Bridge Over Troubled WOTUS
Discussion of the state of Clean Water Act jurisdiction and the current Administration's efforts to repeal the Clean Water Rule

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

WATERKEEPER ALLIANCE, INC.; CENTER FOR BIOLOGICAL DIVERSITY; CENTER FOR FOOD SAFETY; HUMBOLDT BAYKEEPER, a program of Northcoast Environmental Center; RUSSIAN RIVERKEEPER; MONTEREY COASTKEEPER, a program of The Otter Project, Inc.; SNAKE RIVER WATERKEEPER, INC.; UPPER MISSOURI WATERKEEPER, INC.; and TURTLE ISLAND RESTORATION NETWORK, Plaintiffs, v. E. SCOTT PRUITT, in his official capacity as Administrator of the U.S. Environmental Protection Agency; U.S. ENVIRONMENTAL PROTECTION AGENCY; RICKY DALE JAMES, in his official capacity as Assistant Secretary of the Army for Civil Works; and U.S. ARMY CORPS OF ENGINEERS, Defendants.	Case No.18-cv-3521 COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

INTRODUCTION

1. Water sustains all life on earth. Our nation's rivers, streams, lakes, and wetlands provide food to eat and water to drink for millions of Americans; serve as habitat for thousands of species of fish and wildlife, including scores of threatened or endangered species; and give the public aesthetic, recreational, commercial, and spiritual benefits too numerous to count. It is for the protection of these waters that congress passed the Federal Water Pollution Control Act of 1972, 33 U.S.C. § 1251 *et seq*., commonly known as the Clean Water Act ("CWA" or the "Act").

2. Plaintiffs are regional and national public-interest environmental organizations with a combined membership numbering hundreds of thousands of members nationwide. On behalf of these members, Plaintiffs advocate for the protection of oceans, rivers, streams, lakes, and wetlands, and for the people and animal and plant species that depend on clean water.

3. By this action, Plaintiffs challenge two closely related final rules issued by Defendants regarding the statutory phrase "waters of the United States," a phrase that proscribes the jurisdictional reach of the CWA. The first is the June 29, 2015 "Clean Water Rule," which identifies those waters that are subject to the CWA's critical safeguards. *Clean Water Rule: Definition of 'Waters of the United States'*, 80 Fed. Reg. 37054 (June 29, 2015). Waters that do not meet the regulatory definition of "waters of the United States" will be unprotected as a matter of federal law, subject to myriad abuses by those who have long seen our nation's waters as either a convenient means to dispose of waste and debris or as a resource to be dredged or filled to further their economic objectives.

4. The second is the February 6, 2018 "Delay Rule," which makes no substantive changes to the Agencies' regulatory definition, but delays the applicability of the Clean Water Rule by two years. *See Definition of "Waters of the*

United States"–Addition of an Applicability Date to 2015 Clean Water Rule, 83 Fed. Reg. 5200 (Feb. 6, 2018).

5. Plaintiffs filed a similar action in August 2015, challenging the Clean Water Rule only. *Waterkeeper Alliance et al. v. U.S. Envt'l Protection Agency*, N.D. Cal. No. 3:15-cv-03927 (filed August 27, 2015). That suit was among many filed around the country in both the federal district courts and the courts of appeals; and like most other litigants, Plaintiffs voluntarily dismissed their earlier suit after the Sixth Circuit asserted jurisdiction over all challenges to the Clean Water Rule under 33 U.S.C. § 1369(b). *See In re Clean Water Rule: Definition of Waters of U.S.*, 817 F.3d 261, 264 (6th Cir. 2016). Plaintiffs are filing again in this Court because the U.S. Supreme Court subsequently held that review of the Clean Water Rule belongs in the district courts, not the courts of appeals. *Nat'l Ass'n of Mfrs. v. Dep't of Def.*, 138 S. Ct. 617 (2018).

6. The Clean Water Rule, in part, reaffirms CWA jurisdiction over waters historically protected by the Agencies, such as many tributaries and their adjacent wetlands; for this reason, Plaintiffs do not seek vacatur of the Clean Water Rule in its entirety, but instead seek vacatur of the Delay Rule so that the lawful parts of the Clean Water Rule may take immediate effect.

7. However, a number of provisions of the Clean Water Rule are legally or scientifically indefensible, and must therefore be excised from the rule, vacated, and remanded to the Agencies. These flawed provisions impermissibly abandon waters that must be protected under the CWA as a matter of law; unreasonably exclude waters over which the Agencies have historically asserted jurisdiction based on their commerce clause authority; arbitrarily deviate from the best available science; or were promulgated without compliance with the Agencies' notice and comment obligations.

8. By this complaint plaintiffs allege that the Agencies violated the CWA, the Administrative Procedure Act, 5 U.S.C. § 551 *et seq*. ("APA"), the National

Environmental Policy Act, 42 U.S.C. § 4321 *et seq*. ("NEPA"), and the Endangered Species Act, 16 U.S.C. § 1531 *et seq*. ("ESA") when they promulgated both the Clean Water Rule and the Delay Rule. Among other remedies, plaintiffs seek an order holding the Delay Rule and specific portions of the Clean Water Rule unlawful and setting them aside because they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;" "in excess of statutory jurisdiction, authority, or limitations," and/or were promulgated "without observance of procedure required by law." 5 U.S.C. § 706(2)(A), (D).

JURISDICTION & VENUE

9. This Court has jurisdiction over the claims set forth herein pursuant to 5 U.S.C. § 702 (APA), 16 U.S.C. § 1540(g) (ESA citizen suit jurisdiction), and 28 U.S.C. § 1331 (federal question jurisdiction). The relief sought is authorized by 5 U.S.C. § 706(1), 16 U.S.C. § 1540(g), and 28 U.S.C. §§ 2201(a) and 2202.

10. Venue is proper in this District pursuant to 28 U.S.C. § 1391(e)(1)(A) because the Agencies are officers or agencies of the United States, and one or more plaintiffs reside in the district within the meaning of 28 U.S.C. § 1391(d).

11. As required by the ESA's citizen suit provision, 16 U.S.C. § 1540(g)(2)(a)(i), Plaintiffs provided Defendants and the required federal wildlife management agencies with written notice of the ESA violations alleged herein by letters dated August 5, 2015 (for claims related to the Clean Water Rule) and February 14, 2018 (for claims related to the Delay Rule). More than 60 days have passed since Plaintiffs provided their notice of intent to sue.

INTRADISTRICT ASSIGNMENT

12. Assignment to the San Francisco Division is appropriate because several of the plaintiffs (including Humboldt Baykeeper, Russian Riverkeeper, Monterey Coastkeeper, and Turtle Island Restoration Network) have their primary place of business within this Division.

PARTIES

13. Plaintiff **Waterkeeper Alliance, Inc.** ("Waterkeeper") is a global not-for-profit environmental organization dedicated to protecting and restoring water quality to ensure that the world's waters are drinkable, fishable and swimmable. Waterkeeper is comprised of more than 300 Waterkeeper Member Organizations and Affiliates working in 44 countries on 6 continents, covering over 2.5 million square miles of watersheds. In the United States, Waterkeeper represents the interests of its 174 U.S. Waterkeeper Member Organizations and Affiliates, as well as the collective interests of thousands of individual supporting members that live, work and recreate in and near waterways across the country – many of which are severely impaired by pollution. The CWA is the bedrock of Waterkeeper Alliance's and its Member Organizations' and Affiliates' work to protect rivers, streams, lakes, wetlands, and coastal waters for the benefit of its Member Organizations, Affiliate Organizations and our respective individual supporting members, as well as to protect the people and communities that depend on clean water for their survival. In many ways, Waterkeeper and its members depend on the CWA to protect waterways, and the people who depend on clean water for drinking water, recreation, fishing, economic growth, food production, and all of the other water uses that sustain our way of life, health, and well being. Waterkeeper has thousands of members worldwide, many of whom use, enjoy, and recreate on or near waters affected by the Clean Water Rule and the Delay Rule.

14. Plaintiff **Center for Biological Diversity** (the "Center") is a national nonprofit organization dedicated to the preservation, protection, and restoration of biodiversity, native species, and ecosystems. The Center was founded in 1989 and is based in Tuscon, Arizona, with offices throughout the country. The Center works through science, law, and policy to secure a future for all species, great or small, hovering on the brink of extinction. The Center is actively involved in species and habitat protection issues and has more than 63,000 members throughout the United

States and the world, including over 5,900 members in this District. The Center has advocated for species protection and recovery, as well as habitat protection, for species existing throughout the United States, including water-dependent species. The Center brings this action on its own institutional behalf and on behalf of its members. Many of the Center's members and staff reside in, explore, and enjoy recreating in and around numerous waters within this District that are affected by the Clean Water Rule and the Delay Rule.

15. Plaintiff **Center for Food Safety** ("CFS") is a national non-profit public interest and environmental advocacy organization working to protect human health and the environment by curbing the use of harmful food production technologies and by promoting organic and other forms of sustainable agriculture. CFS uses legal actions, groundbreaking scientific and policy reports, books, and other educational materials, market pressure, and grass roots campaigns. CFS has over 950,000 members through the United States, including nearly 60,000 members who reside within this District, many of whom use, enjoy, and recreate on or near waters affected by the Clean Water Rule and the Delay Rule.

16. Plaintiff **Humboldt Baykeeper** is a program of Northcoast Environmental Center, a California non-profit public interest and environmental advocacy organization committed to safeguarding the coastal resources of Humboldt Bay, California, for the health, enjoyment, and economic strength of the Humboldt Bay community. Humboldt Baykeeper uses community education, scientific research, water-quality monitoring, pollution control, and enforcement of laws to protect and enhance Humboldt Bay and near-shore waters of the Pacific Ocean. Humboldt Baykeeper has over 1,000 members residing within this District, many of whom use, enjoy, and recreate on or near waters affected by the Clean Water Rule and the Delay Rule.

17. Plaintiff **Russian Riverkeeper** is a California non-profit public interest and environmental advocacy organization committed to the conservation

and protection of the Russian River, its tributaries, and the broader watershed through education, citizen action, scientific research, and expert advocacy. Russian Riverkeeper has over 1,400 members residing within this District, many of whom use, enjoy, and recreate on or near waters affected by the Clean Water Rule and the Delay Rule.

18. Plaintiff **Monterey Coastkeeper** is a project of the Otter Project, Inc., a California non-profit public interest and environmental advocacy organization committed to the protection and restoration of the central California coast. Monterey Coastkeeper has over 2,000 members residing within this District, many of whom use, enjoy, and recreate on or near waters affected by the Clean Water Rule and the Delay Rule.

19. Plaintiff **Snake River Waterkeeper, Inc.** is an Idaho non-profit public interest and environmental advocacy organization committed to protecting water quality and fish habitat in the Snake River and surrounding watershed. Snake River Waterkeeper uses water-quality monitoring, investigation of citizen concerns, and advocacy for enforcement of environmental laws. Snake River Waterkeeper has more than 50 members, including members who reside, explore, and enjoy recreating on or near waters affected by the Clean Water Rule and the Delay Rule.

20. Plaintiff **Upper Missouri Waterkeeper, Inc.** is a Montana non-profit public interest and environmental advocacy organization committed to protecting and improving ecological and community health throughout Montana's Upper Missouri River Basin. Upper Missouri Waterkeeper uses a combination of strong science, community action, and legal expertise to defend the Upper Missouri River, its tributaries, and communities against threats to clean water and healthy rivers. Upper Missouri Waterkeeper has over 70 members, including members who reside, explore, and enjoy recreating on or near waters affected by the Clean Water Rule and the Delay Rule.

21. Plaintiff **Turtle Island Restoration Network, Inc.** is a national non-profit public interest and environmental advocacy organization committed to the protection of the world's oceans and marine wildlife. Turtle Island Restoration Network works with people and communities to accomplish its mission, using grassroots empowerment, consumer action, strategic litigation, hands-on restoration, and environmental education. Turtle Island Restoration Network has over 80,000 members worldwide, including hundreds of members who reside in this District, many of whom use, enjoy, and recreate on or near waters affected by the Clean Water Rule and the Delay Rule.

22. Each Plaintiff has one or more members who reside in, explore, or recreate in areas impacted by the Final Rule's definition of "waters of the United States." Some of Plaintiffs' members will suffer recreational, aesthetic, or other environmental injuries due to the Agencies' final action. Specifically, the Agencies' promulgation of the Clean Water Rule and Delay Rule will result in the loss of Clean Water Act protections for many thousands of miles of ephemeral streams, tributaries, ditches, wetlands, and other waters used and enjoyed by some of Plaintiffs' members, ultimately facilitating the degradation or destruction of those waters.

23. Defendant United States Environmental Protection Agency ("EPA") is the agency of the United States Government with primary responsibility for implementing the CWA. Along with the Army Corps of Engineers, EPA promulgated both the Clean Water Rule and the Delay Rule.

24. Defendant United States Army Corps of Engineers ("Corps") has responsibility for implementing certain aspects of CWA, most notably the dredge and fill permitting program under CWA § 404, 33 U.S.C. § 1344. Along with EPA, the Corps promulgated both the Clean Water Rule and the Delay Rule.

25. Defendant E. Scott Pruitt is the Administrator of the EPA, acting in his official capacity. Administrator Pruitt signed the Delay Rule. In his role as the

EPA Administrator, Mr. Pruitt oversees the EPA's implementation of the CWA.

26. Defendant Ricky Dale James is the Assistant Secretary of the Army for Civil Works, acting in his official capacity. Mr. James' predecessor, former Acting Assistant Secretary of the Army for Civil Works Ryan A. Fisher, signed the Delay Rule. In his role as Assistant Secretary of the Army for Civil Works, Mr. James oversees the Corps' implementation of the CWA.

LEGAL BACKGROUND

I. Overview of the Clean Water Act

27. In 1972 Congress adopted amendments to the Clean Water Act in an effort "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). The 1972 amendments established, among other things, a national goal "of eliminating all discharges of pollutants into navigable waters by 1985" and an "interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water . . . by 1983." *Id.* § 1251(a).

28. CWA section 301(a), 33 U.S.C. § 1311(a), prohibits the discharge of any pollutant by any person, unless such discharge complies with the terms of any applicable permits, and sections 301, 302, 306, 307, 318, 402, and 404 of the Act. 33 U.S.C. § 1311(a). "Discharge of a pollutant" means "any addition of any pollutant to navigable waters from any point source." *Id.* § 1362(12). "Navigable waters" are broadly defined as "the waters of the United States." *Id.* § 1362(7).

29. While Congress left the term "waters of the United States" undefined, the accompanying Conference Report indicates that it intended the phrase to "be given the broadest possible constitutional interpretation." S. Rep. No. 92-1236, p.144 (1972).

30. CWA section 402, 33 U.S.C. § 1342, establishes the statutory permitting framework for regulating pollutant discharges under the National Pollutant Discharge Elimination System ("NPDES") program. CWA section 404, 33

U.S.C. § 1344, establishes the permitting framework for regulating the discharge of dredged or fill material into waters of the United States.

II. Case Law Interpreting "Waters of the United States"

31. The definition of "waters of the United States" significantly impacts the Agencies' and the States' implementation of the CWA, as it circumscribes which waters are within the Agencies' regulatory authority under the Act, *i.e.,* which waters are jurisdictional. The Act does not protect waters that are not "waters of the United States" from pollution, degradation, or destruction, and it is not unlawful under the Act to dredge and fill them or discharge pollutants into them without a permit.

32. The Agencies last addressed the definition of "waters of the United States" by promulgating essentially identical rules in the mid-1970s. Those regulations asserted jurisdiction over traditionally navigable waters, non-navigable tributaries to those (and other) waters, wetlands adjacent to other jurisdictional waters, and any "other waters," the use, degradation, or destruction of which could affect interstate or foreign commerce. *See, e.g.*, 33 C.F.R. § 328.3(a)(1), (5), (7), and (3) (2014), respectively.

33. The Clean Water Rule is the Agencies' most recent attempt to define "waters of the United States." The impact of the Rule is sweeping; it will result in a massive net loss of CWA jurisdiction as compared to the Agencies' historic interpretation of the Act under their prior rule.

34. The Agencies' efforts were undertaken against the backdrop of three Supreme Court cases addressing this statutory phrase. *See United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985); *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, 531 U.S. 159 (2001) ("*SWANCC*"); and *Rapanos v. United States*, 547 U.S. 715 (2006).

35. In *Riverside Bayview*, the Court upheld the Corps' broad interpretation of the phrase "water of the United States" to include wetlands adjacent to

traditionally navigable waters. 474 U.S. at 139.

36. In *SWANCC*, the Court rejected the Corps' assertion of CWA jurisdiction over isolated intrastate waters where the sole asserted basis for jurisdiction was the use of the relevant waters by migratory birds under the Migratory Bird Rule, 51 Fed. Reg. 41217 (1986). *See* 531 U.S. at 163–64.

37. In *Rapanos*, a divided Court announced widely divergent standards for determining CWA Act jurisdiction over wetlands adjacent to non-navigable tributaries. Justice Scalia, writing for the four-justice plurality, held that the Corps could not categorically assert jurisdiction over all wetlands adjacent to ditches or man-made drains that discharge into traditional navigable waters. 547 U.S. at 725, 757 (Scalia, J.) In his concurring opinion, Justice Kennedy indicated that only those waters possessing "a significant nexus with navigable waters" are subject to CWA jurisdiction. *Id.* at 759. He further explained that

> wetlands possess the requisite nexus, and thus come within the statutory phrase 'navigable waters,' if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'

Id. at 780. Justice Kennedy also recognized that the Agencies had authority under the Act to "identify categories of tributaries that, due to their volume or flow, . . . their proximity to navigable waters, or other relevant considerations, are significant enough that wetlands adjacent to them are likely, in the majority of cases, to perform important functions for an aquatic system incorporating navigable waters." *Id.* at 781.

38. Writing for the four dissenters in *Rapanos*, just as he had done in *SWANCC*, Justice Stevens recognized the "comprehensive nature" of the CWA as well as "Congress' deliberate acquiescence" to the Agencies' long-standing definition of "waters of the United States," and thus would have deferred to that definition and the Corps' assertion of jurisdiction over the wetlands and ditches at issue in the

case. 547 U.S. at 797, 803. Justice Breyer joined the dissenting opinion by Justice Stevens, but also wrote separately to emphasize that "the authority of the Army Corps of Engineers under the CWA extends to the limits of congressional power to regulate interstate commerce." 547 U.S. at 811.

39. As Justice Stevens noted in his Rapanos dissent,

> Given that all four Justices who have joined this opinion would uphold the Corps' jurisdiction in both of these cases—and in all other cases in which either the plurality's or Justice KENNEDY's test is satisfied—on remand each of the judgments should be reinstated if *either* of those tests is met.

547 U.S. at 810. Thus, every federal court of appeals to consider the scope of CWA jurisdiction following *Rapanos* has held that a water is jurisdictional *at least* whenever Justice Kennedy's "significant nexus" test is satisfied.[1] No Circuit has held that the Justice Scalia's approach is the exclusive method for establishing CWA jurisdiction.

III. The Clean Water Act's Permit Exclusion for Farming Activities

40. Clean Water Act section 404(f)(1) excludes certain activities from regulation under the Act. 33 U.S.C. § 1344(f)(1). As relevant here, section 404(f)(1)(A) states that "the discharge of dredged or fill material [] from normal

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[1] *See Northern California River Watch v. City of Healdsburg*, 496 F.3d 993 (9th Cir. 2007), *cert. denied*, 128 S.Ct. 1225 (2008); *United States v. Johnson*, 467 F.3d 56 (1st Cir. 2006), *cert. denied*, 128 S.Ct. 375 (2007); *United States v. Donovan*, 661 F.3d 174 (3d Cir. 2011); *United States v. Cundiff*, 555 F.3d 200 (6th Cir. 2009); *United States v. Gerke Excavating, Inc.*, 464 F.3d 723 (7th Cir. 2006), *cert. denied*, 128 S.Ct. 45 (2007); *United States v. Bailey*, 571 F.3d 791 (8th Cir. 2009); and *United States v. Robison*, 505 F.3d 1208 (11th Cir. 2007), *reh'g denied*, 521 F.3d 1319 (2008), *cert. den. sub nom United States v. McWane, Inc.*, 129 S.Ct. 627 (2008); *see also Precon Development Corp. v. U.S. Army Corps of Engineers*, 633 F.3d 278 (4th Cir. 2011) (where the parties stipulated that Justice Kennedy's test was the appropriate test).

farming, silviculture, and ranching activities … is not prohibited by or otherwise subject to regulation under" CWA sections 402, 404, or 301(a). 33 U.S.C. § 1344(f)(1)(A).

41. CWA section 404(f)(2) provides an exception to this exclusion, commonly referred to as the "Recapture Provision":

> Any discharge of dredged or fill material into the navigable waters incidental to any activity having as its purpose bringing an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced, shall be required to have a permit under this section.

33 U.S.C. § 1344(f)(2).

42. Notably, section 404(f) does not affect the jurisdictional status of waters under the CWA. Rather, sections 404(f)(1) and (2), read together, mean that a person does not need a CWA section 404 permit to discharge dredged or fill material from normal farming, silviculture, and ranching activities into a jurisdictional water *unless* (1) such discharge brings the water "into a use to which it was not previously subject", *e.g.*, a new use; and (2) the discharge impairs the flow or circulation of the navigable water or the reach of the water.

43. The fact that the Recapture Provision refers several times to "navigable waters," a term which the Act defines to mean waters of the United States, further demonstrates that waters in which activities subject to the 404(f)(1) permit exemption take place are still jurisdictional. This interpretation is borne out by the Agencies' long-standing policies as well as the legislative history of CWA section 404(f). *See, e.g.,* CONG. REC. S19654 (daily ed. Dec. 15, 1977) (Senator Muskie noting that the section 404(f)(1) exemption was only intended to eliminate permitting requirements for certain "narrowly defined activities that cause little or no adverse effects either individually or cumulatively.")

IV. The National Environmental Policy Act

44. The National Environmental Policy Act ("NEPA"), enacted by Congress in 1969, is our "basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). One of the core goals of NEPA is to "promote efforts which will prevent or eliminate damage to the environment." 42 U.S.C. § 4321. As such, NEPA directs all federal agencies to assess the environmental impacts of proposed actions that significantly affect the quality of the human environment.

45. The Council on Environmental Quality ("CEQ") promulgated uniform regulations to implement NEPA that are binding on all federal agencies. Those regulations designed to "insure that environmental information is available to public officials and citizens before decisions are made and actions are taken" and to "help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." 40 C.F.R. § 1500.1(b)–(c). The Corps has its own NEPA regulations, codified at 33 C.F.R. Part 230, which the Corps uses in conjunction with the CEQ regulations.

46. NEPA requires all federal agencies to prepare a "detailed statement" assessing the environmental impacts of all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). This statement is known as an Environmental Impact Statement ("EIS"). CEQ's regulations establish a standard format for EISs, including a summary, purpose and need for action, alternatives, affected environment, and environmental consequences. 40 C.F.R. § 1502.10.

47. A "major Federal action" is an action "with effects that may be major and which are potentially subject to Federal control and responsibility." 40 C.F.R. § 1508.18. Promulgation of a rule is an expressly identified "Federal action" under NEPA. *Id.* § 1508.18(b)(1).

48. NEPA regulations define significance in terms of an action's context

and intensity. *See* 40 C.F.R. § 1508.27. An action's context must be analyzed nationally, regionally, and locally. *See id.* § 1508.27(a). An action's intensity must be analyzed on the basis of at least 10 factors, any one of which can indicate that an EIS is required. *See id.* § 1508.27(b). For example, an EIS may be required if a major action is in proximity of "wetlands, wild and scenic rivers, or ecologically critical areas," "likely to be highly controversial," "establish[es] a precedent for future actions with significant effects," or "may adversely affect an endangered or threatened species." *See id.* Moreover, a "significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial." *Id.* § 1508.27(b)(1).

49. An agency that is uncertain whether an EIS is required may first develop an Environmental Assessment ("EA"). An EA is a "concise public document" that "provide[s] sufficient evidence and analysis" for determining whether to prepare an EIS or issue a finding of no significant impact ("FONSI"). 40 C.F.R. § 1508.9(a). The EA must discuss the need for the proposed project, as well as environmental impacts and alternatives, *see* 40 C.F.R. § 1508.9(b); it must provide sufficient evidence and analysis for determining whether an EIS is appropriate; and it must include a discussion of "appropriate alternatives if there are unresolved conflicts concerning alternative uses of available resources[.] 33 C.F.R. § 230.10. If, after preparing an EA, the federal agency determines that the proposed action is not likely to significantly affect the environment, it may issue a "finding of no significant impacts" ("FONSI").

50. NEPA requires an agency to take a "hard look" at the environmental consequences of the agency's proposed action, and to base its decision not to prepare an EIS on a "a convincing statement of reasons why potential effects are insignificant." *Save the Yaak Comm. v. Block*, 840 F.2d 714, 717 (9th Cir. 1988).

51. The information presented in an EA or an EIS must be of high quality. NEPA regulations provide that "[a]ccurate scientific analysis, expert agency

comments, and public scrutiny are essential to implementing NEPA." 40 C.F.R. § 1500.1(b).

52. Although the CWA exempts most actions taken by the EPA Administrator under the Act from NEPA, 33 U.S.C. § 1372(c)(1), it contains no such exemption for actions taken by the Corps.

V. The Endangered Species Act

53. Section 2(c) of the Endangered Species Act ("ESA") states that it is "the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." 16 U.S.C. § 1531(c)(1). The ESA defines "conservation" to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary." *Id.* § 1532(3).

54. To fulfill the purposes of the ESA, each federal agency is required to engage in consultation with the Fish and Wildlife Service ("FWS") and National Marine Fisheries Service ("NMFS") (collectively "the Services"), as appropriate, to "insure that any action authorized, funded, or carried out by such agency … is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of habitat of such species … determined … to be critical." 16 U.S.C. § 1536(a)(2).

55. Such consultation is required for "any action [that] may affect listed species or critical habitat." 50 C.F.R. § 402.14. Agency "action" is broadly defined in the ESA's implementing regulations to include, *inter alia*, "the promulgation of regulations." *Id.* § 402.02 (emphasis added).

56. At the completion of consultation, the Services are required to issue a Biological Opinion that determines if the agency action is likely to jeopardize any affected species. If so, the Biological Opinion must specify "Reasonable and Prudent Alternatives" that will avoid jeopardy and allow the agency to proceed with the

action. The Services may also "suggest modifications" to the action (called Reasonable and Prudent Measures) during the course of consultation to "avoid the likelihood of adverse effects" to the listed species even when not necessary to avoid jeopardy. 50 C.F.R. § 402.13.

57. The ESA further provides that after federal agencies initiate consultation, the agencies "shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section." 16 U.S.C. § 1536(d). The purpose of this prohibition is to maintain the environmental status quo pending the completion of consultation.

58. The ESA's citizen suit provision authorizes citizens to commence suit against, *inter alia*, federal agencies that are alleged to be in violation of any provision of the Act. 16 U.S.C. § 1540(g)(1)(A).

VI. The Administrative Procedure Act

59. The Administrative Procedure Act ("APA") imposes procedural requirements on federal agency rulemaking. 5 U.S.C. § 553. Under the APA, agencies are required to publish notice of proposed rules in the Federal Register, including "the terms or substance of the proposed rule or a description of the subjects and issues involved." *Id.* § 553(b)(3).

60. Following notice of a proposed rulemaking, agencies are required to provide the public with the opportunity to submit "written data, views, or arguments" which must then be considered and responded to by the agency. 5 U.S.C. § 554(c).

61. APA section 702 provides a private cause of action to any person "suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute." 5 U.S.C. § 702.

62. Only final agency actions are reviewable under the APA. 5 U.S.C. §

704. Promulgation of a final rule is a "final agency action" for APA purposes.

63. Under the APA, a court must "hold unlawful and set aside agency actions, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;" "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;" or "without observance of procedure required by law." 5 U.S.C. § 706(2)(A), (C), (D).

GENERAL FACTUAL ALLEGATIONS

I. General Factual Background

64. As the Agencies correctly noted in the preamble to the Proposed Clean Water Rule,

> "Waters of the United States," which include wetlands, rivers, streams, lakes, ponds and the territorial seas, provide many functions and services critical for our nation's economic and environmental health. In addition to providing habitat, rivers, lakes, ponds and wetlands cleanse our drinking water, ameliorate storm surges, provide invaluable storage capacity for some flood waters, and enhance our quality of life by providing myriad recreational opportunities, as well as important water supply and power generation benefits.

79 Fed. Reg. at 22,191.

65. Many types of waters are connected in a hydrologic cycle, and a key purpose of the CWA is to ensure protections for waters that may not themselves be navigable in fact, but which affect such waters. As EPA's own Office of Research and Development has summarized,[2]

- "The scientific literature unequivocally demonstrates that streams, individually or cumulatively, exert a strong influence on the integrity of downstream waters. All tributary streams, including perennial, intermittent, and ephemeral streams, are physically, chemically, and biologically connected to downstream

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[2] U.S. EPA, Office of Research and Development, Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence (January 2015) at ES-3, 4, *available at* http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=296414.

rivers via channels and associated alluvial deposits where water and other materials are concentrated, mixed, transformed, and transported."

- "The literature clearly shows that wetlands and open waters in riparian areas and floodplains are physically, chemically, and biologically integrated with rivers via functions that improve downstream water quality, including the temporary storage and deposition of channel-forming sediment and woody debris, temporary storage of local ground water that supports baseflow in rivers, and transformation and transport of stored organic matter."

- Wetlands and open waters in non-floodplain landscape settings (hereafter called "non-floodplain wetlands") provide numerous functions that benefit downstream water integrity. These functions include storage of floodwater; recharge of ground water that sustains river baseflow; retention and transformation of nutrients, metals, and pesticides; export of organisms or reproductive propagules to downstream waters; and habitats needed for stream species. This diverse group of wetlands (e.g., many prairie potholes, vernal pools, playa lakes) can be connected to downstream waters through surface-water, shallow subsurface-water, and ground-water flows and through biological and chemical connections."

66. In addition, EPA's own Scientific Advisory Board (SAB) has concluded that "groundwater connections, particularly via shallow flow paths in unconfined aquifers, can be critical in supporting the hydrology and biogeochemical functions of wetlands and other waters. Groundwater also can connect waters and wetlands that have no visible surface connections."[3]

67. Many types of waters excluded from CWA jurisdiction by the Clean Water Rule provide important habitat for fish, wildlife and threatened and

[3] Letter from Dr. David T. Allen, Chair, EPA Science Advisory Board, to EPA Administrator Gina McCarthy, *Science Advisory Board (SAB) Consideration of the Adequacy of the Scientific and Technical Basis of the EPA's Proposed Rule titled "Definition of Waters of the Untied States under the Clean Water Act"* (Sept. 30, 2014), at 2-3, *available at* http://yosemite.epa.gov/sab/sabproduct.nsf/0/518D4909D94CB6E585257D6300767DD6/$File/EPA-SAB-14-007+unsigned.pdf.

endangered species. For example, salmon and steelhead in the Pacific Northwest regularly use and require certain types of streams, ditches and ditched or channelized streams during their life cycle. Small wetlands and ponds are important habitat for numerous amphibians and reptiles. Moreover, fish, wildlife, and threatened and endangered species found within traditionally navigable waters are often very sensitive to pollution are harmed from the cumulative impacts to headwater tributaries and wetlands upstream. These species have the potential to receive less or no protection against pollution or destruction under the Clean Water Rule than they did under the Agencies' prior definition of "waters of the United States."

68. At the same time, other types of waters which are afforded greater protection under the Clean Water Rule than under the prior regulatory definition also provide habitat for numerous ESA-listed species. For example, several categories of wetlands, including prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands provide habitat for endangered species such as whooping cranes, Northern Great Plains piping plovers, and prairie shrimp, among others.

II. The Clean Water Rule

69. On April 21, 2014, the Agencies published in the Federal Register a proposed rule entitled *Definition of 'Waters of the United States' Under the Clean Water Act* ("Proposed Clean Water Rule"). 79 Fed. Reg. 21,188–22,274 (Apr. 21, 2014).

70. The Proposed Clean Water Rule provided the public with an opportunity to file comments until July 21, 2014. The comment period was extended twice, ultimately requiring comments to be filed not later than November 14, 2014. *See* 79 Fed. Reg. 35,712 (June 24, 2014); 79 Fed. Reg. 61,590 (Oct. 14, 2014).

71. Each plaintiff in this action submitted written comments on the Proposed Clean Water Rule during the public comment period, including at least

the following: a letter dated November 14, 2014 and submitted electronically to EPA Docket No. EPA-HQ-OW-2011-0880 on behalf of Waterkeeper Alliance, Humboldt Baykeeper, Russian Riverkeeper, Monterey Coastkeeper, Snake River Waterkeeper, Upper Missouri Waterkeeper, and others; a letter dated November 14, 2014 and submitted electronically to EPA Docket No. EPA-HQ-OW-2011-0880 on behalf of Center for Biological Diversity, Center for Food Safety, and Turtle Island Restoration Network; and a letter dated November 14, 2014 and submitted electronically to EPA Docket No. EPA-HQ-OW-2011-0880 on behalf of Center for Biological Diversity and others.

72. On June 29, 2015, the Agencies issued the final Clean Water Rule. 80 Fed. Reg. 37054 (June 29, 2015). The Clean Water Rule revised eleven regulatory provisions where the phrase "waters of the United States" is defined, 40 C.F.R. Parts 110, 112, 116, 117, 122, 230, 232, 300, 301, and 401, which govern various regulatory programs implemented by EPA or the Corps under their CWA authorities.

73. The Clean Water Rule effectively placed all of the nation's waters into one of three categories for purposes of CWA jurisdiction:

(1) Waters that are ***per se jurisdictional***, including traditional navigable waters; interstate waters; the territorial seas; tributaries (as defined elsewhere in the rule) of traditional navigable waters, interstate waters, and territorial seas; impoundments of other jurisdictional waters; and all waters that are adjacent to (as defined elsewhere in the rule) the waters described above;

(2) Waters that are ***per se non-jurisdictional***, including (among others) waters converted to waste treatment systems; certain types of ditches; ephemeral features that do not meet the definition of a tributary; groundwater; and waters outside the 100-year floodplain and more than 4,000 feet of the high tide line or ordinary high water mark of a traditional navigable water, interstate water, the territorial seas, impoundment of other jurisdictional waters, or tributary; and

> (3) Waters which will be assessed for jurisdiction on a case-specific basis by applying a ***significant nexus analysis***, including (among others) all adjacent waters being used for established normal farming, ranching, and silviculture activities; all of certain categories of waters, including prairie potholes, pocosins, and western vernal pools; all waters within the 100-year floodplain of a traditional navigable water, interstate waters, or the territorial seas; and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a traditional navigable water, interstate water, the territorial seas, impoundment of other jurisdictional waters, or tributary.

See 80 Fed. Reg. at 37,104. Substantially the same definition of waters of the United States was incorporated into the relevant definition sections of eleven separate regulations implementing the CWA. *See id.* at 37,104-127.

74. On July 13, 2015, the Clean Water Rule became a "final agency action" within the meaning of 5 U.S.C. § 704.

75. On May 26, 2015, the Corps issued a Final EA on the Clean Water Rule.[4] As part of its EA, the Corps issued a FONSI after concluding "that adoption of the rule is not a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act for which an environmental impact statement is required." *Id.*

III. Tributaries under the Final Clean Water Rules

76. The Clean Water Rule defines "tributary" as "a water that contributes flow, either directly or through another water" to a traditional navigable water, interstate water, or territorial seas, and "that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark." 80 Fed. Reg. at 37,105; 33 C.F.R. § 328.3(c)(3). As the Agencies explain in the preamble to the Clean Water Rule, this definition "requires the presence of a bed and banks

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[4] *See* Finding of No Significant Impact: Adoption of the Clean Water Rule: Definition of Waters of the United States (May 26, 2015), *available at* http://www2.epa.gov/sites/production/files/2015-05/documents/finding_of_no_significant_impact_the_clean_water_rule_52715.pdf. (hereinafter, "FONSI").

and an additional indicator of ordinary high water mark such as staining, debris deposits, or other indicator[.]" 80 Fed. Reg. at 37,076 (emphasis added).

77. As EPA has noted, the definition of tributary in the Clean Water Rule "narrows the waters that meet the definition of tributary compared to current practice that simply requires one indicator of ordinary high water mark"—e.g., the presence of defined bed and banks.[5]

78. The Clean Water Rule's definition of tributary, which includes only those waters that have a bed and banks *and* an additional indicator of an ordinary high water mark, lacks legal and scientific support. EPA's Scientific Advisory Board "advised EPA to reconsider the definition of tributaries because not all tributaries have ordinary high water marks" and urged EPA to change the definition's wording to "bed, bank, and other evidence of flow." 80 Fed. Reg. at 37,064. The Scientific Advisory Board explained that "[a]n ordinary high water mark may be absent in ephemeral streams within arid and semi-arid environments or in low gradient landscapes where the flow of water is unlikely to cause an ordinary high water mark."[6]

79. EPA's own scientific analyses underpinning the Clean Water Rule do not provide support for the requirement that a tributary have both bed and banks and an ordinary high water mark to have a significant nexus with downstream waters and thus be per se jurisdictional under the CWA. While EPA noted that available science "supports the conclusion that sufficient volume, duration, and frequency of flow are required to create a bed and banks and ordinary high water mark" within a tributary, TSD at 171, this self-evident conclusion has no bearing on whether a particular tributary (or group of similarly situated tributaries)

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[5] U.S. EPA and U.S. Dept. of the Army, *Technical Support Document for the Clean Water Rule: Definition of Waters of the United States* (May 27, 2015) at 67 (hereinafter, "TSD").

[6] Letter from Dr. David T. Allen, *supra* note 3, at 2.

"provide[s] many common vital functions important to the chemical, physical, and biological integrity of downstream waters" and should thus be per se jurisdictional. *Id*. at 235. Indeed, the TSD explicitly recognized, and did not dispute, the SAB's view that "from a scientific perspective there are tributaries that do not have an ordinary high water mark but still affect downstream waters." *Id*. at 242.

IV. Ditches and Ephemeral Features under the Proposed and Final Clean Water Rules

80. In its Proposed Clean Water Rule, EPA stated that certain ditches meet the definition of "tributary," and are therefore "waters of the United States," if they satisfy the following criteria: "they have a bed and banks and ordinary high water mark and they contribute flow directly or indirectly through another water to (a)(1) through (a)(4) waters." 79 Fed. Reg. at 22,203.

81. Under the Proposed Clean Water Rule, two types of ditches were *per se* excluded, regardless of whether they satisfied the requirements of another category of "water of the United States": (1) "[d]itches that are excavated wholly in uplands, drain only uplands, and have less than perennial flow," and (2) "[d]itches that do not contribute flow, either directly or through another water, to a traditional navigable water, interstate water, the territorial seas or an impoundment of a jurisdictional water." 79 Fed. Reg. at 22,273–74. The Proposed Rule also exempted gullies, rills, and "non-wetland swales." *Id.* at 22,263.

82. The SAB provided comments on this aspect of the Proposed Clean Water Rule, and specifically rejected the Rule's exclusion of ditches as "not justified by science." The SAB explained: "There is . . . a lack of scientific knowledge to determine whether ditches should be categorically excluded. Many ditches in the Midwest would be excluded under the proposed rule because they were excavated wholly in uplands, drain only uplands, and have less than perennial flow. However, these ditches may drain areas that would be identified as wetlands under the

Cowardin classification system and may provide certain ecosystem services." SAB Report at 3.

83. Members of the SAB panel also expressed concerns regarding the Proposed Clean Water Rule's exclusion of ephemeral streams, noting for example that such waters are ecologically important to downstream water quality (especially in the arid southwest), *see supra* paragraph 66 and n.5; can deliver nutrients and other agricultural pollutants to downstream waters when tiled;[7] and may provide valuable habitat for certain organisms that have adapted to them.[8]

84. In the final Clean Water Rule, the Agencies significantly altered the provision regarding ditches, changing the exclusion to include: "[d]itches with ephemeral flow that are not a relocated tributary or excavated in a tributary"; "[d]itches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands"; and, "[d]itches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section." 80 Fed. Reg. 37,105.

85. In the Clean Water Rule, the Agencies also significantly expanded the exclusion for ephemeral features so that it applies to "[e]rosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways." *Id.* In the Preamble to the Clean Water Rule, the Agencies explained that the term "ephemeral features" broadly encompasses "ephemeral streams that do not have a bed and banks and ordinary high water mark." *Id.* at 37,058.

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[7] Memorandum from Dr. Amanda D. Rodewald, Chair of the Science Advisory Board (SAB) Panel for the Review of the EPA Water Body Connectivity Report, to Dr. David Allen, Chair of the EPA Science Advisory Board, Comments to the Chartered SAB on the Adequacy of the Scientific and Technical Basis of the Proposed Rule Titled "Definition of 'Waters of the United States' Under the Clean Water Act" (Sep. 2, 2014) at 8.

[8] *Id.* at 25, Revised Comments by Kurt D. Fausch on the proposed rule "Definition of 'Waters of the United States' Under the Clean Water Act."

86. EPA's own scientific analyses underpinning the Clean Water Rule do not provide support for its categorical exemptions of certain types of ditches and ephemeral features. According to EPA, "[t]he scientific literature documents that tributary streams, *including perennial, intermittent, and ephemeral streams*, and certain categories of ditches are integral parts of river networks." TSD at 243 (emphasis added). In the preamble to the Proposed Clean Water Rule, EPA noted that "tributary streams, *including perennial, intermittent, and ephemeral streams*, are chemically, physically, or biologically connected to downstream rivers via channels and associated alluvial deposits where water and other materials are concentrated, mixed, transformed, and transported." 79 Fed. Reg. at 22224.

87. In the preamble to the final Clean Water Rule, EPA explained that the effects tributaries exert on downstream waters "occur even when the covered tributaries flow infrequently (such as ephemeral covered tributaries), and even when the covered tributaries are great distances from the traditional navigable water, interstate water, or the territorial sea." 80 Fed. Reg. at 37,069.

88. EPA has also noted that man-made and man-altered tributaries—such as "ditches, canals, channelized streams, piped streams, and the like," TSD at 256—"likely enhance the extent of connectivity" between streams and downstream rivers, "because such structures can reduce water losses from evapotranspiration and seepage." In other words, to the extent perennial, intermittent, and ephemeral tributaries have significant impacts on downstream waters, the increased flow associated with man-made or man-altered ditches may actually exacerbate these effects.

89. Despite noting the significant impacts that ditches and ephemeral streams have on downstream waters, the Agencies have provided no legal or scientific basis for excluding ditches that are ephemeral, intermittent, or indirectly connected to traditional navigable waters, interstate waters, or the territorial seas, nor have the Agencies provided a legal or scientific basis for *per se* excluding

ephemeral features such as ephemeral streams that do not meet the definition of tributary.

90. The Agencies provided no justification, legal, scientific or otherwise, for concluding that all tributaries are "waters of the United States," yet categorically exempting certain types of ditches—a category of tributary under the Clean Water Rule—and other ephemeral waters that may have a significant nexus with traditional navigable waters, interstate waters, or the territorial seas.

91. Finally, the Agencies have provided no legal or scientific basis for exempting ditches that flow into traditional navigable waters, interstate waters, or the territorial seas, despite concluding that such waters are "waters of the United States" in the Proposed Rule. *Compare* 79 Fed. Reg. 22,273–74 (excluding "[d]itches that do not contribute flow . . . to water identified in paragraphs (l)(1)(i) through (iv) of this section"), *with* 80 Fed. Reg. 37,105 (excluding "[d]itches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section").

V. Limits on the Application of the Significant Nexus Test under the Proposed and Final Clean Water Rules

92. In the final Clean Water Rule, the Agencies defined waters of the United States to include "all waters located within 4,000 feet of the high tide line or ordinary high water mark of" a per se jurisdictional water (other than adjacent waters), "where they are determined on a case-specific basis to have a significant nexus" with such water. 80 Fed. Reg. at 37,114.

93. Under the Clean Water Rule, most waters located *more than* 4,000 feet of the high tide line or ordinary high water mark of a per se jurisdictional water other than an adjacent water (hereinafter collectively referred to as "qualifying per se jurisdictional waters") are automatically excluded from CWA jurisdiction, even if those waters have or may possess a significant nexus with the jurisdictional water

or otherwise have a significant affect on interstate commerce.[9] *See* 80 Fed. Reg. at 37,086 (describing the "exclusive" and "narrowly targeted circumstances" under which case-specific significant nexus determinations can be made under the Clean Water Rule).

94. The Proposed Clean Water Rule did not include the 4,000-foot limitation—or any other distance limitation—on the application of the significant nexus test to other waters. Instead, the Proposed Rule would have extended CWA jurisdiction to all "other waters, including wetlands, provided that those waters alone, or in combination with other similarly situated waters, including wetlands, located in the same region, have a significant nexus to" traditional navigable waters, interstate waters, and the territorial seas. 79 Fed. Reg. at 22,268. For example, under the Proposed Rule, a wetland complex located 5,000 feet from a qualifying per se jurisdictional water could be subject to CWA jurisdiction if it was shown to possess a significant nexus with a traditional navigable water, an interstate water, or a territorial sea.

95. In the preamble to the Proposed Clean Water Rule, the Agencies identified and solicited public comment on several alternatives to their proposal to codify the significant nexus test as the basis for determining jurisdiction over all other non-adjacent waters. *See* 79 Fed. Reg. at 22214-17. None of these alternatives suggested the possibility that the Agencies might establish an outermost limit on the application of the significant nexus test at 4,000 feet, or might use any other distance as the basis for excluding waters from CWA jurisdiction.

96. In establishing the "4,000 foot bright line boundaries for these case-

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[9] Under the Clean Water Rule, a case-by-case significant nexus analysis also applies to five categories of waters that the Agencies "have determined are 'similarly situated' for purposes of a significant nexus determination" (such as prairie potholes and western vernal pools), as well as to waters within the 100-year floodplain of a traditional navigable water, interstate water, or territorial sea. 80 Fed. Reg. at 37,086.

specific significant nexus determinations" in the Clean Water Rule, the Agencies purport to be "carefully applying the available science." 80 Fed. Reg. at 37,059. But the opposite is true; indeed, as noted in the preamble to the Clean Water Rule, EPA's own Scientific Advisory Board "found that distance could not be the sole indicator used to evaluate the connection of 'other waters' to jurisdictional waters." *Id*. at 37,064.

VI. Adjacent Waters and Normal Farming Activities under the Proposed and Final Clean Water Rules

97. Prior to the Clean Water Rule, the Agencies considered all wetlands adjacent to a traditional navigable water to have a "significant nexus" to that water, in recognition of the fact that waters and their adjacent wetlands are properly viewed as one system due to their hydrological connection with one another. Thus, prior to the Proposed or Final Clean Water Rule, the Agencies considered all adjacent wetlands to be jurisdictional under the CWA.

98. Under both the Proposed and the Final Clean Water Rule, "waters of the United States" include all waters that are "adjacent" to a traditional navigable water, interstate water, territorial sea, impoundment of a jurisdictional water, or tributary. *See* 79 Fed. Reg. at 22,206-07; 80 Fed. Reg. at 37,058.

99. In the Proposed Clean Water Rule the Agencies proposed to define "adjacent" as follows:

> The term *adjacent* means bordering, contiguous or neighboring. Waters, including wetlands, separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent waters."

79 Fed. Reg. at 22,270 (citing proposed 40 C.F.R. § 232.2).

100. In the preamble to the Proposed Clean Water Rule, the Agencies stated that the rule "does not affect any of the exemptions from CWA section 404 permitting requirements provided by CWA section 404(f), including those for

normal farming, silviculture, and ranching activities." 79 Fed. Reg. at 22,199 (citing 33 U.S.C. § 1344(f); 40 CFR 232.3; 33 CFR 323.4).

101. In the final Clean Water Rule, however, the Agencies added the following language to the definition of adjacent: "Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent." *See, e.g.*, 80 Fed. Reg. at 37,105; 33 C.F.R. § 328(c)(1).

102. This addition was made by EPA on "the day that the draft final rule was sent to OMB to begin the inter-agency review process"[10] and was not subjected to the Agencies' scientific review or the Corps' NEPA evaluation.

103. In the preamble to the Clean Water Rule, the Agencies state that the language added to the definition of adjacent "interprets the intent of Congress[.]" 80 Fed. Reg. at 37,080. But by enacting section 404(f) of the CWA, Congress sought to exempt discharges from certain types of *activities* from the requirement to obtain a permit pursuant section 404; it did not intend to remove any category of waters from the Act's jurisdiction.

104. As a result of this addition to the definition of "adjacent" from the Proposed Clean Water Rule to the final Clean Water Rule, waters being used for established normal farming, ranching, and silviculture activities now must satisfy the significant nexus test in order to be jurisdictional—even if they are physically adjacent to a traditional navigable water would therefore have been *per se* jurisdictional under the Proposed Clean Water Rule or prior agency practice.

105. The Agencies' only stated reasoning for this last-minute addition to the Rule is that farmers play a "vital role" in providing the United States with food, fiber, and fuel, and thus the Agencies wanted to "minimize potential regulatory

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[10] Memorandum from Lance Wood, Assistant Chief Counsel for Environmental Law and Regulatory Programs, U.S. Army Corps of Engineers, to Maj. Gen. John Peabody, Deputy Commanding General for Civil and Emergency Operations, U.S. Army Corps of Engineers, *Legal Analysis of Draft Final Rule on Definition of "Waters of the United States"* (Apr. 24, 2015) at 5.

burdens on the nation's agriculture community." 80 Fed. Reg. at 37,080. The Agencies do not attempt to explain how the CWA section 404(f)(1) exemption is related to "adjacent" waters; nor do the Agencies provide any scientific justification for changing how they treat waters adjacent to traditionally navigable waters.

106. In addition, in the preamble to the Clean Water Rule, the Agencies purport to include all waters "adjacent" to traditional navigable waters, interstate waters, and the territorial seas as waters of the United States "based upon their hydrological and ecological connections to, and interactions with, those waters." 80 Fed. Reg. at 37,058. But in the preamble to the Clean Water Rule the Agencies state that a wetland "being used for established normal farming, ranching, and silviculture activities" "shall not be combined" with other adjacent wetlands when conducting the significant nexus analysis, regardless of the hydrological connection between the wetlands or the effects that the entire wetlands system, as a whole, have on the chemical, physical, or biological integrity of adjacent traditional navigable waters, interstate waters, territorial seas, or tributaries.

107. Nothing in the record or the available science suggests that the mere presence established normal farming, ranching, and silviculture activities affects a water's hydrological and ecological connections to other waters.[11]

108. Moreover, nothing in the preamble to the Proposed Clean Water Rule suggested that the Agencies were considering the creation of an entirely new concept of adjacency that excludes all waters in which established normal farming, ranching, and silvicultural activities occur—even when those waters are bordering, contiguous, or neighboring another jurisdictional water as a matter of geographic fact. *See* 79 Fed. Reg. at 22,207-11.

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[11] *See* Wood Memorandum, *supra* note 8, at 5 (describing the addition of this sentence "indefensible," "a textbook example of rulemaking that cannot withstand judicial review," and "highly problematic, both as a matter of science and for purposes of implementing the final rule").

109. Indeed, nothing in the preamble to the Proposed Clean Water Rule even hinted that Agencies might conclude that established farming practices played any role whatsoever in identifying which waters are subject to CWA jurisdiction. *See, e.g., id*. at 22,210 ("The agencies proposal to determine 'adjacent waters' to be jurisdictional by rule is supported by the substantial physical, chemical, and biological relationship between adjacent waters" and other jurisdictional waters.) Instead, the Agencies noted that the "existing definition of 'adjacent' would be generally retained under" the Proposed Clean Water Rule. *Id*. at 22,207.

VII. Groundwater under the Proposed and Final Clean Water Rule

110. The Agencies have a longstanding and consistent interpretation that the CWA may cover discharges to groundwater that has a direct hydrological connection to surface waters. *See, e.g.*, *National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges*, 55 Fed. Reg. 47990-01 (Nov. 16, 1990). This interpretation has been upheld by numerous courts.[12]

111. The Agencies proposed definition of "waters of the United States" excluded all "groundwater, including groundwater drained through subsurface drainage systems." 79 Fed. Reg. at 22,193. In the preamble to the Proposed Clean Water Rule, EPA explained that the reasoning behind this exclusion was that the agencies had never interpreted "waters of the United States" to include groundwater. *Id.* at 22,218.

112. The SAB provided comments on the proposed definition and specifically noted that there was no scientific justification for the groundwater

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[12] *See, e.g.*, *Friends of Santa Fe Cnty. v. LAC Minerals, Inc.*, 892 F. Supp. 1333, 1357-58 (D.N.M. 1995); *Washington Wilderness Coalition v. Hecla Mining Co.,* 870 F.Supp. 983, 990 (E.D. Wash.1994); *Sierra Club v. Colo. Ref. Co.,* 838 F.Supp. 1428, 1433–34 (D. Colo. 1993); *McClellan Ecological Seepage Situation v. Weinberger,* 707 F.Supp. 1182, 1195–96 (E.D. Cal.1988), *vacated on other grounds,* 47 F.3d 325 (9th Cir.1995), *cert. denied,* 516 U.S. 807, 116 S.Ct. 51, 133 L.Ed.2d 16 (1995); *New York v. United States,* 620 F.Supp. 374, 381 (E.D.N.Y.1985).

exclusion. *See* Letter from Dr. David T. Allen, *supra* note 3, at 3. The SAB went on to comment:

> The available science . . . shows that groundwater connections, particularly via shallow flow paths in unconfined aquifers, can be critical in supporting the hydrology and biogeochemical functions of wetlands and other waters. Groundwater also can connect waters and wetlands that have no visible surface connections.

Id.

113. Several individual members of the SAB further explained their concerns regarding the Proposed Clean Water Rule's categorical exclusion of all groundwater to EPA. For example, Dr. David Allen, chair of the SAB, questioned the exclusion because "an important pathway for some nutrients and contaminants is via subsurface drainage systems to ditches that may not have perennial flow, but which may deliver much of the nonpoint runoff to downstream waters", and concluded that "this exclusion is a concern, and should be recognized as such."[13]

114. Similarly, SAB member Dr. Robert Brooks stated that the groundwater exclusion "seems ill-advised because of the likely connectivity of surface flows into features such as karst sinkholes, with a potential to contaminate groundwater aquifers used for human water supplies, plus the possibility of reconnections to surface water a reasonable distance away." *Id.* at 17. And SAB member Dr. Kenneth Kolm concluded that "[i]n no cases should groundwater that is shown to be connected to 'waters of the US' be exempt." *Id.* at 49.

115. The Agencies ignored the expert advice of their scientific advisors, and included the *per se* exclusion of all "[g]roundwater, including groundwater drained through subsurface drainage systems" in the Final Clean Water Rule. *See* 80 Fed. Reg at 37,104, 37,114.

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[13] U.S. EPA, Compilation of Preliminary Comments from Individual Panel Members on the Scientific and Technical Basis of the Proposed Rule Titled "Definition of 'Waters of the United States' Under the Clean Water Act" (August 14, 2014) at 14.

116. Pursuant to this exclusion, groundwater that that has a significant nexus to a traditional navigable water, interstate water, or a territorial sea is not a water of the United States, even if it is immediately adjacent to and is directly connected that water.

117. In the preamble to the Clean Water Rule, the Agencies explained that their reasoning for categorically excluding all groundwater from the definition of "waters of the United States" is that they have never interpreted groundwater to fall within this definition, and that "[c]odifying these longstanding practices supports the agencies' goals of providing clarity, certainty, and predictability for the regulated public and regulators, and makes rule implementation clear and practical." 80 Fed. Reg at 37,073. Yet the Agencies categorically regulate all other waters that are adjacent to traditional navigable waters, interstate waters, the territorial seas, or their tributaries. The Agencies provided no legal or scientific basis for categorically excluding all groundwater from the definition of "waters of the United States."

VIII. Waste Treatment Systems under the Proposed and Final Clean Water Rule.

118. On May 19, 1980, EPA promulgated a rule establishing the requirements for several environmental permitting programs, including the NPDES program. *See* 45 Fed. Reg. 33,290 (May 19, 1980). As part of this action, EPA promulgated a definition of the term "waters of the United States." That rule stated that:

> Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. *This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States.*

45 Fed. Reg. 33,290, 33,424 (emphasis added); *see also* 40 C.F.R. § 122.3 (1980). The

preamble to this 1980 rule explains that the second sentence of this regulation was included "[b]ecause CWA was not intended to license dischargers to freely use waters of the United States as waste treatment systems[.]" 45 Fed. Reg. 33,290, 33,298.

119. Two months later EPA suspended the second sentence of this regulation (italicized above) by removing it from the regulation entirely. In its place, EPA inserted a footnote stating that the sentence was "suspended until further notice." 45 Fed. Reg. 48,620 (July 21, 1980). EPA explained in a Federal Register notice that it was suspending this sentence due to industry's objections that the regulation "would require them to obtain permits for discharges into existing waste water treatment systems, such as power plant ash ponds, which had been in existence for many years." *Id.*

120. EPA did not provide the public with an opportunity to comment on the suspension at the time the action was taken in 1980. Instead, EPA noted its intent to "promptly develop a revised definition and to publish it as a proposed rule for public comment. At the conclusion of that rulemaking, EPA will amend the rule, or terminate the suspension." *Id.*

121. EPA never developed a revised definition, and thus never submitted a proposed rule regarding this limitation on the waste treatment system exclusion for notice and comment. The public has therefore never had the opportunity to comment on or legally challenge the suspension of the sentence.

122. Due to the "suspension" of the second sentence of the waste treatment system exclusion found at 40 C.F.R. § 122.3 in 1980, subsequently promulgated regulatory definitions of "waters of the United States" did not include that sentence. As such, this suspension—and the Agencies' obligation to take action to resolve it—has seemingly been forgotten, as the Agencies continue to promulgate definitions of "waters of the United States" that do not, because of the ongoing suspension, contain this limitation on the exclusion for waste treatment systems.

123. The Proposed Clean Water Rule included the "suspended" second sentence of the waste treatment system exclusion, but noted in a footnote that the suspension was still in effect. *See* 79 Fed. Reg. at 22,268. In addition, in the preamble to the Proposed Clean Water Rule the Agencies purport to make only "ministerial" changes to the waste treatment system exclusion, and thus stated that were not seeking comment on this exclusion. *Id.* at 22,190, 22,217. However, these "ministerial" changes included the addition of a comma not in the existing exclusion.

124. The definition of "waters of the United States" in 40 C.F.R. § 122.2, as revised by the Clean Water Rule, provides that "[t]he following are not 'waters of the United States' even where they otherwise meet the terms of (1)(iv) through (viii) of the definition" [i.e., even if they are otherwise jurisdictional as impoundments, tributaries, adjacent waters, or waters with a significant nexus to traditional navigable waters, interstate waters, or the territorial seas]:

> Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. [See Note 1 of this section.]

80 Fed. Reg. at 37,114. As it did before, "Note 1" of the revised 40 C.F.R. § 122.2 purports to continue the suspension of the last sentence of the waste treatment system exclusion.

125. In the Clean Water Rule, the Agencies lifted the suspension of the last sentence in 40 C.F.R. § 122.2's exclusion for waste treatment system, and then reinstated the suspension. *See* 80 Fed. Reg. at 37,114. The preamble to the Clean Water Rule describes the changes to the waste treatment system exclusion as "ministerial" and notes that "[b]ecause the agencies are not making any substantive changes to the waste treatment system exclusion, the final rule does not reflect changes suggested in public comments." *Id.* at 37,097.

126. However, the Agencies note in the preamble to the Clean Water Rule that they did, in fact, respond to comments that the addition of the comma narrowed the exclusion, by removing the comma. 80 Fed. Reg. at 37,114. Thus, the agencies responded to some substantive comments on the scope of the exclusion, but not others. Several plaintiffs submitted comments on the Proposed Clean Water Rule that were not addressed by the Agencies. And, moreover, in responding to some of the comments, the Agencies adopted a *broader* exclusion (e.g., excluding more waste treatment systems) than had been contemplated by the Proposed Rule.

127. The Clean Water Rule does not define "waste treatment systems." Thus, under the waste treatment system exclusion in the Final Rule (including the ongoing suspension of the last sentence of that exclusion), certain types of waters such as adjacent wetlands, ponds, or tributaries are not subject to CWA jurisdiction if they are deemed to be part of a "waste treatment system"— *even if* they are themselves naturally occurring waters, were created entirely within a naturally occurring water, or were created by impounding another water of the United States. For example, under the Clean Water Rule an industrial facility could unilaterally destroy CWA jurisdiction over a naturally occurring wetland or tributary merely by using that wetland or tributary as part of its on-site "waste treatment system." This exemption is contrary to the fundamental purposes of the CWA and flies in the face of any permissible reading of "waters of the United States." *See* 33 U.S.C. § 1251(a).

128. In the Preamble to the Clean Water Rule, the Agencies unambiguously recognize that adjacent waters, tributaries, and impoundments are jurisdictional by rule because "the science confirms that they have a significant nexus to traditional navigable waters, interstate waters, or territorial seas." 80 Fed. Reg. at 37,058, 37,075. Thus, the Agencies construe the Clean Water Rule as making these waters jurisdictional "in all cases" and suggest that "no additional analysis is required" to assert CWA jurisdiction over them. *Id.* at 37,058. These statements, however, are flatly contradicted by the waste treatment system exclusion, which excludes

adjacent waters, tributaries, and impoundments of jurisdictional waters (among others) that are deemed to be part of a "waste treatment system."

IX. Abandonment of "Other Waters" under the Clean Water Rule

129. For decades prior to the Clean Water Rule, the Agencies asserted jurisdiction over all other waters "the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce." *See, e.g.*, 33 C.F.R. § 328.3(a)(3) (2014). Under this regulatory definition, many waters of regional or national importance were properly afforded CWA protections, consistent with stated Congressional policy.

130. Among these previously protected "other waters" are closed basins in New Mexico that include many non-tributary rivers, streams and wetlands; wholly intrastate waters such as the Little Lost River in southern Idaho that does not flow into a traditionally navigable water but instead flows into the Snake River Plain Aquifer; and hundreds of "isolated" glacial kettle ponds such as those found on Cape Cod in Massachusetts that, in addition to being tourist attractions, are vital to protecting that region's drinking water.

131. Purportedly on the basis of a single sentence from the Supreme Court's decision in *SWANCC*, in the Clean Water Rule the Agencies "concluded that the general other waters provision in the existing regulation based on [Commerce Clause effects unrelated to navigation] was not consistent with Supreme Court precedent." TSD at 78 (citing SWANCC, 531 U.S. at 172). Thus, in the Clean Water Rule the Agencies rely almost exclusively on the significant nexus test. As a result, because many of these "other waters" are not themselves navigable in fact, and lie beyond 4,000 feet from otherwise jurisdictional navigable waters, tributaries, or adjacent wetlands, they are *per se* non-jurisdictional under the Clean Water Rule.

132. Elsewhere in the rulemaking record, however, the Agencies recognize that the Supreme Court in SWANCC "did not vacate (a)(3) of the existing

regulation" and that "[n]o Circuit Court has interpreted SWANCC to have vacated the other waters provision of the existing regulation." TSD at 77-78.

133. The Agencies do not provide any further factual, scientific, legal, or policy reasons for their change of course with respect to these other waters that are abandoned by the Clean Water Rule, notwithstanding the Agencies' decades-old practice of asserting jurisdiction over them.

X. The Corps' EA/FONSI for the Final Clean Water Rule

134. Concurrently with the issuance of the Clean Water Rule, the Corps released its Final EA and FONSI, in which the Corps concluded that the adoption of the Final Rule would not significantly affect the quality of the human environment and thus an EIS was not required. FONSI at 1.

135. The Corps based its FONSI largely upon an analysis in which it purported to review a random selection of 188 "negative jurisdictional determinations" made by Corps personnel in the years 2013 and 2014. Purportedly based upon this review, the Corps estimated that "there would be an increase of between 2.8 and 4.6 percent in the waters found to be jurisdictional with adoption of the rule." Final EA at 21. These assumptions echo statements found in the Agencies' economic analysis of the Final Rule, which states that "increases in jurisdictional determinations ranging from a 2.84 percent to a 4.65 percent relative to recent practice, utilizing the FY13 and FY14 jurisdictional determination dataset."[14]

136. However, the analyses referenced in the Final EA and the Economic Analysis were incomplete; they only looked at *negative* jurisdictional determinations that might become *positive* under the Clean Water Rule; they did not consider

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[14] U.S. EPA and U.S. Army Corps of Engineers, *Economic Analysis of the EPA-Army Clean Water Rule* (May 20, 2015) at 14 (hereinafter, "Economic Analysis").

whether any waters found to be jurisdictional under then-current policy might be found non-jurisdictional under the Final Rule:

> Reviewing how current positive JDs may become negative as a result of the final rule was determined to be outside the scope of this analysis. Analyzing only negative JDs allows for an estimation of only the potential increase in assertion of CWA jurisdiction, as viewed through the lens of CWA 404 activity during the baseline period of these fiscal years. The agencies recognize that the rule may result in some currently-jurisdictional waters being found to be non-jurisdictional.

Economic Analysis at 7-8.

137. The Final EA and the Economic Analysis, and in particular their reliance on the Agencies' analysis of prior negative jurisdictional determinations as the basis for a "no significant impact" finding, was deeply flawed. With respect to the Economic Analysis of the Clean Water Rule, one senior Corps officer stated:

> [T]he Corps data provided to EPA has been selectively applied out of context, and mixes terminology and disparate data sets. . . . In the Corps' judgment, the documents contain numerous inappropriate assumptions with no connection to the data provided, misapplied data, analytical deficiencies, and logical inconsistencies.[15]

138. Other analyses in the record refute the Agencies' conclusion that there will be a net increase in the number of waters found to be jurisdictional under the Clean Water Rule. For example, a technical analysis performed by Jennifer Moyer, Acting Chief of the Corps' Regulatory Program, concluded that as many as 10% of wetlands previously found to be jurisdictional would *lose* their CWA protections as a result of the Clean Water Rule. In fact, the preamble to the Rule expressly recognizes that the scope of CWA jurisdiction under the Clean Water Rule "is narrower than that under the existing regulation." 80 Fed. Reg. at 37,054.

[15] Memorandum from Maj. Gen. John Peabody, Deputy Commanding General for Civil and Emergency Operations, U.S. Army Corps of Engineers, to Jo-Ellen Darcy, Assistant Secretary of the Army for Civil Works (May 15, 2015).

139. The Final EA barely mentions impacts to fish and wildlife resulting from promulgation of the Clean Water Rule, and gives no particular attention to threatened or endangered species protected by the Endangered Species Act ("ESA"). *See* Final EA at 24. In a cursory two-paragraph discussion, the Final EA merely references the dubious "additional protections associated with the incremental increase" in the amount of waters covered by the CWA as a result of the Clean Water Rule, and presumes that there would be an "expected . . . beneficial impact on fish and wildlife for which the protected waters provide habitat." *Id.*

140. The Corps undertook no NEPA analysis whatsoever for they Delay Rule. It did not consider or assess the likely impacts from delaying by two years the Clean Water Rule's *per se* protections for certain tributaries, adjacent wetlands, and other waters, nor did it consider or assess the impacts of delaying by two years the Agencies' ability to assert jurisdiction over categories of waters like prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands that provide important habitat for many aquatic species, including threatened and endangered species.

XI. The Agencies Failure to Consult under the ESA

141. Although the Clean Water Rule results in the loss of CWA protections for certain tributaries, potentially thousands of miles of ditches and ephemeral streams, thousands of acres of wetlands that lie more than 4,000 feet from a traditionally navigable water, and other waters that provide habitat for dozens of ESA-listed threatened and endangered species, the Agencies failed to consult with the Services under Section 7(a)(2) of the ESA prior to the promulgation of the Clean Water Rule.

142. Further, although the Delay Rule postpones the effective date of the Clean Water Rule by two years—effectively denying per se jurisdiction under the CWA to waters such as tributaries and adjacent wetlands, which provide vital habitat for numerous ESA-listed species—the Agencies failed to consult with the

Services under Section 7(a)(2) of the ESA prior to the promulgation of the Delay Rule.

XII. Litigation over the Clean Water Rule

143. Until recently, the question of which court has jurisdiction over challenges to the Clean Water Rule remained in dispute. In the wake of the rule's promulgation, more than a dozen suits were filed in various district courts under the Administrative Procedure Act, and 14 separate petitions for judicial review were filed under CWA section 509(b), 33 U.S.C. 1369(b). While the district court cases proceeded independently, the petitions for judicial review were consolidated and transferred to the Sixth Circuit, which held that it had exclusive jurisdiction over the matter. *In re Clean Water Rule: Definition of Waters of U.S.*, 817 F.3d 261, 264 (6th Cir. 2016). However, the Supreme Court reversed that decision in a unanimous opinion, and remanded the case to the Sixth Circuit to dismiss the consolidated petitions for review. *Nat'l Ass'n of Mfrs. v. Dep't of Def.*, 138 S. Ct. 617 (2018).

144. By order dated February 28, 2018, the Sixth Circuit dismissed the consolidated judicial review actions for lack of jurisdiction, and simultaneously dissolved the nationwide stay of the Clean Water Rule it had put in place on October 9, 2015. *In re Clean Water Rule*, 713 Fed. Appx. 489 (Feb. 28, 2018).

145. At least three other district court actions challenging the Clean Water Rule have been revived since the Supreme Court's decision in *National Association of Manufacturers*. All of those suits were filed by states opposed to the Clean Water Rule in its entirety, and none of them include ESA claims such as those Plaintiffs allege here. *North Dakota v. EPA*, No. 15-cv-00059 (D.N.D. filed June 29, 2015); *Georgia v. Pruitt*, No. 15-cv-00079 (S.D. Ga. filed June 30, 2015); *Texas v. EPA*, No. 3:15-cv-162 (S.D. Tex. filed June 29, 2015).

XIII. The Delay Rule and the Agencies' Efforts to Roll Back Clean Water Act Protections

146. In the wake of the 2016 presidential election and the resulting change in administration, the Agencies' new leadership made clear their intent to

significantly curtail the jurisdictional reach of the CWA. On February 28, 2017, President Donald Trump signed Executive Order 13778, instructing the Agencies to review the Clean Water Rule and to "publish for notice and comment a proposed rule rescinding or revising the rule, as appropriate and consistent with law." 82 Fed. Reg. 12,497 (March 3, 2017). That Executive Order was immediately followed by the publication of the Agencies' Notice of Intention To Review and Rescind or Revise the Clean Water Rule, providing advance notice of their forthcoming rulemaking. 82 Fed. Reg. 12,532 (March 6, 2017).

147. The Agencies have described what they intend to be a two-step process to review and revise the definition of "waters of the United States": First, promulgation of a rule rescinding the Clean Water Rule and recodifiying the regulatory definition that existed before the 2015 Clean Water Rule, as modified by the Agencies' undisclosed interpretations of caselaw, agency practice and unidentified policy documents; and second, a rulemaking in which the Agencies will conduct a substantive reevaluation of the definition—and, presumably, attempt to narrow the reach of the CWA.

148. The Agencies initiated "step one" of their approach in July 2017 with a proposed rule which, if finalized, would effectively rescind the Clean Water Rule and replace it with the "exact same regulatory text that existed prior to" that rule, as modified by "applicable guidance documents (e.g., the 2003 and 2008 guidance documents, as well as relevant memoranda and regulatory guidance letters), and consistent with the SWANCC and Rapanos Supreme Court decisions, applicable case law, and longstanding agency practice." Proposed Rule, *Definition of "Waters of the United States"—Recodification of Pre-Existing Rules*, 82 Fed. Reg. 34,899, 34,900, 34,903 (July 27, 2017) ("Proposed Repeal Rule"). The Agencies accepted comments on the Proposed Repeal Rule through September 27, 2017, but a final Repeal Rule has not been promulgated.

149. The Agencies claim to have initiated "step two" of their plan in late

2017 by engaging in stakeholder outreach, initiating consultation with state, local, and tribal governments, and soliciting recommendations on an entirely new definition of waters of the United States. The Agencies have not published a proposed rule as a result of this effort. *See* EPA, Waters of the United States: Rulemaking Process, at https://www.epa.gov/wotus-rule/rulemaking-process.

150. Struggling to find either a rational legal basis for the wholesale rescission of the Clean Water Rule or coherent and timely administrative process for their intended "step one" and "step two" rulemakings, the Agencies published the Proposed Delay Rule on November 22, 2017, and made it available for a 21-day public comment period. 82 Fed. Reg. 55,542 (Nov. 22, 2017). The Agencies sought comment only on "whether it is desirable and appropriate to add an applicability date" to the Clean Water Rule, and not on the underlying substantive definition of the statutory phrase "waters of the United States" or other matters the Agencies intend to address under their two-step process. *Id*. at 55544-45.

151. Plaintiffs submitted comments on the Proposed Delay Rule by letter dated December 13, 2017.

152. Less than eleven weeks after the proposed rule was published, the final Delay Rule was promulgated. *Definition of "Waters of the United States"–Addition of an Applicability Date to 2015 Clean Water Rule*, 83 Fed. Reg. 5200 (Feb. 6, 2018). The Agencies received approximately 4,600 comments on the proposed rule, which they claim to have "carefully considered" during the eight weeks between the close of the comment period and publication of the final Delay Rule. *Id*. at 5203.

153. As the Agencies note in the preamble to the Delay Rule, they are currently enjoined from enforcing the Clean Water Rule in thirteen states, due to a

preliminary injunction issued by the U.S. District Court for the District of North Dakota.[16]

154. This injunction, the Agencies contend, when combined with other litigation over the Clean Water Rule, is "likely to lead to uncertainty and confusion as to the regulatory regime applicable, and to inconsistencies between the regulatory regimes applicable in different States, pending further rulemaking by the agencies." 83 Fed. Reg. at 5202. Hence the Agencies' stated purpose for the Delay Rule is to establish an interim framework by which "the scope of CWA jurisdiction will be administered nationwide exactly as it is now being administered by the agencies, and as it was administered prior to the promulgation of the 2015 Rule." *Id*.

155. The Agencies contend that the Delay Rule will ensure that "the scope of the CWA remains consistent nationwide" and that, pending further rulemaking, they will

> administer the regulations in place prior to the 2015 [Clean Water] Rule, and will continue to interpret the statutory term "waters of the United States" to mean the waters covered by those regulations, as they are currently being implemented, consistent with Supreme Court decisions and practice, and as informed by applicable agency guidance documents.

83 Fed. Reg. at 5200.

156. Uncertainty and inconsistency is in fact greatly increased by the Delay Rule, which returns the Agencies, the regulated community, and the general public to a vague definition of "waters of the United States", apparently including the current Administration's undisclosed interpretation of the prior definition which would be premised on conflicting case law and inconsistent agency interpretations of unidentified agency guidance, practice, letters, and memoranda. *See, e.g.*,

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[16] *See North Dakota v. EPA*, D.N.D. No. 15-cv-00059, Mem. Op. and Order Granting Pls' Mot. for Prelim. Inj. (Dkt. #70, Aug. 27, 2015); Order Limiting the Scope of Prelim. Inj. to Plaintiffs (Dkt. #79, Sept. 4, 2015).

Lawrence Hurley, Supreme Court's murky CWA ruling created legal quagmire (Greewire, Feb. 7, 2011), at https://www.eenews.net/greenwire/stories/1059944930/.

157. As they readily admit, the Agencies now propose to identify and define waters of the United States primarily by following the prior regulatory definition of "waters of the United States," as interpreted by case law and their 2001 and 2008 guidance documents issued in the wake of the *SWANCC* and *Rapanos* decisions. 83 Fed. Reg. at 5201.[17] Those guidance documents require the Agencies' and their field staff to undertake a resource intensive, case-by-case assessment for a huge number of arguably jurisdictional waters such as intermittently flowing tributaries and wetlands adjacent to such tributaries. *See, e.g., Rapanos* Guidance at 4, 8 (explaining that for many waters the Agencies will assert jurisdiction "on a case-by-case basis, based on the reasoning of the *Rapanos* opinions."). The Agencies' also plan to use their unexplained interpretation of caselaw they deem relevant, as well as other undisclosed agency guidance, practice, letters, and memoranda.

158. In its review of the *Rapanos* Guidance the Agencies now propose to implement, the U.S. Fish and Wildlife Service expressed its concern that "Corps Districts may implement the guidance inconsistently across the Nation due to language that appears open to subjective interpretation, potentially leading to increased degradation/destruction of waters." Fish and Wildlife Service, Comments on EPA and Corps Guidance Regarding Clean Water Act Jurisdiction Following Rapanos/Carabel (Feb. 5, 2008), *available at*

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[17] Citing Joint Memorandum providing clarifying guidance regarding the Supreme Court's decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, 531 U.S. 159 (2001) ("*SWANCC*"), available at 68 FR 1991, 1995 (Jan. 15, 2003) (hereinafter "*SWANCC* Guidance") and Joint Memorandum, "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States*," (signed December 2, 2008), available at https://www.epa.gov/sites/production/files/2016-02/documents/cwa_jurisdiction_following_rapanos120208.pdf (hereinafter "*Rapanos* Guidance").

https://www.fws.gov/habitatconservation/rapanos_carabell/DOI_comments_on_post_Rapanos_Guidance.pdf.

159. The Agencies' intention to rely on undisclosed agency guidance, practice, letters, and memoranda and "relevant" post-*Rapanos* case law only adds to the uncertainty and confusion. As the Ninth Circuit has recently explained, the fractured decision in *Rapanos*

> paints a rather complex picture, and one where without more it might not be fair to expect a layman of normal intelligence to discern what was the proper standard to determine what are waters of the United States.

United States v. Robertson, 875 F.3d 1281, 1289 (9th Cir. 2017). The courts of appeals "have adopted different approaches" to CWA jurisdiction, giving rise to "competing precedents interpreting *Rapanos*, and further uncertainty engendered" by subsequent appellate decisions. *Id*. at 1289-90.

160. Within some circuits, absent a promulgated definition of "waters of the United States," CWA jurisdiction requires a showing of a significant nexus, consistent with Justice Kennedy's concurring opinion in *Rapanos*. Within others, jurisdiction may also be shown with a "continuous surface connection" as described in Justice Scalia's plurality opinion. Some courts have foresworn either test and have instead relied on the Agencies' prior regulatory definition or pre-*Rapanos* case law. In the words of Chief Justice Roberts, "[l]ower courts and regulated entities . . . now have to feel their way on a case-by-case basis." Rapanos, 547 U.S. at 758.

161. With the Delay Rule in place, therefore, CWA jurisdiction is potentially subject to eleven different formulations based on the caselaw alone, and the Agencies' intent to assert impermissible, unfettered discretion by relying on undisclosed agency guidance, practice, letters, and memoranda to establish the bounds of CWA jurisdiction will result in even greater confusion and conflict.

162. The Agencies themselves previously stated that a purpose of the Clean Water Rule was to place parameters "on waters requiring a case-specific determination" and to create a "clearer definition of significant nexus [to] address the concerns about uncertainty and inconsistencies" 80 Fed. Reg. at 37,095.

163. The Delay Rule does not adopt the Agencies' Proposed Repeal Rule. The Delay Rule does not recodify the prior regulatory definition of "waters of the United States", nor does it create any new regulatory definition that the Agencies will follow during the two-year delay period.

164. In promulgating the Delay Rule, the Agencies asserted that they "are under no obligation to address the merits of the [Clean Water] Rule because the addition of an applicability date to the [Clean Water] Rule does not implicate the merits of that rule." 88 Fed. Reg. at 5205. Thus, the Agencies did not respond to the substance of Plaintiffs' comments on the Proposed Delay Rule with respect to (a) the potential for the Delay Rule to result in the degradation or destruction of significant critical habitat for ESA-listed species; (b) the myriad flaws found in the Agencies' cursory, 5-page economic analysis of the costs and benefits of the Delay Rule; and (c) the Agencies' failure to comply with the CWA, APA, ESA and NEPA, among other comments.

165. Even though promulgation of the Delay Rule will significantly affect the quality of the human environment, the Corps did not engage in any sort of NEPA review prior to its promulgation. The Corps did not assess any alternatives to the Proposed Delay Rule; did not analyze any direct, indirect, or cumulative impacts of the rule's promulgation; and did not prepare either an environmental assessment or an environmental impact statement.

166. Even though promulgation of the Delay Rule is an action that may affect ESA-listed species, the Agencies did not engage in either formal or informal consultation with the Services under Section 7 of the ESA prior to promulgating the Delay Rule, nor did they take any further action to ensure that the Rule will not

jeopardize the continued existence of ESA-listed species or the lead to the destruction or adverse modification of critical habitat.

FIRST CLAIM FOR RELIEF
Clean Water Rule:
Violations of the National Environmental Policy Act and the Administrative Procedure Act

167. The preceding paragraphs are incorporated herein by reference as if fully set forth below.

168. NEPA regulations require that EAs include a "brief discussions of the need for the proposal, of alternatives as required by [NEPA], of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted." 40 C.F.R. § 1508.9.

169. NEPA regulations require that a FONSI "present[] the reasons why an action . . . will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared." 40 C.F.R. § 1508.13.

170. NEPA requires federal agencies to prepare an EIS for all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C).

171. The Agencies' promulgation of the Clean Water Rule is a major Federal action significantly affecting the quality of the human environment because the Final Rule fundamentally alters the CWA's regulatory landscape and establishes regulatory exclusions from the protections of the Act where none existed before.

172. The Clean Water Rule's effects on the environment are significant for the additional reasons that it affects the regulation of myriad activities in the proximity of "wetlands, wild and scenic rivers, or ecologically critical areas;" is "highly controversial;" establishes "a precedent for future actions with significant effects;" and may adversely affect numerous endangered species or their critical

habitat. 40 C.F.R. § 1508.27(b)(3), (4), (6), and (9).

173. The Corps' EA and FONSI were arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law under the APA, 5 U.S.C. § 706(2)(A), for at least the following reasons:

(a) The FONSI was based upon the incorrect assumption in the EA that the Clean Water Rule would increase jurisdictional determinations from 2.84 percent to 4.65 percent relative to recent agency practice, when in fact the Clean Water Rule is likely to lead to a *net decrease* in jurisdictional determinations of up to 10 percent;

(b) The FONSI was based largely upon the EPA's *Economic Analysis of the EPA-Army Clean Water Rule* (May 20, 2015), which in turn was based upon flawed, incomplete, or selectively-chosen data regarding waters found to be jurisdictional under current agency practice;

(c) The FONSI was reached without any consideration in the EA of several last-minute changes to the Clean Water Rule, including the exclusion of farmed wetlands from the definition of "adjacent" and the 4,000-foot distance limitation on the application of the case-by-case significant nexus analysis.

174. Moreover, the Corps' decision not to prepare an EIS for the Clean Water Rule was arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law under the APA, 5 U.S.C. § 706(2)(A), because the Corps failed to take a "hard look" at the potential environmental impacts of the Clean Water Rule and failed to provide a convincing statement of reasons why the potential effects of the Rule are insignificant.

SECOND CLAIM FOR RELIEF

Clean Water Rule: Violation of the Administrative Procedure Act
(Failure to Provide Sufficient Notice and Comment Opportunities)

175. The preceding paragraphs are hereby incorporated by reference as if

fully set forth below.

176. The APA requires that "[g]eneral notice of proposed rule making shall be published in the Federal Register," and that the notice include "either the terms or substance of the proposed rule or a description of the subjects and issues involved[.]" 5 U.S.C. §§ 553(b), (b)(3).

177. Once notice of a proposed rule has been given, an agency is required to "give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation." 5 U.S.C. § 553(c).

178. For the APA's notice requirements to be satisfied, a final rule need not be identical to the proposed rule, but it must at least be a "logical outgrowth" of the proposed rule. A final rule is a logical outgrowth of the proposed rule if "interested parties reasonably could have anticipated the final rulemaking" based on the proposed rule. *Natural Res. Def. Council v. U.S. E.P.A.*, 279 F.3d 1180, 1186 (9th Cir. 2002).

179. Multiple components of the Clean Water Rule were neither included in nor a logical outgrowth of the Proposed Rule, including at least the following:

A. The definition of "adjacent," which states that "[w]aters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent." *See, e.g.*, 80 Fed. Reg. at 37,105;

B. The 4,000-foot distance limit on the application of the significant nexus test included in subsection (a)(8) of the Clean Water Rule. *See, e.g.,* 80 Fed. Reg. at 37,105;

C. The per se exclusion of three categories of ditches from CWA jurisdiction. *See, e.g.,* 80 Fed. Reg. at 37,105;

D. The per se exclusion of "[e]rosional features, including . . . other ephemeral features that do not meet the definition of tributary." *See, e.g.,* 80 Fed. Reg. at 37,058, 37,099;

E. The suspension of the last sentence in the waste treatment system exclusion. *See, e.g.,* 80 Fed. Reg. at 37,097.

180. In addition, the Agencies responded to some substantive comments on the scope of the waste treatment exclusion system, but not others.

181. The Agencies' failure to provide sufficient notice and comment opportunities on these components of the Clean Water Rule violated the APA, 5 U.S.C. §§ 553(b), (b)(3), (c), and the Agencies' inclusion of these components in the Clean Water Rule was without observance of the procedures required by law. *Id.* § 706(2)(D).

THIRD CLAIM FOR RELIEF
Clean Water Rule: Violations of the Administrative Procedure Act
(Definition of "Tributary")

182. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

183. In the Clean Water Rule, the Agencies defined "tributary" as "a water that contributes flow, either directly or through another water" to a traditional navigable water, interstate water, or territorial seas, and "that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark." 80 Fed. Reg. at 37,105.

184. The Agencies' requirement that waters must have both bed and banks and an ordinary high water mark in order to meet the definition of "tributary" and therefore be jurisdictional under the CWA lacks scientific basis and is contrary to the recommendations of EPA's own Science Advisory Board.

185. The Agencies' requirement that tributaries must have both bed and banks and an ordinary high water mark in order to be jurisdictional under the CWA

is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, and is in excess of the Agencies' statutory authority. 5 U.S.C. § 706(2)(A), (C).

FOURTH CLAIM FOR RELIEF

Clean Water Rule: Violation of the Administrative Procedure Act
(Exclusion of Ditches and Ephemeral Features from Clean Water Act Jurisdiction)

186. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

187. In the Clean Water Rule, the Agencies defined waters of the United States to exclude "[d]itches with ephemeral flow that are not a relocated tributary or excavated in a tributary"; "[d]itches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands"; "[d]itches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section"; and "[e]rosional features, including . . . other ephemeral features that do not meet the definition of tributary." 80 Fed. Reg. at 37,105.

188. There is no legal or scientific basis for *per se* excluding these categories of waters from CWA jurisdiction.

189. At a minimum, to the extent that these types of waters, either alone or in combination with other waters similarly situated, possess a significant nexus with traditional navigable waters, interstate waters, or the territorial seas, they are "waters of the United States" and therefore must be subject to the Act's protections. *See Rapanos*, 547 U.S. at 780.

190. The *per se* exclusion of these three categories of ditches and ephemeral streams from CWA jurisdiction is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, and is in excess of the Agencies' statutory authority. 5 U.S.C. § 706(2)(A), (C).

FIFTH CLAIM FOR RELIEF

Clean Water Rule: Violation of the Administrative Procedure Act
(Exclusion of Waters More than 4,000 Feet Beyond the High Tide Line or Ordinary High Water Mark of Qualifying Waters from Clean Water Act Jurisdiction)

191. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

192. In the Clean Water Rule, the Agencies defined waters of the United States to include "all waters located within 4,000 feet of the high tide line or ordinary high water mark of" a qualifying per se jurisdiction water "where they are determined on a case-specific basis to have a significant nexus" with a traditional navigable water, an interstate waters, or a territorial sea. 80 Fed. Reg. at 37,114.

193. There is no legal or scientific basis for automatically excluding from CWA jurisdiction all waters more than 4,000 feet from a qualifying per se jurisdictional water.

194. At a minimum, to the extent that waters located more than 4,000 feet of the high tide line or ordinary high water mark of a qualifying per se jurisdiction water, either alone or in combination with other waters similarly situated, possess a significant nexus with traditional navigable waters, interstate waters, or the territorial seas, they are "waters of the United States" and therefore must be subject to the Act's protections. See *Rapanos*, 547 U.S. at 780.

195. The automatic exclusion from CWA jurisdiction of all waters more than 4,000 feet from a qualifying per se jurisdictional water is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, and is in excess of the Agencies' statutory authority. 5 U.S.C. § 706(2)(A), (C).

SIXTH CLAIM FOR RELIEF
Clean Water Rule: Violation of the Administrative Procedure Act
(Exclusion of Waters in Which 404(f) Activities Occur from the Definition of "Adjacent")

196. The preceding paragraphs are hereby incorporated by reference as if

fully set forth below.

197. The Clean Water Rule defines "adjacent" in a manner that excludes "[w]aters being used for established normal farming, ranching, and silviculture activities[.]" See 80 Fed. Reg. at 37,080, 37,118. In the Clean Water Rule, the Agencies cite CWA section 404(f), 33 U.S.C. 1344(f),

198. By defining "adjacent" in this manner in the Clean Water Rule, the Agencies changed their long-standing policy regarding their treatment of adjacent farmed wetlands without any legal, scientific, or technical justification or support for the change.

199. Moreover, the Agencies' exclusion of waters in which established normal farming, ranching, and silviculture activities occur from the definition of "adjacent" is inconsistent with CWA section 404(f)(1)(A); that provision creates a limited permitting exemption for discharges of dredged or fill material only that result from "normal farming, silviculture, and ranching acvities[.]" 33 U.S.C. § 1344(f)(1)(A). That permitting exemption not affect the jurisdictional status of the waters into which the exempted discharges occur.

200. The Agencies' definition of "adjacent" in the Clean Water Rule is thus arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, and is in excess of the Agencies' statutory authority. 5 U.S.C. § 706(2)(A), (C).

SEVENTH CLAIM FOR RELIEF

Clean Water Rule: Violation of the Administrative Procedure Act
(Exclusion of Groundwater from Clean Water Act Jurisdiction)

201. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

202. The Clean Water Rule excludes "[g]roundwater, including groundwater drained through subsurface drainage systems" from the definition of waters of the United States. The Agencies have not provided any legal, scientific or technical basis to support this exclusion. The Agencies' own in-house scientific experts have

stated that there is no scientific justification for this exclusion.

203. At a minimum, to the extent that groundwater, either alone or in combination with other waters similarly situated, possesses a significant nexus with traditional navigable waters, interstate waters, or the territorial seas, it is a "water of the United States" and therefore must be subject to the CWA's protections. *See Rapanos*, 547 U.S. at 780.

204. The Agencies' exclusion of groundwater from CWA jurisdiction is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, and is in excess of the Agencies' statutory authority. 5 U.S.C. § 706(2)(A), (C).

EIGHTH CLAIM FOR RELIEF

Clean Water Rule: Violation of the Administrative Procedure Act
(Exclusion of Waste Treatment Systems from Clean Water Act Jurisdiction)

205. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

206. The Clean Water Rule excludes "waste treatment systems" from the definition of waters of the United States, even where such systems would otherwise be jurisdictional as impoundments, tributaries, adjacent waters, or waters with a significant nexus to traditional navigable waters, interstate waters, or the territorial seas. 80 Fed. Reg. at 37,114; 40 C.F.R. § 122.2.

207. This waste treatment system exclusion is not limited to man-made bodies of water, and indeed the Agencies expressly continued the suspension of such a limitation in the Clean Water Rule. Thus, the exclusion on its face applies equally to naturally occurring waters (such as adjacent waters, tributaries, or ponds) and impoundments that have been determined to be a "waste treatment system," or part of such a system.

208. To the extent the waste treatment system exclusion applies to waters (such as adjacent wetlands or permanently flowing tributaries) that are unambiguously "waters of the United States", the exclusion is contrary to the CWA.

209. There is no rational scientific or technical reason to exclude waters such as adjacent wetlands, tributaries, or impoundments from the definition of waters of the United States simply because they are part of a waste treatment systems. In fact, the Agencies' own conclusions are that such waters can "significantly affect the chemical, physical, or biological integrity of" downstream traditional navigable waters, interstate waters, and the territorial seas. 80 Fed. Reg. at 37,068, 37,075.

210. The waste treatment system exclusion in the Clean Water Rule is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, and is in excess of the Agencies' statutory authority. 5 U.S.C. § 706(2)(A), (C).

NINTH CLAIM FOR RELIEF

Clean Water Rule: Violation of the Administrative Procedure Act
(Abandonment of Clean Water Act Jurisdiction over "Other Waters")

211. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

212. Unlike the Agencies' prior definition of waters of the United States, the Clean Water Rule does not assert jurisdiction over other waters "the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce." Instead, the Agencies limit themselves in large part to waters that have a significant nexus to traditionally navigable waters.

213. The Agencies' only stated basis for abandoning CWA jurisdiction for other waters that may lack a significant nexus and yet which have other impacts on interstate commerce is a mis-reading of the Supreme Court's decision in *SWANCC*. As such, the Agencies have failed to supply a valid reason for their major shift in their interpretation of the Act.

214. Further, the Agencies' failure to assert jurisdiction over waters long protected on the basis of their interstate commerce impacts unrelated to navigation is contrary to the language and purpose of CWA and Congress' intent that waters be protected to the fullest extent allowed by the commerce clause.

215. To the extent it fails to assert jurisdiction over "other waters" that were previously protected on the basis of interstate commerce impacts unrelated to navigation, the Clean Water Rule is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, and is in excess of the Agencies' statutory authority. 5 U.S.C. § 706(2)(A), (C).

TENTH CLAIM FOR RELIEF

Clean Water Rule: Violation of the Endangered Species Act

216. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

217. Promulgation of the Clean Water Rule is an "an action [that] may affect listed species or critical habitat" under Section 7(a)(2) of the ESA and its implementing regulations, 50 C.F.R. § 402.02(b), because, *inter alia*, it significantly reduces CWA protections for waters such as intermittent and ephemeral streams, ditches, wetlands, and groundwater that are used as habitat for numerous ESA-listed species, thereby increasing the likelihood that such habitat will be destroyed and the species will be harmed.

218. The Agencies failed to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to prepare a Biological Opinion prior to the promulgation of the Clean Water Rule, as required by ESA section 7(a)(2), 16 U.S.C. § 1536(a)(2), and 50 C.F.R. § 402.14.

219. The Agencies failed to "insure" that promulgation of the Clean Water Rule "is not likely to jeopardize the continued existence of" any threatened or endangered species or "the destruction or adverse modification" of critical habitat, in violation of ESA section 7(a)(2), 16 U.S.C. § 1536(a)(2).

220. The ESA violations set forth above will continue until they are abated by an order of this Court. This Court has jurisdiction to enjoin the Agencies' violations of the ESA alleged above and such relief is warranted under 16 U.S.C. § 1540(g).

ELEVENTH CLAIM FOR RELIEF

Delay Rule: Violations of the National Environmental Policy Act and the Administrative Procedure Act

221. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

222. NEPA requires federal agencies to prepare an EIS for all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C).

223. While the CWA exempts most actions taken by the EPA Administrator under the Act from NEPA, 33 U.S.C. § 1372(c)(1), that exemption does not apply to actions taken by the Corps.

224. The Agencies' promulgation of the Delay Rule is a major Federal action significantly affecting the quality of the human environment because the Delay Rule fundamentally alters the Act's regulatory landscape by, *inter alia*, denying most tributaries and wetlands per se protections under the Act afforded by the now-suspended Clean Water Rule.

225. The Delay Rule's effects on the environment are significant for the additional reasons that it affects the regulation of myriad activities in the proximity of "wetlands, wild and scenic rivers, or ecologically critical areas;" is "highly controversial;" establishes "a precedent for future actions with significant effects;" and may adversely affect numerous endangered species or their critical habitat. 40 C.F.R. § 1508.27(b)(3), (4), (6), and (9).

226. Moreover, the Corps' decision not to prepare an EA or an EIS for the Delay Rule was arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law under the APA, 5 U.S.C. § 706(2)(A), because the Corps failed

to take a "hard look" at the potential environmental impacts of the Delay Rule and failed to provide a convincing statement of reasons why the potential effects of the Rule are insignificant.

TWELFTH CLAIM FOR RELIEF

Delay Rule: Violations of the Administrative Procedure Act

227. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

228. The Delay Rule is a final agency action subject to judicial review under the APA.

229. An agency action is arbitrary and capricious if the agency failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise. *Motor Vehicle Mfrs. Ass'n. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

230. The Delay Rule is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA, 5 U.S.C. § 706(2)(A), for at least the following reasons:

(A) The Agencies failed to consider an important aspect of the problem, including most importantly the environmental and economic costs of delaying implementation of the Clean Water Rule by two years;

(B) The Agencies' only stated basis for the Delay Rule—preserving the "status quo" to achieve certainty and predictability in assertion of CWA jurisdiction—has no support in, and in fact is contradicted by, the administrative record; and

(C) The Agencies failed to meaningfully and substantively respond to comments submitted on the Proposed Delay Rule by Plaintiffs and others regarding the Rule's likely impacts to the environment and

ESA-listed species.

THIRTEENTH CLAIM FOR RELIEF

Delay Rule: Violation of the Endangered Species Act

231. The preceding paragraphs are hereby incorporated by reference as if fully set forth below.

232. Promulgation of the Delay Rule is an "an action [that] may affect listed species or critical habitat" under Section 7(a)(2) of the ESA and its implementing regulations, 50 C.F.R. § 402.02(b), because, *inter alia*, it undermines CWA protections for waters afforded per-se protections under the Clean Water Rule such as tributaries and their adjacent wetlands, waters that are used as habitat for numerous ESA-listed species, thereby increasing the likelihood that such habitat will be destroyed and the listed species using them will be harmed.

233. The Agencies failed to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to prepare a Biological Opinion prior to the promulgation of the Delay Rule, as required by ESA section 7(a)(2), 16 U.S.C. § 1536(a)(2), and 50 C.F.R. § 402.14.

234. The Agencies failed to "insure" that promulgation of the Delay Rule "is not likely to jeopardize the continued existence of" any threatened or endangered species or "the destruction or adverse modification" of critical habitat, in violation of ESA section 7(a)(2), 16 U.S.C. § 1536(a)(2).

235. The ESA violations set forth above will continue until they are abated by an order of this Court. This Court has jurisdiction to enjoin the Agencies' violations of the ESA alleged above and such relief is warranted under 16 U.S.C. § 1540(g).

REQUEST FOR RELIEF

WHEREFORE, Plaintiffs respectfully request that the Court:

(1) Declare that the Corps' issuance of the FONSI prepared along with the Clean Water Rule was arbitrary, capricious, an abuse of discretion, or

otherwise not in accordance with law;

(2) Declare that portions of the Clean Water Rule, and the entirety of the Delay Rule, are unlawful because they are arbitrary, capricious, an abuse of discretion, not in accordance with law, or in excess of the Agencies' statutory authority;

(3) Declare that portions of the Clean Water Rule are unlawful because the were promulgated without observance of procedure required by law;

(4) Enter an order vacating the Corps' FONSI and instructing the Corps to comply with NEPA for both the Clean Water Rule and the Delay Rule;

(5) Enter an order vacating only those unlawful portions of the Clean Water Rule, leaving the remainder of the Rule in place;

(6) Enter an order vacating the Delay Rule;

(7) Award Plaintiffs their reasonable fees, costs, expenses, and disbursements, including attorneys' fees associated with this litigation under the Equal Access to Justice Act, 28 U.S.C. § 2412(d), and the ESA, 16 U.S.C. § 1540(g)(4); and

(8) Grant Plaintiffs such additional and further relief as the Court may deem just, proper, and necessary.

Dated this 13th day of June, 2018.

s/ Adam Keats

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DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

33 CFR Part 328

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401

[FRL–9959–93–OW]

Intention To Review and Rescind or Revise the Clean Water Rule

AGENCY: U.S. Army Corps of Engineers (Corps), Department of the Army, Department of Defense; Environmental Protection Agency (EPA).

ACTION: Notice of intent.

SUMMARY: In accordance with a Presidential directive, the U.S. Environmental Protection Agency (EPA) and the Department of the Army (Army) announces its intention to review and rescind or revise the Clean Water Rule.

DATES: March 6, 2017.

FOR FURTHER INFORMATION, CONTACT: Ms. Donna Downing, Office of Water (4502–T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460; telephone number 202–566–2428; email *CWAwaters@epa.gov*, and Mr. Gib Owen, Office of the Assistant Secretary of the Army for Civil Works, Department of the Army, 104 Army Pentagon, Washington, DC 20310–0104; telephone number 703–695–4641; email *gib.a.owen.civ@mail.mil*.

SUPPLEMENTARY INFORMATION: The Federal Water Pollution Control Act, originally enacted in 1948, most comprehensively amended in 1972, and known as the Clean Water Act (CWA), seeks ''to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'' 33 U.S.C. 1251 *et seq.* Among other provisions, the CWA regulates the discharge of pollutants into ''navigable waters,'' defined in the CWA as ''the waters of the United States.'' The question of what is a ''water of the United States'' is one that has generated substantial interest and uncertainty, especially among states, small businesses, the agricultural communities, and environmental organizations, because it relates to the extent of jurisdiction for federal and relevant state regulations.

The EPA and the Department of the Army (collectively, the agencies) have promulgated a series of regulations defining ''waters of the United States.'' The scope of ''waters of the United States'' as defined by the prior regulations has been subject to litigation in several U.S. Supreme Court cases, most recently in *Rapanos* v. *United States,* 547 U.S. 715 (2006) (''*Rapanos*''). In response to that decision, the agencies issued guidance regarding CWA jurisdiction in 2007, and revised it in 2008.

In response to that guidance, Members of Congress, developers, farmers, state and local governments, environmental organizations, energy companies and others asked the agencies to replace the guidance with a regulation. At the conclusion of that rulemaking process, the agencies issued the ''Clean Water Rule: Definition of 'Waters of the United States.' '' 80 FR 37054 (''2015 Rule'') (found at 40 CFR 110, 112, 116, 117, 122, 230, 232, 300, 302 and 401, and 33 CFR 328).

Due to concerns about the potential for continued regulatory uncertainty, as well as the scope and legal authority of the 2015 Rule, 31 states and a number of other parties sought judicial review in multiple actions. Seven states plus the District of Columbia, and an additional number of parties, then intervened in those cases. On October 9, 2015, the U.S. Court of Appeals for the Sixth Circuit stayed the 2015 Rule nationwide pending further action of the court.

On February 28, 2017, the President of the United States issued an Executive Order directing the EPA and the Army to review and rescind or revise the 2015 Rule. Today, the EPA and the Army announce their intention to review that rule, and provide advanced notice of a forthcoming proposed rulemaking consistent with the Executive Order. In doing so, the agencies will consider interpreting the term ''navigable waters,'' as defined in the CWA in a manner consistent with the opinion of Justice Scalia in *Rapanos.* It is important that stakeholders and the public at large have certainty as to how the CWA applies to their activities.

Agencies have inherent authority to reconsider past decisions and to revise, replace or repeal a decision to the extent permitted by law and supported by a reasoned explanation. *FCC* v. *Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (''*Fox*''); *Motor Vehicle Manufacturers Ass'n of the United States, Inc., et al,* v. *State Farm Mutual Automobile Insurance Co., et al.* 463 U.S. 29, 42 (1983) (''*State Farm*''). Importantly, such a revised decision need not be based upon a change of facts or circumstances. A revised rulemaking based ''on a reevaluation of which policy would be better in light of the facts'' is ''well within an agency's discretion,'' and ''[a] change in administration brought about by the people casting their votes is a perfectly reasonable basis for an executive agency's reappraisal of the costs and benefits of its programs and regulations.'' *National Ass'n of Home Builders* v. *EPA*, 682 F.3d 1032, 1038 & 1043 (D.C. Cir. 2012) (citing *Fox*, 556 U.S. at 514–15; quoting *State Farm*, 463 U.S. at 59 (Rehnquist, J., concurring in part and dissenting in part)).

Through new rulemaking, the EPA and the Army seek to provide greater clarity and regulatory certainty concerning the definition of ''waters of the United States,'' consistent with the principles outlined in the Executive Order and the agencies' legal authority.

Dated: February 28, 2017.

E. Scott Pruitt,

Administrator, Environmental Protection Agency.

Dated: February 28, 2017.

Douglas W. Lamont,

Senior Offical Performing the Duties of the Assistant Secretary of the Army for Civil Works, Department of the Army.

[FR Doc. 2017–04312 Filed 3–3–17; 8:45 am]

BILLING CODE 6560–50–P

Consistent with the Act, this document requests that interested persons provide proposed changes to revise or update the Manufactured Home Construction and Safety Standards, the Manufactured Home Procedural and Enforcement Regulations, the Model Manufactured Home Installation Standards, and Manufactured Home Installation Program Regulations. Specifically, recommendations are requested that further HUD's efforts to increase the quality, durability, safety and affordability of manufactured homes; facilitate the availability of affordable manufactured homes and increase homeownership for all Americans; and encourage cost-effective and innovative construction techniques for manufactured homes.

To permit the MHCC to fully consider the proposed changes, commenters are encouraged to provide at least the following information:

- The specific section of the current Manufactured Home Construction and Safety Standards, Manufactured Home Procedural and Enforcement Regulations, Model Manufactured Home Installation Standards, or Manufactured Home Installation Program Regulations that require revision or update, or whether the recommendation would require a new standard;
- Specific detail regarding the recommendation including a statement of the problem intended to be corrected or addressed by the recommendation, how the recommendation would resolve or address the problem, and the basis of the recommendation; and
- Information regarding whether the recommendation would result in increased costs to manufacturers or consumers and the value of the benefits derived from HUD's implementation of the recommendation, should be provided and discussed to the extent feasible.

The Act requires that an administering organization administer the process for the MHCC's development and interpretation of the Manufactured Home Construction and Safety Standards, Manufactured Home Procedural and Enforcement Regulations, Model Manufactured Home Installation Standards, and Manufactured Home Installation Program Regulations. The administering organization that has been selected by HUD to administer this process is Home Innovation Research Labs Inc. This document requests that proposed revisions be submitted to the MHCC for consideration through the administering organization, Home Innovation Research Labs. This organization will be responsible for ensuring delivery of all appropriately prepared proposed changes to the MHCC for its review and consideration.

Paperwork Reduction Act

The information collection requirements contained in this document have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520), and assigned OMB Control Number 2535–0116. In accordance with the Paperwork Reduction Act, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information, unless the collection displays a currently valid OMB control number.

Dated: July 19, 2017.

Pamela Beck Danner,

Administrator, Office of Manufactured Housing Programs.

[FR Doc. 2017–15574 Filed 7–26–17; 8:45 am]

BILLING CODE P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

33 CFR Part 328

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401

[EPA–HQ–OW–2017–0203; FRL–9962–34–OW]

RIN 2040–AF74

Definition of ''Waters of the United States''—Recodification of Pre-Existing Rules

AGENCY: Department of the Army, Corps of Engineers, Department of Defense; and Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency and the Department of the Army (''the agencies'') are publishing this proposed rule to initiate the first step in a comprehensive, two-step process intended to review and revise the definition of ''waters of the United States'' consistent with the Executive Order signed on February 28, 2017, ''Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule.'' This first step proposes to rescind the definition of ''waters of the United States'' in the Code of Federal Regulations to re-codify the definition of ''waters of the United States,'' which currently governs administration of the Clean Water Act, pursuant to a decision issued by the U.S. Court of Appeals for the Sixth Circuit staying a definition of ''waters of the United States'' promulgated by the agencies in 2015. The agencies would apply the definition of ''waters of the United States'' as it is currently being implemented, that is informed by applicable agency guidance documents and consistent with Supreme Court decisions and longstanding practice. Proposing to re-codify the regulations that existed before the 2015 Clean Water Rule will provide continuity and certainty for regulated entities, the States, agency staff, and the public. In a second step, the agencies will pursue notice-and-comment rulemaking in which the agencies will conduct a substantive re-evaluation of the definition of ''waters of the United States.''

DATES: Comments must be received on or before August 28, 2017.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OW–2017–0203, at *http://www.regulations.gov*. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The agencies may publish any comment received to the public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The agencies will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *http://www2.epa.gov/dockets/commenting-epa-dockets.*

FOR FURTHER INFORMATION CONTACT: Ms. Donna Downing, Office of Water (4504–T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460; telephone number: (202) 566–2428; email address: *CWAwotus@epa.gov;* or Ms. Stacey Jensen, Regulatory Community of Practice (CECW–CO–R), U.S. Army

Corps of Engineers, 441 G Street NW., Washington, DC 20314; telephone number: (202) 761–5903; email address: *USACE_CWA_Rule@usace.army.mil*.

SUPPLEMENTARY INFORMATION: The regulatory definition of ''waters of the United States'' in this proposed rule is the same as the definition that existed prior to promulgation of the Clean Water Rule in 2015 and that has been in effect nationwide since the Clean Water Rule was stayed on October 9, 2015. The agencies will administer the regulations as they are currently being implemented consistent with Supreme Court decisions and longstanding practice as informed by applicable agency guidance documents.

State, tribal, and local governments have well-defined and longstanding relationships with the federal government in implementing CWA programs and these relationships are not altered by the proposed rule. This proposed rule will not establish any new regulatory requirements. Rather, the rule simply codifies the current legal *status quo* while the agencies engage in a second, substantive rulemaking to reconsider the definition of ''waters of the United States.''

I. Executive Summary

A. What This Proposed Rule Does

In this proposed rule, the agencies define the scope of ''waters of the United States'' that are protected under the Clean Water Act (CWA). In 2015, the agencies published the ''Clean Water Rule: Definition of 'Waters of the United States''' (80 FR 37054, June 29, 2015), and on October 9, 2015, the U.S. Court of Appeals for the Sixth Circuit stayed the 2015 Rule nationwide pending further action of the court. The agencies propose to replace the stayed 2015 definition of ''waters of the United States'', and re-codify the exact same regulatory text that existed prior to the 2015 rule, which reflects the current legal regime under which the agencies are operating pursuant to the Sixth Circuit's October 9, 2015 order. The proposed regulatory text would thus replace the stayed rulemaking text, and re-codify the regulatory definitions (at 33 CFR part 328 and 40 CFR parts 110; 112; 116; 117; 122; 230; 232; 300; 302; and 401) in the Code of Federal Regulations (CFR) as they existed prior to the promulgation of the stayed 2015 definition. If this proposed rule is finalized, the agencies would continue to implement those prior regulatory definitions), informed by applicable agency guidance documents and consistent with Supreme Court decisions and longstanding agency practice.

B. History and the Purpose of This Rulemaking

Congress enacted the Federal Water Pollution Control Act Amendments of 1972, Public Law 92–500, 86 Stat. 816, as amended, Public Law 95–217, 91 Stat. 1566, 33 U.S.C. 1251 *et seq.* (''Clean Water Act'' or ''CWA'' or ''Act'') ''to restore and maintain the chemical, physical and biological integrity of the Nation's waters.'' Section 101(a). A primary tool in achieving that purpose is a prohibition on the discharge of any pollutants, including dredged or fill material, to ''navigable waters'' except in accordance with the Act. Section 301(a). The CWA provides that ''[t]he term 'navigable waters' means the waters of the United States, including the territorial seas.'' Section 502(7).

The CWA also provides that States retain their traditional role in preventing, reducing and eliminating pollution. The Act states that ''[i]t is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources . . .'' Section 101(b). States and Tribes voluntarily may assume responsibility for permit programs governing discharges of pollution under section 402 for any jurisdictional water bodies (section 402(b)), or of dredged or fill material discharges under section 404 (section 404(g)), with agency approval. (Section 404(g) provides that states may not assume permitting authority over certain specified waters and their adjacent wetlands.) States are also free to establish their own programs under state law to manage and protect waters and wetlands independent of the federal CWA. The statute's introductory purpose section thus commands the Environmental Protection Agency (EPA) to pursue two policy goals simultaneously: (a) To restore and maintain the nation's waters; and (b) to preserve the States' primary responsibility and right to prevent, reduce, and eliminate pollution.

The regulations defining the scope of federal CWA jurisdiction currently in effect, which this proposed rule would recodify, were established in large part in 1977 (42 FR 37122, July 19, 1977). While EPA administers most provisions in the CWA, the U.S. Army Corps of Engineers (Corps) administers the permitting program under section 404. During the 1980s, both of these agencies adopted substantially similar definitions (51 FR 41206, Nov. 13, 1986, amending 33 CFR 328.3; 53 FR 20764, June 6, 1988, amending 40 CFR 232.2).

Federal courts have reviewed the definition of ''waters of the United States'' and its application to a variety of factual circumstances. Three Supreme Court decisions, in particular, provide critical context and guidance in determining the appropriate scope of ''waters of the United States.''

In *United States* v. *Riverside Bayview Homes,* 474 U.S. 121 (1985) (*Riverside*), the Court, in a unanimous opinion, deferred to the Corps' ecological judgment that adjacent wetlands are ''inseparably bound up'' with the waters to which they are adjacent, and upheld the inclusion of adjacent wetlands in the regulatory definition of ''waters of the United States.'' *Id.* at 134.

In *Solid Waste Agency of Northern Cook County* v. *U.S. Army Corps of Engineers,* 531 U.S. 159 (2001) (*SWANCC*), the Supreme Court held that the use of ''isolated'' non-navigable intrastate ponds by migratory birds was not by itself a sufficient basis for the exercise of federal regulatory authority under the CWA. The *SWANCC* decision created uncertainty with regard to the jurisdiction of other isolated non-navigable waters and wetlands. In January 2003, EPA and the Corps issued joint guidance interpreting the Supreme Court decision in *SWANCC* (''the 2003 Guidance''). The guidance indicated that *SWANCC* focused on isolated, intrastate, non-navigable waters, and called for field staff to coordinate with their respective Corps or EPA Headquarters on jurisdictional determinations which asserted jurisdiction for waters under 33 CFR 328.3(a)(3)(i) through (iii). Waters that were jurisdictional pursuant to 33 CFR 328.3(a)(3) could no longer be determined jurisdictional based solely on their use by migratory birds.

Five years after the *SWANCC* decision, in *Rapanos* v. *United States,* 547 U.S. 715 (2006) (*Rapanos*), a four-Justice plurality opinion in *Rapanos,* authored by Justice Scalia, interpreted the term ''waters of the United States'' as covering ''relatively permanent, standing or continuously flowing bodies of water . . . ,'' *id.* at 739, that are connected to traditional navigable waters, *id.* at 742, as well as wetlands with a ''continuous surface connection . . .'' to such water bodies, *id.* (Scalia, J., plurality opinion). The *Rapanos* plurality noted that its reference to ''relatively permanent'' waters did ''not necessarily exclude streams, rivers, or lakes that might dry up in extraordinary circumstances, such as drought,'' or ''*seasonal* rivers, which contain

continuous flow during some months of the year but no flow during dry months . . .'' *Id.* at 732 n.5 (emphasis in original). Justice Kennedy concurred with the plurality judgment, but concluded that the appropriate test for the scope of jurisdictional waters is whether a water or wetland possesses a '' 'significant nexus' to waters that are or were navigable in fact or that could reasonably be so made.'' *Id.* at 759. The four dissenting Justices in *Rapanos,* who would have affirmed the court of appeals' application of the agencies' regulations, also concluded that the term ''waters of the United States'' encompasses, *inter alia,* all tributaries and wetlands that satisfy ''either the plurality's [standard] or Justice Kennedy's.'' *Id.* at 810 & n.14 (Stevens, J., dissenting).

While the *SWANCC* and *Rapanos* decisions limited the way the agencies' longstanding regulatory definition of ''waters of the United States'' was implemented, in neither case did the Court invalidate that definition.

After the *Rapanos* decision, the agencies issued joint guidance in 2007 to address the waters at issue in that decision but did not change the codified definition. The guidance indicated that ''waters of the United States'' included traditional navigable waters and their adjacent wetlands, relatively permanent waters and wetlands that abut them, and waters with a significant nexus to a traditional navigable water. The guidance did not address waters not at issue in *Rapanos,* such as interstate waters and the territorial seas. The guidance was reissued in 2008 with minor changes (hereinafter, the ''2008 guidance'').[1]

After issuance of the 2008 guidance, Members of Congress, developers, farmers, state and local governments, environmental organizations, energy companies and others asked the agencies to replace the guidance with a regulation that would provide clarity and certainty on the scope of the waters protected by the CWA.

Following public notice and comment on a proposed rule, the agencies published a final rule defining the scope of ''waters of the United States'' on June 29, 2015 (80 FR 37054). Thirty-one States and a number of other parties sought judicial review in multiple actions in Federal district courts and Circuit Courts of Appeal, raising concerns about the scope and legal authority of the 2015 rule. One district court issued an order granting a motion for preliminary injunction on the rule's effective date, finding that the thirteen State challengers were likely to succeed on their claims, including that the rule violated the congressional grant of authority to the agencies under the CWA and that it appeared likely the EPA failed to comply with Administrative Procedure Act (APA) requirements in promulgating the rule. *State of North Dakota et al.* v. *US EPA,* No. 15–00059, slip op. at 1–2 (D.N.D. Aug. 27, 2015, as clarified by order issued on September 4, 2015). Several weeks later, the Sixth Circuit stayed the 2015 rule nationwide to restore the ''pre-Rule regime, pending judicial review.'' *In re U.S. Dep't. of Def. and U.S. Envtl. Protection Agency Final Rule: Clean Water Rule,* No. 15–3751 (lead), slip op. at 6. The Sixth Circuit found that the petitioners had demonstrated a substantial possibility of success on the merits, including with regard to claims that certain provisions of the rule were at odds with the *Rapanos* decision and that the distance limitations in the rule were not substantiated by scientific support. Pursuant to the court's order, the agencies have implemented the statute pursuant to the regulatory regime that preceded the 2015 rule. On January 13, 2017, the U.S. Supreme Court granted *certiorari* on the question of whether the court of appeals has original jurisdiction to review challenges to the 2015 rule. The Sixth Circuit granted petitioners' motion to hold in abeyance the briefing schedule in the litigation challenging the 2015 rule pending a Supreme Court decision on the question of the court of appeals' jurisdiction.

On February 28, 2017, the President of the United States issued an Executive Order entitled ''Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule.'' Section 1 of the Order states, ''[i]t is in the national interest to ensure that the Nation's navigable waters are kept free from pollution, while at the same time promoting economic growth, minimizing regulatory uncertainty, and showing due regard for the roles of the Congress and the States under the Constitution.'' It directs the EPA and the Army to review the 2015 rule for consistency with the policy outlined in section 1, and to issue a proposed rule rescinding or revising the 2015 rule as appropriate and consistent with law. Section 2. The Executive Order also directs the agencies to consider interpreting the term ''navigable waters'' in a manner consistent with Justice Scalia's plurality opinion in *Rapanos.* Section 3.

The agencies have the authority to rescind and revise the regulatory definition of ''waters of the United States,'' consistent with the guidance in the Executive Order, so long as the revised definition is authorized under the law and based on a reasoned explanation. *FCC* v. *Fox Television Stations, Inc.,* 556 U.S. 502, 515 (2009) (''*Fox*''). Importantly, such a revised decision need not be based upon a change of facts or circumstances. A revised rulemaking based ''on a re-evaluation of which policy would be better in light of the facts'' is ''well within an agency's discretion,'' and ''[a] change in administration brought about by the people casting their votes is a perfectly reasonable basis for an executive agency's reappraisal'' of its regulations and programs. *Nat'l Ass'n of Home Builders* v. *EPA,* 682 F.3d 1032, 1038 & 1043 (D.C. Cir. 2012) (citing *Fox,* 556 U.S. at 514–15 (Rehnquist, J., concurring in part and dissenting in part)).

The Executive Order states that it is in the national interest to protect the nation's waters from pollution as well as to allow for economic growth, ensuring regulatory clarity, and providing due deference to States, as well as Congress. Executive Order section 1. These various priorities reflect, in part the CWA itself, which includes both the objective to ''restore and maintain'' the integrity of the nation's waters, as well as the policy to ''recognize, preserve, and protect the primary responsibilities and right of States to prevent, reduce, and eliminate pollution . . .'' CWA sections 101(a), 101(b). Re-evaluating the best means of balancing these statutory priorities, as called for in the Executive Order, is well within the scope of authority that Congress has delegated to the agencies under the CWA.

This rulemaking is the first step in a two-step response to the Executive Order, intended to ensure certainty as to the scope of CWA jurisdiction on an interim basis as the agencies proceed to engage in the second step: A substantive review of the appropriate scope of ''waters of the United States.''

C. This Proposed Rule

In this proposed rule, the agencies would rescind the 2015 Clean Water Rule and replace it with a recodification of the regulatory text that governed the legal regime prior to the 2015 Clean Water Rule and that the agencies are

[1] The guidance expressly stated that it was not intended to create any legally binding requirements, and that ''interested persons are free to raise questions about the appropriateness of the application of this guidance to a particular situation, and EPA and/or the Corps will consider whether or not the recommendations or interpretations of this guidance are appropriate in that situation based on the statutes, regulations, and case law.'' 2008 guidance at 4 n. 17.

currently implementing under the court stay, informed by applicable guidance documents (*e.g.,* the 2003 and 2008 guidance documents, as well as relevant memoranda and regulatory guidance letters), and consistent with the *SWANCC* and *Rapanos* Supreme Court decisions, applicable case law, and longstanding agency practice. The proposal retains exclusions from the definition of ''waters of the United States'' for prior converted cropland and waste treatment systems, both of which existed before the 2015 regulations were issued. Nothing in this proposed rule restricts the ability of States to protect waters within their boundaries by defining the scope of waters regulated under State law more broadly than the federal law definition.

D. Rationale for This Rulemaking

This rulemaking action is consistent with the February 28, 2017, Executive Order and the Clean Water Act. This action will consist of two steps. In this first step, the agencies are proposing as an interim action to repeal the 2015 definition of ''waters of the United States'' and codify the legal *status quo* that is being implemented now under the Sixth Circuit stay of the 2015 definition of ''waters of the United States'' and that was in place for decades prior to the 2015 rule. This regulatory text would, pending completion of the second step in the two-step process, continue to be informed by the 2003 and 2008 guidance documents. In the second step, the agencies will conduct a separate notice and comment rulemaking that will consider developing a new definition of ''waters of the United States'' taking into consideration the principles that Justice Scalia outlined in the *Rapanos* plurality opinion.

In the 2015 rulemaking, the agencies described their task as ''interpret[ing] the scope of the 'waters of the United States' for the CWA in light of the goals, objectives, and policies of the statute, the Supreme Court case law, the relevant and available science, and the agencies' technical expertise and experience.'' 80 FR 37054, 37060 (June 29, 2015). In so doing, the agencies properly acknowledged that a regulation defining ''waters of the United States'' in this area is not driven by any one type or piece of information, but rather must be the product of the evaluation and balancing of a variety of different types of information. That information includes scientific data as well as the policies articulated by Congress when it passed the Act. For example, the agencies recognized this construct in the preamble to the 2015 Rule by explaining that what constitutes a ''significant nexus'' to navigable waters ''is not a purely scientific determination'' and that ''science does not provide bright line boundaries with respect to where 'water ends' for purposes of the CWA.'' 80 FR at 37060.[2]

The objectives, goals, and policies of the statute are detailed in sections 101(a)–(g) of the statute, and guide the agencies' interpretation and application of the Clean Water Act. Section 101(a) of the Act states that the ''objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters,'' and identifies several goals and national policies Congress believed would help the Act achieve that objective. 33 U.S.C. 1251(a). When referring to the Act's objective, the 2015 rule referred specifically to Section 101(a). 80 FR at 37056.

In addition to the objective of the Act and the goals and policies identified to help achieve that objective in section 101(a), in section 101(b) Congress articulated that it is ''the policy of the Congress'' to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his or her authority. Section 101(b) also states that it is the policy of Congress that the States manage the construction grant program under this chapter and implement the permit programs under sections 402 and 404 of the Act. 33 U.S.C. 1251(b). Therefore, as part of the two-step rulemaking, the agencies will be considering the relationship of the CWA objective and policies, and in particular, the meaning and importance of section 101(b).

The 2015 rule did acknowledge the language contained in section 101(b) and the vital role states and tribes play in the implementation of the Act and the effort to meet the Act's stated objective. *See, e.g.,* 80 FR at 37059. In discussing the provision, the agencies noted that it was ''[o]f particular importance[,] [that] states and tribes may be authorized by the EPA to administer the permitting programs of CWA sections 402 and 404.'' *Id.* The agencies also noted that ''States and federally-recognized tribes, consistent with the CWA, retain full authority to implement their own programs to more broadly and more fully protect the waters in *their jurisdiction*.'' *Id.* at 37060. However, the agencies did not include a discussion in the 2015 rule preamble of the meaning and importance of section 101(b) in guiding the choices the agencies make in setting the outer bounds of jurisdiction of the Act, despite the recognition that the rule must be drafted ''in light of the goals, objectives, and policies of the statute.'' In the two-step rulemaking process commencing with today's notice, the agencies will more fully consider the policy in section 101(b) when exercising their discretion to delineate the scope of waters of the U.S., including the extent to which states or tribes have protected or may protect waters that are not subject to CWA jurisdiction.

The scope of CWA jurisdiction is an issue of great national importance and therefore the agencies will allow for robust deliberations on the ultimate regulation. While engaging in such deliberations, however, the agencies recognize the need to provide as an interim step for regulatory continuity and clarity for the many stakeholders affected by the definition of ''waters of the United States.'' The pre-CWR regulatory regime is in effect as a result of the Sixth Circuit's stay of the 2015 rule but that regime depends upon the pendency of the Sixth Circuit's order and could be altered at any time by factors beyond the control of the agencies. The Supreme Court's resolution of the question as to which courts have original jurisdiction over challenges to the 2015 rule could impact the Sixth Circuit's exercise of jurisdiction and its stay. If, for example, the Supreme Court were to decide that the Sixth Circuit lacks original jurisdiction over challenges to the 2015 rule, the Sixth Circuit case would be dismissed and its nationwide stay would expire, leading to inconsistencies, uncertainty, and confusion as to the regulatory regime that would be in effect pending substantive rulemaking under the Executive Order.

As noted previously, prior to the Sixth Circuit's stay order, the District Court for North Dakota had preliminarily enjoined the rule in 13 States (North Dakota, Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, Nevada, South Dakota, Wyoming and New Mexico). Therefore, if the Sixth Circuit's nationwide stay were to expire, the 2015

[2] This notion was at least implicitly recognized by the Chief Justice in his concurring opinion in *Rapanos:* ''[T]he Corps and the EPA would have enjoyed plenty of room to operate in developing *some* notion of an outer bound to the reach of their authority.'' *Rapanos* v. *United States,* 547 U.S. 715, 758 (2006) (Roberts, C.J., concurring). Ultimately, developing ''some notion of an outer bound'' from the full range of relevant information is the task facing the agencies.

rule would be enjoined under the North Dakota order in States covering a large geographic area of the country, but the rule would be in effect in the rest of the country pending further judicial decision-making or substantive rulemaking under the Executive Order.

Adding to the confusion that could be caused if the Sixth Circuit's nationwide stay of the 2015 rule were to expire, there are multiple other district court cases pending on the 2015 rule, including several where challengers have filed motions for preliminary injunctions. These cases—and the pending preliminary injunction motions—would likely be reactivated if the Supreme Court were to determine that the Sixth Circuit lacks original jurisdiction over challenges to the 2015 rule. The proposed interim rule would establish a clear regulatory framework that would avoid the inconsistencies, uncertainty and confusion that would result from a Supreme Court ruling affecting the Sixth Circuit's jurisdiction while the agencies reconsider the 2015 rule. It would ensure that, during this interim period, the scope of CWA jurisdiction will be administered exactly the way it is now, and as it was for many years prior to the promulgation of the 2015 rule. The agencies considered other approaches to providing stability while they work to finalize the revised definition, such as simply withdrawing or staying the Clean Water Rule, but did not identify any options that would do so more effectively and efficiently than this proposed rule would do. A stable regulatory foundation for the *status quo* would facilitate the agencies' considered re-evaluation, as appropriate, of the definition of ''waters of the United States'' that best effectuates the language, structure, and purposes of the Clean Water Act.

II. General Information

A. How can I get copies of this document and related information?

1. *Docket.* An official public docket for this action has been established under Docket Id. No. EPA–HQ–OW–2017–0203. The official public docket consists of the documents specifically referenced in this action, and other information related to this action. The official public docket is the collection of materials that is available for public viewing at the OW Docket, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20004. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The OW Docket telephone number is 202–566–2426. A reasonable fee will be charged for copies.

2. *Electronic Access.* You may access this **Federal Register** document electronically under the **Federal Register** listings at *http://www.regulations.gov.* An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may access EPA Dockets at *http://www.regulations.gov* to view public comments as they are submitted and posted, access the index listing of the contents of the official public docket, and access those documents in the public docket that are available electronically. For additional information about EPA's public docket, visit the EPA Docket Center homepage at *http://www.epa.gov/epahome/dockets.htm.* Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the Docket Facility.

B. What is the agencies' authority for taking this action?

The authority for this action is the Federal Water Pollution Control Act, 33 U.S.C. 1251, *et seq.,* including sections 301, 304, 311, 401, 402, 404 and 501.

C. What are the economic impacts of this action?

This proposed rule is the first step in a comprehensive, two-step process to review and revise the 2015 definition of ''waters of the United States.'' The agencies prepared an illustrative economic analysis to provide the public with information on the potential changes to the costs and benefits of various CWA programs that could result if there were a change in the number of positive jurisdictional determinations. The economic analysis is provided pursuant to the requirements of Executive Orders 13563 and 12866 to provide information to the public. The 2015 CWR is used as a baseline in the analysis in order to provide information to the public on the estimated differential effects of restoring pre-2015 status quo in comparison to the 2015 CWR. However, as explained previously, the 2015 CWR has already been stayed by the Sixth Circuit, and this proposal would merely codify the legal status quo, not change current practice.

The proposed rule is a definitional rule that affects the scope of ''waters of the United States.'' This rule does not establish any regulatory requirements or directly mandate actions on its own. However, by changing the definition of ''waters of the United States,'' the proposed rule would change the waters where other regulatory requirements that affect regulated entities come into play, for example, the locations where regulated entities would be required to obtain certain types of permits. The consequence of a water being deemed non-jurisdictional is simply that CWA provisions no longer apply to that water. There are no avoided costs or forgone benefits if similar state regulations exist and continue to apply to that water. The agencies estimated that the 2015 rule would result in a small overall increase in positive jurisdictional determinations compared to those made under the prior regulation as currently implemented, and that there would be fewer waters within the scope of the CWA under the 2015 rule compared to the prior regulations. The agencies estimated the avoided costs and forgone benefits of repealing the 2015 rule. This analysis is contained in the *Economic Analysis for the Proposed Definition of ''Waters of the United States''—Recodification of Pre-existing Rules* and is available in the docket for this action.

III. Public Comments

The agencies solicit comment as to whether it is desirable and appropriate to re-codify in regulation the *status quo* as an interim first step pending a substantive rulemaking to reconsider the definition of ''waters of the United States'' and the best way to accomplish it. Because the agencies propose to simply codify the legal *status quo* and because it is a temporary, interim measure pending substantive rulemaking, the agencies wish to make clear that this interim rulemaking does not undertake any substantive reconsideration of the pre-2015 ''waters of the United States'' definition nor are the agencies soliciting comment on the specific content of those longstanding regulations. *See P&V Enterprises* v. *Corps of Engineers,* 516 F.3d 1021,1023–24 (D.C. Cir. 2008). For the same reason, the agencies are not at this time soliciting comment on the scope of the definition of ''waters of the United States'' that the agencies should ultimately adopt in the second step of this two-step process, as the agencies will address all of those issues, including those related to the 2015 rule, in the second notice and comment rulemaking to adopt a revised definition of ''waters of the United States'' in light of the February 28, 2017, Executive Order. The agencies do not intend to engage in substantive reevaluation of the definition of ''waters of the United States'' until the second step of the rulemaking. *See P&V,* 516 F.3d at 1025–26.

IV. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket.

In addition, the agencies prepared an analysis of the potential avoided costs and forgone benefits associated with this action. This analysis is contained in the *Economic Analysis for the Proposed Definition of ''Waters of the United States''—Recodification of Pre-existing Rules.* A copy of the analysis is available in the docket for this action.

B. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control numbers 2050–0021 and 2050–0135 for the CWA section 311 program and 2040–0004 for the 402 program.

For the CWA section 404 regulatory program, the current OMB approval number for information requirements is maintained by the Corps (OMB approval number 0710–0003). However, there are no new approval or application processes required as a result of this rulemaking that necessitate a new Information Collection Request (ICR).

C. Regulatory Flexibility Act

We certify that this action will not have a significant economic impact on a substantial number of small entities. Because this action would simply codify the legal *status quo,* we have concluded that this action will not have a significant impact on small entities. This analysis is contained in the *Economic Analysis for the Proposed Definition of ''Waters of the United States''—Recodification of Pre-existing Rules.* A copy of the analysis is available in the docket for this action.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The definition of ''waters of the United States'' applies broadly to CWA programs. The action imposes no enforceable duty on any state, local, or tribal governments, or the private sector, and does not contain regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Consistent with the agencies' policy to promote communications with state and local governments, the agencies have informed states and local governments about this proposed rulemaking.

The agencies will appropriately consult with States and local governments as a subsequent rulemaking makes changes to the longstanding definition of ''waters of the United States.''

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This proposed rule does not have tribal implications as specified in Executive Order 13175. This proposed rule maintains the legal *status quo.* Thus, Executive Order 13175 does not apply to this action.

Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes (May 4, 2011), the agencies will appropriately consult with tribal officials during the development of a subsequent rulemaking that makes changes to the longstanding definition of ''waters of the United States.'' In fact, the agencies have already initiated the formal consultation process with respect to the subsequent rulemaking.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This action is not subject to Executive Order 13045 because the environmental health risks or safety risks addressed by this action do not present a disproportionate risk to children.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

I. National Technology Transfer and Advancement Act

This proposed rule does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

This proposed rule maintains the legal *status quo.* The agencies therefore believe that this action does not have disproportionately high and adverse human health or environmental effects on minority, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, Feb. 16, 1994).

K. Executive Order 13771: Reducing Regulation and Controlling Regulatory Costs

Pursuant to Executive Order 13771 (82 FR 9339, February 3, 2017) this proposed rule is expected to be an E.O. 13771 deregulatory action.

List of Subjects

33 CFR Part 328

Environmental protection, Administrative practice and procedure, Intergovernmental relations, Navigation, Water pollution control, Waterways.

40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401

Environmental protection, Water pollution control.

Dated: June 27, 2017.

E. Scott Pruitt,

Administrator, Environmental Protection Agency.

Dated: June 27, 2017.

Douglas W. Lamont,

Deputy Assistant Secretary of the Army (Project Planning and Review), performing the duties of the Assistant Secretary of the Army for Civil Works.

Title 33—Navigation and Navigable Waters

For the reasons set out in the preamble, title 33, chapter II of the Code of Federal Regulations is proposed to be amended as follows:

PART 328—DEFINITION OF WATERS OF THE UNITED STATES

■ 1. The authority citation for part 328 is revised to read as follows:

Authority: 33 U.S.C. 1344.

■ 2. Section 328.3 is amended by revising paragraphs (a) through (d) and adding paragraphs (e) and (f) to read as follows:

§ 328.3 Definitions.

* * * * *

(a) The term *waters of the United States* means

(1) All waters which are currently used, or were used in the past, or may

be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (a)(1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

(b) The term *wetlands* means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(c) The term *adjacent* means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are ''adjacent wetlands.''

(d) The term *high tide line* means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

(e) The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(f) The term *tidal waters* means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

Title 40—Protection of Environment

For reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

PART 110—DISCHARGE OF OIL

■ 3. The authority citation for part 110 is revised to read as follows:

Authority: 33 U.S.C. 1321(b)(3) and (b)(4) and 1361(a); E.O. 11735, 38 FR 21243, 3 CFR parts 1971–1975 Comp., p. 793.

■ 4. Section 110.1 is amended by revising the definition of ''Navigable waters'' and adding the definition of ''Wetlands'' in alphabetical order to read as follows:

§ 110.1 Definitions.

* * * * *

Navigable waters means the waters of the United States, including the territorial seas. The term includes:

(a) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

(b) Interstate waters, including interstate wetlands;

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) That are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce;

(3) That are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as navigable waters under this section;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this section, including adjacent wetlands; and

(f) Wetlands adjacent to waters identified in paragraphs (a) through (e) of this section: Provided, That waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States;

Navigable waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

* * * * *

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

PART 112—OIL POLLUTION PREVENTION

■ 5. The authority citation for part 112 is revised to read as follows:

Authority: 33 U.S.C. 1251 *et seq.;* 33 U.S.C. 2720; E.O. 12777 (October 18, 1991), 3 CFR, 1991 Comp., p. 351.

■ 6. Section 112.2 is amended by revising the definition of ''Navigable waters'' and adding the definition of

''Wetlands'' in alphabetical order to read as follows:

§ 112.2 Definitions.

* * * * *

Navigable waters of the United States means ''navigable waters'' as defined in section 502(7) of the FWPCA, and includes:

(1) All navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92–500), and tributaries of such waters;

(2) Interstate waters;

(3) Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and

(4) Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

* * * * *

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

* * * * *

PART 116—DESIGNATION OF HAZARDOUS SUBSTANCES

■ 7. The authority citation for part 116 is revised to read as follows:

Authority: Secs. 311(b)(2)(A) and 501(a), Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*).

■ 8. Section 116.3 is amended by revising the definition of ''Navigable waters'' to read as follows:

§ 116.3 Definitions.

* * * * *

Navigable waters is defined in section 502(7) of the Act to mean ''waters of the United States, including the territorial seas,'' and includes, but is not limited to:

(1) All waters which are presently used, or were used in the past, or may be susceptible to use as a means to transport interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide, and including adjacent wetlands; the term *wetlands* as used in this regulation shall include those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevelance of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas; the term *adjacent* means bordering, contiguous or neighboring;

(2) Tributaries of navigable waters of the United States, including adjacent wetlands;

(3) Interstate waters, including wetlands; and

(4) All other waters of the United States such as intrastate lakes, rivers, streams, mudflats, sandflats and wetlands, the use, degradation or destruction of which affect interstate commerce including, but not limited to:

(i) Intrastate lakes, rivers, streams, and wetlands which are utilized by interstate travelers for recreational or other purposes; and

(ii) Intrastate lakes, rivers, streams, and wetlands from which fish or shellfish are or could be taken and sold in interstate commerce; and

(iii) Intrastate lakes, rivers, streams, and wetlands which are utilized for industrial purposes by industries in interstate commerce.

Navigable waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

* * * * *

PART 117—DETERMINATION OF REPORTABLE QUANTITIES FOR HAZARDOUS SUBSTANCES

■ 9. The authority citation for part 117 is revised to read as follows:

Authority: Secs. 311 and 501(a), Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*), (''the Act'') and Executive Order 11735, superseded by Executive Order 12777, 56 FR 54757.

■ 10. Section 117.1 is amended by revising paragraph (i) to read as follows:

§ 117.1 Definitions.

* * * * *

(i) *Navigable waters* means ''waters of the United States, including the territorial seas.'' This term includes:

(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) Interstate waters, including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams, (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes;

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce;

(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as navigable waters under this paragraph;

(5) Tributaries of waters identified in paragraphs (i)(1) through (4) of this section, including adjacent wetlands; and

(6) Wetlands adjacent to waters identified in paragraphs (i)(1) through (5) of this section (''Wetlands'' means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally included playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds): *Provided,* That waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States.

Navigable waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

* * * * *

PART 122—EPA ADMINISTERED PERMIT PROGRAMS: THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

■ 11. The authority citation for part 122 continues to read as follows:

Authority: The Clean Water Act, 33 U.S.C. 1251 *et seq.*

■ 12. Section 122.2 is amended by:

■ a. Lifting the suspension of the last sentence of the definition of ''Waters of the United States'' published July 21, 1980 (45 FR 48620).

■ b. Revising the definition of ''Waters of the United States''.

■ c. Suspending the last sentence of the definition of ''Waters of the United States'' published July 21, 1980 (45 FR 48620).

■ d. Adding the definition of ''Wetlands''.

The revision and addition read as follows:

§ 122.2 Definitions.

* * * * *

Waters of the United States or *waters of the U.S.* means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate ''wetlands;''

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, ''wetlands,'' sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) ''Wetlands'' adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. [See Note 1 of this section.] Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Note: At 45 FR 48620, July 21, 1980, the Environmental Protection Agency suspended until further notice in § 122.2, the last sentence, beginning ''This exclusion applies . . .'' in the definition of ''Waters of the United States.'' This revision continues that suspension.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

* * * * *

PART 230—SECTION 404(b)(1) GUIDELINES FOR SPECIFICATION OF DISPOSAL SITES FOR DREDGED OR FILL MATERIAL

■ 13. The authority citation for part 230 is revised to read as follows:

Authority: Secs. 404(b) and 501(a) of the Clean Water Act of 1977 (33 U.S.C. 1344(b) and 1361(a)).

■ 14. Section 230.3 is amended by:

■ a. Redesignating paragraph (o) as paragraph (s).

■ b. Revising newly redesignated paragraph (s).

■ c. Redesignating paragraph (n) as paragraph (r).

■ d. Redesignating paragraph (m) as paragraph (q–1).

■ e. Redesignating paragraphs (h) through (l) as paragraphs (m) through (q).

■ f. Redesignating paragraphs (e) and (f) as paragraphs (h) and (i).

■ g. Redesignating paragraph (g) as paragraph (k).

■ h. Redesignating paragraphs (b) through (d) as paragraphs (c) through (e).

■ i. Adding reserved paragraphs (f), (g), (j), and (l).

■ j. Adding paragraphs (b) and (t).

The revision and additions read as follows:

§ 230.3 Definitions.

* * * * *

(b) The term *adjacent* means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are ''adjacent wetlands.''

* * * * *

(s) The term *waters of the United States* means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under this definition;

(5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;

(6) The territorial sea;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

(t) The term *wetlands* means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

PART 232—404 PROGRAMS DEFINITIONS; EXEMPT ACTIVITIES NOT REQUIRING 404 PERMITS

■ 15. The authority citation for part 232 is revised to read as follows:

Authority: 33 U.S.C. 1344.

■ 16. Section 232.2 is amended by revising the definition of ''Waters of the

United States'' and adding the definition of ''Wetlands'' to read as follows:

§ 232.2 Definitions.

* * * * *

Waters of the United States means:

All waters which are currently used, were used in the past, or may be susceptible to us in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

All interstate waters including interstate wetlands.

All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which would or could affect interstate or foreign commerce including any such waters:

Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

Which are used or could be used for industrial purposes by industries in interstate commerce.

All impoundments of waters otherwise defined as waters of the United States under this definition;

Tributaries of waters identified in paragraphs (g)(1)–(4) of this section;

The territorial sea; and

Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (q)(1)–(6) of this section.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Act (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

PART 300—NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN

■ 17. The authority citation for part 300 is revised to read as follows:

Authority: 33 U.S.C. 1321(c)(2); 42 U.S.C. 9601–9657; E.O. 13626, 77 FR 56749, 3 CFR, 2013 Comp., p.306; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p.351; E.O. 12580, 52 FR 2923, 3 CFR, 1987 Comp., p.193.

■ 18. Section 300.5 is amended by revising the definition of ''Navigable waters'' to read as follows:

§ 300.5 Definitions.

* * * * *

Navigable waters as defined by 40 CFR 110.1, means the waters of the United States, including the territorial seas. The term includes:

(1) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

(2) Interstate waters, including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters;

(i) That are or could be used by interstate or foreign travelers for recreational or other purposes;

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce;

(iii) That are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as navigable waters under this section;

(5) Tributaries of waters identified in paragraphs (a) through (d) of this definition, including adjacent wetlands; and

(6) Wetlands adjacent to waters identified in paragraphs (a) through (e) of this definition: Provided, that waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States.

(7) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

* * * * *

■ 19. In appendix E to part 300, section 1.5 is amended by revising the definition of ''Navigable waters'' to read as follows:

Appendix E to Part 300—Oil Spill Response

* * * * *

1.5 Definitions * * *

Navigable waters as defined by 40 CFR 110.1 means the waters of the United States, including the territorial seas. The term includes:

(a) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

(b) Interstate waters, including interstate wetlands;

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) That are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; and

(3) That are used or could be used for industrial purposes by industries in interstate commerce.

(d) All impoundments of waters otherwise defined as navigable waters under this section;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition, including adjacent wetlands; and

(f) Wetlands adjacent to waters identified in paragraphs (a) through (e) of this definition: Provided, that waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States.

(g) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

* * * * *

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

■ 20. The authority citation for part 302 is revised to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

■ 21. Section 302.3 is amended by revising the definition of ''Navigable waters'' to read as follows:

§ 302.3 Definitions.

* * * * *

Navigable waters or *navigable waters of the United States* means waters of the

United States, including the territorial seas;

* * * * *

PART 401—GENERAL PROVISIONS

■ 22. The authority citation for part 401 is revised to read as follows:

Authority: Secs. 301, 304 (b) and (c), 306 (b) and (c), 307 (b) and (c) and 316(b) of the Federal Water Pollution Control Act, as amended (the ''Act''), 33 U.S.C. 1251, 1311, 1314 (b) and (c), 1316 (b) and (c), 1317 (b) and (c) and 1326(c); 86 Stat. 816 *et seq.;* Pub. L. 92–500.

■ 23. Section 401.11 is amended by revising paragraph (l) to read as follows:

§ 401.11 General definitions.

* * * * *

(l) The term *navigable waters* includes: All navigable waters of the United States; tributaries of navigable waters of the United States; interstate waters; intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce; and intrastate lakes, rivers, and streams which are utilized for industrial purposes by industries in interstate commerce. Navigable waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

* * * * *

[FR Doc. 2017–13997 Filed 7–26–17; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Chapter 1

46 CFR Chapters 1 and III

49 CFR Chapter IV

[Docket No. USCG–2017–0658]

Great Lakes Pilotage Advisory Committee—Input To Support Regulatory Reform of Coast Guard Regulations—New Task

AGENCY: U.S. Coast Guard, Department of Homeland Security.

ACTION: Announcement of new task assignment for the Great Lakes Pilotage Advisory Committee (GLPAC); teleconference meeting.

SUMMARY: The U.S. Coast Guard is issuing a new task to the Great Lakes Pilotage Advisory Committee (GLPAC). The U.S. Coast Guard is asking GLPAC to help the agency identify existing regulations, guidance, and collections of information (that fall within the scope of the Committee's charter) for possible repeal, replacement, or modification. This tasking is in response to the issuance of Executive Orders 13771, ''Reducing Regulation and Controlling Regulatory Costs; 13777, ''Enforcing the Regulatory Reform Agenda;'' and 13783, ''Promoting Energy Independence and Economic Growth.'' The full Committee is scheduled to meet by teleconference on August 23, 2017, to discuss this tasking. This teleconference will be open to the public. The U.S. Coast Guard will consider GLPAC recommendations as part of the process of identifying regulations, guidance, and collections of information to be repealed, replaced, or modified pursuant to the three Executive Orders discussed above.

DATES: The full Committee is scheduled to meet by teleconference on August 23, 2017, from 1:30 p.m. to 3 p.m. EDT. Please note that this teleconference may adjourn early if the Committee has completed its business.

ADDRESSES: To join the teleconference or to request special accommodations, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section no later than 1 p.m. on August 16, 2017. The number of teleconference lines is limited and will be available on a first-come, first-served basis.

Instructions: Submit comments on the task statement at any time, including orally at the teleconference, but if you want Committee members to review your comments before the teleconference, please submit your comments no later than August 16, 2017. You must include the words ''Department of Homeland Security'' and the docket number for this action. Written comments may also be submitted using the Federal e-Rulemaking Portal at *http://www.regulations.gov.* If you encounter technical difficulties with comment submission, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this notice. Comments received will be posted without alteration at *http://www.regulations.gov,* including any personal information provided. You may review *Regulations.gov*'s Privacy and Security Notice at *https://www.regulations.gov/privacyNotice.*

Docket Search: For access to the docket or to read documents or comments related to this notice, go to *http://www.regulations.gov,* insert ''USCG–2017–0658'' in the Search box, press Enter, and then click on the item you wish to view.

FOR FURTHER INFORMATION CONTACT: Ms. Michelle Birchfield, Alternate Designated Federal Officer of the Great Lakes Pilotage Advisory Committee, telephone (202) 372–1533, or email *michelle.r.birchfield@uscg.mil.*

SUPPLEMENTARY INFORMATION:

New Task to the Committee

The U.S. Coast Guard is issuing a new task to GLPAC to provide recommendations on whether existing regulations, guidance, and information collections (that fall within the scope of the Committee's charter) should be repealed, replaced, or modified. GLPAC will then provide advice and recommendations on the assigned task and submit a final recommendation report to the U.S. Coast Guard.

Background

On January 30, 2017, President Trump issued Executive Order 13771, ''Reducing Regulation and Controlling Regulatory Costs.'' Under that Executive Order, for every one new regulation issued, at least two prior regulations must be identified for elimination, and the cost of planned regulations must be prudently managed and controlled through a budgeting process. On February 24, 2017, the President issued Executive Order 13777, ''Enforcing the Regulatory Reform Agenda.'' That Executive Order directs agencies to take specific steps to identify and alleviate unnecessary regulatory burdens placed on the American people. On March 28, 2017, the President issued Executive Order 13783, ''Promoting Energy Independence and Economic Growth.'' Executive Order 13783 promotes the clean and safe development of our Nation's vast energy resources, while at the same time avoiding agency actions that unnecessarily encumber energy production.

When implementing the regulatory offsets required by Executive Order 13771, each agency head is directed to prioritize, to the extent permitted by law, those regulations that the agency's Regulatory Reform Task Force identifies as outdated, unnecessary, or ineffective in accordance with Executive Order 13777. As part of this process to comply with all three Executive Orders, the U.S. Coast Guard is reaching out through multiple avenues to interested individuals to gather their input about

FOR FURTHER INFORMATION CONTACT: Judith Kidwell, Center for Food Safety and Applied Nutrition, Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740, 240–402–1071.

SUPPLEMENTARY INFORMATION: In the **Federal Register** of July 26, 2017, in FR Doc. 2017–15535, on page 34615, the following correction is made:

On page 34615, in the second paragraph under the **SUPPLEMENTARY INFORMATION:** caption, in the second column, the second paragraph is corrected to read, ''These proposed changes would allow manufacturers of fruit juices and fruit juice drinks that are fortified with calcium to maintain the absolute level of added calcium at 330 milligrams (mg) and 100 mg, respectively, as established in our regulations at § 172.380(c)(1) and (2).''

Dated: August 17, 2017.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2017–17704 Filed 8–21–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

33 CFR Part 328

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 110, 112 116, 117, 122, 230, 232, 300, 302, and 401

[EPA–HQ–OW–2017–0203; FRL–9966–81–OW]

RIN 2040–AF74

Definition of ''Waters of the United States''—Recodification of Pre-Existing Rules; Extension of Comment Period

AGENCY: Department of the Army, Corps of Engineers, Department of Defense; and Environmental Protection Agency (EPA).

ACTION: Proposed rule; Extension of comment period.

SUMMARY: The U.S. Environmental Protection Agency (EPA) and the U.S. Department of the Army are extending the comment period for the proposed rule ''Definition of 'Waters of the United States'—Recodification of Pre-existing Rules.'' The agencies are extending the comment period for 30 days in response to stakeholder requests for an extension, from August 28, 2017 to September 27, 2017.

DATES: The comment period for the proposed rule published on July 27, 2017, at 82 FR 34899, is extended. Comments must be received on or before September 27, 2017.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OW–2017–0203, at *http://www.regulations.gov.* Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The agencies may publish any comment received to the public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The agencies will generally not consider comments or comment contents located outside of the primary submission (*i.e.* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *http://www2.epa.gov/dockets/commenting-epa-dockets.*

FOR FURTHER INFORMATION CONTACT: Ms. Donna Downing, Office of Water (4504–T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460; telephone number: (202) 566–2428; email address: *CWAwotus@epa.gov;* or Ms. Stacey Jensen, Regulatory Community of Practice (CECW–CO–R), U.S. Army Corps of Engineers, 441 G Street NW., Washington, DC 20314; telephone number: (202) 761–5903; email address: *USACE_CWA_Rule@usace.army.mil.*

SUPPLEMENTARY INFORMATION: On July 27, 2017 (82 FR 34899), the EPA and the U.S. Department of the Army published the proposed rule ''Definition of 'Waters of the United States'—Recodification of Pre-existing Rules'' in the **Federal Register**. The original deadline to submit comments was August 28, 2017. This action extends the comment period for 30 days. Written comments must now be received by September 27, 2017.

Dated: August 16, 2017.

Michael H. Shapiro,

Acting Assistant Administrator for Water, Environmental Protection Agency.

Dated: August 16, 2017.

Douglas W. Lamont,

Deputy Assistant Secretary of the Army (Project Planning and Review), performing the duties of the Assistant Secretary of the Army for Civil Works.

[FR Doc. 2017–17739 Filed 8–21–17; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2016–0442; FRL–9966–63–OAR]

RIN 2060–AT57

National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry: Alternative Monitoring Method

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is proposing to amend the National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry (Portland Cement NESHAP). We are proposing to revise the testing and monitoring requirements for hydrochloric acid (HCl) due to the current unavailability of HCl calibration gases used for quality assurance purposes.

DATES: The EPA must receive written comments on this proposed rule on or before October 6, 2017.

Public Hearing. If a public hearing is requested by August 29, 2017, then we will hold a public hearing on September 6, 2017 at the EPA WJC East Building, 1201 Constitution Avenue NW., Washington, DC 20004. If a public hearing is requested, then we will provide additional details about the public hearing on our Web site at *https://www.epa.gov/stationary-sources-air-pollution/portland-cement-manufacturing-industry-national-emission-standards* and *https://www3.epa.gov/airquality/cement/actions.html.* To request a hearing, to register to speak at a hearing, or to inquire if a hearing will be held, please contact Aimee St. Clair at (919) 541–1063 or by email at *stclair.aimee@epa.gov.* The EPA does not intend to publish any future notices in the

vending machine, in a type size at least 150 percent of the size of the net quantity of contents declaration on the front of the package, and with sufficient color and contrasting background to other print on the label to permit the prospective purchaser to clearly distinguish the information.

* * * * *

Dated: July 6, 2018.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2018–14906 Filed 7–11–18; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

33 CFR Part 328

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401

[EPA–HQ–OW–2017–0203; FRL–9980–52–OW]

RIN 2040–AF74

Definition of ''Waters of the United States''—Recodification of Preexisting Rule

AGENCY: Department of Defense, Department of the Army, Corps of Engineers; Environmental Protection Agency (EPA).

ACTION: Supplemental notice of proposed rulemaking.

SUMMARY: The purpose of this supplemental notice is for the Environmental Protection Agency (EPA) and the Department of the Army (agencies) to clarify, supplement and seek additional comment on an earlier proposal, published on July 27, 2017, to repeal the 2015 Rule Defining Waters of the United States (''2015 Rule''), which amended portions of the Code of Federal Regulations (CFR). As stated in the agencies' July 27, 2017 Notice of Proposed Rulemaking (NPRM), the agencies propose to repeal the 2015 Rule and restore the regulatory text that existed prior to the 2015 Rule, as informed by guidance in effect at that time. If this proposal is finalized, the regulations defining the scope of federal Clean Water Act (CWA) jurisdiction would be those portions of the CFR as they existed before the amendments promulgated in the 2015 Rule. Those preexisting regulatory definitions are the ones that the agencies are currently implementing in light of the agencies' final rule published on February 6, 2018, adding a February 6, 2020 applicability date to the 2015 Rule, as well as judicial decisions preliminarily enjoining and staying the 2015 Rule.

DATES: Comments must be received on or before August 13, 2018.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OW–2017–0203, at *http://www.regulations.gov.* Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The agencies may publish any comment received to the public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The agencies will generally not consider comments or comment content located outside of the primary submission (*i.e.,* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *http://www2.epa.gov/dockets.commenting-epa-dockets.*

FOR FURTHER INFORMATION CONTACT: Michael McDavit, Office of Water (4504–T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460; telephone number: (202) 566–2428; email address: *CWAwotus@epa.gov;* or Stacey Jensen, Regulatory Community of Practice (CECW–CO–R), U.S. Army Corps of Engineers, 441 G Street NW, Washington, DC 201314; telephone number: (202) 761–6903; email address: *USACE_CWA_Rule@usace.army.mil.*

SUPPLEMENTARY INFORMATION: The agencies propose to repeal the Clean Water Rule: Definition of ''Waters of the United States,'' 80 FR 37054, and recodify the regulatory definitions of ''waters of the United States'' that existed prior to the August 28, 2015 effective date of the 2015 Rule. Those preexisting regulatory definitions are the ones that the agencies are currently implementing in light of the agencies' final rule (83 FR 5200, February 6, 2018), which added a February 6, 2020 applicability date to the 2015 Rule. Judicial decisions currently enjoin the 2015 Rule in 24 States as well. If this proposal is finalized, the agencies would administer the regulations promulgated in 1986 and 1988 in portions of 33 CFR part 328 and 40 CFR parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401, and would continue to interpret the statutory term ''waters of the United States'' to mean the waters covered by those regulations, as the agencies are currently implementing those regulations consistent with Supreme Court decisions and longstanding practice, as informed by applicable guidance documents, training, and experience.

State, tribal, and local governments have well-defined and established relationships with the federal government in implementing CWA programs. Those relationships are not affected by this proposed rule, which would not alter the jurisdiction of the CWA compared to the regulations and practice that the agencies are currently applying. The proposed rule would permanently repeal the 2015 Rule, which amended the longstanding definition of ''waters of the United States'' in portions of 33 CFR part 328 and 40 CFR parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401, and restore the regulations as they existed prior to the amendments in the 2015 Rule.[1]

The agencies are issuing this supplemental notice of proposed rulemaking (SNPRM) to clarify, supplement and give interested parties an opportunity to comment on certain important considerations and reasons for the agencies' proposal. The agencies clarify herein the scope of the solicitation of comment and the actions proposed. In response to the July 27, 2017 NPRM, (82 FR 34899), the agencies received numerous comments on the impacts of repealing the 2015 Rule in its entirety. Others commented in favor of retaining the 2015 Rule, either as written or with modifications. Some commenters interpreted the proposal as restricting their opportunity to provide such comments either supporting or opposing repeal of the 2015 Rule. In this SNPRM, the agencies reiterate that this regulatory action is intended to permanently repeal the 2015 Rule in its entirety, and we invite all interested persons to comment on whether the 2015 Rule should be repealed.

[1] While EPA administers most provisions in the CWA, the Department of the Army, Corps of Engineers (Corps) administers the permitting program under section 404. During the 1980s, both agencies adopted substantially similar definitions of ''waters of the United States.'' *See* 51 FR 41206, Nov. 13, 1986, amending 33 CFR 328.3; 53 FR 20764, June 6, 1988, amending 40 CFR 232.2.

The agencies are also issuing this SNPRM to clarify that the rule adding an applicability date to the 2015 Rule does not change the agencies' decision to proceed with this proposed repeal. For the reasons discussed in this notice, the agencies propose to conclude that regulatory certainty would be best served by repealing the 2015 Rule and recodifying the scope of CWA jurisdiction currently in effect. The agencies propose to conclude that rather than achieving its stated objectives of increasing predictability and consistency under the CWA, *see* 80 FR 37055, the 2015 Rule is creating significant confusion and uncertainty for agency staff, regulated entities, states, tribes, local governments, and the public, particularly in view of court decisions that have cast doubt on the legal viability of the rule. To provide for greater regulatory certainty, the agencies propose to repeal the 2015 Rule and to recodify the pre-2015 regulations, thereby maintaining a longstanding regulatory framework that is more familiar to and better-understood by the agencies, states, tribes, local governments, regulated entities, and the public.

Further, court rulings against the 2015 Rule suggest that the interpretation of the ''significant nexus'' standard as applied in the 2015 Rule may not comport with and accurately implement the legal limits on CWA jurisdiction intended by Congress and reflected in decisions of the Supreme Court. At a minimum, the agencies find that the interpretation of the statute adopted in the 2015 Rule is not compelled and raises significant legal questions. In light of the substantial uncertainty associated with the 2015 Rule, including by virtue of a potential stay, injunction, or vacatur of the 2015 Rule in various legal challenges, as well as the substantial experience the agencies already possess implementing the preexisting regulations that the agencies are implementing today, the agencies propose to conclude that administrative goals of regulatory certainty would be best served by repealing the 2015 Rule.

The agencies also propose to conclude that the 2015 Rule exceeded the agencies' authority under the CWA by adopting such an interpretation of Justice Kennedy's ''significant nexus'' standard articulated in *Rapanos* v. *United States* and *Carabell* v. *United States,* 547 U.S. 715 (2006) (''*Rapanos*'') as to be inconsistent with important aspects of that opinion and to cover waters outside the scope of the Act, even though that concurring opinion was identified as the basis for the significant nexus standard articulated in the 2015 Rule. The agencies also propose to conclude that, contrary to conclusions articulated in support of the rule, the 2015 Rule appears to have expanded the meaning of tributaries and adjacent wetlands to include waters well beyond those regulated by the agencies under the preexisting regulations, as applied by the agencies following decisions of the Supreme Court in *Rapanos* and *Solid Waste Agency of Northern Cook County* v. *U.S. Army Corps of Engineers,* 531 U.S. 159 (2001) (''*SWANCC*''). The agencies believe that the 2015 Rule may have altered the balance of authorities between the federal and State governments, contrary to the agencies' statements in promulgating the 2015 Rule and in contravention of CWA section 101(b), 33 U.S.C. 1251(b).

I. Background

The agencies refer the public to the Executive Summary for the NPRM, 82 FR 34899 (July 27, 2017), and incorporate it by reference herein.

A. The 2015 Rule

On June 29, 2015, the agencies issued a final rule (80 FR 37054) amending various portions of the CFR that set forth definitions of ''waters of the United States,'' a term contained in the CWA section 502(7) definition of ''navigable waters,'' 33 U.S.C. 1362(7).

A primary purpose of the 2015 Rule was to ''increase CWA program predictability and consistency by clarifying the scope of 'waters of the United States' protected under the Act.'' 80 FR 37054. The 2015 Rule attempted to clarify the geographic scope of the CWA by placing waters into three categories: (A) Waters that are categorically ''jurisdictional by rule'' in all instances (*i.e.,* without the need for any additional analysis); (B) waters that are subject to case-specific analysis to determine whether they are jurisdictional, and (C) waters that are categorically excluded from jurisdiction. Waters that are ''jurisdictional by rule'' include (1) waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) interstate waters, including interstate wetlands; (3) the territorial seas; (4) impoundments of waters otherwise identified as jurisdictional; (5) tributaries of the first three categories of ''jurisdictional by rule'' waters; and (6) waters adjacent to a water identified in the first five categories of ''jurisdictional by rule'' waters, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters. *See id.* at 37104.

The 2015 Rule added new definitions of key terms such as ''tributaries'' and revised previous definitions of terms such as ''adjacent'' (by adding a new definition of ''neighboring'' that is used in the definition of ''adjacent'') that would determine whether waters are ''jurisdictional by rule.'' *See id.* at 37105. Specifically, a tributary under the 2015 Rule is a water that contributes flow, either directly or through another water, to a water identified in the first three categories of ''jurisdictional by rule'' waters and that is characterized by the presence of the ''physical indicators'' of a bed and banks and an ordinary high water mark. ''These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and therefore an ordinary high water mark, and thus to qualify as a tributary.'' *Id.* The 2015 Rule does not delineate jurisdiction specifically based on categories with established scientific meanings such as ephemeral, intermittent, and perennial waters that are based on the source of the water and nature of the flow. *See id.* at 37076 (''Under the rule, flow in the tributary may be perennial, intermittent, or ephemeral.''). Under the 2015 Rule, tributaries need not be demonstrated to possess any specific volume, frequency, or duration of flow, or to contribute flow to a traditional navigable water in any given year or specific time period. Tributaries under the 2015 Rule can be natural, man-altered, or man-made, and they do not lose their status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. *Id.* at 37105–06.

In the 2015 Rule, the agencies did not expressly amend the longstanding definition of ''adjacent'' (defined as ''bordering, contiguous, or neighboring''), but the agencies added a new definition of ''neighboring'' that impacted the interpretation of ''adjacent.'' The 2015 Rule defined ''neighboring'' to encompass all waters located within 100 feet of the ordinary high water mark of a category (1) through (5) ''jurisdictional by rule'' water; all waters located within the 100-year floodplain of a category (1) through (5) ''jurisdictional by rule'' water and not more than 1,500 feet from the ordinary high water mark of such water;

all waters located within 1,500 feet of the high tide line of a category (1) though (3) ''jurisdictional by rule'' water; and all waters within 1,500 feet of the ordinary high water mark of the Great Lakes. *Id.* at 37105. The entire water is considered neighboring if any portion of it lies within one of these zones. *See id.* This regulatory text did not appear in the proposed rule, and thus the agencies did not receive public comment on these numeric measures.

In addition to the six categories of ''jurisdictional by rule'' waters, the 2015 Rule identifies certain waters that are subject to a case-specific analysis to determine if they have a ''significant nexus'' to a water that is jurisdictional. *Id.* at 37104–05. The first category consists of five specific types of waters in specific regions of the country: Prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands. *Id.* at 37105. The second category consists of all waters located within the 100-year floodplain of any category (1) through (3) ''jurisdictional by rule'' water and all waters located within 4,000 feet of the high tide line or ordinary high water mark of any category (1) through (5) ''jurisdictional by rule'' water. *Id.* These quantitative measures did not appear in the proposed rule, and thus the agencies did not receive public comment on these specific measures.

The 2015 Rule defines ''significant nexus'' to mean a water, including wetlands, that either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a category (1) through (3) ''jurisdictional by rule'' water. 80 FR 37106. ''For an effect to be significant, it must be more than speculative or insubstantial.'' *Id.* The term ''in the region'' means ''the watershed that drains to the nearest'' primary water.[2] *Id.* This definition is different than the test articulated by the agencies in their 2008 *Rapanos* Guidance.[3] That guidance interpreted ''similarly situated'' to include all wetlands (not waters) adjacent to the same tributary, a much less expansive treatment of similarly situated waters than in the 2015 Rule.

Under the 2015 Rule, to determine whether a water, alone or in combination with similarly situated waters across a watershed, has such an effect, one must look at nine functions such as sediment trapping, runoff storage, provision of life cycle dependent aquatic habitat, and other functions. It is sufficient for determining whether a water has a significant nexus if any single function performed by the water, alone or together with similarly situated waters in the watershed, contributes significantly to the chemical, physical, or biological integrity of the nearest category (1) through (3) ''jurisdictional by rule'' water. *Id.* Taken together, the enumeration of the nine functions and the more expansive consideration of ''similarly situated'' in the 2015 Rule could mean that the vast majority of water features in the United States may come within the jurisdictional purview of the federal government.[4] Indeed, the agencies stated in the 2015 Rule that the ''the chemical, physical, and biological integrity of downstream waters is directly related to the aggregate contribution of upstream waters that flow into them, including any tributaries and connected wetlands.'' *Id.* at 37066.

The agencies also retained exclusions from the definition of ''waters of the United States'' for prior converted cropland and waste treatment systems. *Id.* at 37105. In addition, the agencies codified several exclusions that reflected longstanding agency practice, and added others such as ''puddles'' and ''swimming pools'' in response to concerns raised by stakeholders during the public comment period on the proposed 2015 Rule. *Id.* at 37096–98, 37105.

B. Legal Challenges to the 2015 Rule

Following the 2015 Rule's publication, 31 States[5] and 53 non-state parties, including environmental groups, and groups representing farming, recreational, forestry, and other interests, filed complaints and petitions for review in multiple federal district[6] and appellate[7] courts challenging the 2015 Rule. In those cases, the challengers alleged procedural deficiencies in the development and promulgation of the 2015 Rule and substantive deficiencies in the 2015 Rule itself. Some challengers argued that the 2015 Rule was too expansive while others argued that it excluded too many waters from federal jurisdiction.

The day before the 2015 Rule's August 28, 2015 effective date, the U.S. District Court for the District of North Dakota preliminarily enjoined the 2015 Rule in the 13 States that challenged the rule in that court.[8] The district court found those States were ''likely to succeed'' on the merits of their challenge to the 2015 Rule because, among other reasons, ''it appears likely that the EPA has violated its Congressional grant of authority in its promulgation of the Rule.'' In particular, the court noted concern that the 2015 Rule's definition of tributary ''includes vast numbers of waters that are unlikely to have a nexus to navigable waters.'' Further, the court found that ''it appears likely that the EPA failed to comply with [Administrative Procedure Act (APA)] requirements when promulgating the Rule,'' suggesting that certain distance-based measures were not a logical outgrowth of the proposal to the 2015 Rule. *North Dakota* v. *EPA,* 127 F. Supp. 3d 1047, 1051, 1056, 1058 (D.N.D. 2015). No party sought an interlocutory appeal.

The petitions for review filed in the courts of appeals were consolidated in the U.S. Court of Appeals for the Sixth Circuit. In that litigation, state and industry petitioners raised concerns about whether the 2015 Rule violates the Constitution and the CWA and whether its promulgation violated

[2] In this notice, a ''primary'' water is a category (1) through (3) ''jurisdictional by rule'' water.

[3] *See* U.S. EPA and U.S. Army Corps of Engineers. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos* v. *United States & Carabell v. United States* at 1 (Dec. 2, 2008) (''*Rapanos* Guidance''), *available at https://www.epa.gov/sites/production/files/2016-02/documents/cwa_jurisdiction_following_rapanos120208.pdf.* The agencies acknowledge that the *Rapanos* Guidance did not impose legally binding requirements, *see id.* at 4 n.17, but believe that this guidance is relevant to the discussion in this notice.

[4] ''[T]he vast majority of the nation's water features are located within 4,000 feet of a covered tributary, traditional navigable water, interstate water, or territorial sea.'' U.S. EPA and Department of the Army. Economic Analysis of the EPA-Army Clean Water Rule at 11 (May 20, 2015) (''2015 Rule Economic Analysis'') (Docket ID: EPAHQ–OW–2011–0880–20866), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-20866.*

[5] Alabama, Alaska, Arizona, Arkansas, Colorado, Florida, Georgia, Idaho, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico (Environment Department and State Engineer), North Carolina (Department of Environment and Natural Resources), North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, West Virginia, Wisconsin, and Wyoming. Iowa joined the legal challenge later in the process, bringing the total to 32 States.

[6] U.S. District Courts for the Northern and Southern District of Georgia, District of Minnesota, District of North Dakota, Southern District of Ohio, Northern District of Oklahoma, Southern District of Texas, District of Arizona, Northern District of Florida, District of the District of Columbia, Western District of Washington, Northern District of California, and Northern District of West Virginia.

[7] U.S. Court of Appeals for the Second, Fifth, Sixth, Eighth, Ninth, Tenth, Eleventh, and District of Columbia Circuits.

[8] Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, and Wyoming. Iowa's motion to intervene in the case was granted after issuance of the preliminary injunction.

procedural requirements under the APA and other statutes. Environmental petitioners also challenged the 2015 Rule, including exclusions therein. On October 9, 2015, approximately six weeks after the 2015 Rule took effect in the 37 States that were not subject to the preliminary injunction issued by the District of North Dakota, the Sixth Circuit stayed the 2015 Rule nationwide after finding, among other things, that State petitioners had demonstrated ''a substantial possibility of success on the merits of their claims.'' *In re EPA & Dep't of Def. Final Rule,* 803 F.3d 804 (6th Cir. 2015) (''*In re EPA*'').

On January 13, 2017, the U.S. Supreme Court granted *certiorari* on the question of whether the courts of appeals have original jurisdiction to review challenges to the 2015 Rule. *See Nat'l Ass'n of Mfrs.* v. *Dep't of Defense,* 137 S. Ct. 811 (2017). The Sixth Circuit granted petitioners' motion to hold in abeyance the briefing schedule in the litigation challenging the 2015 Rule pending a Supreme Court decision on the question of the court of appeals' jurisdiction. On January 22, 2018, the Supreme Court, in a unanimous opinion, held that the 2015 Rule is subject to direct review in the district courts. *Nat'l Ass'n of Mfrs.* v. *Dep't of Def.,* 138 S. Ct. 617, 624 (2018). Throughout the pendency of the Supreme Court litigation (and for a short time thereafter), the Sixth Circuit's nationwide stay remained in effect. In response to the Supreme Court's decision, on February 28, 2018, the Sixth Circuit lifted the stay and dismissed the corresponding petitions for review. *See In re Dep't of Def. & EPA Final Rule,* 713 Fed. App'x 489 (6th Cir. 2018).

Since the Supreme Court's jurisdictional ruling, district court litigation regarding the 2015 Rule has resumed. At this time, the 2015 Rule continues to be subject to a preliminary injunction issued by the District of North Dakota as to 13 States: Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, Nevada, North Dakota, South Dakota, Wyoming, and New Mexico. The 2015 Rule also is subject to a preliminary injunction issued by the U.S. District Court for the Southern District of Georgia as to 11 more States: Georgia, Alabama, Florida, Indiana, Kansas, Kentucky, North Carolina, South Carolina, Utah, West Virginia, and Wisconsin. *See Georgia* v. *Pruitt,* No. 15–cv–79 (S.D. Ga.). In another action, the U.S. District Court for the Southern District of Texas is considering preliminary injunction motions filed by parties including the States of Texas, Louisiana, and Mississippi. *See Texas* v. *EPA,* No. 3:15–cv–162 (S.D. Tex.); *Am. Farm Bureau Fed'n et al.* v. *EPA,* No. 3:15–cv–165 (S.D. Tex.). At least three additional States are seeking a preliminary injunction in the U.S. District Court for the Southern District of Ohio as well. *See, e.g.,* States' Supplemental Memorandum in Support of Preliminary Injunction, *Ohio* v. *EPA,* No. 2:15–cv–02467 (S.D. Ohio June 20, 2018) (brief filed by the States of Ohio, Michigan, and Tennessee in support of the States' motion for a preliminary injunction against the 2015 Rule).

C. Executive Order 13778, the Notice of Proposed Rulemaking, and the Applicability Date Rule

The agencies are engaged in a two-step process intended to review and repeal or revise, as appropriate and consistent with law, the definition of ''waters of the United States'' as set forth in the 2015 Rule. This process began in response to Executive Order 13778 issued on February 28, 2017, by the President entitled ''Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule.'' Section 1 of the Executive Order states, ''[i]t is in the national interest to ensure the Nation's navigable waters are kept free from pollution, while at the same time promoting economic growth, minimizing regulatory uncertainty, and showing due regard for the roles of the Congress and the States under the Constitution.'' The Order directed the EPA and the Army to review the 2015 Rule for consistency with the policy outlined in Section 1 of the Order and to issue a proposed rule rescinding or revising the 2015 Rule as appropriate and consistent with law (Section 2). The Executive Order also directed the agencies to ''consider interpreting the term 'navigable waters' . . . in a manner consistent with'' Justice Scalia's plurality opinion in *Rapanos* (Section 3).

On March 6, 2017, the agencies published a notice of intent to review the 2015 Rule and provide notice of a forthcoming proposed rulemaking consistent with the Executive Order. 82 FR 12532. Shortly thereafter, the agencies announced that they would implement the Executive Order in a two-step approach. On July 27, 2017, the agencies published a NPRM (82 FR 34899) that proposed to rescind the 2015 Rule and restore the regulatory text that governed prior to the promulgation of the 2015 Rule, which the agencies have been implementing since the judicial stay of the 2015 Rule consistent with Supreme Court decisions and informed by applicable guidance documents and longstanding agency practice. The agencies invited comment on the NPRM over a 62-day period.

Shortly after the Supreme Court decided that the courts of appeals do not have original jurisdiction to review challenges to the 2015 Rule and directed the Sixth Circuit to dismiss the consolidated challenges to the 2015 Rule for lack of jurisdiction, the agencies issued a final rule (83 FR 5200, Feb. 6, 2018), after providing notice and an opportunity for public comment, that added an applicability date to the 2015 Rule. The applicability date was established as February 6, 2020. When adding the applicability date to the 2015 Rule, the agencies clarified that they will continue to implement nationwide the previous regulatory definition of ''waters of the United States,'' consistent with the practice and procedures the agencies implemented before and immediately following the issuance of the 2015 Rule pursuant to the preliminary injunction issued by the District of North Dakota and the nationwide stay issued by the Sixth Circuit. The agencies further explained that the final applicability date rule would ensure regulatory certainty and consistent implementation of the CWA nationwide while the agencies reconsider the 2015 Rule and potentially pursue further rulemaking to develop a new definition of ''waters of the United States.'' The applicability date rule was challenged in a number of district courts. Generally, the challenges raise concerns that the agencies' action was arbitrary and capricious because the agencies did not address substantive comments regarding the 2015 Rule, as well as procedural concerns with respect to the length of the public comment period for the proposed applicability date rule. At this time, these challenges remain pending in the district courts where they were filed.

D. Comments on the Original Notice of Proposed Rulemaking

The agencies accepted comments on the NPRM from July 27, 2017, through September 27, 2017. The agencies received more than 685,000 comments on the NPRM from a broad spectrum of interested parties. The agencies are continuing to review those extensive comments. Some commenters expressed support for the agencies' proposal to repeal the 2015 Rule, stating, among other things, that the 2015 Rule exceeds the agencies' statutory authority. Other commenters opposed the proposal, stating, among other things, that repealing the 2015 Rule will increase

regulatory uncertainty and adversely impact water quality.

Based on the agencies' careful and ongoing review of the comments submitted in response to the NPRM, the agencies believe that it is in the public interest to provide further explanation and allow interested parties additional opportunity to comment on the proposed repeal of the 2015 Rule. Because some commenters interpreted the NPRM as restricting their ability to comment on the legal and policy reasons for or against the repeal of the 2015 Rule while others submitted comments addressing these topics, the agencies wish to make clear that comments on that subject are solicited. Additionally, some commenters appeared to be confused by whether the agencies proposed a temporary or interim, as opposed to a permanent, repeal of the 2015 Rule. While the agencies did refer to the July 2017 proposal as an ''interim action'' (82 FR 34902), that was in the context of explaining that the proposal to repeal the 2015 Rule is the first step of a two-step process, as described above, and that the agencies are planning to take the additional, second step of conducting a separate notice and comment rulemaking to propose a new definition of ''waters of the United States.'' In this notice, the agencies are clarifying that, regardless of the timing or ultimate outcome of that additional rulemaking, the agencies are proposing a permanent repeal of the 2015 Rule at this stage. This was also our intent in the NPRM. Finally, some commenters did not fully understand the precise action the NPRM proposed to take, *e.g.,* repealing, staying, or taking some other action with respect to the 2015 Rule. The agencies are issuing this SNPRM and are inviting all interested persons to comment on whether the agencies should repeal the 2015 Rule and recodify the regulations currently being implemented by the agencies.

E. Comments on This Supplemental Notice of Proposed Rulemaking

As discussed in the next sections, the agencies are proposing to permanently repeal the 2015 Rule. The agencies welcome comment on all issues that are relevant to the consideration of whether to repeal the 2015 Rule. In response to the initial NPRM, many commenters have already provided comment on considerations and issues that weigh in favor of or against repeal, including many of the issues articulated below. The agencies will consider all of those previously submitted comments, in addition to any new comments submitted in response to this SNPRM, in taking a final action on this rulemaking. As such, commenters need not resubmit comments already provided in response to the agencies' July 27, 2017 NPRM (82 FR 34899).

II. Proposal To Repeal the 2015 Rule

A. Legal Authority To Repeal

The agencies' ability to repeal an existing regulation through notice-and-comment rulemaking is well-grounded in the law. The APA defines rulemaking to mean ''agency process for formulating, amending, or repealing a rule.'' 5 U.S.C. 551(5). The CWA complements this authority by providing the Administrator with broad authority to ''prescribe such regulations as are necessary to carry out the functions under this Act.'' 33 U.S.C. 1361(a). This broad authority includes regulations that repeal or revise CWA implementing regulations promulgated by a prior administration.

The Supreme Court has made clear that ''[a]gencies are free to change their existing policies as long as they provide a reasoned explanation for the change,'' and ''[w]hen an agency changes its existing position, it 'need not always provide a more detailed justification than what would suffice for a new policy created on a blank slate.' '' *Encino Motorcars, LLC* v. *Navarro,* 136 S. Ct. 2117, 2125 (2016) (citations omitted). The NPRM discussed how the agencies may revise or repeal the regulatory definition of ''waters of the United States'' so long as the agencies' action is based on a reasoned explanation. *See* 82 FR 34901. The agencies can do so based on changes in circumstance, or changes in statutory interpretation or policy judgments. *See, e.g., FCC* v. *Fox Television Stations, Inc.,* 556 U.S. 502, 514–15 (2009); *Ctr. for Sci. in Pub. Interest* v. *Dep't of Treasury,* 797 F.2d 995, 998–99 & n.1 (D.C. Cir. 1986). The agencies' interpretation of the statutes they administer, such as the CWA, are not ''instantly carved in stone''; quite the contrary, the agencies ''must consider varying interpretations and the wisdom of [their] policy on a continuing basis, . . . for example, in response to . . . a change in administrations.'' *Nat'l Cable & Telecommc'ns Ass'n* v. *Brand X Internet Servs.,* 545 U.S. 967, 981–82 (2005) (''*Brand X*'') (internal quotation marks omitted) (quoting *Chevron U.S.A., Inc.* v. *NRDC,* 467 U.S. 837, 863–64 (1984)) (citing *Motor Vehicle Mfrs. Ass'n* v. *State Farm Mut. Auto. Ins. Co.,* 463 U.S. 29, 59 (1983) (Rehnquist, J., concurring in part and dissenting in part)). The Supreme Court and lower courts have acknowledged an agency's ability to repeal regulations promulgated by a prior administration based on changes in agency policy where ''the agency adequately explains the reasons for a reversal of policy.'' *See Brand X,* 545 U.S. at 981. A revised rulemaking based ''on a reevaluation of which policy would be better in light of the facts'' is ''well within an agency's discretion,'' and ''[a] change in administration brought about by the people casting their votes is a perfectly reasonable basis for an executive agency's reappraisal'' of its regulations and programs. *Nat'l Ass'n of Home Builders* v. *EPA,* 682 F.3d 1032, 1038 & 1043 (D.C. Cir. 2012) (''*NAHB*'').

B. Legal Background

1. The Clean Water Act

Congress amended the Federal Water Pollution Control Act (FWPCA), or Clean Water Act (CWA) as it is commonly called,[9] in 1972 to address longstanding concerns regarding the quality of the nation's waters and the federal government's ability to address those concerns under existing law. Prior to 1972, the ability to control and redress water pollution in the nation's waters largely fell to the Corps under the Rivers and Harbors Act of 1899. Congress had also enacted the Water Pollution Control Act of 1948, Public Law 80–845, 62 Stat. 1155 (June 30, 1948), to address interstate water pollution, and subsequently amended that statute in 1956 (giving the statute is current formal name), 1961, and 1965. The early versions of the CWA promoted the development of pollution abatement programs, required states to develop water quality standards, and authorized the federal government to bring enforcement actions to abate water pollution.

These early statutory efforts, however, proved inadequate to address the decline in the quality of the nation's waters, *see City of Milwaukee* v. *Illinois,* 451 U.S. 304, 310 (1981), so Congress performed a ''total restructuring'' and ''complete rewriting'' of the existing statutory framework in 1972, *id.* at 317 (quoting legislative history of 1972 amendments). That restructuring resulted in the enactment of a comprehensive scheme designed to prevent, reduce, and eliminate pollution in the nation's waters generally, and to regulate the discharge of pollutants into navigable waters specifically. *See, e.g.,*

[9] The FWPCA is commonly referred to as the CWA following the 1977 amendments to the FWPCA. Public Law 95–217, 91 Stat. 1566 (1977). For ease of reference, the agencies will generally refer to the FWPCA in this notice as the CWA or the Act.

S.D. Warren Co. v. *Maine Bd. of Envtl. Prot.,* 547 U.S. 370, 385 (2006) (''[T]he Act does not stop at controlling the 'addition of pollutants,' but deals with 'pollution' generally[.]'').

The objective of the new statutory scheme was ''to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'' 33 U.S.C. 1251(a). In order to meet that objective, Congress declared two national goals: (1) ''that the discharge of pollutants into the navigable waters be eliminated by 1985;'' and (2) ''that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983. . . .'' *Id.* at 1251(a)(1)–(2).

Congress established several key policies that direct the work of the agencies to effectuate those goals. For example, Congress declared as a national policy ''that the discharge of toxic pollutants in toxic amounts be prohibited; . . . that Federal financial assistance be provided to construct publicly owned waste treatment works; . . . that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State; . . . [and] that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution.'' *Id.* at 1251(a)(3)–(7).

Congress envisioned a major role for the states in implementing the CWA, and the CWA also recognizes the importance of preserving the states' independent authority and responsibility in this area. The CWA balances the traditional power of states to regulate land and water resources within their borders with the need for a federal water quality regulation to protect the waters of the United States. For example, the statute reflects ''the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution'' and ''to plan the development and use . . . of land and water resources. . . .'' *Id.* at 1251(b). Congress also declared as a national policy that states manage the major construction grant program and implement the core permitting programs authorized by the statute, among other responsibilities. *Id.* Congress added that ''nothing in this Act shall . . . be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States.'' *Id.* at 1370. Congress also pledged to provide technical support and financial aid to the states ''in connection with the prevention, reduction, and elimination of pollution.'' *Id.* at 1251(b).

To carry out these policies, Congress broadly defined ''pollution'' to mean ''the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water,'' *id.* at 1362(19), to parallel the broad objective of the Act ''to restore and maintain the chemical, physical, and biological integrity of the Nation's waters,'' *id.* at 1251(a). Congress then crafted a non-regulatory statutory framework to provide technical and financial assistance to the states to prevent, reduce, and eliminate pollution in the broader set of the nation's waters. For example, section 105 of the Act, ''Grants for research and development,'' authorized EPA ''to make grants to any State or States or interstate agency to demonstrate, in *river basins or portions thereof,* advanced treatment and environmental enhancement techniques to control pollution from all sources, . . . including nonpoint sources, . . . [and] for research and demonstration projects for prevention of pollution of *any waters* by industry *including, but not limited to, the prevention, reduction, and elimination of the discharge of pollutants.*'' 33 U.S.C. 1255(b)–(c) (emphases added); *see also id.* at 1256(a) (authorizing EPA to issue ''grants to States and to interstate agencies to assist them in administering programs for the prevention, reduction, and elimination of pollution''). Section 108, ''Pollution control in the Great Lakes,'' authorized EPA to enter into agreements with any state to develop plans for the ''elimination or control of pollution, *within all or any part of the watersheds* of the Great Lakes.'' *Id.* at 1258(a) (emphasis added); *see also id.* at 1268(a)(3)(C) (defining the ''Great Lakes System'' as ''all the streams, rivers, lakes, and other bodies of water within the drainage basin of the Great Lakes''). Similar broad pollution control programs were created for other major watersheds, including, for example, the Chesapeake Bay, *see id.* at 1267(a)(3), Long Island Sound, *see id.* at 1269(c)(2)(D), and Lake Champlain, *see id.* at 1270(g)(2).

For the narrower set of the nation's waters identified as ''navigable waters'' or ''the waters of the United States,'' *id.* at 1362(7), Congress created a federal regulatory permitting program designed to address the discharge of pollutants into those waters. Section 301 contains the key regulatory mechanism: ''Except as in compliance with this section and sections 302, 306, 307, 318, 402, and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.'' *Id.* at 1311(a). A ''discharge of a pollutant'' is defined to include ''any addition of any pollutant to *navigable waters* from any point source,'' such as a pipe, ditch or other ''discernible, confined and discrete conveyance.'' *Id.* at 1362(12), (14) (emphasis added). The term ''pollutant,'' as compared to the broader term ''pollution,'' *id.* at 1362(19), means ''dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.'' *Id.* at 1362(6). Thus, it is unlawful to discharge pollutants into navigable waters (defined in the Act as ''the waters of the United States'') from a point source unless the discharge complies with certain enumerated sections of the CWA, including obtaining authorizations to discharge pollutants pursuant to the section 402 National Pollutant Discharge Elimination System (NPDES) permit program and the section 404 dredged or fill material permit program. *See id.* at 1342 and 1344.

Under this statutory scheme, the states are responsible for developing water quality standards for waters of the United States within their borders and reporting on the condition of those waters to EPA every two years. *Id.* at 1313, 1315. States are also responsible for developing total maximum daily loads (TMDLs) for waters that are not meeting established water quality standards and must submit those TMDLs to EPA for approval. *Id.* at 1313(d). States also have authority to issue water quality certifications or waive certification for every federal permit or license issued within their borders that may result in a discharge to navigable waters. *Id.* at 1341. A change to the interpretation of ''waters of the United States'' may change the scope of waters subject to CWA jurisdiction and thus may change the scope of waters for which states may assume these responsibilities under the Act.

These same regulatory authorities can be assumed by Indian tribes under section 518 of the CWA, which authorizes EPA to treat eligible Indian tribes in a manner similar to states for a variety of purposes, including administering each of the principal

CWA regulatory programs. *Id.* at 1377(e). In addition, states and tribes retain sovereign authority to protect and manage the use of those waters that are not navigable waters under the CWA. *See, e.g., id.* at 1251(b), 1251(g), 1370, 1377(a). Forty-seven states administer the CWA section 402 permit program for those waters of the United States within their boundaries, and two administer the section 404 permit program. At present, no tribes administer the section 402 or 404 programs.

The agencies must develop regulatory programs designed to ensure that the full statute is implemented as Congress intended. *See, e.g., Hibbs* v. *Winn,* 542 U.S. 88, 101 (2004) (''A statute should be construed so that effect is given to all its provisions, so that no part will be inoperative or superfluous, void or insignificant.''). This includes pursuing the overall ''objective'' of the CWA to ''restore and maintain the chemical, physical, and biological integrity of the Nation's waters,'' 33 U.S.C. 1251(a), while implementing the specific ''policy'' directives from Congress to, among other things, ''recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution'' and ''to plan the development and use . . . of land and water resources,'' *id.* at 1251(b). *See Webster's II, New Riverside University Dictionary* (1994) (defining ''policy'' as a ''plan or course of action, as of a government[,] designed to influence and determine decisions and actions;'' an ''objective'' is ''something worked toward or aspired to: Goal''). To maintain that balance, the agencies must determine what Congress had in mind when it defined ''navigable waters'' in 1972 as simply ''the waters of the United States''—and must do so in light of, *inter alia,* the policy directive to preserve and protect the states' rights and responsibilities.

Congress' authority to regulate navigable waters derives from its power to regulate the ''channels of interstate commerce'' under the Commerce Clause. *Gibbons* v. *Ogden,* 22 U.S. (9 Wheat.) 1 (1824); *see also United States* v. *Lopez,* 514 U.S. 549, 558–59 (1995) (describing the ''channels of interstate commerce'' as one of three areas of congressional authority under the Commerce Clause). The Supreme Court explained in *SWANCC* that the term ''navigable'' indicates ''what Congress had in mind as its authority for enacting the Clean Water Act: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made.'' 531 U.S. 159, 172 (2001). The Court further explained that nothing in the legislative history of the Act provides any indication that ''Congress intended to exert anything more than its commerce power over navigation.'' *Id.* at 168 n.3.

The Supreme Court has cautioned that one must look to the underlying purpose of the statute to determine the scope of federal authority being exercised over navigable waters under the Commerce Clause. *See PPL Montana, LLC* v. *Montana,* 132 S. Ct. 1215, 1228 (2012). The Supreme Court did that in *United States* v. *Riverside Bayview Homes,* for example, and determined that Congress had intended ''to exercise its powers under the Commerce Clause to regulate at least some waters that would not be deemed 'navigable' under the classical understanding of that term.'' 474 U.S. 121, 133 (1985) (''[T]he evident breadth of congressional concern for protection of water quality and aquatic ecosystems suggests that it is reasonable for the Corps to interpret the term 'waters' to encompass wetlands adjacent to waters as more conventionally defined.''); *see also SWANCC,* 531 U.S. at 167 (noting that the *Riverside Bayview* ''holding was based in large measure upon Congress' unequivocal acquiescence to, and approval of, the Corps' regulations interpreting the CWA to cover wetlands adjacent to navigable waters'').

The classical understanding of the term navigable was first articulated by the Supreme Court in *The Daniel Ball:*

> Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways of commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. And they constitute navigable waters of the United States within the meaning of the Acts of Congress, in contradistinction from the navigable waters of the States, when they form in their ordinary condition by themselves, or by uniting with other waters, a continued highway over which commerce is or may be carried on with other States or foreign countries in the customary modes in which such commerce is conducted by water.

77 U.S. (10 Wall.) 557, 563 (1871). Over the years, this traditional test has been expanded to include waters that had been used in the past for interstate commerce, *see Economy Light & Power Co.* v. *United States,* 256 U.S. 113, 123 (1921), and waters that are susceptible for use with reasonable improvement, *see United States* v. *Appalachian Elec. Power Co.,* 311 U.S. 377, 407–10 (1940).

By the time the 1972 CWA amendments were enacted, the Supreme Court had also made clear that Congress' authority over the channels of interstate commerce was not limited to regulation of the channels themselves, but could extend to activities necessary to protect the channels. *See Oklahoma ex rel. Phillips* v. *Guy F. Atkinson Co.,* 313 U.S. 508, 523 (1941) (''Congress may exercise its control over the non-navigable stretches of a river in order to preserve or promote commerce on the navigable portions.''). The Supreme Court had also clarified that Congress could regulate waterways that formed a part of a channel of interstate commerce, even if they are not themselves navigable or do not cross state boundaries. *See Utah* v. *United States,* 403 U.S. 9, 11 (1971).

These developments were discussed during the legislative process leading up to the passage of the 1972 CWA amendments, and certain members referred to the scope of the amendments as encompassing waterways that serve as ''links in the chain'' of interstate commerce as it flows through various channels of transportation, such as railroads and highways. *See, e.g.,* 118 Cong. Rec. 33756–57 (1972) (statement of Rep. Dingell); 118 Cong. Rec. 33699 (Oct. 4, 1972) (statement of Sen. Muskie).[10] Other references suggest that congressional committees at least contemplated applying the ''control requirements'' of the Act ''to the navigable waters, portions thereof, and their tributaries.'' S. Rep. No. 92–414, 92nd Cong., 1st Sess. at 77 (1971). And in 1977, when Congress authorized State assumption over the section 404 dredged or fill material permitting program, Congress limited the scope of assumable waters by requiring the Corps to retain permitting authority over Rivers and Harbors Act waters (as identified by the *Daniel Ball* test) plus wetlands adjacent to those waters, minus historic use only waters. *See* 33 U.S.C. 1344(g)(1).[11] This suggests that Congress had in mind a broader scope of waters subject to CWA jurisdiction than waters traditionally understood as navigable. *See SWANCC,* 531 U.S. at 171; *Riverside Bayview,* 474 U.S. at 138 n.11.

Thus, Congress intended to assert federal authority over more than just waters traditionally understood as navigable, and Congress rooted that

[10] The agencies recognize that individual member statements are not a substitute for full congressional intent, but they do help provide context for issues that were discussed during the legislative debates. For a detailed discussion of the legislative history of the 1972 CWA amendments, see Albrecht & Nickelsburg, *Could SWANCC Be Right? A New Look at the Legislative History of the Clean Water Act,* 32 ELR 11042 (Sept. 2002).

[11] For a detailed discussion of the legislative history supporting the enactment of section 404(g), see *Final Report of the Assumable Waters Subcommittee* (May 2017), App. F.

authority in ''its commerce power over navigation.'' *SWANCC,* 531 U.S. at 168 n.3. However, there must necessarily be a limit to that authority and to what water is subject to federal jurisdiction. How the agencies should exercise that authority has been the subject of dispute for decades, but the Supreme Court on three occasions has analyzed the issue and provided some instructional guidance.

2. U.S. Supreme Court Precedent

a. Adjacent Wetlands

In *Riverside Bayview,* the Supreme Court considered the Corps' assertion of jurisdiction over ''low-lying, marshy land'' immediately abutting a water traditionally understood as navigable on the grounds that it was an ''adjacent wetland'' within the meaning of the Corps' then-existing regulations. 474 U.S. at 124. The Court addressed the question whether non-navigable wetlands may be regulated as ''waters of the United States'' on the basis that they are ''adjacent to'' navigable-in-fact waters and ''inseparably bound up with'' them because of their ''significant effects on water quality and the aquatic ecosystem.'' *See id.* at 131–35 & n.9.

In analyzing the meaning of adjacency, the Court captured the difficulty in determining where the limits of federal jurisdiction end, noting that the line is somewhere between open water and dry land:

> *In determining the limits of its power* to regulate discharges under the Act, the Corps must necessarily choose some point at which water ends and land begins. Our common experience tells us that this is often no easy task: The transition from water to solid ground is not necessarily or even typically an abrupt one. Rather, between open waters and dry land may lie shallows, marshes, mudflats, swamps, bogs—in short, a huge array of areas that are not wholly aquatic but nevertheless fall far short of being dry land. Where on this continuum to find the limit of ''waters'' is far from obvious.

Id. at 132 (emphasis added). Within this statement, the Supreme Court identifies a basic principle for adjacent wetlands: The limits of jurisdiction lie within the ''continuum'' or ''transition'' ''between open waters and dry land.'' Observing that Congress intended the CWA ''to regulate at least some waters that would not be deemed 'navigable,' '' the Court therefore held that it is ''a permissible interpretation of the Act'' to conclude that ''a wetland that actually abuts on a navigable waterway'' falls within the ''definition of 'waters of the United States.' '' *Id.* at 133, 135. Thus, a wetland that abuts a navigable water traditionally understood as navigable is subject to CWA permitting because it is ''inseparably bound up with the 'waters' of the United States.'' *Id.* at 134. ''This holds true even for wetlands that are not the result of flooding or permeation by water having its source in adjacent bodies of open water.'' *Id.* The Court also noted that the agencies can establish categories of jurisdiction for adjacent wetlands. *See id.* at 135 n.9.

The Supreme Court in *Riverside Bayview* declined to decide whether wetlands that are not adjacent to navigable waters could also be regulated by the agencies. *See id.* at 124 n.2 & 131 n.8. In *SWANCC,* however, the Supreme Court analyzed a similar question in the context of an abandoned sand and gravel pit located some distance from a traditional navigable water, with excavation trenches that ponded—some only seasonally—and served as habitat for migratory birds. 531 U.S. at 162–65. The Supreme Court rejected the government's stated rationale for asserting jurisdiction over these ''nonnavigable, isolated, intrastate waters.'' *Id.* at 171–72. In doing so, the Supreme Court noted that *Riverside Bayview* upheld ''jurisdiction over wetlands that actually abutted on a navigable waterway'' because the wetlands were ''inseparably bound up with the 'waters' of the United States.'' *Id.* at 167.[12] As summarized by the *SWANCC* majority:

> It was the significant nexus between the wetlands and ''navigable waters'' that informed our reading of the CWA in *Riverside Bayview Homes.* Indeed, we did not ''express any opinion'' on the ''question of authority of the Corps to regulate discharges of fill material into wetlands that are not adjacent to bodies of open water. . . . In order to rule for [the Corps] here, we would have to hold that the jurisdiction of the Corps extends to ponds that are not adjacent to open water. But we conclude that the text of the statute will not allow this.

Id. at 167–68 (internal citations omitted). That is because the text of section 404(a)—the permitting provision at issue in the case—included the word ''navigable'' as its operative phrase, and signaled a clear direction to the Court that ''Congress had in mind . . . its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made.'' *Id.* at 172.

The Court dismissed the argument that the use of the abandoned ponds by migratory birds fell within the power of Congress to regulate activities that in the aggregate have a substantial effect on interstate commerce, or that the targeted use of the ponds as a municipal landfill was commercial in nature. *Id.* at 173. Such arguments, the Court noted, raised ''significant constitutional questions.'' *Id.* ''Where an administrative interpretation of a statute invokes the outer limits of Congress' power, we expect a clear indication that Congress intended that result.'' *Id.* at 172–73 (''Congress does not casually authorize administrative agencies to interpret a statute to push the limit of congressional authority.''). This is particularly true ''where the administrative interpretation alters the federal-state framework by permitting federal encroachment upon a traditional state power.'' *Id.* at 173; *see also Atascadero State Hospital* v. *Scanlon,* 473 U.S. 234, 242–43 (1985) (finding that where Congress intends to alter the ''usual constitutional balance between the States and the Federal Government,'' it must make its intention to do so ''unmistakably clear in the language of the statute''); *Gregory* v. *Ashcroft,* 501 U.S. 452, 460–61 (1991) (''[The] plain statement rule . . . acknowledg[es] that the States retain substantial sovereign powers under our constitutional scheme, powers with which Congress does not readily interfere.''). ''Rather than expressing a desire to readjust the federal-state balance in this manner, Congress chose [in the CWA] to 'recognize, preserve, and protect the primary responsibilities and rights of States . . . to plan the development and use . . . of land and water resources. . . .'' *SWANCC,* 531 U.S. at 174 (quoting 33 U.S.C. 1251(b)). The Court therefore found no clear statement from Congress that it had intended to permit federal encroachment on traditional state power, and construed the CWA to avoid the significant constitutional questions related to the scope of federal authority authorized therein. *Id.*

The Supreme Court considered the concept of adjacency again several years later in consolidated cases arising out of the Sixth Circuit. *See Rapanos* v. *United States,* 547 U.S. 715 (2006). In one case, the Corps had determined that wetlands on three separate sites were subject to CWA jurisdiction because they were adjacent to ditches or man-made drains that eventually connected to traditional navigable waters several miles away through other ditches, drains, creeks, and/or rivers. *Id.* at 719–20, 729. In another case, the Corps had asserted

[12] For additional context, at oral argument during *Riverside Bayview,* the government attorney characterized the wetland at issue as ''in fact an adjacent wetland, adjacent—by adjacent, I mean it is immediately next to, abuts, adjoins, borders, whatever other adjective you might want to use, navigable waters of the United States.'' Transcript of Oral Argument at 16, *United States* v. *Riverside Bayview Homes, Inc.,* 474 U.S. 121 (1985) (No. 84–701).

jurisdiction over a wetland separated from a man-made drainage ditch by a four-foot-wide man-made berm. *Id.* at 730. The ditch emptied into another ditch, which then connected to a creek, and eventually connected to Lake St. Clair, a traditional navigable water, approximately a mile from the parcel at issue. The berm was largely or entirely impermeable, but may have permitted occasional overflow from the wetland to the ditch. *Id.* The Court, in a fractured opinion, vacated and remanded the Sixth Circuit's decision upholding the Corps' asserted jurisdiction over the four wetlands at issue, with Justice Scalia writing for the plurality and Justice Kennedy concurring in the judgment. *Id.* at 757 (plurality), 787 (Kennedy, J.).

The plurality determined that CWA jurisdiction only extended to adjacent ''wetlands with a continuous surface connection to bodies that are 'waters of the United States' in their own right, so that there is no clear demarcation between 'waters' and wetlands.'' *Id.* at 742. The plurality then concluded that ''establishing that wetlands . . . are covered by the Act requires two findings: first, that the adjacent channel contains a 'wate[r] of the United States,' (*i.e.,* a relatively permanent body of water connected to traditional interstate navigable waters); and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the 'water' ends and the 'wetland' begins.'' *Id.* (alteration in original).

In order to reach the adjacency conclusion of this two-part test, the plurality interpreted the *Riverside Bayview* decision, and subsequent *SWANCC* decision characterizing *Riverside Bayview,* as authorizing jurisdiction over wetlands that physically abutted traditional navigable waters. *Id.* at 740–42. The plurality focused on the ''inherent ambiguity'' described in *Riverside Bayview* in determining where on the continuum between open waters and dry land the scope of federal jurisdiction should end. *Id.* at 740. It was ''the inherent difficulties of defining precise bounds to regulable waters,'' *id.* at 741 n.10, according to the plurality, that prompted the Court in *Riverside Bayview* to defer to the Corps' inclusion of adjacent wetlands as ''waters'' subject to CWA jurisdiction based on ecological considerations. *Id.* at 740–41 (''When we characterized the holding of *Riverside Bayview* in *SWANCC,* we referred to the close connection between waters and the wetlands they gradually blend into: 'It was the significant nexus between the wetlands and 'navigable waters' that informed our reading of the CWA in *Riverside Bayview Homes.*' ''). The plurality also noted that ''*SWANCC* rejected the notion that the ecological considerations upon which the Corps relied in *Riverside Bayview* . . . provided an *independent* basis for including entities like 'wetlands' (or 'ephemeral streams') within the phrase 'the waters of the United States.' *SWANCC* found such ecological considerations irrelevant to the question whether physically isolated waters come within the Corps' jurisdiction.'' *Id.* at 741–42 (emphasis in original).

Justice Kennedy disagreed with the plurality's determination that adjacency requires a ''continuous surface connection'' to covered waters. *Id.* at 772. In reading the phrase ''continuous surface connection'' to mean a continuous ''surface-water connection,'' *id.* at 776, and interpreting the plurality's standard to include a ''surface-water-connection requirement,'' *id.* at 774, Justice Kennedy stated that ''when a surface-water connection is lacking, the plurality forecloses jurisdiction over wetlands that abut navigable-in-fact waters—even though such navigable waters were traditionally subject to federal authority,'' *id.* at 776, even after the *Riverside Bayview* Court ''deemed it irrelevant whether 'the moisture creating the wetlands . . . find[s] its source in the adjacent bodies of water,'' *id.* at 772 (internal citations omitted). This is one reason why Justice Kennedy stated that ''*Riverside Bayview*'s observations about the difficulty of defining the water's edge cannot be taken to establish that when a clear boundary is evident, wetlands beyond that boundary fall outside the Corps' jurisdiction.'' *Id.* at 773.

The plurality did not directly address the precise distinction raised by Justice Kennedy, but did note in response that the ''*Riverside Bayview* opinion required'' a ''continuous *physical* connection,'' *id.* at 751 n.13 (emphasis added), and focused on evaluating adjacency between a ''water'' and a wetland ''in the sense of possessing a continuous surface connection that creates the boundary-drawing problem we addressed in *Riverside Bayview*.'' *Id.* at 757. The plurality also noted that its standard includes a ''physical-connection requirement'' between wetlands and covered waters. *Id.* at 751 n.13. In other words, the plurality appeared to be more focused on the abutting nature rather than the source of water creating the wetlands at issue in *Riverside Bayview* to describe the legal constructs applicable to adjacent wetlands, *see id.* at 747; *see also Webster's II, New Riverside University Dictionary* (1994) (defining ''abut'' to mean ''to border on'' or ''to touch at one end or side of something''), and indeed agreed with Justice Kennedy and the *Riverside Bayview* Court that ''[a]s long as the wetland is 'adjacent' to covered waters . . . its creation *vel non* by inundation is irrelevant.'' *Id.* at 751 n.13.[13]

Because physically disconnected wetlands do not raise the same boundary-drawing concerns presented by actually abutting wetlands, the plurality determined that the rationale in *Riverside Bayview* does not apply to such features. The plurality stated that ''[w]etlands with only an intermittent, physically remote hydrologic connection to 'waters of the United States' do not implicate the boundary-drawing problem of *Riverside Bayview,* and thus lack the necessary connection to covered waters that we described as a 'significant nexus' in *SWANCC*[.]'' *Id.* at 742. The plurality supported this position by referring to the Court's treatment of isolated waters in *SWANCC* as non-jurisdictional. *Id.* at 726, 741–42 (''[W]e held that 'nonnavigable, isolated, intrastate waters'—which, unlike the wetlands at issue in *Riverside Bayview,* did not 'actually abu[t] on a navigable waterway,'—were not included as 'waters of the United States.' ''). The plurality found ''no support for the inclusion of physically unconnected wetlands as covered 'waters' '' based on *Riverside Bayview*'s treatment of the Corps' definition of adjacent. *Id.* at 746–47; *see also id.* at 746 (''[T]he Corps' definition of 'adjacent' . . . has been extended beyond reason.'').

Concurring in the judgment, Justice Kennedy focused on the ''significant nexus'' between the adjacent wetlands and traditional navigable waters as the basis for determining whether a wetland is a water subject to CWA jurisdiction: ''It was the significant nexus between wetlands and navigable waters . . . that informed our reading of the [Act] in *Riverside Bayview Homes*. Because such a nexus was lacking with respect to isolated ponds, [in *SWANCC*] the Court held that the plain text of the statute did not permit the Corps' action.'' *Id.* at 767 (internal quotations and citations omitted). Justice Kennedy noted that the wetlands at issue in *Riverside Bayview* were ''adjacent to [a] navigable-in-fact waterway[ ],'' while the ''ponds and

[13] The agencies' *Rapanos* Guidance recognizes the plurality's ''continuous surface connection'' does not refer to a continuous surface *water* connection. *See, e.g., Rapanos* Guidance at 7 n.28 (''A continuous surface connection does not require surface water to be continuously present between the wetland and the tributary.'').

mudflats'' considered in *SWANCC* ''were isolated in the sense of being unconnected to other waters covered by the Act.'' *Id.* at 765–66. ''Taken together, these cases establish that in some instances, as exemplified by *Riverside Bayview,* the connection between a nonnavigable water or wetland and a navigable water may be so close, or potentially so close, that the Corps may deem the water or wetland a 'navigable water' under the Act. In other instances, as exemplified by *SWANCC,* there may be little or no connection. Absent a significant nexus, jurisdiction under the Act is lacking.'' *Id.* at 767.

According to Justice Kennedy, whereas the isolated ponds and mudflats in *SWANCC* lack the ''significant nexus'' to navigable waters, it is the ''conclusive standard for jurisdiction'' based on ''a reasonable inference of ecological interconnection'' between adjacent wetlands and navigable-in-fact waters that allows for their categorical inclusion as waters of the United States. *Id.* at 780 (''[T]he assertion of jurisdiction for those wetlands [adjacent to navigable-in-fact waters] is sustainable under the act by showing adjacency alone.''). Justice Kennedy surmised that it may be that the same rationale ''without any inquiry beyond adjacency . . . could apply equally to wetlands adjacent to certain major tributaries,'' noting that the Corps could establish by regulation categories of tributaries based on volume of flow, proximity to navigable waters, or other factors that ''are significant enough that wetlands adjacent to them are likely, in the majority of cases, to perform important functions for an aquatic system incorporating navigable waters.'' *Id.* at 780–81. However, ''[t]he Corps' existing standard for tributaries'' provided Justice Kennedy ''no such assurance'' to infer the categorical existence of a requisite nexus between waters traditionally understood as navigable and wetlands adjacent to nonnavigable tributaries. *Id.* at 781. That is because:

> the breadth of [the tributary] standard—which seems to leave wide room for regulation of drains, ditches, and streams remote from any navigable-in-fact water and carrying only minor water volumes towards it—precludes its adoption as the determinative measure of whether adjacent wetlands are likely to play an important role in the integrity of an aquatic system comprising navigable waters as traditionally understood. Indeed, in many cases wetlands adjacent to tributaries covered by this standard might appear little more related to navigable-in-fact waters than were the isolated ponds held to fall beyond the Act's scope in *SWANCC.*

Id. at 781–82.

Justice Kennedy stated that, absent development of a more specific regulation, the Corps ''must establish a significant nexus on a case-by-case basis when it seeks to regulate wetlands based on adjacency to nonnavigable tributaries. Given the potential overbreadth of the Corps' regulations, this showing is necessary to avoid unreasonable applications of the statute.'' *Id.* at 782. Justice Kennedy explained that ''wetlands possess the requisite nexus, and thus come within the statutory phrase 'navigable waters,' if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.' '' *Id.* at 780. ''Where an adequate nexus is established for a particular wetland, it may be permissible, as a matter of administrative convenience or necessity, to presume covered status for other comparable wetlands in the region.'' *Id.* at 782.

In describing this significant nexus test, Justice Kennedy relied, in part, on the overall objective of the CWA to ''restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'' *Id.* at 779 (quoting 33 U.S.C. 1251(a)). Justice Kennedy also agreed with the plurality that ''environmental concerns provide no reason to disregard limits in the statutory text.'' *Id.* at 778. With respect to wetlands adjacent to nonnavigable tributaries, Justice Kennedy therefore determined that ''mere adjacency . . . is insufficient. A more specific inquiry, based on the significant-nexus standard, is . . . necessary.'' *Id.* at 786. Not requiring adjacent wetlands to possess a significant nexus with navigable waters, Justice Kennedy noted, would allow a finding of jurisdiction ''whenever wetlands lie alongside a ditch or drain, however remote and insubstantial, that eventually may flow into traditional navigable waters. The deference owed the Corps' interpretation of the statute does not extend so far.'' *Id.* at 778–79.

Based on the agencies' review of this Supreme Court precedent, although the plurality and Justice Kennedy established different standards to determine the jurisdictional status of wetlands adjacent to nonnavigable tributaries, they both appear to agree in principle that the determination must be made using a two-part test that considers: (1) The proximity of the wetland to the tributary; and (2) the status of the tributary with respect to downstream traditional navigable waters. The plurality and Justice Kennedy also agree that the proximity between the wetland and the tributary must be close. The plurality refers to that proximity as a ''continuous surface connection'' or ''continuous physical connection,'' as demonstrated in *Riverside Bayview. Id.* at 742, 751 n.13. Justice Kennedy recognized that ''the connection between a nonnavigable water or wetland and a navigable water may be so close, or potentially so close, that the Corps may deem the water or wetland a 'navigable water' under the Act.'' *Id.* at 767. The second part of the two-part tests established by the plurality and Justice Kennedy is addressed in the next section.

b. Tributaries

The definition of tributaries was not addressed in either *Riverside Bayview* or *SWANCC.* And while the focus of *Rapanos* was on whether the Corps could regulate wetlands adjacent to nonnavigable waters, the plurality and concurring opinions provide some guidance on the regulatory status of tributaries to navigable-in-fact waters.

The plurality and Justice Kennedy both recognized that the jurisdictional scope of the CWA is not restricted to traditional navigable waters. *See id.* at 731 (plurality) (''[T]he Act's term 'navigable waters' includes something more than traditional navigable waters.''); *id.* at 767 (Justice Kennedy) (''Congress intended to regulate at least some waters that are not navigable in the traditional sense.''). Both also agree that federal authority under the Act is not without limit. *See id.* at 731–32 (plurality) (''[T]he waters of the United States . . . cannot bear the expansive meaning that the Corps would give it.''); *id.* at 778–79 (Justice Kennedy) (''The deference owed to the Corps' interpretation of the statute does not extend'' to ''wetlands'' which ''lie alongside a ditch or drain, however remote or insubstantial, that eventually may flow into traditional navigable waters.'').

With respect to tributaries specifically, both the plurality and Justice Kennedy focus in large part on a tributary's contribution of flow to, and connection with, traditional navigable waters. The plurality would include as waters of the United States ''only relatively permanent, standing or flowing bodies of water'' and would define such ''waters'' as including streams, rivers, oceans, lakes and other bodies of waters that form geographical features, noting that all such ''terms connote continuously present, fixed bodies of water . . . .'' *Id.* at 732–33, 739. On the other hand, the plurality would likely exclude ephemeral streams

and related features. *Id.* at 733–34, 739, 741. Justice Kennedy would likely exclude some streams considered jurisdictional under the plurality's test. *Id.* at 769 (noting that under the plurality's test, ''[t]he merest trickle, if continuous, would count as a 'water' subject to federal regulation, while torrents thundering at irregular intervals through otherwise dry channels would not'').

In addition, both the plurality and Justice Kennedy would likely include some intermittent streams as waters of the United States. *See id.* at 732–33 & n.5 (plurality); *id.* at 769–70 (Justice Kennedy). The plurality noted that its reference to ''relatively permanent'' waters did ''not necessarily exclude streams, rivers, or lakes that might dry up in extraordinary circumstances, such as drought,'' or ''*seasonal* rivers, which contain continuous flow during some months of the year but no flow during dry months . . . .'' *Id.* at 732 n.5 (emphasis in original). However, neither the plurality nor Justice Kennedy defined with precision where to draw the line. Nevertheless, the plurality provided that ''navigable waters'' must have ''at bare minimum, the ordinary presence of water,'' *id.* at 734, and Justice Kennedy noted that the Corps can identify by regulation categories of tributaries based on volume of flow, proximity to navigable waters, or other factors that ''are significant enough that wetlands adjacent to them are likely, in the majority of cases, to perform important functions for an aquatic system incorporating navigable waters.'' *Id.* at 780–81. And both the plurality and Justice Kennedy agreed that the Corps' assertion of jurisdiction over the wetlands adjacent to the ''drains, ditches, and streams remote from any navigable-in-fact water,'' *id.* at 781 (Kennedy), at issue in *Rapanos* raised significant jurisdictional questions. *Id.* at 737–38 (plurality); *id.* at 781–82 (Kennedy).

3. Principles and Considerations

From this legal foundation, a few important principles emerge from which the agencies can evaluate their authorities. First, the power conferred on the agencies to regulate the waters of the United States is grounded in Congress' commerce power over navigation. The agencies can choose to regulate beyond waters more traditionally understood as navigable given the broad purposes of the CWA, including some tributaries to those traditional navigable waters, but must provide a reasonable basis grounded in the language and structure of the Act for determining the extent of jurisdiction. The agencies also can choose to regulate wetlands adjacent to the traditional navigable waters and some tributaries, if the wetlands are in close proximity to the tributaries, such as in the transitional zone between open waters and dry land. In the agencies' view, it would not be consistent with Justice Kennedy's *Rapanos* opinion or the *Rapanos* plurality opinion to regulate wetlands adjacent to all tributaries, no matter how small or remote from navigable water. The Court's opinion in *SWANCC* also calls into serious question the agencies' authority to regulate nonnavigable, isolated, intrastate waters that lack a sufficient connection to traditional navigable waters, and suggests that the agencies should avoid regulatory interpretations of the CWA that raise constitutional questions regarding the scope of their statutory authority. The agencies can, however, regulate certain waters by category, which could improve regulatory predictability and certainty and ease administrative burden while still effectuating the purposes of the Act.

In developing a clear and predictable regulatory framework, the agencies also must respect the primary responsibilities and rights of States and Tribes to regulate their land and water resources. *See* 33 U.S.C. 1251(b), 1370. The oft-quoted objective of the CWA to ''restore and maintain the chemical, physical, and biological integrity of the Nation's waters,'' *id.* at 1251(a), must be implemented in a manner consistent with Congress' policy directives to the agencies. The Supreme Court long ago recognized the distinction between federal waters traditionally understood as navigable and waters ''subject to the control of the States.'' *The Daniel Ball,* 77 U.S. (10 Wall.) 557, 564–65 (1871). Over a century later, the Supreme Court in *SWANCC* reaffirmed the State's ''traditional and primary power over land and water use.'' 531 U.S. at 174; *accord Rapanos,* 547 U.S. at 738 (Scalia, J., plurality opinion). Ensuring that States and Tribes retain authority over their land and water resources pursuant to CWA section 101(b) and section 510 helps carry out the overall objective of the CWA, and ensures that the agencies are giving full effect and consideration to the entire structure and function of the Act, including Congress' intent as reflected in dozens of non-regulatory grant, research, nonpoint source, groundwater, and watershed planning programs to assist the states in controlling pollution in the nation's waters, not just its navigable waters.

Further, the agencies are cognizant that the ''Clean Water Act imposes substantial criminal and civil penalties for discharging any pollutant into waters covered by the Act without a permit. . . .'' *U.S. Army Corps of Eng'rs* v. *Hawkes Co.,* 136 S. Ct. 1807, 1812 (2016); *see also Sackett* v. *EPA,* 566 U.S. 120, 132–33 (2012) (Alito, J., concurring) (''[T]he combination of the uncertain reach of the Clean Water Act and the draconian penalties imposed for the sort of violations alleged in this case still leaves most property owners with little practical alternative but to dance to the EPA's tune.''). As the Chief Justice observed in Hawkes, ''[i]t is often difficult to determine whether a particular piece of property contains waters of the United States, but there are important consequences if it does.'' 136 S. Ct. at 1812; *see also id.* at 1816–17 (Kennedy, J., concurring) (''[T]he reach and systemic consequences of the Clean Water Act remain a cause for concern,'' and the Act ''continues to raise troubling questions regarding the Government's power to cast doubt on the full use and enjoyment of private property throughout the Nation.''). Given the significant civil and criminal penalties associated with the CWA, it is important for the agencies to promote regulatory certainty while striving to provide fair and predictable notice of the limits of federal jurisdiction. *See, e.g., Sessions* v. *Dimaya,* 138 S. Ct. 1204, 1223–25 (2018) (Gorsuch, J., concurring in part and concurring in the judgment) (characterizing fair notice as possibly the most fundamental of the protections provided by the Constitution's guarantee of due process, and stating that vague laws are an exercise of ''arbitrary power . . . leaving the people in the dark about what the law demands and allowing prosecutors and courts to make it up'').

C. Proposed Reasons for Repeal

The agencies' proposal is based on our view that regulatory certainty may be best served by repealing the 2015 Rule and recodifying the preexisting scope of CWA jurisdiction. Specifically, the agencies are concerned that rather than achieving their stated objectives of increasing regulatory predictability and consistency under the CWA, retaining the 2015 Rule creates significant uncertainty for agency staff, regulated entities, and the public, which is compounded by court decisions that have increased litigation risk and cast doubt on the legal viability of the rule. To provide for greater regulatory certainty, the agencies propose to revert to the pre-2015 regulations, a regulatory regime that is more familiar to and better-understood by the agencies, States, Tribes, local governments, regulated entities, and the public.

Further, as a result of the agencies' review and reconsideration of their statutory authority and in light of the court rulings against the 2015 Rule that have suggested that the agencies' interpretation of the ''significant nexus'' standard as applied in the 2015 Rule was expansive and does not comport with and accurately implement the limits on jurisdiction reflected in the CWA and decisions of the Supreme Court, the agencies are also concerned that the 2015 Rule lacks sufficient statutory basis. The agencies are proposing to conclude in the alternative that, at a minimum, the interpretation of the statute adopted in the 2015 Rule is not compelled, and a different policy balance can be appropriate.

Considering the substantial uncertainty associated with the 2015 Rule resulting from its legal challenges, and the substantial experience the agencies and others possess with the longstanding regulatory framework currently being administered by the agencies, the agencies conclude that clarity, predictability, and consistency may be best served by repealing the 2015 Rule and thus are proposing to do so. The agencies may still propose changes to the definition of ''waters of the United States'' in a future rulemaking.

Further, the agencies are concerned that certain findings and assumptions supporting adoption of the 2015 Rule were not correct, and that these conclusions, if erroneous, may separately justify repeal of the 2015 Rule. The agencies are concerned and seek comment on whether the 2015 Rule significantly expanded jurisdiction over the preexisting regulatory program, as implemented by the agencies, and whether that expansion altered State, tribal, and local government relationships in implementing CWA programs. The agencies therefore propose to repeal the 2015 Rule in order to restore those preexisting relationships and better serve the balance of authorities envisioned in CWA section 101(b).

1. The 2015 Rule Fails To Achieve Regulatory Certainty

The agencies are proposing to repeal the 2015 Rule because it does not appear to achieve one of its primary goals of providing regulatory certainty and consistency. When promulgating the 2015 Rule, the agencies concluded the rule would ''increase CWA program predictability and consistency by clarifying the scope of 'waters of the United States' protected under the Act.'' 80 FR 37054. The agencies stated that the 2015 ''rule reflect[ed] the judgment of the agencies in balancing the science, the agencies' expertise, and the regulatory goals of providing clarity to the public while protecting the environment and public health, consistent with the law.'' *Id.* at 37065. Since then, developments in the litigation against the 2015 Rule and concerns raised since the rule's promulgation indicate that maintaining the 2015 Rule would produce substantial uncertainty and confusion among state and federal regulators and enforcement officials, the regulated public, and other interested stakeholders. To provide for greater regulatory certainty, the agencies propose to repeal the 2015 Rule and restore a longstanding regulatory framework that is more familiar to and better-understood by the agencies, our co-regulators, and regulated entities, until the agencies propose and finalize a replacement definition.

a. Litigation to Date

As noted above, the 2015 Rule has been challenged in legal actions across multiple district courts, in which plaintiffs have raised a number of substantive and procedural claims against the rule. Petitions for review were also filed in multiple courts of appeals and were consolidated in the U.S. Court of Appeals for the Sixth Circuit. To date, all three of the courts that substantively have considered the 2015 Rule—the Sixth Circuit, the District of North Dakota, and the Southern District of Georgia—have found that petitioners seeking to overturn the rule are likely to succeed on the merits of at least some of their claims against the rule.

In the Sixth Circuit, the court granted a nationwide stay of the 2015 Rule after finding, among other factors, that the petitioners showed a ''substantial possibility of success on the merits'' of their claims against the 2015 Rule, including claims that the rule was inconsistent with Justice Kennedy's opinion in *Rapanos* and that the rule's distance limitations were not substantiated by specific scientific support. *In re EPA,* 803 F.3d 804, 807 (6th Cir. 2015).

The District of North Dakota made similar findings in issuing a preliminary injunction against the 2015 Rule. There, the court found that the plaintiff-States are ''likely to succeed on the merits of their claim'' that the rule violated the congressional grant of authority to the agencies under the CWA because the rule ''likely fails'' to meet Justice Kennedy's significant nexus test. *North Dakota* v. *EPA,* 127 F. Supp. 3d 1047, 1055–56 (D.N.D. 2015). The court also found that the plaintiff-States have a fair chance of success on the merits of their procedural claims that the agencies failed to comply with APA requirements in promulgating the rule. *Id.* at 1056–57.

The Southern District of Georgia also preliminarily enjoined the 2015 Rule, holding that the State plaintiffs had demonstrated ''a likelihood of success on their claims that the [2015] WOTUS Rule was promulgated in violation of the CWA and the APA.'' *Georgia* v. *Pruitt,* No. 15–cv–79, 2018 U.S. Dist. LEXIS 97223, at *14 (S.D. Ga. June 8, 2018) (''*Georgia*'') (granting preliminary injunction). The court determined that the 2015 Rule likely failed to meet the standard expounded in *SWANCC* and *Rapanos,* and that the rule was likely fatally defective because it ''allows the Agencies to regulate waters that do not bear any effect on the 'chemical, physical, and biological integrity' of any navigable-in-fact water.'' *Id.* at *17–18. The court also held that the plaintiffs ''have demonstrated a likelihood of success on both of their claims under the APA'' that the 2015 Rule ''is arbitrary and capricious'' and ''that the final rule is not a logical outgrowth of the proposed rule.'' *Id.* at *18.

These rulings indicate that substantive or procedural challenges to the 2015 Rule are likely to be successful, particularly claims that the rule is not authorized under the CWA and was promulgated in violation of the APA. A successful challenge to the 2015 Rule could result in a court order vacating the rule in all or part, in all or part of the country, and potentially resulting in different regulatory regimes being in effect in different parts of the country, which would likely lead to substantial regulatory confusion, uncertainty, and inconsistency.

Notably, the agencies face an increasing risk of a court order vacating the 2015 Rule. The District of North Dakota is proceeding to hear the merits of the plaintiff-States' claims against the 2015 Rule in that case, and the plaintiff-States in the Southern District of Georgia have requested a similar merits-briefing schedule. *See* Scheduling Order, *North Dakota* v. *EPA,* No. 15–cv–59 (D.N.D. May 2, 2018); Response to Defendants' Updated Response to Plaintiff States' Motion for Preliminary Injunction at 11–12, *Georgia,* No. 15–cv–79 (S.D. Ga. May 29, 2018). Although the applicability date rule ensures that the 2015 Rule will not go into effect until February 6, 2020, the prospect of a court order vacating the 2015 Rule creates additional regulatory uncertainty.

b. Stakeholder Confusion Regarding the Scope of the 2015 Rule and Extent of Federal CWA Jurisdiction

Statements made in the litigation against the 2015 Rule and in comments regarding the 2015 Rule indicate that there has been substantial disagreement and confusion as to the scope of the 2015 Rule and the extent of federal CWA jurisdiction more broadly. In the Sixth Circuit, for example, State petitioners asserted that the 2015 Rule covers waters outside the scope of the CWA pursuant to *SWANCC* and *Rapanos* and ''extends jurisdiction to virtually every potentially wet area of the country.'' [14] Industry petitioners contended that the rule's ''uncertain standards are impossible for the public to understand or the agencies to apply consistently.'' [15] In contrast, environmental petitioners found that *SWANCC* and *Rapanos* led to widespread confusion over the scope of the CWA and that the pre-2015 regulatory regime could theoretically apply to ''almost all waters and wetlands across the country.'' [16] These petitioners asserted that the 2015 Rule violated the CWA by failing to cover certain waters, including waters that may possess a ''significant nexus'' to traditional navigable waters.[17] Whether such comments are accurate or not, they indicate continued widespread disagreement and confusion over the meaning of the 2015 Rule and extent of jurisdiction it entails.

Some comments received on the July 27, 2017 NPRM also demonstrate continued confusion over the scope and various provisions of the 2015 Rule. For example, one commenter found that the rule's definitions of ''adjacent,'' ''significant nexus'' and other key terms lack clarity and thus lead to regulatory uncertainty.[18] This same commenter contended that the rule could raise constitutional concerns related to the appropriate scope of federal authority and encouraged the agencies to undertake a new rulemaking to more clearly articulate the extent of federal CWA authority. Another commenter echoed these concerns, alleging that the 2015 Rule resulted in a ''vague and indecipherable explanation'' of the definition of ''waters of the United States'' that has caused confusion and uncertainty as to the extent of jurisdiction that can be asserted by federal, state and local authorities.[19]

The agencies have received comments from numerous other individuals and entities expressing confusion and concern about the extent of federal CWA jurisdiction asserted under the 2015 Rule, and the agencies are continuing to review and consider these comments.

c. Impact on State Programs

Like other commenters on the proposal to the 2015 Rule, some States expressed confusion regarding the scope of the proposal and, uniquely, the potential impacts of that uncertainty on States' ability to implement CWA programs. Though some States have stated that the 2015 Rule ''more clearly identifies what types of waters would be considered jurisdictional,'' [20] others assert that the extent of CWA jurisdiction under the rule remained ''fuzzy'' and unclear.[21] Certain States noted that this uncertainty could ''create time delays in obtaining permits which previously were not required'' [22] and ''result in increased costs to the State and other private and public interests, along with decreased regulatory efficiency.'' [23] One State suggested that even if the 2015 Rule established greater regulatory clarity, the rule's case-by-case determinations could result in permitting delays when a jurisdictional determination is required.[24]

Similar concerns have been raised in the litigation challenging the 2015 Rule. For example, in the Southern District of Georgia, the State of Indiana has asserted that the 2015 Rule's definition of ''waters of the United States'' is ''vague'' and that the rule ''imposes . . . unclear regulatory requirements that will result in an inefficient use of limited regulatory resources.'' [25] In particular, the State asserts concerns that implementing the 2015 Rule will divert resources by ''[d]emanding the time and attention of regulators to make the now-difficult determination of when and whether a feature is a WOTUS'' and ''[g]enerating unnecessary administrative appeals and lawsuits to resolve jurisdictional disputes.'' [26]

d. Agency Experience With the 1986 Regulations

The agencies have been implementing the pre-2015 regulations (hereinafter referred to as the ''1986 regulations'') almost uninterruptedly since 1986. Corps staff are trained on making jurisdictional determinations in the field and through national webinars and classroom or field-based trainings. From June 2007 through June 2018, the Corps issued 241,857 [27] approved jurisdictional determinations (AJDs) under their 1986 regulations, as informed by applicable Supreme Court precedent and the agencies' guidance.

Through over 30 years of experience, the agencies have developed significant technical expertise with the 1986 regulations and have had the opportunity to refine the application of the rules through guidance and the agencies' experience and federal court decisions. Indeed, the 1986 regulations have been the subject of a wide body of case law, including three significant U.S. Supreme Court decisions [28] and dozens of cases in federal district courts and courts of appeals that have addressed the scope of analysis required. Since 1986, the agencies have issued numerous memoranda, guidance, and question-and-answer documents explaining and clarifying these regulations.[29]

Given the longstanding nature and history of the 1986 regulations, this

[14] Opening Brief of State Petitioners at 15, 61, *In re EPA,* No. 15–3751 (6th Cir. Nov. 1, 2016).

[15] Opening Brief for the Business & Municipal Petitioners, *In re EPA,* No. 15–3751 (6th Cir. Nov. 1, 2016).

[16] Brief of Conservation Groups at 11, *In re EPA,* No. 15–3751 (6th Cir. Nov. 1, 2016).

[17] *See, e.g., id.* at 22, 43.

[18] *See* comments submitted by Oregon Cattlemen's Association (July 27, 2017) (Docket ID: EPA–HQ–OW–2017–0203–0039), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2017-0203-0039.*

[19] *See* comments submitted by Skagit County Dike, Drainage and Irrigation District No. 12 and Skagit County Dike District No. 1 (Sept. 27, 2017) (Docket ID: EPA–HQ–OW–2017–0203–11709), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2017-0203-11709.*

[20] *See, e.g.,* comments submitted by State of Washington, Department of Ecology (Nov. 13, 2014) (Docket ID: EPA–HQ–OW–2011–0880–13957), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-13957.*

[21] *See, e.g.,* comments submitted by State of Oklahoma (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–14625), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-14625; see also* comments submitted by National Association of Counties (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–15081), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-15081.*

[22] *See* comments submitted by State of Utah, Governor's Office (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–16534), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-16534.*

[23] *See* comments submitted by Wyoming Department of Environmental Quality (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–16393), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-16393.*

[24] *See* comments submitted by State of Washington, Department of Ecology, *supra* note 20.

[25] Statement of Bruno L. Pigott, *Georgia,* No. 15–cv–79 (S.D. Ga. July 21, 2015).

[26] *Id.*

[27] U.S. Army Corps of Engineers, OMBIL Regulatory Module (June 5, 2018).

[28] *Riverside Bayview,* 474 U.S. 121 (1985); *SWANCC,* 531 U.S. 159 (2001); *Rapanos,* 547 U.S. 715 (2006).

[29] The Corps maintains many of these documents on its public website, *available at https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Related-Resources/CWA-Guidance/.* The EPA maintains many of these documents as well; *see also https://www.epa.gov/wotus-rule/about-waters-united-states.*

regulatory regime is more familiar to the agencies, co-regulators, and regulated entities. For this reason, as between the 2015 Rule and the 1986 regulations, the 1986 regulations (as informed by applicable Supreme Court precedent and the agencies' guidance) would appear to provide for greater regulatory predictability, consistency, and certainty, and the agencies seek public comment on this issue. Though the agencies acknowledge that the 1986 regulations have posed certain implementation difficulties and were the subject of court decisions that had the effect of narrowing their scope, the longstanding nature of the regulatory regime—coupled with the agencies' and others' extensive experience with the regulatory scheme—make it preferable to the regulatory uncertainty posed by the 2015 Rule.

2. The 2015 Rule May Exceed the Agencies' Authority Under the CWA

The agencies are concerned that the 2015 Rule exceeded EPA's authority under the CWA by adopting an expansive interpretation of the ''significant nexus'' standard that covers waters outside the scope of the Act and stretches the significant nexus standard so far as to be inconsistent with important aspects of Justice Kennedy's opinion in *Rapanos,* even though this opinion was identified as the basis for the significant nexus standard articulated in the 2015 Rule. In particular, the agencies are concerned that the 2015 Rule took an expansive reading of Justice Kennedy's significant nexus test and exceeds the agencies' authority under the Act.

As expounded in *Rapanos,* Justice Kennedy's significant nexus standard is a test intended to limit federal jurisdiction due to the breadth of the Corps' then-existing standard for tributaries and in order to ''prevent[ ] problematic applications of the statute.'' 547 U.S. at 783. ''Given the potential overbreadth of the Corps' [1986] regulations,'' Justice Kennedy found that the showing of a significant nexus ''is necessary to avoid unreasonable applications of the statute.'' *Id.* at 782. The agencies are concerned, upon further consideration of the 2015 Rule, that the significant nexus standard articulated in that rule could lead to similar unreasonable applications of the CWA.

Justice Kennedy wrote that adjacent ''wetlands possess the requisite nexus, and thus come within the statutory phrase 'navigable waters,' if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.' '' 547 U.S. at 780. The opinion did not expressly define the relevant ''region'' or what was meant by ''similarly situated,'' but it is reasonable to presume that that the Justice did not mean ''similarly situated'' to be synonymous with ''all'' waters in a region. The agencies' *Rapanos* Guidance, for example, had interpreted the term ''similarly situated'' more narrowly to ''include all wetlands adjacent to the same tributary.'' [30] ''A tributary . . . is the entire reach of the stream that is of the same order (*i.e.,* from the point of confluence, where two lower order streams meet to form the tributary, downstream to the point such tributary enters a higher order stream).'' [31] Thus, under the agencies' 2008 guidance, ''where evaluating significant nexus for an adjacent wetland, the agencies will consider the flow characteristics and functions performed by the tributary to which the wetland is adjacent along with the functions performed by the wetland and all other wetlands adjacent to that tributary. This approach reflects the agencies' interpretation of Justice Kennedy's term 'similarly situated' to include all wetlands adjacent to the same tributary. . . . Interpreting the phrase 'similarly situated' to include all wetlands adjacent to the same tributary is reasonable because such wetlands are physically located in a like manner (*i.e.,* lying adjacent to the same tributary).'' [32]

The 2015 Rule departed from this interpretation of ''similarly situated'' wetlands in a ''region,'' including applying it to other waters, not only wetlands, that were not already categorically jurisdictional as tributaries or adjacent waters. The proposed rule, for example, stated that ''[o]ther waters, including wetlands, are similarly situated when they perform similar functions and are located sufficiently close together or sufficiently close to a 'water of the United States' so that they can be evaluated as a single landscape unit with regard to their effect on the chemical, physical, or biological integrity of a [primary] water.'' 79 FR 22263 (April 21, 2014). The 2015 Rule took it a step further and stated that ''the downstream health of larger downstream waters is directly related to the aggregate health of waters located upstream, including waters such as wetlands that may not be hydrologically connected but function together to ameliorate the potential impacts of flooding and pollutant contamination from affecting downstream waters.'' 80 FR 37063. The 2015 Rule thus concluded that ''[a] water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest [primary] water.'' *Id.* at 37106. The ''term 'in the region' means the watershed that drains to the nearest [primary] water.'' *Id.*

An examination of all of the waters in ''the watershed'' of ''the nearest [primary] water'' under the 2015 Rule therefore may have materially broadened the scope of aggregation that determines jurisdiction in a ''significant nexus'' inquiry for waters not categorically jurisdictional from the focus in the proposed rule on waters ''located sufficiently close together or sufficiently close to a 'water of the United States' so that they can be evaluated as a single landscape unit.'' 79 FR 22263. The agencies in finalizing the rule viewed the scientific literature through a broader lens as ''the effect of landscape position on the strength of the connection to the nearest 'water of the United States,' '' and that ''relevant factors influencing chemical connectivity include hydrologic connectivity . . . , surrounding land use and land cover, the landscape setting, and deposition of chemical constituents (*e.g.,* acidic deposition).'' 80 FR 37094. The agencies are concerned that this important change in the interpretation of ''similarly situated waters'' from the proposed 2015 Rule and the 2008 *Rapanos* Guidance may not be explainable by the scientific literature, including the Connectivity Report [33] cited throughout the preamble to the 2015 Rule, in light of the agencies' view at the time that ''[t]he scientific literature does not use the term 'significant' as it is defined in a legal context.'' 80 FR 37062. The agencies solicit comment on whether the agencies' justification for the 2015 Rule's interpretation of ''similarly situated'' with reference to an entire watershed for purposes of waters not categorically jurisdictional relied on the scientific literature without due regard for the restraints imposed by the statute and case law, and whether this interpretation of Justice Kennedy's significant nexus standard is a reason, at a minimum because of the legal risk it

[30] *Rapanos* Guidance at 8.

[31] *Id.* at 10.

[32] *Id.*

[33] U.S. EPA. Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence (Jan. 2015) (EPA/600/R–14/475F).

creates, to repeal the 2015 Rule. As discussed, the 2015 Rule included distance-based limitations that were not specified in the proposal. In light of this, the agencies also solicit comment on whether these distance-based limitations mitigated or affected the agencies' change in interpretation of similarly situated waters in the 2015 Rule.

The agencies are also concerned that the 2015 Rule does not give sufficient effect to the term ''navigable'' in the CWA. *See South Carolina* v. *Catawba Indian Tribe,* 476 U.S. 498, 510 n.22 (1986) (''It is our duty to give effect, if possible, to every clause and word of a statute[.]'' (quoting *United States* v. *Menasche,* 348 U.S. 528, 538–39 (1955)) (internal quotation marks omitted)). Justice Kennedy's concurring opinion in *Rapanos,* on which the 2015 Rule relied heavily for its basis, recognized the term ''navigable'' must have ''some importance'' and, if that word has any meaning, the CWA cannot be interpreted to ''permit federal regulation whenever wetlands lie along a ditch or drain, however remote and insubstantial, that eventually may flow into traditional navigable waters.'' *Rapanos,* 547 U.S. at 778–79 (Kennedy, J., concurring in judgment). When interpreting the *Rapanos* decision and its application for determining the scope of CWA jurisdiction in 2008, the agencies wrote ''[p]rincipal considerations when evaluating significant nexus include the volume, duration, and frequency of the flow of water in the tributary and the proximity of the tributary to a traditional navigable water.'' [34] The agencies are considering whether the 2015 Rule's definitions of ''tributary'' and ''adjacent'' were so broad as to eliminate consideration of these factors in a manner consistent with Justice Kennedy's opinion and the CWA.

The 2015 Rule stated that the agencies assessed ''the significance of the nexus'' to navigable water ''in terms of the CWA's objective to 'restore and maintain the chemical, physical, and biological integrity of the Nation's waters.' '' 80 FR 37056 (quoting 33 U.S.C. 1251(a)). Under the 2015 Rule, a significant nexus may be established by an individual water or by collectively considering ''similarly situated'' waters across a ''region,'' defined as ''the watershed that drains to the nearest [primary] water identified.'' *Id.* at 37106. The agencies are now concerned that this broad reliance on biological functions, such as the provision of life cycle dependent aquatic habitat, may not comport with the CWA and Justice Kennedy's statement in *Rapanos* that ''environmental concerns provide no reason to disregard limits in the statutory text.'' *See* 547 U.S. at 778. In particular, the agencies are mindful that the Southern District of Georgia's preliminary injunction of the 2015 Rule was based in part on the court's holding that the 2015 Rule likely is flawed for the same reason as the Migratory Bird Rule: ''the WOTUS Rule asserts that, standing alone, a significant 'biological effect'—including an effect on 'life cycle dependent aquatic habitat[s]'—would place a water within the CWA's jurisdiction. Thus, this WOTUS Rule will likely fail for the same reason that the rule in *SWANCC* failed.'' *Georgia,* 2018 U.S. Dist. LEXIS 97223, at *18 (quoting 33 CFR 328.3(c)(5)). The agencies solicit comment on whether the 2015 Rule is flawed in the same manner as the Migratory Bird Rule, including whether the 2015 Rule raises significant constitutional questions similar to the questions raised by the Migratory Bird Rule as discussed by the Supreme Court in *SWANCC.*

Moreover, the 2015 Rule relied on a scientific literature review—the Connectivity Report—to support exerting federal jurisdiction over certain waters based on nine enumerated functions. *See* 80 FR 37065 (''the agencies interpret the scope of 'waters of the United States' protected under the CWA based on the information and conclusions in the [Connectivity] Report''). The report notes that connectivity ''occur[s] on a continuum or gradient from highly connected to highly isolated,'' and ''[t]hese variations in the degree of connectivity are a critical consideration to the ecological integrity and sustainability of downstream waters.'' *Id.* at 37057. In its review of a draft version of the Connectivity Report, EPA's Science Advisory Board (''SAB'') noted, ''[s]patial proximity is one important determinant of the magnitude, frequency and duration of connections between wetlands and streams that will ultimately influence the fluxes of water, materials and biota between wetlands and downstream waters.'' [35] ''Wetlands that are situated alongside rivers and their tributaries are likely to be connected to those waters through the exchange of water, biota and chemicals. As the distance between a wetland and a flowing water system increases, these connections become less obvious.'' [36] The Connectivity Report also recognizes that ''areas that are closer to rivers and streams have a higher probability of being connected than areas farther away.'' Connectivity Report at ES–4.

Yet, the SAB observed that ''[t]he Report is a science, not policy, document that was written to summarize the current understanding of connectivity or isolation of streams and wetlands relative to large water bodies such as rivers, lakes, estuaries, and oceans.'' [37] ''The SAB also recommended that the agencies clarify in the preamble to the final rule that 'significant nexus' is a legal term, not a scientific one.'' 80 FR 37065. And in issuing the 2015 Rule, the agencies stated, ''the science does not provide a precise point along the continuum at which waters provide only speculative or insubstantial functions to downstream waters.'' *Id.* at 37090.

The agencies now believe that they previously placed too much emphasis on the information and conclusions of the Connectivity Report when setting jurisdictional lines in the 2015 Rule, relying on its environmental conclusions in place of interpreting the statutory text and other indicia of Congressional intent to ensure that the agencies' regulations comport with their statutory authority to regulate. This is of particular concern to the agencies today with respect to the agencies' broad application of Justice Kennedy's phrase ''similarly situated lands. '' As discussed previously, the agencies took an expansive reading of this phrase, in part based on ''one of the main conclusions of the [Connectivity Report] . . . that the incremental contributions of individual streams and wetlands are cumulative across entire watersheds, and their effects on downstream waters should be evaluated within the context of other streams and wetlands in that watershed,'' *see* 80 FR 37066. Yet, Justice Kennedy observed in *Rapanos* that what constitutes a ''significant nexus'' to the waters of the United States is not a solely scientific question and that it cannot be determined by environmental effects alone. *See, e.g.,* 547 U.S. at 777–78 (noting that although ''[s]cientific evidence indicates that wetlands play a critical role in controlling and filtering runoff . . . environmental concerns provide no reason to disregard limits in the statutory text'' (citations omitted)). This includes how Congress' use of the term ''navigable'' in the CWA and how the policies embodied in section 101(b) should inform this analysis. Justice Kennedy wrote that ''the Corps deems a

[34] *Rapanos* Guidance at 10.

[35] Science Advisory Board, U.S. EPA. Review of the EPA Water Body Connectivity Report at 60 (Oct. 17, 2014).

[36] *Id.* at 55.

[37] *Id.* at 2.

water a tributary if it feeds into a traditional navigable water (or a tributary thereof) and possesses an ordinary high-water mark,'' defined as a ''line on the shore established by the fluctuations of water and indicated by [certain] physical characteristics.'' *Id.* at 781. This ''may well provide a reasonable measure of whether specific minor tributaries bear a sufficient nexus with other regulated waters to constitute 'navigable waters' under the Act. Yet the breadth of this standard—which seems to leave wide room for regulation of drains, ditches, and streams remote from any navigable-in-fact water and carrying only minor volumes toward it—*precludes its adoption as the determinative measure of whether adjacent wetlands are likely to play an important role in the integrity of an aquatic system comprising navigable waters as traditionally understood.*'' *Id.* (emphasis added).

The 2015 Rule, by contrast, asserts jurisdiction categorically over any tributary, including all ephemeral and intermittent streams that meet the rule's tributary definition, as well as all wetlands and other waters that are within certain specified distances from a broadly defined category of tributaries (*e.g.,* all waters located within the 100-year floodplain of a category (1) through (5) ''jurisdictional by rule'' water and not more than 1,500 feet from the ordinary high water mark of such water). According to the rule, tributaries are characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark and eventually contribute flow (directly or indirectly) to a traditional navigable water, interstate water, or territorial sea that may be a considerable distance away. *See* 80 FR 37105. The 2015 Rule defined ''ordinary high water mark'' as ''that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.'' *Id.* at 37106. The 2015 Rule did not require any assessment of flow, including volume, duration, or frequency, when defining the ''waters of the United States.'' Instead, the 2015 Rule concluded that it was reasonable to presume that ''[t]hese physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary.'' *Id.* at 37105. The 2015 Rule thus covers ephemeral washes that flow only in response to infrequent precipitation events if they meet the definition of tributary. These results, particularly that adjacent waters, broadly defined, are categorically jurisdictional no matter how small or frequently flowing the tributary to which they are adjacent, is, at a minimum, in significant tension with Justice Kennedy's understanding of the term significant nexus as explained in *Rapanos. See id.* at 781–82 (''[I]n many cases wetlands adjacent to tributaries covered by [the Corps' 1986 tributary] standard might appear little more related to navigable-in-fact waters than were the isolated ponds held to fall beyond the Act's scope in *SWANCC.*'').

The agencies are mindful that courts that have considered the merits of challenges to the 2015 Rule have similarly observed that the rule may conflict with Justice Kennedy's opinion in *Rapanos,* particularly the rule's definition of ''tributary.'' The District of North Dakota found that the definitions in the 2015 Rule raise ''precisely the concern Justice Kennedy had in *Rapanos,* and indeed the general definition of tributary [in the 2015 Rule] is strikingly similar'' to the standard for tributaries that concerned Justice Kennedy in *Rapanos. North Dakota,* 127 F. Supp. 3d at 1056. The Southern District of Georgia also found that the 2015 Rule's definition of ''tributary'' ''is similar to the one'' at issue in *Rapanos,* and that ''it carries with it the same concern that Justice Kennedy had there.'' *Georgia,* 2018 U.S. Dist. LEXIS 97223, at *17. Likewise, the Sixth Circuit stated in response to petitioners' ''claim that the Rule's treatment of tributaries, 'adjacent waters,' and waters having a 'significant nexus' to navigable waters is at odds with the Supreme Court's ruling in *Rapanos*'' that ''[e]ven assuming, for present purposes, as the parties do, that Justice Kennedy's opinion in *Rapanos* represents the best instruction on the permissible parameters of 'waters of the United States' as used in the Clean Water Act, it is far from clear that the new Rule's distance limitations are harmonious with the instruction.'' *In re EPA,* 803 F.3d at 807 & n.3 (noting that ''[t]here are real questions regarding the collective meaning of the [Supreme] Court's fragmented opinions in *Rapanos*'').

One example that illustrates this point is the ''seasonally ponded, abandoned gravel mining depressions'' specifically at issue in *SWANCC,* 531 U.S. at 164, which the Supreme Court determined were ''nonnavigable, isolated, intrastate waters,'' *id.* at 166–72, and not jurisdictional. These depressions are located within 4,000 feet of Poplar Creek, a tributary to the Fox River, and may have the ability to store runoff or contribute other ecological functions in the watershed. Thus, they would be subject to, and might satisfy, a significant nexus determination under the 2015 Rule's case-specific analysis. However, Justice Kennedy himself stated in *Rapanos,* which informed the significant nexus standard articulated in the rule, that, ''[b]ecause such a [significant] nexus was lacking with respect to isolated ponds, the [*SWANCC*] Court held the plain text of the statute did not permit'' the Corps to assert jurisdiction over them. 547 U.S. at 767. Other potential examples of the breadth of the significant nexus standard articulated in the 2015 Rule are provided below in the next section.

3. Concerns Regarding the 2015 Rule's Effect on the Scope of CWA Jurisdiction

The agencies asserted in the preamble to the 2015 Rule that ''State, tribal, and local governments have well-defined and longstanding relationships with the Federal government in implementing CWA programs and these relationships are not altered by the final rule.'' 80 FR 37054. The agencies further noted that ''[c]ompared to the current regulations and historic practice of making jurisdictional determinations, the scope of jurisdictional waters will decrease'' under the 2015 Rule. *Id.* at 37101. When compared to more recent practice, however, the agencies determined that the 2015 Rule would result ''in an estimated increase between 2.84 and 4.65 percent in positive jurisdictional determinations annually.'' *Id.* The agencies thus concluded that the 2015 Rule would ''result in a small overall increase in positive jurisdiction determinations compared to those made under the *Rapanos* Guidance'' and that the ''net effect'' of the regulatory changes would ''be marginal at most.'' Brief for Respondents at 32–33 & n.6, *In re EPA,* No. 15–3571 (6th Cir. Jan. 13, 2017). Since publication of the final rule, the agencies have received information about the impact of these changes, including through filings in litigation against the 2015 Rule and comments received in response to the July 27, 2017 NPRM. After further analysis and reconsideration of how the 2015 Rule is likely to impact jurisdictional determinations, including how the data on those impacts relate to the specific regulatory changes made in the 2015 Rule, the agencies are now considering whether the definitional changes in the 2015 Rule would have a more substantial impact on the scope of

jurisdictional determinations made pursuant to the CWA than acknowledged in the analysis for the rule and would thus impact the balance between federal, state, tribal, and local government in a way that gives inadequate consideration to the overarching Congressional policy to ''recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution'' and ''to plan the development and use . . . of land and water resources. . . .'' 33 U.S.C. 1251(b).

Between the agencies' ''historic'' (*i.e.,* 1986 regulations) and ''recent'' practices of making jurisdictional determinations under the *Rapanos* Guidance, the Supreme Court held that the agencies' application of the 1986 regulation was overbroad in some important respects. *See SWANCC,* 531 U.S. at 174 (reversing and remanding the assertion of jurisdiction); *Rapanos,* 547 U.S. at 715 (vacating and remanding, for further analysis, the assertion of CWA jurisdiction). Throughout the rulemaking process for the 2015 Rule, the agencies stressed in public statements,[38] fact sheets,[39] blog posts,[40] and before Congress [41] that the rule would not significantly expand the jurisdictional reach of the CWA. Some commenters questioned the accuracy of these statements during the rulemaking process for the 2015 Rule and in response to the July 27, 2017 NPRM. The court in *North Dakota* questioned the scope of waters subject to the 2015 Rule, and based its preliminary injunction in principal part on those doubts, stating, for example, that ''the definition of tributary'' in the 2015 Rule ''includes vast numbers of waters that are unlikely to have a nexus to navigable waters within any reasonable understanding of the term.'' 127 F. Supp. 3d at 1056; *see also In re EPA,* 803 F.3d at 807 (finding that ''it is far from clear that the new Rule's distance limitations are harmonious'' with Justice Kennedy's significant nexus test in *Rapanos*); *Georgia,* 2018 U.S. Dist. LEXIS 97223, at *17 (holding that the 2015 Rule's ''tributary'' definition ''is similar to the one invalidated in *Rapanos,* and it carries with it the same concern that Justice Kennedy had there'').

Given the concerns raised by some commenters and the federal courts, the agencies have reviewed data previously relied upon to conclude that the 2015 Rule would have no or ''marginal at most'' impacts on jurisdictional determinations, Brief for Respondents at 32 n.6, *In re EPA,* No. 15–3571 (6th Cir. Jan. 13, 2017), and are reconsidering the validity of this conclusion. The agencies solicit comment on whether the agencies appropriately characterized or estimated the potential scope of CWA jurisdiction that could change under the 2015 Rule, including whether the documents supporting the 2015 Rule appropriately considered the data relevant to and were clear in that assessment.

For example, the agencies relied upon an examination of the documents supporting the estimated 2.84 to 4.65 percent annual increase in positive approved jurisdictional determinations (AJDs) to conclude that the 2015 Rule would only ''result in a small overall increase in positive jurisdictional determinations compared to those made under the *Rapanos* Guidance.'' *See* Brief for Respondents at 32, *In re EPA,* No. 15–3571 (6th Cir. Jan. 13, 2017). However, others have raised concerns that this information and other data show the 2015 Rule may have expanded jurisdiction more significantly, particularly with respect to so-called ''other waters'' that are not adjacent to navigable waters and their tributaries.

In developing the 2015 Rule, the agencies examined records in the Corps' Operation and Maintenance Business Information Link, Regulatory Module (ORM2) database that documents jurisdictional determinations associated with various aquatic resource types, including an isolated waters category. ''The isolated waters category is used in the Corps' ORM2 database to represent intrastate, non-navigable waters; including wetlands, lakes, ponds, streams, and ditches, that lack a direct surface connection to other waterways. These waters are hereafter referred to as 'ORM2 other waters.' '' [42] To examine how assertion of jurisdiction could change under the 2015 Rule, the agencies reviewed ORM2 aquatic resource records from Fiscal Year (FY)13 and FY14 and placed them into three groups: Streams (ORM2 categories of traditionally navigable waters, relatively permanent waters, and non-relatively permanent waters), wetlands adjacent to the stream category group, and other waters. Of the 160,087 records for FY13 and FY14, streams represented 65 percent of the total records available, wetlands represented 29 percent, and other waters represented 6 percent.

From this baseline, the agencies assumed that 100 percent of the records classified as streams would meet the jurisdictional tests established in the final rule, and 100 percent of the records classified as adjacent wetlands would meet the definition of adjacent in the final rule. These assumptions resulted in a relatively minor projected increase in positive jurisdictional determinations under the final rule for these categories: 99.3 to 100 percent for the streams category, and 98.9 to 100 percent for the wetlands category.

The agencies also performed a detailed analysis of the other waters category to determine whether jurisdiction might change for those waters under the final rule. In total, ''these files represented over 782 individual waters in 32 states.'' [43]

Of the existing negative determinations for other waters, the agencies made the following estimates:

- 17.1 percent of the negative jurisdictional determinations for other waters would become positive under the 2015 Rule because the aquatic resources would meet the new definition of adjacent waters. *See* 80 FR 37105. These waters fall within the 100-year floodplain and are within 1,500 feet of a stream included in the United States Geological Survey's (USGS) National Hydrography Dataset (NHD).
- 15.7 percent of the other waters could become jurisdictional under category (7) of the 2015 Rule following a significant nexus analysis. *See id.* at 37104–05.
- 1.7 percent of the other waters could become jurisdictional under category (8) of the 2015 Rule following a significant nexus analysis. *See id.* at 37105.

In total, the agencies estimated that 34.5 percent of the other waters represented in the FY13 and FY14 ORM2 database could become jurisdictional under the 2015 Rule after

[38] Addressing farmers in Missouri in July 2014, then-EPA Administrator Gina McCarthy stated that no additional CWA permits would be required under the proposed 2015 Rule. *See: http://www.farmfutures.com/story-epas-mccarthy-ditch-myths-waters-rule-8-114845* (''The bottom line with this proposal is that if you weren't supposed to get a permit before, you don't need to get one now.'').

[39] U.S. EPA. Facts About the Waters of the U.S. Proposal at 4 (July 1, 2014), *available at https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OW-2011-0880-16357&attachmentNumber=38&contentType=pdf* (''The proposed rule does not expand jurisdiction.'').

[40] U.S. EPA blog post entitled ''Setting the Record Straight on Waters of the US'' (June 30, 2014), *available at https://blog.epa.gov/blog/2014/06/setting-the-record-straight-on-wous/* (''The proposed rule does not expand jurisdiction.'').

[41] In a hearing before the House Committee on Science, Space, and Technology entitled ''Navigating the Clean Water Act: Is Water Wet?'' (July 9, 2014), then-Deputy EPA Administrator Bob Perciasepe told the Committee that the agencies are not expanding the jurisdiction of the CWA. *See https://science.house.gov/legislation/hearings/full-committee-hearing-navigating-clean-water-act-water-wet.*

[42] 2015 Rule Economic Analysis at 7.

[43] 2015 Rule Economic Analysis at 9.

having been declared not jurisdictional under the existing regulations and agency guidance. Thus, while the agencies acknowledged in the 2015 Rule Economic Analysis that ''[f]ollowing the Supreme Court decisions in *SWANCC* (2001) and *Rapanos* (2006), the agencies no longer asserted CWA jurisdiction over isolated waters,'' the agencies estimated in the 2015 Rule Economic Analysis that 34.5 percent of the other waters category could become jurisdictional under the 2015 Rule.[44] By way of comparison, a similar analysis of this category of other waters performed in support of the proposed rule in 2014 (using FY09 and FY10 data from the ORM2 database) estimated that 17 percent of the negative jurisdictional for other waters would become positive.[45]

While the Economic Analysis for the 2015 Rule estimated that 34.5 percent of negative jurisdictional determinations for other waters would become positive,[46] the agencies nevertheless premised the 2015 Rule on assertions that the ''scope of jurisdiction in this rule is narrower than that under the existing regulation,'' the scope of jurisdiction in the rule would result ''in an estimated increase between 2.84 and 4.65 percent in positive jurisdictional determinations annually'' based on existing practice, and that such impacts would be ''small overall'' and ''marginal at most.'' *See* 80 FR 37054, 37101; Brief for Respondents at 32–33 & n.6, *In re EPA,* No. 15–3571 (6th Cir. Jan. 13, 2017). The agencies are examining these statements and how this data relates specifically to the regulatory changes made in the 2015 Rule (as opposed to those provisions which already subjected many streams and wetlands to CWA jurisdiction). The agencies request comment on whether the projected increase for this category is most relevant to measuring the impacts of the 2015 Rule, whether the public had ample notice of the doubling of projected positive jurisdiction over the other waters category from the proposed to final rule, and whether the final rule could expand overall CWA positive jurisdictional determinations by a material amount inconsistent with the findings and conclusions that justified the 2015 Rule.

In particular, the agencies seek comment on the conclusions that were based on the method that estimated a 2.84 to 4.65 percent increase in overall jurisdiction, including the use of a method whereby the increase in assertion of jurisdiction in a particular category of waters (*e.g.,* streams, wetlands, and other waters) was proportionally applied based on the raw number of records in a category relative to the total number of records across all categories in the ORM2 database, notwithstanding whether the regulatory changes in the 2015 Rule did not materially impact those other categories. For example, of the 160,087 records in the ORM2 database for FY13 and FY14, 103,591 were associated with the streams category, 46,781 were associated with the wetlands category, and 9,715 were related to the other waters category. Thus, although 34.5 percent of previously non-jurisdictional ''other waters'' would become jurisdictional under the 2015 Rule, the proportional method used in the 2015 Rule Economic Analysis resulted in only an estimated 2.09 percent increase in positive jurisdictional determinations for ''other waters'' relative to the total number of jurisdictional determinations considered.[47]

In addition, the record for the 2015 Rule includes a 57-page document entitled ''Supporting Documentation: Analysis of Jurisdictional Determinations for Economic Analysis and Rule,'' [48] along with an accompanying 3,695 page document of approved jurisdictional determination (AJD) forms.[49] This contains the agencies' assessment conducted in April 2015 of almost two hundred previously performed AJDs to help the agencies better understand how waters might change jurisdictional status based on the distance limitations included in the final 2015 Rule for adjacent and case-specific waters (*see* 80 FR 37105), including where they might no longer be jurisdictional under the final rule. Certain examples included in the assessment suggest that the 2015 Rule could modify CWA jurisdiction over waters that were deemed not jurisdictional under the 1986 regulatory framework and Supreme Court precedent. The agencies request comment on whether the examples illustrate the concerns expressed by the recent court decisions discussed above that the 2015 Rule may have exceeded the significant nexus standard articulated by Justice Kennedy in the *Rapanos* opinion and concerns expressed by certain commenters that the 2015 Rule may have created additional regulatory uncertainty over waters that were previously thought beyond the scope of CWA jurisdiction. The examples are intended to be illustrative, and are not intended to attempt to quantify or reassess previous estimates of CWA jurisdiction, as the agencies are not aware of any map or dataset that accurately or with any precision portrays CWA jurisdiction at any point in the history of this complex regulatory program.

In the first example, a property in Chesapeake, Virginia, was reviewed by the Corps' Norfolk District in early January 2014 and again in March 2015 and was determined not to contain jurisdictional wetlands because the wetlands on the property lacked a hydrological surface connection of any duration, frequency, or volume of flow to other jurisdictional waters. The Corps noted that the wetlands ''appear to be dependent upon groundwater for hydrology, and have no surface connections'' to nearby tributaries, the closest one of which was approximately 80 feet from the wetland. The agencies

[44] 2015 Rule Economic Analysis at 5, 12.

[45] U.S. EPA and U.S. Army Corps of Engineers. Economic Analysis of Proposed Revised Definition of Waters of the United States at 12, Exhibit 3 (Mar. 2014) (Docket ID: EPA–HQ–OW–2011–0880–0003), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-0003.*

[46] 2015 Rule Economic Analysis at 13, Figure 2.

[47] The following summarizes the methodology used to derive the low-end estimated increase in jurisdiction of 2.84 percent: Streams account for 103,591 of the 160,087 total records (64.709 percent of the total ORM2 records) and 100 percent of streams are assumed to be jurisdictional under the final rule compared to 99.3 percent under previous practice (100 percent minus 99.3 percent = 0.7 percent). The relative contribution of streams to the overall change in jurisdictional determinations is thus 64.709 percent multiplied by 0.7 percent for a total of 0.45 percent. Wetlands account for 46,781 of the 160,087 total records (29.222 percent of the total ORM2 records) and 100 percent of wetlands are assumed to be jurisdictional under the final rule compared to 98.9 percent under previous practice (100 percent minus 98.9 percent = 1.1 percent). The relative contribution of wetlands to the overall estimated change in jurisdictional determinations is thus 29.222 percent multiplied by 1.1 percent for a total of 0.32 percent. Other waters account for 9,715 of the 160,087 total records (6.069 percent of the total ORM2 records) and 34.5 percent of other waters are assumed to be jurisdictional under the final rule compared to 0.0 percent under previous practice (34.5 percent minus 0.0 percent = 34.5 percent). The relative contribution of other waters to the overall estimated change in jurisdictional determinations is thus 6.069 percent multiplied by 34.5 percent for a total of 2.09 percent. The agencies then added the relative contribution to the overall estimated change in jurisdictional determinations for each category of waters (*i.e.,* 0.45 percent for streams, 0.32 percent for wetlands, and 2.09 percent for other waters) to get a total projected change in positive jurisdictional determinations of 2.86 percent. The differences between this calculation and the reported 2.84 percent in the 2015 Rule Economic Analysis may be the result of rounding error.

[48] U.S. EPA. Supporting Documentation: Analysis of Jurisdictional Determinations for Economic Analysis and Rule (Docket ID: EPA–HQ–OW–2011–0880–20877), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-20877.*

[49] U.S. EPA and U.S. Army Corps of Engineers. Supporting Documentation: Jurisdictional Determinations (Docket ID: EPA–HQ–OW–2011–0880–20876), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-20876.*

later stated that the wetland features ''would be jurisdictional under the new rule'' because they are ''within 100-feet of a tributary'' and would thus meet the rule's definition of ''neighboring'' and, in turn, ''adjacent.'' Further information regarding this AJD and property has been added to the docket for the NPRM and is identified as ''Case Study A—AJD Number NAO–2014–2269'' (*see* Support Document).

In another example, the Corps' Buffalo District reviewed a small wetland approximately 583 feet away from the Johlin Ditch near Toledo, Ohio, which eventually leads north to Lake Erie. After conducting a field investigation in September 2014, the Corps determined that the wetlands were not jurisdictional because the ''wetlands are isolated and there is no surface water connections [sic] and the only potential jurisdiction would be the [Migratory Bird Rule],'' noting that the area previously would have been regulated under the Migratory Bird Rule prior to the Supreme Court's *SWANCC* decision. The agencies later stated that the wetlands would be jurisdictional under the 2015 Rule. Further information regarding this AJD and property has been added to the docket for the NPRM and is identified as ''Case Study B—AJD Number 2004–001914'' (*see* Support Document).

In another example, the Corps' Memphis District reviewed a borrow pit on a property in Mississippi County, Missouri, and concluded that the borrow pit did not contain jurisdictional wetlands. The project area was described in the AJD as follows:

> The borrow pit has been abandoned for some time. Vegetation consists mainly of black willow (*Salix nigra*) and poison ivy (*Toxicodendron radicans*). A site visit was conducted on 8 December 2014. The borrow pit is bordered by agricultural land on three sides and County Road K on the western border. There are no surface water connections to other waters of the U.S. A sample was taken within the site and all three parameters for a wetland are present. The Soil Survey book for Cape Girardeau, Mississippi and Scott Counties Missouri, compiled in 1974 and 1975 from aerial photography indicates no drainage into or out of the project site. The area is an isolated wetland approximately 7.6 acres in size.

The abandoned pit in this example was 2,184 feet from the nearest ''tributary,'' a feature that itself appears to be a ditch in an agricultural field. The wetlands in the borrow pit were determined by the Corps to be isolated and non-jurisdictional ''with no substantial nexus to interstate (or foreign) commerce'' and on the basis that ''prior to . . .*'SWANCC,'* the review area would have been regulated based solely on the 'Migratory Bird Rule.' '' A later review by the agencies, however, stated that these wetlands would be jurisdictional under the 2015 Rule. Further information regarding this property and associated AJD has been added to the docket for the NPRM and is identified as ''Case Study C—AJD Number MVM–2014–460'' (*see* Support Document).

In another example, the Corps' New England District reviewed a ''mowed wet meadow within a mowed hayfield'' in Greensboro, Vermont, in August 2012 and concluded the site did not contain jurisdictional wetlands. The AJD described the wetlands as ''surrounded on all sides by similar upland,'' ''500′–985′ away'' from the nearest jurisdictional waters, and ''isolated intrastate waters with no outlet, no hydrological connection to the Lamoille River, no nexus to interstate commerce, and no significant nexus to the Lamoille River (located about 1.7–1.8 miles southeast of the site).'' A later review by the agencies, however, stated the wetlands would be jurisdictional under the 2015 Rule. Further information regarding this property and associated AJD has been added to the docket for the NPRM and is identified as ''Case Study D—AJD Number NAE–2012–1813'' (*see* Support Document).

In another example, the Corps' Chicago District completed AJD number LRC–2015–31 for wetlands in agricultural fields in Kane County, Illinois, in January 2015. AJD Number LRC–2015–31 was completed using two separate AJD forms: One form for the features at the project site that were determined to be jurisdictional according to the *Rapanos* Guidance (''positive AJD form'') and a second form for the features at the site that the Corps determined were not jurisdictional under the *Rapanos* Guidance (''negative AJD form''). Only the positive AJD form was included in the docket in Supporting Documentation entitled, ''Jurisdictional Determinations—Redacted.'' [50] The negative AJD form is available on the Chicago District website.[51]

Using a field determination and desk determinations, the Corps found on the AJD form that there were ''no 'waters of the U.S.' within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.'' The Corps described the project area in the AJD form as follows: ''Wetland A is a 1.37 acre high quality closed depressional isolated wetland. Wetlands B and C (0.08 ac and 0.15 ac) are isolated wetlands that formed over a failed drain tile and are over 1,200 feet away from the closest jurisdictional waterway.'' The AJD also notes, ''Weland [sic] A and the area around Wetlands B and C were previously determined to be isolated in 2008. Wetland C is mapped as Prior Converted in a NRCS certified farmed wetland determination—other areas are mapped as not inventoried.'' Upon later reviewing the negative AJD, however, the agencies determined the wetlands would be ''now Yes JD'' under the 2015 Rule. Further information regarding this property and associated positive and negative AJDs has been added to the docket for the NPRM and is identified as ''Case Study E—AJD Number LRC–2015–31'' (*see* Support Document).

In another example, the Corps' Pittsburgh District visited a property in Butler, Pennsylvania, in October 2014 and determined the site did not contain waters of the United States because the wetland was ''completely isolated and has no nexus to a TNW or interstate or foreign commerce.'' The Corps noted that the wetland would have been regulated based solely on the Migratory Bird Rule prior to the decision in *SWANCC.* Upon reviewing the AJD, the agencies later stated the wetland is ''[i]solated but would have flood storage function.'' The agencies' review notes that the wetland is 1,270 feet from the nearest relatively permanent water (RPW) or traditional navigable water (TNW). Given the wetland is within 4,000 feet of a tributary and the agencies have stated it possesses at least one of the nine functions relevant to the significant nexus evaluation, *see* 80 FR 37106 (*i.e.,* retention and attenuation of flood waters), the wetland would be subject to a significant nexus evaluation under the 2015 Rule. It is unclear, however, whether the wetland and its flood storage function would contribute significantly to the chemical, physical, or biological integrity of the nearest category (1) through (3) water as required by the 2015 Rule to satisfy the significant nexus test. Further information regarding this property and associated AJD has been added to the docket for the NPRM and is identified as ''Case Study F—AJD Number LRP 2014–855'' (*see* Support Document).

In addition to the projected increase in positive jurisdictional determinations and the above examples of expected JD changes, an examination of the documents supporting the estimated 2.84 to 4.65 percent annual increase in positive AJDs raises concerns that the 2015 Rule may have significantly expanded jurisdiction over tributaries in

[50] *Id.* at 2082–83.

[51] Available at: *http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/jd/lrcnjd02-2015.pdf* (page 1 and 2).

certain States, particularly those in more arid parts of the country.

As described previously, to assess how assertion of jurisdiction may change under the 2015 Rule, the agencies reviewed ORM2 aquatic resource records from FY13 and FY14 and placed the aquatic resources into three groups: Streams, wetlands adjacent to the stream category group, and other waters. With respect to the streams category, the agencies assumed that ''100 percent of the records classified as streams will meet the definition of tributary in the final rule,'' [52] resulting in a relatively minor projected increase in positive jurisdictional determinations under the final rule for streams: 99.3 percent to 100 percent, or a 0.7 percent increase.

However, the agencies have reexamined the 57-page ''Supporting Documentation: Analysis of Jurisdictional Determinations for Economic Analysis and Rule'' and have questions regarding the minor projected increase in positive jurisdictional determinations over streams in some states. An untitled table on page 46 of the supporting document lists an analysis of a subset of streams and the number of those streams estimated to be non-jurisdictional by State in the FY13–FY14 ORM2 records for the purpose of estimating stream mitigation costs associated with the 2015 Rule.[53]

Investigating the percent of streams estimated to be non-jurisdictional on a State-by-State basis coupled with the 2015 Rule Economic Analysis's assumption that 100 percent of the stream jurisdictional determinations will be positive under the 2015 Rule could indicate that there may be a significant expansion of jurisdiction over tributaries in some States beyond current practice. For example, in the FY13–FY14 ORM2 records for Arizona, the table identifies 709 of 1,070 total streams (66.3 percent) were non-jurisdictional. For Arkansas, the table identifies 116 of 213 total streams (54.5 percent) as non-jurisdictional. In South Dakota, North Dakota, Nevada, New Mexico, and Wyoming, 8.5 percent, 9.2 percent, 13.2 percent, 16.7 percent, and 57.1 percent of streams in the FY13–FY14 ORM2 database, respectively, were identified in the table as non-jurisdictional. The agencies are concerned that because the 2015 Rule may assert jurisdiction over 100 percent of streams as the agencies assumed in the 2015 Rule Economic Analysis, certain States, particularly those in the arid West, would see significant expansions of federal jurisdiction over streams. The agencies solicit comment on whether such expansions conflict with the assumptions underlying and statements justifying the 2015 Rule, and if such expansions were consistent with the policy goals of section 101(b) of the CWA.

Several questions were raised by commenters regarding whether the 2015 Rule expanded CWA jurisdiction over intermittent and ephemeral streams, and whether the agencies accurately identified that potential expansion in the development of the 2015 Rule. Several commenters, for example, suggested that the amount of jurisdictional river and stream miles in the United States may increase from approximately 3.5 million miles to more than 8 million miles in response to the *per se* jurisdictional treatment of millions of miles of ephemeral and intermittent streams under the tributary definition.[54] To frame their analysis, those commenters compared river and stream miles reported in recent CWA section 305(b) reports submitted by States to EPA, and transmitted by EPA to Congress, to the river and stream miles depicted in maps developed by the agencies and the USGS prior to the 2015 Rule's proposal.

Section 305(b)(1)(A) of the CWA directs each state to ''prepare and submit to the Administrator . . . biennially . . . a report which shall include . . . a description of the water quality of all navigable waters in such State during the preceding year. . . .'' 33 U.S.C. 1315(b)(1)(A). Section 305(b)(2) additionally directs the Administrator to ''transmit such State reports, together with an analysis thereof, to Congress . . . .'' *Id.* at 1315(b)(2). Over the years, those reports to Congress have identified between 3.5 and 3.7 million river and stream miles nationwide (*see* Support Document). The agencies previously observed that this analysis may not be precise, because of concerns regarding the baseline for comparison and assumptions regarding which intermittent and ephemeral streams may be covered under the 2015 Rule.[55]

The agencies are not aware of any national, regional, or state-level map that identifies all ''waters of the United States'' and acknowledge that there are limitations associated with existing datasets. The agencies, however, developed a series of draft maps using the NHD identifying ''rivers and streams and tributaries and other water bodies'' in each State, which then-EPA Administrator Gina McCarthy mentioned at a March 27, 2014 hearing before the U.S. House of Representatives Appropriations Committee Subcommittee on Interior, Environment, and Related Agencies.[56] The EPA provided a copy of those draft maps to Congress on July 28, 2014,[57] and they remain available to the public on the U.S. House of Representatives Committee on Science, Space and Technology website.[58] The draft maps identify a total of 8,086,742 river and stream miles across the 50 States (*see* Support Document).

Given the significant differences between the CWA section 305(b) reports and the draft NHD maps submitted to Congress, and the possibility that each may represent potential estimates for the relative jurisdictional scope of the 1986 regulations and practice compared to the 2015 Rule, several States have questioned whether the proposed definition of ''tributary'' for the 2015 Rule would expand federal jurisdiction over State water resources. Eight State departments of environmental quality, for example, stated in joint comments that ''comparing the 'waters of the United States' reported by States to recent USGS maps released by the EPA shows a 131% increase in federal waters.'' [59] Comments filed by the State

[52] 2015 Rule Economic Analysis at 8.

[53] The table includes all states except Hawaii.

[54] *See* comments submitted by Arizona Department of Environmental Quality et al. (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–15096), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-15096;* comments submitted by CropLife America (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–14630), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-14630;* comments submitted by American Foundry Society (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–15148), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-15148;* comments submitted by U.S. Chamber of Commerce et al. (Nov. 12, 2014) (Docket ID: EPA–HQ–OW–2011–0880–14115), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-14115.*

[55] *See* U.S. EPA and U.S. Army Corps of Engineers. Clean Water Rule Response to Comments—Topic 8: Tributaries at 88–89, *available at https://www.epa.gov/sites/production/files/2015-06/documents/cwr_response_to_comments_8_tributaries.pdf.*

[56] EPA Administrator Gina McCarthy testimony before the U.S. House of Representatives Appropriations Committee Subcommittee on Interior, Environment, and Related Agencies (March 27, 2014), *available at https://www.c-span.org/video/?318438-1/fy2015-epa-budget.*

[57] Letter from Nancy Stoner, Acting Asst. Administrator, U.S. EPA Office of Water, to Rep. Lamar Smith, Chairman, U.S. House of Representatives Committee on Science, Space, and Technology (July 28, 2014), *available at https://science.house.gov/sites/republicans.science.house.gov/files/documents/epa_releases_maps_letter.pdf.*

[58] EPA State and National Maps of Waters and Wetlands, *available at https://science.house.gov/epa-state-and-national-maps-waters-and-wetlands.*

[59] *See* comments submitted by Alabama Dept. of Environ. Mgmt., Arizona Dept. of Environ. Quality,

of Kansas on the proposed rule raised similar concerns and focused on the inclusion of ephemeral streams in the proposed definition of tributary: ''In Kansas we have identified approximately 31,000 miles of perennial and intermittent waters that have been treated as WOTUS for several decades. . . . As per the preamble to the Rule and EPA/ACOE statements, the additional 133,000 miles [of ephemeral streams] would result in a 460% increase in the number of Kansas waters presumed to be jurisdictional under the Rule.'' [60] Kansas added that the State does ''not believe ephemeral waters have *always* been considered *de facto* tributaries for CWA jurisdictional purposes.'' [61] Referencing a statement made by then-EPA Administrator McCarthy in which she stated, ''[u]nfortunately, 60 percent of our nation's streams and millions of acres of wetlands currently lack clear protection from pollution under the Clean Water Act,'' [62] Kansas noted that ''if those 60 percent that 'lack clear protection' are brought under the umbrella of the CWA, [there will be] a significantly larger expansion than estimated in the economic analysis for the Rule.'' [63]

The agencies in 2015 suggested that a feature that flows very infrequently would not form the physical indicators required to meet the 2015 Rule's definitions of ''ordinary high water mark'' and ''tributary.'' [64] In response to comments questioning the agencies' characterization of the change in scope of jurisdiction under the 2015 Rule, the agencies stated that the 2015 Rule was narrower in scope than the existing regulations and historical practice, and reiterated that an increase of approximately 3 percent represented the agencies' estimate of the increased positive jurisdictional determinations compared to recent practice.[65] In the administrative record for the 2015 Rule and in a brief filed with the Sixth Circuit (based on that record), the agencies asserted that the definition of ''waters of the United States'' historically has included ephemeral streams and that some federal court decisions after *SWANCC* upheld assertions of CWA jurisdiction over surface waters that have a hydrologic connection to and that form part of the tributary system of a traditional navigable water, including intermittent or ephemeral streams. 80 FR 37079; Brief for Respondents at 11, 62–64, *In re EPA,* No. 15–3571 (6th Cir. Jan. 13, 2017).[66] The agencies are requesting comment on whether these responses to these issues are adequate. While some ephemeral streams may have been jurisdictional after a case-specific analysis pursuant to the *Rapanos* Guidance,[67] and while challenges to some of those determinations have been rejected by courts, the agencies are requesting public comment on whether these prior conclusions and assertions were correct.

Given the concerns expressed by three federal courts regarding the potential scope of the 2015 Rule and comments raised during the 2015 rulemaking and submitted in response to the July 27, 2017 NPRM, the agencies are re-evaluating the 2015 Rule and the potential change in jurisdiction. While the agencies are not aware of any data that estimates with any reasonable certainty or predictability the exact baseline miles and area of waters covered by the 1986 regulations and preexisting agency practice or data that accurately forecasts of the additional waters subject to jurisdiction under the 2015 Rule, the agencies are examining whether the data and estimates used to support the 2015 Rule's conclusions that the rule would be narrower than preexisting regulations may not have supported those conclusions, and instead the 2015 Rule may have had more than a marginal impact on CWA jurisdictional determinations and may impact well-defined and longstanding relationships between the federal and State governments in implementing CWA programs. The agencies seek comment on this and other data that may be relevant to a proposed finding, and whether such a change in finding would, either independently or in conjunction with other factors, support the agencies' proposal to repeal the 2015 Rule.

4. Potential Impact on Federal-State Balance

When promulgating the 2015 Rule, the agencies concluded and prominently stated that ''State, tribal, and local governments have well-defined and longstanding relationships with the Federal government in implementing CWA programs and these relationships are not altered by the final rule,'' 80 FR 37054. Indeed, it was ''the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this Act.'' 33 U.S.C. 1251(b).

In response to the agencies' July 27, 2017 NPRM, some commenters have suggested that the 2015 Rule—including, *inter alia,* elements of the final rule that commenters were not able to address during the comment period—may not effectively reflect the specific policy that Congress articulated in CWA section 101(b). The agencies are considering whether and are proposing to conclude that the 2015 Rule did not draw the appropriate line, for purposes of CWA jurisdiction, between waters subject to federal and State regulation, on the one hand, and waters subject to state regulation only, on the other. In comments submitted to the agencies in response to the July 27, 2017 NPRM, many States, representatives of entities within many sectors of the regulated community, and numerous other commenters expressed concerns that the 2015 Rule permits federal encroachment upon the States' traditional and primary authority over land and water resources. Such commenters cite the Supreme Court's recognition that ''Congress chose to 'recognize, preserve, and protect the primary responsibilities and rights of states . . . to plan the development and use' '' of those resources in enacting the CWA rather than ''readjust the federal-state balance,'' *SWANCC,* 531 U.S. at 174 (quoting CWA section 101(b), 33 U.S.C. 1251(b)).

Indiana Dept. of Environ. Mgmt., Kansas Dept. of Health and Environ., Louisiana Dept. of Environ. Quality, Mississippi Dept. of Environ. Quality, Oklahoma Dept. of Environ. Quality, and Wyoming Dept. of Environ. Quality (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–15096), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-15096.*

[60] *See* comments submitted by the State of Kansas at Appendix A (Oct. 23, 2014) (Docket ID: EPA–HQ–OW–2011–0880–16636), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-16636.*

[61] *Id.* (emphasis in original).

[62] *See* ''Clean Water Drives Economic Growth'' by Gina McCarthy (Sept. 29, 2014), *available at http://www.huffingtonpost.com/gina-mccarthy/clean-water-act_b_5900734.html.*

[63] *See supra* note 60.

[64] *See, e.g.,* U.S. EPA and U.S. Army Corps of Engineers. Clean Water Rule Response to Comments—Topic 11: Cost/Benefits (Volume 2) at 223, *available at https://www.epa.gov/sites/production/files/2015-06/documents/cwr_response_to_comments_11_econ_vol2.pdf.*

[65] *See, e.g., id.* at 10–13, 17.

[66] *See also* U.S. EPA and Department of the Army. Technical Support Document for the Clean Water Rule: Definition of Waters of the United States at 28 (May 27, 2015), *available at https://www.epa.gov/sites/production/files/2015-05/documents/technical_support_document_for_the_clean_water_rule_1.pdf.*

[67] *See Rapanos* Guidance at 7 (''[R]elatively permanent' waters do not include ephemeral tributaries which flow only in response to precipitation and intermittent streams which do not typically flow year-round or have continuous flow at least seasonally. However, CWA jurisdiction over these waters will be evaluated under the significant nexus standard.'').

Under the 2015 Rule, commenters have observed that the agencies asserted categorical jurisdiction over water features that may be wholly intrastate and physically remote from navigable-in-fact waters. Such waters ''adjacent'' to jurisdictional waters are deemed to meet the definition of ''waters of the United States'' under the 2015 Rule, so long as any portion of the water is located within 100 feet of the ordinary high water mark of a category (1) through (5) ''jurisdictional by rule'' water; within the 100-year floodplain of a category (1) through (5) ''jurisdictional by rule'' water but not more than 1,500 feet from the ordinary high water mark of such water; or within 1,500 feet of the high tide line of a primary water or the ordinary high water mark of the Great Lakes. 80 FR 37085–86, 37105. The agencies also established case-specific jurisdiction over water features generally at a greater distance, including waters (including seasonal or ephemeral waters) located within 4,000 feet of the high tide line or ordinary high water mark of a category (1) through (5) water. *See* 80 FR 37105. For such waters, ''the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) . . . or within 4,000 feet of the high tide line or ordinary high water mark'' of a category (1) through (5) water.'' *Id.*

The agencies are considering whether the 2015 Rule's coverage of waters based, in part, on their location within the 100-year floodplain of a jurisdictional water is consistent with the policy articulated in CWA section 101(b) that States should maintain primary responsibility over land and water resources. The agencies received many comments on the proposal to the 2015 Rule indicating that the potential breadth of this standard could conflict with other federal, State or local laws that regulate development within floodplains.[68] In particular, certain local governments expressed concern that the floodplain element of the rule could conflict with local floodplain ordinances or otherwise complicate local land use planning and development.[69] Though the agencies added a distance-based threshold to limit the use of the 100-year floodplain as a basis for categorical CWA jurisdiction with respect to adjacent waters, the agencies are concerned that the Rule's use of this standard, including its use as a basis for requiring a case-specific significant nexus determination, could nonetheless interfere with traditional state and local police power, as suggested by some of the comments received in 2014.[70] Comments received in response to the July 27, 2017 NPRM also raise concerns about the use of the 100-year floodplain. Specifically, commenters expressed concern about the absence of suitable maps and about the accuracy of existing maps. Given these concerns, the agencies request comment on whether the 2015 Rule's use of the 100-year floodplain as a factor to establish jurisdiction over adjacent waters and case-specific waters interferes with States' primary responsibilities over the planning and development of land and water resources in conflict with CWA section 101(b). The agencies also seek comment on to what extent the 100-year floodplain component of the 2015 Rule conflicts with other federal regulatory programs, and whether such a conflict impacts State and local governments.

The agencies noted in 2015 ''that the vast majority of the nation's water features are located within 4,000 feet of a covered tributary, traditional navigable water, interstate water, or territorial sea.'' [71] The agencies' broadening of certain key concepts and terms relative to the prior regulatory regime means that the agencies can potentially review the ''vast majority'' of water features in the country under the 2015 Rule, unless those features have been excluded from the definition. Similar concern was raised in response to the July 27, 2017 NPRM, for example, by the Missouri Department of Natural Resources and Department of Agriculture.[72] The agencies seek comment on that analysis and whether the 2015 Rule readjusts the federal-state balance in a manner contrary to the congressionally determined policy in CWA section 101(b). Indeed, when issuing a preliminary injunction of the 2015 Rule, the Southern District of Georgia held that ''The [2015] WOTUS Rule asserts jurisdiction over remote and intermittent waters without evidence that they have a nexus with any navigable-in-fact waters.'' *Georgia,* 2018 U.S. Dist. LEXIS 97223, at *19. The agencies thus solicit comment on whether the definitions in the 2015 Rule would subject wholly intrastate or physically remote waters or wetlands to CWA jurisdiction, either categorically or on a case-by-case basis, and request information about the number and scope of such waters of which commenters may be aware.[73]

Further, the agencies solicit comment about whether these, or any other, aspects of the 2015 Rule as finalized would, as either a *de facto* or *de jure* matter, alter federal-state relationships in the implementation of CWA programs and State regulation of State waters, and whether the 2015 Rule appropriately implements the Congressional policy of recognizing, preserving, and protecting the primary rights of states to plan the development and use of land and water resources. Because such findings would, if adopted by the agencies, negate a key finding underpinning the 2015 Rule, the agencies request comment on whether to repeal the 2015 Rule on this basis.

5. Additional Bases for Repealing the 2015 Rule That the Agencies Are Considering

In addition to our proposed conclusions that the 2015 Rule failed to provide regulatory certainty and that it exceeded the agencies' authority under the CWA, the agencies are also considering several other supplemental bases for repealing the 2015 Rule. These are discussed below along with requests for public comment.

Some commenters have suggested that the 2015 Rule may exceed Congress' power under the Commerce Clause. The Supreme Court in *SWANCC* found that, in enacting the CWA, Congress had in mind as its authority ''its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made.'' 531 U.S. at 172. The Court went on to construe the CWA to avoid the significant constitutional

[68] *See, e.g.,* comments submitted by City of Chesapeake (Sept. 9, 2014) (Docket ID: EPA–HQ–OW–2011–0880–9615), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-9615.*

[69] *See, e.g.,* comments submitted by National Association of Counties (Nov. 14, 2014) (Docket ID: EPA–HQ–OW–2011–0880–15081), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-15081.*

[70] *See, e.g.,* comments submitted by Georgia Municipal Association (Nov. 13, 2014) (Docket ID: EPA–HQ–OW–2011–0880–14527), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-14527;* comments submitted by City of St. Petersburg (Nov. 13, 2014) (Docket ID: EPA–HQ–OW–2011–0880–18897), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-18897.*

[71] 2015 Rule Economic Analysis at 11.

[72] *See* comments submitted by the Missouri Department of Natural Resources and Department of Agriculture (Sept. 26, 2017) (Docket ID: EPA–HQ–OW–2017–0203–13869), *available at https://www.regulations.gov/document?D=EPA-HQ-OW-2017-0203-13869* (''The broad definition of tributary and the inclusion of a three-quarter mile buffer around every tributary and impoundment, would have cast a very broad jurisdictional umbrella over the state; requiring significant nexus determinations on all but a very few number of waters.'').

[73] This includes whether the 2015 Rule is supported by a ''clear and manifest'' statement under the CWA to change the scope of traditional state regulatory authority. *See BFP* v. *Resolution Trust Corp.,* 511 U.S. 531, 544 (1994); *see also Bond* v. *United States,* 134 S. Ct. 2077, 2089–90 (2014); *SWANCC,* 531 U.S. at 172–74.

questions raised by the agencies' assertion that the '' 'Migratory Bird Rule' falls within Congress' power to regulate intrastate activities that 'substantially affect' interstate commerce.'' *Id.* at 173. The agencies are evaluating the concerns, reflected in certain comments received by the agencies, that many features that are categorically jurisdictional under the 2015 Rule, such as wetlands that fall within the distance thresholds of the definition of ''neighboring,'' test the limits of the scope of the Commerce Clause because they may not have the requisite effect on the channels of interstate commerce.[74]

For example, according to certain litigants challenging the 2015 Rule, the ''seasonally ponded, abandoned gravel mining depressions'' specifically at issue in *SWANCC,* 531 U.S. at 164, which the Supreme Court determined were ''nonnavigable, isolated, intrastate waters,'' *id.* at 166–72, might be subject to case-specific jurisdiction under the 2015 Rule. The depressions appear to be located within 4,000 feet of Poplar Creek, a tributary to the Fox River, and may have the ability to store runoff or contribute other ecological functions in the watershed.

The agencies request comment, including additional information, on whether the water features at issue in *SWANCC* or other similar water features could be deemed jurisdictional under the 2015 Rule, and whether such a determination is consistent with or otherwise well-within the agencies' statutory authority, would be unreasonable or go beyond the scope of the CWA, and is consistent with Justice Kennedy's significant nexus test expounded in *Rapanos* wherein he stated, ''[b]ecause such a [significant] nexus was lacking with respect to isolated ponds, the [*SWANCC*] Court held that the plain text of the statute did not permit'' the Corps to assert jurisdiction over them. *See* 547 U.S. at 767.

The examples identified in Section II.C.3 above raise similar issues. The abandoned borrow pit, for example, discussed in Case Study C—AJD Number MVM–2014–460, was determined by the Corps in December 2014 to be an isolated water located 2,184 feet from a relatively permanent body of water ''with no substantial nexus to interstate (or foreign) commerce'' (*see* Support Document), yet the agencies later stated the feature would be jurisdictional under the 2015 Rule. In addition, the wetlands at issue in Case Study B—AJD Number 2004–001914 (*see* Support Document) described above in Section II.C.3 were located 583 feet from the Johlin Ditch outside Toledo, Ohio, situated east of an existing medical building and west of an agricultural area. The wetlands were determined by the Corps to be isolated, lacking a surface connection to a water of the United States and a substantial nexus to interstate commerce. Those wetlands, however, were later stated by the agencies to be subject to CWA jurisdiction under the 2015 Rule. The agencies therefore solicit comment on whether the 2015 Rule would cover such wetlands and, if so, whether that would exceed the CWA's statutory limits. *See, e.g., SWANCC,* 531 U.S. at 171–72, 174 (''[W]e find nothing approaching a clear statement from Congress that it intended § 404(a) to reach an abandoned sand and gravel pit'' that is ''isolated.'').

Interested parties are encouraged to provide comment on whether the 2015 Rule is consistent with the statutory text of the CWA and relevant Supreme Court precedent, the limits of federal power under the Commerce Clause as specifically exercised by Congress in enacting the CWA, and any applicable legal requirements that pertain to the scope of the agencies' authority to define the term ''waters of the United States.'' The agencies also solicit comment on any other issues that may be relevant to the agencies' consideration of whether to repeal the 2015 Rule, such as whether any potential procedural deficiencies limited effective public participation in the development of the 2015 Rule.[75]

D. The Agencies' Next Steps

In defining the term ''waters of the United States'' under the CWA, Congress gave the agencies broad discretion to articulate reasonable limits on the meaning of that term, consistent with the Act's text and its policies as set forth in CWA section 101. In light of the substantial litigation risk regarding waters covered under the 2015 Rule, and based on the agencies' experience and expertise in applying the CWA, the agencies propose to repeal the 2015 Rule and put in place the prior regulation. This is based on the concerns articulated above and the agencies' concern that there may be significant disruption to the implementation of the Act and to the public, including regulated entities, if the 2015 Rule were vacated in part. The agencies therefore propose to exercise their discretion and policy judgment by repealing the 2015 Rule permanently and in its entirety because the agencies believe that this approach is the most appropriate means to remedy the deficiencies of the 2015 Rule identified above, address the litigation risk surrounding the 2015 Rule, and restore a regulatory process that has been in place for years.

The agencies have considered other alternatives that could have the effect of addressing some of the potential deficiencies identified, including proposing revisions to specific elements of the 2015 Rule, issuing revised implementation guidance and implementation manuals, and proposing a further change to the February 6, 2020 applicability date of the 2015 Rule. The agencies are soliciting comments on whether any of these alternative approaches would fully address and ameliorate potential deficiencies in and litigation risk associated with the 2015 Rule. Consistent with the President's Executive Order, the agencies are also evaluating options for revising the definition of ''waters of the United States.''

The agencies are proposing to permanently repeal the 2015 Rule at this time, and are taking comment on whether this proposal is the best and most efficient approach to address the potential deficiencies identified in this notice and to provide the predictability and regulatory certainty that alternative approaches may not provide.

E. Effect of Repeal

The 2015 Rule amended longstanding regulations contained in portions of 33 CFR part 328 and 40 CFR parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401 by revising, removing, and re-designating certain paragraphs and definitions in those regulations. In this action, the agencies would repeal the 2015 Rule and restore the regulations in existence immediately prior to the 2015 Rule. As such, if the agencies finalize this proposal and repeal the 2015 Rule and thus repeal those amendments, the regulatory definitions of ''waters of the United States'' in effect would be those portions of 33 CFR part 328 and 40 CFR parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401 as they existed immediately prior to the 2015 Rule's amendments. *See, e.g., API* v. *EPA,* 883 F.3d 918, 923 (DC Cir. 2018) (regulatory criterion in effect immediately before enactment of criterion that was vacated by the court ''replaces the now-vacated'' criterion). Thus, if the agencies

[74] Though the agencies have previously said that the 2015 Rule is consistent with the Commerce Clause and the CWA, the agencies are in the process of considering whether it is more appropriate to draw a jurisdictional line that ensures that the agencies regulate well within our constitutional and statutory bounds.

[75] *See, e.g., Small Refiner Lead Phase-Down Task Force* v. *EPA,* 705 F.2d 506, 549 (DC Cir. 1983).

determine that repeal of the 2015 Rule is appropriate, the agencies concurrently would recodify the prior regulation in the CFR, which would not have the effect of creating a regulatory vacuum, and the agencies need not consider the potential consequences of such a regulatory vacuum in light of this. If this proposed rule is finalized, the agencies propose to apply the prior definition until a new definition of CWA jurisdiction is finalized.

The current regulatory scheme for determining CWA jurisdiction is ''familiar, if imperfect,'' *In re EPA,* 803 F.3d at 808, and the agencies and regulated public have significant experience operating under the longstanding regulations that were replaced by the 2015 Rule. The agencies would continue to implement those regulations, as they have for many years, consistent with Supreme Court decisions and practice, other case law interpreting the rule, and informed by agency guidance documents. Apart from a roughly six-week period when the 2015 Rule was in effect in 37 States, the agencies have continued to implement the preexisting regulatory definitions as a result of the court orders discussed in Section I.B. above, as well as the final rule adding an applicability date to the 2015 Rule (83 FR 5200, Feb. 6, 2018). While the agencies acknowledge that the 1986 and 1988 regulations have been criticized and their application has been narrowed by various legal decisions, including *SWANCC* and *Rapanos,* the longstanding nature of the regulatory framework and its track record of implementation makes it preferable until the agencies propose and finalize a replacement definition. The agencies believe that, until a new definition is completed, it is important to retain the status quo that has been implemented for many years rather than the 2015 Rule, which has been and continues to be mired in litigation.

In other words, restoration of the prior regulatory text in the CFR, interpreted in a manner consistent with Supreme Court decisions, and informed by applicable agency guidance documents and longstanding practice, will ensure that the scope of CWA jurisdiction will be administered in the same manner as it is now; as it was during the Sixth Circuit's lengthy, nationwide stay of the 2015 Rule; and as it was for many years prior to the promulgation of the 2015 Rule. To be clear, the agencies are not proposing a new definition of ''waters of the United States'' in this specific rulemaking separate from the definition that existed immediately prior to the 2015 Rule. The agencies also are not proposing to take this action in order to fill a regulatory gap because no such gap exists today. *See* 83 FR 5200, 5204. Rather, the agencies are solely proposing to repeal the 2015 amendments to the above-referenced portions of the CFR and recodify the prior regulatory text as it existed immediately prior to the 2015 Rule's amendments.

III. Minimal Reliance Interests Implicated by a Repeal of the 2015 Rule

More than 30,000 AJDs of individual aquatic resources and other features have been issued since August 28, 2015, the effective date of the 2015 Rule. However, less than two percent of the AJDs of individual aquatic resources were issued under the 2015 Rule provisions in the six weeks the rule was in effect in a portion of the country.[76] The 2015 Rule was in effect in only 37 States for about six weeks between the 2015 Rule's effective date and the Sixth Circuit's October 9, 2015 nationwide stay order, *see In re EPA,* 803 F.3d 804 (6th Cir. 2015), and only 540 AJDs for aquatic resources and other features were issued during that short window of time. The remainder of the AJDs issued since August 28, 2015, were issued under the regulations defining the term ''waters of the United States'' that were in effect immediately before the effective date of the 2015 Rule.

''Sudden and unexplained change, . . . or change that does not take account of legitimate reliance on prior [agency] interpretation, . . . may be arbitrary, capricious [or] an abuse of discretion[,] [b]ut if these pitfalls are avoided, change is not invalidating[.]'' *Smiley* v. *Citibank (South Dakota), N.A.,* 517 U.S. 735, 742 (1996) (internal quotation marks and citations omitted). Therefore, in proposing to repeal the 2015 Rule, the agencies are considering any interests that may have developed in reliance on the 2015 Rule, as well as the potential harm to such reliance interests from repealing the Rule against the benefits. The agencies solicit comment on whether the AJDs that were issued under the 2015 Rule's brief tenure (and any ensuing reliance interests that were developed) would be adversely affected by the Rule's repeal. If the potential for such harm exists, the agencies also solicit comment on whether those harms outweigh the potential benefits of repealing the 2015 Rule.

In staying the 2015 Rule nationwide, the Sixth Circuit found no indication ''that the integrity of the nation's waters will suffer imminent injury if the [2015 Rule] is not immediately implemented and enforced.'' *In re EPA,* 803 F.3d at 808. The Sixth Circuit wrote that the ''burden—potentially visited nationwide on governmental bodies, state and federal, as well as private parties—and the impact on the public in general, implicated by the Rule's effective redrawing of jurisdictional lines over certain of the nation's waters'' was of ''greater concern.'' *Id.* As a result, the Sixth Circuit held that ''the sheer breadth of the ripple effects caused by the Rule's definitional changes counsels strongly in favor of maintaining the status quo for the time being.'' *Id.* For the reasons expounded in this notice and the NPRM, the agencies believe that any potential adverse reliance interests are outweighed by the benefits of the agencies' proposed action. The agencies therefore propose to repeal the 2015 Rule and request comment on that proposal.

IV. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review; Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review prior to the NPRM and again prior to issuance of the SNPRM. Any changes made in response to OMB recommendations have been documented in the docket.

While economic analyses are informative in the rulemaking context, the agencies are not relying on the economic analysis performed pursuant to Executive Orders 12866 and 13563 and related procedural requirements as a basis for this proposed action. *See, e.g., NAHB,* 682 F.3d at 1039–40 (noting that the quality of an agency's economic analysis can be tested under the APA *if* the ''agency decides to rely on a cost-benefit analysis as part of its rulemaking'').

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Cost

This rule is expected to be an Executive Order 13771 deregulatory action. Details on the estimated cost savings of this proposed rule can be found in the economic analysis that was published together with the NPRM.

[76] *See* Clean Water Act Approved Jurisdictional Determinations, *available at https://watersgeo.epa.gov/cwa/CWA-JDs,* as of May 9, 2018. The 2015 Rule was enjoined in 13 States by the U.S. District Court for the District of North Dakota and has never gone into effect in those States.

C. Paperwork Reduction Act

This proposed rule does not impose any new information collection burdens under the Paperwork Reduction Act.

D. Regulatory Flexibility Act

The Regulatory Flexibility Act generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions.

The proposed repeal of the 2015 Rule is a deregulatory action that would effectively maintain the status quo as the agencies are currently implementing it, and avoid the imposition of potentially significant adverse economic impacts on small entities in the future. Details on the estimated cost savings of this proposed rule can be found in the economic analysis that was published together with the NPRM. Accordingly, after considering the potential economic impacts of the proposed repeal action on small entities, we certify that this proposed action will not have a significant economic impact on a substantial number of small entities.

E. Unfunded Mandates Reform Act

Under section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA), signed into law on March 22, 1995, an agency must prepare a budgetary impact statement to accompany any proposed or final rule that includes a federal mandate that may result in estimated cost to state, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under section 205 of the UMRA, the agency must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the agency to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule. This proposed action does not contain any unfunded mandate as described in the UMRA, and does not significantly or uniquely affect small governments. The definition of ''waters of the United States'' applies broadly to CWA programs. The proposed action imposes no enforceable duty on any state, local, or tribal governments, or the private sector, and does not contain regulatory requirements that significantly or uniquely affect small governments.

F. Executive Order 13132: Federalism

Executive Order 13132 requires the agencies to develop an accountable process to ensure ''meaningful and timely input by state and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implication'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Under Executive Order 13132, the agencies may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the federal government provides the funds necessary to pay the direct compliance costs incurred by state and local government, or the agencies consult with state and local officials early in the process of developing the proposed regulation. The agencies also may not issue a regulation that has federalism implications and that preempts state law unless the agencies consult with state and local officials early in the process of developing the proposed regulation.

This proposed rule will not have substantial direct effects on the states, on the relationship between the national government and states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, because it merely proposes to repeal a rule that was in effect in only a portion of the country for a short period of time, and does not alter the relationship or the distribution of power and responsibilities established in the CWA. The agencies are proposing to repeal the 2015 Rule in part because the 2015 Rule may have impermissibly and materially affected the states and the distribution of power and responsibilities among the various levels of government and therefore likely should have been characterized as having federalism implications when promulgated in 2015. Thus, the requirements of section 6 of the Executive Order do not apply to this proposed rule because it returns the federal-state relationship to the status quo.

G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, Nov. 9, 2000), requires the agencies to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' This proposed rule does not have tribal implications, as specified in Executive Order 13175. This proposed rule will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, because it merely preserves the status quo currently in effect today and in effect immediately before promulgation of the 2015 Rule. Thus, Executive Order 13175 does not apply to this proposed rule. Consistent with E.O. 13175, however, the agencies have and will continue to consult with tribal officials, as appropriate, as part of any future rulemaking to define ''waters of the United States.''

H. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, Apr. 23, 1997), applies to any rule that: (1) Is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that an agency has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agency. This proposed rule is not subject to Executive Order 13045 because it does not involve decisions intended to mitigate environmental health or safety risks.

I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001), because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

J. National Technology Transfer and Advancement Act

Section 12 of the National Technology Transfer and Advancement Act of 1995 requires federal agencies to evaluate existing technical standards when developing a new regulation. The proposed rule does not involve technical standards.

K. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

This proposed rule maintains the legal status quo. The agencies therefore believe that this action does not have disproportionately high and adverse human health or environmental effects on minority, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, Feb. 16, 1994).

List of Subjects

33 CFR Part 328

Environmental protection, Administrative practice and procedure, Navigation (water), Water pollution control, Waterways.

40 CFR Part 110

Environmental protection, Oil pollution, Reporting and recordkeeping requirements.

40 CFR Part 112

Environmental protection, Oil pollution, Penalties, Reporting and recordkeeping requirements.

40 CFR Part 116

Environmental protection, Hazardous substances, Reporting and recordkeeping requirements, Water pollution control.

40 CFR Part 117

Environmental protection, Hazardous substances, Penalties, Reporting and recordkeeping requirements, Water pollution control.

40 CFR Part 122

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous substances, Reporting and recordkeeping requirements, Water pollution control.

40 CFR Part 230

Environmental protection, Water pollution control.

40 CFR Part 232

Environmental protection, Intergovernmental relations, Water pollution control.

40 CFR Part 300

Environmental protection, Air pollution control, Chemicals, Hazardous substances, Hazardous waste, Intergovernmental relations, Natural resources, Occupational safety and health, Oil pollution, Penalties, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

40 CFR Part 302

Environmental protection, Air pollution control, Chemicals, Hazardous substances, Hazardous waste, Intergovernmental relations, Natural resources, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

40 CFR Part 401

Environmental protection, Waste treatment and disposal, Water pollution control.

■ For the reasons stated herein, the agencies propose to amend 33 CFR part 328 and 40 CFR parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401 of the Code of Federal Regulations to repeal the amendments that were promulgated in the 2015 Rule and reestablish the regulatory text that was in place immediately prior to promulgation of the 2015 Rule.

Dated: June 29, 2018.

E. Scott Pruitt,

Administrator, Environmental Protection Agency.

Dated: June 29, 2018.

R.D. James,

Assistant Secretary of the Army (Civil Works).

[FR Doc. 2018–14679 Filed 7–11–18; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Medicare & Medicaid Services

42 CFR Part 447

[CMS–2413–P]

RIN 0938–AT61

Medicaid Program; Reassignment of Medicaid Provider Claims

AGENCIES: Centers for Medicare & Medicaid Services, Department of Health and Human Services.

ACTION: Proposed rule.

SUMMARY: This proposed rule would remove the regulatory text that allows a state to make payments to third parties on behalf of an individual provider for benefits such as health insurance, skills training, and other benefits customary for employees. We are concerned that these provisions are overbroad, and insufficiently linked to the exceptions expressly permitted by the statute. As we noted in our prior rulemaking, section 1902(a)(32) of the Act provides for a number of exceptions to the direct payment requirement, but it does not authorize the agency to create new exceptions.

DATES: To be assured consideration, comments must be received at one of the addresses provided below, no later than 5 p.m. on August 13, 2018.

ADDRESSES: In commenting, please refer to file code CMS–2413–P. Because of staff and resource limitations, we cannot accept comments by facsimile (FAX) transmission.

Comments, including mass comment submissions, must be submitted in one of the following three ways (please choose only one of the ways listed):

1. *Electronically.* You may submit electronic comments on this regulation to *http://www.regulations.gov.* Follow the ''Submit a comment'' instructions.

2. *By regular mail.* You may mail written comments to the following address ONLY: Centers for Medicare & Medicaid Services, Department of Health and Human Services, Attention: CMS–2413–P, P.O. Box 8016, Baltimore, MD 21244–8016.

Please allow sufficient time for mailed comments to be received before the close of the comment period.

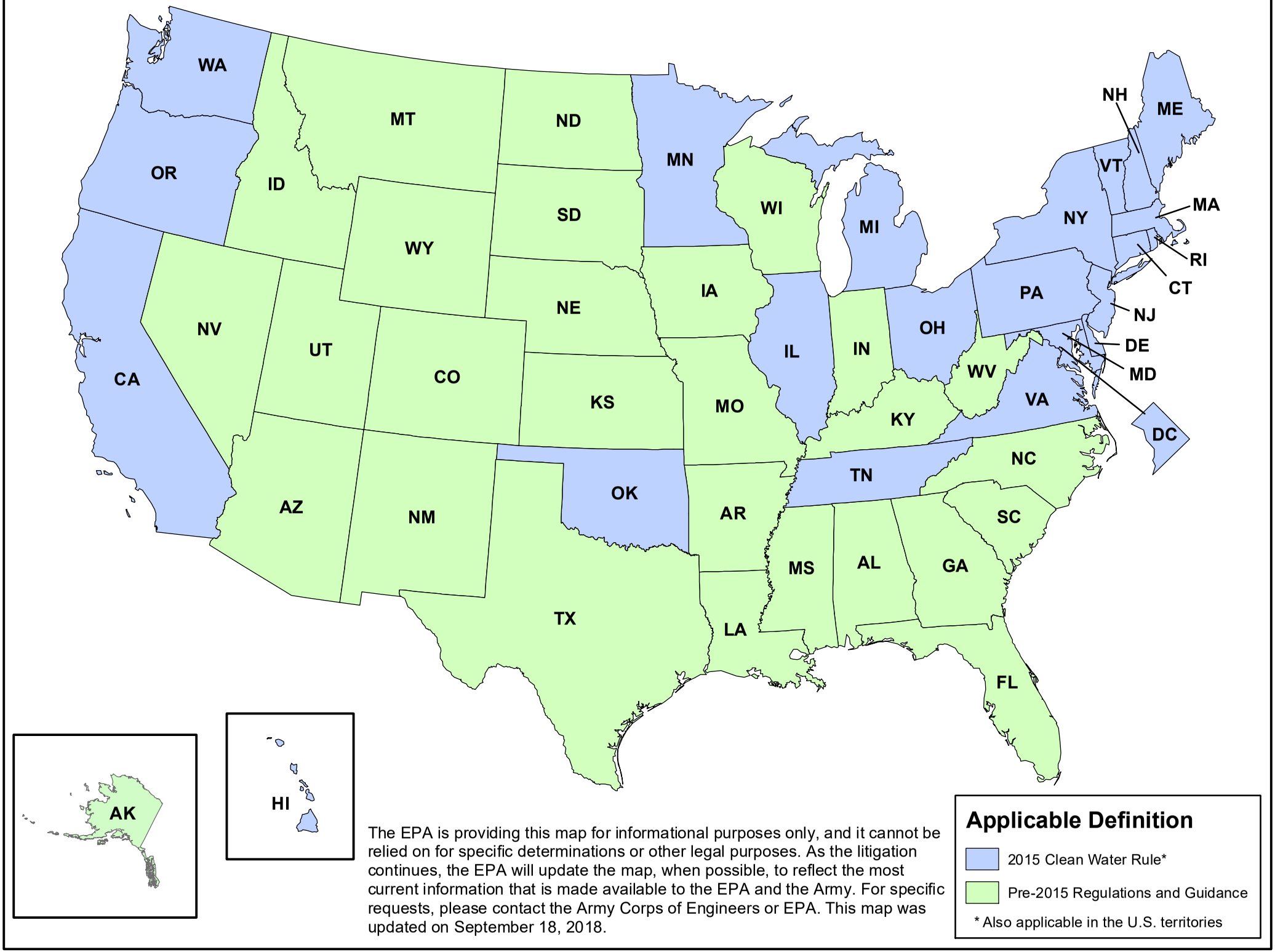
3. *By express or overnight mail.* You may send written comments to the following address ONLY: Centers for Medicare & Medicaid Services, Department of Health and Human Services, Attention: CMS–2413–P, Mail Stop C4–26–05, 7500 Security Boulevard, Baltimore, MD 21244–1850.

FOR FURTHER INFORMATION CONTACT: Christopher Thompson, (410) 786–4044.

SUPPLEMENTARY INFORMATION: *Inspection of Public Comments:* All comments received before the close of the comment period are available for viewing by the public, including any personally identifiable or confidential business information that is included in a comment. We post all comments received before the close of the comment period on the following website as soon as possible after they have been received: *http://www.regulations.gov.* Follow the search instructions on that website to view public comments.

I. Background

The Medicaid program was established by the Congress in 1965 to



The EPA is providing this map for informational purposes only, and it cannot be relied on for specific determinations or other legal purposes. As the litigation continues, the EPA will update the map, when possible, to reflect the most current information that is made available to the EPA and the Army. For specific requests, please contact the Army Corps of Engineers or EPA. This map was updated on September 18, 2018.

Weeding Out Ethical and Environmental Issues in the Budding Cannabis Industry

Presented By:
Telisport W. Putsavage, Esq.

ENVIRONMENTAL ISSUES IN THE CULTIVATION OF CANNABIS

Environment & Energy Section
New York State Bar Association
Mt. Tremper, New York
October 19 - 21 2018

Telisport W. Putsavage
Putsavage PLLC
17 Elk Street Albany, New York 12207

Federal Status of Cannabis

Drug Enforcement Agency	Schedule 1 Drug: No beneficial use Listing reconsidered late in Obama administration but left unchanged
Rohrabacher Amendment	No use of Federal funds to enforce against state medical program
Cole Memo / Sessions Memo	Stand back versus active scrutiny
Perspective of US Attorneys	Utah versus Massachusetts

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Nationwide Status:

30 states and DC have some form of legalization

Adult use retail	1 state
Medical/adult use/operating retail	5 states
Medical/ authorized adult use retail	2 states
Medical/personal adult use	DC; 1 state
Medical	21 states

Putsavage PLLC

Regional Outlook

Massachusetts	Medical; implementing retail adult use
Canada	Retail adult use now operating
Vermont	Medical; home grow adult use
New Jersey	Active legislative consideration
Pennsylvania	Active legislative consideration

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New York Status

Medical — Compassionate Care Act passed 2014

Overseen by Narcotics Bureau of the New York State Department of Health (NYSDOH)

10 Registered Organizations; 22 dispensaries; more under development

5 RO's operate cultivation facilities; others under development

Medical order required from NYSDOH-registered physician for specified diagnoses; insurance coverage for doctor visit, but not product

Adult use — *Assessment of the Potential Impact of Regulated Marijuana in New York State* [NYSDOH July 2018]

Multi-Agency Work Group / 15 Listening Sessions

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Environmental Issues: Pesticide Use

Pesticides are regulated under the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA")
7 USC § 136 *et seq*

With limited exceptions every individual pesticide product must be registered with EPA; products must also be registered in states where distributed.

Under FIFRA a pesticide must be used strictly in accord with its label directions, including in the case of an agricultural use product, the target crop(s) on which it may be used.

As a Schedule 1 Listed substance, cannabis is not allowed to be listed as a target crop on a registered pesticide label.

Result No registered pesticides are legal to apply to cannabis

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Minimum Risk Pesticides

Exemption from FIFRA registration for products determined by EPA to be of such limited toxicity as to not require registration

Must be composed of EPA-specified active ingredients and inert ingredients

Free of FIFRA prohibition on labeling for use on cannabis but can be of questionable efficacy

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Pest Pressures

Most legal cannabis is cultivated in large commercial greenhouses or warehouses converted to a greenhouse function. [Exception: California]

Face normal pest pressures of insects and disease confronted by commercial greenhouse agriculture.

Insecticides and fungicides are generally required to successfully cultivate a crop.

Massachusetts requires regular use of EPA-registered sanitizers on contact surfaces.

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Integrated Pest Management ("IPM")

Management of pest pressure by comprehensive program of sanitation, physical control, non-toxic control methods and where necessary as a last resort

IPM Approaches

> Complete cleansing of growing space between crops; disinfect when disease detected
> Use of beneficial insects, both purchased and raised, to control insects; can eliminate need for insecticides
> Use of Minimum Risk pesticides where effective
> Use of biological pesticides

Massachusetts requires employment of "best practices" to minimize pest pressure 935 CMR § 500.120

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State Approaches to Pesticides for Cannabis

Transparent approach

Colorado, Oregon, Washington and other states have published criteria and lists of acceptable products.

Typical criteria include:

> labeled for use on food products;

> where smoking of cannabis material is permitted, allowed pesticide products must be labeled for tobacco

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State Approaches to Pesticide Use for Cannabis Cultivation: Limited information approach

NYSDOH requires approval of New York State Department of Environmental Conservation (NYSDEC) for any pesticide to be used

NYSDEC refuses to publish list of products permitted; individual determinations must be sought

More limited criteria than other states

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California Requirements for Minimum Risk Pesticides

For all pesticides that are exempt from registration requirements, licensees shall comply with all pesticide laws and regulations enforced by the Department of Pesticide regulation and with the following pesticide application and storage protocols:

1. Comply with all pesticide label directions;
2. Store chemicals in a secure building or shed to prevent access by wildlife;
3. Contain any chemical leaks and immediately clean up any spills;
4. Apply the minimum amount of product necessary to control the target pest;
5. Prevent off site drift;
6. Do not apply pesticides when pollinators are present;
7. Do not allow drift to flowering plants attractive to pollinators;
8. Do not spray directly to surface water or allow pesticide product to drift to surface water.
9. Do not apply pesticides when they may reach surface water or groundwater; and
10. Only use properly labeled pesticides.

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Mandatory Testing for Pesticide Residues

New York: Requires analysis for 66 pesticide active ingredients, none of which are approved for use

California: Prohibits 21 active ingredients; sets residue limits for 45 other active ingredients

Massachusetts: Requires analysis without specifying suspect substances

Oregon testing revealed contamination by unlisted active ingredients in commercial pesticides

Difficulty in finding qualified DEA-approved laboratories within each legalized state, as no interstate transportation allowed

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National Organic Program

Organic Foods Production Act 7 USC § 6501 *et seq*; 7 CFR Part 205

Established the National Organic Program (NOP) administered by USDA

Governs the use of the term ***ORGANIC*** and the official Organic Seal on agricultural products

NOP identifies eligible and ineligible inputs for agricultural products and processing

3rd party certification is required for NOP participation

Due to the Schedule 1 status, cannabis is ineligible as a crop to qualify for the NOP

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NOP Issues

Federal law conflict: Massachusetts authorizes ***ORGANIC*** labeling if requirements of the NOP are met; question whether this extends to requiring 3rd party certification

In other states many cultivators claim adherence to NOP standards but no 3rd party certification is employed

Cannabis Organic 3rd Party Certification Organizations

- Certified Kind
- Clean Green Certified
- Compliant Farms Certified
- Demeter Association Biodynamic Certification
- Dragonfly Earth Medicine Pure

Most cannabis certification organizations impose additional sustainability requirements beyond NOP requirements

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Environmental Issue: Energy Generation and Consumption

Massachusetts Cannabis Control Commission: Policies and Procedures for Energy Efficiency and Conservation shall include:

1. Identification of potential energy use reduction opportunities (including but not limited to natural lighting, heat recovery ventilation and energy efficiency measures), and a plan for implementation of such opportunities;

2. Consideration of opportunities for renewable energy generation, including, where applicable, submission of building plans showing where energy generators could be placed on the site, and an explanation of why the identified opportunities were not pursued, if applicable;

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Massachusetts Cannabis Control Commission: Policies and Procedures for Energy Efficiency and Conservation [continued]

3. Strategies to reduce electric demand (such as lighting schedules, active load management and energy storage); and

4. Engagement with energy efficiency programs

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Energy Generation and Consumption

Estimated annual consumption for average grow facility: 275,000 kilowatts / square foot of canopy

Canopy: square footage occupied by mature plants

Massachusetts Consumption Limits: Lighting Power Densities (LPD)

Up to 10,000 square feet of canopy:	50 watts / sq. ft. of canopy
10,000 or greater square feet of canopy:	35 watts / sq. ft. of canopy

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Energy Generation and Consumption

Comparison LPD Standards manufacturing facilities 1.3
hospital emergency room 2.7

LED versus High Pressure Sodium

Compared to industry standard 1,000W HPS bulb, 660W LED bulb produced 13% increase in yield with 37% reduction in energy use

Cost per bulb: LED 660W: $1,280 HPS 1,000W: $400

Massachusetts standard requires use of LED

Staring in 4 years California will impose greenhouse gas emission limits

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Additional Environmental Issues

Solid waste management All states require shredding of cannabis waste and combination with organic material to make it unrecognizable; nonetheless tracking by disposal event and weight is usually required.

Water Use Most states require indoor cultivation and facilities are usually connected to municipal systems. California allows outdoor cultivation, and under strict controls, surface water withdrawals

Growing Media Sophisticated growing media employed, but must also be analyzed; have been found to contain heavy metals

Putsavage PLLC

Severe Environmental Impacts

Large scale illegal grows in northern California

National Forest land

Pesticides and other toxics used with little knowledge or care

Booby traps set on public lands

Putsavage PLLC

The Future

Wave of state-legalization will continue; November ballot referendum in 3 more states

Major corporate investments:
- Scott's Miracle-Gro / Hawthorne Gardening
- Constellation Brands - $5 billion
- Coca Cola

Increased focus on diversion from state-authorized programs

Federal standoff also seems likely to continue

Black market likely to continue to exist, at least regionally

Thank You

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Ethical Issues in the Budding Cannabis Industry

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Presented By:
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NEW YORK STATE BAR ASSOCIATION

ENVIRONMENTAL & ENERGY LAW SECTION

Fall Meeting 2018

Ethical Issues in the Budding Cannabis Industry

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United States Justice Department Memorandum – October 19, 2009

Investigations and Prosecutions in States Authorizing the Medical Use of Marijuana

The "Ogden Memo"

U.S. Department of Justice

Office of the Deputy Attorney General

The Deputy Attorney General

Washington, D.C. 20530

October 19, 2009

MEMORANDUM FOR SELECTED UNITED STATES ATTORNEYS

FROM: David W. Ogden
Deputy Attorney General

SUBJECT: Investigations and Prosecutions in States
Authorizing the Medical Use of Marijuana

This memorandum provides clarification and guidance to federal prosecutors in States that have enacted laws authorizing the medical use of marijuana. These laws vary in their substantive provisions and in the extent of state regulatory oversight, both among the enacting States and among local jurisdictions within those States. Rather than developing different guidelines for every possible variant of state and local law, this memorandum provides uniform guidance to focus federal investigations and prosecutions in these States on core federal enforcement priorities.

The Department of Justice is committed to the enforcement of the Controlled Substances Act in all States. Congress has determined that marijuana is a dangerous drug, and the illegal distribution and sale of marijuana is a serious crime and provides a significant source of revenue to large-scale criminal enterprises, gangs, and cartels. One timely example underscores the importance of our efforts to prosecute significant marijuana traffickers: marijuana distribution in the United States remains the single largest source of revenue for the Mexican cartels.

The Department is also committed to making efficient and rational use of its limited investigative and prosecutorial resources. In general, United States Attorneys are vested with "plenary authority with regard to federal criminal matters" within their districts. USAM 9-2.001. In exercising this authority, United States Attorneys are "invested by statute and delegation from the Attorney General with the broadest discretion in the exercise of such authority." *Id.* This authority should, of course, be exercised consistent with Department priorities and guidance.

The prosecution of significant traffickers of illegal drugs, including marijuana, and the disruption of illegal drug manufacturing and trafficking networks continues to be a core priority in the Department's efforts against narcotics and dangerous drugs, and the Department's investigative and prosecutorial resources should be directed towards these objectives. As a general matter, pursuit of these priorities should not focus federal resources in your States on

individuals whose actions are in clear and unambiguous compliance with existing state laws providing for the medical use of marijuana. For example, prosecution of individuals with cancer or other serious illnesses who use marijuana as part of a recommended treatment regimen consistent with applicable state law, or those caregivers in clear and unambiguous compliance with existing state law who provide such individuals with marijuana, is unlikely to be an efficient use of limited federal resources. On the other hand, prosecution of commercial enterprises that unlawfully market and sell marijuana for profit continues to be an enforcement priority of the Department. To be sure, claims of compliance with state or local law may mask operations inconsistent with the terms, conditions, or purposes of those laws, and federal law enforcement should not be deterred by such assertions when otherwise pursuing the Department's core enforcement priorities.

Typically, when any of the following characteristics is present, the conduct will not be in clear and unambiguous compliance with applicable state law and may indicate illegal drug trafficking activity of potential federal interest:

- unlawful possession or unlawful use of firearms;
- violence;
- sales to minors;
- financial and marketing activities inconsistent with the terms, conditions, or purposes of state law, including evidence of money laundering activity and/or financial gains or excessive amounts of cash inconsistent with purported compliance with state or local law;
- amounts of marijuana inconsistent with purported compliance with state or local law;
- illegal possession or sale of other controlled substances; or
- ties to other criminal enterprises.

Of course, no State can authorize violations of federal law, and the list of factors above is not intended to describe exhaustively when a federal prosecution may be warranted. Accordingly, in prosecutions under the Controlled Substances Act, federal prosecutors are not expected to charge, prove, or otherwise establish any state law violations. Indeed, this memorandum does not alter in any way the Department's authority to enforce federal law, including laws prohibiting the manufacture, production, distribution, possession, or use of marijuana on federal property. This guidance regarding resource allocation does not "legalize" marijuana or provide a legal defense to a violation of federal law, nor is it intended to create any privileges, benefits, or rights, substantive or procedural, enforceable by any individual, party or witness in any administrative, civil, or criminal matter. Nor does clear and unambiguous compliance with state law or the absence of one or all of the above factors create a legal defense to a violation of the Controlled Substances Act. Rather, this memorandum is intended solely as a guide to the exercise of investigative and prosecutorial discretion.

Finally, nothing herein precludes investigation or prosecution where there is a reasonable basis to believe that compliance with state law is being invoked as a pretext for the production or distribution of marijuana for purposes not authorized by state law. Nor does this guidance preclude investigation or prosecution, even when there is clear and unambiguous compliance with existing state law, in particular circumstances where investigation or prosecution otherwise serves important federal interests.

Your offices should continue to review marijuana cases for prosecution on a case-by-case basis, consistent with the guidance on resource allocation and federal priorities set forth herein, the consideration of requests for federal assistance from state and local law enforcement authorities, and the Principles of Federal Prosecution.

cc: All United States Attorneys

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Assistant Attorney General
Criminal Division

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United States Attorney
District of Minnesota
Chair, Attorney General's Advisory Committee

Michele M. Leonhart
Acting Administrator
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United States Justice Department Memorandum – June 29, 2011

Guidance Regarding the Ogden Memo in Jurisdictions Seeking to Authorize Marijuana for Medical Use

U.S. Department of Justice

Office of the Deputy Attorney General

Washington, D.C. 20530

June 29, 2011

MEMORANDUM FOR UNITED STATES ATTORNEYS

FROM: James M. Cole
Deputy Attorney General

SUBJECT: Guidance Regarding the Ogden Memo in Jurisdictions Seeking to Authorize Marijuana for Medical Use

Over the last several months some of you have requested the Department's assistance in responding to inquiries from State and local governments seeking guidance about the Department's position on enforcement of the Controlled Substances Act (CSA) in jurisdictions that have under consideration, or have implemented, legislation that would sanction and regulate the commercial cultivation and distribution of marijuana purportedly for medical use. Some of these jurisdictions have considered approving the cultivation of large quantities of marijuana, or broadening the regulation and taxation of the substance. You may have seen letters responding to these inquiries by several United States Attorneys. Those letters are entirely consistent with the October 2009 memorandum issued by Deputy Attorney General David Ogden to federal prosecutors in States that have enacted laws authorizing the medical use of marijuana (the "Ogden Memo").

The Department of Justice is committed to the enforcement of the Controlled Substances Act in all States. Congress has determined that marijuana is a dangerous drug and that the illegal distribution and sale of marijuana is a serious crime that provides a significant source of revenue to large scale criminal enterprises, gangs, and cartels. The Ogden Memorandum provides guidance to you in deploying your resources to enforce the CSA as part of the exercise of the broad discretion you are given to address federal criminal matters within your districts.

A number of states have enacted some form of legislation relating to the medical use of marijuana. Accordingly, the Ogden Memo reiterated to you that prosecution of significant traffickers of illegal drugs, including marijuana, remains a core priority, but advised that it is likely not an efficient use of federal resources to focus enforcement efforts on individuals with cancer or other serious illnesses who use marijuana as part of a recommended treatment regimen consistent with applicable state law, or their caregivers. The term "caregiver" as used in the memorandum meant just that: individuals providing care to individuals with cancer or other serious illnesses, not commercial operations cultivating, selling or distributing marijuana.

The Department's view of the efficient use of limited federal resources as articulated in the Ogden Memorandum has not changed. There has, however, been an increase in the scope of

commercial cultivation, sale, distribution and use of marijuana for purported medical purposes. For example, within the past 12 months, several jurisdictions have considered or enacted legislation to authorize multiple large-scale, privately-operated industrial marijuana cultivation centers. Some of these planned facilities have revenue projections of millions of dollars based on the planned cultivation of tens of thousands of cannabis plants.

The Ogden Memorandum was never intended to shield such activities from federal enforcement action and prosecution, even where those activities purport to comply with state law. Persons who are in the business of cultivating, selling or distributing marijuana, and those who knowingly facilitate such activities, are in violation of the Controlled Substances Act, regardless of state law. Consistent with resource constraints and the discretion you may exercise in your district, such persons are subject to federal enforcement action, including potential prosecution. State laws or local ordinances are not a defense to civil or criminal enforcement of federal law with respect to such conduct, including enforcement of the CSA. Those who engage in transactions involving the proceeds of such activity may also be in violation of federal money laundering statutes and other federal financial laws.

The Department of Justice is tasked with enforcing existing federal criminal laws in all states, and enforcement of the CSA has long been and remains a core priority.

cc: Lanny A. Breuer
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United States Justice Department Memorandum – August 29, 2013

Guidance Regarding Marijuana Enforcement

The "Cole Memo"

U.S. Department of Justice

Office of the Deputy Attorney General

The Deputy Attorney General

Washington, D.C. 20530

August 29, 2013

MEMORANDUM FOR ALL UNITED STATES ATTORNEYS

FROM: James M. Cole
Deputy Attorney General

SUBJECT: Guidance Regarding Marijuana Enforcement

In October 2009 and June 2011, the Department issued guidance to federal prosecutors concerning marijuana enforcement under the Controlled Substances Act (CSA). This memorandum updates that guidance in light of state ballot initiatives that legalize under state law the possession of small amounts of marijuana and provide for the regulation of marijuana production, processing, and sale. The guidance set forth herein applies to all federal enforcement activity, including civil enforcement and criminal investigations and prosecutions, concerning marijuana in all states.

As the Department noted in its previous guidance, Congress has determined that marijuana is a dangerous drug and that the illegal distribution and sale of marijuana is a serious crime that provides a significant source of revenue to large-scale criminal enterprises, gangs, and cartels. The Department of Justice is committed to enforcement of the CSA consistent with those determinations. The Department is also committed to using its limited investigative and prosecutorial resources to address the most significant threats in the most effective, consistent, and rational way. In furtherance of those objectives, as several states enacted laws relating to the use of marijuana for medical purposes, the Department in recent years has focused its efforts on certain enforcement priorities that are particularly important to the federal government:

- Preventing the distribution of marijuana to minors;
- Preventing revenue from the sale of marijuana from going to criminal enterprises, gangs, and cartels;
- Preventing the diversion of marijuana from states where it is legal under state law in some form to other states;
- Preventing state-authorized marijuana activity from being used as a cover or pretext for the trafficking of other illegal drugs or other illegal activity;

- Preventing violence and the use of firearms in the cultivation and distribution of marijuana;
- Preventing drugged driving and the exacerbation of other adverse public health consequences associated with marijuana use;
- Preventing the growing of marijuana on public lands and the attendant public safety and environmental dangers posed by marijuana production on public lands; and
- Preventing marijuana possession or use on federal property.

These priorities will continue to guide the Department's enforcement of the CSA against marijuana-related conduct. Thus, this memorandum serves as guidance to Department attorneys and law enforcement to focus their enforcement resources and efforts, including prosecution, on persons or organizations whose conduct interferes with any one or more of these priorities, regardless of state law.[1]

Outside of these enforcement priorities, the federal government has traditionally relied on states and local law enforcement agencies to address marijuana activity through enforcement of their own narcotics laws. For example, the Department of Justice has not historically devoted resources to prosecuting individuals whose conduct is limited to possession of small amounts of marijuana for personal use on private property. Instead, the Department has left such lower-level or localized activity to state and local authorities and has stepped in to enforce the CSA only when the use, possession, cultivation, or distribution of marijuana has threatened to cause one of the harms identified above.

The enactment of state laws that endeavor to authorize marijuana production, distribution, and possession by establishing a regulatory scheme for these purposes affects this traditional joint federal-state approach to narcotics enforcement. The Department's guidance in this memorandum rests on its expectation that states and local governments that have enacted laws authorizing marijuana-related conduct will implement strong and effective regulatory and enforcement systems that will address the threat those state laws could pose to public safety, public health, and other law enforcement interests. A system adequate to that task must not only contain robust controls and procedures on paper; it must also be effective in practice. Jurisdictions that have implemented systems that provide for regulation of marijuana activity

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[1] These enforcement priorities are listed in general terms; each encompasses a variety of conduct that may merit civil or criminal enforcement of the CSA. By way of example only, the Department's interest in preventing the distribution of marijuana to minors would call for enforcement not just when an individual or entity sells or transfers marijuana to a minor, but also when marijuana trafficking takes place near an area associated with minors; when marijuana or marijuana-infused products are marketed in a manner to appeal to minors; or when marijuana is being diverted, directly or indirectly, and purposefully or otherwise, to minors.

must provide the necessary resources and demonstrate the willingness to enforce their laws and regulations in a manner that ensures they do not undermine federal enforcement priorities.

In jurisdictions that have enacted laws legalizing marijuana in some form and that have also implemented strong and effective regulatory and enforcement systems to control the cultivation, distribution, sale, and possession of marijuana, conduct in compliance with those laws and regulations is less likely to threaten the federal priorities set forth above. Indeed, a robust system may affirmatively address those priorities by, for example, implementing effective measures to prevent diversion of marijuana outside of the regulated system and to other states, prohibiting access to marijuana by minors, and replacing an illicit marijuana trade that funds criminal enterprises with a tightly regulated market in which revenues are tracked and accounted for. In those circumstances, consistent with the traditional allocation of federal-state efforts in this area, enforcement of state law by state and local law enforcement and regulatory bodies should remain the primary means of addressing marijuana-related activity. If state enforcement efforts are not sufficiently robust to protect against the harms set forth above, the federal government may seek to challenge the regulatory structure itself in addition to continuing to bring individual enforcement actions, including criminal prosecutions, focused on those harms.

The Department's previous memoranda specifically addressed the exercise of prosecutorial discretion in states with laws authorizing marijuana cultivation and distribution for medical use. In those contexts, the Department advised that it likely was not an efficient use of federal resources to focus enforcement efforts on seriously ill individuals, or on their individual caregivers. In doing so, the previous guidance drew a distinction between the seriously ill and their caregivers, on the one hand, and large-scale, for-profit commercial enterprises, on the other, and advised that the latter continued to be appropriate targets for federal enforcement and prosecution. In drawing this distinction, the Department relied on the common-sense judgment that the size of a marijuana operation was a reasonable proxy for assessing whether marijuana trafficking implicates the federal enforcement priorities set forth above.

As explained above, however, both the existence of a strong and effective state regulatory system, and an operation's compliance with such a system, may allay the threat that an operation's size poses to federal enforcement interests. Accordingly, in exercising prosecutorial discretion, prosecutors should not consider the size or commercial nature of a marijuana operation alone as a proxy for assessing whether marijuana trafficking implicates the Department's enforcement priorities listed above. Rather, prosecutors should continue to review marijuana cases on a case-by-case basis and weigh all available information and evidence, including, but not limited to, whether the operation is demonstrably in compliance with a strong and effective state regulatory system. A marijuana operation's large scale or for-profit nature may be a relevant consideration for assessing the extent to which it undermines a particular federal enforcement priority. The primary question in all cases – and in all jurisdictions – should be whether the conduct at issue implicates one or more of the enforcement priorities listed above.

As with the Department's previous statements on this subject, this memorandum is intended solely as a guide to the exercise of investigative and prosecutorial discretion. This memorandum does not alter in any way the Department's authority to enforce federal law, including federal laws relating to marijuana, regardless of state law. Neither the guidance herein nor any state or local law provides a legal defense to a violation of federal law, including any civil or criminal violation of the CSA. Even in jurisdictions with strong and effective regulatory systems, evidence that particular conduct threatens federal priorities will subject that person or entity to federal enforcement action, based on the circumstances. This memorandum is not intended to, does not, and may not be relied upon to create any rights, substantive or procedural, enforceable at law by any party in any matter civil or criminal. It applies prospectively to the exercise of prosecutorial discretion in future cases and does not provide defendants or subjects of enforcement action with a basis for reconsideration of any pending civil action or criminal prosecution. Finally, nothing herein precludes investigation or prosecution, even in the absence of any one of the factors listed above, in particular circumstances where investigation and prosecution otherwise serves an important federal interest.

cc: Mythili Raman
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New York State Bar Association Ethics Opinion – September 29, 2014

Counseling Clients in Illegal Conduct; Medical Marijuana Law

NEW YORK STATE BAR ASSOCIATION

Serving the legal profession and the community since 1876

ETHICS OPINION 1024

New York State Bar Association
Committee on Professional Ethics

Opinion 1024 (9/29/14)

Topic: Counseling clients in illegal conduct; medical marijuana law.

Digest: In light of current federal enforcement policy, the New York Rules permit a lawyer to assist a client in conduct designed to comply with state medical marijuana law, notwithstanding that federal narcotics law prohibits the delivery, sale, possession and use of marijuana and makes no exception for medical marijuana.

Rules: 1.2(d), 1.2(f), 1.2 cmt 9, 1.16(c)(2), 6.1 cmt 1, 8.4(b).

FACTS

1. In July 2014, New York, following the lead of 22 other states, adopted the Compassionate Care Act ("CCA")[1], a law permitting the use of medical marijuana in tightly controlled circumstances. The CCA regulates the cultivation, distribution, prescription and use of marijuana for medical purposes. It permits specially approved organizations such as hospitals and community health centers to dispense medical marijuana to patients who have been certified by a health care provider and who have registered with the state Department of Health, and it further provides for the regulation and registration of organizations to manufacture and deliver marijuana for authorized medical uses.

2. At the same time, federal criminal law forbids the possession, distribution, sale or use of marijuana, and the federal law provides no exception for medical uses. The U.S. Department of Justice takes the position that the federal law is valid and enforceable even against individuals and entities engaged in the cultivation, transportation, delivery, prescription or use of medical marijuana in accordance with state regulatory law; however, the U.S. Department of Justice has adopted and published formal guidance restricting federal enforcement of the federal marijuana prohibition when individuals and entities act in accordance with state regulation of medical marijuana.

QUESTION

3. Under these unusual circumstances, do the New York Rules of Professional Conduct ("Rules") permit a lawyer to provide legal advice and assistance to doctors, patients, public officials, hospital administrators and others engaged in the cultivation, distribution, prescribing, dispensing, regulation,

possession or use of marijuana for medical purposes to help them act in compliance with state regulation regarding medical marijuana and consistently with federal enforcement policy?

OPINION

4. Lawyers may advise clients about the lawfulness of their proposed conduct and assist them in complying with the law, but lawyers may not knowingly assist clients in illegal conduct. Rule 1.2(d) provides: "A lawyer shall not counsel a client to engage, or assist a client, in conduct that the lawyer knows is illegal or fraudulent, except that the lawyer may discuss the legal consequences of any proposed course of conduct with a client." Disciplinary Rule 7-102(A)(7), contained in the pre-2009 Code of Professional Responsibility, was to the same effect. As this Committee has observed, if a client proposes to engage in conduct that is illegal, "then it would be unethical for an attorney to recommend the action or assist the client in carrying it out." N.Y. State 769 (2003); *accord* N.Y. State 666 (1994).

5. This ethical restriction reflects lawyers' fundamental role in the administration of justice, which is to promote compliance with the law by providing legal advice and assistance in structuring clients' conduct in accordance with the law. *See also* Rule 8.4(b) (forbidding "illegal conduct that adversely reflects on the lawyer's honesty, trustworthiness or fitness as a lawyer"). Ideally, lawyers will not only attempt to prevent clients from engaging in knowing illegalities but also discourage clients from conduct of doubtful legality:

> The most effective realization of the law's aims often takes place in the attorney's office, . . . where the lawyer's quiet counsel takes the place of public force. Contrary to popular belief, the compliance with the law thus brought about is not generally lip-serving and narrow, for by reminding him of its long-run costs the lawyer often deters his client from a course of conduct technically permissible under existing law, though inconsistent with its underlying spirit and purpose. . . .
>
> The reasons that justify and even require partisan advocacy in the trial of a cause do not grant any license to the lawyer to participate as legal adviser in a line of conduct that is immoral, unfair, or of doubtful legality.

Am. Bar Ass'n & Ass'n of Am. Law Sch., Professional Responsibility Report of the Joint Conference, 44 A.B.A. J. 1159, 1161 (1958). The public importance of lawyers' role in promoting clients' legal compliance is reflected in the attorney-client privilege, which protects the confidentiality that is traditionally considered essential in order for lawyers to serve this role effectively. *See, e.g., Hunt v. Blackburn*, 128 U.S. 464, 470 (1888) (privilege "is founded upon the necessity, in the interest and administration of justice, of the aid of persons having knowledge of the law and skilled in its practice, which assistance can only be safely and readily availed of when free from the consequences or the apprehension of disclosure").

6. It is counter-intuitive to suppose that the lawyer's fundamental role might ever be served by assisting clients in violating a law that the lawyer knows to be valid and enforceable. But the question presented by the state's medical marijuana law is highly unusual if not unique: Although participating in the production, delivery or use of medical marijuana violates federal criminal law as written, the federal government has publicly announced that it is limiting its enforcement of this law, and has acted accordingly, insofar as individuals act consistently with state laws that legalize and extensively regulate medical marijuana. Both the state law and the publicly announced federal enforcement policy presuppose that individuals and entities will comply with new and intricate state regulatory law and, thus, presuppose that lawyers will provide legal advice and assistance to an array of public and private actors and institutions to promote their compliance with state law and current federal policy. Under these unusual circumstances, for the reasons discussed below, the Committee concludes that Rule 1.2(d) does not forbid lawyers from providing the necessary advice and assistance.

Legal background

7. Much has been written elsewhere about the interrelationship between federal criminal narcotics laws and recent state medical marijuana laws. For purposes of this opinion, only the following basic understanding is needed.

8. Under federal criminal law, marijuana is a Schedule I narcotic, whose manufacture, possession and distribution is prohibited, and for which there is no approved medical use. Further, individuals and entities are forbidden by federal law not only from violating these laws as principals, but also, under principles of accessorial liability, from intentionally aiding and abetting others in violating the narcotics law, counseling others to violate the narcotics law, or conspiring with others to violate the narcotics law.[2]

9. For many years, states likewise criminalized the manufacture, possession and distribution of marijuana, allowing for concurrent federal and state enforcement of the criminal law. Most prosecutions of narcotics laws, especially with regard to marijuana, occurred at the state and local level. However, in recent years, more than 20 states have legalized marijuana for medicinal purposes to make it available by prescription. Colorado and Washington have gone farther, developing regulation permitting the sale and use of marijuana for recreational purposes.

10. The U.S. Department of Justice ("DOJ") takes the position that the manufacture, possession and distribution of marijuana remains a federal crime, and can be enforced by federal law enforcement officials, even when the conduct in question is undertaken in accordance with state medical marijuana laws. However, current federal policy restricts federal enforcement activity, including civil as well as criminal enforcement, concerning medical marijuana. The Deputy Attorney General's August 29, 2013 memorandum, titled "Guidance Regarding Marijuana Enforcement," acknowledges that "the federal government has traditionally relied on state and local law enforcement agencies to address marijuana activity through enforcement of their own narcotics laws," and the federal government has concentrated its effort in accordance with federal enforcement priorities, such as preventing the distribution of marijuana to minors, preventing revenue from marijuana sales from going to criminal enterprises, and preventing marijuana activity from being used as a cover for trafficking other drugs. The memorandum directs Department attorneys and federal law enforcement authorities to focus their enforcement resources and efforts on these priorities, which are less likely to be threatened "[i]n jurisdictions that have

enacted laws legalizing marijuana in some form and that have also implemented strong and effective regulatory and enforcement systems to control the cultivation, distribution, sale, and possession of marijuana." Although the memorandum makes plain that it is not intended to create any enforceable substantive or procedural rights, the memorandum might fairly be read as an expression by the current Administration that it will not enforce the federal criminal law with regard to otherwise-lawful medical marijuana activities that are carried out in accordance with a robust state regulatory law and that do not implicate the identified federal enforcement priorities. Over the period of more than a year since the memorandum was published, federal law enforcement authorities have acted consistently with this understanding.

11. The CCA allows specified licensed New York physicians to prescribe, and patients to use, medical marijuana only in pill form or in a form that may be inhaled as a vapor, but not in a form that may be smoked. Medical marijuana may only be prescribed for identified, documented medical conditions categorized as "severe[ly] debilitating or life-threatening." The regulation of medical marijuana under the law will be overseen by the Health Department, which, among other things, will authorize and register a limited number of organizations ("Registered Organizations") to manufacture and dispense marijuana for medical use, will issue registration cards to patients or their caregivers certified to receive medical marijuana, and will set prices. The law restricts who may be hired by Registered Organizations, regulates their production and dispensation of medical marijuana, establishes a tax on their receipts, and criminalizes various abuses. *See generally* Francis J. Serbaroli, "A Primer on New York's Medical Marijuana Law," NYLJ, July 22, 2014, p. 3.

The potential role of lawyers in providing legal assistance regarding compliance with the medical marijuana law

12. Lawyers might provide a range of assistance to clients seeking to comply with the CCA and to act consistently with federal law enforcement policy. Among the potential clients are public officials and agencies including the Health Department that have responsibility for implementing the law, health care providers and other entities that may apply to be selected or eventually be selected as Registered Organizations authorized to manufacture and dispense medical marijuana, physicians seeking to prescribe medical marijuana, and patients with severely debilitating or life-threatening conditions seeking to obtain medical marijuana. Any or all of these potential clients may seek legal assistance not only so that they may be advised how to comply with the state law and avoid running afoul of federal enforcement policy but also for affirmative legal assistance. The Health Department may seek lawyers' help in establishing internal procedures to conduct the registrations and other activities contemplated by the law. Entities may seek assistance in applying to become Registered Organizations as well as in understanding and complying with employment, tax and other requirements of the law. Physicians may seek help in understanding the severe restrictions on the issuance of prescriptions for medical marijuana and in navigating the procedural requirements for effectively issuing such prescriptions.

13. Leaving aside the federal law, the above-described legal assistance would be entirely consistent with lawyers' conventional role in helping clients comply with the law. Indeed, it seems fair to say that state law would not only permit but affirmatively expect lawyers to provide such assistance. In general, it is assumed that lawyers, by virtue of their expertise and ethical expectations, have a necessary role in ensuring the public's compliance with the law. "As our society becomes one in which rights and

responsibilities are increasingly defined in legal terms, access to legal services has become of critical importance." Rule 6.1, Cmt. [1]. This is especially true with regard to complex, technical regulatory schemes such as the one established by the CCA, and where, as in the case of the CCA, noncompliance can result in criminal prosecution.

14. However, the federal law cannot easily be left aside. The question of whether lawyers may serve their traditional role is complicated by the federal law. Assuming, as we do for purposes of this opinion, that the federal marijuana prohibition remains valid and enforceable notwithstanding state medical marijuana law, then individuals and entities seeking to dispense, prescribe or use medical marijuana, or to assist others in doing so, pursuant to the CCA would potentially be violating federal narcotics law as principals or accessories; in that event, the legal assistance sought from lawyers might involve assistance in conduct that the lawyer knows to be illegal.

Prior ethics opinions

15. Several other bar association ethics committees have confronted this problem but reached different conclusions under their counterparts to Rule 1.2(d). Most of these opinions pre-dated DOJ's August 2013 guidance, but took account of a 2009 DOJ memorandum suggesting that federal law enforcement would not be directed at patients and their caregivers who are in "clear and unambiguous compliance" with state medical marijuana laws.

16. In 2010, Maine's ethics committee took the view that although lawyers may assist clients in determining "the validity scope, meaning or application of the law," the rule "forbids attorneys from assisting a client in engaging in the medical marijuana business" because the rule "does not make a distinction between crimes which are enforced and those which are not. . . . [A]n attorney needs to . . . determine whether the particular legal service being requested rises to the level of assistance in violating federal law." Maine Op. 199 (July 7, 2010).

17. Connecticut's ethics committee similarly concluded that a lawyer may not assist a client insofar as its conduct, although authorized by the state's medical marijuana law, which created a broad licensing and registration structure to be implemented by the Department of Consumer Protection, violates federal law. Connecticut Op. 2013-02 (Jan. 16, 2013). The opinion noted that much of the legal assistance sought by clients seeking to comply with the law (e.g., patients, caregivers, physicians, pharmacists, distributers and growers), such as legal advice and assistance regarding the law's requirements and the rule-making and regulatory processes, would be consistent with lawyers' "traditional role as counselors" and "in the classic mode envisioned by professional standards." But some of that legal work might nevertheless constitute impermissible assistance in violating federal law.

18. More recently, in the context of Colorado's state law decriminalizing and regulating the sale of marijuana for recreational purposes, the state's ethics committee opined: "[U]nless and until there is a change in applicable federal law or in the Colorado Rules of Professional Conduct, a lawyer cannot advise a client regarding the full panoply of conduct permitted by the marijuana amendments to the Colorado Constitution and implementing statutes and regulations. To the extent that advice were to cross from advising or representing a client regarding the consequences of a client's past or contemplated conduct under federal and state law to counseling the client to engage, or assisting the client, in conduct the

lawyer knows is criminal under federal law, the lawyer would violate Rule 1.2(d)." Colorado Op. 125 (Oct. 21, 2013). However, the committee recommended amending the state ethics rules to authorize lawyers to advise and assist clients regarding marijuana-related conduct, notwithstanding contrary federal law.[3]

19. In 2011, Arizona's ethics committee reached a very different conclusion, however, based in significant part on the premise that "no court opinion has held that the state law is invalid or unenforceable on federal preemption grounds."

> In these circumstances, we decline to interpret and apply ER 1.2(d) in a manner that would prevent a lawyer who concludes that the client's proposed conduct is in "clear and unambiguous compliance" with state law from assisting the client in connection with activities expressly authorized under state law, thereby depriving clients of the very legal advice and assistance that is needed to engage in the conduct that the state law expressly permits. The maintenance of an independent legal profession, and of its right to advocate for the interests of clients, is a bulwark of our system of government. History is replete with examples of lawyers who, through vigorous advocacy and at great personal and professional cost to themselves, obtained the vindication of constitutional or other rights long denied or withheld and which otherwise could not have been secured.
>
> A state law now expressly permits certain conduct. Legal services are necessary or desirable to implement and bring to fruition that conduct expressly permitted under state law. In any potential conflict between state and federal authority, such as may be presented by the interplay between the Act and federal law, lawyers have a critical role to perform in the activities that will lead to the proper resolution of the controversy. Although the Act may be found to be preempted by federal law or otherwise invalid, as of this time there has been no such judicial determination.

Arizona Op. 11-01 (Feb. 2011). The opinion concluded:

> • If a client or potential client requests an Arizona lawyer's assistance to undertake the specific actions that the Act expressly permits; and
>
> • The lawyer advises the client with respect to the potential federal law implications and consequences thereof or, if the lawyer is not qualified to do so, advises the client to seek other legal counsel regarding those issues and limits the scope of his or her representation; and
>
> • The client, having received full disclosure of the risks of proceeding under the state law, wishes to proceed with a course of action specifically authorized by the Act; then
>
> • The lawyer ethically may perform such legal acts as are necessary or desirable to assist the client to engage in the conduct that is expressly permissible under the Act.

Id.

20. A recent opinion of the King County (Washington) Bar Association endorsed the Arizona committee's conclusion and much of its reasoning,[4] in the context of Washington's adoption of a state-regulated system for producing and selling marijuana for recreational purposes:

> While the KCBA does not agree with all components of the Arizona opinion, its emphasis on the client's need for legal assistance to comply with state law accurately reflects the reality that Washington clients face in navigating the new Washington law. The initial proposed implementing regulations for I-502, for example, have added 49 new sections in the Washington Administrative Code encompassing 42 pages of text. These regulations are consistent with I-502's express goal of removing the marijuana economy from the province of criminal organizations and bringing it into a "tightly regulated, state-licensed system." In building this complex system, the voters of Washington could not have envisioned it working without attorneys. As the State Bar of Arizona recognized, disciplining attorneys for working within such a system would deprive the state's citizens of legal services 'necessary and desirable to implement and bring to fruition that conduct expressly permitted under state law.

KCBA Ethics Advisory Opinion on I-502 [Initiative 502 - marijuana legalization] & Rules of Professional Conduct (Oct. 2013). Following suit, the Washington State bar ethics committee recently proposed adding a Comment to the state's ethics code and issuing an advisory opinion authorizing lawyers to assist clients in complying with the state marijuana law at least until federal enforcement policy changes.

Analysis

21. As Rule 1.2(d) makes clear, although a lawyer may not encourage a client to violate the law or assist a client in doing so, a lawyer may advise a client about the reach of the law. *See* N.Y. State 455 (1976) ("[W]here the lawyer does no more than advise his client concerning the legal character and consequences of the act, there can be no professional impropriety. That is his proper function and fully comports with the requirements of Canon 7. . . . But, where the lawyer becomes a motivating force by encouraging his client to commit illegal acts or undertakes to bring about a violation of law, he oversteps the bounds of propriety."). Thus, a lawyer may give advice about whether undertaking to manufacture, transport, sell, prescribe or use marijuana in accordance with the CCA's regulatory scheme would violate federal narcotics law. If the lawyer were to conclude competently and in good faith that the federal law was inapplicable or invalid, the lawyer could so advise the client and would not be subject to discipline even if the lawyer's advice later proved incorrect. *See, e.g.*, ABA Op. 85-352 (1985) ("[W]here a lawyer has a good faith belief . . . that a particular transaction does not result in taxable income or that certain expenditures are properly deductible as expenses, the lawyer has no duty to require [disclosure] as a condition of his or her continued representation . . . . In the role of advisor, the lawyer should counsel the client as to whether the position is likely to be sustained by a court if challenged by the IRS, as well as of the potential penalty

consequences to the client if the position is taken on the tax return without disclosure.").[5] As the Second Department recognized in dismissing a prosecution against a lawyer who allegedly gave erroneous advice about the lawfulness of the client's proposed conduct:

> We cannot conclude that an attorney who advises a client to take an action that he or she, in good faith, believes to be legal loses the protection of the First Amendment if his or her advice is later determined to be incorrect. Indeed, it would eviscerate the right to give and receive legal counsel with respect to potential criminal liability if an attorney could be charged with conspiracy and solicitation whenever a District Attorney disagreed with that advice. The potential impact of allowing an attorney to be prosecuted in circumstances such as those presented here is profoundly disturbing. A looming threat of criminal sanctions would deter attorneys from acquainting individuals with matters as vital as the breadth of their legal rights and the limits of those rights. Correspondingly, where counsel is restrained, so is the fundamental right of the citizenry, bound as it is by laws complex and unfamiliar, to receive the advice necessary for measured conduct.

Matter of Vinluan v Doyle, 60 AD3d 237, 243, 873 NYS2d 72 (2d Dep't 2009).

22. Further, Rule 1.2(d) forbids a lawyer from assisting a client in conduct only if the lawyer *knows* the conduct is illegal or fraudulent. If the lawyer believes that conduct is unlawful but there is some support for an argument that the conduct is legal, the lawyer may provide legal assistance under the Rules (but is not obligated to do so). *See* Rule 1.2(f) ("A lawyer may refuse to aid or participate in conduct that the lawyer believes to be unlawful, even though there is some support for an argument that the conduct is legal."); s*ee also* Rule 1.16(c)(2) ("a lawyer may withdraw from representing a client when . . . the client persists in a course of action involving the lawyer's services that the lawyer reasonably believes is criminal or fraudulent").

23. The difficult question arises if the lawyer *knows* that the client's proposed conduct, although consistent with state law, would violate valid and enforceable federal law.[6] Ordinarily, in that event, while the lawyer could advise the client about the reach of the federal law and how to conform to the federal law, the lawyer could not properly encourage or assist the client in conduct that violates the federal law. That would ordinarily be true even if the federal law, although applicable to the client's proposed conduct, was not rigorously enforced and the lawyer anticipated that the law would not be enforced in the client's situation. *See* Charles W. Wolfram, Modern Legal Ethics 703 (1986) ("on the whole, lawyers serve the interests of society better if they urge upon clients the desirability of complying with all valid laws, no matter how widely violated by others they may be"); *cf.*Restatement (Third) of the Law Governing Lawyers

§ 94, Cmt. f (2000) ("A lawyer's advice to a client about the degree of risk that a law violation will be detected or prosecuted [is impermissible when] the lawyer thereby intended to counsel or assist the client's crime, fraud, or violation of a court order."). But the situation is different where the state executive branch determines to implement the state legislation by authorizing and regulating medical marijuana, consistent with current, published federal executive-branch enforcement policy, and the federal government does not take effective measures to prevent the implementation of the state law. In that event, the question under Rule 1.2(d) is whether a lawyer may assist in conduct under the state medical marijuana law that the lawyer knows would violate federal narcotics law that is on the books but deliberately unenforced as a matter of federal executive discretion.

24. This situation raises political and philosophical questions that this Committee cannot and need not resolve regarding how best to make and implement law in a federal system. Some may think it anomalous, where Congress has recognized no relevant exception to its narcotics prohibitions, for states to adopt medical marijuana laws that appear to contravene federal law and for the federal executive branch, through the exercise of prosecutorial discretion, effectively to carve out an exception for the implementation of these state laws. Others may think that DOJ's forbearance is consistent with its tradition, known to Congress, of exercising prosecutorial discretion to mitigate the criminal law's excesses, including where the criminal law reaches farther than its underlying purposes. We do not believe that by adopting Rule 1.2(d), our state judiciary meant to declare a position on this debate or meant to preclude lawyers from counseling or assisting conduct that is legal under state law. Rule 1.2(d) was based on an ABA model and there is no indication that anyone – not the ABA, not the state bar, and not the state court itself -- specifically considered whether lawyers may serve in their traditional role in this sort of unusual legal situation. We assume for purposes of this Opinion that state courts will themselves serve in their traditional role: As issues of interpretation arise in litigation under the CCA, state courts will be available to issue interpretive rulings and take other judicial action that has the practical effect of assisting in the implementation of the CCA.[7] Serving this role will not undermine state judicial integrity. Similarly, we do not believe that it derogates from public respect for the law and lawyers, or otherwise undermines the objectives of the professional conduct rules, for lawyers as "officers of the court" to serve in their traditional role as well, if they so choose. Obviously, lawyers may decline to give legal assistance regarding the CCA.

25. We conclude that the New York Rules of Professional Conduct permit lawyers to give legal assistance regarding the CCA that goes beyond a mere discussion of the legality of the client's proposed conduct. In general, state professional conduct rules should be interpreted to promote state law, not to impede its effective implementation. As the Arizona and King County opinions recognized, a state medical-marijuana law establishing a complex regulatory scheme depends on lawyers for its success. Implicitly, the state law authorizes lawyers to provide traditional legal services to clients seeking to act in accordance with the state law. Further, and crucially, in this situation the federal enforcement policy also depends on the availability of lawyers to establish and promote compliance with the "strong and effective regulatory and enforcement systems" that are said to justify federal forbearance from enforcement of narcotics laws that are technically applicable. The contemplated legal work is not designed to escape law enforcement by avoiding detection. *Cf.* Rule 1.2 cmt. [9] ("There is a critical distinction between presenting an analysis of the legal aspects of questionable conduct and recommending the means by which a crime or fraud might be committed with impunity."); N.Y. State 529 (1981) ("[T]he Code distinguishes between giving legal advice and giving advice which would aid the client in escaping

punishment for past crimes. EC 7-5 warns that 'a lawyer should never encourage or aid his client to commit criminal acts or counsel his client on how to violate the law and avoid punishment'"). Lawyers would assist clients who participate openly and subject to a state regulatory structure that the federal government allows to function as a matter of discretion. Nothing in the history and tradition of the profession, in court opinions, or elsewhere, suggests that Rule 1.2(d) was intended to prevent lawyers in a situation like this from providing assistance that is necessary to implement state law and to effectuate current federal policy.[8] If federal enforcement were to change materially, this Opinion might need to be reconsidered.

CONCLUSION

26. In light of current federal enforcement policy, the New York Rules of Professional Conduct permit a lawyer to assist a client in conduct designed to comply with state medical marijuana law, notwithstanding that federal narcotics law prohibits the delivery, sale, possession and use of marijuana and makes no exception for medical marijuana.

(34-14)

[1]Laws of 2014, Chap. 90 (signed by the Governor and effective on July 5, 2014).

[2]*See, e.g.*, 18 U.S.C. §2(a)("Whoever commits an offense against the United States or aids, abets, counsels, commands, induces or procures its commission, is punishable as a principal."); 18 U.S.C. § 2(b)("Whoever willfully causes an act to be done which if directly performed by him or another would be an offense against the United States, is punishable as a principal."); 21 U.S.C. § 846 ("Any person who attempts or conspires to commit any offense defined in this subchapter shall be subject to the same penalties as those prescribed for the offense, the commission of which was the object of the attempt or conspiracy.").

[3]Colorado added a new comments [14] to Rule 1.2 of the Colorado Rules of Professional Conduct, permitting a lawyer to counsel a client regarding the validity, scope and meaning of the Colorado marijuana law and to assist a client in conduct that the lawyer reasonably believes is permitted by that law, but the lawyer must also advise the client regarding related federal law and policy. Nevada adopted a new Comment [1] to Rule 1.2 that is substantively identical to Colorado Comment [14]. In Washington State, the King County Bar Association has urged the Washington Supreme Court to amend the Washington Rules of Professional Conduct to add a comment to Rule 8.4 and a new Rule 8.6, to make clear that conduct permitted by the state marijuana law does not reflect adversely on the lawyer's honesty, trustworthiness or fitness in other respects, and that a lawyer is not subject to discipline for counseling or assisting a client in conduct permitted by the state marijuana law, even though the conduct may violate federal law. Those proposals were still pending when we issued this opinion.

[4]The King County opinion rejected the implication of the Arizona opinion that the propriety of the lawyer's assistance turned on the fact that the state medical marijuana law had not yet been invalidated or preempted.

[5]Inasmuch as this Committee limits itself to interpreting the ethics rules, we take no view on whether a colorable argument can be made that the federal narcotics law is invalid or unenforceable in situations where individuals or entities transport, distribute, possess or use marijuana pursuant to state medical marijuana law. We note, however, that as a constitutional matter, duly enacted federal laws ordinarily preempt inconsistent state laws under the federal Supremacy Clause. We also note, in particular, that in *Gonzales v. Raich*, 545 U.S. 1 (2005), the Court rejected a claim that Congress exceeded its authority under the Commerce Clause insofar as the marijuana prohibition applied to personal use of marijuana for medical purposes.

[6]Rule 1.2(d) allows lawyers to assist clients in good faith challenges to a law's validity, but that is not the situation posed here.

[7]If the state courts were to nullify the CCA based on inconsistent federal narcotics law, the question addressed in this opinion would, of course, become moot.

[8]For essentially the same reason, we regard Rule 8.4(b) as inapplicable. Assuming that a lawyer's legal assistance in implementing the state medical-marijuana law technically violates the unenforced federal criminal law, we do not believe that the lawyer's assistance under the circumstances described here would amount to "illegal conduct that adversely reflects on the lawyer's honesty, trustworthiness or fitness as a lawyer."

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Amendment to 2013-2014 Federal Budget

The "Rohrabacher-Farr Amendment"

has been, and, again, will be passed unanimously by the House.

I yield back the balance of my time.

Mr. WOLF. Mr. Chairman, I move to strike the requisite number of words.

The Acting CHAIR. The gentleman from Virginia is recognized for 5 minutes.

Mr. WOLF. I accept the amendment, and I yield back the balance of my time.

The Acting CHAIR. The question is on the amendment offered by the gentleman from Florida (Mr. Grayson).

The amendment was agreed to.

Amendment No. 25 Offered by Mr. Rohrabacher

Mr. ROHRABACHER. Mr. Chairman, I have an amendment at the desk preprinted in the Congressional Record.

The Acting CHAIR. The Clerk will designate the amendment.

The text of the amendment is as follows:

> At the end of the bill (before the short title), insert the following:
>
> Sec. __. None of the funds made available in this Act to the Department of Justice may be used, with respect to the States of Alabama, Alaska, Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Hawaii, Illinois, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Oregon, Rhode Island, South Carolina, Tennessee, Utah, Vermont, Washington, and Wisconsin, to prevent such States from implementing their own State laws that authorize the use, distribution, possession, or cultivation of medical marijuana.

The Acting CHAIR. Pursuant to the order of the House of today, the gentleman from California (Mr. Rohrabacher) and a Member opposed each will control 5 minutes.

The Chair recognizes the gentleman from California.

Mr. ROHRABACHER. Mr. Chairman, I rise to speak in favor of my amendment, which would prohibit the Department of Justice from using any of

[[Page H4983]]

the funds appropriated in this bill to prevent States from implementing their own medical marijuana laws. Twenty-nine States have enacted laws that allow patients access to medical marijuana and its derivatives, such as CBD oils.

It is no surprise then that public opinion is shifting, too. A recent Pew Research Center survey found that 61 percent of Republicans and a whooping 76 percent of Independents favor making medical marijuana legal and available to their patients who need it.

United States v McIntosh, 833 F.3d 1163 (9th Cir. 2016)

Caution
As of: September 28, 2018 1:42 PM Z

United States v. McIntosh

United States Court of Appeals for the Ninth Circuit

December 7, 2015, Argued and Submitted, San Francisco, California; August 16, 2016, Filed

No. 15-10117, No. 15-10122, No. 15-10127, No. 15-10132, No. 15-10137, No. 15-30098, No. 15-71158, No. 15-71174, No. 15-71179, No. 15-71225

Reporter
833 F.3d 1163 *; 2016 U.S. App. LEXIS 15029 **

UNITED STATES OF AMERICA, Plaintiff-Appellee, v. STEVE MCINTOSH, Defendant-Appellant. UNITED STATES OF AMERICA, Plaintiff-Appellee, v. IANE LOVAN, Defendant-Appellant. UNITED STATES OF AMERICA, Plaintiff-Appellee, v. SOMPHANE MALATHONG, Defendant-Appellant.UNITED STATES OF AMERICA, Plaintiff-Appellee, v. VONG SOUTHY, Defendant-Appellant. UNITED STATES OF AMERICA, Plaintiff-Appellee, v. KHAMPHOU KHOUTHONG, Defendant-Appellant. UNITED STATES OF AMERICA, Plaintiff-Appellee, v. JERAD JOHN KYNASTON, AKA Jared J. Kynaston, AKA Jerad J. Kynaston; SAMUEL MICHAEL DOYLE, AKA Samuel M. Doyle; BRICE CHRISTIAN DAVIS, AKA Brice C. Davis; JAYDE DILLON EVANS, AKA Jayde D. Evans; TYLER SCOTT MCKINLEY, AKA Tyler S. McKinley, Defendants-Appellants. IN RE IANE LOVAN, IANE LOVAN, Petitioner, v. UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF CALIFORNIA, FRESNO, Respondent, UNITED STATES OF AMERICA, Real Party in Interest. IN RE SOMPHANE MALATHONG, SOMPHANE MALATHONG, Petitioner, v. UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF CALIFORNIA, FRESNO, Respondent, UNITED STATES OF AMERICA, Real Party in Interest. IN RE VONG SOUTHY, VONG SOUTHY, Petitioner, v. UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF CALIFORNIA, FRESNO, Respondent, UNITED STATES OF AMERICA, Real Party in Interest. IN RE KHAMPHOU KHOUTHONG, KHAMPHOU KHOUTHONG, Petitioner, v. UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF CALIFORNIA, FRESNO, Respondent, UNITED STATES OF AMERICA, Real Party in Interest.

Subsequent History: Motion denied by *United States v. McIntosh, 2017 U.S. Dist. LEXIS 39920 (N.D. Cal., Mar. 20, 2017)*

Prior History: [1]** Appeal from the United States District Court for the Northern District of California. D.C. No. 3:14-cr-00016-MMC-3. Maxine M. Chesney, Senior District Judge, Presiding.

Appeals from the United States District Court for the Eastern District of California. D.C. No. 1:13-cr-00294-LJO-SKO-1, D.C. No. 1:13-cr-00294-LJO-SKO-2, D.C. No. 1:13-cr-00294-LJO-SKO-3, D.C. No. 1:13-cr-00294-LJO-SKO-4. Lawrence J. O'Neill, District Judge, Presiding.

Appeal from the United States District Court for the Eastern District of Washington. D.C. No. 2:12-cr-00016-WFN-1 Wm. Fremming Nielsen, Senior District Judge, Presiding.

Petitions for Writ of Mandamus. D.C. No. 1:13-cr-00294-LJO-SKO-1, D.C. No. 1:13-cr-00294-LJO-SKO-3, D.C. No. 1:13-cr-00294-LJO-SKO-2, D.C. No. 1:13-cr-00294-LJO-SKO-4.

United States v. Kynaston, 534 Fed. Appx. 624, 2013 U.S. App. LEXIS 15035 (9th Cir. Wash., 2013)

Disposition: VACATED AND REMANDED WITH INSTRUCTIONS.

Core Terms

medical ***marijuana***, appropriations, prosecutions, funds, state law, district court, cultivation, authorize, ***marijuana***, rider, individuals, prohibits, injunction, cases, injunctive relief, spending, implementing, manufacture, appeals, enjoin, practical effect, ***marijuana*** plant, orders, Dictionary, direct denial, federal court, spend money, separation-of-powers, requirements, principles

Case Summary

Overview

ISSUE: Whether criminal defendants may avoid prosecution for various federal ***marijuana*** offenses on the basis of a congressional appropriations rider that prohibits the U.S. Department of Justice (DOJ) from spending funds to prevent states' implementation of their own medical ***marijuana*** laws. HOLDINGS: [1]-Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), prohibits the DOJ from spending money on actions that prevent the Medical ***Marijuana*** States giving practical effect to their state laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***; [2]-At a minimum, § 542 prohibits DOJ from spending funds from relevant appropriations acts for the prosecution of individuals who engaged in conduct permitted by the State Medical ***Marijuana*** Laws and who fully complied with such laws.

Outcome

The court vacated the orders of the district courts and remanded with instructions to conduct an evidentiary hearing to determine whether defendants had complied with state law.

LexisNexis® Headnotes

Criminal Law & Procedure > Appeals > Appellate Jurisdiction > Authority of Appellate Court

HN1[] **Appellate Jurisdiction, Authority of Appellate Court**

Federal courts are courts of limited subject-matter jurisdiction, possessing only that power authorized both by the Constitution and by Congress. Before proceeding to the merits of a dispute, the court must assure itself that it has jurisdiction.

Criminal Law & Procedure > Appeals > Appellate Jurisdiction > Final Judgment Rule

HN2[] **Appellate Jurisdiction, Final Judgment Rule**

The court of appeals' jurisdiction is typically limited to final decisions of the district court. In criminal cases, this prohibits appellate review until after conviction and imposition of sentence.

Criminal Law & Procedure > Appeals > Appellate Jurisdiction > Interlocutory Appeals

HN3[] **Appellate Jurisdiction, Interlocutory Appeals**

Under *28 U.S.C.S. § 1292(a)*, the courts of appeals shall have jurisdiction of appeals from: (1) Interlocutory orders of the district courts of the United States granting, continuing, modifying, refusing or dissolving injunctions, except where a direct review may be had in the Supreme Court. By its terms, *§ 1292(a)(1)* requires only an interlocutory order refusing an injunction.

Criminal Law & Procedure > Appeals > Appellate Jurisdiction > Interlocutory Appeals

HN4[] **Appellate Jurisdiction, Interlocutory Appeals**

While *28 U.S.C.S. § 1292(a)(1)* must be narrowly construed in order to avoid piecemeal litigation, it does permit appeals from orders that have the "practical effect" of denying an injunction, provided that the would-be appellant shows that the order "might have a serious, perhaps irreparable, consequence." The U.S. Court of Appeals for the Ninth Circuit finds nothing in Carson to suggest that the requirement of irreparable injury applies to appeals from orders specifically denying injunctions. Carson merely expanded the scope of appeals that do not fall within the meaning of the statute. Thus, Carson's requirements do not apply to appeals from the "direct denial of a request for an injunction."

Criminal Law & Procedure > Appeals > Appellate Jurisdiction > Interlocutory Appeals

HN5[] **Appellate Jurisdiction, Interlocutory Appeals**

In almost all federal criminal prosecutions, injunctive relief and interlocutory appeals will not be appropriate. Federal courts traditionally have refused, except in rare instances, to enjoin federal criminal prosecutions. An order by a federal court that relates only to the conduct or progress of litigation before that court ordinarily is not

considered an injunction and therefore is not appealable under *28 U.S.C.S. § 1292(a)(1)*. Thus, in almost all circumstances, federal criminal defendants cannot obtain injunctions of their ongoing prosecutions, and orders by district courts relating solely to requests to stay ongoing federal prosecutions will not constitute appealable orders under *§ 1292(a)(1)*.

Constitutional Law > Congressional Duties & Powers > Spending & Taxation

Criminal Law & Procedure > Commencement of Criminal Proceedings

Criminal Law & Procedure > Appeals > Appellate Jurisdiction > Interlocutory Appeals

HN6[] Congressional Duties & Powers, Spending & Taxation

It is emphatically the exclusive province of the Congress not only to formulate legislative policies and mandate programs and projects, but also to establish their relative priority for the Nation. Once Congress, exercising its delegated powers, has decided the order of priorities in a given area, it is for the courts to enforce them when enforcement is sought. A court sitting in equity cannot ignore the judgment of Congress, deliberately expressed in legislation. When Congress has enacted a legislative restriction like the Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), that expressly prohibits the Department of Justice from spending funds on certain actions, federal criminal defendants may seek to enjoin the expenditure of those funds, and the court of appeals may exercise jurisdiction over a district court's direct denial of a request for such injunctive relief.

Criminal Law & Procedure > Jurisdiction & Venue > Jurisdiction

HN7[] Jurisdiction & Venue, Jurisdiction

District courts in criminal cases have ancillary jurisdiction, which is the power of a court to adjudicate and determine matters incidental to the exercise of its primary jurisdiction over a cause under review.

Constitutional Law > The Judiciary > Case or Controversy > Standing

HN8[] Case or Controversy, Standing

The doctrine of standing asks whether a litigant is entitled to have a federal court resolve his grievance. A court has an independent obligation to examine its own jurisdiction, and standing is perhaps the most important of the jurisdictional doctrines.

Constitutional Law > The Judiciary > Case or Controversy > Standing

Criminal Law & Procedure > Appeals > Appellate Jurisdiction

HN9[] Case or Controversy, Standing

Constitutional limits on the court's jurisdiction are established by U.S. Const. art. III, which limits the jurisdiction of federal courts to "Cases" and "Controversies." U.S. Const. art. III, § 2. It demands that an "actual controversy" persist throughout all stages of litigation. That means that standing must be met by persons seeking appellate review. To have U.S. Const. art. III standing, a litigant must have suffered or be imminently threatened with a concrete and particularized "injury in fact" that is fairly traceable to the challenged action and likely to be redressed by a favorable judicial decision.

Constitutional Law > The Judiciary > Case or Controversy > Standing

HN10[] Case or Controversy, Standing

One who seeks to initiate or continue proceedings in federal court must demonstrate, among other requirements, both standing to obtain the relief requested, and, in addition, an ongoing interest in the dispute on the part of the opposing party that is sufficient to establish concrete adverseness. When those conditions are met, U.S. Const. art. III does not restrict the opposing party's ability to object to relief being sought at its expense.

Constitutional Law > The Judiciary > Case or Controversy > Standing

HN11 **Case or Controversy, Standing**

Threatened prosecution may give rise to standing.

Constitutional Law > Separation of Powers

Constitutional Law > The Judiciary > Case or Controversy > Standing

HN12 **Constitutional Law, Separation of Powers**

The Bond decision concluded that, "if the constitutional structure of our Government that protects individual liberty is compromised, individuals who suffer otherwise justiciable injury may object." The U.S. Supreme Court explained that both federalism and separation-of-powers constraints in the Constitution serve to protect individual liberty, and a litigant in a proper case can invoke such constraints "when government acts in excess of its lawful powers." The Court gave numerous examples of cases in which private parties, rather than government departments, were able to rely on separation-of-powers principles in otherwise jusiticiable cases or controversies. In another decision, the Court recognized, of course, that the separation of powers can serve to safeguard individual liberty and that it is the duty of the judicial department--in a separation-of-powers case as in any other--to say what the law is.

Constitutional Law > Congressional Duties & Powers > Spending & Taxation

HN13 **Congressional Duties & Powers, Spending & Taxation**

The Appropriations Clause of the Constitution, refer to U.S. Const. art. I, § 9, cl. 7, provides that "No Money shall be drawn from the Treasury, but in Consequence of Appropriations made by Law."). This straightforward and explicit command means simply that no money can be paid out of the Treasury unless it has been appropriated by an act of Congress. Money may be paid out only through an appropriation made by law; in other words, the payment of money from the Treasury must be authorized by a statute.

Constitutional Law > Separation of Powers

Constitutional Law > Congressional Duties & Powers > Spending & Taxation

HN14 **Constitutional Law, Separation of Powers**

The Appropriations Clause plays a critical role in the Constitution's separation of powers among the three branches of government and the checks and balances between them. Any exercise of a power granted by the Constitution to one of the other branches of Government is limited by a valid reservation of congressional control over funds in the Treasury. The Clause has a fundamental and comprehensive purpose to assure that public funds will be spent according to the letter of the difficult judgments reached by Congress as to the common good and not according to the individual favor of Government agents. Without it, Justice Story explained, the executive would possess an unbounded power over the public purse of the nation; and might apply all its moneyed resources at his pleasure.

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

HN15 **Criminal Law & Procedure, Commencement of Criminal Proceedings**

None of the funds made available in this Act to the Department of Justice may be used, with respect to Medical ***Marijuana*** States to prevent any of them from implementing their own laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***: Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015).

Governments > Legislation > Effect & Operation

Governments > Legislation > Interpretation

HN16 **Legislation, Effect & Operation**

It is a fundamental canon of statutory construction that, unless otherwise defined, words will be interpreted as taking their ordinary, contemporary, common meaning. Regarding the plain meaning of "prevent any of the Medical ***Marijuana*** States from implementing their own laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***"--the pronoun "them" refers back to the Medical ***Marijuana*** States, and "their

own laws" refers to the state laws of the Medical ***Marijuana*** States. And "implement" means: To "carry out, accomplish; esp.: to give practical effect to and ensure of actual fulfillment by concrete measure." Implement, Merriam-Webster's Collegiate Dictionary (11th ed. 2003); "To put into practical effect; carry out." Implement, American Heritage Dictionary of the English Language (5th ed. 2011); and "To complete, perform, carry into effect (a contract, agreement, etc.); to fulfil (an engagement or promise)." Implement, Oxford English Dictionary, www.oed.com. The court may follow the common practice of consulting dictionaries to determine ordinary meaning.

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

HN17[] **Criminal Law & Procedure, Commencement of Criminal Proceedings**

In sum, Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), prohibits the Department of Justice from spending money on actions that prevent the Medical ***Marijuana*** States giving practical effect to their state laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***.

Criminal Law & Procedure > Criminal Offenses > Controlled Substances > Delivery, Distribution & Sale

Governments > Legislation > Interpretation

Criminal Law & Procedure > Criminal Offenses > Controlled Substances > Possession

HN18[] **Controlled Substances, Delivery, Distribution & Sale**

Statutory language cannot be construed in a vacuum. It is a fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme. The court must read the Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), with a view to its place in the overall statutory scheme for ***marijuana*** regulation, namely the Controlled Substances Act (CSA) and the State Medical ***Marijuana*** Laws. The CSA prohibits the use, distribution, possession, or cultivation of any ***marijuana***. *21 U.S.C.S. §§ 841(a), 844(a)*. The State Medical ***Marijuana*** Laws are those state laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***. Thus, the CSA prohibits what the State Medical ***Marijuana*** Laws permit.

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

HN19[] **Criminal Law & Procedure, Commencement of Criminal Proceedings**

In light of the ordinary meaning of the terms of Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), and the relationship between the relevant federal and state laws, the court considers whether a superior authority, which prohibits certain conduct, can prevent a subordinate authority from implementing a rule that officially permits such conduct by punishing individuals who are engaged in the conduct officially permitted by the lower authority. The court concludes that it can.

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

HN20[] **Criminal Law & Procedure, Commencement of Criminal Proceedings**

At a minimum, Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), prohibits the Department of Justice from spending funds from relevant appropriations acts for the prosecution of individuals who engaged in conduct permitted by the State Medical ***Marijuana*** Laws and who fully complied with such laws.

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

HN21[] **Criminal Law & Procedure, Commencement of Criminal Proceedings**

"Law" has many different meanings, including the following definitions that appear most relevant to Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015): "The aggregate of legislation, judicial precedents, and accepted legal principles; the body of authoritative grounds of judicial and administrative action; esp., the body of rules, standards, and principles that the courts of a particular jurisdiction apply in deciding controversies brought before them." "The set of rules or principles dealing with a specific area of a legal system." Law, Black's Law Dictionary (10th ed. 2014); and: "1. a. The body of rules, whether proceeding from formal enactment or from custom, which a particular state or community recognizes as binding on its members or subjects. (In this sense usually the law.)." "One of the individual rules which constitute the 'law' (sense 1) of a state or polity. The plural has often a collective sense. approaching sense 1." Law, Oxford English Dictionary, www.oed.com. The relative pronoun "that" restricts "laws" to those laws authorizing the use, distribution, possession, or cultivation of medical ***marijuana***.

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

HN22[] **Criminal Law & Procedure, Commencement of Criminal Proceedings**

In sum, the ordinary meaning of Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), prohibits the Department of Justice from preventing the implementation of the Medical ***Marijuana*** States' laws or sets of rules and only those rules that authorize medical ***marijuana*** use.

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

HN23[] **Criminal Law & Procedure, Commencement of Criminal Proceedings**

Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), prohibits the federal government only from preventing the implementation of those specific rules of state law that authorize the use, distribution, possession, or cultivation of medical ***marijuana***. DOJ does not prevent the implementation of rules authorizing conduct when it prosecutes individuals who engage in conduct unauthorized under state medical ***marijuana*** laws. Individuals who do not strictly comply with all state-law conditions regarding the use, distribution, possession, and cultivation of medical ***marijuana*** have engaged in conduct that is unauthorized, and prosecuting such individuals does not violate § 542. Congress could easily have drafted § 542 to prohibit interference with laws that address medical ***marijuana*** or those that regulate medical ***marijuana***, but it did not. Instead, it chose to proscribe preventing states from implementing laws that authorize the use, distribution, possession, and cultivation of medical ***marijuana***.

Governments > Legislation > Effect & Operation

Governments > Legislation > Interpretation

HN24[] **Legislation, Effect & Operation**

It is a fundamental principle of appropriations law that the court may only consider the text of an appropriations rider, not expressions of intent in legislative history. An agency's discretion to spend appropriated funds is cabined only by the text of the appropriation, not by Congress' expectations of how the funds will be spent, as might be reflected by legislative history. As the U.S. Supreme Court has said (in a case involving precisely the issue of Executive compliance with appropriation laws, although the principle is one of general applicability): "legislative intention, without more, is not legislation."

Criminal Law & Procedure > Commencement of Criminal Proceedings

Governments > Legislation > Effect & Operation

Criminal Law & Procedure > Criminal Offenses > Controlled Substances

HN25[] **Criminal Law & Procedure, Commencement of Criminal Proceedings**

To be clear, Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015), does not provide immunity from prosecution for federal ***marijuana*** offenses.

Civil Procedure > Remedies > Writs > All Writs Act

Civil Procedure > ... > Writs > Common Law Writs > Mandamus

HN26 **Writs, All Writs Act**

The court has jurisdiction under the All Writs Act, 28 U.S.C.S. § 1651, to "issue all writs necessary or appropriate in aid of our jurisdiction and agreeable to the usages and principles of law." 28 U.S.C.S. § 1651. The writ of mandamus is a drastic and extraordinary remedy reserved for really extraordinary causes.

Summary:

SUMMARY*

Criminal Law

In ten consolidated interlocutory appeals and petitions for writs of mandamus arising from three district courts in two states, the panel vacated the district court's orders denying relief to the appellants, who have been indicted for violating **[**2]** the Controlled Substances Act, and who sought dismissal of their indictments or to enjoin their prosecutions on the basis of a congressional appropriations rider, *Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015)*, that prohibits the Department of Justice from spending funds to prevent states' implementation of their medical ***marijuana*** laws.

The panel held that it has jurisdiction under *28 U.S.C. § 1292(a)(1)* to consider the interlocutory appeals from these direct denials of requests for injunctions, and that the appellants have standing to invoke separation-of-powers provisions of the Constitution to challenge their criminal prosecutions.

The panel held that § 542 prohibits DOJ from spending funds from relevant appropriations acts for the prosecution of individuals who engaged in conduct permitted by state medical ***marijuana*** laws and who fully complied with such laws. The panel wrote that individuals who do not strictly comply with all state-law conditions regarding the use, distribution, possession, and cultivation of medical ***marijuana*** have engaged in conduct that is unauthorized, and that prosecuting such individuals does not violate § 542.

Remanding to the district courts, the panel instructed that if DOJ wishes to continue **[**3]** these prosecutions, the appellants are entitled to evidentiary hearings to determine whether their conduct was completely authorized by state law. The panel wrote that in determining the appropriate remedy for any violation of § 542, the district courts should consider the temporal nature of the lack of funds along with the appellants' rights to a speedy trial.

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Robert R. Fischer (argued), Federal Defenders of Eastern Washington & Idaho, Spokane, Washington, for Defendant-Appellant Jerad John Kynaston.

Richard D. Wall, Spokane, Washington, for Defendant-Appellant Tyler Scott McKinley.

Douglas Hiatt, Seattle, Washington; Douglas Dwight Phelps, Spokane, Washington; for Defendant-Appellant Samuel Michael Doyle.

David Matthew Miller, Spokane, Washington, for Defendant-Appellant Brice Christian Davis.

Nicholas V. Vieth, Spokane, Washington, for Defendant-Appellant Jayde Dillion Evans.

Andras Farkas (argued), Assistant Federal Defender; Heather E. Williams, Federal Defender; Federal Defenders of the Eastern District of California, Fresno, California; for Defendant-Appellant/Petitioner Iane Lovan.

Daniel L. **[**4]** Harralson, Daniel L. Harralson Law Corp., Fresno, California, for Defendant-Appellant/Petitioner Somphane Malathong.

Harry M. Drandell, Law Offices of Harry M. Drandell, Fresno, California, for Defendant-Appellant/Petitioner Vong Southy.

Peter M. Jones, Wanger Jones Helsley, P.C., Fresno, California, for Defendant-Appellant/Petitioner Khamphou Khouthong.

Owen P. Martikan (argued), Assistant United States

* This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

Attorney; Barbara J. Valliere, Chief, Appellate Division; Brian Stretch, United States Attorney; United States Attorney's Office, San Francisco, California, and ; Russell E. Smoot and Timothy J. Ohms, Assistant United States Attorneys; Michael C. Ormsby, United States Attorney; United States Attorney's Office, Spokane, Washington; Camil A. Skipper, Assistant United States Attorney; Benjamin B. Wagner, United States Attorney; United States Attorney's Office, Sacramento, California; for Plaintiff-Appellee/Real Party in Interest United States.

Judges: Before: Diarmuid F. O'Scannlain, Barry G. Silverman, and Carlos T. Bea, Circuit Judges. Opinion by Judge O'Scannlain.

Opinion by: Diarmuid F. O'Scannlain

Opinion

[*1168] O'SCANNLAIN, Circuit Judge:

We are asked to decide whether criminal defendants may avoid prosecution for various **[**5]** federal ***marijuana*** offenses on the basis of a congressional appropriations rider that prohibits the United States Department of Justice from spending funds to prevent states' implementation of their own medical ***marijuana*** laws.

I

A

These ten cases are consolidated interlocutory appeals and petitions for writs of mandamus arising out of orders entered by three district courts in two states within our circuit.[1] All Appellants have been **[*1169]** indicted for various infractions of the Controlled Substances Act (CSA). They have moved to dismiss their indictments or to enjoin their prosecutions on the grounds that the Department of Justice (DOJ) is prohibited from spending funds to prosecute them.

In *McIntosh*, five codefendants allegedly **[**6]** ran four ***marijuana*** stores in the Los Angeles area known as Hollywood Compassionate Care (HCC) and Happy Days, and nine indoor ***marijuana*** grow sites in the San Francisco and Los Angeles areas. These codefendants were indicted for conspiracy to manufacture, to possess with intent to distribute, and to distribute more than 1000 ***marijuana*** plants in violation of *21 U.S.C. §§ 846, 841(a)(1), 841(b)(1)(A)*. The government sought forfeiture derived from such violations under *21 U.S.C. § 853*.

In *Lovan*, the U.S. Drug Enforcement Agency and Fresno County Sheriff's Office executed a federal search warrant on 60 acres of land located on North Zedicker Road in Sanger, California. Officials allegedly located more than 30,000 ***marijuana*** plants on this property. Four codefendants were indicted for manufacturing 1000 or more ***marijuana*** plants and for conspiracy to manufacture 1000 or more ***marijuana*** plants in violation of *21 U.S.C. §§ 841(a)(1), 846*.

In *Kynaston*, five codefendants face charges that arose out of the execution of a Washington State search warrant related to an investigation into violations of Washington's Controlled Substances Act. Allegedly, a total of 562 "growing ***marijuana*** plants," along with another 677 pots, some of which appeared to have the root structures of **[**7]** suspected harvested ***marijuana*** plants, were found. The codefendants were indicted for conspiring to manufacture 1000 or more ***marijuana*** plants, manufacturing 1000 or more ***marijuana*** plants, possessing with intent to distribute 100 or more ***marijuana*** plants, possessing a firearm in furtherance of a Title 21 offense, maintaining a drug-involved premise, and being felons in possession of a firearm in violation of *18 U.S.C. §§ 922(g)(1), 924(c)(1)(A)(i)* and *21 U.S.C. §§ 841, 856(a)(1)*.

B

In December 2014, Congress enacted the following rider in an omnibus appropriations bill funding the government through September 30, 2015:

> None of the funds made available in this Act to the Department of Justice may be used, with respect to the States of Alabama, Alaska, Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Hawaii, Illinois, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Oregon, Rhode Island, South Carolina,

[1] Appellants filed one appeal in ***United States v. McIntosh***, No. 15-10117, arising out of the Northern District of California; one appeal in *United States v. Kynaston*, No. 15-30098, arising out of the Eastern District of Washington; and four appeals with four corresponding petitions for mandamus—Nos. 15-10122, 15-10127, 15-10132, 15-10137, 15-71158, 15-71174, 15-71179, 15-71225, which we shall address as *United States v. Lovan*—arising out of the Eastern District of California.

> Tennessee, Utah, Vermont, Washington, and Wisconsin, to prevent such States from implementing their own State laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***.

Consolidated and **[**8]** Further *Continuing Appropriations Act, 2015, Pub. L. No. 113-235, § 538, 128 Stat. 2130, 2217 (2014)*. Various short-term measures extended the appropriations and the rider through December 22, 2015. On December 18, 2015, Congress enacted a new appropriations act, which appropriates funds through the fiscal year ending September 30, 2016, and includes essentially the same rider in § 542. *Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015)* **[*1170]** (adding Guam and Puerto Rico and changing "prevent such States from implementing their own State laws" to "prevent any of them from implementing their own laws").

Appellants in *McIntosh*, *Lovan*, and *Kynaston* filed motions to dismiss or to enjoin on the basis of the rider. The motions were denied from the bench in hearings in *McIntosh* and *Lovan*, while the court in *Kynaston* filed a short written order denying the motion after a hearing. In *McIntosh* and *Kynaston*, the court concluded that defendants had failed to carry their burden to demonstrate their compliance with state medical ***marijuana*** laws. In *Lovan*, the court concluded that the determination of compliance with state law would depend on facts found by the jury in a federal prosecution, and thus it would revisit the defendants' motion after the trial.

Appellants in all **[**9]** three cases filed interlocutory appeals, and Appellants in *McIntosh* and *Lovan* ask us to consider issuing writs of mandamus if we do not assume jurisdiction over the appeals.

II

HN1[] Federal courts are courts of limited subject-matter jurisdiction, possessing only that power authorized both by the Constitution and by Congress. *See Gunn v. Minton, 133 S. Ct. 1059, 1064, 185 L. Ed. 2d 72 (2013)*. Before proceeding to the merits of this dispute, we must assure ourselves that we have jurisdiction. *See Steel Co. v. Citizens for a Better Env't, 523 U.S. 83, 95, 118 S. Ct. 1003, 140 L. Ed. 2d 210 (1998)*.

A

The parties dispute whether Congress has authorized us to exercise jurisdiction over these interlocutory appeals. ***HN2***[] "Our jurisdiction is typically limited to final decisions of the district court." *United States v. Romero-Ochoa, 554 F.3d 833, 835 (9th Cir. 2009)*. "In criminal cases, this prohibits appellate review until after conviction and imposition of sentence." *Midland Asphalt Corp. v. United States, 489 U.S. 794, 798, 109 S. Ct. 1494, 103 L. Ed. 2d 879 (1989)*. In the cases before us, no Appellants have been convicted or sentenced. Therefore, unless some exception to the general rule applies, we should not reach the merits of this dispute. Appellants invoke three possible avenues for reaching the merits: jurisdiction over an order refusing an injunction, jurisdiction under the collateral order doctrine, and the writ of mandamus. We address the first of these three avenues.

1

HN3[] Under *28 U.S.C. § 1292(a)*, "the courts of appeals shall have **[**10]** jurisdiction of appeals from: (1) Interlocutory orders of the district courts of the United States . . . granting, continuing, modifying, *refusing* or dissolving *injunctions*, . . . except where a direct review may be had in the Supreme Court." (emphasis added). By its terms, *§ 1292(a)(1)* requires only an interlocutory order refusing an injunction. Nonetheless, relying on *Carson v. American Brands, Inc., 450 U.S. 79, 84, 101 S. Ct. 993, 67 L. Ed. 2d 59 (1981)*, the government argues that *§ 1292(a)(1)* requires Appellants to show that the interlocutory order (1) has the effect of refusing an injunction; (2) has a serious, perhaps irreparable, consequence; and (3) can be effectually challenged only by immediate appeal.

The government's reliance on *Carson* is misplaced in light of our precedent interpreting that case. In *Shee Atika v. Sealaska Corp.*, we explained:

> In *Carson*, the Supreme Court considered whether *section 1292(a)(1)* permitted appeal from an order denying the parties' joint motion for approval of a **[*1171]** consent decree that contained an injunction as one of its provisions. Because the order did not, on its face, deny an injunction, an appeal from the order did not fall precisely within the language of *section 1292(a)(1)*. The Court nevertheless permitted the appeal. The Court stated that, ***HN4***[] while *section 1292(a)(1)* must be narrowly construed in order **[**11]** to avoid piecemeal litigation, it does permit appeals from orders that have the "practical effect" of denying an injunction, provided that the would-be appellant

> shows that the order "might have a serious, perhaps irreparable, consequence."
>
> We find nothing in *Carson* to suggest that the requirement of irreparable injury applies to appeals from orders specifically denying injunctions. *Carson* merely expanded the scope of appeals that do not fall within the meaning of the statute. Sealaska appeals from the direct denial of a request for an injunction. *Carson*, therefore, is simply irrelevant.

39 F.3d 247, 249 (9th Cir. 1994) (citations omitted); *accord Paige v. California, 102 F.3d 1035, 1038 (9th Cir. 1996)*; *see also Shee Atika, 39 F.3d at 249 n.2* (noting that its conclusion was consistent with "the overwhelming majority of courts of appeals that have considered the issue" and collecting cases). Thus, *Carson's* requirements do not apply to appeals from the "direct denial of a request for an injunction." *Shee Atika, 39 F.3d at 249*.

2

In the cases before us, the district courts issued direct denials of requests for injunctions. Lovan, for instance, requested injunctive relief in the conclusion of his opening brief: "Therefore, the Court should dismiss all counts against Mr. Lovan based upon alleged violations of *21 U.S.C. § 841* and/or enjoin the Department **[**12]** of Justice from taking any further action against the defendants in this case unless and until the Department can show such action does not involve the expenditure of any funds in violation of the Appropriations Act." At the hearing, Lovan's counsel made exceptionally clear that his motion sought injunctive relief in the alternative:

> THE COURT: But remember, your remedy is not because you are upset that the Department of Justice is spending taxpayer money. Your remedy is a dismissal, which is what you are seeking now, is it not?
>
> MR. FARKAS: And your Honor, as an alternative in our motion, we ask for a stay of these proceedings, asked this Court to enjoin the Department of Justice from spending any funds to prosecute Mr. Lovan if this Court finds he is in conformity with the California Compassionate Use Act. So it is a motion to dismiss or, alternatively, a motion to enjoin until Congress designates funds for that purpose.

Shortly thereafter, Lovan's counsel reiterated: "[W]e would ask either for a dismissal or to enjoin the government from spending any funds that were not appropriated under the Appropriations Act." At the close of the hearing, Lovan's counsel even explicitly argued that the **[**13]** district court's denial of injunctive relief would be appealable immediately: "I believe this might be the type of collateral order that is appealable to the Ninth Circuit immediately. As I said, we are asking for an injunction." The district court denied Lovan's motion, which clearly requested injunctive relief.

Similarly, in *Kynaston*, the opening brief in support of the motion began and ended with explicit requests for injunctive relief. Subsequent filings by other defendants in that case referenced the injunctive relief sought, and one discussed at length how courts of equity should exercise their jurisdiction. The district court denied the motion, which clearly sought injunctive relief.

[*1172] In *McIntosh*, the defendant requested injunctive relief in his moving papers, and he mentioned his request for injunctive relief three times in his reply brief. At the hearing, the question of injunctive relief did not arise, and the district court said simply that it was denying the motion. Although McIntosh could have emphasized the equitable component of his request more, we conclude that he raised the issue sufficiently for the denial of his motion to constitute a direct denial of a request for **[**14]** an injunction.

Therefore, we have jurisdiction under *28 U.S.C. § 1292(a)(1)* to consider the interlocutory appeals from these direct denials of requests for injunctions.

3

We note the unusual circumstances presented by these cases. *HN5*[] In almost all federal criminal prosecutions, injunctive relief and interlocutory appeals will not be appropriate. Federal courts traditionally have refused, except in rare instances, to enjoin federal criminal prosecutions. *See Ackerman v. Int'l Longshoremen's Union, 187 F.2d 860, 868 (9th Cir. 1951)*; *Argonaut Mining Co. v. McPike, 78 F.2d 584, 586 (9th Cir. 1935)*; *Stolt-Nielsen, S.A. v. United States, 442 F.3d 177, 185 (3d Cir. 2006)*; *Deaver v. Seymour, 822 F.2d 66, 69, 261 U.S. App. D.C. 334 (D.C. Cir. 1987)*. "An order by a federal court that relates only to the conduct or progress of litigation before that court ordinarily is not considered an injunction and therefore is not appealable under *§ 1292(a)(1)*." *Gulfstream Aerospace Corp. v. Mayacamas Corp., 485 U.S. 271, 279, 108 S. Ct. 1133, 99 L. Ed. 2d 296 (1988)*. Thus, in almost all circumstances, federal criminal defendants cannot obtain injunctions of their ongoing prosecutions, and orders by district courts relating solely to requests to stay ongoing federal prosecutions will not constitute appealable orders under *§ 1292(a)(1)*.

Here, however, Congress has enacted an appropriations rider that specifically restricts DOJ from spending money to pursue certain activities. HN6[] It is "emphatically . . . the exclusive province of the Congress not only to formulate legislative policies and mandate programs and projects, but also to establish **[**15]** their relative priority for the Nation. Once Congress, exercising its delegated powers, has decided the order of priorities in a given area, it is for . . . the courts to enforce them when enforcement is sought." *Tenn. Valley Auth. v. Hill, 437 U.S. 153, 194, 98 S. Ct. 2279, 57 L. Ed. 2d 117 (1978)*; *accord United States v. Oakland Cannabis Buyers' Co-op., 532 U.S. 483, 497, 121 S. Ct. 1711, 149 L. Ed. 2d 722 (2001)*. A "court sitting in equity cannot 'ignore the judgment of Congress, deliberately expressed in legislation.'" *Oakland Cannabis, 532 U.S. at 497* (quoting *Virginian Ry. Co. v. Sys. Fed'n No. 40, 300 U.S. 515, 551, 57 S. Ct. 592, 81 L. Ed. 789 (1937)*). Even if Appellants cannot obtain injunctions of their prosecutions themselves, they can seek—and have sought—to enjoin DOJ from *spending funds* from the relevant appropriations acts on such prosecutions.[2] When Congress has enacted a legislative **[*1173]** restriction like § 542 that expressly prohibits DOJ from spending funds on certain actions, federal criminal defendants may seek to enjoin the expenditure of those funds, and we may exercise jurisdiction over a district court's direct denial of a request for such injunctive relief.

B

1

As part of our jurisdictional inquiry, we must consider whether Appellants have standing to complain that DOJ is spending money that has not been appropriated by Congress. HN8[] "The doctrine of standing asks whether a litigant is entitled to have a federal court resolve his grievance." *Kowalski v. Tesmer, 543 U.S. 125, 128, 125 S. Ct. 564, 160 L. Ed. 2d 519 (2004)*. Although the government concedes that Appellants have standing, we have an "independent obligation to examine [our] own jurisdiction, and standing is perhaps the most important of the jurisdictional doctrines." *United States v. Hays, 515 U.S. 737, 742, 115 S. Ct. 2431, 132 L. Ed. 2d 635 (1995)* (internal quotation marks and alterations omitted).

HN9[] Constitutional limits on our jurisdiction are established by Article III, which limits the jurisdiction of federal courts to "Cases" and "Controversies." U.S. Const. art. III, § 2. It "demands that an 'actual controversy' persist throughout all stages of litigation. That means that standing 'must be met by persons seeking appellate review . . . .'" *Hollingsworth v. Perry, 133 S. Ct. 2652, 2661, 186 L. Ed. 2d 768 (2013)* (citations omitted). To have Article III standing, a litigant "must have suffered or be imminently threatened with a concrete **[**17]** and particularized 'injury in fact' that is fairly traceable to the challenged action . . . and likely to be redressed by a favorable judicial decision." *Lexmark Int'l, Inc. v. Static Control Components, Inc., 134 S. Ct. 1377, 1386, 188 L. Ed. 2d 392 (2014)*.

In *Bond v. United States*, the Supreme Court addressed a situation similar to the cases before us. *564 U.S. 211, 131 S. Ct. 2355, 180 L. Ed. 2d 269 (2011)*. There, the Third Circuit had concluded that the criminal defendant lacked "standing to challenge a federal statute on grounds that the measure interferes with the powers reserved to States," and the Supreme Court reversed. *Id. at 216, 226*.

The Court explained that HN10[] "[o]ne who seeks to initiate or continue proceedings in federal court must demonstrate, among other requirements, both standing to obtain the relief requested, and, in addition, an 'ongoing interest in the dispute' on the part of the opposing party that is sufficient to establish 'concrete adverseness.'" *Id. at 217* (citations omitted). "When those conditions are met, Article III does not restrict the opposing party's ability to object to relief being sought at its expense." *Id.* "The requirement of Article III standing thus had no bearing upon [the defendant's] capacity to assert defenses in the District Court." *Id.*

Applying those principles to the defendant's standing to appeal, the Court concluded that **[**18]** it was "clear Article III's prerequisites are met. Bond's challenge to her conviction and sentence 'satisfies the case-or-controversy requirement, because the incarceration . . . constitutes a concrete injury, caused by the conviction

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[2] We need not decide in the first instance exactly how the district courts should resolve claims that DOJ is spending money to prosecute a defendant in violation of an appropriations rider. We therefore take no view on the precise relief required and leave that issue to the district courts in the first instance. We note that HN7[] district courts **[**16]** in criminal cases have ancillary jurisdiction, which "is the power of a court to adjudicate and determine matters incidental to the exercise of its primary jurisdiction over a cause under review." *United States v. Sumner, 226 F.3d 1005, 1013-15 (9th Cir. 2000)*; *see Kokkonen v. Guardian Life Ins. Co. of Am., 511 U.S. 375, 378-80, 114 S. Ct. 1673, 128 L. Ed. 2d 391 (1994)*; *Garcia v. Teitler, 443 F.3d 202, 206-10 (2d Cir. 2006)*.

and redressable by invalidation of the conviction.'" *Id.* Here, Appellants have not yet been deprived of liberty via a conviction, but their indictments imminently threaten such a deprivation. *Cf.* Susan B. Anthony List v. Driehaus, 134 S. Ct. 2334, 2342-47, 189 L. Ed. 2d 246 (2014) **HN11**[↑] (threatened prosecution may give rise to standing). They clearly had Article III standing to pursue their challenges below because **[*1174]** they were merely objecting to relief sought at their expense. And they have standing on appeal because their potential convictions constitute concrete, particularized, and imminent injuries, which are caused by their prosecutions and redressable by injunction or dismissal of such prosecutions. *See* Bond, 564 U.S. at 217.

After addressing Article III standing, **HN12**[↑] the *Bond* Court concluded that, "[i]f the constitutional structure of our Government that protects individual liberty is compromised, individuals who suffer otherwise justiciable injury may object." Id. at 223. The Court explained that both federalism and separation-of-powers constraints in the Constitution serve **[**19]** to protect individual liberty, and a litigant in a proper case can invoke such constraints "[w]hen government acts in excess of its lawful powers." Id. at 220-24. The Court gave numerous examples of cases in which private parties, rather than government departments, were able to rely on separation-of-powers principles in otherwise jusiticiable cases or controversies. *See* id. at 223 (citing Free Enter. Fund v. Pub. Co. Accounting Oversight Bd., 561 U.S. 477, 130 S. Ct. 3138, 177 L. Ed. 2d 706 (2010); Clinton v. City of New York, 524 U.S. 417, 433-36, 118 S. Ct. 2091, 141 L. Ed. 2d 393 (1998); Plaut v. Spendthrift Farm, Inc., 514 U.S. 211, 115 S. Ct. 1447, 131 L. Ed. 2d 328 (1995); Bowsher v. Synar, 478 U.S. 714, 106 S. Ct. 3181, 92 L. Ed. 2d 583 (1986); INS v. Chadha, 462 U.S. 919, 103 S. Ct. 2764, 77 L. Ed. 2d 317 (1983); N. Pipeline Constr. Co. v. Marathon Pipe Line Co., 458 U.S. 50, 102 S. Ct. 2858, 73 L. Ed. 2d 598 (1982); Youngstown Sheet & Tube Co. v. Sawyer, 343 U.S. 579, 72 S. Ct. 863, 96 L. Ed. 1153, 62 Ohio Law Abs. 417 (1952); A.L.A. Schechter Poultry Corp. v. United States, 295 U.S. 495, 55 S. Ct. 837, 79 L. Ed. 1570 (1935)).

The Court reiterated this principle in NLRB v. Noel Canning, 134 S. Ct. 2550, 189 L. Ed. 2d 538 (2014). There, the Court granted relief to a private party challenging an order against it on the basis that certain members of the National Labor Relations Board had been appointed in excess of presidential authority under the Recess Appointments Clause, another separation-of-powers constraint. Id. at 2557. The Court "recognize[d], of course, that the separation of powers can serve to safeguard individual liberty and that it is the 'duty of the judicial department'—in a separation-of-powers case as in any other—'to say what the law is.'" Id. at 2559-60 (citing Clinton, 524 U.S. at 449-50 (Kennedy, J., concurring), and quoting Marbury v. Madison, 5 U.S. (1 Cranch) 137, 177, 2 L. Ed. 60 (1803)); *see also* id. at 2592-94 (Scalia, J., concurring in the judgment) (discussing at great length how the separation of powers protects individual liberty).

Thus, Appellants have standing to invoke separation-of-powers provisions of the Constitution to challenge **[**20]** their criminal prosecutions.

2

Here, Appellants complain that DOJ is spending funds that have not been appropriated by Congress in violation of **HN13**[↑] the Appropriations Clause of the Constitution. *See* U.S. Const. art. I, § 9, cl. 7 ("No Money shall be drawn from the Treasury, but in Consequence of Appropriations made by Law . . . ."). This "straightforward and explicit command . . . means simply that no money can be paid out of the Treasury unless it has been appropriated by an act of Congress." Office of Pers. Mgmt. v. Richmond, 496 U.S. 414, 424, 110 S. Ct. 2465, 110 L. Ed. 2d 387 (1990) (citation omitted). "Money may be paid out only through an appropriation made by law; in **[*1175]** other words, the payment of money from the Treasury must be authorized by a statute." *Id.*

HN14[↑] The Appropriations Clause plays a critical role in the Constitution's separation of powers among the three branches of government and the checks and balances between them. "Any exercise of a power granted by the Constitution to one of the other branches of Government is limited by a valid reservation of congressional control over funds in the Treasury." Id. at 425. The Clause has a "fundamental and comprehensive purpose . . . to assure that public funds will be spent according to the letter of the difficult judgments reached by Congress as to the common good and not according to the individual favor of Government agents." Id. at 427-28. Without it, Justice **[**21]** Story explained, "the executive would possess an unbounded power over the public purse of the nation; and might apply all its moneyed resources at his pleasure." Id. at 427 (quoting 2 Joseph Story, *Commentaries on the Constitution of the United States* § 1348 (3d ed. 1858)).

Thus, if DOJ were spending money in violation of § 542,

it would be drawing funds from the Treasury without authorization by statute and thus violating the Appropriations Clause. That Clause constitutes a separation-of-powers limitation that Appellants can invoke to challenge their prosecutions.

III

The parties dispute whether the government's spending money on their prosecutions violates § 542.

A

We focus, as we must, on the statutory text. Section 542 provides that HN15[] "[n]one of the funds made available in this Act to the Department of Justice may be used, with respect to [Medical ***Marijuana*** States[3]] to prevent any of them from implementing their own laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***." *Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, § 542, 129 Stat. 2242, 2332-33 (2015)*. Unfortunately, the rider is not a model of clarity.

1

HN16[] "It is a 'fundamental canon of statutory construction' that, 'unless otherwise defined, words will be interpreted as taking their ordinary, contemporary, common meaning.'" *Sandifer v. U.S. Steel Corp., 134 S. Ct. 870, 876, 187 L. Ed. 2d 729 (2014)* (quoting *Perrin v. United States, 444 U.S. 37, 42, 100 S. Ct. 311, 62 L. Ed. 2d 199 (1979)*). Thus, in order to decide whether the prosecutions of Appellants violate § 542, we must determine the plain meaning of "prevent any of [the Medical ***Marijuana*** States] from implementing their own laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***." The pronoun **[*1176]** "them" refers **[**23]** back to the Medical ***Marijuana*** States, and "their own laws" refers to the state laws of the Medical ***Marijuana*** States. And "implement" means:

> To "carry out, accomplish; *esp.*: to give practical effect to and ensure of actual fulfillment by concrete measure." *Implement, Merriam-Webster's Collegiate Dictionary* (11th ed. 2003);
>
> "To put into practical effect; carry out." *Implement, American Heritage Dictionary of the English Language* (5th ed. 2011); and
>
> "To complete, perform, carry into effect (a contract, agreement, etc.); to fulfil (an engagement or promise)." *Implement, Oxford English Dictionary*, www.oed.com.

See Sanford v. MemberWorks, Inc., 625 F.3d 550, 559 (9th Cir. 2010) (We "may follow the common practice of consulting dictionaries to determine" ordinary meaning.); *Sandifer, 134 S. Ct. at 876*. HN17[] In sum, § 542 prohibits DOJ from spending money on actions that prevent the Medical ***Marijuana*** States' giving practical effect to their state laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***.

2

DOJ argues that it does not prevent the Medical ***Marijuana*** States from giving practical effect to their medical ***marijuana*** laws by prosecuting private individuals, rather than taking legal action against the state. We are not persuaded.

Importantly, the HN18[] "[s]tatutory language **[**24]** cannot be construed in a vacuum. It is [another] fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme." *Sturgeon v. Frost, 136 S. Ct. 1061, 1070, 194 L. Ed. 2d 108 (2016)* (internal quotation marks omitted). Here, we must read § 542 with a view to its place in the overall statutory scheme for ***marijuana*** regulation, namely the CSA and the State Medical ***Marijuana*** Laws. The CSA prohibits the use, distribution, possession, or cultivation of any ***marijuana***. *See 21 U.S.C. §§ 841(a), 844(a)*.[4]

---

[3] To avoid repeating the names of all 43 jurisdictions listed, we refer to Alabama, Alaska, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, **[**22]** Illinois, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming, the District of Columbia, Guam, and Puerto Rico as the "Medical ***Marijuana*** States" and their laws authorizing "the use, distribution, possession, or cultivation of medical ***marijuana***" as the "State Medical ***Marijuana*** Laws." While recognizing that the list includes three non-states, we will refer to the listed jurisdictions as states and their laws as state laws without further qualification.

[4] This requires a slight caveat. Under the CSA, "the manufacture, distribution, or possession of ***marijuana*** [is] a criminal offense, with the sole exception being use of the drug as part of a Food and Drug Administration preapproved research study." *Gonzales v. Raich, 545 U.S. 1, 14, 125 S. Ct. 2195, 162 L. Ed. 2d 1 (2005)*; *see 21 U.S.C. §§ 812(c), 823(f),*

The State Medical ***Marijuana*** Laws are those state laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***. Thus, the CSA prohibits what the State Medical ***Marijuana*** Laws permit.

HN19[] In light of the ordinary meaning of the terms of § 542 and the relationship between the relevant federal **[**25]** and state laws, we consider whether a superior authority, which prohibits certain conduct, can prevent a subordinate authority from implementing a rule that officially permits such conduct by punishing individuals who are engaged in the conduct officially permitted by the lower authority. We conclude that it can.

DOJ, without taking any legal action against the Medical ***Marijuana*** States, prevents them from implementing their laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana*** by prosecuting individuals for use, distribution, possession, or cultivation of medical ***marijuana*** that is authorized by such laws. By officially permitting certain conduct, state law provides for non-prosecution of individuals who engage in such conduct. If **[*1177]** the federal government prosecutes such individuals, it has prevented the state from giving practical effect to its law providing for non-prosecution of individuals who engage in the permitted conduct.

We therefore conclude that, *HN20*[] at a minimum, § 542 prohibits DOJ from spending funds from relevant appropriations acts for the prosecution of individuals who engaged in conduct permitted by the State Medical ***Marijuana*** Laws and who fully **[**26]** complied with such laws.

3

Appellants in *McIntosh* and *Kynaston* argue for a more expansive interpretation of § 542. They contend that the rider prohibits DOJ from bringing federal ***marijuana*** charges against anyone licensed or authorized under a state medical ***marijuana*** law for activity occurring within that state, including licensees who had failed to comply fully with state law.

For instance, Appellants in *Kynaston* argue that "implementation of laws necessarily involves all aspects of putting the law into practical effect, including interpretation of the law, means of application and enforcement, and procedures and processes for determining the outcome of individual cases." Under this view, if the federal government prosecutes individuals who are not strictly compliant with state law, it will prevent the states from implementing the *entirety* of their laws that authorize medical ***marijuana*** by preventing them from giving practical effect to the penalties and enforcement mechanisms for engaging in unauthorized conduct. Thus, argue the *Kynaston* Appellants, the Department of Justice must refrain from prosecuting "unless a person's activities are so clearly outside the scope of a state's medical ***marijuana*** **[**27]** laws that reasonable debate is not possible."

To determine whether such construction is correct, we must decide whether the phrase "laws that authorize" includes not only the rules authorizing certain conduct but also the rules delineating penalties and enforcement mechanisms for engaging in unauthorized conduct. In answering that question, we consider the ordinary meaning of "laws that authorize the use, distribution, possession, or cultivation of medical ***marijuana***." "*HN21*[] Law" has many different meanings, including the following definitions that appear most relevant to § 542:

> "The aggregate of legislation, judicial precedents, and accepted legal principles; the body of authoritative grounds of judicial and administrative action; esp., the body of rules, standards, and principles that the courts of a particular jurisdiction apply in deciding controversies brought before them."
>
> "The set of rules or principles dealing with a specific area of a legal system <copyright law>."

Law, Black's Law Dictionary (10th ed. 2014); and:

> "1. a. The body of rules, whether proceeding from formal enactment or from custom, which a particular state or community recognizes as binding on its members or subjects. (In this **[**28]** sense usually *the law.)*."
>
> "One of the individual rules which constitute the 'law' (sense 1) of a state or polity. . . . The plural has often a collective sense . . . approaching sense 1."

Law, Oxford English Dictionary, www.oed.com . The relative pronoun "that" restricts "laws" to those laws authorizing the use, distribution, possession, or cultivation of medical ***marijuana***. *See* Bryan A. Garner, *Garner's Dictionary of Legal Usage* 887-89 (3d ed.

841(a)(1), *844(a)*. Thus, except as part of "a strictly controlled research project," federal law "designates ***marijuana*** as contraband for *any* purpose." *Raich, 545 U.S. at 24, 27*.

2011). HN22[↑] In sum, the ordinary meaning of § 542 prohibits the Department of Justice from preventing the implementation of the Medical ***Marijuana*** States' laws or sets of rules and only those **[*1178]** rules that authorize medical ***marijuana*** use.

We also consider the context of § 542. The rider prohibits DOJ from preventing forty states, the District of Columbia, and two territories from implementing their medical ***marijuana*** laws. Not only are such laws varied in composition but they also are changing as new statutes are enacted, new regulations are promulgated, and new administrative and judicial decisions interpret such statutes and regulations. Thus, § 542 applies to a wide variety of laws that are in flux.

Given this context and the restriction of the relevant laws to those **[**29]** that authorize conduct, we conclude that HN23[↑] § 542 prohibits the federal government only from preventing the implementation of those specific rules of state law that authorize the use, distribution, possession, or cultivation of medical ***marijuana***. DOJ does not prevent the implementation of rules authorizing conduct when it prosecutes individuals who engage in conduct unauthorized under state medical ***marijuana*** laws. Individuals who do not strictly comply with all state-law conditions regarding the use, distribution, possession, and cultivation of medical ***marijuana*** have engaged in conduct that is unauthorized, and prosecuting such individuals does not violate § 542. Congress could easily have drafted § 542 to prohibit interference with laws that address medical ***marijuana*** or those that regulate medical ***marijuana***, but it did not. Instead, it chose to proscribe preventing states from implementing laws that authorize the use, distribution, possession, and cultivation of medical ***marijuana***.

B

The parties cite various pieces of legislative history to support their arguments regarding the meaning of § 542.

We cannot consider such sources. HN24[↑] It is a fundamental principle of appropriations law that we may only consider the **[**30]** text of an appropriations rider, not expressions of intent in legislative history. "An agency's discretion to spend appropriated funds is cabined only by the 'text of the appropriation,' not by Congress' expectations of how the funds will be spent, as might be reflected by legislative history." *Salazar v. Ramah Navajo Chapter, 132 S. Ct. 2181, 2194-95, 183 L. Ed. 2d 186 (2012)* (quoting *Int'l Union, UAW v. Donovan, 746 F.2d 855, 860-61, 241 U.S. App. D.C. 122 (D.C. Cir. 1984)* (Scalia, J.)). In *International Union*, then-Judge Scalia explained:

> As the Supreme Court has said (in a case involving precisely the issue of Executive compliance with appropriation laws, although the principle is one of general applicability): "legislative intention, without more, is not legislation." The issue here is not how Congress expected or intended the Secretary to behave, but how it *required* him to behave, through the only means by which it can (as far as the courts are concerned, at least) require anything—the enactment of legislation. Our focus, in other words, must be upon the text of the appropriation.

746 F.2d at 860-61 (quoting *Train v. City of New York, 420 U.S. 35, 45, 95 S. Ct. 839, 43 L. Ed. 2d 1 (1975)*); *see also Cherokee Nation of Okla. v. Leavitt, 543 U.S. 631, 646, 125 S. Ct. 1172, 161 L. Ed. 2d 66 (2005)* ("The relevant case law makes clear that restrictive language contained in Committee Reports is not legally binding."); *Lincoln v. Vigil, 508 U.S. 182, 192, 113 S. Ct. 2024, 124 L. Ed. 2d 101 (1993)* ("'[I]ndicia in committee reports and other legislative history as to how the funds should or are expected to be spent do not establish any **[**31]** legal requirements on' the agency." (citation omitted)).

We recognize that some members of Congress may have desired a more expansive **[*1179]** construction of the rider, while others may have preferred a more limited interpretation. However, we must consider only the text of the rider. If Congress intends to prohibit a wider or narrower range of DOJ actions, it certainly may express such intention, hopefully with greater clarity, in the text of any future rider.

IV

We therefore must remand to the district courts. If DOJ wishes to continue these prosecutions, Appellants are entitled to evidentiary hearings to determine whether their conduct was completely authorized by state law, by which we mean that they strictly complied with all relevant conditions imposed by state law on the use, distribution, possession, and cultivation of medical ***marijuana***. We leave to the district courts to determine, in the first instance and in each case, the precise remedy that would be appropriate.

We note the temporal nature of the problem with these prosecutions. The government had authority to initiate criminal proceedings, and it merely lost funds to

continue them. DOJ is currently prohibited from spending funds **[**32]** from specific appropriations acts for prosecutions of those who complied with state law. But Congress could appropriate funds for such prosecutions tomorrow. Conversely, this temporary lack of funds could become a more permanent lack of funds if Congress continues to include the same rider in future appropriations bills. In determining the appropriate remedy for any violation of § 542, the district courts should consider the temporal nature of the lack of funds along with Appellants' rights to a speedy trial under the *Sixth Amendment* and the Speedy Trial Act, 18 U.S.C. § 3161.[5]

V

For the foregoing reasons, we vacate the orders of the district courts and remand with instructions to conduct an evidentiary hearing to determine whether Appellants have complied with state law.[6]

VACATED AND REMANDED WITH INSTRUCTIONS.

End of Document

[5] The prior observation should also serve as a warning. *HN25*[] To be clear, ***§ 542*** does not provide immunity from prosecution for federal ***marijuana*** offenses. The CSA prohibits the manufacture, distribution, and possession of ***marijuana***. Anyone in any state who possesses, distributes, or manufactures ***marijuana*** for medical or recreational purposes (or attempts or conspires to do so) is committing a federal crime. The federal government can prosecute such offenses for up to five years after they occur. *See* 18 U.S.C. § 3282. Congress currently restricts the government from spending certain funds to prosecute certain individuals. But Congress could restore funding tomorrow, a year **[**33]** from now, or four years from now, and the government could then prosecute individuals who committed offenses while the government lacked funding. Moreover, a new president will be elected soon, and a new administration could shift enforcement priorities to place greater emphasis on prosecuting ***marijuana*** offenses.

Nor does any state law "legalize" possession, distribution, or manufacture of ***marijuana***. Under the Supremacy Clause of the Constitution, state laws cannot permit what federal law prohibits. U.S. Const. art VI, cl. 2. Thus, while the CSA remains in effect, states cannot actually authorize the manufacture, distribution, or possession of ***marijuana***. Such activity remains prohibited by federal law.

[6] ***HN26***[] We have jurisdiction under the All Writs Act to "issue all writs necessary or appropriate in aid of [our] jurisdiction[] and agreeable to the usages and principles of law." 28 U.S.C. § 1651. The writ of mandamus "is a drastic and extraordinary remedy reserved for really extraordinary causes." United States v. Guerrero, 693 F.3d 990, 999 (9th Cir. 2012) (quoting Cheney v. U.S. Dist. Court, 542 U.S. 367, 380, 124 S. Ct. 2576, 159 L. Ed. 2d 459 (2004)). We **DENY** the petitions for the writ of mandamus because the petitioners **[**34]** have other means to obtain their desired relief and because the district courts' orders were not clearly erroneous as a matter of law. *See id.* (citing Bauman v. U.S. Dist. Ct., 557 F.2d 650, 654-55 (9th Cir. 2010)). In addition, we **GRANT** the motion for leave to file an oversize reply brief, ECF No. 47-2; **DENY** the motion to strike, ECF No. 52; and **DENY** the motion for judicial notice, ECF No. 53.

United States Justice Department Memorandum – January 4, 2018

Marijuana Enforcement

Rescission of the "Cole Memo"

Office of the Attorney General
Washington, D. C. 20530

January 4, 2018

MEMORANDUM FOR ALL UNITED STATES ATTORNEYS

FROM: Jefferson B. Sessions, III
Attorney General

SUBJECT: Marijuana Enforcement

In the Controlled Substances Act, Congress has generally prohibited the cultivation, distribution, and possession of marijuana. 21 U.S.C. § 801 *et seq*. It has established significant penalties for these crimes. 21 U.S.C. § 841 *et seq*. These activities also may serve as the basis for the prosecution of other crimes, such as those prohibited by the money laundering statutes, the unlicensed money transmitter statute, and the Bank Secrecy Act. 18 U.S.C. §§ 1956-57, 1960; 31 U.S.C. § 5318. These statutes reflect Congress's determination that marijuana is a dangerous drug and that marijuana activity is a serious crime.

In deciding which marijuana activities to prosecute under these laws with the Department's finite resources, prosecutors should follow the well-established principles that govern all federal prosecutions. Attorney General Benjamin Civiletti originally set forth these principles in 1980, and they have been refined over time, as reflected in chapter 9-27.000 of the U.S. Attorneys' Manual. These principles require federal prosecutors deciding which cases to prosecute to weigh all relevant considerations, including federal law enforcement priorities set by the Attorney General, the seriousness of the crime, the deterrent effect of criminal prosecution, and the cumulative impact of particular crimes on the community.

Given the Department's well-established general principles, previous nationwide guidance specific to marijuana enforcement is unnecessary and is rescinded, effective immediately.[1] This memorandum is intended solely as a guide to the exercise of investigative and prosecutorial discretion in accordance with all applicable laws, regulations, and appropriations. It is not intended to, does not, and may not be relied upon to create any rights, substantive or procedural, enforceable at law by any party in any matter civil or criminal.

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[1] Previous guidance includes: David W. Ogden, Deputy Att'y Gen., Memorandum for Selected United States Attorneys: Investigations and Prosecutions in States Authorizing the Medical Use of Marijuana (Oct. 19, 2009); James M. Cole, Deputy Att'y Gen., Memorandum for United States Attorneys: Guidance Regarding the Ogden Memo in Jurisdictions Seeking to Authorize Marijuana for Medical Use (June 29, 2011); James M. Cole, Deputy Att'y Gen., Memorandum for All United States Attorneys: Guidance Regarding Marijuana Enforcement (Aug. 29, 2013); James M. Cole, Deputy Att'y Gen., Memorandum for All United States Attorneys: Guidance Regarding Marijuana Related Financial Crimes (Feb. 14, 2014); and Monty Wilkinson, Director of the Executive Office for U.S. Att'ys, Policy Statement Regarding Marijuana Issues in Indian Country (Oct. 28, 2014).

NYC's Watershed Protection Land Acquisition Program

Moderator:
Daniel A. Ruzow, Esq.

Presented By:
Hilary Meltzer, Esq.
helly Johnson-Bennett
Timothy E. Cox, Esq.
Jeffrey Senterman

NYSBA
Environmental & Energy Law Section
2018 Fall Meeting
Mt. Tremper, N.Y.

NYC's Watershed Protection Land Acquisition Program

An examination of the most peculiar, socially engineered program for the protection of the world's largest unfiltered water supply.

---"Still Crazy After All These Years."

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Statutory & Regulatory Underpinnings (NYS):

- **ECL Art 15, Title 15 Water Supply**
- **6 NYCRR Part 601 Water Withdrawal Permitting, Reporting and Registration**
- **DEC Declaratory Ruling 15-06 (Oct 1982)**
- **1997 NYC Watershed Memorandum of Agreement, Article II**
- **NYSDEC Water Supply Permit WSA #11,352 --NYC Watershed Land Acquisition Program December 24, 2010, as modified 06-15-16**

Statutory & Regulatory Underpinnings (Federal):

- **SDWA Amendments 1986**
- **Surface Water Treatment Rule 40 CFR Part 141.71(b)(2)**
- **2017 Filtration Avoidance Determination (FAD)**

NYC's Watershed Protection Land Acquisition Program

Statutory & Regulatory Underpinnings (NYC):

New York City Department of Environmental Protection Long-Term Watershed Protection Plan December 2016

Proposed Modifications to the Long-Term Land Acquisition Plan 2012-2022 submitted April 2018

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NYC's Watershed Protection Land Acquisition Program

NYS
ECL Art 15, Sections 15-1501 Water withdrawals; Permits

1. Except as otherwise provided in this title, no person …shall have any power to do the following until such person has first obtained a permit or permit modification from the department pursuant to this title:

b. To take or condemn lands for the protection of any existing sources of public water supply; or for the development ***or protection of any new or additional sources of public water supply***; as amended 2011, c. 401

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NYC's Watershed Protection Land Acquisition Program

NYS
ECL Art 15, Sections 15-1503 Permits

2. In making its decision to grant or deny a permit or to grant a permit with conditions, the department shall determine whether: …

c. ***the project is just and equitable to all affected municipalities and their inhabitants with regard to their present and future needs for sources of potable water supply;***

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NYC's Watershed Protection Land Acquisition Program

NYS
6 NYCRR Section 601 Water Withdrawal Permitting, Reporting and Registration

- 601.3 Applicability.
- This Part applies to any person who is engaged in, or proposes to engage in, … ***the taking, condemnation or acquisition of land for the development or protection of sources of public water supply systems*** in excess of the threshold volume[100,000 gpd]**;**

NYC's Watershed Protection Land Acquisition Program

NYS
6 NYCRR Section 601 Water Withdrawal Permitting, Reporting and Registration

- 601.3 Applicability.
- … All valid public water supply permits and approvals issued by the department or its predecessors that are in effect as of February 15, 2012 shall remain in full force and effect according to their terms….

NYC's Watershed Protection Land Acquisition Program

NYS
6 NYCRR Section 601 Water Withdrawal Permitting, Reporting and Registration

- 601.6 Water withdrawal permit.

Except to the extent that it is otherwise explicitly stated in this Part, no person may take any of the following actions without having first obtained a water withdrawal permit:
(a) ***take, condemn or acquire lands for a source or for the protection of such source of public water supply*** equal to or greater than the threshold [100,000gpd] volume

NYC's Watershed Protection Land Acquisition Program

NYS
6 NYCRR Section 601 Water Withdrawal Permitting, Reporting and Registration

- 601.11 Actions on permit applications.

(c) In making its decision to grant or deny a permit or to grant a permit with conditions, the department shall determine whether:

3) ***the proposed project is just and equitable to all affected municipalities and their inhabitants with regard to their present and future needs for sources of potable water supply***;

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NYC's Watershed Protection Land Acquisition Program

NYS
DEC Declaratory Ruling 15-06 (See Appendix A)

In the Matter of the Application of Wilmorite, Inc. (Oct 22, 1982) DEC determined that an Art 15, Title 15 water supply permit was required for the City of Schenectady and Town of Niskayuna to take or condemn lands for the protection of their Great Flats Aquifer water supply, even though there was no plan to withdraw additional water for their supply.

Upheld: In re City of Schenectady v Flacke, 100 AD2d 349 (3d Dept. 1984) Lv to App den. 63 N.Y. 2d 603; See also, Williams v City of Schenectady 115 AD 2d 204 (3d Dept. 1985) (upholding DEC's determination that a water supply permit is also required for purchase of water supply lands.

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NYC's Watershed Protection Land Acquisition Program

NYS
NYSDEC Water Supply Permit WSA #11,352 --NYC Watershed Land Acquisition Program December 24, 2010, as last modified 06-15-16
(See Appendix B)
See Special Conditions

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DEC ID# 0-999-00051/00001 Modified 6/20/2011, last amended 6/15/2016

Special Conditions
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1997 NYC Watershed Memorandum Agreement

Article I (See Appendix C)

6. WHEREAS, the Parties recognize that the goals of drinking water protection and economic vitality within Watershed communities are not inconsistent and it is the intention of the Parties to enter into a new era of partnership to cooperate in the development and implementation of a Watershed protection program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities; and

1997 NYC Watershed Memorandum Agreement

Article I

7. WHEREAS, after extensive negotiations the Parties now enter into legally enforceable commitments, as set forth in this Agreement, on issues related to the Watershed protection program, including the Watershed rules and regulations, the *land acquisition program,* and Watershed partnership initiatives; and

1997 NYC Watershed Memorandum Agreement

Article I
8. WHEREAS, the Parties agree that the City land acquisition program, as described below in Article II, *is a purely voluntary program* which provides the opportunity to the Watershed communities to review parcels and to provide comments to the City on potential acquisitions, and *that Towns and Villages may exempt areas of their communities from purchase under the City's land acquisition program*; and

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1997 NYC Watershed Memorandum Agreement

Article I
9. WHEREAS, the Parties agree that the City's land acquisition program, the City's Watershed Regulations, and the other programs and conditions contained in this Agreement, when implemented in conjunction with one another, *would allow existing development to continue and future growth to occur in a manner that is consistent with the existing community character and planning goals of each of the Watershed communities*; and *that the City's land acquisition goals insure that the availability of developable land in the Watershed will remain sufficient to accommodate projected growth without anticipated adverse effects on water quality and without substantially changing future population patterns in the Watershed communities*;

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1997 NYC Watershed Memorandum Agreement

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NYC's Watershed Protection Land Acquisition Program

Federal

SDWA Amendments 1986 Pub Law 99-339 June 19, 1986

The 1986 amendments required the EPA to (1) issue regulations for 83 specified contaminants by June 1989 and for 25 more contaminants every three years thereafter, (2) ***promulgate requirements for disinfection and filtration of public water supplies***, (3) limit the use of lead pipes and lead solder in new drinking water systems, (4) establish an elective wellhead protection program around public wells, (5) establish a demonstration grant program for state and local authorities having designated sole-source aquifers to develop ground water protection programs, and (6) issue rules for monitoring underground injection wells that inject hazardous wastes below a drinking water source. The amendments also increased the EPA's enforcement authority.

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NYC's Watershed Protection Land Acquisition Program

Federal

Surface Water Treatment Rule --40 CFR Part 141.71 June 1989

- **The purpose of the Surface Water Treatment Rules (SWTRs) is to reduce illnesses caused by pathogens in drinking water. The disease-causing pathogens include *Legionella*, *Giardia lamblia, and Cryptosporidium*.**
- **The SWTRs requires water systems to filter and disinfect surface water sources. Some water systems are allowed to use disinfection only for surface water sources that meet criteria for water quality and watershed protection.**

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NYC's Watershed Protection Land Acquisition Program

Federal

Surface Water Treatment Rule --40 CFR Part 141.71 June 1989

§ 141.71 Criteria for avoiding filtration.

A public water system that uses a surface water source must meet all of the conditions of paragraphs (a) and (b) of this section, and is subject to paragraph (c) of this section, beginning December 30, 1991, unless the State has determined, in writing pursuant to § 1412(b)(7)(C)(iii), that filtration is required.

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NYC's Watershed Protection Land Acquisition Program

Federal

SWTR 40 CFR 141.71 (b)Site-specific conditions. …(2) The public water system must maintain a watershed control program which minimizes the potential for contamination by Giardia lamblia cysts and viruses in the source water. The State must determine whether the watershed control program is adequate to meet this goal. The adequacy of a program to limit potential contamination by Giardia lamblia cysts and viruses must be based on: the comprehensiveness of the watershed review; the effectiveness of the system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed. At a minimum, the watershed control program must:

(i) Characterize the watershed hydrology and land ownership;

(ii) Identify watershed characteristics and activities which may have an adverse effect on source water quality; and

(iii) Monitor the occurrence of activities which may have an adverse effect on source water quality.

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NYC's Watershed Protection Land Acquisition Program

Federal/NYSDOH

NYC Filtration Avoidance Determinations

January 1993

December 1993

May 1997

November 2002

July 2007

May 2014 Modification (NYSDOH in consultation with EPA)

December 2017 (NYSDOH) (See Appendix E)

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NYC's Watershed Protection Land Acquisition Program

Federal/NYSDOH

2017 Filtration Avoidance Determination (FAD) December 2017

Section 4.2 Land Acquisition Program (Appendix E pp 35-43)

The Land Acquisition Program (LAP) seeks to prevent future degradation of water quality by acquiring environmentally-sensitive lands. The overarching goal of the LAP is to ensure that these high priority Watershed lands are placed into permanently protected status, either through fee simple purchase or conservation easements (CEs), so that the Watershed continues to be a source of high-quality drinking water for the City and upstate counties. In pursuit of this goal, since 1997 the City has secured over 140,000 acres of land and CEs. Prior to 1997, the City owned 34,193 acres of reservoir buffer land. Now more than 38% of the more than one million acres covered by the Catskill/Delaware Watershed is currently protected the City, the State, and/or other entities such as municipalities and land trusts.

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NYC's Watershed Protection Land Acquisition Program

NYC Long-Term Plan in support of Renewal of its Filtration Avoidance Determination for the Catskill/Delaware System December 2016 (See Appendix F Land Acquisition Program (pp 31-34)
http://www.nyc.gov/html/dep/pdf/reports/2016_long-term_watershed_protection_program_plan.pdf

LAP was initiated in 1997 following execution of the Watershed Memorandum of Agreement, the Water Supply Permit, and the 1997 FAD. In the last twenty years, the City has secured over 140,000 acres of land and conservation easements ("CEs"), which is added to 34,193 acres of protected buffer land surrounding the reservoirs that was owned by the City as of 1997.

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NYC's Watershed Protection Land Acquisition Program

Proposed Modifications to the Long-Term Land Acquisition Plan 2012-2022 submitted April 2018
Prepared in accordance with Section 4.2 of the NYSDOH 2017 Filtration Avoidance Determination
(see Appendix G)
http://www.nyc.gov/html/dep/pdf/reports/fad_4.2_land_acquisition_program_-_proposed_modifications_to_the_long-term_strategy_2012-2022_04-18.pdf

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NYC's Watershed Protection Land Acquisition Program

And the saga continues…

Questions?

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NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Application of

WILMORITE, INC.

DEC 15-06

for a Declaratory Ruling Pursuant to the State Administrative Procedure Act Section 204 and 6 NYCRR Part 619

I. INTRODUCTION

On August 5, 1982, Wilmorite, Inc. of Rochester, New York, by its attorney, John A. Shields, requested a determination from the General Counsel as to applicability of Section 15-1501 of the Environmental Conservation Law ("ECL") to the proposed "Great Flats Critical Aquifer Area Project" of the City of Schenectady and Town of Niskayuna. Wilmorite's inquiry has been deemed a request for a Declaratory Ruling under Section 204 of the State Administrative Procedure Act and the Department's rules thereunder, 6 NYCRR Part 619.

Comments, information and authorities have been provided to this Department on the issue by counsel for Wilmorite, the Town of Niskayuna, the City of Schenectady, and the Town of Rotterdam.

Wilmorite contends that the City of Schenectady (hereafter "City"), and the Town of Niskayuna (hereafter "Town") are required to obtain a permit from the Department of Environmental Conservation ("DEC") pursuant to Sections 15-1501 et seq. of the ECL prior to furtherance of any proceedings pursuant to Article 2

of the Eminent Domain Procedure Law ("EDPL"). The City and Town have undertaken the Great Flats Critical Aquifer Area Project, pursuant to resolutions, for the stated purpose of "the protection, preservation and conservation of the water resources located within [the Great Flats Critical] Aquifer." A hearing was held August 10, 1982 pursuant to Section 203 of the EDPL to inform the public, take comment and form the basis of a City and Town determination concerning the project's public use, benefit, purpose, location, effect on the environment and residents and other factors cited in Section 204 of the EDPL. Counsel for the City and Town contend that the project does not come within those enumerated acts for which a permit is required under the ECL and that EDPL Section 207 provides the exclusive mechanism for judicial challenge by those persons who feel aggrieved by the City's and Town's administrative determination of the need, location or environmental impact of the proposed public project. This administrative determination is due ninety (90) days from the conclusion of the August 10, 1982 hearing.

II. THE PROJECTS

The proposed project of the City and Town is to acquire property and/or property rights. No construction is proposed. The stated intent and purpose of the City and Town is to protect, preserve and conserve the groundwater resources of the Great Flats section of the Schenectady Aquifer which is the sole source aquifer of the City of Schenectady and the major source for the

Town of Niskayuna. (Several neighboring communities likewise depend on this aquifer either through their own wells or by purchase of water from the City.)

According to the Report prepared by the City's Water Department for the August 10, 1982 hearing the project will accomplish the following:

1. Place the entire Great Flats Critical Area, Well Head Protection Area under public protection.
2. Provide protection of the Great Flats Wetlands, an integral part of the Aquifer.
3. Remove a major source of potential groundwater contamination.
4. Place 23% of the Aquifer Recharge within the Great Flats area under public control or ownership.

All the lands the City and Town are moving to condemn are in the Town of Rotterdam. A substantial portion of the land sought to be condemned consists of parcels subject to options of Wilmorite, Inc., or in other instances lands owned by Genesee Management, Inc., an affiliated corporation of Wilmorite, Inc. These lands are part of Wilmorite's proposed "Rotterdam Square Project", a retail shopping enterprise with a planned 650,000 square feet of gross leasable area, on about 83 acres of land. The Great Flats Critical Aquifer project, if undertaken, would leave the City and Town in control of approximately 200 acres. Approximately 31 acres of the Aquifer Project overlap with Wilmorite's 83 acres of planned shopping complex. The taking of this portion of land from Wilmorite would have the likely effect of preventing the construction of Rotterdam Square. (The

Aquifer Project also affects approximately 69 acres that the Town of Rotterdam was to receive from Wilmorite for parkland use.)

The Rotterdam Square Project was recently the subject of a State Environmental Quality Review hearing, hearing report and a Commissioner's Decision in connection with Wilmorite's application for several environmental permits (Project #447-07-01488, decision May 18, 1982). The Commissioner's Decision states:

> Foremost among the environmental issues and the one which ultimately led the Department to seek lead agency status was the concern for the Project's impact on the Schenectady/Rotterdam aquifer (the "Aquifer"). After a comprehensive, expert investigation and extensive testimony the conclusion reached in the Report is that the proposed Project, modified by certain conditions described below, will not have a significant effect on the Aquifer. Indeed, the proposed shopping center represents a far lesser risk than the existing land uses and transportation corridors in the area.

This decision approved issuance of permits contingent on several changes being made to Wilmorite's original project. DEC concluded that Wilmorite had met its burden of proof with respect to the requirements for various permits with the exception of the freshwater wetlands permit and an impoundment permit. Issuance of these permits depends on further submittals addressing what DEC considered to be the primary potential adverse environmental impacts of Wilmorite's project, namely the increased risk of flooding due to the filling of the wetland.

The City and Town have moved forward with the Great Flats project because they deem public control of the lands as necessary to protect the quality of the water supply notwithstanding the Commissioner's Decision to condition the development of Wilmorite's lands with measures to protect the aquifer.

Wilmorite has alleged that the City and/or Town are moving forward with the acquisition project more out of a motive to prevent commercial competition rather than the stated motive to protect the Great Flats Aquifer from contamination.

III. ISSUE

Despite the extensive hearings and public controversy surrounding the two projects, the question presented for Declaratory Ruling in this case is a narrow one: Do the City and Town need to apply for a permit from the Department in order to purchase or exercise eminent domain powers to acquire property for the protection of existing water supplies without contemplation of the construction of additional wells or increased quantities of withdrawals from the Great Flats aquifer source? This question can be stated as a generic issue of whether a person or public corporation must obtain a permit pursuant to Section 15-1501 et seq. of the ECL in order to acquire, take, or condemn lands for the purpose of protecting the aquifer that is the water supply for that person or public corporation.

I conclude that the ECL does require a permit in such a case and that the City of Schenectady and the Town of Niskayuna must apply to this Department prior to acquisition or exercise of eminent domain power to acquire lands and property rights to protect the Great Flats Aquifer.

IV. ANALYSIS

This ruling can be based entirely on the explicit provisions of the Environmental Conservation Law.

Section 15-1501 reads in pertinent part as follows:

> 1. Except as otherwise provided in this title, no person or public corporation who is authorized and engaged in, or proposing to engage in, the acquisition, conservation, development, use and distribution of water for potable purposes ... shall have any power to do the following until such person or public corporation has first obtained a permit from the department pursuant to this title:
>
> a. To acquire or take a water supply or an additional water supply from an existing approved source; or
>
> b. To take or condemn lands for any new or additional sources of water supply or for the utilization of such supplies; or ....
>
> 2. [Describes exemptions from permit requirements.]
>
> 3. [Refers to requirements that certain plans for facilities must be submitted to and approved by the Commissioner of Health.]

I have reviewed the judicial and Attorney General's opinions cited by counsel and find therein no conflict with the ruling made today. On the contrary, although no cases cited are specifically on point with the issue raised here, the

overwhelming weight of opinion supports the conclusion reached, namely that as in the words of the Legislative Findings for Article 15:*(1)

> Article 15 shall be construed and administered in light of the following findings of fact:
>
> 1. The sovereign power to regulate and control the water resources of the state ever since its establishment has been and now is vested exclusively with the State of New York except to the extent of any delegation of power to the United States; .... (Section 15-0103(1))

Hence, the State has the duty and authority to regulate water supply and the City's and Town's project to obtain additional control over the aquifer in question must be done pursuant to Departmental permit. Further explicit statutory policy is set out at Section 15-0105 as:

> In recognition of its sovereign duty to conserve and control its water resources for the benefit of all inhabitants of the state, it is hereby declared to be the public policy of the State of New York that:
>
> 1. The regulation and control of the water resources of the state of New York be exercised only pursuant to the laws of this state; ....

A close reading of Section 15-1501 in light of the foregoing provisions of Article 15 compels the result of this ruling.(2) The introductory paragraph of Section 15-1501 refers to the terms "acquisition", "conservation", "use" of water for potable purposes as objectives for which actions to control water supply must be authorized by permit. These same objectives are goals of the City and Town. Notwithstanding the City's and Town's intent

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* Case Notes follow this ruling.

to seek no greater quantities of water, the acts to take and/or acquire the lands forming the aquifer and water supply is the determinative fact which requires DEC oversight, according to Section 15-1501(1)(a).

Section 15-1501(1)(b) provides a complementary and independent basis for assertion of DEC's jurisdiction. The City and Town seek rights to land to conserve, and utilize water. The phrase "new or additional sources" is not defined in the statute.(3) However, the City's and Town's effort to obtain in fee or other property rights connotes the acquisition of additional rights to control a water supply not now so owned. Contrast this to the extent of ownership the City and Town possess with respect to their existing well fields.

The total and exclusive control of the land or the possession of certain development rights in the land which are related to water supply protection put the City and Town in a position of acquiring or taking lands for new or additional sources of water supply even if the City and Town choose not to seek permits to withdraw waters from the source below the lands.

Thus the fact that any waters within the Great Flats Aquifer may now already be transmitted to the water supply sources, i.e., the wells of the City and Town, does not alter the conclusion that when title is acquired to additional lands, it becomes part of the City's and Town's water supply and must be considered as a new or additional source of water supply, requiring a DEC permit.(4)

Additionally, Section 15-1501(2) does not include the acquisition of land for the purpose of protection of water supply as one of the exemptions from requirements to obtain a permit.

And lastly, there is the interpretation of the statutory requirements provided in Part 601 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR Part 601). The foregoing elements of this ruling are consistent with this interpretation. 6 NYCRR §601.1 sets out the jurisdiction and applicability of the Conservation Law from which Section 15-1501 of the ECL is derived. The approval requirements of Part 601 are applicable to identified entities proposing to:

> (b) acquire, take or develop any source of water supply in connection with such system;
>
> (c) acquire, take or develop any source of water supply in connection with an existing water supply system;
>
> (d) take or condemn any lands or other rights for water supply purposes; ...
>
> (m) perform any other acts covered by the statute, but not here specifically mentioned.

The predecessor statute to Section 15-1501 had been interpreted to require state approval prior to acquisition of any lands or other rights in connection with water supply purposes, except as specifically exempted in 6 NYCRR §601.3 of the regulations.(5) The noted exceptions do not pertain to the circumstances of this matter.

V. CONCLUSION

Section 15-1501 of the ECL applies to the project proposed to be undertaken. In order to proceed with the project the City and Town should make application through the Department's Regional Permit Administrator at the Region 4 Office, 2176 Guilderland Avenue, Schenectady, New York 12306.

DATED: Albany, New York
October 22, 1982

for Richard A. Persico
General Counsel/Deputy Commissioner

CASE NOTES

1. In Blomquist v. Orange County, 69 Misc.2d 1077, 332 N.Y.S.2d 546, the Supreme Court, Orange County held that the county was without any authority to purchase or condemn land for future reservoir purposes and the Court would enjoin any further acquisition of land for that purpose until the County complied with the Water Resources Law and obtained Water Resources Commission approval.

2. The Appellate Division, Third Department, in 1961, in the Petition of Suffolk County Water Authority, 12 A.D.2d 198, 209 N.Y.S.2d 978 upheld a decision of the Water Power and Control Commission involving allocation of water supply service area between local governmental entities as follows:

> The broad responsibilities to make determinations affecting the access to water resources of the State rests by law in the Commission (Conservation Law, Article V [Water Resources Law]). It must "control and conserve" the water resources "for the benefit of all the inhabitants of the state". City of Syracuse v. Gibbs, 283 N.Y. 275, 28 N.E.2d 835, 838.

3. Prior approval is required for a municipal corporation or other civil divisions to take or condemn lands for any "new or additional source of water supply". The term "source" does not indicate a whole territory from some part of which a municipality has taken a portion of its water supply, hence the taking of additional lands adjacent to New York City's existing "source" was deemed to be a taking of a new additional source of water supply in the 1909 case of Queens County Water Company v. O'Brien, 131 App. Div. 91, 115 N.Y.S.495.

4. The closest case paralleling the instant one is a 1945 Attorney General's opinion declaring that the Village of Liberty was required to obtain the consent of the Water Power and Control Commission prior to the purchase of 192 acres adjacent to its existing surface supply. Like the City's and Town's project, the acquisition was aimed solely at protecting the existing source and supply of the Village. The Attorney General stated:

> I am of the opinion that the acquisition of these lands as an addition to the present water system requires the approval of your Commission. The proper protection of the water supply and the water shed is a subject within the jurisdiction of the Commission (Conservation Law §523). The fact that Mud Pond now flows into Lilly Pond, the present source of water supply of the Village, does not alter the conclusion that when title to Mud Pond is acquired by the Village, it becomes part of the Village's water supply system and must be considered as a new or additional source of water supply, requiring your approval (Conservation Law §§521, 523).

5. Consistent with the regulation exemptions is the case of Mitchell v. Village of Croton-on-Hudson, 45 Misc.2d 910, 258 N.Y.S.2d 201 (1965). Prior approval of the State Water Resources Commission was not needed for condemnation of certain land by a village and for erection of a water storage tank where the reservoir was to draw water from the present village supply and would not result in an increase in the supply taken.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 4
65561 State Highway 10, Suite 1, Stamford, NY 12167-9503
P: (607) 652-7741 I F: (607) 652-3672
www.dec.ny.gov

June 15, 2016

Honorable Emily Lloyd
Commissioner
NYC Department of Environmental Protection
59-17 Junction Boulevard
Flusing, NY 11373

Re: DEC ID# 0-9999-0051/00001
Water Supply Permit WSA#11,352
NYC Watershed Land Acq. Program

Dear Commissioner Lloyd:

The Department hereby modifies the above referenced Water Supply Permit in regard to the City-Funded Flood Buyout Program.

Specifically, Special Condition 7(b) was modified to add wording reflecting the program. The revisions are incorporated into page 8 of the permit which is attached in its entirety hereto. All other conditions of the permit remain in effect. Please attach this modified document and letter to the permit.

If you have any questions, please feel free to contact Martha A Bellinger, Project Manager/Environmental Analyst of our Region 4 Division of Environmental Permits Stamford Office, or myself.

Sincerely,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

Cc: List attached

Cc: A. Rosa
D. Frazier
D. Ruzow
G. Rodenhausen
J. Baker
K. Young
M. Sterthouse
N. Franzese
T. Cox
B. Clarke
C. Cashman
D. Tobias
E. Goldstein
F. Huneke
H. Meltzer
J. Tierney
K. Hudson
L. Taylor
M. Matsil
M. Brand
M. VonWergers
M. Schwab
M. Holt
P. Young
P. Gallay
R. Williams
R. Levine
R. Sokol
T. Snow
K. Goertz
D. Warne
D. Pabst
A. Coiro
M. Oliver
M. Brand
M. VanRossum
B. Dolph
J. Senterman
J. Parker
K. Lynch
P. Rush

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER
0-9999-00051/00001

FACILITY/PROGRAM NUMBER(S)
WSA #11,352
Date Filed: January 20, 2010
Ext. No.

PERMIT
Under the Environmental Conservation Law (ECL)

EFFECTIVE DATE
Original: December 24, 2010
Last modification: June 15, 2016

EXPIRATION DATE(S)
As per Special Condition 3

TYPE OF PERMIT (Check All Appropriate Boxes)
X NEW X RENEWAL X MODIFICATION PERMIT TO CONSTRUCT X PERMIT TO OPERATE

	ARTICLE 15, TITLE 5: PROTECTION OF WATER		ARTICLE 17, TITLES 7, 8: SPDES		ARTICLE 27, TITLE 9; 6NYCRR 373: HAZARDOUS WASTE MGMT.
X	ARTICLE 15, TITLE 15: WATER SUPPLY		ARTICLE 19: AIR POLLUTION CONTROL		ARTICLE 34: COASTAL EROSION MANAGEMENT
	ARTICLE 15, TITLE 15: WATER TRANSPORT		ARTICLE 23, TITLE 27: MINED LAND RECLAMATION		ARTICLE 36: FLOODPLAIN MANAGEMENT
	ARTICLE 15, TITLE 15: LONG ISLAND WELLS		ARTICLE 24: FRESHWATER WETLANDS		ARTICLES 1, 3, 17, 19, 27, 37, 6NYCRR 380: RADIATION CONTROL
	ARTICLE 15, TITLE 27: WILD, SCENIC & RECREATIONAL RIVERS		ARTICLE 25: TIDAL WETLANDS		ARTICLE 27, TITLE 3, 6NYCRR 364: WASTE TRANSPORTER
	6NYCRR 608: WATER QUALITY CERTIFICATION		ARTICLE 27, TITLE 7: 6NYCRR 360: SOLID WASTE MANAGEMENT		OTHER:

PERMIT ISSUED TO
New York City Department of Environmental Protection

TELEPHONE NUMBER
718-595-6586

ADDRESS OF PERMITTEE
59-17 Junction Boulevard, Flushing, NY 11373

CONTACT PERSON FOR PERMITTED WORK
Caswell F. Holloway, Commissioner

TELEPHONE NUMBER

NAME AND ADDRESS OF PROJECT/FACILITY
N/A

LOCATION OF PROJECT/FACILITY
Counties of Putnam, Westchester, Dutchess , Greene, Sullivan, Schoharie, Ulster, Delaware

COUNTY	TOWN/CITY/VILLAGE	WATERCOURSE/WETLAND NO.	NYTM COORDINATES
Multiple	Multiple	N/A	E: N:

DESCRIPTION OF AUTHORIZED ACTIVITY:

Land and easement acquisition and management program (Land Acquisition Program or LAP) within the New York City water supply watershed for the purpose of water quality protection.

Original permit issued 12/24/10
Modification 1: Exhibit 10, paragraph 24.c modified May 27, 2011
Modification 2: Special Condition 8.c. 180 days changed to 360 days (2011 only), modified June 20, 2011.
Modification 3: Special Condition 23: 6 months changed to 4 months, modified July 15, 2011.
Modification 4: Special Condition 8(c), and 29a &b modified February 24, 2012.
Modification 5: Special Condition 7(b) modified January 14, 2014 (Fair Market Value determination).
Modification 6: Special Condition 7(b) modified June 15, 2016 (City-funded Buyouts)

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

REGIONAL PERMIT ADMINISTRATOR
William J. Clarke

ADDRESS
NYSDEC, Region 4 Headquarters
1130 North Westcott Road, Schenectady, NY 12306

William J. Clarke

DATE
6/15/2016

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

GENERAL CONDITIONS

1. Facility Inspection by the Department

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. Relationship of this Permit to Other Department Orders and Determinations

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications for Permit Renewals or Modifications

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

The permittee must submit a renewal application at least:

a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and

b) 30 days before expiration of all other permit types.

Submission of applications for permit renewal or modification are to be submitted to:

NYSDEC Regional Permit Administrator, Region 4
1150 North Westcott Road, Schenectady, NY 12306
(for Albany, Columbia, Greene, Rensselaer, Montgomery, & Schenectady Counties)

NYSDEC Deputy Regional Permit Administrator, Region 4
Stamford Field Office, 65561 SH 10, Stamford, NY 12167
(for Delaware, Otsego, & Schoharie Counties)

4. Permit Modifications, Suspensions and Revocations by the Department

The Department reserves the right to modify, suspend or revoke this permit in accordance with 6 NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;

b) failure by the permittee to comply with any terms or conditions of the permit;

c) exceeding the scope of the project as described in the permit application;

d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

Special Conditions
Table of Contents

1. **Authorization.** As authorized by and pursuant to all the terms and conditions of this permit, including attached exhibits, the City of New York ("City"), through the New York City Department of Environmental Protection ("NYCDEP"), may acquire fee title to, or Watershed Conservation Easements (which also include Watershed Agricultural Easements, Watershed Forest Easements, and Riparian Buffer Easements) on, parcels of land located within the Watershed of the New York City water supply system (Watershed). The terms and conditions of this permit draw their statutory authorization from and are designed to ensure that the project is consistent with, section 15-1503(2) and 15-1503(4) of the Environmental Conservation Law and implementing regulations 6NYCRR601. Nothing herein shall be construed to diminish any obligation of the City arising out of the prior approvals or permits issued by NYSDEC, or its predecessors, including the Water Supply Commission, Conservation Commission and Water Power and Control Commission. This authorization shall not exceed 106,712 acres in total City acquisitions in fee title and Watershed Conservation Easements across the entire Watershed which are acquired (i.e. executed contract to purchase) from January 1, 2010 forward of which no more than 105,043 acres shall be located in the West of Hudson watershed.

2. **Scope.** The 2007 USEPA filtration avoidance determination requires the City to commit Two Hundred Forty One Million Dollars ($241,000,000) in funding a Land Acquisition Program ("LAP") to acquire fee title to, or Watershed Conservation Easements on, parcels of land in the Catskill and Delaware Watershed. This follows upon an earlier filtration avoidance determination embodied in the 1997 Water Supply Permit and the intergovernmental 1997 New York City Watershed Memorandum of Agreement or MOA that required the City to allocate Two Hundred Fifty Million Dollars ($250,000,000) to the LAP and an additional Fifty Million Dollars ($50,000,000) to the LAP between 2002 and 2008. The City's LAP, the City's Watershed Regulations, and the other programs and conditions contained in the Watershed MOA, when implemented in conjunction with one another, are intended to protect water quality while allowing existing development to continue and future growth to occur in a manner that is consistent with the existing community character and planning goals of each of the Watershed communities. The City's land acquisition goals recognize the importance of ensuring that the availability of developable land in the Watershed will remain sufficient to accommodate projected growth without adverse effects on water quality and without substantially changing future population patterns in the Watershed communities.

3. Permit Duration. The following special conditions shall expire 15 years from the effective date of this permit: Special Conditions 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 22, 25, 26, 27, 29, 30, 31, 33, and 34. All other special conditions shall remain in effect unless modified pursuant to 6NYCRR621. Operational non expiring permit conditions shall consist of:

3. Permit Duration
4. Definitions
15. Recreational Uses: City Property Owned in Fee Simple for Watershed Protection.
16. Uses: LAP Fee and Easement Property
18. Real Property Taxes: Newly Acquired In Fee
19. Real Property Taxes: Watershed Conservation Easements
20. Limitation on Transfers to Tax Exempt Entities
21. Land Held in Perpetuity for Watershed Protection
23. Water Conservation Program Updates and Approval
24. Water Conservation Program Implementation
28. Notices and Submittals
32. Forest Management Plan

4. **Definitions.** The following terms, as used in this permit, shall have the meaning set forth below:
   a. "CAPA" means the City Administrative Procedure Act, chapter 45 of the New York City Charter.

b. "Catskill and Delaware System" means the Ashokan, Cannonsville, Kensico, Neversink, Pepacton, Rondout, Schoharie, and West Branch/Boyd's Corner Reservoirs, and the tunnels, dams and aqueducts which are part of and connect the above listed reservoirs.

c. "Catskill and Delaware Watershed" means the drainage basins of the Catskill and Delaware System. A map of this watershed is set forth in Exhibit 1.

d. "Catskill Watershed Corporation" or "CWC" means an independent locally-based and locally administered not-for-profit corporation, organized under Section 1411 of the Not For Profit Corporation Law (the "CW Corporation") established in order to foster a working partnership between the City and the WOH Communities, and to manage certain programs more fully described in Special Condition 25 and Exhibit 14 required by this permit under contract to New York City.

e. "City" means the City of New York, a municipal corporation with its principal office at City Hall, New York, New York 10007. The City is subject to all the terms and conditions in this Water Supply Permit through its implementing agency the NYC Department of Environmental Protection and is responsible for assuring all of its contractors adhere to the same.

f. "Cluster Development" means the concentrated grouping of residential or commercial development so as to protect water quality and preserve the open space of the development parcel. Cluster Development is also defined within NYS Town Law Section 278 as follows: cluster development shall mean a subdivision plat or plats, approved pursuant to this article, in which the applicable zoning ordinance or local law is modified to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping in order to preserve the natural and scenic qualities of open lands.

g. "Coalition of Watershed Towns" or "Coalition" means the inter-municipal body composed of the municipalities located wholly or partially within that portion of the New York City Watershed that lies west of the Hudson river, which have duly entered into a cooperative agreement, pursuant to § 119-o of the New York General Municipal Law, having its principal office at Tannersville, New York.

h. "Croton System" means the Amawalk, Bog Brook, Cross River, Croton Falls, Diverting, East Branch, Middle Branch, Muscoot, New Croton, and Titicus Reservoirs, Kirk Lake, Lake Gleneida and Lake Gilead, and the tunnels, dams and aqueducts which are part of and connect the above listed reservoirs and controlled lakes.

i. "Croton Watershed" means the drainage basins of the Croton System. A map of this watershed is set forth in Exhibit 1.

j. "Drainage Basin" or "Reservoir Basin" means, for purposes of defining the boundaries of the drainage basin of each reservoir or controlled lake, the area of land that drains surface water into, or into tributaries of, a reservoir or controlled lake of the Catskill and Delaware or Croton Systems.

k. "East of Hudson" or "EOH" means the drainage basins of the specific reservoirs and controlled lakes of the New York City Watershed located east of the Hudson River in the New York counties of Dutchess, Putnam, and Westchester.

l. "Effective Date" means the date as shown on Page 1 of the issued permit.

m. "Executive Committee" means the Executive Committee of the WPPC.

n. "Individual Landowner Forest Management Plan" means a document prepared by a professional forester that is based upon the goals and objectives that individual owners have for their forested properties and updated on a ten year basis. It is a document which shows by maps, tables and written text, the boundaries and size of the forest, what kind and sizes of trees it contains, what needs to be done to produce and harvest forest products or to achieve other non-timber related objectives and how such activities should be designed in order to minimize negative impacts to water quality.

o. "Filtration Avoidance Determination or "FAD" means the written determination of the United States Environmental Protection Agency, or the New York State Department of Health, determining that surface source waters may be used as a public water supply without filtration.

p. "Land" means fee title in real property or Watershed Conservation easements on real property, unless a different meaning is clearly intended by the context.

q. "NYCDEP" means the New York City Department of Environmental Protection, a mayoral agency of the City of New York organized and existing pursuant to the New York City Charter and its contractors.

r. "NYSDEC" means the New York State Department of Environmental Conservation, an executive agency of the State of New York organized and existing pursuant to the New York Environmental Conservation Law.

s. "NYSDOH" means the New York State Department of Health, an executive agency of the State of New York organized and existing pursuant to the New York Public Health Law.

t. "Primacy Agency" means the United States Environmental Protection Agency or the New York State Department of Health, whichever has primary enforcement responsibility for implementation of the federal Surface Water Treatment Rule (40 CFR §141.70 et seq.) pursuant to §1413 of the federal Safe Drinking Water Act (42 U.S.C. §300g-2).

u. "Riparian Buffer Easement" means a Watershed Conservation Easement, as defined below in paragraph (cc.) on real property (including floodplains) adjacent to streams, lakes, rivers, wetlands, and/or water bodies acquired pursuant to the Riparian Buffer Program described in Special Condition 29.

v. "Riparian Buffer in fee" means real property (including floodplains) adjacent to streams, lakes, rivers, wetlands, and/or water bodies acquired in fee pursuant to the Riparian Buffer Program described in Special Condition 29.

w. "TMDL" means Total Daily Maximum Load. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations for point source discharges, load allocations for nonpoint sources, and a margin of safety.

x. "Uninhabitable Dwelling" means a dwelling which is deteriorated to the extent that: either the cost of rehabilitation which would prevent the continued deterioration of primary components will exceed sixty percent (60%) of the fair market value of the structure (as established by the City's appraisal) or rehabilitation will not prevent the continued deterioration of primary components of the dwelling which will result in unsafe living conditions; and it has not been occupied for one year immediately prior to the signing of an option. As used herein, the term "primary components of a dwelling" shall include: foundations, exterior wall framing, rafters, roof decks, roof coverings, porches, floor joists, sills, headers, electrical systems, heating systems, plumbing systems and septic systems.

y. "USEPA" means the United States Environmental Protection Agency, an executive agency of the United States, organized and existing under the laws of the United States, with its principal office at 401 M Street, S.W., Washington, D.C. 20460.

z. "Watershed" or "New York City Watershed" means the drainage basins of the Catskill and Delaware and Croton Systems.

aa. "Watershed Agricultural Council" or "WAC" means an independent locally-based and locally administered not-for-profit corporation, organized under Section 1411 of the Not For Profit Corporation Law (the "Watershed Agricultural Council") established in order to foster a working partnership between the City and the WOH Communities, and to implement and manage certain programs under contract to New York City including but not limited to Watershed Agricultural Easements.

bb. "Watershed Agricultural Easement" means a Watershed Conservation Easement, as defined below in paragraph (cc.), on real property in active agricultural production or designated for future agricultural production. Such easements shall allow agricultural production.

cc. "Watershed Conservation Easement" means an easement, covenant, restriction or other interest in real property, created under and subject to the provisions of Article 49 of the New York Environmental Conservation Law, which limits or restricts development, management or use of such real property for the purpose of maintaining the open space or natural condition or character of the real property in a manner consistent with the protection of water quality generally and the New York City drinking water supply specifically. It also includes Watershed Agricultural Easements, Watershed Forest Easements, and Riparian Buffer Easements)

dd. "Watershed Forest Easement" means a Watershed Conservation Easement, as defined in paragraph (cc.), on real property in forest production or designated for future forest production. Such easements shall allow forest production.

ee. "Watershed MOA" or "MOA" means the agreement, entered on January 21, 1997, among the State of New York, the City of New York, the United States Environmental Protection Agency, Catskill Watershed Corporation, the Coalition of Watershed Towns, certain watershed municipalities, and certain environmental groups which established a framework for a "partnership to cooperate in the development and implementation of a Watershed protection program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities."

ff. "Watershed Protection and Partnership Council" or "WPPC" shall mean a group formed to aid in the protection of drinking water quality and the economic vitality of the Watershed communities. The Council will represent a broad-based diverse group of interests that share the common goal of protecting and enhancing the environmental integrity of the Watershed and the social and economic vitality of the Watershed communities. The Council shall consists of twenty-seven (27) members (sixteen (16) members constituting an executive Committee and eleven (11) additional members), which shall include representatives from the State and City of New York, local governments in the Watershed, the USEPA, business, the environmental community, and water supply consumers.

gg. "Watershed Regulations" means the watershed rules and regulations applicable to the New York City Watershed, codified as Rules of the City of New York ("RCNY"), Title 15, Chapter 18 and New York Codes, Rules and Regulations, Title 10, Part 128 pursuant to Public Health Law Section 1100.

hh. "1997 Designated Areas" means the villages, village extensions, hamlets, and commercial or industrial areas designated in accordance with paragraph 68 of the Watershed MOA.

ii. "1997 Water Supply Permit" means the water supply permit issued by NYSDEC on January 21, 1997, DEC Permit Number 0-9999-00051/00001.

jj. "Water Supply System" means the system of reservoirs, controlled lakes, structures and facilities such as dams, tunnels, and aqueducts which collect source water for the New York City drinking water supply and transport it to the City of New York.

kk. "West of Hudson" or "WOH" means the Catskill and Delaware drainage basins of the specific reservoirs of the New York City Watershed located west of the Hudson River in the New York counties of Greene, Delaware, Ulster, Schoharie, and Sullivan.

ll. "WWTP" means wastewater treatment plant.

5. **Willing Sellers/No Eminent Domain.** The City may acquire fee title to, or Watershed Conservation easements on, real property from willing sellers only. This permit does not authorize the use of any powers of eminent domain.

6. Mapping of Priority Areas.

a. The Catskill and Delaware Watershed has been mapped, in descending order of priority for acquisition and protection , into Priority Areas 1A, 1B, 2, 3. and 4 by the City as shown in Exllibits 2 (West of Hudson) and 3 (East of Hudson).

i. Priority Area 1A is the highest priority. It consists of portions of reservoir basins that are within 60-day travel time to distribution and arc in close proximity to an aqueduct intake. It consists of portions of the basins of the Kensico, West Branch, Ashokan, Rondout, Neversink, Pepacton, and Cannonsville Reservoirs. Priority Area 1B consists of portions of reservoir basins that are within 60-day travel time to distribution and not Priority Area 1A. It consists of: all of Boyd's Corners Reservoir basin; the remaining portions of the basins of Kensico, West Branch, and Rondout Reservoirs; and portions of the basins of Ashokan, Cannonsville, and Pepacton Reservoirs.

ii. Priority Area 2 consists of the remaining portion of the Ashokan Reservoir basin (portions of terminal reservoir basins that are not within priority areas 1A or 1B).

iii. Priority Area 3 consists of portions of reservoir basins with identified water quality problems that are not in priority areas 1A, 1B, or 2.

iv. Priority Area 4 is the lowest priority. It consists of the remaining areas within the Watershed.

b. The Croton Watershed has been mapped by the City into Priority Areas A, B, and C; A being the highest priority.

i. The Croton Watershed priority areas are as follows: A (New Croton, Croton Falls, and Cross River Reservoirs); B (Muscoot and portions of Amawalk and Titicus Reservoirs within 60-day travel time to distribution); C (remaining reservoir basins and sub-basins beyond 60-day travel time to distribution).

A map of the boundaries of these Priority Areas is set forth in Exhibit 3 of this permit.

7. Eligibility and Authorization for Acquisition.

a. To be eligible and authorized for acquisition by the City in fee. parcels of land must be vacant, as defined in Special Condition 8, and meet the size and natural features criteria, as set folth in Special Condition 9, and not fall under the acquisition exclusions (hamlet or village designations), as set forth in Special Condition 10. Acquisition eligibility and authorization for Riparian Buffer fee parcels shall be determined solely based upon their meeting the surface water features thresholds (but not steep slopes thresholds) in Special Condition 9.a.2.a - d. and falling outside the acquisition exclusion areas (hamlet or village designations) in Special Condition 10 unless such exclusion is waived in individual municipalities by the town or village boards by resolution authorizing the Riparian Buffer Program and the specific parcels described and covered by such program.

b. Parcels of land participating in a federal, state, or City flood buy-out program need neither be vacant, as defined in Special Condition 8, nor meet the size and natural features criteria, as set forth in Special Condition 9 nor are such parcels subject to the acquisition exclusions (hamlet or village designations) in Special Condition 10. Fair Market Value for parcels of land participating in a federal, state, or City flood buy-out program may be determined in accordance with either the process established by the Federal Emergency Management Agency, or as set forth in Special Condition 13. Any parcels of land acquired under a federal, state, or City flood buy-out program which will be held in fee by a local government rather than the City which are protected from development in perpetuity by deed in accordance with the provisions of 42 U.S.C. §5170c or equivalent protections enforceable by the department, are not subject to Special Condition 21(a). The City flood buy-out program referred to in this condition is defined and governed by the process, procedures and criteria defined in the document entitled "City-Funded Flood Buyout Program Property Evaluation and Selection Process", dated June 1, 2016. In the event the City proposes a material modification to the Process such proposed modification shall be publicly noticed by NYSDEC for public comment and shall be subject to NYSDEC approval as a permit modification under 6NYCRR Part 621 Uniform Procedures prior to City implementation of such proposed modification. The City flood buy-out program shall provide for the opportunity prior to acquisition for the municipality to review and approve. conditionally approve or reject the proposed parcels within its boundaries.

c. To be eligible and authorized for acquisition as Watershed Conservation Easements (except for Watershed Agricultural Easements and Riparian Buffer Easements) by the City, parcels of land must meet the size and natural features criteria set forth in Special Condition 9 and not fall under the acquisition exclusions (hamlet or village designations) in Special Condition 10. All Watershed Conservation Easements may be acquired on land regardless of whether the land is vacant, as defined in Special Condition 8. Acquisition eligibility and authorization for Watershed Agricultural Easement parcels shall be determined solely based upon falling outside the acquisition exclusion areas (hamlet or village designations) in Special Condition 10.

Acquisition eligibility and authorization for Riparian Buffer Easement parcels shall be determined solely based upon their meeting the surface water features thresholds (but not steep slopes thresholds) in Special Condition 9.a.2.a - d and falling outside the acquisition exclusion areas (hamlet or village designations) in Special Condition 10 unless such exclusion is waived in individual municipalities by the town or village boards by resolution authorizing the Riparian Buffer Program and the specific parcels described and covered by such program.

8. Vacant Lands Defined.

a. Vacant land West of Hudson means land on which there are no structures, other than uninhabitable dwellings or accessory structures (sheds, barns, etc.). If a parcel contains a habitable dwelling, the City will acquire the parcel in fee only if the owner subdivides the parcel so that the City only takes title to the portion of the parcel without the habitable dwelling. The subdivided parcel containing the habitable dwelling must include an adequate area for septic field, reserve area and well. If a parcel acquired in fee contains an uninhabitable dwelling or accessory structure, the City will remove it within two years of acquiring title if requested to do so by the respective town or village during the local consultation period.

b. Vacant land East of Hudson means land on which there are no inhabited structures at the time the City acquires title. If the City is interested in a parcel that contains a structure that would be inhabited at the time the City acquires title, the parcel must be subdivided so that the City only takes title to the portion of the parcel without the inhabited structure.

c. The City shall be authorized to use land trusts operating under the Enhanced Land Trust Program established pursuant to Special Condition 33 for WOH as LAP contractors to acquire lands described in this special condition providing that the following requirements are adhered to: the subdivision of the parcels is carried out according to the criteria in 8.a above, the vacant land is conveyed to the City, the portion of the properties containing the habitable dwellings are fully maintained so as to not diminish their monetary value, all local tax (including ad valorem) payments are kept current and such subdivided habitable dwelling properties are placed for sale in the open real estate market. In order for this provision to take effect the Town or Village Board shall adopt a resolution pursuant to such procedures determined to be applicable by such Board within 390 days of the Effective Date of this Permit. Every five years, from the Effective Date of the Permit any Town or Village Board shall have a 180 day window following these five year anniversary dates (12/24/2015, 12/24/2020, 12/24/2025) to reassess and if it so chooses to implement the provisions of this paragraph or rescind any prior adopted resolution. All such resolutions shall be provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption.

9. Size and Natural Features Criteria.

Applicability defined herein and within Special Condition 7 above.

a. West of Hudson:

1. Size

All eligible and authorized parcels must:

a. In Priority Area 1A be at least one acre in size.

b. In Priority Area 1B must be at least five acres in size.

c. In Priority Areas 2, 3, and 4 must be at least ten acres in size

2. Surface Water Features/Slopes:

All eligible and authorized parcels only in Priority Areas 2, 3, and 4 must either:

a. Be at least partially located within 1,000 feet of a reservoir; or

b. Be at least partially located within the 100-year flood plain; or

c. Be at least partially located within 300 feet of a watercourse, as defined in the Watershed Regulations; or

d. Contain in whole or in part a federal jurisdiction wetland greater than five (5) acres or NYSDEC mapped wetland; or

e. Contain ground slopes greater than fifteen percent (15%).

3. Special Criteria:

All eligible and authorized parcels only in Priority Areas 2, 3 and 4 must either:

a. Be no less than seven percent (7%) Surface Water Features, as set forth in 9.a.2.a - d above, or

b. Be no less than fifty percent (50%) slopes of 15% or greater as set forth in 9.a.2.e above.

b. Parcels which meet the natural features criteria, as set forth in subparagraph a.2, adjoining to lands owned in fee by the City or owned in fee by the State and which would otherwise not be eligible and authorized under the above Special Criteria, as defined in subparagraph a.3 of this special condition, are eligible and authorized for acquisition in fee by the City subject to the following restrictions: 1) individual acquisitions cannot exceed 25 acres, 2) total acquisitions cannot exceed 1,500 acres in West of Hudson over the life of this permit condition, 3) total acquisitions cannot exceed 300 acres in any one county over the life of this permit and 4) such acquisitions must be for one or more of the following purposes of: a) enhancing recreational access or use, b) addressing access deficiencies such as proposed or existing recreational trail interconnections or trailheads, c) State or City owned in fee parcel access, d) addressing land management issues such as preventing unauthorized uses on State or City owned lands, or e) to provide for linking City or State owned lands or to achieve consolidation by purchasing private in-holdings found within City or State owned land.

c. The City may acquire parcels of land West of Hudson that do not meet the above size requirements applicable to Priority Areas 1B, 2, 3 and 4 throughout a town or village or only for those parcels located, at least partially, in a 100-year floodplain, if the Town or Village Board waives the size requirements by resolution adopted pursuant to such procedures determined to be applicable by such Board within 180 days of the Effective Date of this Permit. Every five years, from the Effective Date of the Permit any Town or Village Board shall have a 180 day window following these five year anniversary dates (12/24/2015, 12/24/2020, 12/24/2025) to reassess and if it so chooses to implement the provisions of this paragraph or revoke a prior waiver if granted. All such resolutions shall be provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption.

d. There are no parcel size requirements East of Hudson.

e. In the Croton Watershed, the City will prioritize its acquisitions based on the Priority Area in which the parcel is located and the natural features of the parcel which could affect water quality.

f. The City may aggregate adjoining tax parcels being acquired at one time, or being aggregated with adjoining City-owned land, to meet the minimum acreage (size) requirements as set forth in 9.a.1 above.

g. The City may aggregate adjoining tax parcels being acquired at one time to meet the Natural Features Criteria as set forth in 9.a. above so long as the parcels are under related family member ownership or related corporate ownership.

h. The natural features criteria determinations of parcel eligibility and authorization shall be based upon information contained in the City's geographic information system, or if available site inspection information, as of the parcel appraisal order date. Where and if available, new, verified, more up to date information shall be used to govern parcel eligibility and authorization up to the conclusion of the local consultation process as set forth in Special Condition 12 including the dispute resolution process as set forth in 12.h.

i. Any unacquired parcels not meeting the Special Criteria in this condition but which have appraisal orders which precede the Effective Date of this Permit shall continue to be considered eligible and authorized for acquisition for up to 12 months from the effective date of this permit whereupon such eligibility ceases unless a purchase contract has been signed between the City and the seller.

10. Exclusions from Acquisition (Designated Hamlet and Village Areas).

a. West of Hudson. The following land areas described in subparagraphs i - iv below are hereby excluded from acquisition by the City in fee and Watershed Conservation Easement only if a town or a village designates them as Designated Hamlet (or Village) Areas by Town (or Village) Board resolution within 180 days of the Effective Date of the permit. Such Town or Village Board designation resolutions shall describe the excluded (hamlet or village) land parcels within their jurisdiction covered in subparagraphs i – iv below. Towns and Villages shall have the option to remove parcels from coverage so they would not be part of the designated hamlet or village area. Towns and Villages considering such resolutions shall provide for the following: 1) written notification via regular US Postal Service mail to the affected landowners within their jurisdiction as shown in Exhibits 4 and 5 using the mailing addresses found in the most current municipal tax rolls, 2) general notice to the public via local newspapers, and 3) a public comment period of no less than 30 days following such notices. Then within 21 days following their adoption, Town or Village Board designation resolutions must be submitted by the towns or villages to NYSDEC, the City and affected landowners with a certification and documentation that all requirements of this Special Condition and all applicable laws and regulations have been followed. Thereupon the resolution will take effect and becomes binding upon the City. NYSDEC retains final authority to resolve any dispute under this special condition between the City and Town or Village using the process as set forth in Special Condition 12.h. Towns may designate hamlet areas under subparagraphs ii. and/or land areas under iii. and iv. below. The excluded land areas under this paragraph can consist of only:

   i. land within an incorporated village designated by the Village Board (Designated Village Area); and
   ii. land parcels within a town and designated as hamlet in whole or in part by the Town Board (Designated Hamlet Area) from the list of tax parcels and maps in Exhibits 4 and 5; and
   iii. up to 50 acres of land within a town designated by the Town Board; provided that the lands are outside Priority Area 1A, are identified as whole tax map parcels, and are identified as commercial or industrial areas and provided that any acreage previously so designated by Town Boards is set forth in Exhibits 4 and 5; and
   iv. lands within a town designated by the Town Board; provided that the lands are designated by tax map parcel and are located within one-quarter mile of a village and abutting the roads set forth in Exhibit 6 of this permit.

b. The 1997 Town or Village Board Designated Areas by resolution which implemented an acquisition in fee only exclusion made pursuant to the provisions of the 1997 Water Supply Permit shall continue (except for the Town of Shandaken) unless superseded by the new designations authorized in Paragraph a of this Special Condition.

c. Commencing on the Effective Date of this Permit except for Riparian Buffers in fee or Easements, the City shall not solicit the purchase of either land in fee or Watershed Conservation Easements from any landowner in the Town of Shandaken directly. Specifically, the City will not intentionally initiate contact with any landowner concerning opportunities to sell real property interests, whether by mail, by telephone, in person, or otherwise. Notwithstanding the City's agreement not to solicit landowners directly, nothing herein shall prevent the City from receiving, responding to, or acting upon unsolicited inquiries from owners of land in the Town of Shandaken.

d. East of Hudson, the City shall not acquire fee title to property zoned commercial or industrial as of the date of the City's solicitation, except that the City may acquire up to five percent (5%) of the total acreage of such property within any town or village unless a town or village in Westchester County agrees, by resolution, to a higher percentage in such town or village.

e. Any unacquired parcels which become part of the area excluded from acquisition (hamlet designation) under paragraph a. of this condition and have appraisal orders that precede the Effective Date of this Permit shall continue to be considered eligible and authorized for acquisition for up to 12 months from the Effective Date of this Permit whereupon such eligibility ceases unless a purchase contract has been signed between the City and the seller.

f. Every five years, from the Effective Date of the Permit any town or village shall have a 180 day window following these five year anniversary dates (12/24/2015, 12/24/2020, 12/24/2025) to reassess and if it so chooses to: 1) implement the provisions of Paragraph a. of this Special Condition or 2) rescind any prior designation pursuant to such procedures determined to be applicable by such Board with such resolutions provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption in order for them to take effect. If the Town of Shandaken exercises this option then the provisions of paragraph c. in this special condition are no longer in effect. In order to maintain eligibility and acquisition authorization for any pending parcel specific land acquisition process in those communities the City shall have three months after receiving the town or village board resolution in which to order an appraisal and 12 months for purchase contracts to be signed by the City and the seller otherwise such parcels become excluded from acquisition. The City shall not solicit additional acquisitions upon passage and subsequent submittal to NYSDEC and the City of the designation resolution.

g. As provided for in Special Condition 7.c above, Riparian Buffer in fee or easements may be acquired by the City even if within a Designated Village or Hamlet Area if the Town or Village Board waives by resolution which may be adopted at any time pursuant to such procedures determined to be applicable by such Board thereby authorizing the Riparian Buffer Program and the specific parcels described and covered. Such resolutions must be provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption in order for them to take effect.

h. For the Towns of Ashland, Delhi, Hamden, Walton and Windham, the parcels referenced in the cluster development Town Board resolutions attached as Exhibit 13 shall be eligible for coverage under this Special Condition only if such resolutions remain in force. Such resolutions shall encourage and authorize town planning boards to approve cluster development projects.

11. Acquisition Procedures.

At request of a town or village, the City shall make a presentation describing the process the City intends to use to solicit acquisitions.

a. West of Hudson, the City may make a joint presentation to groups of up to three towns and/or villages. With the consent of the involved towns or villages, the City may also make a joint presentation to groups of more than three towns and/or villages West of Hudson, or to any number of towns and/or villages East of Hudson.

b. Such presentation shall also include an indication of what land is eligible for acquisition in such town or village (including a map of the town or village reflecting the priority areas and applicable Natural Features Criteria) and the estimated acreage that the City expects to acquire.

c. The City may solicit landowners directly and acquire such land except as restricted by Special Conditions (SC) 7 – Eligibility and Authorization for Acquisition, SC 8 – Vacant Lands Defined, SC 9 – Size and Natural Features Criteria and SC 10 – Exclusions from Acquisition. The City may also receive, and act upon, unsolicited inquiries from landowners at any time subject to the restrictions of Special Conditions 7, 8, 9 and 10.

12. Local Consultation.

a. Prior to acquiring any land or Watershed Conservation Easements, the City will consult with the town or village in which the parcel is located. The consultation will ensure that the City is aware of and considers the town's or village's interests and that the terms of this permit are complied with.

b. The City will provide a local government consultation package with copies to NYSDOH, EPA and NYSDEC that will: 1) identify for the town or village, and for the appropriate County and for NYSDEC, the parcels of any land or Watershed Conservation Easements for which the City has entered into an option or contract to purchase, any structures which may be located on the property; 2) state the City's determination of whether structures are uninhabitable or accessory; 3) include a map or maps depicting the tax parcel boundary of the acquisition property, including the location and attributes of "envelopes" within the proposed acquisition; 4) include an aerial photo of the affected property (if available); 5) identify exclusions (if any) from the acquisition; 6) describe any proposed recreational uses; 7) describe all historical uses including natural resources; 8) identify known available natural resources; 9) include the Community Review Fact Sheet; 10) include a brief summary concerning and map depicting the proposed acquisition and any adjacent proposed City acquisitions in fee or easements including rights of way or adjacent existing City or State owned land in fee or easement; 11) describe any proposed fencing and signing; 12) include the form of easement agreement (if an easement is being acquired); and 13) state that the parcel meets these acquisition criteria: a) Special Condition 9 Size and Natural Features Criteria, b) Special Condition 8 Vacant Lands Defined, c) Special Condition 7 Eligibility and Authorization for Acquisition and d) Special Condition 10 Exclusions from Acquisition.

c. The City will diligently attempt to group together parcels for review by the town or village and to minimize the number of times it submits parcels for review, and will submit such parcels for review no more frequently than on a monthly basis. The City shall allow the town or village a total of 120 days to undertake all the following:

- review and assess the information contained in the City's submission;
- conduct public review and interagency consultation where so desired by the town or village; and
- submit comments to the City.

e. The town or village review and comments (which may be supplemented with comments from the county) may include:

- consistency with the natural features criteria in Special Condition 9;
- consistency with the size requirements in Special Condition 9;
- consistency with the vacancy requirements in Special Condition 8;
- consistency with local land use laws, plans and policies;
- the City's proposed fencing and signing;
- proposed recreational uses;
- available natural resources and access thereto;
- access to any development areas;
- potable water;
- sewage disposal;
- consistency with set-back requirements and local land use regulation; and
- natural resource criteria.

f. In the event of a mortgage foreclosure, tax foreclosure or judgment sale, the City may submit a parcel for review to a town or village without obtaining an option or contract to purchase.

g. The City will respond to local government comments and provide notice of any proposed City actions, within thirty (30) days of receipt. Unless a town or village notifies the City of its intent to file an appeal within thirty (30) days of receiving the City's response and an appeal is filed pursuant to paragraph h. below the City may proceed to acquire the parcels

identified in the local consultation process in the village or town. In the event of any dispute, the acquisition of any specific parcel involved shall not proceed except under the dispute resolution/final decision provisions of paragraph h. below.

h. Disputes between the City and the town or village over whether a particular parcel meets the vacancy, size, or natural features criteria contained in this permit in Special Conditions 8 and 9 will be submitted by the City to NYSDEC (attention: NYSDEC Office of Hearings) prior to the City's acquisition or may be submitted by the disputing town or village no later than thirty (30) days of receiving the City's response to comments under paragraph g above. This dispute, will be resolved based upon the facts as submitted and the terms and conditions of this permit by NYSDEC through a designated Administrative Law Judge in the NYSDEC Office of Hearings. The responding party (the town or village, or the City) may make a submission to NYSDEC in response to the position advocated by the party initiating the dispute resolution process within fifteen (15) days following the City's receipt of the initial submission. NYSDEC shall resolve such dispute or issue a final binding decision within thirty (30) days of the responding party's submittal deadline. NYSDEC's decision shall be a final decision for purposes of Article 78 of the New York Civil Practice Law and Rules. Unless otherwise specified, either party (the City or the community) has sixty (60) days from the date of the NYSDEC decision to commence an Article 78 proceeding in respect of NYSDEC's decision. In the event NYSDEC does not resolve the dispute or issue a final decision within the thirty (30) day time period specified herein then the City may send a request to NYSDEC in writing by certified mail, return receipt requested with copies to the disputing town or village, to issue a final decision pursuant to this paragraph. The Petition in an Article 78 proceeding shall name the City as a Respondent. If within thirty (30) days of the receipt of this letter the dispute is not resolved or a final decision by NYSDEC is not issued then a final NYSDEC decision finding that the disputed acquisition parcels have met the vacancy, size, or natural features criteria contained in this permit in Special Conditions 8 and 9 shall be deemed to have been granted.

i. To assist towns and villages in the Watershed in their review and comment on proposed City land acquisition in such towns and villages, and the designation of hamlets, commercial/industrial areas, and village extensions and periodic determinations with respect to such designations in Special Condition 10, the City will reimburse each town or village where the City seeks to acquire lands or Watershed Conservation Easements, for actual costs incurred, up to Thirty Thousand Dollars ($30,000), in the West of Hudson Watershed, up to Twenty Thousand Dollars ($20,000) in the East of Hudson portions of the Catskill and Delaware Watershed , and up to Ten Thousand Dollars ($10,000), per town or village in the Croton Watershed and not in the Catskill/Delaware Watershed, Such funding has previously been allocated pursuant to MOA ¶ 148 and the 2007 FAD.

13. Fair Market Value.

a. The purchase price of all land and Watershed Conservation Easements acquired shall reflect fair market value, as determined by an independent appraisal obtained at the direction of the City and performed by an independent, New York State certified appraiser.

b. Notwithstanding (a) above, the City may acquire property at less than the fair market value at public auction or at a directly negotiated sale from a bank, other financial institution, or taxing authority in the context of a mortgage foreclosure, tax foreclosure, or legal judgment.

c. Fair market value shall be determined in accordance with the following definition from the Uniform Standards of Professional Appraisal Practice adopted by the Appraisal Standards Board of the Appraisal Foundation, or in accordance with relevant successor language.

The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this

definition is the consummation of the sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their best interest;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in U.S. dollars, or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property, sold unaffected by special or creative financing sales concessions granted by anyone associated with the sale.

d. For purposes of determining fair market value if all other required governmental permits and approvals have been granted, the appraiser shall assume that any necessary City approvals have also been granted.

e. In determining the fair market value, the independent appraisers hired by the City will consider information from a second appraisal, provided by the landowner and made at the landowner's or a third party's expense, provided the second appraisal is made by a New York State certified appraiser and was completed no earlier than one year prior to the City's appraisal and no later than six (6) months after the owner received the City's appraisal. Upon request by the landowner or a third party, the City may extend the time period for completion of a second appraisal.

14. **Schedule.** The City will solicit acquisitions in accordance with the applicable solicitation plan prepared and submitted to NYSDEC, NYSDOH and USEPA pursuant to the 2007 FAD or its successor (Exhibits 7: 2007, Exhibit 8: 2008-10. The City may, at any time, respond to direct inquiries from property owners anywhere in the Watershed, subject to all applicable Special Conditions in this permit.

15. **Recreational Uses: City Property Owned in Fee Simple for Watershed Protection.**

a. The City will consult during the 120-day review period specified in Special Condition 12 with NYSDEC, NYSDOH, USEPA local governments, and the appropriate regional Sporting Advisory Subcommittee, if any, regarding the recreational uses the City deems appropriate on newly acquired parcels in fee.

b. The City shall allow historic recreational uses, including fishing, trapping, hiking, and hunting, to continue on newly acquired parcels in fee, subject to rules and regulations adopted or permits issued by NYCDEP, unless NYCDEP determines, on a rational basis, that such uses threaten public safety or threaten to have an adverse impact on water quality or NYCDEP operations related to water supply.

c. The following recreational uses are more likely to be allowed on City land, if appropriate, subject to rules and regulations adopted, or permits issued, by NYCDEP: fishing (including fishing by boat) under regulation; hiking, especially where parcels intersect State trails, snowshoeing; cross country skiing; bird watching, educational programs, nature study and interpretation; and hunting (only in certain areas under certain conditions).

d. The following activities are not likely to be allowed on City property even if the property was historically utilized for these purposes: boating (other than for permitted fishing by boat and the pilot boating program in paragraph g. of this condition); snowmobiling (except as per paragraph f. of this condition); camping; motorcycling; mountain bicycling; and horseback riding.

e. Seven (7) years from the Effective Date of the Permit the City shall consult pursuant to paragraph 15.a above regarding recreational uses on City owned property owned in fee simple using the procedures in this special condition and based upon such consultation evaluate if there should be any changes in the allowable recreational uses specified herein. A report shall be prepared and submitted to NYSDEC within 6 months after such consultation. Thereafter, upon

request from NYSDEC, the City shall follow the consultation procedures described in 15.a above and prepare and submit a report to NYSDEC within twelve (12) months after receiving such request. Such requests will be made in writing, will include specific recommendations concerning changes in the allowable recreational uses for the City to consider, and may be made no more often than once every ten (10) years.

f. Snowmobile Trails. The City will continue to allow snowmobile access on specific City-owned parcels under the following conditions:
   i. A qualified organization must obtain a land use permit for trails that are part of a regional NYSDEC-sanctioned network to cross City property;
   ii. Use of the trails must not pose a threat to water quality or NYCDEP operations related to water supply; and
   iii. A qualified organization must take responsibility for establishment and maintenance of trails.

g. Expanded Boating Program. The City will continue the Cannonsville Pilot Boating Program (for the purposes of this paragraph, the "Boating Program") including cooperating with CWC to complete the evaluation study to gather data from the Boating Program regarding its impact, if any, upon water quality, and providing recreational opportunities as well as establishing criteria for evaluating the Program. With this study in hand, NYCDEP shall consult with NYSDEC and NYSDOH prior to making any determination if the Boating Program should be continued and/or expanded to other City owned reservoirs.

16. Uses: LAP Fee and Easement Property.

a. Permitted uses on land acquired in fee by the Land Acquisition Program (LAP): As described in Special Condition 15.b and c.

b. Uses not likely to be allowed on LAP-acquired fee land: As described in Special Condition 15.d. above.

c. Prohibited Uses on LAP-acquired fee land: as described in the declaration of restrictions contained in the grant of conservation easement to NYSDEC as shown in Exhibit 9 or as revised by NYSDEC in consultation with NYCDEP.

d. Reserved Uses/Reserved Rights:

1. The Reserved Uses/Reserved Rights that may be available on LAP Fee and Easement Property include, but are not limited to: communication towers, wind turbines, Farm Support Housing and other buildings used for rural enterprises (Watershed Agricultural Easements only), Commercial Forestry, Commercial Bluestone Mining, and public or private rights of way and utility easements.

2. Watershed Conservation Easements Acquired after the Effective Date of this Permit.
   a. The City will incorporate into NYCDEP Watershed Conservation Easements appraised on or after the Effective Date of this Permit provisions for the reserved uses/reserved rights listed in subparagraph d.1. above and also provide that the City must review such applications to exercise reserved uses/reserved rights on a case by case basis subject to the terms of the Easement and a determination that the proposed use will not pose a threat to water quality or NYCDEP operations related to water supply.
   b. The City will ensure that Watershed Agricultural Easements appraised on or after the Effective Date of the Permit shall conform to the WAC model easement found in Exhibit 10, and shall provide the rights provided in paragraphs 2.s, 3, 8, 19, 20, and 24 of the model easement dated September 2, 2010.
   c. Any unacquired easement parcels shall not be subject to paragraphs d.2.a. and b. of this condition if their appraisal orders precede the Effective Date of this

Permit and the landowner has declined the opportunity to convert the easement to the versions of the NYCDEP and WAC model easements described in paragraphs 16.d.2.a and 16.d.2.b above and a purchase contract has been signed between the City and the landowner/seller within 12 months from the Effective Date of this Permit. Otherwise paragraphs 16.d.2.a. and b. apply.

3. Watershed Conservation Easements Executed Prior to the Effective Date of this Permit.

a. Upon request from a grantor of an easement acquired prior to the Effective Date of this Permit, based on a specific proposal to undertake a use that would be a Reserved Use under this Permit but is not included in the existing easement, the City shall make (or shall ensure that its contractor makes) diligent efforts to execute and record amendments to the easement, or otherwise to allow the use if it is permissible without such an amendment, subject to reasonable conditions, so long as:

i. The grantor provides the following information about the proposed use:

1. A project description;
2. A map depicting the proposed area for the activity and approximate area(s) of disturbance;
3. A list of all required regulatory approvals associated with the proposed use; and
4. Information demonstrating that the proposed use will not pose a threat to water quality or NYCDEP operations related to water supply.

ii. Any modification to the easement is made subject to all applicable laws and requirements.

b. The City shall ensure the following actions: 1) within 180 days of the Effective Date of this Permit, WAC will send a letter to grantors of Agricultural Easements offering to amend existing Agricultural Easements; 2) the letter will specifically propose to add new language to the existing Easement, including but not necessarily limited to sections 2.s, 3, 8, 19, 20, and 24 of the updated model Agricultural Easement, attached as Exhibit 10; 3) the letter will state that WAC will pay for all costs associated with such amendments where grantors agree to amend; and 4) implementation of these provisions.

4. The NYS Conservation Easement for new fee parcels may include the reserved uses/rights as defined in 16.d.1 above. Such NYS Conservation Easements shall provide for the review and approval by the NYSDEC of each proposed wind energy tower/structure or communications tower/structure in accordance with the model NYS Conservation Easement attached as Exhibit 9 unless the NYSDEC waives such individual project review and approval in writing. The City may request on a case by case basis for specific project proposals that NYSDEC amend specific NYS Conservation Easements in order to provide for the wind energy or communications tower reserved uses enumerated in d.1 above. Any modification to such an easement or to the model easement shall be subject to all applicable laws and requirements.

17. Watershed Conservation Easements. In addition to acquisition in fee, the City may acquire Watershed Conservation Easements in accordance with Article 49 of the New York State Environmental Conservation Law and any implementing regulations. The Watershed Conservation Easements will be acquired at fair market value in accordance with Special Condition 13. Watershed Conservation Easements shall consist of Watershed Conservation Easements, Watershed Agricultural Easements, Watershed Forest Easements and Riparian Buffer Easements acquired by either the City or on behalf of the City as part of a contractual agreement between the

City and organizations or governmental agencies, individuals or companies pursuant to all the provisions of this permit.

18. Real Property Taxes: Newly Acquired in Fee under the City's Land Acquisition Program.

a. The City will not challenge the initial assessed value or adjustments to the assessed value of parcels to be acquired pursuant to the land acquisition program set forth in this permit provided the initial assessed or adjusted value for such parcel does not exceed the fair market value of the parcel multiplied by the applicable equalization rate or a special equalization rate for that assessing unit. For purposes of this paragraph, fair market value equals the parcel's appraised value as finally determined by the City's independent appraiser.

b. The City will not challenge future assessments on any parcel acquired pursuant to the land acquisition program set forth in this permit or the 1997 Water Supply Permit, provided that in any Town or Village both of the following two conditions are met: (1) the rate of increase of the total assessed value of all parcels purchased by the City under the land acquisition program, as measured from the assessment roll in any year over the assessment roll of the prior year is not greater than the equivalent rate of increase in total assessed value of all non-City-owned parcels classified as forest or vacant; and (2) the ratio of the total assessed value of all parcels purchased by the City under the land acquisition program in the town to the total assessed value of all taxable parcels in the town does not increase from the prior year (after excluding any City acquisitions not included in the prior year's calculation). With respect to each parcel purchased by the City, since the beginning of the LAP in 1997 as well as after the Effective Date of this Permit, this commitment with respect to challenges of future assessments shall last for thirty (30) years from the date of each purchase.

c. The City will not seek to have any parcels acquired pursuant to this land acquisition program consolidated for purposes of reducing the City's property taxes.

d. The City shall retain its right as a property owner to challenge in court, or otherwise, assessments of parcels purchased under the land acquisition program if the provisions of paragraphs (a) and (b) are not satisfied. In any such challenge, the City will not seek to have the assessed value of the parcel reduced below the highest value which would result in the assessed value of the parcel satisfying the limitation set forth in paragraph (a) or in the total assessed value of all parcels purchased by the City under the land acquisition program in the town satisfying the limitations set forth in paragraph (b) above.

e. Except as provided in paragraph (c), the City retains all legal rights held by property owners with respect to any town-wide or county wide revaluation or update (as those terms are defined in Section 102, subdivisions (12-a) and (22) of the RPTL) currently being undertaken or which may be undertaken in the future.

f. The City shall also make payment for real property tax and ad valorem levies upon properties covered by this Special Condition.

g. The City shall assure the provisions of this special condition are incorporated into an instrument binding upon the recipient and if successors or assignees in the event of any property transfer or sale.

19. Real Property Taxes: Watershed Conservation Easements. The City shall support the enactment by the State Legislature of amendments as set forth in Exhibit 11 or its equivalent. Among other changes such amendments in Exhibit 11 would extend this statute so its provisions do not expire on 12/31/2016 and also expand property tax payment obligations by the City to include agriculturally exempt Watershed Agricultural Easements pursuant to Article 25-AA Agricultural and Markets Law acquired after 12/31/2010.

a. Article 5, Title 4-a of the New York Real Property Tax Law is the applicable state law which applies to Watershed Conservation Easements and Watershed Agricultural Easements. After December 31, 2010 the City shall also be bound by the proposed amended provisions in Exhibit 11 unless it or its equivalent has been enacted into law. Should the current statute expire then the

City shall be bound by the provisions of Exhibit 11 in its entirety. Unless Exhibit 11 or its equivalent is enacted into statute the City may not enter into purchase contracts to acquire Watershed Conservation Easements (WCE) or Watershed Agricultural Easements (WAE) except in those towns or villages where the City has entered into agreements with each applicable local property tax and assessing authority or jurisdiction (Local Authority[ies]) to implement the proposed amended provisions of Exhibit 11 on the following schedule: 1) WAEs proposed for acquisition after 12/31/2010, 2) WCEs (including continuation for WAEs) proposed for acquisition after 12/31/2016. In the event the Local Authority[ies] does/do not execute within ninety (90) days a signed agreement provided by the City then the City may execute purchase contracts within that town or village. Exhibit 11 includes the City paying local property tax levies for agriculturally exempt Watershed Agricultural Easements pursuant to Article 25-AA Agricultural and Markets Law which are acquired after December 31, 2010 as well as the continuation past December 31, 2016 of the City's obligation to pay local property taxes for Watershed Conservation Easements and Watershed Agricultural Easements acquired by the City under the LAP. Such agreements shall expire only if Exhibit 11 or its equivalent is enacted into law.

a. The City will provide to the respective Towns and Villages, as part of the local consultation process, and to the respective sellers, a generic description in plain language of the real property tax consequences to a seller arising from the City's purchase of a Watershed Conservation Easement.
b. The City shall assure the provisions of this special condition are incorporated into an instrument binding upon the recipient and if successors or assignees in the event of any property transfer or sale.

20. Limitation on Transfers to Tax Exempt Entities. The City will not transfer land including Watershed Conservation Easements, acquired pursuant to this land acquisition program to a tax exempt entity unless the entity executes a binding agreement with the City to comply with the provisions of Special Conditions 18 and 19.a plus 19.c which includes payments in place of property taxes and ad valorem levies as well as with any agreements and requirements that run with the land. This binding agreement shall also provide for the tax exempt entity to enter into its own written agreements acceptable to and with each applicable local property tax and assessing authority or jurisdiction to make payments equal to real property tax and ad valorem levies to satisfy the provisions of this special condition and the binding agreement. The City shall also in each such binding agreement entered into pursuant to this Special Condition make each such local property tax and assessing authority or jurisdiction in which the land subject to transfer to a tax exempt entity is situated, a third party beneficiary. Such agreement will grant each such third party beneficiary the right to enforce against the tax exempt entity and obtain specific performance as a remedy as well as shall run with the land and apply to future grantees or assignees.

21. Land Held in Perpetuity for Watershed Protection. (a) The City will grant a conservation easement that shall run with the land on all land acquired in fee under the land acquisition program to NYSDEC to ensure that such land is held in perpetuity in an undeveloped state in order to protect the Watershed and the New York City drinking water supply. Such easement shall also provide that the Primacy Agency shall have enforcement rights or be specified as a third-party beneficiary with a right to enforce the easement. With respect to lands in Priority Areas 3, 4 or C, such easements will provide that, with the prior agreement of USEPA and NYSDOH, the City may sell such lands free of the easement restriction, in order to purchase already identified replacement lands located in a higher Priority Area. In addition, any lands to be sold shall be offered in the first instance to NYSDEC for the option to acquire pursuant to applicable New York State and NYC laws at fair market value or a mutually agreed upon acquisition price. If so, the replacement lands thus acquired will similarly be subject to conservation easements. The City will not use the granting of conservation easements to reduce property tax liability on the property it acquires. In order to acquire any replacement lands during the term of the land acquisition program, the City shall comply with all of the requirements of this permit. Replacement LAP land

acquisition shall be governed by the provisions of this permit which shall survive expiration for this express LAP purpose.
(b) Watershed Conservation Easements acquired by the City shall be held in perpetuity in order to protect the Watershed and the New York City drinking water supply.

22. Acquisition Reports. The City shall submit acquisition reports every six months from the Effective Date of the Permit to the Primacy Agency (USEPA or NYSDOH), NYSDEC, and the Watershed Protection and Partnership Council. Such reports will include the following information for all parcels and easements acquired during the reporting period: address; description of the property, including any easement; county and town where property is located; tax map number; acreage; closing date; and map of property. The acquisition report shall also contain cumulative totals of acreage solicited and acreage acquired identified by town and Priority Area. Such Reports may be consolidated with reports required to be submitted under a Filtration Avoidance Determination.

23. Water Conservation Program Updates and Approval. The City shall update its current Water Conservation Program dated December, 2006 (Exhibit 13) ("Program") every 5 years thereafter and submit four (4) copies and one electronic copy in PDF, or similar form, of the updated Program to the NYSDEC for approval by no later than four (4) months prior to the end of the five year period. The written Water Conservation Program must be submitted to NYSDEC with sufficient detail and analysis to explain any data, objectives, proposals, estimated savings, measurements, milestones, methods of documentation, results or conclusions contained therein.

24. Water Conservation Program Implementation. The City shall continue to carry out all elements of its approved Water Conservation Program ("Program"). Within one year after the approval of the latest Program by the NYSDEC, and annually thereafter, the permittee must submit to the NYSDEC four (4) copies and one electronic copy in PDF, or similar form, of a Water Conservation Report ("Report"). The Report must address each element of the approved Program and any additional water conservation measures planned or being carried out by the permittee. The Report must be in the same format as the Program and must also include an update on the progress of implementation of all elements of the Program to date, an identification of accomplishments over the previous year; and an explanation for any failure to accomplish an element of the Program. The Report shall also specifically include, but not be limited to, a table that includes the number of meters installed; leaks repaired; miles of water main repaired and replaced; miles of water main leak surveyed; hydrants repaired or replaced; water fixtures rebated and water conservation surveys completed for the City's five boroughs. Each category shall also include the estimated daily gallons of water saved by each action.

25. Programs to Foster Cooperation and Requirement to Fund Watershed Protection and Partnership Programs.

a. Pursuant to Section 15-1503(4) of the Environmental Conservation Law, in addition to the foregoing conditions, NYSDEC has determined that the implementation, by the City, of the following programs, originally established by the 1997 Watershed MOA, incorporated as conditions in the 1997, 2002 and 2007 FADs and made a condition of the 1997 Water Supply Permit, as well as those programs identified below will foster cooperation with persons affected by the land acquisition program and assure the LAP is just and equitable to all affected municipalities and their inhabitants and in particular with regard to their present and future needs for sources of water supply. Except as otherwise provided in this permit, the City is required to execute and maintain Valid and Enforceable Program Contracts which implement the programs set forth below and as further described in the following provisions of the MOA which are incorporated by reference as Exhibit 14, and the following Watershed Protection and Partnership Programs: Septic Remediation and Replacement Program; Septic Maintenance Program; Community Wastewater Management Program; Stormwater Retrofit Program; Local Consultation Program; Education and Outreach Program; Tax Litigation Avoidance Program; CWC Operating Funds; Watershed Agricultural Program; Stream Management Program; and East of Hudson Non-Point Source

Pollution Control Program. The City's obligation to execute and maintain Valid and Enforceable Program Contracts for such programs is an independent requirement of this permit and shall continue whether or not the Watershed MOA is valid and enforceable. Nothing in this Permit limits the City's obligations under the MOA.

Exhibit 14 Paragraph	Description
120	Funding of the Catskill Watershed Corporation.
121	SPDES Upgrades.
122	New Sewage Treatment Infrastructure Facilities for Towns, Villages and Hamlets and Community Wastewater Management Program
125	Stormwater Retrofits, including continuation thereof.
126	Sand and Salt Storage Facilities, including continuation thereof.
131	Public Education, including continuation thereof
136	Tax Consulting Fund, which is hereby replaced by the Tax Litigation Avoidance Program
141	Upgrades to Existing WWTPs to comply with Watershed Regulations.
144	Phosphorus Controls in Cannonsville.
148	Local Consultation on Land Acquisition Program., including continuation thereof.

For purposes of this Special Condition, a Valid and Enforceable Program Contract shall mean a contract: (i) for which the City has appropriated sufficient funds to fulfill its obligations under this special condition and to make payments as they become due and owing; (ii) which has been registered pursuant to section 328 of the City Charter; and (iii) which remains in full force and effect and enforceable under applicable law during the term required by this permit. A failure by the City to comply with the condition requiring a valid and enforceable program contract for a program shall not be a violation of this permit if (i) the City continues to make timely payments for the program in accordance with the terms of the relevant paragraph of the MOA and the applicable program contract or (ii) the City has properly terminated the contract pursuant to the terms thereof and the City complies with its obligations to continue to fund or complete the subject program. For purposes of this Special Condition, a payment to be made by the City shall not be considered made to the extent such payments are required to be refunded to the City. In order to ensure the continuity of the programs in paragraph "b" below, the City shall meet annually with CWC prior to the end of CWC's fiscal year (December 31) to evaluate and confirm the availability of adequate and sufficient funding to meet the City's obligations.

b. Watershed Protection and Partnership Programs. In order to continue watershed protection and partnership programs, the City shall provide adequate levels of funding for continuation of all of the Watershed Protection and Partnership Programs required in this permit and in the 2007 FAD and any subsequent FAD or FAD amendment including adequate funding to the CWC and WAC, as described and set forth below:

1. Septic Remediation and Replacement Program:
   i. Through October 2013, consistent with the terms of the 2007 FAD and pursuant to the City's Program Agreement with CWC, the City shall continue to pay CWC One Million, Three Hundred Thousand Dollars ($1,300,000) each quarter to fund the Septic Remediation and Replacement Program as established pursuant to Watershed MOA paragraph 124 and as subsequently modified under the 2002 and 2007 FADs. These funds include funds available

for the Small Business Program and the Cluster System Program as set forth below. For the duration of this Permit, the City will continue to fund the Septic Remediation and Replacement Program at a level to allow a minimum of three hundred (300) septic systems per year to be remediated or replaced, provided that CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Septic Remediation and Replacement Program (including the Small Business Program and the Cluster System Program) shall be incorporated herein and made enforceable conditions of this Permit.

ii. The City shall support the continued use of the Four Million Dollars ($4,000,000) allocated under the 2007 FAD for the Small Business Program for the duration of this Permit for the purposes described in the 2007 FAD, as refined through the development of the Program Rules. For the duration of this Permit, the City will provide comparable and adequate funding for the Small Business Program, provided that CWC demonstrates that the need for such funding continues.

iii. The City shall support the continued use of the Two Million Dollars ($2,000,000) allocated under the 2007 FAD for the Cluster System Program for the duration of this Permit for the purposes described in the 2007 FAD, as refined through the development of the Program Rules. The City agrees that cluster systems may be an effective solution to address certain problematic septic systems on lots with inadequate space and/or soils to accommodate individual systems in compliance with applicable regulations, and that rather than simple cooperative agreements among common users to a proposed cluster system that are only subject to private enforcement, municipal management and sewer district formation will be needed. Pursuant to the 2007 FAD, the City has identified thirteen areas/small hamlets that may be candidates for or in need of cluster systems. To determine the feasibility of such cluster systems, the City shall, in cooperation with CWC, consider the following issues: determining whether an individual town agrees that there is a need for a collective engineered intervention in a specific identified hamlet; identifying a willing host site for a collective system; establishing a sewer use ordinance; and overseeing project management by CWC or its agents. NYCDEP shall work with CWC to explore implementation of projects under these terms and to continue to examine the program terms to facilitate the advancement of cluster systems. In the event that CWC determines that it is not feasible to further pursue this program, the City shall allow CWC to allocate any remaining funds to either or both the Septic Remediation and Replacement Program or the Small Business Program.

2. Septic Maintenance Program: The City shall support the continued use of the One Million, Five Hundred Thousand Dollars ($1,500,000) allocated and paid to CWC under the 2002 FAD for the Septic Maintenance Program. For the duration of this Permit, the City will provide additional funding, if necessary, to allow maintenance each year of 20% of the total number of septic systems eligible for maintenance under CWC's Septic Maintenance Program Rules, as revised February 28, 2008, provided that CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Septic Maintenance Program shall be incorporated herein and made enforceable conditions of this Permit.

3. Community Wastewater Management Program: As set forth in the 2007 FAD and as a continuation of the New Infrastructure Program established pursuant to Paragraph 122 of the Watershed MOA, the City shall provide sufficient funding to design and complete Community Wastewater Management Program projects for the remaining communities as set forth in the list contained in MOA Paragraph 122. This includes the hamlets of Trout Creek, Lexington, South Kortright, Shandaken, West Conesville, Claryville, Halcottsville, and New Kingston. Consistent with the City's Program Agreement with CWC, the City shall make payment based on invoices from CWC as needed for project design and implementation costs. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Community Wastewater

Management Program shall be incorporated herein and made enforceable conditions of this Permit.

4. Stormwater Retrofit Program: Through October 2013, the City shall support the continued use of the Four Million, Six Hundred Fifty Thousand Dollars ($4,650,000) allocated under the 2007 FAD for the Stormwater Retrofit Program established pursuant to Paragraph 125 of the Watershed MOA. For the duration of the Permit, the City shall continue to fund the Stormwater Retrofit Program to allow the Program to continue at a level of activity that has been maintained since the inception of the Program, consistent with the processes set forth in CWC's Stormwater Retrofit Program Rules, as revised October 6, 2009, provided CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Stormwater Retrofit Program shall be incorporated herein and made enforceable conditions of this Permit.
5. Local Consultation on Land Acquisition Program: The City shall continue to make available up to Thirty Thousand Dollars ($30,000) per town or village in the West of Hudson Watershed allocated pursuant to Paragraph 148 of the Watershed MOA and the 2007 FAD for the Local Consultation Program, for purposes described in MOA Paragraph 148 and the 2007 FAD, for the duration of this Permit. The City shall also continue to make available up to Twenty Thousand Dollars ($20,000) per town or village in the East of Hudson portions of the Catskill/Delaware Watershed allocated pursuant to MOA Paragraph 148 for the Local Consultation Program, for purposes described in the 1997 MOA, for the duration of this Permit. The City shall also continue to make available up to Ten Thousand Dollars ($10,000) per town or village in the Croton Watershed and not in the Catskill/Delaware Watershed, for purposes described in the 1997 MOA, for the duration of this Permit.
6. Education and Outreach Program: As set forth in the 2007 FAD, the City shall continue to make available up to Eight Hundred Thousand Dollars ($800,000) to fund the Education and Outreach Program as established pursuant to Paragraph 125 of the Watershed MOA. Consistent with the City's Program Agreement with CWC, the City shall make payment based on invoices from CWC as needed for eligible projects. For the duration of the Permit, the City will continue to fund the Education and Outreach Program at a minimum level of Two Hundred Three Thousand, Seven Hundred Thirty Four Dollars ($203,734) per year, provided that CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Education and Outreach Program shall be incorporated herein and made enforceable conditions of this Permit.
7. Catskill Watershed Corporation General Operating Expenses:
   i. General Operating Expenses: For the duration of this permit, the City will continue to fund CWC General Operating Expenses as needed, based on requests for such funding from CWC, which the City shall not unreasonably deny. The City estimates that the total funding will be approximately Four Million, Three Hundred Seventy-Three Thousand, Six Hundred Twenty-Five Dollars ($4,373,625) over the duration of this Permit. The City shall be bound to provide no less than this amount to fulfill such CWC funding requests.
   ii. Stormwater Coordination Position: Through 2013, consistent with the terms of the 2007 FAD and pursuant to the City's Stormwater Technical Assistance contract with CWC, the City shall continue to pay CWC Forty-Eight Thousand Dollars ($48,000) each year to fund a position at CWC to assist the regulated community in complying with the stormwater provisions of the City's Watershed Regulations. For the duration of this Permit, the City will ensure adequate funding and continue to fund an appropriate engineering position at CWC (salary plus cost of standard fringe benefits) to assist applicants undertaking regulated activities to comply with the stormwater provisions of the City's Watershed Regulations. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund such an engineering position at the Catskill Watershed Corporation, including annual salary

plus cost of standard fringe benefits, shall be incorporated herein and made enforceable conditions of this Permit.

8. Tax Litigation Avoidance Program: For the duration of this Permit, the City will fund the Tax Litigation Avoidance Program (TLAP) pursuant to which the City will provide funds in an initial amount of Five Hundred Thousand Dollars ($500,000), and continued funding up to a cap of Two Million Dollars ($2,000,000) plus a one time additional reasonable amount for any individual Assessing Authority to be used for the purposes of the TLAP to be administered by the CWC, for use by the jurisdictional local property tax assessing authorities (Assessing Authority[ies]) for the purpose of seeking to avoid the costs and risks of litigation over taxes assessed on dams, reservoirs, wastewater treatment plants and, to the extent applicable, sewer lines (Unique Properties) owned by the City. The City will seek to enter into a Program Agreement with CWC within nine months of the date of this Permit, setting forth the terms and conditions under which TLAP funds may be used by CWC to retain an expert to assist the Assessing Authority in (i) applying and updating templates for assessing Unique Properties owned by the City; (ii) evaluating a Valuation Report provided by the City to an Assessing Authority; and (iii) valuing Unique Properties where the Assessing Authority has undertaken a town-wide revaluation. In addition, under certain limited circumstances, the City will provide limited reimbursement for costs of litigation. The City will not challenge future assessments of Unique Properties, where templates have been established and the Assessing Authorities have used those templates, provided that the City does not dispute the manner in which the Assessing Authority has applied the template. Disputes will be resolved in accordance with the TLAP Program Agreement. The City shall provide a copy of the program agreement to NYSDEC when executed.

9. Gap Funding: The City will provide reimbursement to CWC of any funds transferred from CWC's Future Stormwater Program to the CWC Septic Program and/or the CWC Stormwater Retrofit Program for the purpose of ensuring continuation of those programs and from the Catskill Fund for the Future to CWC Operating accounts and/or the TLAP pending final funding agreements under the terms of the Second Five Years of the 2007 Filtration Avoidance Determination ("2012 FAD Reauthorization") or of a subsequent Filtration Avoidance Determination, if such a Determination is issued ("2017 FAD" and/or 2022 FAD"). Such reimbursement from the City, including interest foregone by CWC by virtue of having temporarily allocated money from the Future Stormwater Program and/or the Catskill Fund for the Future, shall be provided for in agreements or change orders. The City shall not oppose such agreements and/or change orders being included as conditions of the 2012 FAD Reauthorization or the 2017 FAD.

10. Geographic Information System: As set forth in the 2007 FAD, the City shall continue to disseminate data to stakeholders and the public as appropriate, including notification of data availability to communities and responses to requests for data.

11. Watershed Agricultural Program: Through October 2012, consistent with the terms of the 2007 FAD and pursuant to the City's Program Agreement with WAC, the City shall continue to make available up to Thirty-Two Million Dollars ($32,000,000) to fund the Watershed Agricultural Program. Consistent with the City's Program Agreement with WAC, the City shall make payment based on quarterly invoices from WAC, subject to the terms of the Program Agreement, for farm plans and associated best management practices (BMPs), forest plans and forest BMPs, and other eligible costs relating to WAC's farm and forestry programs. For the duration of this Permit, the City's commitments to fund the Watershed Agricultural Program pursuant to any subsequent FAD or FAD amendment shall be incorporated herein and made enforceable conditions of this Permit.

12. Stream Management Program: Consistent with the terms of the 2007 FAD and pursuant to the City's contracts with Soil and Water Contract Districts in Delaware County ($8,251,000), Greene County ($10,748,506), Ulster County ($4,460,000), and Sullivan County ($3,292,684) and with

Ulster County Cornell Cooperative Extension ($3,647,570), the City shall provide funding for the continuation of each of the existing Stream Corridor Management Program contracts. For the duration of this Permit, the City commits to fund the Stream Corridor Management Program pursuant to any subsequent FAD or FAD amendment which shall be incorporated herein and made an enforceable condition of this permit.

26. Restriction on Acquisition of Title.

a. The City shall not acquire title to land or Watershed Conservation Easements on land (hereinafter referred to as "Restrictions") as described below in subparagraph (c) if (1) the City has not appropriated funds for one or more of the programs listed in subparagraph (c) below and thereafter the City fails to make a payment that would otherwise be due and owing under a contract for such unappropriated program and (2) the City has not cured the failure to make such payment within thirty (30) days of the date the payment was due and owing. For purposes of this paragraph only, a failure to make a payment shall be deemed cured if the City makes such payment, with interest at 9% compounded annually from the date such payment was due and owing.

b. Except as provided in paragraph (a) above, the City shall not acquire title to land or Watershed Conservation Easements on land (hereinafter referred to as "Restrictions") as described below in subparagraph (c) if (1) for one or more of the programs listed below, the City does not have a valid and enforceable program contract during the term set forth in Exhibit 14 and thereafter the City fails to make a payment that would otherwise be due and owing under such invalid or unenforceable contract and (2) the City had not cured the failure to make such payment within 8 months of the date the payment would otherwise have been due and owing. The 8 month period is intended to provide the City with time to attempt to resolve the matter which caused the program contract to become invalid and unenforceable without interruption to the land acquisition program. For purposes of this paragraph only, a failure to make a payment shall be deemed cured if the City makes such payment, with interest at 6.5% compounded annually from the date such payment was due and owing.

c. The programs for which such failure to make payment and to timely cure late payment shall lead to Restrictions to the water supply permit under this subpart are: (1) with respect to acquisitions in West of Hudson: Catskill Watershed Corporation Funding, SPDES Upgrades; New Sewage Treatment Infrastructure Facilities; Sand and Salt Storage; Septic Remediation and Replacement Program; Septic Maintenance Program; Community Wastewater Management Program; Stormwater Retrofit Program; Education and Outreach Program; Tax Litigation Avoidance Program; Stream Management Program, (2) with respect to acquisitions in East of Hudson: Non-Point Source Control Program, and (3) with respect to acquisitions in the entire Watershed: Upgrades to Existing WWTPs to Comply with Watershed Regulations; Watershed Agricultural Program and Local Consultation on Land Acquisition.

d. If the water supply permit is Restricted under this Special Condition, the City shall not acquire title to land or Watershed Conservation Easements on land under this permit until, with respect to the program for which the failure to pay led to the Restrictions, the City has made all missed payments which the City failed to pay and which would otherwise be due and owing except that the City failed to maintain a valid and enforceable contract, as provided in paragraphs (a) and (b), as well as interest on such missed payments at the rate set forth in paragraphs (a) or (b), whichever is applicable.

e. The following process shall govern Restrictions on the City's acquisition of an interest in land or Watershed Conservation Easements on land pursuant to this water supply permit under this paragraph:

(i) The City shall notify in writing NYSDEC (Attention: Chief Permit Administrator) the individual members of the Executive Committee, and the CW Corporation as soon as practicable of the commencement of any litigation seeking to invalidate one or more program contracts. The

purpose of the notice is to provide the Parties at the earliest possible point in the litigation an opportunity to discuss such dispute. Additionally, the City will keep such parties advised of the status of the litigation.

(ii) If the conditions set forth in paragraphs (a) or (b) are met, the party to whom the City would otherwise have owed the missed payment ("Contracting Party") may notify the City, the Executive Committee, and NYSDEC in writing that the condition of this permit requiring a valid and enforceable program contract has been violated and that thereafter the City missed a payment under such contract, and that the City has not cured the failure to make such missed payment. The City shall have 10 days from its receipt of the notice to respond in writing to the Contracting Party, the Executive Committee and NYSDEC. If the City agrees with the notice or does not respond within 10 days, the City's permit shall be restricted without further proceedings and the City will not acquire title to land or Watershed Conservation Easements on land under this permit. If the City disputes the notice, NYSDEC shall have 15 days from its receipt of the City's response to determine, after consulting with the City, Executive Committee and Contracting Party, whether the condition requiring a valid and enforceable program contract has been violated and whether thereafter the City has missed a payment under such contract and whether the City has not cured the failure to make such missed payment. If NYSDEC determines that these criteria exist, it shall notify the City, the Executive Committee and the Contracting party of its determination within 5 days and the City will not acquire title to land or Watershed Conservation Easements on land under this permit.

(iii) If the water supply permit has been Restricted pursuant to subparagraph (d)(ii) above, and the City believes it has met the conditions set forth in paragraph (c) above so that the Restrictions should be lifted, the City may notify the Executive Committee, NYSDEC and the Contracting Party in writing. The Contracting Party shall have 10 days from its receipt of the City's notice to respond in writing to the City, the Executive Committee and NYSDEC. If the Contracting Party agrees with the City's notice or does not respond within 10 days, the City may resume land acquisition without further proceedings. If the Contracting Party disputes the notice, NYSDEC shall have 15 days from its receipt of the Contracting Party's response to determine, after consulting with the City, Executive Committee and Contracting Party, whether the missed payments have been paid with interest at the applicable rate. If NYSDEC determines that such missed payments have been paid with interest, it shall notify the City, the Executive Committee and the Contracting Party of its determination in writing within 5 days, and the City may thereafter resume land acquisition under this permit.

27. Primacy Agency Determination. The Primacy Agency has regulatory authority under the federal Safe Drinking Water Act and Surface Water Treatment Rule to review and approve any request by the City for a filtration waiver for the Catskill and Delaware portions of the Watershed and to incorporate and enforce conditions to any such Filtration Avoidance Determination it may issue. The Primacy Agency's authority is undiminished by this Water Supply Permit. If the Primacy Agency determines, as part of its review and approval process for such a request that the Natural Features Criteria as contained in Special Condition 9 and/or acquisition exclusions (hamlet or village designations) contained in SC 10 are having or have had a detrimental impact on the ability of the City to protect water quality by unduly restricting the acquisition of land in fee and Watershed Conservation Easements, the Primacy Agency may notify NYSDEC in writing (with copies to the MOA signatories and others upon request) to request the Natural Features Criteria be modified through the formal modification process as a new permit application as set forth in 6 NYCRR621.

28. Notices and Submittals. Except to the extent that any other paragraph specifically requires or authorizes a different form of notice, any notice required or permitted to be given hereunder shall be in writing, and shall be delivered by certified mail, postage prepaid, or by hand, or by overnight courier, or by telecopy confirmed by any of the previous methods, addressed to the receiving party at its address as shown on Exhibit 15 or at such

other or further address as the receiving party shall provide to the other parties in writing from time to time. If any organizations which are to receive any notice, material or information from the City under the terms of this permit are not established or cease to exist, such notice, material or information shall be submitted by the City to NYSDEC.

29. Riparian Buffers Program.

a. The City shall allocate initially Five Million Dollars ($5,000,000) of the LAP funds for a program for acquiring Riparian Buffers -in easement or fee as part of a Riparian Buffers Program (RBP) which shall be implemented by November 1, 2014, and run for no less than 3 years thereafter. The City shall cause to be completed the Riparian Buffer Program Development Initiative (PDI Report) Report by May 1, 2013 and a copy provided to NYSDEC.

b. The goals, acquisition criteria, procedures (including implementing agency), and evaluation criteria for the RBP will be developed into a Report (PDI Report) with full City participation through an intergovernmental cooperative effort (RBP Program Development Initiative [PDI) between the City, Coalition of Watershed Towns (CWT), [the Town of Hunter and Greene Land Trust] and the Catskill Center for Conservation and Development (CCCD) (lead implementing organization) funded by a grant from the Catskill Watershed Corporation (CWC) Local Technical Assistance Program ("LTAP Grant") or, if for any reason the lead implementing organization fails to develop the PDI Report, the City, in either event with the input of a consultative working group including but not limited to NYCDEP, NYSDEC, NYSDOH, CWC, CWT, Delaware County, Greene County, Schoharie County, NRDC, Riverkeeper and NYPIRG.

c. The City shall submit to NYSDEC a written recommendation regarding the implementation of the Program no less than 3 months before the implementation deadline in paragraph a. of this special condition. If the City's recommendation identifies a need to modify this permit then such recommendation shall be accompanied by a permit modification application. NYSDEC will, after consultation with NYSDOH, NYCDEP, and other agencies or local governments, make a written determination on whether or not it should be implemented and/or expanded beyond the Schoharie Reservoir Basin. Such written determination shall include addressing NYCDEP recommendations.

d. Pursuant to Special Condition 7 above RBP acquisitions in fee or easement shall be subject only to the eligibility criteria of surface water features in Special Condition 9 Natural Features Criteria and the acquisition excluded areas (hamlet designations) in Special Condition 10. The acquisition exclusion areas (hamlets) may be waived in individual municipalities by the town or village boards by resolution which shall cover the Riparian Buffer Program and the specific parcels described and covered by such program.

e. The RBP will be implemented in conjunction with one or more Stream Management Plans developed under the City's Stream Management Program, and will be carried out in partnership with one or more land trusts which shall be bound by contract to the City to implement and comply with the provisions of this permit. Consistent with the PDI Report, the land trust(s) will be responsible for coordinating with NYCDEP on tasks that may include but are not limited to: landowner outreach and contact, establishing eligibility and criteria; drafting legal documents;
coordinating with NYCDEP to minimize multiple program solicitations; obtaining local approval to pursue acquisitions under the RBP that do not comply with the terms and conditions otherwise applicable to the LAP pursuant to this Permit; ordering appraisals and making purchase offers; acquiring eligible property interests; managing the Local Consultation process; identifying and implementing management practices linked to the goals of riparian buffer protection; stewarding, administering, monitoring, and enforcing the terms of riparian buffer easements or fee acquisitions; and allowing for public access on land acquired in fee simple where applicable. In the event a qualified land trust is not found then the City shall fully implement the program itself.

f. An evaluation report on the effectiveness of the RBP meeting the requirements of this permit and Filtration Avoidance Determination as well as the goals and evaluation criteria to emerge from the PDI, including recommendations on any proposed changes, if necessary, to improve the program, shall be submitted by NYCDEP to NYSDEC within 6 months before the end of the initial 3 year program period in paragraph a. of this special condition. NYSDEC will evaluate

this program and, after consultation with NYSDOH, NYCDEP, as well as other agencies or local governments, make a written determination on whether or not it should be continued and/or expanded beyond the Schoharie Reservoir Basin. Such written determination shall include addressing NYCDEP recommendations.

30. Revocable Permits for Use of Watershed Property Owned In Fee by NYCDEP.
The City shall amend its revocable permit regulation Title 15, Chapter 17 (Issuance of Temporary Permits for the Occupation of City Property), Section 17-06 (Fees and Charges) of the Rules of the City of New York (RCNY) permit fee schedule to provide for a waiver or reduction for certain municipal and recreational uses.

31. Watershed Forest Conservation Easement Program.

a. The City shall develop and implement a Watershed Forest Conservation Easement Program within 12 months from the Effective Date of the permit. The Watershed Forest Conservation Easement Program shall be implemented by the City and through WAC or another qualified local and/or regional land trust or by the City on its own. This program shall include the acquisition of Watershed Conservation Easements on eligible lands. The City shall initially commit Six Million Dollars ($6,000,000) to support this program. Eligible lands shall include the following:

i. Land enrolled in WAC's Forest Management Program for which an Individual Landowner Forest Management Plan has been developed; or
ii. Land enrolled in NYSDEC's Forest Stewardship Program or Section 480A Forest Tax Law for which an Individual Landowner Forest Management Plan has been developed; or
iii. Other land important for watershed, water quality and/or forestry protection.

b. This program shall be implemented for an initial period of (5) five years. NYCDEP shall submit a written evaluation on the effectiveness of the Watershed Forest Conservation Easement Program in meeting the requirements of this permit and Filtration Avoidance Determination and include recommendations concerning continuation and funding of this Program as well as on any proposed changes, if necessary, to improve the Program. This written evaluation is to be submitted to NYSDEC and NYSDOH (4) four years and (3) three months from the date on which the Watershed Forest Conservation Easement Program commences. NYSDEC will evaluate this Program and, after consultation with NYSDOH, NYCDEP, as well as other agencies or local governments, make a written determination on whether or not it should be continued and/or expanded. Such written determination shall include addressing the recommendations of NYCDEP. If the Program is implemented by WAC or another qualified local and/or regional land trust and a determination is made not to continue the program, all unused funds, including earnings thereon, shall be returned to the City and shall remain available for land acquisition.

32. Forest Management Plan. The City is preparing a forest management plan for its watershed lands, pursuant to Section 4.3 of the 2007 FAD, which is due in November 2011. The plan will include a comprehensive forestry inventory on all lands owned by the City. The NYCDEP Forest Management Plan will include a discussion of fire risk management. The City will conduct a consultation process commencing no less than three months prior to the completion of the plan that will at a minimum include NYSDEC and Delaware County, as well as other Counties and any other interested stakeholders, to cover fire risk management aspects of the plan, forestry practices (including those of NYSDEC) and forest health. The plan shall contain an implementation schedule that shall go into effect once the plan has been submitted to and accepted by the Primacy Agency. The implementation schedule shall also provide for updating the plan 7 years from the Effective Date of the Permit and every 10 years thereafter when

requested in writing by either the Primacy Agency or NYSDEC. Such plan updates shall be in accordance with the provisions and process specified in this special condition.

33. **Enhanced Land Trust Program.** The City shall develop and implement a program to collaborate with land trusts to acquire properties including but not limited to land with habitable dwellings, in accordance with the provisions of Special Condition 8. Through this Program, in municipalities that have adopted resolutions allowing one or more specified land trusts to work with NYCDEP on acquisitions under this Program, land trusts may acquire property on behalf of the City in accordance with this permit. The City shall continue to participate in the Land Trust Working Group, with representatives of land trusts, the Coalition of Watershed Towns, CWC, and Delaware County, which has developed a number of terms and conditions for the Enhanced Land Trust Program and which will continue to provide guidance as the Program is implemented.

34. **East of Hudson Non-Point Source Stormwater Program.**

a. In order to foster continued partnership and cooperation in the protection of the City's water supply watershed, the City shall provide a total of Fifteen Million, Five Hundred Thousand Dollars ($15,500,000) ("EOH NPS Fund") to the EOH Watershed Communities to help fund the first five year plan for the stormwater retrofit program to be implemented under the heightened requirements for phosphorus reduction applicable to the EOH Watershed Communities. The City shall make Ten Million Dollars ($10,000,000) of the EOH NPS Fund available within 12 months of the Effective Date of this Permit. Provided that no East of Hudson Community brings a legal challenge to this Special Condition of this Permit within 120 days of the Effective Date of this Permit, the City shall make the remaining Five Million, Five Hundred Thousand Dollars ($5,500,000) of the EOH NPS Fund available within 6 months of receiving written notification that the first Ten Million Dollars ($10,000,000) have been committed via binding agreements.

b. Up to Two Hundred Thousand Dollars ($200,000) of the EOH NPS Fund will be available to the EOH Watershed Communities to prepare a report analyzing the potential opportunities for phosphorus reduction in stormwater runoff on lands owned by the City in the EOH Watershed, including a calculation of the total possible phosphorus reduction, the drainage area captured and treated, the estimated cost of such reduction, a description of the retrofit projects on City lands and a timetable for possible implementation of such projects.

c. Up to Fifty Thousand Dollars ($50,000) of the EOH NPS Fund will be available for the establishment of a Regional Stormwater Entity to administer and coordinate compliance with the MS4 Program.

d. On or before December 31, 2013, the City shall enter into discussions with the NYSDEC and the EOH Watershed Communities regarding requirements for future EOH phosphorus reductions in stormwater as required under the heightened requirements for phosphorus reduction applicable to the EOH Watershed Communities. In these discussions, the City will consider, among other things, any projects on City lands in the EOH Watershed that would be appropriate for the EOH Communities' Stormwater Management Programs identified in the report prepared pursuant to Paragraph b. above. The City shall make lands available for such projects so long as it determines that the projects will not pose a threat to water quality or NYCDEP operations related to water supply.

e. On or before December 31, 2014, if the City agrees to provide additional assistance to the EOH Communities to achieve the heightened requirements for phosphorus reductions applicable in the EOH Watershed, including but not limited to additional funding, the City shall request that this special condition be modified to incorporate such commitments. If City lands are identified as appropriate for stormwater management projects pursuant to Paragraphs b. and d. above, the City's making such lands

available shall constitute all or a portion of any additional assistance it agrees to provide. Any such required amendment of this special condition shall not require or constitute a reopening of any other provision of this permit. For the duration of this Permit, any City agreement to provide additional funding for the East of Hudson Non-Point Source Stormwater Program as described in this subparagraph shall be incorporated herein and made enforceable conditions of this Permit.

f. Consistent with the terms of the 2007 FAD, the City shall make available Four Million, Five Hundred Thousand Dollars ($4,500,000) to the EOH Watershed Communities to help fund the first five year plan for the stormwater retrofit program implemented under the heightened requirements for phosphorus reduction in stormwater applicable to the EOH Watershed Communities in the Croton Falls and Cross River basins within the East of Hudson Watershed and any upstream/hydrologically connected basins and shall be made available on the same expedited basis as the funding set forth in subsection "a" hereof.

g. For the duration of this Permit, the City's commitment to fund the heightened requirements of the East of Hudson Non-Point Source Program (which encompasses the stormwater retrofit program and related projects) pursuant to any subsequent FAD or FAD amendment shall be incorporated herein and made enforceable conditions of this Permit. Consistent with the terms of the 2007 FAD, and as set forth in the MS4 SPDES General Permit No. GP-0-10-002 issued by NYSDEC on April 29, 2010 ("the MS4 Permit") (which contains the NYSDEC TMDL reduction requirements, including the heightened requirements applicable to the EOH Watershed Communities), the MS4 requirements are requirements of federal and State law. As stated in the MS4 permit, meeting those requirements is the responsibility of the EOH Watershed Communities.

h. On or before June 30, 2011, the City shall work with the NYSDEC and the EOH Watershed Communities to develop program rules that assure that the funds provided by the City pursuant to this special condition will be easily accessible by the EOH Watershed Communities and will be fully allocated for the implementation of the pending five-year plans for the stormwater retrofit program to be implemented under the heightened requirements for phosphorus reduction applicable to the EOH Watershed Communities, consistent with all applicable legal requirements and the City's fiduciary obligations.

Exhibits:[Corresponding Special Condition]

1. Map of Catskill and Delaware Water Supply and Watershed and Map of Croton Water Supply and Watershed [4c]
2. Catskill and Delaware Watershed Priority Areas West-of-Hudson [6.a]
3. Catskill, Delaware and Croton Watershed Priority Areas East-of-Hudson [6.a, 6.b]
4. List of Tax Parcels in West of Hudson Hamlet Areas [10.a.ii]
5. Maps of West of Hudson Hamlet Areas [10.a.ii]
6. Defined West of Hudson Roads Eligible for Land Acquisition Exemption [10.a.iv]
7. 2007 Solicitation Schedule [14]
8. 2008-2010 Solicitation Plan [14]
9. Model Conservation Easement to be Held by NYSDEC on City Fee Lands [16.c]
10. Model WAC Conservation Easement [16.d.2.b]
11. Draft Legislation to Amend Article 5, Title 4-a of the RPTL for Taxation of Watershed Conservation Easements [19]
12. City's Water Conservation Program dated December 2006 [23]
13. Cluster Development Resolutions [10.h]
14. Watershed Memorandum of Agreement [25 & 26] [incorporated by reference]
15. Notice Addresses

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4
65561 State Highway 10, Suite 1, Stamford, New York 12167-9503
Phone: (607) 652-7741 **FAX:** (607) 652-3672
Website: www.dec.state.ny.us

Peter M. Iwanowicz
Acting Commissioner

December 24, 2010

Honorable Caswell F. Holloway
Commissioner
New York City Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Re: DEC ID# 0-9999-00051/00001
Water Supply Permit WSA#11,352
NYC Watershed Land Acquisition Program

Dear Commissioner Holloway:

Please find enclosed a Water Supply Permit issued pursuant to Article 15, Title 15 and Article 70 (Uniform Procedures) of the Environmental Conservation Law (ECL), authorizing land and easement acquisition within New York City's water supply watersheds.

The Department appreciates the cooperative efforts of your agency to fully address all concerns raised and work to achieve the agreement among the many parties to this process. We believe the outcome is protective of this vital water supply for 9 million of New York State's inhabitants while being fair and equitable to the watershed communities.

If you have any questions, please feel free to contact Martha A. Bellinger, Project Manager/Environmental Analyst of our Region 4 Division of Environmental Permits Stamford Office, or myself.

Sincerely Yours,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

Permit Mods Listed Within

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4
65561 State Highway 10, Suite 1, Stamford, New York 12167-9503
Phone: (607) 652-7741 **FAX:** (607) 652-3672
Website: www.dec.state.ny.us

Joseph Martens
Commissioner

May 27, 2011

Honorable Caswell F. Holloway
Commissioner
New York City Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Re: DEC ID# 0-9999-00051/00001
Water Supply Permit WSA#11,352
NYC Watershed Land Acquisition Program

Dear Commissioner Holloway:

As per the April 19, 2011 request to modify the above referenced Water Supply Permit, the permit is hereby modified in regard to Exhibit 10.

Specifically, section 24.c of Exhibit 10 is modified to reflect new language and is attached as a revised Exhibit 10 hereto and replaces the prior Exhibit 10 which was part of the permit issued December 24, 2010. All other conditions of the permit remain in effect. Please attach this modified document and letter to the permit.

If you have any questions, please feel free to contact Martha A. Bellinger, Project Manager/Environmental Analyst of our Region 4 Division of Environmental Permits Stamford Office, or myself.

Sincerely,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4
65561 State Highway 10, Suite 1, Stamford, New York 12167-9503
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Website: www.dec.state.ny.us

Joseph Martens
Commissioner

June 20, 2011

Honorable Caswell F. Holloway
Commissioner
New York City Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Re: DEC ID# 0-9999-00051/00001
Water Supply Permit WSA#11,352
NYC Watershed Land Acquisition Program

Dear Commissioner Holloway:

The Department hereby modifies the above referenced Water Supply Permit in regard to Enhanced Land Trusts.

Specifically, Special Condition 8.c is modified to extend the time available for local communities to adopt a resolution for such program from 180 day to 360 days from permit issuance on 12/24/2010. This change applies to 2011 only. The revision is incorporated into the permit which attached in its entirety hereto. All other conditions of the permit remain in effect. Please attach this modified document and letter to the permit.

If you have any questions, please feel free to contact Martha A. Bellinger, Project Manager/Environmental Analyst of our Region 4 Division of Environmental Permits Stamford Office, or myself.

Sincerely,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

cc: List attached

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4
65561 State Highway 10, Suite 1, Stamford, New York 12167-9503
Phone: (607) 652-7741 **FAX:** (607) 652-3672
Website: www.dec.state.ny.us

Joseph Martens
Commissioner

July 15, 2011

Caswell F. Holloway
Commissioner
New York City Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Re: DEC ID# 0-9999-00051/00001
Water Supply Permit WSA#11,352
NYC Watershed Land Acquisition Program

Dear Commissioner Holloway,

In response to NYCDEP's request of June 27, 2011 for a 60 day submittal extension the Department hereby modifies the above referenced Water Supply Permit in regard to Special Condition 23 Water Conservation Program ("Program") Updates and Approval.

Specifically, Special Condition 23 is modified to change the Program update submittal deadline from six months (June 30, 2011) to four months (August 31, 2011) before the end of the five year Program period (December 31, 2011). The revision putting this new deadline into effect is incorporated into the permit which is attached in its entirety hereto. All other conditions of the permit remain in effect.

If you have any questions, please feel free to contact Martha A. Bellinger, Project Manager/Environmental Analyst of our Region 4 Division of Environmental Permits Stamford Office, or myself.

Sincerely Yours,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

cc: List attached

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4
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Phone: (607) 652-7741 **FAX:** (607) 652-3672
Website: www.dec.state.ny.us

Joseph Martens
Commissioner

February 24, 2012

Honorable Carter H. Strickland, Jr.
Commissioner
New York City Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Re: DEC ID# 0-9999-00051/00001
Water Supply Permit WSA#11,352
NYC Watershed Land Acquisition Program

Dear Commissioner Strickland:

The Department hereby modifies the above referenced Water Supply Permit in regard to the Riparian Buffers Program and the Vacant Lands Defined (Enhanced Land Trust Program).

Specifically, Special Conditions 29a, 29b and 8(c). The revisions are incorporated into the permit which is attached in its entirety hereto. All other conditions of the permit remain in effect. Please attach this modified document and letter to the permit.

If you have any questions, please feel free to contact Martha A. Bellinger, Project Manager/Environmental Analyst of our Region 4 Division of Environmental Permits Stamford Office, or myself.

Sincerely,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

cc: List attached

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4
65561 State Highway 10, Suite 1, Stamford, New York 12167-9503
Phone: (607) 652-7741 **FAX:** (607) 652-3672
Website: www.dec.state.ny.us

Joseph Martens
Commissioner

January 17, 2014

Honorable Carter H. Strickland, Jr.
Commissioner
New York City Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Re: DEC ID# 0-9999-00051/00001
Water Supply Permit WSA#11,352
NYC Watershed Land Acquisition Program

Dear Commissioner Strickland:

The Department hereby modifies the above referenced Water Supply Permit in regard to the Eligibility and Authorization for Acquisition.

Specifically, Special Condition 7(b) was modified to add Fair Market Value determination wording. The revisions are incorporated into page 8 of the permit which is attached in its entirety hereto. All other conditions of the permit remain in effect. Please attach this modified document and letter to the permit.

If you have any questions, please feel free to contact Martha A. Bellinger, Project Manager/Environmental Analyst of our Region 4 Division of Environmental Permits Stamford Office, or myself.

Sincerely,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

cc: List attached

Cc: A. Rosa
A. White
D. Frazier
D. Ruzow
G. Rodenhausen
J. Baker
J. Grossman
K. Young
M. Sterthouse
N. Franzese
T. Cox
W. Harding
B. Clarke
C. Spreitzer
C. Noteboom
C. Breen
C. Cashman
D. Tobias
E. Goldstein
F. Huneke
H. Meltzer
J. Tierney
J. Graf
J. Nye
K. Hudson
L. Taylor
M. Matsil
M. Brand
M. Murphy
M. VonWergers
M. Schwab
M. Holt
M. Griffen
P. Young
P. Gallay
R. Williams
R. Levine
R. Sokol
P. Sweeney
T. Snow
G. Kelly
C. Stuendel
D. Warne

NEW YORK CITY WATERSHED MEMORANDUM OF AGREEMENT

MEMORANDUM OF AGREEMENT, dated as of January 21, 1997, agreed to and executed by and among the following parties (collectively, the "Parties" and individually a "Party"):

The City of New York, a municipal corporation with its principal office at City Hall, New York, New York 10007 (the "City");

The State of New York, with its principal office at The Capitol, Albany, New York 12224 (the "State");

The United States Environmental Protection Agency, an executive agency of the United States, organized and existing under the laws of the United States, with its principal office at 401 M Street, S.W., Washington, D.C. 20460 ("USEPA");

The Coalition of Watershed Towns, an inter-municipal body composed of the municipalities located wholly or partially within that portion of the New York City Watershed that lies west of the Hudson River, which have duly entered into a cooperative agreement pursuant to Section 119-o of the New York General Municipal Law, having its principal office at Delhi, New York (the "Coalition");

The Catskill Watershed Corporation, an independent locally-based and locally administered not-for-profit corporation, organized and existing under section 1411 of the New York State Not-For-Profit Corporation Law and having its principal office in Margaretville, New York ("CW Corporation")

The County of Putnam, New York, a municipal corporation with its principal office at 40 Gleneida Avenue, Carmel, New York 10512 ("Putnam County");

The County of Westchester, New York, a municipal corporation with its principal office at the Michaelian Office Building, 148 Martine Avenue, White Plains, New York 10601 ("Westchester County");

Each of the counties, towns and villages identified in Attachment A appended hereto and made a part hereof, constituting municipal corporations and having their principal offices at the respective addresses shown for each in Attachment XX (collectively, the "Municipal Parties" and individually a "Municipal Party"); and

Each of the environmental organizations identified in Attachment B appended hereto and made a part hereof, constituting not-for-profit corporations and having their principal offices at the respective addresses shown for each in Attachment XX (collectively, the "Environmental Parties" and individually an "Environmental Party").

WITNESSETH:

1. WHEREAS, the Parties, being the State of New York, the City of New York, the Coalition of Watershed Towns (whose membership is set forth in Attachment E), the CW Corporation, the United States Environmental Protection Agency, Westchester County, Putnam County, the Municipal Parties, and the Environmental Parties recognize that an adequate supply of clean and healthful drinking water is vital to the health and social and economic well being of the People of the State of New York; and

2. WHEREAS, it is the intention of the Parties to assure the continued adequate supply of exceptional quality drinking water for the eight million residents of the City of New York and the one million New York State residents outside the City who depend upon the New York City drinking water supply system; and

3. WHEREAS, the New York City water supply system is a monumental hydraulic and civil engineering achievement, consisting of an interconnected series of reservoirs, controlled lakes, and several hundred miles of underground tunnels and aqueducts that collect and transport approximately 1.5 billion gallons of water daily to a customer distribution system containing thousands of miles of water mains; and

4. WHEREAS, the primary sources of water for the New York City water supply system originate in portions of the Catskill Mountain Region and the Hudson River Valley, commonly referred to as the watershed of the New York City water supply and its sources (the "Watershed"), which span over 1,900 square miles and portions of eight counties, sixty towns, and twelve villages; and

5. WHEREAS, the Parties agree that the New York City water supply is an extremely valuable natural resource that must be protected in a comprehensive manner; and

6. WHEREAS, the Parties recognize that the goals of drinking water protection and economic vitality within Watershed communities are not inconsistent and it is the intention of the Parties to enter into a new era of partnership to cooperate in the development and implementation of a Watershed protection program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities; and

7. WHEREAS, after extensive negotiations the Parties now enter into legally enforceable commitments, as set forth in this Agreement, on issues related to the Watershed protection program, including the Watershed rules and regulations, the land acquisition program, and Watershed partnership initiatives; and

8. WHEREAS, the Parties agree that the City land acquisition program, as described below in Article II, is a purely voluntary program which provides the opportunity to the Watershed communities to review parcels and to provide comments to the City on

potential acquisitions, and that Towns and Villages may exempt areas of their communities from purchase under the City's land acquisition program; and

9. WHEREAS, the Parties agree that the City's land acquisition program, the City's Watershed Regulations, and the other programs and conditions contained in this Agreement, when implemented in conjunction with one another, would allow existing development to continue and future growth to occur in a manner that is consistent with the existing community character and planning goals of each of the Watershed communities; and that the City's land acquisition goals insure that the availability of developable land in the Watershed will remain sufficient to accommodate projected growth without anticipated adverse effects on water quality and without substantially changing future population patterns in the Watershed communities; and

10. WHEREAS, the City is currently under a stipulation with the New York State Department of Health which requires the City to design and construct a filtration facility for the Croton System; and

11. WHEREAS, the City has applied for and received an interim filtration avoidance determination from USEPA which declares that the source waters of the Catskill and Delaware Watershed may continue to be used as a public drinking water supply without filtration provided that the City implement measures to assure the continued protection of water quality and the objective criteria of the Surface Water Treatment Rule continue to be met; and

12. WHEREAS, the Parties have agreed to act in good faith and to take all necessary and appropriate actions, in cooperation with one another, to effect the purposes of this Agreement.

NOW, THEREFORE, in consideration of the promises and of the mutual covenants and agreements herein set forth, and of the undertakings of each party to the other parties, the Parties do hereby promise and agree as follows:

ARTICLE I DEFINITIONS

The following terms, as used in this Agreement, shall have the meaning set forth below:

13. "CAPA" means the City Administrative Procedure Act, chapter 45 of the New York City Charter.

14. "Catskill and Delaware System" means the Ashokan, Cannonsville, Kensico, Neversink, Pepacton, Rondout, Schoharie, and West Branch/Boyd's Corner Reservoirs, and the tunnels, dams and aqueducts which are part of and connect the above listed reservoirs.

15. "Catskill and Delaware Watershed" means the drainage basins of the Catskill and Delaware System. A map of this watershed is set forth in Attachment C.

16. "City" means the City of New York, a municipal corporation with its principal office at City Hall, New York, New York 10007.

17. "Coalition of Watershed Towns" or "Coalition" means the inter-municipal body composed of the municipalities located wholly or partially within that portion of the New York City Watershed that lies west of the Hudson River, which have duly entered into a cooperative agreement, pursuant to §119-o of the New York General Municipal Law, having its principal office at Delhi, New York. A list of the members of the Coalition is set forth in Attachment E.

18. "Croton System" means the Amawalk, Bog Brook, Cross River, Croton Falls, Diverting, East Branch, Middle Branch, Muscoot, New Croton, and Titicus Reservoirs; Kirk Lake, Lake Gleneida and Lake Gilead ("controlled lakes"); and the tunnels, dams and aqueducts which are part of and connect the above listed reservoirs and controlled lakes.

19. "Croton Watershed" means the drainage basins of the Croton System. A map of this watershed is set forth in Attachment D.

20. "December 1993 Filtration Avoidance Determination" or "December 1993 FAD" means the written determination of the United States Environmental Protection Agency, dated December 30, 1993 and signed by Acting Region II Administrator William J. Muszynski, entitled Surface Water Treatment Rule Determination New York City's Catskill and Delaware Water Supplies, declaring that the source waters of the Catskill and Delaware Watershed could continue to be used as a public drinking water supply without filtration provided that the City implement measures to assure the continued protection of water quality and the objective criteria of the Surface Water Treatment Rule continue to be met.

21. "Drainage Basin" means, for the purpose of defining the boundaries of the drainage basin of each reservoir or controlled lake, the area of land that drains surface water into, or into tributaries of, a reservoir or controlled lake of the Catskill and Delaware or Croton Systems.

22. "East of Hudson" or "EOH" means the drainage basins of the specific reservoirs and controlled lakes of the New York City Watershed located east of the Hudson River in the New York counties of Dutchess, Putnam, and Westchester.

23. "East of Hudson Communities" or "EOH Communities" means the municipal corporations (as defined by § 66(2) of the New York General Construction Law, but not including school districts) which are located wholly or partially within the EOH portion of the Watershed. The EOH Communities are set forth below in Attachment G.

24. "ECL" means the New York Environmental Conservation Law.

25. "Effective Date of Agreement" shall be January 21, 1997.

26. "Environmental Parties" means the not-for-profit corporations listed in Attachment B.

27. "GOL" means the New York General Obligations Law.

28. "Governor" means the Governor of the State of New York.

29. "Hamlet" or "Hamlets" means the population centers listed in Attachment R with the boundaries to be established by the Towns pursuant to the procedure set forth in paragraph 68 of this Agreement.

30. "Mayor" means the Mayor of the City of New York.

31. "NYCDEP" means the New York City Department of Environmental Protection, a mayoral agency of the City of New York organized and existing pursuant to the New York City Charter.

32. "NYCDOH" means the New York City Department of Health, a mayoral agency of the City of New York organized and existing pursuant to the New York City Charter.

33. "NYSDEC" means the New York State Department of Environmental Conservation, an executive agency of the State of New York organized and existing pursuant to the New York Environmental Conservation Law.

34. "NYSDOH" means the New York State Department of Health, an executive agency of the State of New York organized and existing pursuant to the New York Public Health Law.

35. "NYSEFC" means the New York State Environmental Facilities Corporation, a public benefit corporation organized pursuant to New York Public Authorities Law § 1280 et seq.

36. "PHL" means the New York Public Health Law.

37. "Primacy Agency" means the United States Environmental Protection Agency or the New York State Department of Health, whichever has primary enforcement responsibility for implementation of the federal Surface Water Treatment Rule (40 CFR § 141.70 et seq.) pursuant to §1413 of the federal Safe Drinking Water Act (42 U.S.C. § 300g-2).

38. "RPTL" means the New York State Real Property Tax Law.

39. "SAPA" means the New York State Administrative Procedure Act and regulations promulgated pursuant thereto (9 NYCRR Part 260).

40. "SEQR" means the New York State Environmental Quality Review Act (ECL Article 8) and regulations promulgated pursuant thereto (6 NYCRR Part 617).

41. "Total Maximum Daily Loads" or "TMDLs" means the sum of the wasteload allocations for point sources plus the load allocations for nonpoint sources plus a margin of safety to account for uncertainties in the development process. (From the USEPA guidance document, "Guidance for Water Quality Based Decisions; The TMDL Process - April 1991.")

42. "Uninhabitable Dwelling" means a dwelling which is deteriorated to the extent that: either the cost of rehabilitation which would prevent the continued deterioration of primary components will exceed sixty percent (60%) of the fair market value of the structure, or rehabilitation will not prevent the continued deterioration of primary components of the dwelling which will result in unsafe living conditions; and it has not been occupied for one year immediately prior to the signing of an option. The fair market value of the existing dwelling shall be as established by the City's appraisal. As used herein, the term "primary components of a dwelling" shall include: foundations, exterior wall framing, rafters, roof decks, roof coverings, porches, floor joists, sills, headers, electrical systems, heating systems, plumbing systems and septic systems.

43. "UPA" means the Uniform Procedures Act (ECL Article 70) and the regulations promulgated pursuant thereto (6 NYCRR Part 621).

44. "USEPA" means the United States Environmental Protection Agency, an executive agency of the United States, organized and existing under the laws of the United States, with its principal office at 401 M Street, S.W., Washington, D.C. 20460.

45. "Watershed" or "New York City Watershed" means the drainage basins of the Catskill and Delaware and Croton Systems. Maps of the Watershed are set forth in Attachments C and D.

46. "Watershed Agricultural Council" or "WAC" means the Watershed Agricultural Council for the New York City Watershed, Inc., a not-for-profit organization with its principal place of business at NYS Route 10, Walton, New York 13856.

47. "Watershed Agricultural Easement" means a Watershed Conservation Easement, as defined below in paragraph 48, on real property in active agricultural production or designated for future agricultural production. Such easements shall allow agricultural production.

48. "Watershed Conservation Easement" means an easement, covenant, restriction or other interest in real property, created under and subject to the provisions of Article 49 of the New York Environmental Conservation Law, which limits or restricts development,

management or use of such real property for the purpose of maintaining the open space or natural condition or character of the real property in a manner consistent with the protection of water quality generally and the New York City drinking water supply specifically.

49. "Watershed Regulations" means the watershed rules and regulations applicable to the New York City Watershed which were submitted by New York City Department of Environmental Protection to the New York State Department of Health for approval pursuant to Public Health Law Section 1100 consistent with this Agreement and which are appended hereto as Attachment W.

50. "Water Supply System" means the system of reservoirs, controlled lakes, structures and facilities such as dams, tunnels, and aqueducts which collect source water for the New York City drinking water supply and transport it to the City of New York.

51. "West of Hudson" or "WOH" means the drainage basins of the specific reservoirs of the New York City Watershed located west of the Hudson River in the New York counties of Greene, Delaware, Ulster, Schoharie, and Sullivan.

52. "West of Hudson Communities" or "WOH Communities" means the municipal corporations (as defined by § 66(2) of the New York General Construction Law, but not including school districts) which are located wholly or partially within the WOH portion of the Watershed. The WOH communities are set forth below in Attachment F.

53. "WWTP" means wastewater treatment plant.

NEW YORK CITY WATERSHED MEMORANDUM OF AGREEMENT

January 21, 1997

ARTICLE II NYC WATERSHED LAND ACQUISITION PROGRAM

74. City Financial Commitments for Land Acquisition

75. Land Acquisition Segregated Account.

76. The State's Croton Land Acquisition Program.

77. Watershed Agricultural Easements Program Overview.

78. Watershed Agricultural Easements Program.

79. Real Property Taxes: Newly Acquired in Fee Under the City's Land Acquisition Program.

80. Real Property Taxes: Watershed Conservation Easements.

81. Limitation on Transfers to Tax Exempt Entities.

82. Land Held in Perpetuity for Watershed Protection

83. Conservation Easements Held in Perpetuity for Watershed Protection

84. Acquisition Reports.

85. Permit Conditions.

86. Funding of Permit Programs in City Budget.

ARTICLE II NYC WATERSHED LAND ACQUISITION PROGRAM

54. Overview. This Article sets forth the elements of the New York City land acquisition program in the Watershed that will be implemented by the City. The program defined by these elements satisfies federal and New York State filtration avoidance criteria applicable to the Catskill and Delaware System. It also provides needed additional protection to the Croton System. Unless a different meaning is clearly intended by a particular provision of this Article, the term "land" (especially used in the term "land acquisition") includes fee title in real property and/or Watershed Conservation Easements on real property.

55. Prior Permit Application Discontinued. The City has withdrawn its application for a water supply permit, which was the subject of the administrative adjudicatory proceeding entitled In the Matter of the Application of New York City Department of Environmental Protection, NYSDEC Project No. 3-9903-00023/00001-9; WSA No. 9010.

56. New Permit Application. NYCDEP has submitted an application to NYSDEC for a water supply permit for the City land acquisition program set forth in this Article to acquire land in the Catskill and Delaware Watershed and in the Croton Watershed for watershed protection purposes and in furtherance of the programs set forth in the December 1993 Filtration Avoidance Determination and the new Filtration Avoidance Determination referred to in paragraph 159.

57. Processing of New Permit Application. Consistent with SEQR and the UPA, NYSDEC determined that the NYCDEP application is complete and has issued a draft water supply permit which is appended hereto as Attachment V. The comment period on the application remained open until December 6, 1996.

58. Permit Issuance. The Parties, other than NYSDEC, consent to and agree not to oppose the issuance of a final water supply permit for a land acquisition program that is consistent with this Agreement and the draft water supply permit appended hereto as Attachment V. Should entities other than the Parties request or commence administrative or civil legal proceedings, the Parties agree to support the issuance of the water supply permit by NYSDEC that is consistent with this Agreement and the draft water supply permit appended hereto as Attachment V. Should entities other than the Parties request or commence administrative or civil legal proceedings, the Parties also agree to support one another's application for full party status to support the issuance of the water supply permit by NYSDEC that is consistent with this Agreement and the draft water supply permit appended hereto as Attachment V. Such support does not require any Party to become a party to any proceeding.

59. Limitation on Eminent Domain. The City will not acquire fee title or Watershed Conservation Easements through eminent domain for purposes of the land acquisition program set forth in this Article and the water supply permit issued pursuant to paragraph 58. Nothing in this Agreement shall act as a waiver of any rights any Party may have to challenge an application by the City for a water supply permit allowing the exercise of the City's power of eminent domain. Moreover, nothing herein shall relieve the City from obtaining any necessary permits or approvals from the State of New York or complying with SEQR prior to exercising any power of eminent domain in the future.

60. Willing Buyer/Willing Seller; Solicitation. Under the City's land acquisition program, the City will acquire fee title to, or Watershed Conservation Easements on, real property in the Watershed through a willing buyer/willing seller process only. Before beginning to solicit acquisitions in a Town or Village, the City shall notify the chief elected official of the Town or Village and appropriate county that the City is commencing solicitation. At the request of a Town or Village, the City shall make a presentation describing the process the City intends to use to solicit acquisitions. West of Hudson, the City may make a joint presentation to groups of up to three Towns and/or Villages. With the consent of the involved Towns or Villages, the City may also make a joint presentation to groups of more than three Towns and/or Villages West of Hudson, or to any number of Towns and/or Villages East of Hudson. Such presentation shall also include an indication of what land is eligible for acquisition in such Town or Village (including a map of the

Town or Village reflecting the priority areas and applicable Natural Features Criteria) and the estimated acreage that the City expects to acquire. The City may solicit landowners directly except that in areas where acquisition in fee by the City has been restricted pursuant to paragraphs 68 and 70, the City may only solicit acquisition of Watershed Conservation Easements. Further, public meetings may also be held with the consent of the chief elected official of the Town or Village. The City may also receive, and act upon, unsolicited inquiries from landowners at any time.

61. Fair Market Value. The purchase price shall reflect fair market value, as determined by an independent appraisal obtained at the direction of the City and performed by an independent, certified New York State appraiser, except that the City may acquire property at less than the fair market value at a public auction or at a directly negotiated sale from a bank, other financial institution, or taxing authority in the context of a mortgage foreclosure, tax foreclosure, or legal judgment. In determining the fair market value, the City's independent appraisers will consider information from a second appraisal, provided by the owner and made at the owner's or a third party's expense, provided the second appraisal is made by a certified New York State appraiser and was completed no earlier than one year prior to the date of the City's appraisal or the later of six (6) months after the owner received the City's appraisal or six (6) months from the Effective Date of this Agreement. Upon request, the City may extend the time period for completion of a second appraisal.

62. Duration and Schedule. The water supply permit for the City's land acquisition program shall be valid for ten (10) years and shall be renewable for an additional five (5) years upon written request from the City to NYSDEC with notice to the individual members of the Executive Committee. Additional requests for extensions may be made through an application for permit modification as provided by NYSDEC regulations. The Parties retain their full legal rights with respect to such additional requests by the City. The permit will provide that the City may acquire any parcel of land, in fee or by Watershed Conservation Easement, that is eligible for acquisition. The schedule the City currently intends to follow in carrying out its land acquisition program is set forth in Attachment H for informational purposes. The City may modify the schedule without the approval of any Party other than the Primacy Agency. The City will, however, notify all Parties of any proposed changes to the schedule. The City will solicit acquisitions drainage basin by drainage basin, commencing with the priority basins in the Catskill and Delaware Watershed in 1997, including Kensico, West Branch/Boyd's Corner, Rondout and Ashokan; and the priority basins in the Croton Watershed in 1998, including New Croton, Cross River and Croton Falls. The City may, at any time, respond to direct inquiries from property owners anywhere in the Watershed.

63. Natural Features Criteria: Catskill and Delaware Watershed.

(a) The Catskill and Delaware Watershed has been divided into Priority Areas 1A, 1B, 2, 3, and 4 by the City; 1A being the highest priority. The Catskill and Delaware Watershed priority areas are as follows: 1A (sub-basins within 60-day travel time to distribution that are near intakes), 1B (sub-basins within 60-day travel time to distribution that are not

near intakes), 2 (sub-basins within terminal reservoir basins that are not within priority areas 1A and 1B), 3 (sub-basins with identified water quality problems that are not in priority areas 1A, 1B, and 2), and 4 (all remaining sub-basins in non-terminal reservoir basins). A map of the boundaries of Priority Areas 1 (1A and 1B combined), 2, 3, and 4 is set forth in Attachment I. The boundaries of Priority Area 1A in the Cannonsville, Pepacton, Neversink, Rondout, Ashokan, West Branch, and Kensico Reservoir basins are provided in Attachments K-Q.

(b) To be eligible for acquisition, land must satisfy the following criteria ("Natural Features Criteria"):

(i) Parcels in Priority Area 1A must be at least one acre in size;

(ii) Parcels in Priority Area 1B must be at least five acres in size;

(iii) Parcels in Priority Areas 2, 3, and 4 must be at least ten acres in size and must:

(A) Be at least partially located within 1,000 feet of a reservoir: or

(B) Be at least partially located within the 100-year flood plain; or

(C) Be at least partially located within 300 feet of a watercourse, as defined in the Watershed Regulations; or

(D) Contain in whole or in part a federal jurisdiction wetland greater than five (5) acres or a NYSDEC mapped wetland; or

(E) Contain ground slopes greater than fifteen percent (15%).

(c) In any priority area, adjoining parcels, including City-owned parcels, may be aggregated to meet any minimum size requirements. Notwithstanding the above, the City may acquire parcels of any size in the West Branch/Boyd's Corner and Kensico Reservoir drainage basins. Any West of Hudson Town or Village may waive the acreage requirement in priority areas 1B, 2, 3 or 4 pursuant to the procedures set forth in paragraph 68. The foregoing Natural Features Criteria shall not apply to any parcels which are part of an Acquisition and Relocation Program administered pursuant to the Hazard Mitigation Grant Program of the Federal Disaster Assistance Act.

64. Catskill and Delaware Watershed Acquisition Goals. In the Catskill and Delaware Watershed, the 1997 Filtration Avoidance Determination issued as described in paragraph 159 ("1997 FAD") will not require the City to spend at least Two Hundred One Million Dollars ($201,000,000) to acquire at least 80,000 acres of land. Instead, the 1997 FAD will require the City to solicit, consistent with paragraph 60 above, owners of 61,750 acres of eligible land in Priority Areas 1A and 1B; 42,300 acres of eligible land in Priority Area 2; 96,000 acres of eligible land in Priority Area 3; and 155,000 acres of eligible land in Priority Area 4 for a total of 355,050 acres of eligible land. Consistent

with the conditions set forth in the protocol appended hereto as Attachment Z, the 1997 Filtration Avoidance Determination will also require that upon receipt of a positive response from a landowner to a solicitation from the City and after a field visit by the City, the City, except under certain limited situations, shall proceed through the specified series of steps, set forth in Attachment Z, to acquire an interest in such parcel if the landowner so desires.

65. Catskill and Delaware Watershed Acquisition Milestones. The 1997 FAD will require the City to annually solicit owners of the following acres of eligible land: 56,609 acres within the first year after a water supply permit is issued by NYSDEC; 51,266 acres within the second year after a water supply permit is issued by NYSDEC; 42,733 acres within the third year after a water supply permit is issued by NYSDEC; 52,846 acres within the fourth year after a water supply permit is issued by NYSDEC; 55,265 acres within the fifth year after a water supply permit is issued by NYSDEC; 48,531 acres within the sixth year after a water supply permit is issued by NYSDEC; 0 acres within the seventh year after a water supply permit is issued by NYSDEC; 47,800 acres within the eighth year after a water supply permit is issued by NYSDEC; and 0 acres within the ninth and tenth years after a water supply permit is issued by NYSDEC. Acreage will be further specified by approximation of priority acreage in each reservoir basin.

66. Land Acquisition Criteria: Croton Watershed. The Croton Watershed has been divided into Priority Areas A, B, and C; A being the highest priority. The Croton Watershed priority areas are as follows: A (New Croton, Croton Falls, and Cross River Reservoirs); B (Muscoot and portions of Amawalk and Titicus Reservoirs within 60-day travel time to distribution); C (remaining reservoir basins and sub-basins beyond 60-day travel time to distribution). A map of the boundaries of these Priority Areas is set forth in Attachment J. The City will prioritize its acquisition of lands in the Croton Watershed considering the priority of the basin in which the parcel is located, in conjunction with the natural features of the parcel that could impact water quality.

67. Vacant Property West of Hudson. Except with respect to the acquisition of a Watershed Conservation Easement or acquisition of any parcel acquired through an Acquisition and Relocation Program administered pursuant to the Hazard Mitigation Grant Program of the Federal Disaster Assistance Act, property West of Hudson may not be acquired by the City unless there are no structures other than uninhabitable dwellings or accessory structures. If the City is interested in a parcel that contains a habitable dwelling, the parcel must be subdivided so that the City only takes title to the portion of the parcel without the habitable dwelling. The subdivided parcel containing the habitable dwelling must include an adequate area for a septic field, reserve area and well. The local government will provide for subdivision review in the most expeditious time frame consistent with State and local law. If a parcel acquired in fee contains a structure other than a habitable dwelling, then during the 120 day local review period set forth in paragraph 71, the local government may direct the City to demolish such structure within one (1) year of taking title to the property.

68. Designation of Non-Acquirable Land West of Hudson. The Parties recognize that any land acquisition program designed to protect water quality should provide reasonable opportunities for growth in and around existing population centers and that local communities have an interest in policies that affect local land use. To preserve community character and to accommodate these and other important local concerns, any West of Hudson Town or Village may take the following actions:

(a) By resolution adopted within 105 days of the Effective Date of this Agreement, West of Hudson Towns and Villages may exercise their option under the water supply permit to designate parcels to be excluded from acquisition in fee by the City, but not acquisition of Watershed Conservation Easements, in the following manner:

(i) Defined hamlets and villages. A list of hamlets and villages, and a listing of the maximum acreage which may be excluded from acquisition in such hamlets, are set forth in Attachments R and S. A Town shall delineate the boundaries of an existing hamlet by designating contiguous whole tax map parcels reasonably reflective of the existing population concentrations, up to the acreage identified and set forth in Attachment R and may exclude such hamlet from acquisition in fee. A Town may designate less than whole tax map parcels in delineating the boundaries of a hamlet to the extent necessary to reflect existing population concentrations, provided the Town demonstrates that, in light of the acreage limitations in Attachment R, limiting the designation to whole tax parcels will result in a designation which excludes existing population concentrations. A Village may exclude all the land in the Village from acquisition in fee.

(ii) Each Town may also designate up to fifty (50) acres in priority areas 1B, 2, 3, or 4 as a commercial or industrial area where acquisition in fee is prohibited. The designation shall be by whole tax map parcels.

(iii) A Town may also designate tax map parcels which are located within one-quarter mile of a village abutting defined road corridors to be excluded from acquisition in fee by the City. Attachment T lists the eligible road corridors.

(b) By resolution adopted within 105 days of the Effective Date of this Agreement, a Town or Village may choose to waive the acreage requirement for Priority Areas 1B, 2, 3 and 4 throughout the Town or Village or only for those parcels located, at least partially, in a 100-year flood plain.

(c) A decision by a Town or Village, pursuant to subparagraphs (a) and (b), shall remain binding on the Town or Village until the end of the City's land acquisition program under the water supply permit unless:

(i) Between January 1 and June 30, 2001, a Town or Village reassesses its earlier decision under subparagraphs (a) and (b) and adopts a resolution rescinding or exercising its rights under subparagraph (a) and (b); and/or

(ii) Between January 1, and June 30, 2006 a Town or Village reassesses its earlier decision(s) under subparagraphs (a), (b) and (c)(i) and adopts a resolution rescinding or exercising its rights under subparagraph (a) and (b).

69. Vacant Property East of Hudson. Except with respect to the acquisition of a Watershed Conservation Easement, property East of Hudson may not be acquired by the City unless the property is uninhabited at the time the City acquires title. If the City is interested in a parcel that contains a structure that would be inhabited at the time the City acquires title, the parcel must be subdivided so that the City only takes title to the portion of the parcel without the inhabited structure.

70. Designation of Non-Acquirable Land East of Hudson. East of Hudson, property zoned commercial or industrial as of the date of the City's solicitation will be excluded from the City's acquisition program, except that the City may acquire up to five percent (5%) of the total acreage of such property within any town or village unless a Town or Village in Westchester County agrees, by resolution, to a higher percentage in such Town or Village.

71. Local Consultation. Prior to acquiring any land under the land acquisition program or Watershed Conservation Easements, other than Watershed Agricultural Easements, the City will consult with the Town or Village in which the parcel is located. The consultation will ensure that the City is aware of and considers the Town's or Village's interests and that the terms of the land acquisition program agreed to by the Parties are complied with. The City will identify for the Town or Village, and for the appropriate County if the parcels are located EOH, and for NYSDEC, the land or Watershed Conservation Easements the City seeks to acquire, any structures which may be located on the property, the City's determination of whether structures are uninhabitable or accessory, any proposed recreational uses, and any proposed fencing and signing. The City will diligently attempt to group together parcels for review by the Town or Village and to minimize the number of times it submits parcels for review, and will submit such parcels for review no more frequently than on a monthly basis. At or prior to the first submission of parcels for review in an individual Town or Village, the City shall comply with the presentation requirement in paragraph 60. The Town or Village will have 120 days to: a) review and assess the information contained in the City's submission; b) conduct public review where so desired by the Town or Village; and c) submit comments to the City. The Town or Village review may include consistency with the Natural Features Criteria; consistency with local land use laws, plans and policies; the City's designation of any structure on the property as uninhabitable or an accessory structure; the City's proposed fencing and signing, if any; and proposed recreational uses. In the event of a mortgage foreclosure, tax foreclosure or judgment sale, the City may submit a parcel for review to a Town or Village without obtaining an option or contract to purchase, and the Town or Village will use its best efforts to complete its review expeditiously in order to allow the City to submit a bid to acquire such parcel in a timely manner. The City will respond to local government comments within thirty (30) days. After responding to the local government's comments, the City may proceed immediately to acquire any parcel, provided, however, that disputes over whether a particular parcel

meets the Natural Features Criteria or whether a structure is an uninhabitable dwelling or accessory structure will be submitted to NYSDEC and will be resolved by NYSDEC within thirty (30) days. NYSDEC's decision shall be a final decision for purposes of Article 78 of the Civil Practice Law and Rules. The City will provide funds for technical consultants and in-house municipal staff to review the information provided by the City pursuant to the terms and conditions set forth in paragraph 148 of Article V.

72. Recreational Uses: Newly Acquired Property. The City will consult with NYSDEC, USEPA (for the Catskill and Delaware Watershed), the appropriate local governments, and the appropriate regional Sporting Advisory Subcommittee (as defined below) during the 120-day review period specified in paragraph 71, regarding the recreational uses the City deems appropriate on newly acquired fee property. Whatever recreational use by the public the City determines to permit on a given parcel, the City is not obligated to provide, construct, or maintain any facilities for the public. By virtue of executing this Agreement or by allowing recreational use of its property, the City does not assume any liability for the recreational use by the public of its land beyond that provided in GOL Section 9-103. Historic recreational uses, including fishing, hiking, and hunting, will be allowed to continue on newly acquired fee property, subject to rules and regulations adopted, or permits issued, by NYCDEP, provided that they neither threaten public safety nor threaten to have an adverse impact on water quality. The Parties agree that the following recreational uses are more likely to be allowed on City land, if appropriate, subject to rules and regulations adopted, or permits issued, by NYCDEP: fishing (including fishing by boat) under regulation; hiking, especially where parcels intersect State trails; snowshoeing; cross country skiing; bird watching; educational programs, nature study and interpretation; and hunting (only in certain areas under certain conditions). The following activities are not likely to be allowed on City property even if the property was historically utilized for these purposes: boating (other than for permitted fishing by boat); snowmobiling; camping; motorcycling; mountain bicycling; and horseback riding.

73. Recreational Uses: Currently Owned City Property. In consultation with NYSDEC, USEPA (for the Catskill and Delaware Watershed), the appropriate local governments, and the appropriate regional Sporting Advisory Subcommittee, the City will also undertake a comprehensive review of existing and potential recreational uses on currently owned City property. The City will submit a preliminary report, within two years of the Effective Date of this Agreement, to the Watershed Protection and Partnership Council established pursuant to Article IV of this Agreement regarding recreational uses on currently owned and newly acquired City property.

74. City Financial Commitments for Land Acquisition.

(a) The 1997 FAD will require the City to commit the sum of Two Hundred, Fifty Million Dollars ($250,000,000) for acquisition of land in the Catskill and Delaware Watershed under the land acquisition program contemplated by this Agreement; up to Ten Million Dollars ($10,000,000) of that sum may be used by the City to acquire Watershed Agricultural Easements on farms that have a Whole Farm Plan approved by

WAC. After five (5) years, the City, USEPA and NYSDOH will confer on the sufficiency of the Two Hundred Fifty Million Dollars ($250,000,000) in light of the land acquisition program's progress. If the Primacy Agency determines it is necessary, the City will at that time commit up to an additional $50 million for the Catskill and Delaware land acquisition program (any additional monies committed to such program pursuant to this sentence shall be referred to as "Supplemental Land Funds").

(b) The City commits to spend Ten Million Dollars ($10,000,000) to acquire fee title to, or Watershed Conservation Easements on, real property in the Croton Watershed within ten years of the Effective Date of this Agreement consistent with the acquisition schedule appended hereto as Attachment H. The City agrees to spend at least ninety percent (90%) of the Ten Million Dollars ($10,000,000) on acquisition in Westchester and Putnam Counties. The City agrees that it will seek to acquire similar amounts of land in both Westchester and Putnam Counties in the Croton system to the extent that such a result is practical and consistent with the Criteria set forth in paragraph 66.

75. Land Acquisition Segregated Account.

(a) The 1997 FAD will require the City to maintain a segregated account for purposes of the land acquisition program in the Catskill and Delaware Watershed contemplated by this Agreement.

(b) The 1997 FAD shall require that the City deposit or cause to be deposited, into the segregated account, its Two Hundred Fifty Million Dollar ($250,000,000) funding commitment for such program (as referred to in paragraph 74), in the following manner:

(i) By not later than the date the Interim Filtration Avoidance Determination is issued as described in paragraph 159 of this Agreement (the "Interim FAD"), the sum of Eighty-Eight Million Dollars ($88,000,000) shall be deposited into the segregated account.

(ii) The balance of the $250,000,000 commitment shall be deposited into the segregated account as follows: During the period between the issuance of the Interim FAD and December 31, 2001, the City, USEPA, and NYSDOH shall jointly review the sufficiency of funds in the segregated account at least bi-annually. Such review shall be based on the progress of the land acquisition program to date and the projected level of acquisitions over the next two-year period. If the Primacy Agency determines that additional funds are needed to ensure appropriate funding for the land acquisition program over the following two years, the City shall promptly deposit such additional funds into the segregated account.

(iii) If, as of December 31, 2001, the sum of all deposits theretofore made by the City pursuant to clauses (i) and (ii) above is less than $250,000,000, the City shall immediately deposit the difference into the segregated account.

(iv) Any Supplemental Land Funds determined to be necessary by the Primacy Agency, pursuant to paragraph 74, shall be deposited into the segregated account in such amounts,

and at such times, as shall be decided upon by the Primacy Agency pursuant to, and in accordance with, a bi-annual review process as described in clause (ii) above.

(c) Anything in this Agreement to the contrary notwithstanding, in no event shall the City be required to deposit, in aggregate, funds into the segregated account in excess of $300,000,000.

(d) All interest earned on funds deposited in the segregated account shall belong to the City, and the City shall not be required to spend any portion of such interest on the land acquisition program in the Catskill and Delaware Watershed contemplated by this Agreement. The City may use such interest for any lawful purpose that it, in its sole discretion, deems appropriate.

(e) The City may remove or cause to be removed funds from the segregated account only to pay for costs of the land acquisition program. The foregoing notwithstanding, if at any time the proceeds of tax-exempt bonds are deposited in the account, and bond counsel to the issuer of such bonds determines that federal or state tax laws, rules, or regulations require that such proceeds be expended within a certain time period in order to preserve the tax-exempt status of such bonds, the City may take such actions as it reasonably determines to be necessary or appropriate in order to preserve such tax-exempt status. Such actions include expenditure of such proceeds for eligible purposes, other than the land acquisition program, in order to ensure that all such proceeds are properly expended within such time period. In this situation, the City shall promptly replace all funds taken from the segregated account for other purposes.

76. The State's Croton Land Acquisition Program. The State commits to spend Seven Million Five Hundred Thousand Dollars ($7,500,000) to acquire fee title to, or Watershed Conservation Easements on, real property in the Croton Watershed beginning in State fiscal year 1998-99 and concluding no later than calendar year 2006. The State, in consultation with the City, will identify parcels or Watershed Conservation Easements for State acquisition. Parcels shall be acquired pursuant to this paragraph only upon the mutual agreement of the State and City, and the State and City shall not unreasonably withhold such agreement. Upon acquisition by the State, the real property or Watershed Conservation Easement shall be promptly transferred by the State to the City consistent with the requirements of this Article and the draft legislation appended hereto as Attachment U. The City will be responsible for paying real property taxes or PILOTs, in accordance with the provisions of paragraphs 79 and 80, on said lands or Watershed Conservation Easements as set forth in this Agreement. The State's land acquisition under this program, and the City's participation therein, shall conform to the requirements of this Article applicable to the City's land acquisition program. The real property or Watershed Conservation Easements acquired by the State and transferred to the City shall be held in perpetuity for the protection of the Croton Watershed and the New York City drinking water supply, in accordance with the provisions of paragraphs 82 and 83.

77. Watershed Agricultural Easements Program Overview. A program to acquire Watershed Agricultural Easements would further the protection of sensitive lands based

on water quality criteria, provide added economic incentive to farmers for pollution prevention linked to Whole Farm Plans, and assist the inter-generational transfer of farm lands and operations. To be successful, a City funded Watershed Agricultural Easements program must be carried out in partnership with the WAC. The WAC will be responsible for landowner outreach and contact, identifying and implementing management practices linked to the Watershed Agricultural Easements and administering, monitoring and enforcing the terms of such easements. The WAC will work closely with NYCDEP on these tasks, as well as working with individual farmers and NYCDEP in the survey, appraisal and closing processes.

78. Watershed Agricultural Easements Program.

(a) As specified in paragraph 74, the City may spend up to Ten Million Dollars ($10,000,000) of the Two Hundred Fifty Million Dollars ($250,000,000) committed to the Catskill and Delaware land acquisition program on a program for acquiring Watershed Agricultural Easements.

(b) If the City undertakes the program identified in subparagraph (a), the City will provide funding for the acquisition of Watershed Agricultural Easements and for Watershed Conservation Easements on non-agricultural lands under common ownership with farms from property owners who have Whole Farm Plans approved by WAC. The Watershed Conservation Easements will be acquired at fair market value as determined by an independent appraisal ordered by the City and performed by an independent, certified New York State appraiser. In determining fair market value, the City's independent appraisers will consider information from a second appraisal, provided by the property owner and made at the owner's or a third party's expense, provided the second appraisal is made by a certified New York State appraiser and was completed no earlier than one year prior to the date of the City's appraisal or no later than the later of six (6) months after the owner has received the City’s appraisal or six (6) months after the Effective Date of this Agreement. Upon request, the City may extend the time period for completion of a second appraisal.

(c) The City and the WAC will jointly determine:

(i) Procedures and standards for appraising the fair market value of the proposed Watershed Agricultural Easement; and

(ii) The appropriate terms and conditions of the Watershed Agricultural Easements and Watershed Conservation Easements on non-agricultural lands under common ownership with farms owned by property owners who have Whole Farm Plans approved by WAC.

(d) The WAC, in consultation with NYCDEP, will be responsible for property owner contact and outreach for the Watershed Agricultural Program and the identification and implementation of management practices designed to enhance pollution prevention.

(e) The easements may be held either by WAC or by the City together with WAC. If held by WAC, the City shall have third party enforcement rights. In either case, the WAC shall have primary responsibility for administering, monitoring and enforcing the terms of the easements. The City and WAC shall reach an agreement on how WAC shall administer, monitor, and enforce the easements and under what circumstances the City would be allowed to step in and perform such functions, such as WAC's failure to enforce the terms of the easements. In the event WAC is dissolved, declared insolvent, or otherwise ceases to do business on an ongoing basis, all such easements shall revert to, and be enforceable by, the City. The City and WAC may agree to engage another third party, to which all such easements and enforcement responsibilities shall revert prior to reversion to the City, in the event WAC is dissolved, declared insolvent, or otherwise ceases to do business on an ongoing basis.

(f) Watershed Agricultural Easements on land qualifying for and receiving an agricultural assessment pursuant to Article 25AA of the Agriculture and Markets Law shall be exempt from real property taxation, consistent with the legislation appended hereto as Attachment U. Watershed Agricultural Easements on lands which do not receive an agricultural assessment pursuant to Article 25AA of the Agriculture and Markets Law shall be subject to real property taxation for all purposes, consistent with the legislation appended hereto as Attachment U.

79. Real Property Taxes: Newly Acquired in Fee Under the City's Land Acquisition Program.

(a) An assessing unit (applicable County, Town or Village), shall initially assess each parcel acquired pursuant to the land acquisition program set forth in this Agreement at the uniform percentage of value applied to other parcels in the assessing unit. The City will not challenge the initial assessed value of such parcel provided the initial assessed value for such parcel does not exceed the fair market value of the parcel multiplied by the latest state equalization rate or a special equalization rate for that assessing unit. For purposes of this paragraph, fair market value equals the parcel's appraised value as finally determined by the City's independent appraiser.

(b) The City will not challenge future assessments on any parcel acquired pursuant to the land acquisition program set forth in this Agreement provided that in any Town both of the following two conditions are met: (1) the rate of increase of the total assessed value of all parcels purchased by the City under the land acquisition program, as measured from the assessment roll in any year over the assessment roll of the preceding year, except in cases of county-wide or town-wide revaluations or updates as provided in paragraph (e) below, is not greater than the equivalent rate of increase in total assessed value of all non-City-owned parcels classified as forest or vacant; and (2) the ratio of the total assessed value of all parcels purchased by the City under the land acquisition program in the Town to the total assessed value of all taxable parcels in the Town does not increase from the prior year. With respect to each parcel purchased by the City, the agreement set forth in this paragraph shall last for twenty (20) years from the date of purchase.

(c) The City will not seek to have any parcels acquired pursuant to this land acquisition program consolidated for purposes of the City reducing taxes.

(d) The City shall retain its right as a property owner to challenge in court, or otherwise, assessments of parcels purchased under the land acquisition program if the provisions of paragraphs (a) and (b) are not satisfied. In any such challenge, the City will not seek to have the assessed value of the parcel reduced below the highest value which would result in the assessed value of the parcel satisfying the limitation set forth in paragraph (a) or in the total assessed value of all parcels purchased by the City under the land acquisition program in the Town satisfying the limitations set forth in paragraph (b) above.

(e) Except as provided in paragraph (c), the City retains all legal rights held by property owners with respect to any Town-wide or County-wide revaluation or update (as those terms are defined in Section 102, subdivisions (12-a) and (22) of the RPTL) currently being undertaken or which may be undertaken in the future.

80. Real Property Taxes: Watershed Conservation Easements.

(a) The Parties agree to support State legislation, in the form of Attachment U, requiring City-held Watershed Conservation Easements to be taxed and authorizing transfer of State lands to the City. If the water supply permit issued pursuant to paragraph 58 and attached in draft as Attachment V is renewed or extended beyond December 31, 2016, the Parties agree to support legislation extending the term of the conservation easement legislation to be consistent with any extension of the water supply permit.

(b) The City will not acquire Watershed Conservation Easements in any given Town or Village prior to the passage of such proposed State legislation unless the City enters into an agreement to make payments in lieu of taxes ("PILOTs") with such Towns or Villages in the manner set forth in the model PILOT agreement appended to this Agreement as Attachment X which agreement shall be submitted to the applicable Villages and Towns by the City together with a letter noting the requirements of this paragraph. The Villages and Towns that are Parties to this Agreement agree to execute a PILOT agreement, appended hereto as Attachment X, with the City. If a Village or Town does not execute the PILOT agreement within ninety (90) days of submission of a signed PILOT agreement by the City, the City may acquire Watershed Conservation Easements in such Village or Town notwithstanding the absence of an executed PILOT agreement. The local consultation process set forth in paragraph 71 may run concurrently with the ninety day period for signing of the PILOT agreement, but the City may not close on a Watershed Conservation Easement prior to either the Town or Village signing the PILOT agreement or the expiration of the ninety days. A PILOT agreement executed by the City shall remain a valid contract offer as long as the City owns said easement, provided that State legislation for the taxation of such Watershed Conservation Easements is not effective. If a Town or Village executes the PILOT agreement after the ninety day period, then the City shall make PILOTs only from the effective date of the PILOT agreement, and shall not be liable for PILOTs under such agreement prior to the effective date of such agreement. In addition, the City shall not acquire any Watershed Conservation

Easements if the PILOT agreement for said Town or Village is determined to be unenforceable by any court of competent jurisdiction and if there is no State legislation providing for the taxation of Watershed Conservation Easements pursuant to paragraph 167.

(c) The City will provide to the respective Towns and Villages, as part of the local consultation process, and to the respective sellers, a generic description in plain language of the real property tax consequences to a seller arising from the City's purchase of a Watershed Conservation Easement.

81. Limitation on Transfers to Tax Exempt Entities. The City will not transfer land it acquires pursuant to this land acquisition program to a tax exempt entity unless the entity enters into a written agreement acceptable to and with the assessing unit to make payments in lieu of full real property tax and ad valorem levies to each applicable taxing entity. Consent of the assessing unit to entering into such an agreement shall not be unreasonably withheld.

82. Land Held in Perpetuity for Watershed Protection. The City will grant to NYSDEC a conservation easement that shall run with the land on all land acquired in fee under the land acquisition program to ensure that such land is held in perpetuity in an undeveloped state in order to protect the Watershed and the New York City drinking water supply. Such easement shall also provide that the Primacy Agency shall have enforcement rights or be specified as a third-party beneficiary with a right to enforce the easement. With respect to lands in Priority Areas 3, 4 or C, such easements will provide that, with the prior agreement of USEPA and NYSDOH, the City may sell such lands free of the easement restriction, in order to purchase already identified replacement lands located in a higher Priority Area. If so, the replacement lands thus acquired will similarly be subject to conservation easements. The City will not use the granting of conservation easements to reduce property tax liability on the property it acquires. In order to acquire any replacement lands during the term of the land acquisition program, the City shall comply with all of the requirements of this Article. Prior to acquiring any replacement lands after the expiration date of the land acquisition program, the City shall obtain all necessary permits and comply with SEQR.

83. Conservation Easements Held in Perpetuity for Watershed Protection.

(a) Watershed Conservation Easements, including Watershed Agricultural Easements, acquired by or on behalf of the City under the land acquisition program set forth in this Agreement, shall be held in perpetuity in order to protect the Watershed and the New York City drinking water supply.

(b) The New York State Attorney General shall be granted full third party enforcement rights over all such Watershed Conservation Easements, including Watershed Agricultural Easements, subject to the following provisions:

(i) The City may not materially amend the express terms of the Watershed Conservation Easement without the approval of the Attorney General.

(ii) The Attorney General may bring an action to enforce a Watershed Conservation Easement in a court of competent jurisdiction provided that:

(A) Such action shall only be brought in the case of a material breach of the easement; and

(B) Before commencing such an action, the Attorney General must first notify the City and the landowner of the parcel encumbered by the Easement and give the City sixty (60) days to take appropriate action, including commencing an enforcement action; and

(C) If the City is diligently prosecuting an enforcement action, in either an administrative or judicial proceeding, the Attorney General shall not have a right to prosecute an action for the same breach of the easement.

(iii) The Attorney General shall not be given the right to inspect any property burdened by a Watershed Conservation Easement.

(c) The City shall inspect any property burdened by a Watershed Conservation Easement at least twice each year. Such inspections may include aerial inspections. The City shall provide the Attorney General with reports of all inspections.

84. Acquisition Reports.

(a) The City will submit copies of its acquisition reports which are submitted to the Primacy Agency, pursuant to the Interim and 1997 FADs, to NYSDEC, and to the Watershed Protection and Partnership Council. Such reports will include the following information for all parcels and easements acquired during the reporting period: address; description of the property, including any easement; county and town where property is located; tax map number; acreage; closing date; and map of property. The acquisition report shall also contain cumulative totals of acreage solicited and acreage acquired identified by Town and Priority Area. The Watershed Protection and Partnership Council shall review such reports and may make recommendations on the adequacy of the land acquisition program to the Primacy Agency. The Council may not recommend that the City increase its financial commitment to the land acquisition program, without the City's consent.

(b) The State will submit annual progress reports on its Croton land acquisition program within thirty (30) days of the end of each State fiscal year to the Watershed Protection and Partnership Council. Such reports will contain the following information for all parcels and easements acquired during the previous fiscal year: address; description of the property, including any easement; county and town where property is located; tax map number; acreage; closing date; and map of property. The acquisition report shall also contain cumulative totals of acreage acquired identified by Town and Priority Area and

money spent. The Watershed Protection and Partnership Council shall review such reports and may make recommendations on the adequacy of the land acquisition program to the State.

85. Permit Conditions.

(a) In order, in part, to provide additional security for the agreements set forth in Article V, the water supply permit for the land acquisition program issued pursuant to paragraph 58 shall be conditioned on the City executing and maintaining valid and enforceable program contracts which include the terms and conditions required by Article V of this Agreement for the following programs: Catskill Watershed Corporation Funding (paragraph 120); SPDES Upgrades (paragraph 121); New Sewage Treatment Infrastructure Facilities (paragraph 122); Septic System Rehabilitations and Replacements (paragraph 124); Stormwater Retrofits (paragraph 125); Sand and Salt Storage Facilities (paragraph 126); WOH Future Stormwater Controls (paragraph 128); Alternate Design Septic Systems (paragraph 129); Public Education (paragraph 131); WOH Economic Development Study (paragraph 134); Catskill Fund for the Future (paragraph 135); Tax Consulting Fund (paragraph 136); Funding of the Watershed Protection and Partnership Council (paragraph 137); Watershed Planning in the Croton System (paragraph 138); Sewage Diversion Feasibility Studies (paragraph 139); EOH Water Quality Investment Program (paragraph 140); Upgrades to Existing WWTPs (paragraph 141); Phosphorus Controls in Cannonsville (paragraph 144); Payment of Costs and Expenses (paragraph 146); Good Neighbor Payments (paragraph 147); and Local Consultation on Land Acquisition (paragraph 148). For purposes of this paragraph, a Valid and Enforceable Program Contract shall mean a contract (i) for which the City has appropriated sufficient funds to allow it to make payments as they become due and owing; (ii) which has been registered pursuant to section 328 of the City Charter; and (iii) which remains in full force and effect and enforceable under applicable law during the term required by this Agreement ("Valid and Enforceable Program Contract"). A failure by the City to comply with the permit condition requiring a Valid and Enforceable Program Contract for a program shall not be a violation of the permit if (i) the City continues to make timely payments for the program in accordance with the terms of this Agreement and the applicable program contract or (ii) the City has properly terminated the contract pursuant to the terms thereof and the City complies with its obligation to continue to fund or complete the subject program. For purposes of this paragraph, a payment to be made by the City shall not be considered made to the extent such payments are required to be refunded to the City.

(b) The water supply permit shall provide that, except where payment under a program is suspended pursuant to paragraphs 155, 156, or 157 below, the City shall not acquire title to land or Watershed Conservation Easements on land (hereinafter referred to as "Restrictions") as described below in subparagraphs (i), (ii) and (iii) if (1) the City has not appropriated funds for one or more of the programs listed below and thereafter the City fails to make a payment that would otherwise be due and owing under a contract for such unappropriated program and (2) the City has not cured the failure to make such payment within 30 days of the date the payment was due and owing. For purposes of this

subparagraph only, a failure to make a payment shall be deemed cured if the City makes such payment, with interest at 9% compounded annually from the date such payment was due and owing.

(i) The programs for which such failure to make payment and to timely cure late payment shall lead to Restrictions to the water supply permit with respect to acquisitions West of Hudson under this subparagraph are: Catskill Watershed Corporation Funding, but only for City fiscal year 1997 (paragraph 120); SPDES Upgrades (paragraph 121); New Sewage Treatment Infrastructure Facilities (paragraph 122); Septic System Rehabilitations and Replacements (paragraph 124); Stormwater Retrofits (paragraph 125); Sand and Salt Storage Facilities (paragraph 126); WOH Future Stormwater Controls (paragraph 128); Alternate Design Septic Systems (paragraph 129); Public Education, but only for City fiscal year 1997 (paragraph 131); WOH Economic Development Study, but only for City fiscal year 1997 (paragraph 134); Catskill Fund for the Future, but only for City fiscal year 1997 (paragraph 135); Tax Consulting Fund, but only for City fiscal year 1997 (paragraph 136); and Phosphorus Controls in Cannonsville (paragraph 144).

(ii) The programs for which such failure to make payment and to timely cure late payment shall lead to Restrictions to the water supply permit with respect to acquisitions East of Hudson under this subparagraph are: Watershed Planning in the Croton System, but only for City fiscal year 1997 (paragraph 138); Sewage Diversion Feasibility Studies (paragraph 139); and EOH Water Quality Investment Program (paragraph 140).

(iii) The programs for which such failure to make payment and to timely cure late payment shall lead to Restrictions to the water supply permit for the entire watershed under this subparagraph are: Funding of the Watershed Protection and Partnership Council, but only for City fiscal year 1997 (paragraph 137); Upgrades to Existing WWTPs (paragraph 141); Payment of Costs and Expenses (paragraph 146); Good Neighbor Payments (paragraph 147); and Local Consultation on Land Acquisition (paragraph 148).

(c) The water supply permit shall provide that, except where payment under a program is suspended pursuant to paragraphs 155, 156 or 157 below, and except as provided in subparagraph (b) above, the City shall not acquire title to land or Watershed Conservation Easements on land (hereinafter referred to as "Restrictions") as described below in subparagraphs (i), (ii) and (iii) if (1) for one or more of the programs listed below, the City does not have a Valid and Enforceable Program Contract during the term required by this Agreement and thereafter the City fails to make a payment that would otherwise be due and owing under such invalid or unenforceable contract and (2) the City has not cured the failure to make such payment within eight (8) months of the date the payment would otherwise have been due and owing. The eight (8) month period is intended to provide the City with time to attempt to resolve the matter which caused the program contract to become invalid and unenforceable without interruption to the land acquisition program. For purposes of this subparagraph only, a failure to make a payment shall be

deemed cured if the City makes such payment, with interest at 6.5% compounded annually from the date such payment was due and owing.

(i) The programs for which such failure to make payment or to timely cure late payment shall lead to Restrictions to the water supply permit with respect to acquisitions West of Hudson under this subparagraph are: Catskill Watershed Corporation Funding (paragraph 120); SPDES Upgrades (paragraph 121); New Sewage Treatment Infrastructure Facilities (paragraph 122); Septic System Rehabilitations and Replacements (paragraph 124); Stormwater Retrofits (paragraph 125); Sand and Salt Storage Facilities (paragraph 126); WOH Future Stormwater Controls (paragraph 128); Alternate Design Septic Systems (paragraph 129); Public Education (paragraph 131); WOH Economic Development Study (paragraph 134); Catskill Fund for the Future (paragraph 135); Tax Consulting Fund (paragraph 136) and Phosphorus Controls in Cannonsville (paragraph 144).

(ii) The programs for which such failure to make payment and to timely cure late payment shall lead to Restrictions to the water supply permit with respect to acquisitions East of Hudson under this subparagraph are: Watershed Planning in the Croton System (paragraph 138); Sewage Diversion Feasibility Studies (paragraph 139); and EOH Water Quality Investment Program (paragraph 140).

(iii) The programs for which such failure to make payment and to timely cure late payment shall lead to Restrictions to the water supply permit with respect to acquisitions for the entire watershed under this subparagraph are: Funding of the Watershed Protection and Partnership Council (paragraph 137); Upgrades to Existing WWTPs (paragraph 141); Payment of Costs and Expenses (paragraph 146); Good Neighbor Payments (paragraph 147); and Local Consultation on Land Acquisition (paragraph 148).

(d) If the water supply permit is Restricted under this paragraph 85, the City shall not acquire title to land or Watershed Conservation Easements on land under the permit until, with respect to the program for which the failure to pay led to the Restrictions, the City has made all missed payments which the City failed to pay and which would otherwise be due and owing except that the City failed to maintain a Valid and Enforceable Program Contract, as provided in subparagraphs (b) and (c), as well as interest on such missed payments at the rate set forth in subparagraphs (b) or (c), whichever is applicable.

(e) The following process shall govern Restrictions on the City's acquisition of an interest in land or Watershed Conservation Easements on land pursuant to the water supply permit under this paragraph 85.

(i) The City shall notify in writing NYSDEC, the individual members of the Executive Committee, and the CW Corporation as soon as practicable of the commencement of any litigation seeking to invalidate one or more program contracts or this Agreement. The purpose of the notice is to provide the Parties at the earliest possible point in the litigation an opportunity to discuss such dispute. Additionally, the City will keep such Parties advised of the status of the litigation.

(ii) If the conditions set forth in subparagraph (b) or (c) are met, the party to whom the City would otherwise have owed the missed payment ("Contracting Party") may notify the City, the Executive Committee, and NYSDEC in writing that the condition of the permit requiring a Valid and Enforceable Program Contract has been violated and that thereafter the City missed a payment under such contract, and that the City has not cured the failure to make such missed payment. The City shall have 10 days from its receipt of the notice to respond in writing to the Contracting Party, the Executive Committee and NYSDEC. If the City agrees with the notice or does not respond within 10 days, the City's permit shall be Restricted without further proceeding and the City will not acquire title to land or Watershed Conservation Easements on land under the permit. If the City disputes the notice, NYSDEC shall have 15 days from its receipt of the City's response to determine, after consulting with the City, Executive Committee and Contracting Party, whether the permit condition requiring a Valid and Enforceable Program Contract has been violated and whether thereafter the City has missed a payment under such contract, and whether the City has not cured the failure to make such missed payment. If NYSDEC determines that these criteria exist, it shall notify the City, the Executive Committee and the Contracting Party of its determination within 5 days and the City will not acquire title to land or Watershed Conservation Easements on land under the permit.

(iii) If the water supply permit has been Restricted pursuant to subparagraphs (e)(ii) above, and the City believes it has met the conditions set forth in subparagraph (d) above so that the Restrictions should be lifted, the City may notify the Executive Committee, NYSDEC and the Contracting Party in writing. The Contracting Party shall have 10 days from its receipt of the City's notice to respond in writing to the City, the Executive Committee and NYSDEC. If the Contracting Party agrees with the City's notice or does not respond within 10 days, the City may resume land acquisition without further proceedings. If the Contracting Party disputes the notice, NYSDEC shall have 15 days from its receipt of the Contracting Party's response to determine, after consulting with the City, Executive Committee and Contracting Party, whether the missed payments have been paid with interest at the applicable rate. If NYSDEC determines that such missed payments have been paid with interest, it shall notify the City, the Executive Committee and the Contracting Party of its determination in writing within 5 days, and the City may thereafter resume land acquisition under the permit.

(f) Notwithstanding any provision in this Agreement to the contrary, the City agrees herein to comply with its obligations under the conditions of the water supply permit identified in subparagraphs (b) and (c) above and during the term of such permit and any renewal thereof, to refrain from seeking a modification to the permit which would authorize the City to acquire title to land or Watershed Conservation Easements on land while the conditions set forth in subparagraph (b) and (c) are met.

86. Funding of Permit Programs in City Budget. During the term of the water supply permit, the City shall notify NYSDEC and the Executive Committee each City fiscal year as to whether the City budget for that fiscal year includes sufficient funding to allow the City to meet its financial obligations for the programs listed in paragraph 85 for such

fiscal year. The City will provide such notification within 30 days of the beginning of the fiscal year. Failure to provide such notice shall not be grounds for suspending the permit.

New York City Filtration Avoidance Determination

Prepared By

New York State Department of Health

in consultation with

United States Environmental Protection Agency

December 2017

2017 Surface Water Treatment Rule Determination for
New York City's Catskill/Delaware Water Supply System

Table of Contents

Acronyms

AOC	Administrative Order on Consent
BMPs	Best Management Practices
CAP	*Cryptosporidium* Action Plan
CATUEC	Catskill Aqueduct Upper Effluent Chamber
CDUV	Catskill/Delaware Ultraviolet Facility
CCE	Cornell Cooperative Extension
CE	Conservation Easement
CFI	Continuous Forest Inventory
CFR	Code of Federal Regulations
CREP	Conservation Reserve Enhancement Program
CSBI	Catskill Streams Buffer Initiative
CT	Concentration-Time (chlorine contact time)
CWC	Catskill Watershed Corporation
DDBPR	Disinfection and Disinfectant Byproducts Rule
EOH	East-of-Hudson
EOHWC	East-of-Hudson Watershed Corporation
FAD	Filtration Avoidance Determination
FBO	Flood Buy-Out
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
GIS	Geographic Information System
HAA5	Haloacetic Acids (sum of five)
IESWTR	Interim Enhanced Surface Water Treatment Rule
LAP	Land Acquisition Program
LFHMP	Local Flood Hazard Management Program
LT2	Long Term 2 Enhanced Surface Water Treatment Rule
MAP	Forestry Management Assistance Program
MCL	Maximum Contaminant Level
MGD	Million Gallons per Day
MOA	New York City Watershed Memorandum of Agreement
MOU	Memorandum of Understanding
NPS	Nonpoint Source
NYC	New York City
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York [State] Codes, Rules, and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operations and Maintenance
OST	Operations Support Tool
PFM	Precision Feed Management
PHL	Public Health Law
RWBT	Rondout West Branch Tunnel
SAP	Streamside Acquisition Program
SDWA	Safe Drinking Water Act
SEQRA	State Environmental Quality Review Act
SOEM	New York State Office of Emergency Management
SMP	Stream Management Program
SMIP	Stream Management Implementation Grant Program
SPDES	State Pollutant Discharge Elimination System

SWPPP	Stormwater Pollution Prevention Plan
SRP	Septic Repair Program
SWTR	Surface Water Treatment Rule
TAP	Turbidity Action Plan
TCR	Total Coliform Rule
TTHM	Total Trihalomethanes
USEPA	United States Environmental Protection Agency
USGS	Unites States Geological Survey
UV	Ultraviolet
WAC	Watershed Agricultural Council
WAP	Watershed Agricultural Program
WDRAP	Waterborne Disease Risk Assessment Program
WECC	Watershed Enforcement Coordination Committee
WIG	Watershed Inspector General
WFP	Whole Farm Plan
WOH	West-of-Hudson
WPS	Wetlands Protection Strategy
WR&Rs	Watershed Rules and Regulations
WSP	Water Supply Permit
WWTP	Wastewater Treatment Plant
WQIP	Water Quality Investment Program

2017 Filtration Avoidance Determination

Executive Summary

Since 1993, New York City ("the City") has met the requirements of the 1989 Surface Water Treatment Rule (SWTR) and, after 1998, the Interim Enhanced SWTR (IESWTR). This has allowed the City to avoid filtering its Catskill/Delaware water supply. The conditions that the City must meet to maintain filtration avoidance are described in the City's Filtration Avoidance Determination (FAD).

The first FAD was issued by the United States Environmental Protection Agency (USEPA) in 1993, with USEPA issuing subsequent FADs in 1997, 2002, and 2007. The 2007 FAD required the City to undertake a ten-year land acquisition program and included specific commitments to activities in other programs for the first five years. After the 2007 FAD was issued, USEPA transferred primacy for regulatory oversight of the City's FAD to the New York State Department of Health (NYSDOH). In May 2014, NYSDOH, in consultation with USEPA, issued the Revised 2007 FAD, which defined the City's requirements for the remaining period of the 2007 FAD. In accordance with NYSDOH's certification of the 2007 FAD, the next FAD was scheduled to be issued in 2017.

This 2017 FAD supersedes the Revised 2007 FAD and will remain effective until a further determination is made, currently scheduled for July 2027. As the primacy agency, NYSDOH has authority to determine whether the City's Watershed program provides adequate protection of the City's water supply, pursuant to the SWTR/IESWTR and/or other avoidance criteria in the SWTR/IESWTR. If NYSDOH were to determine that the City was not adequately protecting the Catskill/Delaware water supply, NYSDOH also has authority to require the City to filter the water from that water supply.

1. Background and Basis for Determination

As required under the Safe Drinking Water Act (SDWA) Amendments of 1986, USEPA promulgated the SWTR on June 29, 1989, specifying the criteria pursuant to which filtration is required as a treatment technique for public water systems supplied by a surface water source. The SWTR is codified in the Code of Federal Regulations (CFR) at Subpart H of 40 CFR, Part 141 - National Primary Drinking Water Regulations. The SWTR was promulgated to reduce the risk of waterborne disease occurrence from microbial contaminants at public water systems with surface water sources, either through filtration or by meeting the stringent water quality, disinfection, and site-specific avoidance criteria that make filtration unnecessary.

In response to requirements set forth in the 1996 Amendments to the SDWA, USEPA amended the SWTR on December 16, 1998 with the IESWTR, which is codified in Subpart P of 40 CFR, Part 141. USEPA amended the SWTR again on January 5, 2006 with the Long Term 2 Enhanced Surface Water Treatment Rule (LT2), which is codified in Subpart W of 40 CFR, Part 141. The IESWTR requires unfiltered systems to meet additional provisions to remain unfiltered, including compliance with more stringent disinfection byproduct maximum contaminant levels (MCLs) and the requirement to address *Cryptosporidium* in their watershed control programs. The LT2 provisions for unfiltered systems are not specifically identified as requirements for filtration avoidance, but do require that unfiltered systems provide treatment for *Cryptosporidium*.

The following sections of the SWTR (40 CFR §141.71 and §141.72) and the IESWTR (40 CFR §141.171), define the criteria that must be met to maintain filtration avoidance. Applicable sections of Title 10 of the New York State Codes, Rules and Regulations (NYCRR), Subpart 5-1 are cited following the corresponding federal code citations.

Source water quality conditions:

§141.71 (a)(1), §5-1.30(c)(1): Fecal or total coliform concentration requirements
§141.71 (a)(2), §5-1.30(c)(2): Turbidity level requirements

Site-specific conditions:

§141.71 (b)(1)(i)/§141.72(a)(1), §5-1.30(c)(3): Disinfection and CT requirements.
§141.71 (b)(1)(ii)/§141.72(a)(2), §5-1.30(c)(4): Redundant disinfection components and auxiliary power supply requirements.
§141.71 (b)(1)(iii)/141.72(a)(3), §5-1.30(c)(5): Entry point residual disinfectant concentration requirements.
§141.71 (b)(1)(iv)/§141.72(a)(4), §5-1.30(c)(6): Distribution system residual disinfectant concentration requirements.
§141.71(b)(2), §5-1.30(c)(7)(*i*)-(*vii*): Maintain a watershed control program which minimizes contamination by *Giardia lamblia* cysts and viruses.
§141.71 (b)(3) and §141.171(b): Be subject to an annual on-site inspection, which includes determination of adequacy of the watershed protection

	program to limit potential contamination from *Cryptosporidium.*
§141.71 (b)(4), §5-1.30(c)(8):	Must not be identified as a source of a waterborne disease outbreak.
§141.71 (b)(5), §5-1.30(c)(10):	Must comply with the MCL for total coliforms in at least 11 of the 12 previous months (starting April 1, 2016, comply with MCL for *Escherichia coli).*
§141.71 (b)(6), §5-1.30(c)(9):	Must comply with disinfection byproduct requirements (this provision of Subpart H was amended as part of the IESWTR).
§141.171(a), §5-1.30(c)(7):	Minimize the potential for contamination by *Cryptosporidium* oocysts in the source water.

If, at any time, a system fails to meet the avoidance criteria, it will be required to provide filtration within 18 months of such failure.

Additional National Primary Drinking Water Regulations that apply to unfiltered systems, but that are not specifically identified as filtration avoidance criteria, are included in the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2) and LT2. The Stage 2 DDBPR strengthens public health protection by tightening compliance monitoring requirements for trihalomethanes (TTHM) and haloacetic acids (HAA5). Systems must identify specific locations in the distribution system with the highest disinfection byproduct concentrations. Systems must further comply with MCLs for TTHM and HAA5 based on a locational running annual average, rather than averaging all monitoring locations across the system, as was previously allowed. April 1, 2012 was the compliance date for these tighter monitoring and compliance requirements. Although implementation of Stage 2 has changed which sites are being sampled, unfiltered systems are still required to calculate a system-wide running annual average based on the results from the Stage 2 sample sites. These averages must comply with the TTHM and HAA5 MCLs for the water system to maintain filtration avoidance.

LT2 established important new requirements for both filtered and unfiltered systems. LT2 requires all systems to conduct source water sampling and provide effective treatment for *Cryptosporidium*. For unfiltered systems, LT2 requires use of two disinfectants. April 1, 2012 was the compliance date for this rule, although up to two additional years were provided for certain systems that were making capital improvements. A schedule for the City's compliance with LT2 requirements was established by an Administrative Order on Consent (AOC) that was issued by the USEPA in February 2007. Milestones for this AOC were also included in the 2007 FAD. The City selected water treatment using ultraviolet (UV) light, in addition to chlorine disinfection, to meet the LT2 requirements. The AOC was revised in September 2012 to accommodate the need for additional UV light treatment unit validation testing. The revised UV AOC terminated upon the City's completion of all activities required by the AOC, and as reflected in a USEPA letter dated July 7, 2016. The Catskill/Delaware UV (CDUV) facility has been on line since December 1, 2012, providing UV treatment to all Catskill/Delaware water delivered to the City.

Revisions to the 1989 Total Coliform Rule (TCR) were published February 13, 2013. Starting April 1, 2016, compliance with the Revised TCR is based on an MCL for *Escherichia coli* (§141.63(c)), rather than total coliforms.

Previous Filtration Avoidance Determinations

USEPA's January 1993 Determination: Following the City's July 1992 submission of an application not to filter its Catskill/Delaware water system, USEPA began an in-depth review of the City's water supply to determine whether the Catskill/Delaware system could fully meet the avoidance criteria. USEPA concluded that the system met each of the objective criteria for filtration avoidance. USEPA also concluded that the City's existing Watershed protection programs were adequate and met the SWTR goal for a Watershed control program, but that the program's ability to meet the criteria in the future was uncertain. Accordingly, on January 19, 1993, USEPA issued a conditional determination granting filtration avoidance until a further determination was made, on or before December 31, 1993.

USEPA's December 1993 Determination: In September 1993, the City submitted *New York City's 1993 Long-Term Watershed Protection and Filtration Avoidance Program* to demonstrate that the Catskill/Delaware system could and would continue to meet the filtration avoidance criteria in the future. USEPA reviewed historic and 1993 water quality data, *New York City's 1993 Long-Term Watershed Protection and Filtration Avoidance Program*, the City's achievements meeting the conditions contained in USEPA's January 19, 1993 conditional determination, the USEPA March 23, 1993 Expert Panel Report, public comments received, and additional documentation submitted by the City and interested parties relating to the Watershed. USEPA concluded that the Catskill/Delaware system met each of the SWTR objective criteria for filtration avoidance. USEPA also concluded that the City's existing Watershed protection programs continued to be adequate and met the SWTR's criteria for a Watershed control program, but that the program's ability to meet the criteria in the future was still uncertain. USEPA determined that progress had been made toward enhanced Watershed protection programs. However, USEPA sought a more refined characterization of the Watershed and more specific data concerning the identification and location of the activities within the Watershed. USEPA also wanted the City's Watershed protection programs to operate for a longer time period, to evaluate the effectiveness of the programs' long-term ability to monitor and control activities that have the potential to pollute the water supply.

On December 30, 1993, USEPA issued a second conditional determination which allowed the City's Catskill/Delaware public water system to remain unfiltered. This second determination was intended to be effective until a further determination was made, scheduled for December 15, 1996. The second determination also contained conditions primarily related to enhanced Watershed protection and monitoring programs, pathogen studies, reservoir modeling, and other efforts to characterize the Watershed and human activities. The conditions included continued design of filtration facilities should USEPA deem filtration necessary in the future, as well as a requirement that the City remove bottom sediment from and cover Hillview Reservoir. Hillview Reservoir was believed to be the cause of violations of the Total Coliform Rule in 1993 and again in 1994. Hillview remediation requirements are now part of an AOC that was issued by

USEPA. The milestones of USEPA's AOC have also been incorporated into an AOC issued by NYSDOH and, therefore, are no longer FAD requirements.

USEPA's January and May 1997 Determinations: By 1995, implementation of a number of conditions of the 1993 determination had not yet occurred. At that time, USEPA and other interested stakeholders urged the Governor of New York State to intercede. Then Governor George E. Pataki brought the parties together in a consensus-building approach to negotiate reasonable, effective, and scientifically-defensible Watershed protection programs.

The January 1997 New York City Watershed Memorandum of Agreement (MOA), signed by New York State, the City, Watershed towns and counties, environmental parties, and USEPA, enabled the City to implement Watershed protection programs necessary to continue to avoid filtration. On January 21, 1997, the New York City Department of Environmental Protection (NYCDEP), which operates the Catskill/Delaware system, received a Water Supply Permit (WSP) from the New York State Department of Environmental Conservation (NYSDEC). This permit authorized NYCDEP to acquire land and conservation easements in the Watershed of the City's water supply system. The City promulgated new Watershed Rules and Regulations (effective on May 1, 1997) and established economic partnerships with Watershed communities to assist the City and stakeholders in their efforts to protect the Watershed. In addition, the MOA mandated wastewater treatment plant (WWTP) upgrades, nonpoint source pollution controls, and the review of the existing monitoring program.

USEPA issued a four-month interim FAD on January 21, 1997, followed by a FAD in May 1997, granting the City conditional relief from filtering its Catskill/Delaware water system until the agency made a further determination, scheduled for April 15, 2002.

USEPA's November 2002 Determination: Based on NYCDEP's *2001 Long-Term Watershed Protection Program*, USEPA issued a FAD in November 2002, which included significant enhancements to the overall Watershed protection program. In addition, the 2002 FAD highlighted two major themes in the City's program: a long-term commitment to Watershed protection programs, and a reliance on Watershed partners (such as the Catskill Watershed Corporation (CWC) and the Watershed Agricultural Council (WAC)) to enhance program acceptance and implementation.

Program enhancements in the 2002 FAD included expansion of the agricultural program to include small farms and East-of-Hudson (EOH) farms; commitment to seven new wastewater projects for communities on the MOA prioritized list; an expanded stream management program (SMP); study of Catskill turbidity and evaluation of control alternatives; and commitment to construction of a UV light disinfection plant for the Catskill/Delaware water supply.

USEPA's July 2007 Determination: In accordance with the provisions of the 2002 FAD, the 2007 FAD development process was initiated by the City's submittal of a report entitled *2006 Watershed Protection Program Summary and Assessment* in March 2006. After extensive consultation with USEPA, NYSDOH and NYSDEC, the City submitted its *2006 Long-Term Watershed Protection Program* in December 2006. In developing its *2006 Long-Term Watershed Protection Program*, the City, among other things, committed to take additional steps to address

several significant issues and challenges that are important to the continuation of filtration avoidance: 1) excessive turbidity in the Catskill system that is produced by large storm events; 2) compliance with new, more stringent national standards for disinfection byproducts; and 3) the potential for changes in development patterns, and how to refine the City's land acquisition program. The *2006 Long-Term Watershed Protection Program* was premised on the 2007 FAD being issued for a period of five years and thus geared its various programs and activities to such a five-year period.

After the City submitted its *2006 Long-Term Watershed Protection Program*, and based on input received from interested stakeholders and discussions among the parties, the City, USEPA, and NYSDOH agreed that the 2007 FAD would cover a term of ten years, consisting of two five-year periods: 2007-2012 ("First Five Year Period"), and 2012-2017 ("Second Five Year Period"). As part of this agreement, the City committed to a land acquisition program covering ten years, rather than five as originally proposed. The City also agreed that, by January 21, 2010, it would apply for a WSP from NYSDEC covering a ten-year period. The 2007 FAD included requirements for programs other than land acquisition for the First Five Year Period, with provisions for developing program commitments for the Second Five Year Period. A mid-term review of the 2007 FAD would consider what programs should be continued during the Second Five Year Period; whether and how any of the continuing programs should be modified; and/or whether additional programs were needed to justify the continuation of the FAD for the second five years of its term. Proposed requirements for the Second Five Year Period were subject to USEPA and NYSDOH review and approval. USEPA and NYSDOH would seek input from Watershed stakeholders regarding the commitments to be established for the Second Five Year Period and would then issue a mid-term revision to the FAD in 2012 memorializing the new commitments.

On April 12, 2007, USEPA released a draft 2007 FAD which incorporated a land acquisition program covering ten years, as described above. Based on public response to this draft, the City made several additional commitments to enhance its Watershed protection program. Program enhancements in the 2007 FAD included:

- expanding the Septic Remediation and Replacement Program to include cluster systems and small businesses;
- funding wastewater management systems in the final five communities listed in Paragraph 122 of the Watershed MOA;
- providing additional funds for wastewater treatment plant upgrades West-of-Hudson (WOH);
- funding an additional engineering position at the CWC to assist applicants in complying with storm water provisions of the Watershed Rules and Regulations (WR&Rs);
- funding WAC to: implement a forest easement program, support easement stewardship activities, make the Nutrient Management Credit more widely available, and report on a study of Precision Feed Management (PFM); and
- funding local consultation activities to support review of proposed City land acquisitions.

In July 2007, USEPA, in consultation with NYSDOH, determined that the City's *2006 Long-Term Watershed Protection Program*, along with the milestones, clarifications, and additions set

forth in the 2007 determination, would achieve the objectives of the SDWA and the SWTR for unfiltered systems.

Developments Following the Issuance of the 2007 FAD: In September 2007, USEPA granted NYSDOH primary regulatory responsibility for the SWTR as it applies to the Catskill/Delaware water supply, making NYSDOH the primacy agency for oversight of the City's FAD.

On April 4, 2010, the City adopted amendments to its *Rules and Regulations for the Protection from Contamination, Degradation and Pollution of the New York City Water Supply and Its Sources* (WR&Rs). These amendments made the City's WR&Rs consistent with the State's requirements for storm water pollution prevention plans (SWPPPs), and revised the definition of "phosphorus-restricted basin" to include basins for source water reservoirs whose phosphorus levels exceed 15 micrograms/liter.

After significant discussion among the City, the State, USEPA, and Watershed stakeholders on the conditions that would apply to the City's Land Acquisition Program, the City applied to NYSDEC for a WSP in 2010, and the City was issued a fifteen-year WSP on December 24, 2010.

NYSDOH's Revised 2007 FAD: At the end of the First Five-Year Period, NYSDOH, as the recently-designated primacy agency, took the lead on conducting a review of the City's implementation of its *2006 Long-Term Watershed Protection Plan* and compliance with the requirements of the FAD. NYSDOH, in consultation with USEPA, issued an assessment in September 2011. This assessment, along with multiple meetings with the City, stakeholder outreach and public input, formed the basis for the Revised 2007 FAD.

In May 2014, NYSDOH issued the Revised 2007 FAD. In general, the activities set forth for the First Five Year Period of the 2007 FAD remained relevant and formed the basis for program implementation during the remaining period of the 2007 FAD. However, a number of program requirements were revised to enhance program effectiveness or to improve efficiency of implementation. In particular, severe flooding due to tropical storms that occurred in 2011 demonstrated the detrimental impacts flooding can have on water quality. In response, a new focus was placed on flood hazard mitigation in the Revised 2007 FAD. A City-funded Flood Buy-Out (NYCFFBO) program and Local Flood Hazard Mitigation Programs (LFHMPs) associated with the Stream Management Program (SMP) and CWC were developed to address flood-related water quality issues. Other program enhancements included a Septic Repair Program for the EOH FAD Basins (i.e., West Branch, Boyd Corners, Croton Falls, and Cross River Reservoirs and Lake Gleneida), a requirement to work with the National Research Council (NRC) to convene an Expert Panel to review the City's use of the Operations Support Tool (OST), and a requirement to begin the process of convening an Expert Panel to review the City's overall Watershed protection strategy and provide recommendations for improving Watershed protection programs.

NYSDOH's 2017 FAD: With the next determination regarding the City's filtration avoidance status scheduled for July 2017, preparations began for development of the 2017 FAD in early 2016. As required by the Revised 2007 FAD, the City submitted its *2016 Watershed Protection*

Program Summary and Assessment (March 2016). Based on this report, ongoing review of the City's Watershed protection activities, and water system inspections, NYSDOH issued its report entitled *Implementation of New York City's Watershed Protection Program and Compliance with the Revised 2007 Filtration Avoidance Determination* (July 2016). This report concluded that "NYSDOH finds that the City has a comprehensive and robust Watershed protection program, which, overall, is being effectively implemented by the City and its partners. The City continues to provide drinking water to NYC and upstate consumers that meets all requirements of the Surface Water Treatment Rule (SWTR)."

Other key components of the NYSDOH FAD reissuance process include:

- Multiple meetings with the City, including USEPA and NYSDEC, to discuss and come to agreement on proposed FAD program requirements;
- Outreach to Watershed Stakeholders;
- Public Information Sessions in June and July of 2016, held in Delhi, Hunter, Somers, New York City, and by webinar;
- *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* ("2016 Long-Term Plan," submitted by the City on December 15, 2016), which compiled the City's proposed commitments for FAD programs for a ten-year period;
- NYSDOH's Draft 2017 FAD, the requirements of which are based on the City's 2016 Long-Term Plan and subsequent input;
- A 45-day public comment period; and
- State Environmental Quality Review Act (SEQRA) review of the City's 2016 Long-Term Plan, amended as necessary to reflect the requirements of the 2017 FAD.

In 2015, representatives from WOH communities expressed concerns about the City's implementation and enforcement of its WR&Rs. Community representatives requested that the City commit to addressing these concerns in a supplemental side agreement to a modification to the City's WSP, which was required for the City to implement a City-Funded Flood Buy-Out Program. This side agreement, then under negotiation, followed on two prior agreements relating to the City's WSP and memorialized commitments by the City, the WOH communities and partner organizations, and a number of environmental stakeholders. These supplemental agreements essentially serve as updates to the MOA.

In early 2016, community representatives and the CWC met with NYSDOH, USEPA and NYSDEC to discuss these issues. Subsequently, many more meetings were held with WOH community representatives, later including the City and representatives from key Watershed stakeholder environmental groups, with the scope of the topics discussed expanding to include issues related to the City's Watershed program partnerships and to FAD programs. The results of these discussions have been documented in a Supplemental Agreement associated with the 2017 FAD. Many of the resolutions resulting from these discussions have been included in the 2017 FAD as new or revised program requirements.

The City's 2016 Long-Term Plan and the 2017 FAD have been developed to cover a ten-year period from 2017-2027, documenting the City's long-term commitment to its Watershed

protection programs. Unlike the 2007 FAD, the 2017 provides for a ten-year commitment for all Watershed protection programs. The 2017 FAD also provides for a focused review of the City's Watershed protection programs around the halfway point of the FAD term to ensure that the programs are adequate for the City to continue to meet the requirements of filtration avoidance in the future. This review will be informed by the findings of an independent panel of experts ("Expert Panel"), who will be convened by the National Academies of Sciences or NRC (now called the National Academies of Sciences, Engineering, and Medicine (NASEM)). The City was required to engage with the NRC by the Revised 2007 FAD. A similar review was conducted by the NRC as the City was developing its Watershed protection programs in the late 1990s. Stakeholder input received during the development of the Revised 2007 FAD suggested that, as nearly 20 years had passed since that review was conducted, a new review was timely. In early 2015, NYSDOH solicited input from stakeholders on the scope of work for this review and worked with the City to develop a scope of work.

The 2017 FAD requires the City to commence the Expert Panel review by January 31, 2018. The Panel is anticipated to issue a report on its findings 33 months after it commences work (anticipated by October 31, 2020). Four months after the release of the report (anticipated late February 2021), the City, in cooperation with NYSDOH, will convene a meeting or meetings of Watershed stakeholders to present the Expert Panel's findings and solicit stakeholder input. Stakeholder input on the findings of the NASEM review and matters relevant to the FAD programs will be accepted during a 60-day comment period following the stakeholder meeting(s). The City, in consultation with regulators, will evaluate the Expert Panel findings, along with stakeholder input relevant to the FAD programs. NYSDOH will review the Expert Panel report, the March 2021 Watershed Protection Program Summary and Assessment Report, and stakeholder input. If NYSDOH, in consultation with USEPA, determines that changes to the Long-Term Watershed Protection Plan are warranted and necessary to ensure that filtration avoidance criteria continue to be met, NYSDOH will instruct the City to incorporate these changes into the 2021 Long-Term Watershed Protection Plan. The City will submit the 2021 Long-Term Watershed Protection Plan to NYSDOH by December 15, 2021. Concurrently, NYSDOH, in consultation with USEPA, will complete a FAD compliance assessment report, which is a comprehensive review of the City's performance in meeting the terms of the 2017 FAD. It is anticipated that this report will be issued in July 2021. Any revisions to the City's Long-Term Watershed Protection Plan will be incorporated into a draft Revised 2017 FAD, which will be made available for a 45-day public comment period. A final Revised 2017 FAD is scheduled to be issued in July 2022.

In general, the activities set forth in the Revised 2007 FAD remain relevant and form the basis for program implementation during the 2017 FAD period. However, several program requirements have been revised to enhance program effectiveness or to improve efficiency of implementation. The following new or revised program elements have been included in the 2017 FAD:

Septic System and Sewer Programs: The City's various Septic System and Sewer Programs have successfully reduced the potential for sanitary waste from failing septic systems to contaminate the City's Catskill/Delaware water supply. However, during the 2016 WOH stakeholder meetings, community representatives noted that there were gaps in who could

receive assistance from the City's Septic System and Sewer Programs, and suggested that in some cases the high cost of septic system rehabilitation or replacement in the NYC Watershed deterred these system owners from implementing repairs or, in the case of business owners, compelled them to go out of business or leave the Watershed. To address these gaps, the City has modified its Small Business Septic System Rehabilitation and Replacement Program to now cover not-for-profit and government-owned facilities (including firehouses), and all or some of the costs of qualifying alterations or modifications to existing septic systems covered by the program. In addition, the communities and the City agreed that the CWC would be given discretion to cover costs associated with seasonal high groundwater level determinations made by the City, when such a determination is disputed by an applicant's professional engineer. Funding to support such determinations would be allocated from the CWC's Alternate Septic Fund. These new program elements have been included as commitments in the 2017 FAD.

The 2017 FAD has clarified that in all the septic system programs, where sewer extensions to City-owned WWTPs or to WWTPs not owned by the City are more cost-effective than stand-alone solutions, the City will support the design and construction of such sewer extensions. The City will charge households served by a sewer extension to a City-owned WWTP no more in annual operation and maintenance costs than the maximum for households served by WWTPs in the New Infrastructure and Community Wastewater Management Programs pursuant to MOA Paragraph 122. Where a sewer extension to a WWTP not owned by the City is warranted, the City will provide additional funding to the owner of the WWTP to cover any annual operation and maintenance costs above the household maximum established in MOA Paragraph 122. Where a sewer extension serves an entity other than a household, the City will provide supplemental funding to ensure that the entity's annual operation and maintenance costs are comparable to those of non-residential sewer users served by WWTPs in the New Infrastructure or Community Wastewater Management Programs.

Community Wastewater Management Program: The Revised 2007 FAD required the City to complete a study to determine the need for a community wastewater management system for the Hamlet of Shokan. Based on available data, NYSDOH has required the City to provide funding for development and installation of an appropriate wastewater management solution for Shokan pursuant to a timeline defined in the 2017 FAD.

Stormwater Programs: Included in the list of concerns from the WOH communities, raised in 2015, was the City's enforcement of its WR&Rs in regard to stormwater management issues. In some instances, the communities and the City disagreed as to which components of the Storm Water Pollution Prevention Plan (SWPPP) design and implementation constituted incremental differences between State-required measures and City-required measures. In accordance with the MOA, the City is required to compensate for the costs of such incremental differences. The City and CWC are developing a more effective way to identify incremental costs for reimbursement under this program. In addition, certain Future Stormwater costs that the City, in accordance with paragraph 145 of the MOA, had formerly paid directly to applicants, will now be addressed through the CWC's program. The 2017 FAD commits the City to replenishing the CWC's Future Stormwater Fund to ensure continuity of the Future Stormwater Programs.

Land Acquisition Program: The Environmental Impact Statement (EIS) completed by the City in conjunction with issuance of its WSP in 2010 analyzed the potential impacts of the City's Land Acquisition Program (LAP) on selected towns in the Watershed. The EIS determined there would be no adverse environmental impacts at the levels of acreage projected for the analysis. During the 2016 WOH stakeholder meetings, the WOH communities expressed concern that the City was nearing the projected levels of acquisition in some towns. In response, the City committed to updating or completing assessments for 21 towns. The City accepted public comments for 180 days following the release of those updated assessments, until October 31, 2017. Based on the updated Town Level Assessments and its review of comments received, the City will consider whether it should modify its 2012-2022 Long-Term Land Acquisition Plan and discuss its conclusions with NYSDOH, USEPA, and NYSDEC. The City will share any proposed modifications to its solicitation plan, or the basis for a conclusion that no modifications are warranted, with the WOH stakeholders. While the study was being conducted and until the City's adoption of a modified solicitation plan or conclusion that no modifications are necessary, the City agreed to stop or reduce solicitation of land in Delhi, Windham, Andes, Roxbury, Walton, Kortright, Bovina, Middletown, and Halcott. The City will continue solicitation in those towns for the Streamside Acquisition Program (SAP) and the City-Funded Flood Buy-Out Program (NYCFFBO), and the City may accept incoming solicitations initiated by landowners. To continue to ensure that Watershed communities have adequate funding to review the City's land acquisitions, the City will increase the cap on local consultation funding from $30,000 to $40,000 per incorporated town and village, and funding will be available for towns to review the updated town level assessments.

The 2017 FAD commits the City to continue to solicit landowners for a total of 350,000 acres over the seven-year period, 2017 through 2024; however, some changes have been made to the LAP. The credit allowed for solicitation done under WAC's easement programs, NYCFFBO Program, and SAP has been increased from 10,000 acres per year in the Revised 2007 FAD to 20,000 acres per year in the 2017 FAD. The City will now receive five acres credit for every one acre solicited under the NYCFFBO program and the SAP. Although the 2017 FAD covers program requirements through 2027, the FAD acknowledges that the City's WSP, which permits the City to conduct a land acquisition program, expires in 2025. To address this, the 2017 FAD provides that the City solicit landowners only through 2024 and assess funding annually, with review by NYSDOH, USEPA, and NYSDEC, to ensure program funds are adequate to cover program needs. In addition, all FAD requirements for this program beyond 2025 are conditioned upon reissuance of the City's WSP. However, NYSDOH anticipates that land acquisition will continue to be an important component of the City's overall Watershed protection strategy. To avoid a potential gap in program activities, and to allow adequate time for stakeholder input on the LAP, the 2017 FAD requires that the City apply in 2022 for a water supply permit to succeed the 2010 WSP, three and a half years before the permit expires. In addition, the City must develop a Long-Term Land Acquisition Plan covering the period 2023-2033. This long-term plan will provide continuity as the City transitions from the City's last plan, covering the period 2012-2022, and will consider the findings of the NASEM Expert Panel regarding the LAP. The Expert Panel findings, the Long-Term Land Acquisition Plan, and public input will also help inform the conditions of the WSP reissuance.

The 2017 FAD continues to require the City to support WAC's Agricultural Easement Program and a stewardship fund to provide for continuing oversight of WAC's acquisitions. The 2017 FAD also ensures that adequate funding will be available for the WAC Forest Easement Program, in anticipation that this program will be continued beyond its pilot phase.

The 2017 FAD commits the City to providing additional funding to support the SAP. The 2017 FAD acknowledges that, in accordance with the City's WSP, and in consultation with NYSDOH, NYCDEP and other agencies or local governments, NYSDEC may make a written determination whether or not the SAP should be expanded beyond the Schoharie Reservoir Basin. A workgroup will be convened to explore payment approaches or incentives that may be applied to purchasing streamside lands.

The City commits to continue to explore opportunities to enhance the LAP through partnerships with land trusts, including a new program that may help protect farms that are not currently protected by an easement, when the current owners no longer wish to farm. This program will help transition these farms to new farm owners, with a conservation easement in place.

The City will also work with stakeholders to explore opportunities to use certain City-owned lands that have lower water quality protection values to facilitate relocation of development out of the floodplain.

Watershed Agricultural Program: As the Watershed Agricultural Program (WAP) has developed and matured over two decades, the metrics employed to measure the achievements of this program have evolved. The focus of the WAP has moved from maximizing farmer participation and development of Whole Farm Plans (WFPs) to implementing, maintaining, and repairing the Best Management Practices (BMP) that have been recommended by the WFPs. The 2017 FAD requires that the program implement at least 50% of the new BMPs that have been identified and repair 50% of the BMPs in need of repair by the end of 2024. Program funding will be reviewed to allow for greater levels of implementation and repair if feasible. WAP metrics will be evaluated in 2023 to determine if they are adequate to assess program efficacy and whether the metrics should be continued or modified.

Watershed Forestry Program: The Watershed Forestry Program continues to develop new ways to engage foresters and forest landowners and promote the stewardship of healthy, sustainable forests in the Watershed. The 2017 FAD promotes the use of tools like NYS's forest tax abatement program, the MyWoodlot.com website, and the Conservation Awareness Index to achieve program goals.

Stream Management Program: The Stream Management Program will continue to inventory stream features in the Watershed and work to prioritize stream restoration work based on water quality protection benefits. To support these efforts, the City will continue to pursue a study evaluating stream management projects' effectiveness in turbidity reduction. The 2017 FAD sets requirements for accomplishments for the Stream Management Program, including completing 24 stream projects, revegetating at least 5 miles of streambanks through the Catskill Streams Buffer Initiative (CSBI), and funding at least 100 community-driven projects through the Stream Management Implementation Program (SMIP). Through programs administered by both the

SMP partners and the CWC, the City also commits to funding flood mitigation projects that are generated from the Local Flood Analyses (LFAs) that have been done in a number of WOH communities.

A few issues related to the SMP were identified by stakeholders during the 2016 WOH stakeholder meetings. Stakeholders raised concerns that the City was requiring LFA-generated projects to undergo a benefit-cost analysis (BCA), using a procedure developed for the Federal Emergency Management Agency (FEMA), and meet a cost-benefit ratio (BCR) greater than 1.0. The City and WOH stakeholders have agreed that projects generated from the LFAs will undergo a FEMA BCA for the purposes of applying for State and federal funds, should they become available. However, projects will not be required to meet a specific FEMA BCR to be eligible for SMIP or CWC funding. The stakeholders will continue to work to develop a method for evaluating water quality benefits of LFA-generated projects to help prioritize project implementation.

Delaware County and WAC proposed a pilot program to make use of a new funding opportunity from the Conservation Reserve Enhancement Program (CREP). CREP now provides funding to vegetate riparian buffers on fallow agricultural lands. The City and stakeholders have agreed that Delaware County will use SMP funds allocated to DCSWD to implement a pilot program to integrate this new CREP program with the CSBI. The City will work with the CSBI programs in Greene, Schoharie, Sullivan, and Ulster Counties to make use of CREP where applicable through the CSBI framework.

Representatives from environmental advocacy groups suggested that the City participate in a workgroup composed of regulators and Watershed stakeholders to develop a plan for in-stream and riparian emergency recovery procedures following flood events. The plan would identify the locations of equipment and other key resources, provide contact information for local professionals trained to perform emergency recovery procedures, and outline a regulatory approval process that expedites emergency stream work while maintaining water resource protection. A requirement to participate in such a workgroup has been added to the 2017 FAD. The City will continue to support emergency stream intervention training in furtherance of these efforts.

Ecosystem Protection Program: The City's 2016 *Long-Term Watershed Protection Plan* introduced a new program, the Ecosystem Protection Program, which is a combination of several of the City's existing programs. Watershed protection efforts under the Forestry, Wetlands, and Invasive Species programs have been brought together under the Ecosystems Protection Program. During the term of the 2017 FAD, the City will submit updated Watershed Forest Management Plans and updated strategies for implementation of the Wetlands Protection and Invasive Species program elements.

East-of-Hudson (EOH) Nonpoint Source Pollution Control Program: The 2017 FAD commits the City to continue to implement an EOH Septic Repair Program in the four Catskill/Delaware FAD basins (West Branch, Boyd's Corner, Croton Falls, and Cross River Reservoirs), and will extend the availability of this program to the basins that are upstream and hydrologically connected to the Croton Falls Reservoir. To date, the existing program, as established by the

Revised 2007 FAD, has had little participation. The 2017 FAD requires the City to continue to provide funding to cover at least 50% of the cost of repair or replacement of 35 septic systems per year. The City will also report on efforts to enhance the awareness of potential program participants to program availability.

The 2007 FAD included a requirement that the City provide $4.5 million to address stormwater pollution in the Cross River and Croton Falls Reservoir basins, as well as the basins upstream/hydrologically connected to these reservoirs. This funding was to be used to provide a 50% match to local funding, and was directed at funding stormwater retrofit projects that would help EOH communities meet their requirements under the NYSDEC Municipal Separate Storm Sewer Systems (MS4) State Pollutant Discharge Elimination System (SPDES) general permit. The requirements for the MS4 permit are based on meeting specified phosphorus reduction goals. The Revised 2007 FAD included reference to additional funding for these projects, specifically $15.5 million that had been committed by the City's 2010 WSP. The $20 million previously allocated has been spent by the EOH communities to meet the requirements set for the first five-year period of the MS4 general permit. The 2017 FAD requires the City to provide $22 million of additional funding to EOH communities to continue efforts to reduce phosphorus inputs to EOH FAD basins. The City will also provide a new source of funds to facilitate the preliminary planning of community wastewater solutions for areas in the EOH FAD basins where poorly functioning individual septic systems have the potential to impact water quality. These stormwater and wastewater programs will work together to provide the most benefit toward achieving the goal of reducing phosphorus inputs, as well as other pollutants, to the City's EOH FAD reservoirs.

Catskill Turbidity Control Program: The Revised 2007 FAD required the City to fund an Expert Panel review of its use of the Operations Support Tool (OST). The City has contracted with the NASEM to convene a panel to conduct this review. The first meetings of the Expert Panel, which included public participation, were held in Kingston, NY on January 5 and 6, and April 24 and 25, 2017. The 2017 FAD continues the requirement for the Expert Panel review. The 2017 FAD also continues requirements for the City to report and meet with regulators on the EIS being done in relation to proposed modifications to the City's Catalum SPDES permit. Modifications to the City's Catskill turbidity control strategies may result from this environmental impact study.

Multi-tiered Water Quality Modeling Program: At the request of NYSDOH, the City has added a commitment to this program to hold an annual progress meeting with the regulators to present and discuss results of the modeling program's work. As the activity in this program continues to expand and as modeling has become an increasingly important tool used in planning for, managing, and operating the Catskill/Delaware water system, these meetings will help ensure that NYSDOH is up-to-date and understands the modeling the City uses to meet its Watershed protection goals.

Watershed Rules and Regulations: Many of the issues raised during the 2016 WOH stakeholder meetings pertained to the City's WR&Rs, in particular those related to septic systems, sewer systems, and stormwater. Working with the WOH stakeholders, and in consultation with NYSDOH and NYSDEC, the City has proposed revisions to the WR&Rs to address these concerns and to ensure that the WR&Rs incorporate the most recent State wastewater and

stormwater requirements. The 2017 FAD requires the City to report semi-annually on the progress of the proposed changes to the WR&Rs until they are adopted.

Within this program, the City also commits to provide NYSDOH with an annual update on the capital replacement of equipment and methods at eligible WWTPs that are required by the WR&Rs and not otherwise required by State or federal law.

Catskill/Delaware Filtration Plant Design: Since the 2002 FAD, the City has been required to report on any updates to its preliminary design for filtration facilities for the Catskill/Delaware water supply, which was initially required by the 1993 FAD. While some updates to the preliminary design have been made, the City has determined, and NYSDOH agrees, that a comprehensive review of this design should be conducted and that a new conceptual design should be developed, using the knowledge and technologies that are currently available. The 2017 FAD requires the City to report on the status of the design development process, conduct bench-scale and larger scale pilot studies and submit a conceptual design in 2026.

FAD Administration: During the 2016 WOH stakeholder meetings, the City's Watershed program partners (i.e., the County Soil and Water Conservation Districts, Cornell Cooperative Extension (CCE), WAC, and CWC) noted some commonly-experienced issues with the City's contracting and funding processes. In some cases, these issues have led to delays in program implementation. The City has initiated dialog between its partners and its contract and budget staff to better identify and address these issues to the extent possible. Consequently, the 2017 FAD requires the City to report annually on the status of key partnership contracts and funding projections. In addition, NYSDOH may request to meet with the City and program partners to discuss and foster resolution to any contract or funding issues that may be interfering with FAD program implementation.

References to program partner contracts throughout this FAD require the City to "execute and register" the contract by the specified due date. In accordance with the City's contracting procedures, an "executed" contract has been signed by the City and the program partner. Once an executed contract has been "registered", funding becomes available so that the program partner may begin invoicing to fund program activities.

Co-location of NYCDEP and CWC staff in the Watershed: NYSDOH recognizes that the success of many of the City's Watershed protection efforts relies on cooperation from the City's FAD program partners and Watershed stakeholders. The City has proposed to enhance opportunities for collaboration and cooperation with WOH partners and communities by co-locating some of the NYCDEP staff with CWC staff in a new office planned to be constructed in Arkville, NY. NYSDOH supports this effort in the FAD with the recognition that it may help facilitate Watershed protection program implementation. The 2017 FAD requires the City to sign a binding commitment to lease space in the new Arkville office building and to assign at least 40 NYCDEP staff to this location by December 31, 2026.

Other Stakeholder Issues: The WOH stakeholders also discussed efforts to enhance communication and coordination during emergencies related to the City's reservoir dams and forest fires on City lands. The City has agreed to meet with emergency management staff to

discuss these issues. While these efforts are outside of the scope of the FAD, NYSDOH recognizes that such coordination activities are integral to maintaining relationships that will sustain the City's ability to manage its water supply system into the future.

Revisions Made in Response to Public Comments

The Draft 2017 FAD was released to the public for review and comment July 21, 2017, followed by a 45-day comment period, which ended on September 5, 2017. Several revisions were made to the FAD in response to those public comments. Most of comments focused on the need for a midterm, or 5-year, review of the 2017 FAD. The text on page 8 and 15 of this FAD was revised to make clear the timeline of activities following the release of the NASEM Expert Panel report and the formal midterm review.

The Office of the Watershed Inspector General (WIG) submitted several recommendations related to the evaluation and regulation of stormwater associated with new development in the City's Watershed and the particular practices used in phosphorus-restricted basins. This submission included a report commissioned by the WIG titled, "Review of Stormwater Phosphorus Characteristics and Treatment for New Development in the New York City Watershed." Stormwater in the Watershed is regulated by NYSDEC and by the City's Watershed Rules and Regulations. The information submitted by the WIG, along with all other comments submitted during the 45-day comment period for the draft 2017 FAD, will be provided to the NASEM Expert Panel for consideration in its evaluation of the City's Watershed Protection Program. NYSDOH encourages the WIG to continue to work with the City and NYSDEC on new scientific developments related to stormwater practices and enhanced phosphorus removal.

In Conclusion

The 2017 FAD is one component of the City's comprehensive Watershed protection program, which has been established within the context of the MOA and previous FADs. Many of the program activities will be implemented through partnerships with Watershed stakeholders that the City has developed and maintained since the signing of the Watershed MOA. This FAD includes all the commitments made by the City in their 2016 Long-Term Plan. Note that the City is required to meet the requirements and due dates as set forth in this determination, rather than those in the 2016 Long-Term Plan, in instances where they differ from those in the 2016 Long-Term Plan.

In addition, the 2017 FAD requires continued implementation of the WR&Rs (effective May 1, 1997 and amended April 4, 2010) and compliance with the WSP issued by NYSDEC for land acquisition (last reissued December 24, 2010). The 2017 FAD also requires that the City continue to meet the filtration avoidance criteria, detailed in 40 CFR §§141.71, 141.72, 141.171, and 141.712; and 10 NYCRR Part 5, Subpart 5-1, Section 1.30(c).

The 2017 FAD supersedes the Revised 2007 FAD and will be effective until a further determination is made, currently scheduled for July 2027. Looking ahead, NYSDOH, in consultation with USEPA, will commence a mid-term review of the City's compliance with the

terms of the 2017 FAD, and issue a compliance assessment report on this review by July 31, 2021. By December 15, 2021, the City will submit the 2021 Long-Term Watershed Protection Plan to NYSDOH for review, which will address the findings of the compliance assessment report and incorporate any FAD program changes required by NYSDOH. These changes will then be incorporated into a draft Revised 2017 FAD, with a final Revised 2017 FAD scheduled for issuance in July 2022. To transition from the Revised 2017 FAD into the 2027 FAD, NYSDOH expects that the City will undertake a comprehensive evaluation of its Watershed protection program to be completed by March 31, 2026. NYSDOH will conduct a FAD compliance review, and issue a compliance assessment report on this review by July 31, 2026. This report will assist the City in its development of a new Long-Term Watershed Protection Plan due on December 15, 2026. The 2026 Long-Term Watershed Protection Plan will serve as the principal reference for the next FAD reissuance, scheduled for July 2027. The dates above are tentative and may be re-evaluated by NYSDOH as necessary.

Regulatory Authority

NYSDOH possesses authority under both State and federal law to enforce the 2017 FAD and the City's Long-Term Watershed Protection Plan, as revised in December 2016. Collectively, these documents, along with the City's WR&Rs and related requirements of the State Sanitary Code, *see* 10 NYCRR § 5-1.30, and federal regulations, *see* 40 CFR § 141.71(b), and 141.171, embody the "watershed control program" for filtration avoidance under State law and under the federal Safe Drinking Water Act, 42 USC § 300f *et seq.*

The City would be in violation of State and federal filtration avoidance requirements if it failed to comply with its obligations to fully maintain the watershed control program, including any failure by the City to make adequate, timely, and approvable submissions to NYSDOH required by that program. *See* 40 CFR § 141.71(b)(2) and (3) (watershed control program and disinfection treatment process must be "adequately designed and maintained" to "the State's satisfaction"); 10 NYCRR § 5-1.30(d). The City also would be in violation of State and federal filtration avoidance requirements if it were to fail to meet applicable standards for water quality and disinfection. *See* 40 CFR § 141.71(a)(1) and (2); 141.71(b)(1), (4), (5), and (6); 141.71(c)(2); 10 NYCRR § 5-1.30(d).

NYSDOH may take enforcement action against the City to address any such violations through the Commissioner's assessment of civil penalties of up to $25,000 per day for each violation, *see* Public Health Law § 206(4)(d), and in a State or federal court action brought by the Attorney General on NYSDOH's behalf to compel the City to comply with the watershed control program or, in the alternative, to compel the City to filter its Catskill/Delaware water supply.

2. SWTR Filtration Avoidance Criteria Requirements

The Surface Water Treatment Rule (SWTR) at 40 CFR §141.71, the Interim Enhanced Surface Water Treatment Rule (IESWTR) at 40 CFR §141.171, and 10 NYCRR, Subpart 5-1, §5-1.30 require that all surface water supplies provide filtration unless certain source water quality, disinfection, and site-specific avoidance criteria are met. In addition, the supplier must comply with: (1) the Revised Total Coliform Rule (RTCR); and (2) the Stage 1 Disinfectants and Disinfection Byproducts Rule. Further, the Stage 2 Disinfectants and Disinfection Byproducts Rule and the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) establish additional important requirements for unfiltered systems, although these provisions are not identified in USEPA regulations as filtration avoidance criteria.

The City will continue to report to NYSDOH and USEPA on two items not specifically required by the SWTR as conditions of filtration avoidance. The requirements are to: (1) report on the operational status of the Catskill/Delaware Ultraviolet Disinfection Facility, as required by LT2; and (2) notify NYSDOH and USEPA within 24 hours of learning that a sample from a distribution system RTCR compliance site has tested positive for *E. coli*.

Expert Panel Review

The 2017 FAD continues the requirement from the Revised 2007 FAD that the City convene an Expert Panel to review the City's Long-Term Watershed Protection Plan, water quality and water quality trends, and anticipated future activities that might adversely impact the City's water supply. The City will contract with the National Academies of Science, Engineering, and Medicine (NASEM) to conduct this review. Following the release of the Expert Panel's final report, the City will convene a public meeting with NYSDOH, USEPA, NYSDEC, and Watershed stakeholders to discuss the findings and recommendations of the Expert Panel. NYSDOH may request additional stakeholder meetings if necessary.

NYSDOH expects that this process will inform changes to the City's Long-Term Watershed Protection Plan and, correspondingly, some requirements of this FAD. The anticipated timeline for these activities would see revisions to the City's Long-Term Watershed Protection Plan in late 2021, and revisions to this FAD in mid-2022. Any revisions to this FAD would be subject to a 45-day public comment period.

The City's Filtration Avoidance Criteria Requirements are described in Section 2.1 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the SWTR Objective Criteria requirements in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Continue to meet SWTR filtration avoidance criteria (40 CFR §141.71 and §141.171, and 10 NYCRR §5-1.30) and submit reports and certification of compliance on: • §141.71(a)(1) and §5-1.30(c)(1) – raw water fecal coliform concentrations • §141.71(a)(2) and §5-1.30(c)(2) – raw water turbidity sampling • §141.71(b)(1)(i)/§141.72(a)(1) and §5-1.30(c)(3) – raw water disinfection CT values • §141.71(b)(1)(ii)/§141.72(a)(2) and §5-1.30(c)(4) – operational status of Kensico and Hillview disinfection facilities, including generators and alarm systems • §141.71(b)(1)(iii)/§141.72(a)(3) and §5-1.30(c)(5) – entry point chlorine residual levels • §141.71(b)(1)(iv)/§141.72(a)(4) and §5-1.30(c)(6) – distribution system disinfection levels (the City will include a discussion of any remedial measures taken if chlorine residual levels are not maintained throughout the distribution system) • §141.71(b)(5) and §5-1.30(c)(10) – distribution system coliform monitoring, including a summary of the number of samples taken, how many tested positive for total coliform, whether the required number of repeat samples were taken at the required locations, and which, if any, total coliform positive samples were also *E. coli* positive. For each *E. coli* positive sample, include the investigation of potential causes, problems identified and what has or will be done to remediate problems. Include copies of any public notices issued as well as dates and frequency of issuance.	Monthly[1]
All requirements described in §141.71(b)(4) and §5-1.30(c)(8) must continue to be met. Notify NYSDOH and USEPA within twenty-four hours of any suspected waterborne disease outbreak.	Event Based
All requirements described in §141.71(b)(6) and §5-1.30(c)(9) must continue to be met. Submit report on disinfection byproduct monitoring results.	Quarterly[2]

Notify NYSDOH/USEPA within twenty-four hours, if at any time the chlorine residual falls below 0.2 mg/L in the water entering the distribution system.	Event Based
Notify NYSDOH/USEPA by the close of the next business day, whether or not the chlorine residual was restored within four hours.	Event Based
Report on the operational status of Kensico Reservoir, West Branch Reservoir (on-line or by-pass), Hillview Reservoir, and whether any of these reservoirs experienced unusual water quality conditions.	Monthly[1]
Regarding the emergency/dependability use of Croton Falls and Cross River source water: • The City shall not introduce Croton Falls or Cross River source water into the Catskill/Delaware water supply system without the prior written approval of NYSDOH. • As a condition of approval, the City must demonstrate continuing, substantial compliance with the Watershed protection program elements being implemented in the Croton Falls and Cross River watersheds that are contained in this Determination. • As a condition of approval, the City will submit water quality data and monitor water quality at Croton Falls and/or Cross River, pursuant to the approved sampling plan submitted to NYSDOH and USEPA in December 2016, or as revised by the City, and approved by NYSDOH and USEPA, thereafter. NYSDOH approval under this Section may include additional conditions including, but not limited to, project schedules or specific operating goals or parameters for the City's water supply facilities (such as maximizing use of the Croton Filtration Plant, or operation of the Catskill/Delaware UV Plant at 3-log inactivation). In evaluating requests for approval from the City, NYSDOH shall consult with USEPA.	Continuous

Contract with the National Academies to conduct an Expert Panel review of the City's Long-Term Watershed Protection Plan, water quality and water quality trends, and anticipated future activities that might adversely impact the water supply and its ability to comply with 40 CFR §141.71 and §141.171, and 10 NYCRR §5-1.30. Evaluate the adequacy of the City's Watershed Protection Programs for addressing these concerns and provide recommendations, as necessary, for improving programs.	
• Issue Commence Work notice to National Academies.	1/31/2018
• Upon request of the National Academies, provide any necessary background information and respond to any pertinent questions within the scope of the review.	Ongoing
• Ensure the schedule for public meetings is widely available either on a project-specific website, National Academies website or the NYCDEP website.	Ongoing
• Report on the status of the Expert Panel review in the FAD Annual Report.	Annually[3]
• Provide the final report to NYSDOH, USEPA, and NYSDEC.	Commence Work + 33 months
• Convene a public meeting with the regulators and Watershed stakeholders to discuss the major findings and recommendations of the Expert Panel review.	Date of Final Report + 4 months

Report Description	Due Date
Submit 2021 Long-Term Watershed Protection Plan	12/15/2021
Submit 2026 Long-Term Watershed Protection Plan	12/15/2026
Report on program implementation in the FAD Annual Report.	Annually[3]

[1] Monthly means reports for a monthly reporting period must be submitted no later than ten days after the end of each month.
[2] Quarterly means reports for a calendar quarter reporting period must be submitted no later than ten days after the end of each quarter.
[3] Annually means reports for a calendar year reporting period must be submitted no later than March 31 of the following year.

3. Environmental Infrastructure Programs

3.1 Septic and Sewer Programs

The City implements a comprehensive set of programs that serve to reduce the number of failing or potentially failing septic systems in the Watershed.

The goals for the Sewer and Septic Program under the 2017 FAD are to:

- Provide adequate funding for the Septic Remediation and Replacement program.
- Provide adequate funding for the Small Business Program.
- Provide adequate funding for the Cluster System Program.
- Continue to fund the Septic Maintenance Program.
- Complete the currently active Sewer Extension Projects.
- Provide funding for the Alternate Design Septic Program.

In all the septic system programs, where sewer extensions to City-owned WWTPs or to WWTPs not owned by the City are more cost-effective than stand-alone solutions, the City will support the design and construction of such sewer extensions. The City will charge households served by a sewer extension to a City-owned WWTP no more in annual operation and maintenance costs than the maximum for households served by WWTPs in the New Infrastructure and Community Wastewater Management Programs pursuant to MOA Paragraph 122. Where a sewer extension to WWTP not owned by the City is warranted, the City will provide additional funding to the owner of the WWTP to cover any annual operation and maintenance costs above the household maximum established in MOA Paragraph 122. Where a sewer extension serves an entity other than a household, the City will provide supplemental funding to ensure that the entity's annual operation and maintenance costs are comparable to those of non-residential sewer users served by WWTPs in the New Infrastructure or Community Wastewater Management Programs.

Septic Remediation and Replacement Program

The Septic Remediation and Replacement Program provides for pump-outs and inspections of septic systems serving single or two-family residences in the WOH Watershed; upgrades of substandard systems; and remediation or replacement of systems that are failing or reasonably likely to fail in the near future. Participation is currently available to residential properties within 700 feet of a watercourse or within the 60-day Travel Time Area. The goal is to ensure funding is in place to remediate or replace approximately 300 failing or likely-to-fail septic systems per year.

Small Business Program

The Small Business Septic System Rehabilitation and Replacement Program helps pay for repair or replacement of failed septic systems serving small businesses (those employing 100 or fewer people) in the WOH Watershed. Through CWC, eligible business owners are reimbursed for a

percentage of the cost of septic repairs. The goal is to ensure funding is in place to remediate or replace failing septic systems serving small businesses.

As part of discussions with Watershed stakeholders in 2016, the City agreed to fund an expansion of the CWC Small Business Septic System Program. This expansion will include funding 100% of the costs of repairs and qualifying alterations and modifications to septic systems for: small businesses with 20 or fewer employees; not-for-profit organizations with 5 or fewer locally-based employees; and governmental entities. The City will also fund 75% of the costs of repairs of, and qualifying modifications to, septic systems up to $100,000 for a single system, plus 100% of any cost over $100,000 for: small businesses with 21 or more employees; and not-for-profit organizations with 6 or more locally-based employees. For any equipment or methods of operation required solely by the WR&Rs and not otherwise required by State or federal law, the City will fund 100% of the cost for a septic system serving a population center or an entity that is "public" for purposes of Public Health Law (PHL) Section 1104.

Cluster System Program

The Cluster System Program funds the planning, design, and construction of cluster systems in thirteen communities in the WOH Watershed. Through CWC, eligible communities may elect to establish districts that would support cluster systems and tie multiple properties to a single disposal system. This enables communities to locate disposal systems on larger sites in areas where existing structures were sited on insufficiently-sized lots. The goal is to ensure funding is in place to remediate failing septic systems through construction of cluster systems. The City will also work with CWC to modify the program rules and program agreement for this program to help ensure that projects are implemented in a timely manner and that eligible operation and maintenance costs are adequately funded by the City.

Septic Maintenance Program

The Septic System Maintenance Program is a voluntary program open to home owners who constructed new septic systems after 1997 or participated in the septic repair program, and is intended to reduce the occurrence of septic system failures through regular pump-outs and maintenance. Through CWC, home owners are reimbursed 50% of eligible costs for pump-outs and maintenance. As part of the program, CWC also develops and disseminates septic system maintenance educational materials. The goal is to continue to fund 50% of the cost for septic pump-outs to qualified properties to enhance the functioning, and reduce the incidence of failures, of septic systems throughout the WOH Watershed.

Sewer Extension Program

The Sewer Extension Program has funded the design and construction of wastewater sewer extensions connected to City-owned WWTPs discharging in the WOH Watershed. The goal of this program is to reduce the number of failing or potentially failing septic systems by extending WWTP service to priority areas. The City has completed projects in the towns of Roxbury (Grand Gorge WWTP); Hunter-Haines Falls (Tannersville WWTP); Neversink (Grahamsville WWTP); and Hunter-Showers Road (Tannersville WWTP). The City anticipates that the sewer extension projects now under construction in Shandaken (Pine Hill WWTP) and Middletown (Margaretville WWTP) will be completed before the 2017 FAD is in place. The long-term goal for this program will depend upon future determination of need for projects.

Alternate Design Septic Program

The Alternate Design Septic Program funds the eligible incremental compliance costs of the septic provisions of the WR&Rs for new septic systems to the extent they exceed state and federal requirements. The City funded the Alternate Design Septic Program under the Watershed MOA. The goal is to support the use of funding to cover the eligible incremental costs to comply with the septic system provisions of the WR&Rs. This may include, at the CWC Board's discretion, incremental costs associated with a NYCDEP determination of high groundwater based on soils tests, when such a determination is disputed by an applicant's professional engineer.

The City's Septic and Sewer program is described in Section 2.2.1 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Septic and Sewer Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
In accordance with CWC Program Rules, contract with CWC to provide adequate funding in support of the Septic Remediation and Replacement Program at a funding level sufficient to address 300 septic systems per year and to cover the future costs of additional septic systems as they are identified and enrolled in the program.	Ongoing
In accordance with CWC Program Rules, contract with CWC to provide adequate funding in support of the Small Business Septic System Program provided that the need for such funding has been demonstrated. • Make additional funding available to the Small Business Septic System Program to address a total of 15 systems per year. A minimum of $13 million shall be made available to this program through 2027. • Reimburse CWC for funding used to support the Small Business Septic System Program prior to contract execution.	Ongoing 6/30/2019 6/30/2019
In accordance with CWC Program Rules, contract with CWC to provide adequate funding in support of the Cluster System Program component of the Septic Remediation and Replacement Program. • Work with CWC to modify the Cluster System Program Rules, if the City and CWC conclude that modifications are necessary to facilitate implementation of cluster systems. Such modifications may include, but are not limited to: (i)	Ongoing 6/30/2018

incorporating defined time frames for milestones in project schedules (e.g., Study Phase to be completed 1 year after community agrees to participate in the program; funding for project to be approved or denied within 90 days after receipt of completed Study Phase report); (ii) indicating that if the Study Phase determines that a cluster system(s) is not the most cost-effective wastewater solution for an area identified with septic system failures, then the consultant may recommend a more cost-effective solution (e.g., sewer extension or other wastewater management system); (iii) clarifying that where a sewer extension to a City-owned WWTP or to a WWTP not owned by the City is the most cost-effective solution, the City will provide funding to ensure that operation and maintenance costs charged to the entities served by such a sewer extension are comparable to what they would be under the New Infrastructure and Community Wastewater Management Programs; and (iv) identifying operation and maintenance costs of cluster systems that are eligible for funding under the program. • Make an additional $1 million available to the Cluster System Program to cover the eligible operation and maintenance costs of cluster systems that are implemented under the program. The need for additional funding for this program will be assessed annually.	6/30/2019
Contract with CWC to provide funding, if necessary, to allow maintenance each year of 20% of the total number of septic systems eligible under the Septic Maintenance Program Rules.	Ongoing
Construct sewer extension projects in Shandaken (Pine Hill WWTP), Middletown (Margaretville WWTP).	Completed
Support the use of the already provided funding to cover the eligible incremental costs for septic systems serving population centers or entities that are “public” for purposes of PHL Section 1104 to comply with the septic system provisions of the WR&Rs to the extent that they are not otherwise required by state or federal regulations.	Ongoing

Report Description	Due Date
Report on program implementation in the FAD Annual Report: • Septic Remediation and Replacement Program • Small Business Program • Cluster System Program • Septic Maintenance Program • Sewer Extension Program • Alternate Design and Other Septic Systems	Annually, 3/31

3.2 New Sewage Treatment Infrastructure Program

This program was concluded under the Revised 2007 FAD.

3.3 Community Wastewater Management Program

The Community Wastewater Management Program (CWMP) funds construction of community septic systems and/or septic maintenance districts in communities identified in Paragraph 122 of the MOA (the 8-22 communities). This program is designed to improve water quality and protect public health by reducing the transport of pathogens, nutrients and organic matter into waterways. Much of this work has already been completed under prior FADs, and final projects have been completed for the following communities: Bloomville, Boiceville, Hamden, DeLancey, Bovina, Ashland, Haines Falls, Trout Creek, Lexington, and South Kortright. The Shandaken, Claryville, West Conesville, and Halcottsville projects have received block grant approval and are eligible to start the Design Phase. The remaining of the MOA-identified communities (New Kingston) is currently in the Study Phase. For all projects, the timeline of the Design Phase commences when the proposed project outlined in the Study Phase is approved by the parties, the timeline of the Construction Phase commences when the plans drafted during the Design Phase are approved.

The potential need for a community wastewater management system for the Hamlet of Shokan was identified subsequent to the MOA. The Revised 2007 FAD required the City to complete a study to determine that potential need. Under the 2017 FAD, NYSDOH, in consultation with NYSDEC, has directed the City to fund an engineering study to determine the appropriate community wastewater management system to serve the hamlet of Shokan in the Town of Olive, as well as to fund the design and construction of that system.

The City's CWMP is described in Section 2.2.2 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the CWMP in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Complete preliminary study for Halcottsville and New Kingston.	Completed
Approve block grant for Halcottsville.	Completed
Approve block grant for New Kingston.	Six months from date of completed Study Phase (estimated 3/31/2018)
Complete design for the following projects: • Shandaken • Claryville • West Conesville • Halcottsville • New Kingston	One year from date of town approval to enter Design Phase Estimated 9/30/2018 Estimated 10/31/2018 Estimated 12/31/2018 Estimated 12/31/2018 Estimated 6/30/2019
Complete construction for the following projects: • Shandaken • Claryville • West Conesville • Halcottsville • New Kingston	Two years from date of completed Design Phase) Estimated 9/30/2020 Estimated 10/31/2020 Estimated 12/31/2020 Estimated 12/31/2020 Estimated 6/30/2021

Community Wastewater System for the Hamlet of Shokan	
• Work with CWC to provide funding for the engineering study for a community wastewater system for the Hamlet of Shokan.	Completed
• Contract with CWC to provide funding to implement the Shokan project.	12/31/2018
• Complete preliminary study for Shokan, which includes the proposed service area to be approved by NYSDOH, USEPA and NYSDEC.	3/31/2019
• Approve block grant for Shokan project.	Six months from date of completed Study Phase (estimated 9/30/2019)
• Complete design for Shokan.	One year from date of town approval to enter Design Phase (estimated 12/31/2020)
• Complete construction for Shokan.	Two years from date of completed Design Phase (estimated 12/31/2022)

Report Description	**Due Date**
Report on program implementation in the FAD Annual Report: • Shandaken • West Conesville • Claryville • Halcottsville • New Kingston • Shokan	Annually, 3/31

3.4 Wastewater Treatment Plant Upgrade Program

As of the Revised 2007 FAD, this program was concluded. The City's commitment to pay for Capital Replacement of Watershed Equipment and Methods at eligible WWTPs can be found in Section 6.1 of this FAD.

3.5 Stormwater Programs

As part of the MOA, the City established two Stormwater Cost-Sharing Programs: (1) Future Stormwater Controls paid for by the City for Single Family Houses; Small Businesses and Low Income Housing Program; and (2) the WOH Future Stormwater Controls Program. These programs provide financial support for the cost of designing, constructing and, in some cases, maintaining stormwater controls that are required by the WR&Rs, but not otherwise required by federal or State law, for certain new development projects.

The City has committed to replenish funding for the Future Stormwater Controls Program, in the amount of $4,720,869, based on projected needs for the program.

The Stormwater Retrofit Program, also administered by the CWC, was established in the MOA. The program addresses existing stormwater runoff problems in the WOH Watershed through the construction of stormwater BMPs. Funding is provided for design, permitting, construction, and maintenance of BMPs that address runoff from concentrated areas of impervious surfaces, as well as community-wide stormwater infrastructure assessment and planning. Program funding can also be used for retrofit projects installed in coordination with the CWMP.

The goals for the Stormwater Program under the 2017 FAD are to:

- Fund eligible incremental costs to comply with the stormwater provisions of the City's WR&Rs.
- Ensure funding for a position at CWC to assist applicants in complying with the stormwater provisions of the City's WR&Rs.
- Provide funding for nine stormwater retrofit projects per year.
- Fund operations and maintenance of retrofit projects completed under the Stormwater Retrofit Program.
- Contract with CWC to fund payments under MOA Paragraph 145 via CWC instead of directly from the City.

The City's Stormwater Programs are described in Section 2.2.3 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Stormwater Programs in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Contract with CWC to provide $4,720,869 to CWC to replenish the Future Stormwater Funds to be used in accordance with MOA Paragraph 128.	On or Before 5/31/2019

Fund, in accordance with the MOA, and consistent with the CWC program rules, as amended, the eligible incremental costs to comply with the stormwater provisions of the WR&Rs to the extent that they are not otherwise required by federal or State law.	Ongoing
Contract with CWC to provide adequate funding for an appropriate position at CWC to assist applicants undertaking regulated activities to comply with the stormwater provisions of the WR&Rs.	Ongoing
Continue to contract with CWC to provide the funding needed to allow the Stormwater Retrofit Program to construct nine (9) stormwater retrofit projects per year, consistent with the Stormwater Retrofit Program Rules. Selection and implementation of eligible projects will be based on potential to benefit water quality protection. These projects are in addition to those installed in coordination with CWMP projects.	Ongoing
Support the use of program funding for retrofit projects installed in coordination with CWMP projects.	Ongoing
Continue to contract with CWC to provide the funding needed for the operations and maintenance of retrofit projects funded through the Stormwater Retrofit Program consistent with the Stormwater Retrofit Program Rules, provided the demonstrated need for such funding continues.	Ongoing

Report Description	Due Date
Report on implementation of the Future Stormwater Controls Programs and the Stormwater Retrofit Program in the FAD Annual Report.	Annually, 3/31

4. Protection and Remediation Programs

4.1 Waterfowl Management Program

Surveys of Kensico Reservoir in 1992 established a strong relationship between avian populations and bacteria (fecal coliform) levels in untreated water. As a result, the City instituted a Waterfowl Management Program to reduce or eliminate, where possible, all waterbird activity in order to mitigate seasonal elevations of fecal coliform bacteria. A similar program was established at Hillview Reservoir, and was expanded on an "as needed" basis to several more reservoirs.

"Bird dispersal" refers to use of pyrotechnics, motorboats, airboats, remote control motorboats, propane cannons, and other methods employed to physically chase or deter waterbirds from inhabiting the reservoirs.

"Bird deterrence" refers to preventative methods employed to prevent waterbirds from inhabiting the reservoirs, such as: nest and egg depredation, overhead bird deterrent wires, bird netting on shaft buildings, meadow maintenance, and other methods.

"As needed" refers to implementation of bird management measures based on criteria including fecal coliform concentrations approaching or exceeding 20 colony-forming units at reservoir effluent structures coincident with elevated bird populations. Other criteria include current bird populations, recent weather events, operations flow conditions within the reservoir, reservoir ice coverage and Watershed snow cover, and determination that active bird management measures would be effective in reducing bird populations and fecal coliform bacteria levels.

The goals for the Waterfowl Management Program under the 2017 FAD are to:

- Continue active and "as needed" waterbird management through dispersal and deterrent methods at Kensico Reservoir and Hillview Reservoir.
- Continue "as needed" management at other City Reservoirs.

The City's Waterfowl Management Program is described in Section 2.3.1 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Waterfowl Management Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Active Waterbird Dispersal – Kensico Reservoir.	Annually, 8/1 to 3/31
Active Waterbird Dispersal – Hillview Reservoir.	Year-round
"As Needed" Bird Dispersal – West Branch, Rondout, Ashokan, Croton Falls, and Cross River Reservoirs.	Annually, 8/1 to 4/15
"As Needed" Bird Deterrent Measures – Kensico, West Branch, Rondout, Ashokan, Croton Falls, Cross River, and Hillview.	Year-round

Report Description	Due Date
Summary of Waterfowl Management Program activities at all reservoirs, including wildlife management at Hillview Reservoir (8/1 to 7/31).	Annually, 10/31

4.2 Land Acquisition Program

The Land Acquisition Program (LAP) seeks to prevent future degradation of water quality by acquiring environmentally-sensitive lands. The overarching goal of the LAP is to ensure that these high priority Watershed lands are placed into permanently protected status, either through fee simple purchase or conservation easements (CEs), so that the Watershed continues to be a source of high-quality drinking water for the City and upstate counties. In pursuit of this goal, since 1997 the City has secured over 140,000 acres of land and CEs. Prior to 1997, the City owned 34,193 acres of reservoir buffer land. Now more than 38% of the more than one million acres covered by the Catskill/Delaware Watershed is currently protected by the City, the State, and/or other entities such as municipalities and land trusts.

The City's strategy for prioritizing lands for acquisition is defined in its 2012-2022 Long-Term Land Acquisition Plan. This plan focuses its core land acquisition activities for this period toward less-protected basins and sub-basins, in particular the Schoharie, Pepacton, and Cannonsville Reservoir basins. The plan also seeks to develop parcel selection procedures that will maximize the water quality benefits of acquisitions. While the long-term plan favors the purchase of more cost-effective parcels in the less protected areas of the Watershed, the City has continued to look for opportunities to acquire properties in the well-protected Kensico and EOH FAD basins when properties important to water quality protection become available.

In addition to the City's core land acquisition activities, the LAP includes some other important land acquisition efforts in the Watershed. The City-funded Flood Buy-Out (NYCFFBO) Program was initiated by the Revised 2007 FAD and allows the City to acquire high-priority improved parcels that are important from a flood mitigation and water-quality perspective, but which did not participate in or qualify for a federal and/or State flood buy-out program. The City supports, through partnership with WAC, an Agricultural and a Forest Easement Program. The Revised 2007 FAD committed the City to fund the costs of stewardship and enforcement of the current and future portfolio of these CEs. The Streamside Acquisition Program (SAP) is being piloted by the Catskill Center, in partnership with the City, to focus on securing, in fee simple or CE, streamside (riparian) buffer lands and floodplains in the Schoharie Reservoir basin. The City will convene a work group to explore payment approaches or incentives that might increase participation in this program. This FAD requires that an additional $3 million will be committed to support the SAP pilot. If it is determined that a streamside acquisition program should be continued for the duration of the FAD, the 2017 FAD requires the City to commit an additional $8 million to the program. If needed, additional funding for acquisitions made under the SAP may be drawn from the funding appropriated for the core LAP.

The City will continue to work with land trusts to explore and implement additional ways to enhance the efforts of the LAP. A focus for this FAD period will be to consider the feasibility of a program, in partnership with land trusts and stakeholders, that will protect the majority of each transitioning farm (for example, a farm that is at risk of foreclosure or farms with retiring farmers). This program would seek to secure a conservation easement on the majority of the farm.

The City is authorized to implement the LAP by a Water Supply Permit (WSP) issued by NYSDEC. The current WSP became effective December 2010 and expires in 2025. While the term of the 2017 FAD extends into 2027, solicitation and funding requirements for the LAP beyond 2024 are contingent upon reissuance of the WSP. Application for a WSP to succeed the 2010 WSP is required by June 2022 to ensure adequate time for stakeholder input on the conditions of the successor WSP. In addition, the FAD requires the City to develop a new Long-Term Land Acquisition Plan, which will cover the period 2023-2033 and will consider the findings of the National Academies Expert Panel review of the City's Watershed Protection Program. It is anticipated that the long-term plan and the Expert Panel findings will also help inform the conditions of the successor WSP.

NYSDOH projects that the funding needed to support the level of solicitation required through 2024 for the City's core LAP will be a minimum of $69.3 million. The City shall deposit $23 million into a segregated account for land acquisition funds every two years starting in July 2018 through 2022. Funding for the remaining term of the 2017 FAD will be based on projections for program activity consistent with the 2023-2033 Long-Term Land Acquisition Plan.

Pursuant to discussions with WOH stakeholders, on April 28, 2017, the City provided new or updated Town Level Assessments for 21 WOH towns to NYSDOH, USEPA, NYSDEC, and WOH stakeholders. Following the release of those assessments, the City will accept stakeholder comments for 180 days. Based on the updated Town Level Assessments and its review of comments received, the City will evaluate the need for modification of its 2012-2022 Long-Term Land Acquisition Plan and discuss its conclusions with NYSDOH, USEPA, and NYSDEC. The City will share any proposed modifications to its solicitation plan, or the basis for a conclusion that no modifications are warranted, with the WOH stakeholders. During the period between February 14, 2017 and the City's adoption of a modified solicitation plan or conclusion that no modifications are necessary, the City agreed to limit solicitations in certain towns.

The City provides funding through the Local Consultation Funds program, administered by the CWC, to cover the eligible costs to communities related to their review of the City's proposed land acquisitions. The cap on this funding will be increased from $30,000 to $40,000 for each incorporated town and village, and up to $5,000 will be made available for municipalities to review the updated Town Level Assessments.

The goals for the LAP under the 2017 FAD are to:

- Continue to acquire land and CEs in accordance with all program requirements set forth in the MOA, FAD, and WSP;
- Develop a new Long-Term Land Acquisition Plan for the period 2023-2033, which will consider the recommendations of the Expert Panel review of the City's Watershed Protection Program;
- Continue to work with and support partners to secure properties and CEs pursuant to the applicable programs (i.e., the NYCFFBO Program, the Agricultural and Forest Easement Programs, and the SAP, which are funded outside the traditional land acquisition segregated account) and related requirements.

The City's LAP is described in Section 2.3.2 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the LAP in accordance with the milestones below.

Activity	Due Date
Continue to provide sufficient funding to support the LAP in accordance with the 2010 Water Supply Permit (WSP) and program objectives.	
• The City shall deposit or cause to be deposited $23 million into the land acquisition segregated account.	7/01/2018
• The City shall deposit or cause to be deposited $23 million into the land acquisition segregated account.	7/01/2020
• The City shall deposit or cause to be deposited $23 million into the land acquisition segregated account.	7/01/2022
During annual budget discussions with NYSDOH, USEPA and NYSDEC, discuss potential need for any additional monies beyond that already committed to all land acquisition programs. If such funding is needed, sequester the funds within six (6) months from written request by NYSDOH.	Annually, 11/30
Submit plans for each two-year period to solicit 350,000 acres through 2024.[1] SAP and NYCFFBO acres may be credited 5 acres for every 1 acre solicited pursuant to the agreed methodology. Up to a total of 20,000 acres per year of WAC, SAP, and NYCFFBO acres may be credited towards solicitation goals.	Biennially, beginning October 2018
Accept stakeholder comments on updated Town Level Assessments. If warranted based on the updated Town Level Assessments and comments received, modify the 2012-2022 Long-Term Land Acquisition Plan and submit to NYSDOH for approval. Such a submission may include recommendations for modifications to the solicitation and funding milestones for the core LAP.	Completed 4/30/2018

Submit a Long-Term Land Acquisition Plan, subject to NYSDOH approval, for the period 2023-2033. This plan will consider the findings of the National Academies Expert Panel review of the City's Watershed protection programs, including the LAP, as well as public input received in response to the Expert Panel review. Based on the approved plan, solicitation rates for 2025 through 2027 will be determined by NYSDOH, in consultation with USEPA and NYSDEC.[2]	5/31/2022
Submit application for a WSP to succeed the 2010 WSP.	6/30/2022
Contingent upon issuance of a successor WSP to the 2010 WSP, continue to implement the LAP for the remainder of the 2017 FAD term.	Upon issuance of a successor WSP
The City shall deposit or cause to be deposited into the land acquisition segregated account sufficient funds to support projected program activity based on solicitation rates approved for 2025 through 2027.[3]	6/30/2025
Revise program rules for the Local Consultation Funds Program and execute and register contract change with CWC to increase the cap on funding to $40,000 per incorporated town or village. Amend agreement with CWC for the Local Consultation Funds Program to provide $5,000 per municipality to review updated Town Level Assessments.	6/30/2018 6/30/2018
Continue to work with land trusts regarding large properties with dwellings that could be pre-acquired by land trusts and vacant portions conveyed to the City, subject to support by the local town and interested land trust(s).	Ongoing, in accordance with the 2010 WSP
Execute and register a contract or contract amendment with WAC to provide $11 million in funding to continue the WAC Agricultural Easement program for the entire duration of the 2017 FAD.[3]	3/31/2020

Continue to work with stakeholders to explore the feasibility of a program that will protect the majority of each transitioning farm (agricultural land that is at risk of foreclosure or farms with retiring farmers). This program would seek to secure a conservation easement on the majority of the farm.	
• Report on the findings of this workgroup.	6/30/2018
• Meet with NYSDOH, USEPA, and NYSDEC to discuss findings of the workgroup.	7/31/2018
• If NYSDOH determines, informed by the findings of the workgroup, that a farm transition program would be feasible, compatible with Community goals, and beneficial to Watershed protection, the City, in consultation with NYSDOH, USEPA, NYSDEC, and stakeholders, shall propose a plan to implement such a program in the Watershed.	1/31/2019
• If required, submit a request to NYSDEC to modify the Water Supply Permit to incorporate this new program.	2/28/2019
Based on the requirements of the 2010 WSP, submit a program evaluation report on the NYCFFBO Program.	
• First evaluation report	6/15/2018
• Second evaluation report	6/15/2021
The City shall ensure that funding for full implementation of this program is continued during the evaluation period.	

<u>WAC Forest Conservation Easement</u> Based on the requirements of the 2010 WSP, submit a written evaluation of the WAC Forest Conservation Easement acquisition program, making recommendations as to whether the program should be continued, modified, or terminated, as well as any proposed improvements to the program.	Completed
If, in accordance with the City's 2010 WSP, a written determination is made by NYSDEC, in consultation with NYSDOH, the City, and other agencies or local governments, to authorize that the WAC Forest Easement Program be continued, the City shall provide WAC a minimum of $8 million to continue the program for the remainder of the 2017 FAD.[3] Such determination will consider the recommendations of the City's evaluation of its ancillary programs.	
• Complete contract amendment with WAC, including the transfer of funds.	Within 18 months from written determination
If authorization is not given to continue the program, all unused funds, with any earnings thereon, are to be returned to the City to be deposited in the LAP-segregated account for use by the LAP.	
Submit a status report on the WAC Forest Conservation Easement acquisition program.	12/15/2020
<u>SAP</u> Continue implementation of a $5 million Pilot SAP.	Ongoing, in accordance with the 2010 WSP
Based on the requirements of the 2010 WSP, submit a written evaluation of the SAP, making recommendations as to whether the program should be continued, modified, or terminated, as well as any proposed improvements to the program.	Completed
The City shall execute and register a contract or contract amendment to make an additional $3 million available to the Catskill Center to continue to implement the SAP through at least 2022.[3]	6/30/2019
Submit a status report on the SAP.	12/15/2020

If, in accordance with the City's 2010 WSP, a written determination is made by NYSDEC, in consultation with NYSDOH, the City, and other agencies or local governments, to authorize that a streamside acquisition program be continued and expanded beyond the Schoharie Reservoir Basin, execute and register a contract to make a minimum of $8 million available to the Catskill Center to implement or continue to implement such a program for the remainder of the 2017 FAD.[3] Consistent with the WSP, such written determination will include addressing the City's recommendations for the program.	Within 18 months of such written determination
If authorization is not given to continue the program, all unused funds, with any earnings there on, are to be returned to the City to be deposited in the LAP-segregated account for use by the LAP.	
If NYSDOH determines that additional funding is required for acquisitions under the SAP or other streamside acquisition program, funds may be drawn from the City's LAP-segregated account.	As needed
The City shall convene a working group of stakeholders to explore payment approaches or incentives that might increase participation by landowners in SAP.	
• Convene stakeholder group.	2/28/2018
• Submit to NYSDOH, USEPA, and NYSDEC for review and NYSDOH approval a proposed approach to provide payment or incentives to increase participation in SAP. If a WSP modification is required to implement this new approach, submit a request to NYSDEC to modify the WSP.	3/31/2019
Submit a report that evaluates the need, opportunities, and options for enhancing riparian buffer protection efforts in the Kensico and EOH FAD Basins, including, but not limited to, establishing a riparian acquisition program for these basins, either through the City's existing programs or another entity. The report shall discuss the metrics used for evaluating these options.	9/30/2018
Participate in a workgroup convened to assess opportunities to use certain potentially developable LAP-acquired lands that have lower water quality protection value to facilitate relocation of development out of floodplains.	
• Report on the progress of this workgroup.	6/30/2018

If requested by a local governmental entity which has applied to FEMA for funding, the City will engage in good faith negotiations to participate in any future FEMA/SOEM Flood Buy-out (FBO) Program, providing up to 25% of the eligible costs as the local match for each NYC Watershed property that is participating in the program and deemed eligible and acceptable by the willing buyer, whether it be the City or local community.	As required by FEMA/SOEM FBO program rules
Continue to implement a NYCFFBO program pursuant to the 2010 WSP, as amended, and agreements with local stakeholders. Properties may be eligible for the Program based on municipal concurrence, referral, expected flood mitigation, and water quality benefits derived.	Ongoing

[1] Solicitation beyond 2024 is contingent upon re-issuance of a NYSDEC WSP authorizing continuation of the LAP beyond 2025. Solicitation rates beyond 2024 will be evaluated based on the NASEM Expert Panel review of the City's Watershed protection programs and public input and will be consistent with the Long-Term Land Acquisition Plan.

[2] Implementation of this Long-Term Land Acquisition Plan beyond 2025 will be contingent upon re-issuance of a NYSDEC WSP authorizing continuation of the LAP beyond 2025.

[3] The requirement to allocate funding for purchases beyond 2025 is contingent upon re-issuance of a NYSDEC WSP authorizing continuation of the LAP beyond 2025. Funding amounts may be re-assessed by NYSDOH based upon the 2023-2033 Long-Term Land Acquisition Plan. With respect to the determinations following the evaluations of the WAC Forest Conservation Easement program and the SAP, the City will not be required to allocate additional funds for those programs unless and until such acquisitions are also authorized under a NYSDEC WSP.

Report Description	Due Date
Submit a modified solicitation plan or a statement that the City does not intend to modify the 2012-2022 Long-Term Land Acquisition Plan at this time.	Completed
Submit the first evaluation report on the NYCFFBO Program.	6/15/2018
Report on progress of workgroup convened to assess opportunities to use LAP-acquired lands to facilitate relocation of development out of the floodplain.	6/30/2018
Submit report evaluating need, opportunities, and options for enhancing riparian buffer protection efforts in Kensico and EOH FAD Basins.	9/30/2018
Submit proposed approach for providing payments or incentives that might increase participation by landowners in SAP.	3/31/2019
Submit a status report on the WAC Forest Conservation Easement acquisition program.	12/15/2020
Submit a status report on the SAP.	12/15/2020
Submit the second evaluation report on the NYCFFBO Program.	6/15/2021
Submit a Long-Term Land Acquisition Plan for the period 2023-2033.	5/31/2022
Submit semi-annual reports on program activities and status.	Semi-annually, 3/31 in FAD Annual Report and 7/31

4.3 Land Management Program

The City has made a significant investment in purchasing water supply lands and conservation easements. However, to maximize the utility of these lands in protecting the long-term water supply for the City, they must be monitored, managed and secured properly. Effective and routine monitoring of lands and easements is vital to discovering encroachments, timber trespass, and overuse of lands that the City has purchased, and potential violations for easements. The City inspects the lands it has purchased on a prioritized basis per its fee monitoring policy (up to once per year) and easements semi-annually, which enables the City to identify and address encroachments expeditiously.

The City supports and provides for many recreational uses of its land. As the second largest public land holder in the Watershed, the City has been successful in opening many of its lands and waters for expanded recreational uses, consistent with its mission to protect water quality. Improving some of these lands for recreational access, particularly along the reservoirs can help address the impacts of overuse if they arise. City lands can also be an important economic component to local communities, and the City continues to allow various uses of its lands, such as for agriculture, and issues revocable land use permits.

The goals for the Land Management Program under the 2017 FAD are to:

- Conduct routine monitoring and inspection of City Watershed protection lands to meet the primary mission of water quality protection.
- Ensure encroachments and other unauthorized uses of City land are dealt with in a timely manner.
- Facilitate and coordinate the protection and wise use of City lands and natural resources.
- Provide community benefits through allowing compatible recreation and agricultural uses and issuing revocable land use permits.
- Ensure the long-term protection and management of the City's significant investment in purchased lands and conservation easements.
- Ensure that conservation easements held by the City and WAC are administered effectively, including regular monitoring, consideration of activity requests, and documentation and correction of any violations that occur; provide for stewardship funding to WAC as previously agreed.
- Engage recreational users through education and outreach.

The City's Land Management Program is described in Section 2.3.3 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Land Management Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Monitor and actively manage water supply lands.	Ongoing
Monitor and enforce City Watershed conservation easements, including those held by WAC.	Ongoing
Continue to assess and implement strategies to increase the public's recreational use of water supply lands.	Ongoing
Inform regulators when recreational use policies or proposals are substantively modified.	Ongoing
Engage recreational users of City land through outreach and events.	Ongoing

Report Description	Due Date
Report on program implementation in the FAD Annual report.	Annually, 3/31

4.4 Watershed Agricultural Program

The Watershed Agricultural Program (WAP) is a voluntary program that represents a successful longstanding partnership between the City and the Watershed Agricultural Council (WAC). The program began as a pilot in 1992 with the main goal to reduce pollution associated with agricultural land use and to protect source water quality. The WAP's primary activities include the development of Whole Farm Plans (WFPs) and the implementation of agricultural Best Management Practices (BMPs), along with the establishment of riparian buffers through the federal Conservation Reserve Enhancement Program (CREP). The WAP also supports nutrient management planning, precision feed management, and diverse educational programs that collectively provide farmers with a comprehensive suite of technical assistance and financial incentives to improve farm management and reduce pollution risks.

After two decades of expansion, the WAP has accumulated technical experience, established strong local leadership, and achieved extensive on-the-ground accomplishments. However, the WAP's historical focus on recruiting new participants and developing WFPs for these participants has resulted in the accumulation of a large BMP workload that needs to be addressed and managed in a more sustainable manner moving forward.

During the term of the 2017 FAD, source water quality protection will remain the WAP's programmatic priority. However, the program will continue to be flexible and responsive to participant needs and pollution risks in the context of shifting farmer demographics and evolving agricultural operations. The priority WAP activities will include the need to repair or replace existing BMPs in a timely manner and managing the growing complexity of an extensive portfolio of voluntary WFPs in various stages of implementation. During the 2017 FAD, the WAP will increase its focus on reducing the backlog of BMPs and improving the timeliness of BMP implementation for already approved WFPs.

To assure effective water quality protection and to sustain working relationships with hundreds of WAP's voluntary participants, the goals under the 2017 FAD include:

- Develop a new approach for investigating and repairing certain WAP-implemented BMPs using an in-house field crew of WAP technicians, with a goal of reducing the BMP backlog and becoming more responsive to the BMP repair needs of participants.
- Offer the Nutrient Management Credit Program to all eligible farms.
- Maintain up to 60 eligible farms in the Precision Feed Management Program.
- Engage greater numbers of WAP participants in farmer education programs in order to improve and enhance farm operation decisions and management behaviors.

The City's Watershed Agricultural Program is described in Section 2.3.4 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to contract with WAC to implement the Watershed Agricultural Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Manage the current portfolio of active WFPs, including the revision of existing plans as needed and the development of new plans on eligible priority farms on a case-by-case basis.	Ongoing
Conduct annual status reviews on at least 90% of all active WFPs every calendar year, with a goal of 100%.	Ongoing
Continue to implement new priority BMPs on active participating farms with WFPs, with the dual goals of reducing the existing backlog of new priority BMPs and limiting the potential backlog for newly identified BMPs, according to the following milestones: • Design, encumber, and schedule for implementation within two years of being encumbered at least 50% of all BMPs within pollutant categories I-VI that were identified by WAC as of January 1, 2017. Program funding will be sufficient to achieve a goal of implementing 60% of identified new BMPs based on BMP backlog cost estimates as of January 1, 2017. • Implement all viable BMPs that were designed and encumbered through calendar year 2022.	Ongoing 12/31/2022 12/31/2024
Continue to repair or replace existing BMPs on active participating farms with WFPs, with the dual goals of reducing the backlog of existing BMPs in need of repair or replacement and limiting the potential backlog for newly identified BMPs, according to the following milestones: • Design, encumber, and schedule for implementation within a two-year timeframe at least 50% of all BMPs needing repair or replacement that were identified by WAC as of January 1, 2017. Program funding will be sufficient to achieve a goal of implementing 70% of identified BMPs needing repair or replacement. • Repair or replace all viable BMPs that were designed and encumbered through calendar year 2022.	Ongoing 12/31/2022 12/31/2024
In consultation with WAC, assess the adequacy of current WAP metrics and submit a report that recommends the continuation of current metrics and/or the consideration of potential new metrics.	6/30/2023

Meet with NYSDOH, USEPA, and NYSDEC to discuss the WAP's metrics and future BMP implementation milestones for calendar year 2024 and beyond.	9/30/2023
Continue to develop and update nutrient management plans on active participating farms that require such a plan, with a goal of maintaining current nutrient management plans on 90% of all active participating farms that require one.	Ongoing
Continue to offer the Nutrient Management Credit Program to all eligible farms.	Ongoing
Continue to implement the PFM Program on up to 60 eligible farms.	Ongoing
Continue to develop new CREP contracts and re-enroll expiring contracts as needed.	Ongoing
Continue to implement a Farmer Education Program.	Ongoing
Continue to implement an Economic Viability Program.	Ongoing

Report Description	Due Date
Report on program implementation in the FAD Annual Report including: • Number of new and revised WFPs completed and approved, as well as the total number and percentage of active plans in relation to the current universe of WAP participants. • Number, types and dollar amounts of both new BMPs and repaired or replaced BMPs implemented each year. • Number, types, and dollar amounts of both new BMPs and repaired or replaced BMPs designed and scheduled for implementation in the following year. • Cumulative percentage of BMP backlog reduced (designed, implemented, or scheduled for implementation) in relation to projected BMP implementation milestones for 2022. • Number and percentage of annual status reviews completed on active Whole Farm Plans. • Number of new and updated nutrient management plans completed, as well as the percentage of current plans on all active participating farms that require such a plan. • Number of farms participating in the Nutrient Management Credit Program, including number of farms that are eligible for the program at the time of the report and efforts made to offer Nutrient Management Credit to all eligible farms. • Number of farms participating in the PFM Program and a summary of accomplishments. • Number of new and re-enrolled CREP contracts completed, along with a summary of total enrolled and re-enrolled acres. • Summary of Farmer Education Program accomplishments. • Summary of Economic Viability Program accomplishments.	Annually, 3/31
WAP Metrics Assessment and Recommendations Report.	6/30/2023

4.5 Watershed Forestry Program

The Watershed Forestry Program is a longstanding partnership between the City, WAC, and the United States Forest Service that began in 1997. The primary objective of the Watershed Forestry Program is to encourage long-term management of the Watershed forests for both water quality protection and economic viability purposes. A secondary objective is to promote good forest stewardship through the development and implementation of forest management plans; the implementation of BMPs during and after timber harvesting; professional training for loggers and foresters; educational forums for Watershed landowners; teacher training and educational programs for upstate and downstate students; and coordination of a Watershed model forest program that supports demonstration purposes as well as education and outreach.

The goals of the Watershed Forestry Program under the 2017 FAD are to:

- Continue to monitor the use and progress of the new MyWoodlot.com website as a tool for understanding the needs and interests of Watershed landowners.
- Explore potential modifications and improvements to the Management Assistance Program (MAP) that may be needed to support and compliment the recently redesigned WAC Forest Management Planning Program.

The City's Forest Management Program is described in Section 2.3.5 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to contract with WAC to implement the Watershed Forestry Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Continue to support a Watershed forest management planning program that encourages landowner participation in New York's forest tax abatement program.	Ongoing
Continue to support the development of forest management plans and the implementation of these plans through the Management Assistance Program (MAP), with a goal of completing at least 60 MAP projects per year.	Ongoing
Continue to support the implementation of forestry BMPs, with a focus on road BMP projects and forestry stream crossing projects.	Ongoing
Continue to support the Croton Trees for Tribs Program, enhancing program efforts to promote and install riparian plantings in the Kensico, West Branch, and Boyd's Corner Reservoir basins, with a goal of completing six (6) projects per year in the EOH Watershed.	Ongoing

Use MyWoodlot.com and forest landowner education programs to provide family forest owners access to the knowledge they need to make positive conservation decisions for their Watershed forests.	Ongoing
Evaluate the effectiveness of the Watershed forest management planning program and landowner education programs once every five years using Conservation Awareness Index (CAI).	Ongoing
Continue to support professional training for loggers and foresters.	Ongoing
Continue to support educational programs for landowners.	Ongoing
Continue to support school-based education programs for teachers and students in both the Watershed and New York City.	Ongoing
Continue to support and coordinate four (4) Watershed model forests.	Ongoing

Report Description	Due Date
Report on program implementation in the FAD Annual report including: • Number of forest management plans completed and acres of forestland enrolled in New York's forest tax abatement program. • Number and types of MAP projects completed. • Number and types of forestry BMP projects completed. • Number of Croton Trees for Tribs projects completed. • Summary of logger and forester training accomplishments. • Summary of landowner education accomplishments. • Summary of school-based education accomplishments. • Summary of model forest accomplishments.	Annually, 3/31
Report on CAI evaluation results for the Watershed forest management planning program and landowner education programs.	12/31/2021 and 12/31/2026

4.6 Stream Management Program

The Stream Management Program (SMP) seeks to improve water quality through the protection and restoration of stream stability and ecological integrity for WOH Watershed streams and floodplains. Program components include annual action planning for each reservoir basin based on stream assessments and stakeholder input; water quality-driven Stream Projects; stakeholder-driven Stream Management Implementation Program (SMIP) projects; the Catskill Streams Buffer Initiative (CSBI); Flood Hazard Mitigation projects; and Education, Outreach and Training.

Some of the goals for the SMP under the 2017 FAD include:

- Conduct stream feature inventories to support project site prioritization.
- Construct at least 24 Stream Projects.
- Continue stream studies investigating turbidity reduction from stream projects.
- Complete revegetation of at least five streambank miles in the WOH Watershed.
- Complete Local Flood Analyses (LFAs), and provide funding for the implementation of LFA-recommended projects through SMP and CWC.
- Explore the coordination of CSBI and CREP with local partners to increase riparian buffers on fallow agricultural lands.
- Convene a workgroup to develop a coordinated plan for in-stream and riparian emergency recovery activities that may become necessary following flooding events.
- Evaluate the LFHMP for its contribution to the protection of water quality and recommend steps for enhancing this protection in the future.

The City's SMP is described in Section 2.3.6 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the SMP requirements in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
<u>Ashokan Projects</u> As required by the Revised 2007 FAD, complete the construction of 7 stream management projects within the Ashokan basin with a goal of protecting water quality, in particular by reducing turbidity.	11/30/2018

Execute and register contracts or contract amendments with SMP partners (Delaware County, Greene County, Sullivan County, and Ulster County Soil and Water Conservation Districts and Ulster County Cornell Cooperative Extension) to ensure continuity of funding sufficient to continue all SMP programs for the duration of the 2017 FAD. Funding shall be, at a minimum, equivalent, on an annual basis, to the level of funding provided to the SMP under the Revised 2007 FAD SMP partner contracts (excluding LFHM funding), with the addition of an annual inflation adjustment. Total funding for the 10-year FAD period shall be a minimum of $90 million.	Ongoing
<u>Water-Quality Based Stream Projects and Site Selection</u> • The City and SMP Contract Partners will meet to review water quality analyses to outline the water quality basis for project site selection and to prioritize the main stems and/or sub-basins for stream feature inventories. • Six stream feature inventories will be conducted in the prioritized tributaries/main stems of the major SMP basins (Schoharie, Ashokan, Neversink/Rondout, and Cannonsville/Pepacton) to identify water quality threats and support project site prioritization. • Design and complete construction of at least 24 Stream Projects that have a principal benefit of water quality protection or improvement. A minimum of 3 of the 24 shall be in the Stony Clove watershed (Ashokan) to support the Water Quality Monitoring Study and a total of at least 8 of the 24 projects shall be in the Ashokan watershed. Stream Projects will be selected based on a water quality-based site selection process and in accordance with the review and prioritization of basin-scale water quality priorities described above. Beginning in 2017, projects completed beyond those required for the Revised 2007 FAD will be counted towards this requirement. Stream Projects may be delayed due to flood events, which can change project priorities and temporarily shift the program focus to response and recovery operations, as well as changes in landowner cooperation. • The City will propose projects for FAD approval in November of each year.	12/31/2018 12/31/2022 12/31/2027 Annually, 11/30

CSBI Continue implementation of CSBI by providing technical assistance and conservation guidance to riparian landowners according to the following milestones:	
• Convene annual meetings of the Riparian Buffer Working Group.	Annually, 2/28
• Facilitate the supply of native plant materials to the CSBI.	Ongoing
• Implement Education, Outreach, and Marketing Strategy with partners.	Ongoing
• Seek to establish a partnership between the CSBI program and the CREP program to enable CREP to be implemented on fallow agricultural lands through the CSBI in the WOH Watershed.	Ongoing
• Within Delaware County, support the use of funding for a pilot program to be administered by DCSWCD and WAC that will coordinate CSBI and CREP programs to implement CREP on fallow agricultural lands in Delaware County.	Completed
• Establish metrics, agreed upon by NYSDOH, USEPA, NYSDEC, Delaware County SWCD, WAC, and the City, to evaluate the effectiveness of the Delaware County CSBI/CREP pilot program.	11/30/2018
• Review progress in extending CREP to eligible fallow agricultural lands through CSBI in the WOH Watershed, including progress of the Delaware County CSBI/CREP pilot program.	11/30/2019
• Submit to NYSDOH recommendations for establishment of a permanent program and estimated funding needs, or discontinuation of the program.	11/30/2019
• If NYSDOH determines the Delaware County CSBI/CREP pilot program is an effective tool for riparian buffer protection, execute and register contracts or contract changes with DCSWCD and WAC, if needed, to fund such a program in Delaware County. The City will ensure adequate funding is available to allow continuity of program activities while contract changes are being implemented.	Within 18 months of determination

• Complete revegetation of a minimum of 5 streambank miles throughout the WOH Watershed. This metric may be adjusted following the determination regarding the Delaware County CSBI/CREP pilot program.	11/30/2027
<u>SMIP</u> • Continue the local funding programs for the enhanced implementation of stream management plan recommendations, including LFA recommended projects, in the Schoharie, Cannonsville, Pepacton, Neversink, Rondout and Ashokan basins. • Complete commitment of funds for a minimum of 100 SMIP projects throughout the WOH Watershed.	Ongoing By 5/31/2027

<u>Local Flood Hazard Mitigation Program (LFHMP)</u>
• Complete LFAs and provide funding toward implementation of LFA-recommended projects through both the SMP and the CWC in the WOH Watershed.
  • Execute and register contracts or contract amendments with SMP partners (Delaware County, Greene County, Sullivan County, and Ulster County Soil and Water Conservation Districts and Ulster County Cornell Cooperative Extension) to make $15 million available to support a minimum of 50 LFA-generated projects.
  • Where such projects include relocations of homes and businesses and the corresponding need to relocate sewer infrastructure, the City will support the use of funding either for onsite sewage disposal or for sewer extensions to City-owned WWTPs or to WWTPs not owned by the City, based on what solutions are most cost-effective. If a relocation results in a sewer extension, the City will make funding available to ensure that sewer charges are comparable to what they would be under the New Infrastructure and Community Wastewater Management Programs.
• With NYSDOH, USEPA, and NYSDEC, assess use of $10.1 million committed to the SMP and $17 million committed to the CWC for LFHMPs in accordance with the Revised 2007 FAD, and $15 million committed in 2017 FAD for support of LFA-generated projects, and determine if remaining funding is adequate to meet program needs.
	12/31/2027
	
	Ongoing, as SMP partner contracts are updated
	
	Ongoing
	
	Annually, 11/30 (during FAD annual budget meeting)

• Commit additional LFHMP funding, as needed, to meet program needs. • Coordinate the LFHMP funding program with State and federal flood hazard mitigation agencies to ensure consistency and thereby maximize funding to the Watershed communities. • Continue to provide technical support, education, and training to Watershed communities to support their use of Flood Insurance Rate Maps (FIRMs) and their participation in a variety of floodplain management, flood hazard mitigation, and flood preparedness programs.	Within 18 months of determination of need Ongoing Ongoing
<u>Water Quality Monitoring Studies</u> • Submit the final Esopus Creek Watershed Turbidity/Suspended Sediment Study Design. • Continued collection and analysis of data for the Esopus Creek Watershed Turbidity/Suspended Sediment Study. • Submit 3 proposed Stony Clove restoration projects for approval.	Completed Ongoing 1/31/2019
<u>Annual Meeting and Action Plans</u> Meet annually with county contracting partners to review progress made in the previous year within each program area (Stream Projects, CSBI, SMIP, LFHMP, and Education/Outreach/Training) and re-evaluate priorities as the basis for preparing new Action Plans for the coming year, especially after major flood events. Action plans and program activities should place priority on projects that will enhance water quality, and restore or protect stream system stability. This meeting will also provide an opportunity for discussion on the research advanced by each basin team and the City during the year, as well as next steps.	Annually, 2/28

Addendum A Coordinate with NYSDEC regarding the implementation of Addendum A to the 1993 Memorandum of Understanding between NYSDEC and the City as it pertains to the review of Article 15 Stream Disturbance Permits, to enhance coordination between the agencies with the goal of ensuring consistency with the recommendations in stream management plans and implementation of stream management projects.	As Needed
Watershed Emergency Stream Response and Recovery Plan • Participate in a workgroup convened by NYSDEC with Watershed stakeholders to develop a coordinated plan for in-stream and riparian emergency recovery activities that may become necessary following flooding events. Consistent with Addendum A to the 1993 Memorandum of Understanding between NYSDEC and the City, the workgroup will provide an opportunity for coordination between the City and NYSDEC on permits NYSDEC issues under Articles 15 and 24 of the Environmental Conservation Law. • Report on the workgroup's development of a Watershed Emergency Stream Response and Recovery Plan.	When convened Within 12 months of NYSDEC convening the workgroup
Education/Outreach/Training Continue to implement the Education/Outreach/Training strategy for municipal officials with program partners and maintain base education and outreach existing programming in the SMP basin programs, including emergency stream intervention training.	Ongoing
Progress Meeting Convene progress meetings with NYSDOH, USEPA, and NYSDEC. An office-based meeting shall be held by 8/30, and a field-based meeting shall be held following the construction season by 10/31.	Twice per year, by 8/30 and 10/31

Report Description	Due Date
Water Quality Based Stream Projects and Site Selection Submit brief basin specific reports outlining the water quality basis for Stream Project Site Selection in the basin during the FAD period and that prioritize main stem and/or sub-basins for stream feature inventories.	6/30/2019
Submit descriptions of proposed stream projects to be considered toward the required 24 Stream Projects.	Annually, 11/30
CSBI • Report on metrics that have been established to evaluate the effectiveness of the Delaware County CSBI/CREP pilot program. • Report on progress in extending CREP to eligible fallow agricultural lands through CSBI in the WOH Watershed, including progress of the Delaware County CSBI/CREP pilot program. Report will include recommendations for establishment of a permanent program and estimated funding needs, or discontinuation of the program.	11/30/2018 11/30/2019
Local Flood Hazard Mitigation Program (LFHMP) Evaluate the LFHMP for its contribution to the protection of water quality and recommend steps for enhancing this protection in the future. • First evaluation • Second evaluation	6/30/2020 6/30/2023
Water Quality Monitoring Studies • Submit biennial status reports on study findings. • Submit first five-year study findings. • Submit final study findings.	Beginning 3/31/2019 11/30/2022 11/30/2027
Action Plans Each year, submit a rolling two-year Action Plan for each basin that outlines the upcoming projects in the program areas (Stream Projects, CSBI, SMIP, Education/Outreach/Training, LFHMP).	Annually, 5/31

<u>Watershed Emergency Stream Response and Recovery Plan</u> • Report on the workgroup's development of a Watershed Emergency Stream Response and Recovery Plan. • Update report on the workgroup's development of a Watershed Emergency Stream Response and Recovery Plan.	12/31/2018 12/31/2023
Report on program implementation in the FAD Annual Report: • Site selection of water quality based projects and status of projects. • CSBI, including miles of streambank revegetated. • Stream Management Implementation Projects, including number of projects funded. • Local Flood Hazard Mitigation Program, including number of LFHM and LFA-generated projects funded, funding amounts, and number of completed projects. • Water Quality studies. • Watershed Emergency Stream Response Plan.	Annually, 3/31

4.7 Riparian Buffer Protection Program

The Riparian Buffer Protection Program, initiated under the 2007 FAD, now consists of several separate efforts undertaken by different City units, including the Land Acquisition, Watershed Agricultural, Stream Management, and Forestry Programs. The multi-program approach to protecting and restoring buffers ensures buffers on both public and private land are protected, managed and in many cases restored.

The Riparian Buffer Protection Program is enhanced by the City's Streamside Acquisition Program (SAP) which is currently piloting the acquisition of riparian buffers in designated areas within the Schoharie Watershed. The requirement to acquire riparian buffers is included in both this section and the LAP section.

The goals for the Riparian Buffer Protection Program under the 2017 FAD are to:

- Continue existing programs that are protective of riparian buffers.
- Continue implementation of the Pilot SAP.
- Explore options for synergies between CREP and CSBI to increase riparian buffers on fallow agricultural lands.

The City's Riparian Buffer Protection Program is described in Section 2.3.7 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Riparian Buffer Protection Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Continue existing programs that are protective of riparian buffers including, but not limited to, Watershed regulations, agricultural programs, land acquisition, stream management, and land management.	Ongoing
Continue implementation of CREP.	Ongoing

CSBI Continue implementation of CSBI by providing technical assistance and conservation guidance to riparian landowners according to the following milestones:	
• Convene annual meetings of the Riparian Buffer Working Group.	Annually, 2/28
• Facilitate the supply of native plant materials to the CSBI.	Ongoing
• Implement Education, Outreach, and Marketing Strategy with partners.	Ongoing
• Seek to establish a partnership between the CSBI program and the CREP program to enable CREP to be implemented on fallow agricultural lands through the CSBI in the WOH Watershed.	Ongoing
• Within Delaware County, support the use of funding for a pilot program to be administered by DCSWCD and WAC that will coordinate CSBI and CREP programs to implement CREP on fallow agricultural lands in Delaware County.	Completed
• Establish metrics, agreed upon by NYSDOH, USEPA, NYSDEC, Delaware County SWCD, WAC, and the City, to evaluate the effectiveness of the Delaware County CSBI/CREP pilot program.	11/30/18
• Review progress in extending CREP to eligible fallow agricultural lands through CSBI in the WOH Watershed, including progress of the Delaware County CSBI/CREP pilot program.	11/30/2019
• Submit to NYSDOH recommendations for establishment of a permanent program and estimated funding needs, or discontinuation of the program.	11/30/2019
• If NYSDOH determines the Delaware County CSBI/CREP pilot program is an effective tool for riparian buffer protection, execute and register contracts or contract changes with DCSWCD and WAC, if needed, to fund such a program in Delaware County. The City will ensure adequate funding is available to allow continuity of program activities while contract changes are being implemented.	Within 18 months of determination

• Complete revegetation of a minimum of 5 streambank miles throughout the WOH Watershed. This metric may be adjusted following the determination regarding the Delaware County CSBI/CREP pilot program.	11/30/2027
• Continue to seek enhanced management agreements (voluntary 10-year or purchased perpetual) for all current and future stream restoration projects.	Ongoing
<u>SAP</u> • Continue implementation of a $5 million Pilot SAP.	Ongoing, in accordance with the 2010 WSP
• Based on the requirements of the 2010 WSP, submit a written evaluation of the SAP, making recommendations as to whether the program should be continued, modified, or terminated, as well as any proposed improvements to the program.	Completed
• The City shall execute and register a contract or contract amendment to make an additional $3 million available to the Catskill Center to continue to implement the SAP through at least 2022.[1]	6/30/2019
• Submit a status report on the SAP.	12/15/2020
• If, in accordance with the City's 2010 WSP, a written determination is made by NYSDEC, in consultation with NYSDOH, the City, and other agencies or local governments, to authorize that a streamside acquisition program be continued and expanded beyond the Schoharie Reservoir Basin, execute and register a contract to make a minimum of $8 million available to the Catskill Center to implement or continue to implement such a program for the remainder of the 2017 FAD.[1] Consistent with the WSP, such written determination will include addressing the City's recommendations for the program. If authorization is not given to continue the program, all unused funds, with any earnings there on, are to be returned to the City to be deposited in the LAP-segregated account for use by the LAP.	Within 18 months of such written determination
• If NYSDOH determines that additional funding is required for acquisitions under the SAP or other streamside acquisition program, funds may be drawn from the City's LAP-segregated account.	As needed

Continue to support the Croton Trees for Tribs Program, enhancing program efforts to promote and install riparian plantings in the Kensico, West Branch, and Boyd's Corner Reservoir basins, with a goal of completing six (6) projects per year in the EOH Watershed.	Ongoing

[1] The requirement to allocate funding for purchases beyond 2025 is contingent upon re-issuance of a NYSDEC WSP authorizing continuation of the LAP beyond 2025. Funding amounts may be re-assessed by NYSDOH based upon the 2023-2033 Long-Term Land Acquisition Plan. The City will not be required to allocate additional funds for this program unless and until such acquisitions are also authorized under a NYSDEC WSP.

Report Description	Due Date
CSBI • Report on metrics that have been established to evaluate the effectiveness of the Delaware County CSBI/CREP pilot program. • Report on progress in extending CREP to eligible fallow agricultural lands through CSBI in the WOH Watershed, including progress of the Delaware County CSBI/CREP pilot program. Report will include recommendations for establishment of a permanent program and estimated funding needs, or discontinuation of the program.	11/30/2018 11/30/2019
Submit a status report on the SAP.	12/15/2020
The FAD annual report will reference the other FAD programs where the completed Riparian Buffer Protection Program details will be described.	Annually, 3/31

4.8 Ecosystem Protection Program

The City owns over 165,000 acres of forests, fields, transitional lands, and wetlands within the watersheds of the Croton, Catskill, and Delaware reservoir systems. Well-functioning, intact natural ecosystems are critical for maintaining and enhancing water quality. The City provides multifaceted programming for the protection of wetlands and fisheries along with stewardship of forests and management of invasive species through a combination of research, inventories, assessment, and outreach programs. The Ecosystem Protection Program combines goals and activities from three principle areas, consisting of forestry, wetlands, and invasive species.

The primary goals of the Ecosystem Protection Program under the 2017 FAD are to:

- Continue silvicultural activities to increase diversity of species and age structure where needed to promote forest resiliency.
- Conduct forest inventories on newly acquired lands and adopt appropriate management strategies.
- Assess management strategies to foster adequate forest regeneration in lands heavily browsed by deer.
- Maintain data collection and analysis for the Continuous Forest Inventory (CFI) Project.
- Expand the pilot LiDAR wetland mapping and stream connectivity assessment to the entire Watershed.
- Enhance the Reference Wetland Monitoring Program.
- Implement key aspects of the Invasive Species Management Strategy to promote sustainable native communities.

The City's Ecosystem Protection Program is described in section 2.3.8 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Ecosystem Protection Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Forestry	
• Implement the Watershed Forest Management Plan.	Ongoing
• Continue to conduct forest inventories on City-owned lands, including long-term CFI plots.	Ongoing
• Continue to assess and mitigate deer impacts on forest regeneration on City-owned lands.	Ongoing
• Update the Watershed Forest Management Plan.	Completed
• Revise Watershed Forest Management Plan.	3/31/2027
Wetlands	
• Update Wetland Protection Strategy.	3/31/2018
• Update the wetland GIS data for the Watershed using LiDAR derived data and high-resolution photography.	3/31/2022
• Continue reference wetland monitoring.	Ongoing
• Review federal, State, and local wetland permit applications.	Ongoing
Invasive Species	
• Continue to implement the Invasive Species Management Strategy.	Ongoing
• Engage Watershed partners and residents to coordinate efforts in invasive species prevention and control.	Ongoing

Report Description	Due Date
Submit updated Watershed Forest Management Plan.	Completed
Submit updated Wetlands Protection Strategy.	3/31/2018
Submit summary of wetland mapping and connectivity assessment results for the Watershed.	3/31/2022
Submit updated Invasive Species Management Strategy.	3/31/2022

Submit revised Watershed Forest Management Plan.	3/31/2027
Report on program implementation in the FAD Annual Report: • Forest inventories • Wetland protection • Wetland mapping • Wetland permit reviews • Invasive species management	Annually, 3/31

4.9 East-of-Hudson Nonpoint Source Pollution Control Program

The East-of-Hudson Nonpoint Source (NPS) Pollution Control Program has been developed to reduce inputs of pathogens and nutrients from sanitary sewers, septic systems, and stormwater to the EOH FAD Basins (Boyd's Corner, West Branch, Cross River, and Croton Falls Reservoirs). The program addresses this concern through the continued implementation of the WR&Rs, involvement in project reviews, and inspection and maintenance of existing stormwater management facilities. The City also supports a grant program to fund the design and construction of stormwater retrofits in the EOH FAD basins.

The goals for the EOH NPS Pollution Control Program under the 2017 FAD are to:

- Maintain EOH Stormwater Facilities.
- Complete construction of two stormwater remediation retrofits remaining from the Revised 2007 FAD.
- Support the EOH Stormwater Retrofit Grant Program.
- Facilitate the preliminary planning of community wastewater solutions for areas in the EOH FAD basins where poorly functioning individual septic systems have the potential to impact water quality.
- Support the EOH Septic Repair Program in the four EOH FAD Basins, Lake Gleneida basin, and the basins upstream/hydrologically connected to Croton Falls Reservoir, as program capacity allows.
- Inspect sanitary sewers.

The City's EOH NPS Pollution Control Program is described in Section 2.3.9 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the EOH NPS Pollution Control Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Maintenance of DEP's EOH Stormwater Facilities.	Ongoing
Complete construction of two stormwater retrofit projects: • Maple Avenue (Cross River) • Drewville Road (Croton Falls)	9/30/2020

<u>EOH Stormwater Retrofit Grant Program</u> Execute and register a contract or contract amendment with the EOH Watershed Corporation to provide $22 million to support the design and construction of stormwater retrofits in the EOH FAD Basins and in basins upstream and hydrologically connected to the Croton Falls Reservoir. A total of $7 million shall be specifically committed to support stormwater retrofits within EOH FAD basins and $15 million shall be specifically committed to support stormwater retrofits within basins upstream and hydrologically connected to the Croton Falls Reservoir or within EOH FAD basins.	9/30/2019
Continue to make City lands available for stormwater retrofit projects constructed by the EOH Watershed communities so long as the City determines that the projects will not pose a threat to water quality or City operations related to the water supply.	Ongoing
<u>EOH Community Wastewater Planning Assistance Grants</u> Execute and register a contract with the Environmental Facilities Corporation (EFC), or any other organization approved by NYSDOH, to develop and administer a grant program that will provide $3 million for preliminary planning for community wastewater solutions for areas in the EOH FAD basins where poorly functioning individual septic systems have the potential to impact water quality. The grant program will require that municipalities who apply for this funding will complete preliminary planning studies within four years from issuance of the 2017 FAD. Based on preliminary studies conducted by NYSDEC, wastewater planning assistance grants will be made available to municipalities ("identified municipalities") in which the following areas have been identified to have the potential to impact water quality from septic systems: areas surrounding Lake Waccabuc, Lake Truesdale, and Lake Kitchawan in the Cross River Reservoir basin; and Palmer Lake, Lake Gilead, Lake Casse, Lake View Road, and Mud Pond Brook in the Croton Falls Reservoir basin. Funds may be used by identified municipalities to finance engineering studies and report generation to assist those municipalities in evaluating wastewater treatment options/solutions that they could undertake to mitigate water quality impacts. The generated reports are intended to be used by the municipalities to appropriately plan and determine costs for the identified wastewater solution project so that municipalities may seek financing through State or federal funding sources, including but not limited to the 2017 Clean Water Infrastructure Act.	12/31/2019

<u>EOH Septic Repair Program (SRP)</u> • The City shall contract with EFC to provide funding to support the repair, replacement, or connection to a WWTP for at least 35 residential septic systems per year in the four EOH FAD basins, including Lake Gleneida basin. • Revise contract with EFC for the EOH SRP to allow eligibility of septic systems located within basins upstream or hydrologically connected to Croton Falls Reservoir. Implementation of the program will be prioritized, with priority given to septic systems in the EOH FAD basins, including Lake Gleneida basin, and expanding within the basins upstream or hydrologically connected to Croton Falls Reservoir as program rules dictate and program capacity allows. • Continue to provide technical assistance in support of EOH septic management programs. • Review strategies used to inform potential SRP participants of the program's availability. Propose ways to improve education and outreach to enhance participation in the program. • Conduct an assessment of the SRP to determine whether funding for at least 35 systems per year is appropriate to meet demand from eligible EOH communities. Funding made available for this program may be increased or decreased based on this assessment.	Ongoing 12/31/2018 Ongoing 3/31/2018 3/31/2022
<u>Video Sanitary Sewer Inspection</u> • Video Sanitary Sewer Inspection of four EOH CAT/DEL basins. • Complete mapping of new sewer areas (if any). • Complete inspection of targeted areas. • Identify potential defects. • Notify entities responsible for remediation of identified deficiencies.	3/31/2021

Report Description	Due Date
Report on implementation of two EOH stormwater retrofit projects (Maple Avenue and Drewville Road).	Quarterly until completed (3/31, 6/30, 9/30, 12/31)
Report on review of strategies used to inform potential SRP participants of the program's availability.	3/31/2018
Report on assessment of funding for the SRP	3/31/2022
Report on program implementation in the FAD Annual Report: • Maintenance of EOH Stormwater Facilities • Stormwater retrofit projects • EOH NPS Stormwater Retrofit Grant Program • EOH Community Wastewater Planning Assistance Program • EOH Septic Repair Program, including education and outreach efforts • Video Sanitary Sewer Inspection	Annually, 3/31

4.10 Kensico Water Quality Control Program

The Kensico Reservoir, located in Westchester County, is the terminal reservoir for the City's Catskill/Delaware water supply. Because it provides the last impoundment of Catskill/Delaware water prior to entering the City's distribution system, protection of this reservoir is critically important to maintaining water quality for the City. The primary goal of the Kensico Water Quality Control Program is to reduce non-point source pollution in the reservoir through implementation of various stormwater and wastewater projects. In addition, the City may conduct wildlife scat surveys around Kensico Reservoir in advance of storm events. These surveys include the recording, collecting, and disposing of wildlife latrines.

The objectives of the Kensico Water Quality Control Program under the 2017 FAD are to:

- Continue proper operation and adequate maintenance through regular inspections of the existing stormwater management facilities and identification of repair needs to maximize pollutant removal efficiency.

- Reduce the risk of water contamination with pathogens through implementation of the Septic Repair Reimbursement Program, monitoring the early warning sanitary sewer overflow protection system, and inspection of targeted sanitary sewers.

- Minimize turbidity levels at effluent chambers by completion of the shoreline stabilization project at Shaft 18 and review timeline for assessing and/or dredging effluent chambers to prevent possible resuspension of sediment.

The City's Kensico Water Quality Control program is described in Section 2.3.10 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Kensico Water Quality Control Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Inspect and maintain non-point source management facilities within the Kensico Reservoir Basin: • Stormwater management facilities • Turbidity curtains • Spill containment measures	Ongoing
Oversee remote monitoring system at Westlake Sewer Extension.	Ongoing
Implement Septic Repair Reimbursement Program.	Ongoing

Conduct the Video Sanitary Sewer Inspection Program to: • Complete mapping of new sewer areas. • Complete reinspection of targeted areas. • Identify potential defects. • Notify entities responsible for remediation of identified deficiencies.	3/31/2021
Complete Shaft 18 shoreline stabilization project.	12/31/2022

Report Description	Due Date
Report on program implementation in the FAD Annual Report, including: • Operation and maintenance of non-point source management facilities • Westlake sewer monitoring program • Shaft 18 shoreline stabilization • Review timeline for assessing or dredging at the effluent chambers • Septic Repair Program • Video Sanitary Sewer Inspection • Kensico Wildlife Scat Sanitary Survey • Westchester County Airport (including capped landfills), as needed	Annually, 3/31

4.11 Catskill Turbidity Control

The underling geology of the Catskill System portion of the NYC Watershed makes its streams naturally prone to periods of elevated turbidity when large runoff events destabilize stream banks, mobilize streambeds, and suspend the glacial clays that underlie the streambed armor. The design of the Catskill System accounts for this effect, and provides for settling within Schoharie Reservoir, Ashokan West Basin, Ashokan East Basin, and the upper reaches of Kensico Reservoir. Under most circumstances, the extended detention time in these reservoirs is sufficient to allow the turbidity-causing clay solids to settle out, and the system easily meets the SWTR turbidity standard (5 NTU) at the Kensico Reservoir effluent.

The City's ability to meet this turbidity standard is occasionally threatened after extreme rain and runoff events. Historically, elevated turbidity has been addressed through the addition of the coagulant aluminum sulfate (alum) near the end of the Catskill Aqueduct. This increases the settling of suspended clays as Catskill water enters Kensico Reservoir. However, concern for potential negative environmental impacts of this practice has compelled the City to seek other turbidity management strategies. The City will continue to maintain its ability to use alum in the event other management alternatives are unable to adequately protect Kensico water quality.

Since, 2002, the City has undertaken a number of studies and implemented significant changes to its operations to better manage turbidity in the Catskill System, while minimizing potentially negative local environmental impacts associated with the operation of the Shandaken Tunnel and the use of alum. The City determined that the most effective measures for controlling turbidity while minimizing alum use were: modification of reservoir operations using an Operations Support Tool (OST), interconnection of the Delaware and Catskill Aqueducts at Delaware Aqueduct Shaft 4, and improvements to stop shutters in the Catskill Aqueduct. The system-wide OST allows the City to optimize reservoir releases and diversions to balance between maximizing water supply storage, optimizing water quality, and achieving other environmental objectives. The City's Multi-Tiered Water Quality Modeling Program makes use of this tool to evaluate a variety of operational and water quality scenarios that are used to help support operational decisions. The interconnection between the Catskill Aqueduct and the Delaware Aqueduct at Shaft 4 was established to allow the increased use of Delaware System water during Catskill turbidity events and improve overall system flexibility. Structural improvements made to the Catskill Aqueduct stop shutter facilities help maintain adequate water depths near the intakes of the wholesale community customers with connections to the Catskill Aqueduct during periods when flows are minimized between Ashokan and Kensico Reservoirs.

Catalum SPDES Permit and Environmental Review

The Catalum SPDES Permit sets forth the conditions under which the City is allowed to treat Catskill Aqueduct water with alum prior to entering Kensico Reservoir. On October 4, 2013, NYSDEC executed an Order on Consent (DEC Case No.: D007-0001-11) (CO) with the City in connection with the Catalum SPDES permit. Incorporated into that CO was a modified version of an interim operating protocol for use of the Ashokan Release Channel (ARC), to which the City and NYSDEC had agreed in October 2011. The ARC provides a mechanism for water to be released from the Ashokan Reservoir to the lower Esopus Creek for environmental or economic benefit, flood mitigation, or to mitigate the impacts of turbidity on water diverted to Kensico

Reservoir. The protocol seeks to enhance community benefits, improve flood attenuation, and provide better water quality.

In June 2012, consistent with the then proposed Catalum CO, the City requested a modification to the Catalum SPDES Permit to incorporate measures to control turbidity in water sent from the Ashokan Reservoir to the Kensico Reservoir via the Catskill Aqueduct, and to postpone dredging of alum floc at Kensico Reservoir until completion of certain infrastructure projects. This proposed modification to the Catalum SPDES permit required that an Environmental Impact Statement (EIS) be conducted under the State Environmental Quality Review Act (SEQRA). NYSDEC is lead agency for this review and issued the final scope of work for the EIS on March 22, 2017. Under the CO, the City is required to prepare a draft EIS (DEIS) and draft of the Final EIS (FEIS), which will analyze the potential environmental and socioeconomic impacts resulting from the proposed modifications. Impacts to the Ashokan Reservoir, lower Esopus Creek, and Kensico Reservoir will be considered. The EIS will evaluate a suite of alternatives that could be executed at Ashokan Reservoir, along the Catskill Aqueduct, and at Kensico Reservoir, as well as implementation of the City's turbidity control measures as a whole. Where potential adverse impacts are indicated, reasonable and practicable measures that have the potential to avoid, mitigate, or minimize these impacts will be identified.

Expert Panel Review

As required by the Revised 2007 FAD, the City contracted with the National Academies of Sciences, Engineering, and Medicine (NASEM, formerly known as the National Research Council) to conduct an expert panel ("Expert Panel") review of the City's use of OST. The NASEM is in a unique position to bring together a group of experts with the breadth of experience and expertise needed to undertake this independent study and to ensure a comprehensive and scientifically objective product.

The goals of the Expert Panel are to:

- Evaluate the effectiveness of the City's use of OST for water supply operations, and identify ways in which the City can more effectively use OST to manage turbidity.
- Evaluate the performance measures and criteria that the City uses to assess the efficacy of the Catskill Turbidity Control Program, and recommend additional performance measures, if necessary.
- Review the City's proposed use of OST in evaluating the proposed modification to the Catalum SPDES Permit as well as the alternatives to be considered in the environmental review of those proposed modifications.
- Review the City's existing studies of the potential effects of climate change on the City's water supply to help identify and enhance understanding of areas of potential future concern regarding the use of OST.

The general goals of Catskill Turbidity Control under the 2017 FAD are to:

- Continue to use OST to manage water system operations to reduce turbidity levels in the Catskill System water entering Kensico Reservoir, while minimizing adverse environmental impacts and alum use.
- Keep NYSDOH informed on plans to manage Catskill turbidity during the planned shutdown of the Rondout-West Branch Tunnel (RWBT) section of the Delaware Aqueduct for repairs.
- Continue to support the Expert Panel review of the City's use of OST.
- Propose, as necessary, alternative measures for achieving turbidity control based on the Catalum EIS.

The City's Catskill Turbidity Control measures are described in Section 2.3.11 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Continue to utilize and update OST.	Ongoing
Conduct the Expert Panel review of the City's use of OST.	
• Upon request of the Expert Panel, provide any information necessary to assess the City's turbidity and water system modeling programs and to respond to the questions the Panel has been asked to address.	Ongoing
• Provide the final report to NYSDOH, USEPA, and NYSDEC and the Watershed Inspector General (WIG).	Anticipated release by 10/31/2018
• Submit final revised performance measures and criteria for evaluating the efficacy of Catskill Turbidity Control measures, taking into consideration the Expert Panel recommendations, for review and approval by NYSDOH, USEPA, and NYSDEC.	Six months after submission of Expert Panel report

Annually convene a progress meeting with NYSDOH, USEPA, NYSDEC, and the WIG to provide a forum for discussion of the status of the Catskill Turbidity Control measures, management of turbidity events reported in the March Annual Report and subsequent events, use of performance measures to assess program efficacy, status/results of the DEIS and FEIS, and other matters related to turbidity control. In addition, the City will facilitate discussion of the following items: • The Expert Panel Report. This discussion may occur at the next annual meeting after the Report is submitted or NYSDOH may, at its option, request that the City convene a separate meeting to discuss the Expert Panel Report, in addition to the annual meetings. Consistent with NASEM procedures, the City will ask some or all members of the Expert Panel, and/or staff of the organization, to participate in this meeting. • The DEIS. This discussion may occur at the next annual meeting after the DEIS is issued by NYSDEC, or NYSDOH may, at its option, request that the City convene a separate meeting to discuss the DEIS, in addition to the annual meetings. • The Catskill Turbidity Control measures report that is due 3 months after issuance of the FEIS. This discussion may occur at the next annual meeting more than three months after issuance of the FEIS or NYSDOH may, at its option, request that the City convene a separate meeting to discuss this report, in addition to the annual meetings.	Annually, 10/31

Report Description	Due Date
Report on program implementation in the FAD Annual Report.	Annually, 3/31
Provide the final report of National Academies Expert Panel to NYSDOH, USEPA, NYSDEC, and the WIG.	Anticipated release by 10/31/2018
Report on final revised performance measures/criteria for evaluating the efficacy of Catskill Turbidity Controls.	6 months after submission of Expert Panel report
Report on Catskill Turbidity Control Rondout-West Branch Tunnel (RWBT) Shutdown Management Plan, including consideration of maintaining water quality during the RWBT repair and shutdown.	1 year prior to the planned RWBT shutdown
Report on whether, based on the conclusions of the FEIS, the City intends to modify its use of turbidity control measures identified in the Phase III Catskill Turbidity Control Implementation Plan, and/or implement any other turbidity control measures. If so, the City shall submit a modification of the Phase III Plan, proposing alternative measures for achieving turbidity control and a timeline for implementing those alternative measures.	3 months after NYSDEC issuance of FEIS

4.12 Sand and Salt Storage

This program was concluded under the Revised 2007 FAD.

5. Watershed Monitoring, Modeling, and GIS Programs

5.1 Watershed Monitoring Program

The City conducts extensive water quality monitoring throughout the Watershed. Programmatic goals are defined in the 2016 Watershed Water Quality Monitoring Plan, which describes the data gathering protocols for regulatory purposes, FAD program evaluation, modeling, and surveillance (including pathogen surveillance). Significant alterations in the monitoring plan require the City to submit the proposed changes to NYSDOH for review and approval prior to implementation. Changes to the plan are documented using addenda.

Water quality results collected from routine monitoring of reservoirs, streams, and aqueducts throughout the Watershed are stored in a database. The database serves both short- and long-term objectives. The daily results are used for regulatory compliance and operational decisions, and are compiled by the City each year into the Watershed Water Quality Annual Report. Over the longer term, the data generated through the City's monitoring program, in conjunction with other defensible scientific findings, are used to assess water quality status, water quality trends, and the overall effectiveness of the Watershed protection program. This evaluation is described in the Watershed Protection Program Summary and Assessment Report, which is produced every five years. The last submission occurred on March 31, 2016, and the next assessment report shall be submitted by March 31, 2021.

The goals for the Watershed Monitoring Program under the 2017 FAD are to:

- Provide water quality results collected through routine programs.
- Use water quality data to evaluate the source and fate of pollutants.
- Assess the effectiveness of Watershed protection efforts and water supply operations.
- Participate in educational forums on Watershed monitoring, research, and management.
- Coordinate a working group on pathogen research.
- Provide after-action reports to NYSDOH and USEPA on all non-routine chemical treatments and other significant or unusual events that could impact water quality.

The City's Watershed Monitoring Program is described in Section 2.4.1 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

Natural gas drilling using high volume hydraulic fracturing is currently prohibited in New York State[1]. However, as a contingency if natural gas drilling is authorized in the New York City Watershed, the City shall work with regulatory partners to develop parameters to revise and enhance its monitoring plan to include sampling for indicator pollutants.

The 2017 FAD requires the City to implement the Watershed Monitoring Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Annual participation in educational seminars on Watershed monitoring and management.	Ongoing
Coordinate Pathogen Technical Working Group meeting.	Annually, 5/31
Provide after-action reports on all non-routine chemical treatments and other significant or unusual events that have the potential to impact water quality.	Upon completion as specified by NYSDOH for each action

Report Description	Due Date
Submit Watershed Water Quality Annual Report, including comprehensive chapters on: • Kensico Reservoir water quality • Pathogens • Modeling • Educational seminars on Watershed monitoring and management • Ongoing research	Annually, 7/31
Submit the 2021 Watershed Protection Program Summary and Assessment Report.	3/31/2021
Submit the 2026 Watershed Protection Program Summary and Assessment Report.	3/31/2026

[1] On June 29, 2015, NYSDEC officially prohibited high-volume hydraulic fracturing (HVHF) in New York State by issuing its formal Findings Statement, completing the State's seven-year review of this activity.
The Findings Statement concludes that there are no feasible or prudent alternatives that adequately avoid or minimize adverse environmental impacts and address risks to public health from this activity. NYSDEC based the Findings Statement on the vast research included in the NYSDOH Report on the subject and the Final Supplemental Generic Environmental Impact Statement (FSGEIS) released in May 2015. The FSGEIS included consideration of extensive public comment and NYSDOH's Public Health Review, which concluded that there is considerable uncertainty as to potential health impacts from HVHF and that HVHF should not move forward in New York State.

5.2 Multi-Tiered Water Quality Modeling Program

The City conducts extensive modeling analysis to inform long-term water supply planning, Watershed program evaluation, and day-to-day operations to ensure FAD compliance and overall system reliability. The models developed and applied by the Water Quality Modeling Program fall into four general classes:

- Watershed models that simulate hydrology and stream water quality, including processes associated with agricultural, forested, and urban lands, and with water quality including turbidity, nutrients, organic carbon, and disinfection byproduct (DBP) precursors.
- Reservoir models that simulate the effects of Watershed hydrology, nutrient inputs, and operations on reservoir nutrient and chlorophyll levels, the production and loss of organic carbon.
- System operation models that simulate the demands, storage, transfer, and quality of water throughout the entire NYC reservoir system.
- Stochastic weather generators, which generate synthetic time series of weather variables such as precipitation and air temperature; which, when combined with Watershed, reservoir, and system models, allows evaluation of the impacts of climate change and extreme events on supply system operation and water quality.

These models encapsulate the key processes and interactions that control generation and transport of water, sediment, organic carbon and nutrients from the land surface, through the watersheds and reservoirs, and the supply system. Research and development is an integral component of the Water Quality Modeling Section's mission that leads to improvements to existing models, adaptation of new models and development of model applications to support water supply planning and operations by evaluating the impacts of changing and evolving management and protections programs, climate, land use, population, reservoir operations, and regulatory requirements.

The goals for the Multi-Tiered Water Quality Modeling Program under the 2017 FAD are the development and application of models in the following areas:

- Prediction of turbidity transport in the Catskill system, and Kensico and Rondout Reservoirs, and to provide guidance for reservoir operations to minimize the impact of turbidity events.
- Integration of the Rondout turbidity model into the OST.
- Development and testing of turbidity models for other Delaware system reservoirs, beginning with Neversink.
- Evaluation of the effectiveness between and within Watershed management programs implemented through the FAD and MOA on maintenance and improvement of water quality.
- Continuation of model development and application to forecast the effects of climate change on water supply quantity and quality.

- Development and testing of models to simulate Watershed sources, and reservoir fate and transport, of organic carbon and disinfection byproduct precursors.
- Evaluation of impacts of infrastructure improvements (both during and following), including the RWBT repair project.

The City's Multi-Tiered Modeling Program is described in Section 2.4.2 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Multi-Tiered Water Quality Modeling Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Update and enhance data describing land use, Watershed programs, meteorology, stream hydrology and water quality, reservoir quality and operations data to support modeling.	Ongoing
Provide modeling and technical support for Catskill Turbidity Control measures including the applications of OST.	Ongoing
Use reservoir turbidity models and OST to support operational decisions in response to episodes of elevated turbidity.	Ongoing
Apply and test new models to support Watershed management and long-term planning.	Ongoing
Develop and test fate and transport models for organic carbon and disinfection byproduct precursors in Cannonsville and Neversink Reservoirs.	Ongoing
Develop future climate scenarios for use as inputs to the City's Watershed and reservoir models; scenarios may be based on: (a) historic time series, and (b) synthetic weather generators.	Ongoing
Develop model applications that simulate the impacts of future climate change on Watershed hydrology, reservoir water quality, and water system operations.	Ongoing
Hold an annual progress meeting with regulators to present and discuss modeling results.	Annually, 10/31

Report Description	Due Date
Submit program Status Report, including updates on the modeling activities described above in the Watershed Water Quality Annual Report.	Annually, 7/31
Report on Modeling Analysis of FAD Programs as a supplement to the Watershed Protection Program Summary and Assessment Report.	3/31/2021 and 3/31/2026

5.3 Geographic Information System Program

The City's upstate Geographic Information System (GIS) is used to manage the City's interests in the lands and facilities of the upstate water supply system, and to display and evaluate the potential efficacy of Watershed protection programs, through maps, queries, and spatial analyses. The GIS is also used to support Watershed and reservoir modeling of water quantity and quality, as well as modeling of water supply system operations. GIS resources are utilized by staff at offices throughout the Watershed, directly and via the Watershed Lands Information System (WaLIS).

The GIS will continue to be a useful tool in four primary areas:

- Inventory and track water supply lands and facilities.
- Perform analyses of land use and terrain to map development, agriculture, forest and hydrography.
- Provide estimation of the effects of Watershed management programs on long-term water quality.
- Support Watershed and reservoir modeling of water quantity and quality, and modeling of system operations.

The goals for the GIS Program under the 2017 FAD are to:

- Continue to provide GIS technical support for protection programs, monitoring programs, and modeling applications.
- Continue to develop and update GIS data and metadata, including acquisition of high-resolution aerial data and their derived products.
- Continue to improve and maintain GIS infrastructure to evolve with changing technology and growing database needs.
- Continue to fulfill requests for GIS data from other agencies and Watershed stakeholders.

The City's GIS program is described in Section 2.4.3 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Geographic Information System Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Continue to provide GIS technical support for protection programs, monitoring programs, and modeling applications.	Ongoing

Continue to develop and update GIS data and metadata, including acquisition of high-resolution aerial data and their derived products as needed.	Ongoing
Continue to improve and maintain GIS infrastructure to evolve with changing technology and growing database needs.	Ongoing
Continue to fulfill requests for GIS data from other agencies and Watershed stakeholders.	Ongoing

Report Description	Due Date
Report on program implementation in the FAD Annual Report, including: • GIS technical support for protection programs, monitoring programs, and modeling applications • Completion or acquisition of new GIS data layers and aerial products in the City's GIS spatial data libraries • GIS infrastructure improvement • GIS data dissemination summaries	Annually, 3/31

6. Regulatory Programs

6.1 Watershed Rules and Regulations and Other Enforcement/Project Review

The City administers and enforces the City's Watershed Rules and Regulations (WR&Rs), including the regulations and standards incorporated by reference in these regulations. The City also participates in environmental reviews under SEQRA for projects in the Watershed. The majority of the regulated activities reviewed by the City involve subsurface sewage treatment systems or stormwater pollution prevention plans to prevent the discharge of sediment, turbidity, nutrients, and pathogens from entering the reservoirs.

The program is coordinated through a Memorandum of Understanding (MOU) between NYSDEC and the City. The MOU established the Watershed Enforcement Coordination Committee (WECC) which meets quarterly to address non-compliance with stormwater pollution prevention plans through formal enforcement and compliance assistance under specific agency protocols. The WECC process is designed to address instances of significant non-compliance in a timely and appropriate manner.

The City, in accordance with Public Health Law Section 1104 and the MOA, is obligated to pay for capital replacement of Watershed Equipment and Methods at all public wastewater treatment plants (WWTPs), as well as all (public or nonpublic) WWTPs that existed or were under construction as of November 2, 1995, and that are required by the WR&Rs and not otherwise required by federal or State law.

The City is working towards revising the WR&Rs to provide for greater consistency with the State's regulatory program for stormwater and wastewater. Revisions have also been proposed in response to concerns raised by stakeholders in WOH communities, in particular related to noncomplying regulated activities, subsurface sewage treatment systems, holding tanks, SWPPPs, and variances.

The goals for Watershed Rules and Regulations and Other Enforcement/Project Review under the 2017 FAD are to:

- Facilitate optional pre-application meeting requests, receive applications for approval of regulated activities, perform a review of SEQR notices and new projects in accordance with the WR&Rs, and monitor construction activity.
- Investigate possible violations of the WR&Rs, Environmental Conservation Law, and Clean Water Act. Document system failures, illicit discharges, and construction site non-compliance; issue Notices of Violation as necessary, and review corrective action plans for all violations. Observe and document remediation efforts and perform close-out actions.
- Enforce environmental and public health requirements, including petroleum/chemical spills, and hazardous and solid waste dumping.
- Continue the City's commitment to pay for Capital Replacement of Watershed Equipment and Methods at eligible WWTPs.

The City's WR&Rs program is described in Section 2.5.1of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement Watershed Rules and Regulations and Other Enforcement/Project Review in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Enforce the WR&Rs and other applicable regulations. Continue to promote compliance guidance to applicants seeking approval, through pre-application conferences and providing guidance documents.	Ongoing
Work with NYSDEC, in accordance with Addendum S of the NYCDEP/NYSDEC Memorandum of Understanding, to improve coordination of stormwater enforcement and compliance activities between agencies and with the State Attorney General's Office. Such enforcement and compliance coordination will apply, but not be limited to, all effective NYSDEC general permits for construction activity. Stormwater WECC meetings with involved agencies will be held at least twice per year or more as needed.	Ongoing
Submit the proposed changes to the WR&Rs and a timeline for completing the rulemaking process.	2/28/2018
Update guidance documents affected by WR&Rs changes to assist applicants undertaking regulated activities in complying with the WR&Rs. Submit the updated guidance documents in accordance with the MOA.	18 months after effective date of revisions to WR&Rs

Report Description	Due Date
Submit the proposed changes to the WR&Rs and a timeline for completing the rulemaking process.	2/28/18
Submit reports consisting of: • Summary table, with corresponding maps, of new project activities that may affect water quality including variance activities and review of new/remediated septic systems in the Catskill/Delaware Watershed basins as well as in the Croton Falls and Cross River basins east of the Hudson River. • Summary table (inventory) of all development projects proposed and their SEQRA status, with corresponding maps. • Summary table of projects under construction, by basin, with corresponding maps.	Semi-annually, 4/30 and 10/31
Submit reports on the status of the City's regulatory enforcement actions in the Catskill/Delaware Watershed basins, including the Croton Falls and Cross River basins.	Semi-annually, 4/30 and 10/31
Submit report on the progress of the proposed changes to the WR&Rs until adopted.	Semi-annually, 4/30 and 10/31
Submit an update on Capital Replacement of the Watershed Equipment and Methods at eligible WWTPs.	Annually, 3/31
Report on the analyses used to determine the phosphorus-restricted and coliform-restricted status of each reservoir, as part of the Watershed Water Quality Annual Report.	Annually, 7/31

6.2 Wastewater Treatment Plant Compliance and Inspection Program

The goal of the WWTP Compliance and Inspection Program is to prevent degradation of source waters from the threat of contamination from WWTPs discharging in the Watershed. To ensure compliance with the Watershed Regulations and the SPDES permits, the City through the WWTP Compliance and Inspection Group performs onsite inspections, conducts sample monitoring, provides compliance assistance, and takes enforcement actions when needed. The program is coordinated through a Memorandum of Understanding (MOU) between NYSDEC and the City. The MOU established the Watershed Enforcement Coordination Committee (WECC), which meets quarterly to address non-compliance through formal enforcement and/or compliance assistance under specific inter-agency protocols. The WECC process is designed to address instances of significant non-compliance in a timely and appropriate manner. In addition, the City's Water Quality sampling program regularly monitors the effluent of all treatment plants in the Watershed and uses the results of sampling to assist WWTP operators to meet compliance requirements or to initiate enforcement actions as necessary.

The City's WWTP Compliance and Inspection Program is described in Section 2.5.2 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Wastewater Treatment Plant Compliance and Inspection Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Perform monitoring at all City-owned WWTPs in accordance with their SPDES permits, and grab sample monitoring monthly at all non-City-owned WWTPs discharging in the Catskill/Delaware Watershed. At least once annually, for the non-City-owned WWTPs, samples shall be collected and analyzed in accordance with the monitoring requirements of each facility's SPDES permit. Continue to provide technical assistance to owner/operators of non-City-owned WWTPs as needed.	Ongoing
Continue to take timely and appropriate enforcement actions against non-City-owned WWTPs for noncompliance with the City's WR&Rs and SPDES discharge permit requirements, in accordance with the WECC enforcement coordination protocol specified in the MOU between NYSDEC and the City.	Ongoing
Conduct at least four on-site inspections for year-round SPDES permitted facilities and at least two on-site inspections per year for all seasonal SPDES permitted WWTPs in the watershed.	Ongoing

Report Description	Due Date
Report on the WWTP Compliance and Inspection Program, including: • WWTP inspection summary reports • Enforcement actions	Semi-annually, 3/31 (July 1 to Dec 31) 9/30 (Jan 1 to June 30)
Submit WWTP Water Quality Sampling Monitoring Report.	Semi-annually, 3/31 (July 1 to Dec 31) 9/30 (Jan 1 to June 30)
Report by email to NYSDOH all sewage spills exceeding 500 gallons within 24 hours of the City becoming aware of the spill.	Ongoing

7. Catskill/Delaware Filtration Plant Design

The 1997 FAD required the City to produce a Final Design and Final Environmental Impact Statement for filtration facilities for the Catskill/Delaware water supply. The 2002 FAD required the City to provide biennial updates to the preliminary filtration plant design for the Catskill/Delaware system (in addition to constructing an ultraviolet light disinfection facility, which was placed into full service in October 2012). The 2007 FAD maintained the requirement for the City to provide a biennial report that updated the preliminary design for filtration facilities.

In 2013 and 2015, the City proposed, and NYSDOH agreed, that because no design changes to the 2009 preliminary plans for the Catskill/Delaware Filtration Facilities were required or issued, no revisions to the 2009 plans were necessary. In recognition that the work supporting the existing preliminary plans is now over 25 years old, the 2017 FAD requires the City to contract for a comprehensive review of filtration methods and technologies, resulting in the development of a new conceptual design for a filtration facility or facilities. This will minimize the overall time to commence filtration, in the event that the City or NYSDOH determines that filtration is necessary.

It is expected that this design review process will include:

- bench studies and modeling;
- larger scale pilot studies;
- independent review from water treatment experts;
- conceptual design that incorporates the latest filtration methods and technologies.

The City's Catskill/Delaware Filtration Plant Design program is described in Section 2.6 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Catskill/Delaware Filtration Plant Design requirements in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Advertise for Request for Proposals.	Completed
Issue Notice to Proceed.	2/28/2018
Complete paper and bench studies.	6/30/2020
Commence conceptual design and larger scale pilot studies.	12/31/2021

Complete larger scale pilot studies and submit report.	12/31/2024
Submit conceptual design.	12/31/2026

Report Description	Due Date
Report on status of design review.	Annually, 3/31
Submit larger scale pilot studies report.	12/31/2024
Submit Final Report on conceptual design.	12/31/2026

8. In-City Programs

8.1 Waterborne Disease Risk Assessment Program

To maintain filtration avoidance, the City must continue to demonstrate that water consumers served by the NYC water supply are adequately protected against waterborne disease. In particular, the City's water must not be identified as a source of outbreaks of giardiasis or cryptosporidiosis.

Since the promulgation of the SWTR in 1989, and the initiation of the City's Waterborne Disease Risk Assessment Program (WDRAP) in 1993, significant changes in water quality regulation and water treatment have occurred. In the City, the Catskill/Delaware UV plant was constructed and began operation in 2012. Also, the Croton filtration plant began delivering water to areas of the City in 2015. With these treatment facilities now in operation, the City has major additional protection against any risk of waterborne disease due to pathogens such as *Giardia* and *Cryptosporidium*.

Providing an additional level of public health protection, the 2017 FAD continues to require that the WDRAP program assess and ensure the safety of the City's water supply. The main goal of the WDRAP program is to track the incidence of and gather relevant demographic and risk factor data on potentially-waterborne illnesses, in particular giardiasis and cryptosporidiosis, in the population served by the City's water supply. Also under WDRAP, syndromic surveillance programs have been developed and implemented as a means for observing general community gastro-intestinal illness trends in NYC, as an additional assurance of the safety of the water supply.

The City's Waterborne Disease Risk Assessment Program is described in Section 2.7 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the WDRAP in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Continue to operate the Waterborne Disease Risk Assessment Program.	Ongoing
In relation to any water quality "event" involving the NYC water supply (e.g., increased turbidity levels, pathogen detection, disruption of operations), the City will provide NYSDOH and USEPA with syndromic surveillance system information.	Event based

Notify NYSDOH and USEPA whenever the City is notified by the New York City Department of Health and Mental Hygiene of any signs of community gastrointestinal illness in which public drinking water supply appears to be the source of the illness.	Event based
Continue to implement the Turbidity Action Plan and annually update the contact information.	Event based

Report Description	**Due Date**
Submit Annual Report on program and program findings, implementation, and analysis.	Annually, 3/31

8.2 Cross Connection Control Program

A cross connection is a physical connection in a drinking water distribution system through which the water supply can become contaminated. By inspections of potential sources of cross connections and follow-up enforcement to ensure backflow prevention devices are installed where necessary, the Cross Connection Control Program is an important tool for preventing contamination of the City's water in distribution system.

Although this program is an important part of the City's drinking water program, NYSDOH, in consultation with USEPA, has determined that it is no longer a necessary component of the Filtration Avoidance Determination. As a requirement of 10 NYCRR Section 5-1.31 and Title 15, Chapter 20 of the Rules of the City of New York, the City will continue to implement a Cross Connection Control Program. As required by New York City Local Law 76/09, the Program will report semi-annually (January and July) to the New York City Council on: the number of facilities for which one or more backflow devices were installed since the last report; the number of facilities that have been newly notified of the need to install devices; and the number of violations issued for failure to install devices. The City will ensure that this information is also posted on its public website http://www.nyc.gov/html/dep/html/forms_and_permits/cross.shtml#faq, and that NYSDOH and USEPA are copied on the report that is sent to the NYC Council.

9. Administration

In order to successfully implement a comprehensive Watershed protection program, dedicated professionals in a variety of fields are needed. The FAD requires the City to maintain the level of staffing, funding, and expertise necessary to support all elements of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016). Annual reporting of staffing, disbursements, and out-year appropriations is important for determining if the City's committed resource levels are sufficient.

In addition to having adequate staffing and funding, the City and its WOH Watershed partners have recognized that the establishment of a physical office in the WOH Watershed would improve implementation of the City's source water protection programs. Providing a central location for certain operations, maintenance, and infrastructure improvement tasks can help ensure the reliable delivery of water to the City from the Catskill/Delaware Watershed. By sharing a work location, centrally located in the Watershed, the City and CWC can further improve coordination and responsiveness to Watershed communities. The City shall work with CWC to co-locate new offices for certain NYCDEP staff. CWC has begun advancing plans for a new facility in Arkville, NY. The City shall take all necessary steps to obtain required City review and approvals for leasing of approximately 13,000 square feet of office, meeting, and storage space for a 20-25-year term, in a time frame to begin relocation of appropriate staff in 2020. The details of its lease of space, including square footage, revisions, if any, to estimated staffing numbers, and timing of occupation (subsequent to receipt by CWC of a certificate of occupancy), shall be updated and reported annually to NYSDOH.

The 2017 FAD requires a new section in the annual report to provide the status of key partnership contracts, such as those with CWC, SWCDs, and WAC. In addition, upon request from NYSDOH, the City will convene a meeting with FAD program partners, as necessary, to discuss program administrative, contract, and/or funding issues. The goal is to maintain continuity in the Watershed protection programs, and prevent the occurrence of funding gaps.

The City's Administration Program is described in Section 2.8 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Administration requirements in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
NYCDEP, in consultation with the City's Office of Management and Budget, will make a presentation to NYSDOH, USEPA, and NYSDEC on the amount of money appropriated and spent for Watershed protection programs and its adequacy to meet program objectives and FAD requirements.	Within 60 Days after submission of the Annual Report
Co-location of NYCDEP staff with CWC in new office in Arkville, NY:	
• Sign a binding commitment to lease office space in Arkville, NY for relocation of NYCDEP program staff.	By the time the building is complete and ready for occupancy, with best efforts to sign by 12/31/2018
• Assign at least 26 NYCDEP staff to new offices in Arkville, NY.	12/31/2020, provided building is complete and ready for occupancy
• Assign additional staff, as necessary, to ensure that a total of at least 40 NYCDEP staff are assigned to new offices in Arkville, NY.	12/31/2026

Report Description	Due Date
Report annually on: • The actual filled staff position levels versus available staff positions for each division and section involved in supporting FAD Watershed protection programs, and confirm that resource levels are adequate to ensure that all program goals and FAD requirements are met. Contractor support staff will be noted. • The amount appropriated in the City budget for FAD Watershed protection programs for the upcoming fiscal year, specifically the amount (capital and expense) spent during the previous year, the amount appropriated for the current year, and the amount planned for the year thereafter. The amount spent, appropriated, and planned will be broken	Annually, 9/30

down by program, to the extent practicable. The report will also include costs for technical consultant contracts identified in the FAD. • The status of key partnership contracts including contract issues (i.e., change orders, planning for successor contract) and funding projections.	
Report on status of lease details and City approvals, estimated staffing numbers, and timing of occupation of leased space in new offices in Arkville, NY.	Annually, 3/31

10. **Education and Outreach**

The overall goal of the Education and Outreach Program is to raise awareness about the importance of the New York City water supply system and the critical need to protect its sources for current and future generations. Through this collaborative program, the City works with numerous partners in both the Watershed and New York City to educate upstate residents and downstate consumers about the importance of source water protection, and to promote the benefits of environmental protection to public health and quality of life.

Certain elements of the Watershed Education and Outreach Program are achieved through individual Watershed programs and partnerships that target a specific audience, whereas others involve direct stakeholder engagement or active participation in local community events where information can be effectively disseminated to a broad audience. The continued use of websites, press releases, newsletters, publications, and newer technology such as social media and e-news complements all these efforts.

Virtually every Watershed protection program funded or supported by the City accomplishes some degree of public education or outreach, which the City attempts to track and quantify with a focus on characterizing the key target audiences reached. The primary Watershed programs that focus on education and outreach include the CWC Public Education Grants Program, Watershed Agricultural Program, Watershed Forestry Program, Stream Management Program, and Land Management Program (Watershed Recreation).

The goals for the Education and Outreach Program under the 2017 FAD are to:

- Continue to promote environmental stewardship as means of water quality and public health protection.

- Continue to track and document the estimated numbers and types of audiences reached via targeted Watershed education and/or training programs.

- Continue to track and document the diverse range of community public outreach events that are sponsored or attended by the City and its Watershed partners.

The City's Education and Outreach Program is described in Section 2.9 of the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016).

The 2017 FAD requires the City to implement the Education and Outreach Program in accordance with the milestones below.

Activity and Reporting Requirements

Activity	Due Date
Continue to support the following activities: • CWC Public Education Grants Program (through a contract with CWC). • Targeted education and professional training programs for specific adult audiences through the ongoing efforts of existing Watershed protection programs. • School-based education programs for both upstate and downstate audiences (teachers and students). • Watershed community outreach events and public meetings, with participation as needed. • Utilization of websites, press releases, newsletters, publications and social media to disseminate information about the water supply and Watershed protection programs.	Ongoing

Report Description	Due Date
Report on program implementation in the FAD Annual Report, summarizing key activities and accomplishments related to education and outreach in the following programs: • CWC Public Education Grants Program • Watershed Agricultural Program • Watershed Forestry Program • Stream Management Program • Watershed Recreation	Annually, 3/31

11. Reporting

The 2017 FAD continues to require that the City inform NYSDOH and USEPA of its Watershed protection efforts through submittal of reports designed to assist the regulatory community and Watershed stakeholders in their assessment of the overall progress of the City's Watershed Protection Program. The expected content for these reports is described in more detail in each section of this 2017 FAD and in the *New York City Department of Environmental Protection Long-Term Watershed Protection Plan* (December 2016). This reporting section is not an exhaustive list of all reporting obligations. All FAD reports generated by NYCDEP are posted on the NYCDEP website (http://www.nyc.gov/html/dep/html/watershed_protection/fad.shtml). The following tables highlight reports submitted on a periodic as well as one-time only basis.

For informational purposes, the City will also inform NYSDOH and USEPA annually about actions planned and actions taken by the City on water conservation, implementation or revisions to the City's Drought Management Plan, and the elimination of leaks in the Delaware Aqueduct.

The 2017 FAD requires that the City implement the reporting requirements in accordance with the submittal list and schedule below.

Periodic Submittals by FAD Section

Section	Report Topic	Frequency*
2	Continue to meet SWTR filtration avoidance criteria (40 CFR §141.71 and §141.171, and 10 NYCRR §5-1.30) and submit reports and certification of compliance on: • §141.71(a)(1) and §5-1.30(c)(1) – raw water fecal coliform concentrations. • §141.71(a)(2) and §5-1.30(c)(2) – raw water turbidity sampling. • §141.71(b)(1)(i)/§141.72(a)(1) and §5-1.30(c)(3) – raw water disinfection CT values. • §141.71(b)(1)(ii)/§141.72(a)(2) and §5-1.30(c)(4) – operational status of Kensico and Hillview disinfection facilities, including generators and alarm systems. • §141.71(b)(1)(iii)/§141.72(a)(3) and §5-1.30(c)(5) – entry point chlorine residual levels.	Monthly

Section	Report Topic	Frequency*
	• §141.71(b)(1)(iv)/§141.72(a)(4) and §5-1.30(c)(6) – distribution system disinfection levels (the City will include a discussion of any remedial measures taken if chlorine residual levels are not maintained throughout the distribution system). • §141.71(b)(5) and §5-1.30(c)(10) – distribution system coliform monitoring, including a summary of the number of samples taken, how many tested positive for total coliform, whether the required number of repeat samples were taken at the required locations, and which, if any, total coliform positive samples were also *E. coli* positive. For each *E. coli* positive sample, include the investigation of potential causes, problems identified and what has or will be done to remediate problems. Include copies of any public notices issued as well as dates and frequency of issuance.	
	All requirements described in §141.71(b)(6) and §5-1.30(c)(9) must continue to be met. Submit report on disinfection byproduct monitoring results.	Quarterly
	Report on the operational status of Kensico Reservoir, West Branch Reservoir (on-line or by-pass), Hillview Reservoir, and whether any of these reservoirs experienced unusual water quality conditions.	Monthly
	Report on the status of the Expert Panel Review in the FAD Annual Report.	Annually

Section	Report Topic	Frequency*
3.1	Septic and Sewer Programs implementation: • Septic Remediation and Replacement Program • Small Business Program • Cluster System Program • Septic Maintenance Program • Alternate Design and Other Septic Systems	Annually
3.3	Community Wastewater Management Program implementation: • Shandaken • West Conesville • Claryville • Halcottsville • New Kingston • Shokan	Annually
3.5	Implementation of the Future Stormwater Controls Programs and the Stormwater Retrofit Program.	Annually
4.1	Summary of Waterfowl Management Program activities at all reservoirs, including wildlife management at Hillview Reservoir (8/1 to 7/31).	Annually (10/31)
4.2	Semi-annual reports on Land Acquisition Program activities and status.	Semi-annually (3/31 and 7/31)
4.3	Land Management Program implementation.	Annually
4.4	Watershed Agricultural Program implementation including: • Number of new and revised WFPs completed and approved, as well as the total number and percentage of active plans in relation to the current universe of WAP participants.	Annually

Section	Report Topic	Frequency*
	• Number, types and dollar amounts of both new BMPs and repaired or replaced BMPs implemented each year. • Number, types, and dollar amounts of both new BMPs and repaired or replaced BMPs designed and scheduled for implementation in the following year. • Cumulative percentage of BMP backlog reduced (designed, implemented, or scheduled for implementation) in relation to projected BMP implementation milestones for 2022. • Number and percentage of annual status reviews completed on active Whole Farm Plans. • Number of new and updated nutrient management plans completed, as well as the percentage of current plans on all active participating farms that require such a plan. • Number of farms participating in the Nutrient Management Credit Program. • Number of farms participating in the PFM Program and a summary of accomplishments. • Number of new and re-enrolled CREP contracts completed, along with a summary of total enrolled and re-enrolled acres. • Summary of Farmer Education Program accomplishments. • Summary of Economic Viability Program accomplishments.	Annually
4.5	Report on Watershed Forestry Program implementation including: • Number of forest management plans completed and acres of forestland	Annually

Section	Report Topic	Frequency*
	enrolled in New York's forest tax abatement program. • Number and types of MAP projects completed. • Number and types of forestry BMP projects completed. • Number of Croton Trees for Tribs projects completed. • Summary of logger and forester training accomplishments. • Summary of landowner education accomplishments. • Summary of school-based education accomplishments. • Summary of model forest accomplishments.	Annually
4.6	Report on the Stream Management Program implementation including: • Site selection of water quality based projects and status of projects. • Catskill Stream Buffer Initiative, including miles of streambank revegetated. • Stream Management Implementation Projects, including number of projects funded. • Local Flood Hazard Mitigation Program, including number of LFHM and LFA-generated projects funded, funding amounts, and number completed projects. • Water Quality studies. • Watershed Emergency Stream Response Plan.	Annually

Section	Report Topic	Frequency*
	Submit rolling two-year Action Plans for implementing stream management plan recommendations and establishing priorities, by reservoir basin.	Annually (5/31)
	Submit descriptions of proposed stream projects for FAD approval.	Annually (11/30)
	Water Quality Monitoring Studies status reports.	Biennially, beginning 3/31/2019
4.7	Report on Riparian Buffer Protection Program implementation referencing the other FAD programs where the completed Riparian Buffer Protection Program details will be described.	Annually
4.8	Report on Ecosystems Protection Program implementation including: • Forest inventories • Wetland protection • Wetland mapping • Wetland permit reviews • Invasive species management	Annually
4.9	Report on East-of-Hudson Nonpoint Source Pollution Control Program implementation: • Maintenance of EOH Stormwater Facilities • Stormwater Remediation Projects • EOH NPS Stormwater Retrofit Grant Program • EOH Community Wastewater Planning Assistance Program • EOH Septic Repair Program, including education and outreach efforts • Video Sanitary Sewer Inspection	Annually
	Implementation status of two EOH Stormwater Remediation Projects.	Quarterly until completed (3/31, 6/30, 9/30, 12/31)

Section	Report Topic	Frequency*
4.10	Report on Kensico Water Quality Control Program implementation: • Operation and maintenance of non-point source management facilities • Westlake sewer monitoring program • Shaft 18 shoreline stabilization • Review timeline for assessing or dredging at the effluent chambers • Septic Repair Program • Video Sanitary Sewer Inspection • Kensico Wildlife Scat Sanitary Survey • Westchester County Airport (including capped landfills), as needed	Annually
4.11	Report on Catskill Turbidity Control Program.	Annually
5.1	Watershed Water Quality Annual Report, including comprehensive chapters on: • Kensico Reservoir water quality • Pathogens • Modeling • Educational seminars on Watershed monitoring and management • Ongoing research	Annually (7/31)
5.2	Status report on Multi-Tiered Water Quality Modeling Program, including updates on modeling activities in the Watershed Water Quality Annual Report.	Annually (7/31)

Section	Report Topic	Frequency*
5.3	Report on Geographic Information System Program implementation, including: • GIS technical support for protection programs, monitoring programs, and modeling applications. • Completion or acquisition of new GIS data layers and aerial products in the City's GIS spatial data libraries. • GIS infrastructure improvement. • GIS data dissemination summaries.	Annually
6.1	Report on WR&Rs consisting of: • Summary table, with corresponding maps, of new project activities that may affect water quality including variance activities and review of new/remediated septic systems in the Catskill/Delaware Watershed basins as well as in the Croton Falls and Cross River basins east of the Hudson River. • Summary table (inventory) of all development projects proposed and their SEQRA status, with corresponding maps. • Summary table of projects under construction, by basin, with corresponding maps.	Semi-annually (4/30 and 10/31)
	WR&Rs Enforcement Report.	Semi-annually (4/30 and 10/31)
	Progress report on proposed revisions to the City's WR&Rs.	Semi-annually until adopted (4/30 and 10/31)
	Submit an update annually on Capital Replacement of the Watershed Equipment and Methods at eligible WWTPs.	Annually
	Analyses used to determine the phosphorus-restricted and coliform-restricted status of each reservoir.	Annually in Watershed Water Quality Report (7/31)

Section	Report Topic	Frequency*
6.2	WWTP Compliance and Inspection Program • WWTP inspection summary reports • Enforcement actions WWTP Water Quality Sampling Monitoring Report.	Semi-annually (3/31 and 9/30) Semi-annually (3/31 and 9/30)
7	Catskill Delaware Filtration Plant Design Review status.	Annually
8.1	Waterborne Disease Risk Assessment Program findings, implementation, and analysis.	Annually
9	Administration Report on: • The actual filled staff position levels versus available staff positions for each division and section involved in supporting FAD Watershed protection programs, and confirm that resource levels are adequate to ensure that all program goals and FAD requirements are met. Contractor support staff will be noted. • The amount appropriated in the City budget for FAD Watershed protection programs for the upcoming fiscal year, specifically the amount (capital and expense) spent during the previous year, the amount appropriated for the current year, and the amount planned for the year thereafter. The amount spent, appropriated, and planned will be broken down by program, to the extent practicable. The report will also include costs for technical consultant contracts identified in the FAD. • The status of key partnership contracts including contract issues (i.e., change orders, planning for successor contract) and funding projections.	Annually (9/30)

Section	Report Topic	Frequency*
10	Education and Outreach Report on program implementation summarizing key activities and accomplishments: • CWC Public Education Grants Program • Watershed Agricultural Program • Watershed Forestry Program • Stream Management Program • Watershed Recreation	Annually
11	Comprehensive FAD Annual Report. NYCDEP Response to NYSDOH On-site Inspection Report.	Annually Annually (within 60 days following receipt of NYSDOH report)

*Monthly means reports for a monthly reporting period must be submitted no later than ten days after the end of each month.
Quarterly means reports for a calendar quarter reporting period must be submitted no later than ten days after the end of each quarter.
Semi-annually means reports for a January-June reporting period must be submitted no later than July 31 and for a July-December reporting period must be submitted no later than January 31, unless otherwise stated in the FAD.
Annually means reports for a calendar year reporting period must be submitted no later than March 31 of the following year, unless otherwise stated in the FAD.

Significant One-Time Submittals Required under the FAD in Chronological Order

Section	Description	Due Date
4.11	Provide the Final Report of the Expert Panel on the City's OST to NYSDOH, USEPA, NYSDEC, and the WIG.	When released by National Academies (anticipated by 10/31/2018)
4.11	Report on final revised performance measures/criteria for evaluating the efficacy of Catskill Turbidity Controls.	6 months after release of National Academies report
4.11	Report on whether, based on the conclusions of the FEIS, the City intends to modify its use of turbidity control measures identified in the Phase III Catskill Turbidity Control Implementation Plan, and/or implement any other turbidity control measures. If so, the City shall submit a modification of the Phase III Plan, proposing alternative measures for achieving turbidity control and a timeline for implementing those alternative measures.	3 months after NYSDEC issuance of FEIS
2	Provide the Final Report of the Expert Panel on the City's Watershed Protection Plan.	Commence Work date + 33 months
2	Convene a public meeting with the regulators and Watershed stakeholders to discuss the major findings and recommendations of the National Academies Expert Panel review.	Date of Final Report + 4 months
4.8	Submit updated Watershed Forest Management Plan.	Completed
6.1	Submit timeline for completing proposed changes to the WR&Rs.	2/28/18
4.8	Submit updated Wetlands Protection Strategy.	3/31/2018
4.9	Report on review of strategies used to inform potential EOH Septic Repair Program participants of the program's availability	3/31/2018
4.2	Based on the requirements of the 2010 WSP, submit first evaluation report on the NYCFFBO Program	6/15/2018
4.2	Report on progress of workgroup convened to assess opportunities to use LAP-acquired lands to facilitate relocation of development out of floodplain.	6/30/2018

Section	Description	Due Date
4.6	Report on metrics that have been established to evaluate Delaware County CSBI/CREP pilot program	11/30/2018
4.6	Report on development of Watershed Emergency Stream Response and Recovery Plan.	12/31/2018
4.2	Submit proposed approach for providing payments or incentives that might increase participation by landowners in SAP.	3/31/2019
4.6	Submit brief basin specific reports outlining the water quality basis for Stream Project Site Selection in the basin during the FAD period and that prioritize main stem and/or sub-basins for stream feature inventories.	6/30/2019
4.6	Report on progress in extending CREP through CSBI, including Delaware County CSBI/CREP pilot program, and submit recommendations for establishment of a permanent program and estimated funding needs, or discontinuation of the program.	11/30/2019
4.2, 4.7	Submit a status report on the SAP.	12/15/2020
4.2	Submit a status report on the WAC Forest Conservation Easement acquisition program.	12/15/2020
4.6	Submit LFHMP first evaluation.	6/30/2020
5.1	Submit 2021 Watershed Protection Program Summary and Assessment Report.	3/31/2021
5.2	Report on Modeling Analysis of FAD Programs as a supplement to the Watershed Protection Program Summary and Assessment Report.	3/31/2021
4.2	Based on the requirements of the 2010 WSP, submit the second program evaluation report on the NYCFFBO Program.	6/15/2021
2	Submit 2021 Long-Term Watershed Protection Plan.	12/15/2021
4.4	Report on CAI evaluation results for the Watershed forest management planning program and landowner education programs.	12/31/2021

Section	Description	Due Date
4.11	Report on Catskill Turbidity Control RWBT Shutdown Management Plan, including consideration of maintaining water quality during the RWBT repair and shutdown.	1 year prior to planned RWBT shutdown
4.8	Submit summary of wetland mapping and connectivity assessment.	3/31/2022
4.8	Submit updated Invasive Species Implementation Strategy.	3/31/2022
4.9	Report on assessment of funding for the EOH Septic Repair Program.	3/31/2022
4.2	Submit a Long-Term Land Acquisition Plan for the period 2023-2033.	5/31/2022
4.6	Submit Water Quality Monitoring Studies first five-year report.	11/30/2022
4.4	Submit WAP Metrics Assessment and Recommendations Report.	6/30/2023
4.6	Submit LFHMP second evaluation.	6/30/2023
4.6	Update report on development of Watershed Emergency Stream Response and Recovery Plan.	12/31/2023
7	Submit Catskill Delaware Filtration Plant larger scale pilot studies report.	12/31/2024
5.1	Submit 2026 Watershed Protection Program Summary and Assessment Report.	3/31/2026
5.2	Report on Modeling Analysis of FAD Programs as a supplement to the Watershed Protection Program Summary and Assessment Report.	3/31/2026
2	Submit 2026 Long-Term Watershed Protection Plan.	12/15/2026
4.4	Report on CAI evaluation results for the Watershed forest management planning program and landowner education programs.	12/31/2026
7	Submit Final Report on Catskill Delaware Filtration Plant conceptual design.	12/31/2026

Section	Description	Due Date
4.8	Submit revised Watershed Forest Management Plan.	3/31/2027
4.6	Submit Water Quality Monitoring Studies final study findings report.	11/30/2027

New York City Department of Environmental Protection

Long-Term Watershed Protection Plan

December 2016

Vincent Sapienza, P.E., Acting Commissioner
Paul V. Rush, P.E., Deputy Commissioner
Bureau of Water Supply

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List of Acronyms

AUV	autonomous underwater vehicle
AWSMP	Ashokan Watershed Stream Management Program
BMP	best management practice
BODR	Basis of Design Report
CAT/DEL	Catskill/Delaware
CATUEC	Catskill Upper Effluent Chamber
CDIC	Catskill/Delaware Interconnection Chamber
CDUV	Catskill/Delaware Ultraviolet Disinfection Facility
CE	conservation easement
CP	Forest Management Plan Conservation Practices
CREP	Conservation Reserve Enhancement Program
CRISP	Catskill Regional Invasive Species Partnership
CSBI	Catskill Streams Buffer Initiative
CUNY	City University of New York
CUNRF	City University of New York Research Foundation
CWC	Catskill Watershed Corporation
CWMP	Community Wastewater Management Program
DEM	Digital Elevation Model
DEP	New York City Department of Environmental Protection
DMAP	Deer Management Assistance Permit
DOHMH	New York City Department of Health and Mental Hygiene
EAB	emerald ash borer
EFC	New York State Environmental Facilities Corporation
EIS	environmental impact statement
ELAP	Environmental Laboratory Approval Program
EOC	Emergency Operations Centers
EOH	East of Hudson
EOHWC	East of Hudson Watershed Corporation
EWP	Emergency Watershed Protection
FAD	Filtration Avoidance Determination
FBO	Flood Buyout
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FMP	New York City Forest Management Plan
GCSWCD	Greene County Soil and Water Conservation District
GI	gastrointestinal illness
GIS	Geographic Information System
GPS	Global Positioning System
GWLF	Generalized Watershed Loading Functions
HEFS	Hydrologic Ensemble Forecast Service
HMGP	Hazard Mitigation Grant Program

IRSP	individual residential stormwater plan
ISAC	Invasive Species Advisory Committee
ISC	New York State Invasive Species Council
ISWG	Invasive Species Working Group
JV	Joint Venture
LAP	Land Acquisition Program
LFA	Local Flood Analysis
LiDAR	Light Detection and Ranging
LIMS	Laboratory Information Management System
LT2ESWTR	Long-term 2 Enhanced Surface Water Treatment Rule
MAP	Management Assistance Program
MFO	Master Forest Owner
MGD	million gallons per day
MMI	Milone & MacBroom, Inc.
MOA	New York City Memorandum of Agreement
NHD	National Hydrography Dataset
NMP	nutrient management plan
NRCS	Natural Resources Conservation Service
NTU	nephelometric turbidity unit
NWI	National Wetlands Inventory
NYC	New York City
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OECD	Organization for Economic Cooperation and Development
OST	Operations Support Tool
PRISM	Partnership for Regional Invasive Species Management
RBAP	Riparian Buffer Acquisition Program
ROV	remote operated vehicle
RWBT	Rondout-West Branch Tunnel
SEQRA	State Environmental Quality Review Act
SMIP	Stream Management Implementation Program
SMP	Stream Management Program
SPDES	State Pollutant Discharge Elimination System
SSMP	Septic System Management Program
SSTS	subsurface sewage treatment system
SUNY	State University of New York
SWCD	Soil and Water Conservation District
SWE	snow water equivalent
SWPPP	stormwater pollution prevention plan
SWTR	Surface Water Treatment Rule
THM	trihalomethane
TP	total phosphorus
TSI	Trophic State Index

TTHM	Total trihalomethane
UCSWCD	Ulster County Soil and Water Conservation District
UFI	Upstate Freshwater Institute
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USGS	United States Geological Survey
WAC	Watershed Agricultural Council
WaLIS	Watershed Lands Information System
WAP	Watershed Agricultural Program
WCDEF	Westchester County Department of Environmental Facilities
WDRAP	Waterborne Disease Risk Assessment Program
WFP	whole farm plan
WOH	West of Hudson
WRF	Water Research Foundation
WR&R	New York City Watershed Rules and Regulations
WSP	Water Supply Permit
WSPS	Water and Sewer Permitting System
WWQMP	Watershed Water Quality Monitoring Plan
WWTP	wastewater treatment plant

Acknowledgements

The New York City Department of Environmental Protection is charged with providing an ample supply of clean water to more than 9 million people every day. DEP meets this mandate through the efforts of hundreds of dedicated professionals. This plan provides DEP's vision for the next phase of its comprehensive program to protect water quality and public health. Although the staff members who help make all this possible are too numerous to mention here, their efforts are recognized and appreciated. We acknowledge the Bureau of Water Supply, under the direction of Deputy Commissioner Paul V. Rush, P.E., and its Directorates of Source Water Operations, Treatment Operations, Water Quality, Watershed Protection Programs and Planning. The vital support of Management Services and Budget, and Compliance staff, along with the Bureaus of Police and Security, Legal Affairs, Information Technology, Engineering Design and Construction, and the NYC Law Department is also acknowledged.

1. Introduction

This report presents New York City's Long-Term Watershed Protection Program (the Program), submitted to the New York State Department of Health (NYSDOH) in support of a new filtration waiver for the Catskill/Delaware systems. The Program for the next Filtration Avoidance Determination (FAD) covers a ten year period. Through periodic assessments, the New York City Department of Environmental Protection (DEP) has demonstrated the ongoing effectiveness of the overall program in preserving the high quality of the Catskill/Delaware waters. The City's most recent assessment, issued in March 2016, confirms that water quality status and trends continue to point to a safe, reliable supply of drinking water for half the population of New York State.

This document should be viewed in context of the City's long-running source water protection program. Since its first filtration waiver was issued by New York State nearly 25 years ago, DEP has produced a multitude of reports detailing program progress and documenting the continued high quality of the Catskill/Delaware supply. For specifics about the implementation of watershed protection programs, refer to the Annual Reports prepared pursuant to the FAD. DEP also produces dozens of semi-annual and annual reports on FAD programs, publishes reports on special studies, and prepares an annual water quality statement which gives detailed information about water quality (www.nyc.gov/html/dep/html/watershed_protection).

Figure 1.1 Map of the New York City water supply system.

1.1 Water Supply System Overview

The New York City (NYC or City) water supply system consists of three surface water sources (the Croton, the Catskill, and the Delaware) and a system of wells in Queens (the Queens Groundwater System) (see Figure 1.1). The three upstate water collection systems include 19 reservoirs and three controlled lakes with a total storage capacity of approximately 580 billion gallons. They were designed and built with various interconnections to increase flexibility to meet quality and quantity goals and to mitigate the impact of localized droughts and water quality impairments. The system supplies drinking water to almost half the population of the State of New York – over eight million people in NYC and one million people in Westchester, Putnam, Orange, and Ulster Counties – plus the millions of commuters and tourists who visit the City throughout the year. Overall consumption in 2015 averaged approximately 1.1 billion gallons a day, which includes both in-City and upstate demand. In-City, overall demand has decreased dramatically since 1990 as a direct result of significant investments by DEP in demand management. Figure 1.2 shows water demand in New York City since 1960, documenting a 30% decrease in the past 25 years, despite rising population.

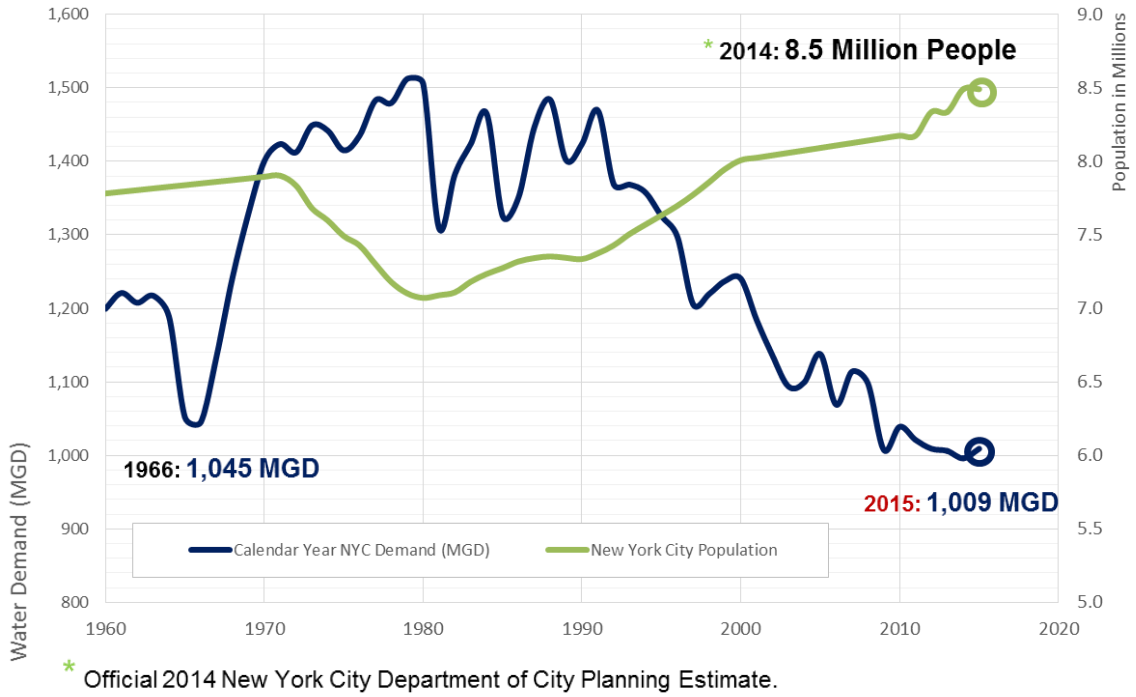


Figure 1.2 New York City water consumption.

The Croton watershed is located entirely east of the Hudson River in Westchester, Putnam and Dutchess Counties, with a small portion in the State of Connecticut. The oldest of the three systems, the Croton system, has been in service for more than 170 years. The watershed covers approximately 375 square miles. Croton's 12 reservoirs and three controlled lakes are connected primarily via streams and rivers, and ultimately drain to the New Croton Reservoir in Westchester County. Historically, approximately 10% of the City's average daily water demand has been supplied by the Croton, although in times of drought the Croton system may supply significantly more water.

In 2015, DEP completed construction and began operation of a water treatment plant to filter the Croton Supply. While the Croton system usually met all current health-based regulatory standards for an unfiltered surface water supply, it has experienced periodic violations of the aesthetic standards for color, taste and odor. In addition, DEP did not believe that the Croton system would be able to meet stricter disinfection by-product rules recently promulgated. Now that the Croton Water Filtration Plant is in service, with a capacity of 290 million gallons per day (MGD), DEP can once again reliably deliver Croton water to NYC consumers.

The Catskill system consists of two reservoirs located west of the Hudson River – Ashokan Reservoir in Ulster County and Schoharie Reservoir in Schoharie, Delaware and Greene counties. The Catskill system was constructed in the early part of the 20th century, and Ashokan Reservoir went into service in 1915. Since Schoharie Reservoir was completed in 1926, water travels through the 18-mile Shandaken Tunnel, which empties into the Esopus Creek at Allaben and then travels 12 miles to the Ashokan Reservoir. Water leaves Ashokan via the 75-mile long section of the Catskill Aqueduct, to reach Kensico Reservoir in Westchester County. The Catskill system supplies, on average, 40% of the City's daily water supply.

The Delaware system was completed in the 1950s and 1960s, and is comprised of four reservoirs: Cannonsville, Pepacton and Neversink reservoirs which are built on tributaries to the Delaware River, and Rondout Reservoir which is formed by damming Rondout Creek, a tributary to the Hudson River. Water travels through tunnels from each of the Delaware basin reservoirs into Rondout Reservoir; water then leaves Rondout and travels to West Branch Reservoir in Putnam County via the Rondout-West Branch Tunnel portion of the Delaware Aqueduct. Water from West Branch then flows through another section of the Delaware Aqueduct to the Kensico Reservoir. The Delaware system provides the remainder of the City's supply. Because waters from the Catskill and Delaware watershed are commingled at Kensico Reservoir, they are frequently referred to as one system: the CAT/DEL system.

In the late 1980s, the City decided to apply for filtration avoidance for the Catskill/Delaware system under the terms of the Surface Water Treatment Rule (SWTR; see "Regulatory Context," below). Since that time, DEP and its partner agencies and organizations have developed and deployed a comprehensive watershed monitoring and protection program designed to maintain and enhance the high quality of CAT/DEL water. This program has been

recognized internationally as a model for watershed protection and has allowed the City to secure a series of waivers from the filtration requirements of the SWTR.

1.2 Regulatory Context

The Safe Drinking Water Act (SDWA) amendments of 1986 required the United States Environmental Protection Agency (USEPA) to develop criteria under which filtration would be required for public surface water supplies. In 1989, USEPA promulgated the SWTR, which requires all public water supply systems supplied by unfiltered surface water sources to either provide filtration or meet certain criteria. The filtration avoidance criteria are comprised of the following:

- Objective Water Quality Criteria – the water supply must meet certain levels for specified constituents including coliforms, turbidity and disinfection by-products.
- Operational Criteria – a system must demonstrate compliance with certain disinfection requirements for inactivation of *Giardia* and viruses; maintain a minimum chlorine residual entering and throughout the distribution system; provide uninterrupted disinfection with redundancy; and undergo an annual on-site inspection by the primacy agency to review the condition of disinfection equipment.
- Watershed Control Criteria – a system must establish and maintain an effective watershed control program to minimize the potential for contamination of source waters by *Giardia* and viruses.

The City first applied for a waiver for the CAT/DEL system from the filtration requirements of the SWTR in 1991. This first application was filed with NYSDOH, because at the time the City and NYSDOH believed that NYSDOH had primacy to administer the SWTR for all water supply systems in New York State (NYS). NYSDOH granted a one-year filtration waiver. Subsequently, it was determined that USEPA had retained primacy for the SWTR. In mid-1992, DEP submitted a thirteen-volume application to USEPA, describing in detail the City's plans for protecting the CAT/DEL supply. On January 19, 1993, USEPA issued a conditional determination granting filtration avoidance until December 31, 1993. The waiver incorporated many elements of the program the City had described in mid-1992, and was conditioned upon the City meeting 66 deadlines for implementing studies to identify potential pollution sources, developing programs to ensure long-term protection of the watershed, and addressing existing sources of contamination in the watershed. USEPA also imposed substantial reporting requirements on the City, to monitor the City's progress.

DEP submitted a second application for continued avoidance to USEPA in September 1993. This application was based upon the knowledge gained by the City through initiation of its watershed studies and programs and laid out a long-term strategy for protecting water quality in the Catskill/ Delaware system. Again, USEPA determined that the City's program met the SWTR criteria for filtration avoidance, although it did express concerns about the program's

ability to meet the criteria in the future. On December 30, 1993, USEPA issued a second conditional determination, containing 150 requirements related primarily to enhanced watershed protection and monitoring programs. USEPA also required that the City proceed with design of a filtration facility for the CAT/DEL supply, so that no time would be lost should USEPA decide that filtration was necessary in the future.

Two critical pieces of the watershed protection program that DEP described in September 1993, and that USEPA incorporated into the December 1993 Determination, were implementation of a land acquisition program and promulgation of revised watershed regulations. Primarily due to the objections of watershed communities over the potential impact that those programs might have on the character and economic viability of their communities, DEP was unable to move forward with implementation of those key program elements. It was against this backdrop that Governor Pataki convened a group of stakeholders to try to come to an accord. The negotiations involved the City, the State, USEPA, representatives of the counties, towns and residents of the watershed, and representatives from environmental groups. This unique coalition came together with the dual goals of protecting water quality for generations to come and preserving the economic viability of watershed communities. In November 1995, the parties reached an Agreement in Principle that set forth the framework of an agreement that would allow the City to advance its watershed protection program while protecting the economic viability of watershed communities. It took another 14 months to finalize the details of an agreement and, in January 1997, the parties signed the Watershed Memorandum of Agreement (MOA). The MOA supplemented the City's existing watershed protection program with approximately $350 million in additional funding for economic and environmental partnership programs with upstate communities, including a water quality investment program and a regional economic development fund. The MOA established the institutional framework and relationships needed to implement the range of protection programs identified as necessary by the City, the State, and USEPA. The State issued a water supply permit to allow the City to purchase land in the watershed, and approved a revision to the City’s Watershed Regulations governing certain aspects of new development in the watershed. The City also secured a 5-year waiver from the filtration requirements for the CAT/DEL system.

In March 2006, the City submitted to USEPA a rigorous, science-based assessment of Catskill/Delaware water quality, followed in December 2006 by an enhanced, comprehensive long-term plan for watershed protection efforts. That long-term plan represented a significant enhancement to the City's watershed protection efforts and relied in part on the continued support and cooperation of the City's partners. The plan formed the basis of an updated FAD, issued by USEPA in July 2007. Significantly, the 2007 FAD was the first FAD to cover a full 10-year period, signaling the growing confidence of all parties that source water protection has become a sustainable alternative to filtration for the City’s CAT/DEL supply.

Following issuance of the 2007 FAD, USEPA granted NYSDOH primary regulatory responsibility for the SWTR as it applies to the CAT/DEL supply. In March 2011, DEP issued

another detailed assessment of program activity and water quality, which formed the basis of a revised long-term plan submitted to NYSDOH in December 2011. In late summer 2011, two significant storms swept through the region, devastating communities and significantly impacting water quality in portions of the NYC supply. In the wake of the storms, a large group of watershed stakeholders came together to discuss developing and enhancing certain programs to promote flood resiliency and minimize water supply impacts from future events. Following these discussions, NYSDOH issued a Revised 2007 FAD in May 2014. The Revised 2007 FAD demonstrated DEP's ability to continue to implement proven programs, as well as the ability to adapt strategies as needed to anticipate and respond to changing conditions. DEP's source water protection program continues to be an international model for sustainable water supply management and public health protection.

Also after the 2007 FAD was issued, the State issued a new 15-year Water Supply Permit to allow the City to continue to purchase lands for source water protection. At the time, the MOA parties reaffirmed their commitment to the partnership and executed a supplemental agreement updating certain commitments.

1.3 New York City's Source Water Protection Program for the Catskill/Delaware Systems

DEP is responsible for operating, maintaining and protecting the City's water supply and distribution system. This document, *New York City's 2016 Long Term Watershed Protection Plan,* has been prepared to comply with NYSDOH's Revised 2007 FAD for the Catskill/Delaware Water Supply Systems.

To demonstrate its eligibility for a filtration waiver, DEP advanced a program to assess and address water quality threats in the Catskill/Delaware system. DEP's strategy is based on a simple premise: it is better to keep the water clean at its source than it is to treat it after it has been polluted. To meet the goal of public health protection, DEP has designed and deployed a mix of remedial programs (intended to clean up existing sources of pollution) and protective programs (to prevent new sources of pollution). These efforts provided the basis for a series of waivers from the filtration requirements of the SWTR (January 1993, December 1993, January 1997, May 1997, November 2002, July 2007 and May 2014).

1.3.1 Assessing the Potential Threats to the Water Supply

Since the inception of the program in the early 1990s, the City has made great progress in assessing potential sources of water contamination and designing and implementing programs to address those sources. Each year, DEP collects and analyzes tens of thousands of samples from more than 450 sites throughout the watershed – at aqueducts, reservoirs, streams and wastewater treatment plants (WWTPs). The purpose of this intensive monitoring effort is to help operate and manage the system to provide the best possible water at all times, to develop a record to identify water quality trends, and to focus watershed management efforts. This robust monitoring program provides the scientific underpinnings for the source water protection program.

Based on the information collected through the monitoring program, DEP developed a comprehensive strategy for the protection of source water quality, designed to address existing sources of pollution and prevent new sources. Each element of the watershed protection effort is conducted at a specific spatial and temporal scale to ensure the maintenance of the already high quality of the Catskill/Delaware waters. This effort yields benefits for water consumers as well as the tens of thousands of people who live, work and recreate in the watershed, and the millions in communities downstream of the reservoirs.

1.3.2 Highlights of the Watershed Protection Program

Effective implementation of this multi-faceted program depends on support from and cooperation with the City's watershed partners. DEP regularly works with many agencies, organizations and communities throughout the region to advance initiatives. These partnerships are vital to the continued success of the source water protection program and recognize the need to strike a balance between protecting water quality and preserving the communities in the watershed. The contributions of many of these groups are acknowledged throughout this report.

Significant progress continues on implementation of several key watershed protection initiatives: the Watershed Agricultural Program; the acquisition of sensitive watershed lands; the enforcement of Watershed Regulations; the Stream Management Program (SMP); and the continuation of environmental and economic partnership programs that target specific sources of pollution in the watershed. In addition, DEP continued its enhanced watershed protection efforts in the Kensico Reservoir basin and completed the upgrades of non-City owned watershed WWTPs. Figure 1.3 and Figure 1.4 map the myriad projects completed by DEP and its partners in the Catskill/Delaware and Croton watersheds since 1997. Key watershed protection program highlights include:

Watershed Agricultural Program

Since 1992, the Watershed Agricultural Program (WAP) has promoted a non-regulatory, voluntary, incentive-based and farmer-led approach to controlling agricultural sources of pollution while supporting the economic viability of the watershed's farmed landscape. Working through the Watershed Agricultural Council (WAC), the City funds development of farm pollution prevention plans and implementation of structural and non-structural best management practices (BMPs). To date, 192 large farm operations in the Catskill/Delaware watersheds have signed up for the WAP, of which 184 farms (96%) have a Whole Farm Plan. A total of 350 active farms currently have Whole Farm Plans, including smaller scale farming operations and farms located East of Hudson. The WAP has implemented approximately 7,168 BMPs on all participating farms at a cumulative cost of $58 million, not including planning, design and administrative expenses. The Conservation Reserve Enhancement Program (CREP), which pays farmers to take sensitive riparian buffer lands out of active farm use and re-establish a vegetative buffer, has enrolled more than 1,820 acres of riparian buffers and an estimated 9,000 head of livestock have been excluded from streams.

Land Acquisition

The Land Acquisition Program (LAP) seeks to protect sensitive lands from development through willing seller/willing buyer transactions. Watershed-wide, DEP has secured 115,573 acres in fee simple or conservation easement (CE), with another 26,242 acres of farm easements secured by the WAC. Overall, the City and State now protect 38% of lands in the Catskill/Delaware system. While the overall level of protection is impressive, even higher levels of protection have been achieved in the key basins – Ashokan, Rondout, West Branch and Kensico – which range from 41% to 66% protected.

Watershed Regulations

Since 1997, DEP has reviewed more than 16,800 applications for projects that proposed one or more regulated activities, as well as performed routine compliance inspections at regulated wastewater facilities and active construction sites, and responded to violations of permit standards to enforce corrective actions. DEP works with applicants to ensure new development in the watershed is undertaken in a manner that is fully protective of critical water supply resources; overall more than 98% of DEP's regulatory determinations are project approvals.

Wastewater Programs

DEP has implemented an array of programs intended to improve the treatment of wastewater across the watershed. The City, in conjunction with its partners, has continued to implement programs that have remediated more than 5,000 failing septic systems. All WWTPs – including City- and non-City-owned – have been upgraded to tertiary treatment, and DEP funds a significant portion of ongoing operation and maintenance. New WWTPs, or other community wastewater solutions, have been implemented in 16 communities, resulting in more than 2,432 septic systems being decommissioned.

Stream Management Program

The Stream Management Program (SMP) promotes the protection and/or restoration of stream system stability and ecological integrity by providing for the long-term stewardship of streams and floodplains. Over the past five years, a significant focus of the SMP was responding to the devastating storms of 2011, and working closely with federal, State and local partners to implement restoration projects. DEP augmented SMP funding to support new science-based efforts for local flood hazard mitigation, to protect water quality and improve community resiliency.

Ultraviolet (UV) Disinfection Facility

In 2012, DEP began operation of a UV disinfection facility to treat all water from the Catskill/Delaware supply. The facility, the largest of its kind in the world, provides an additional barrier for public health protection and complements DEP's efforts to keep the water clean at the source.

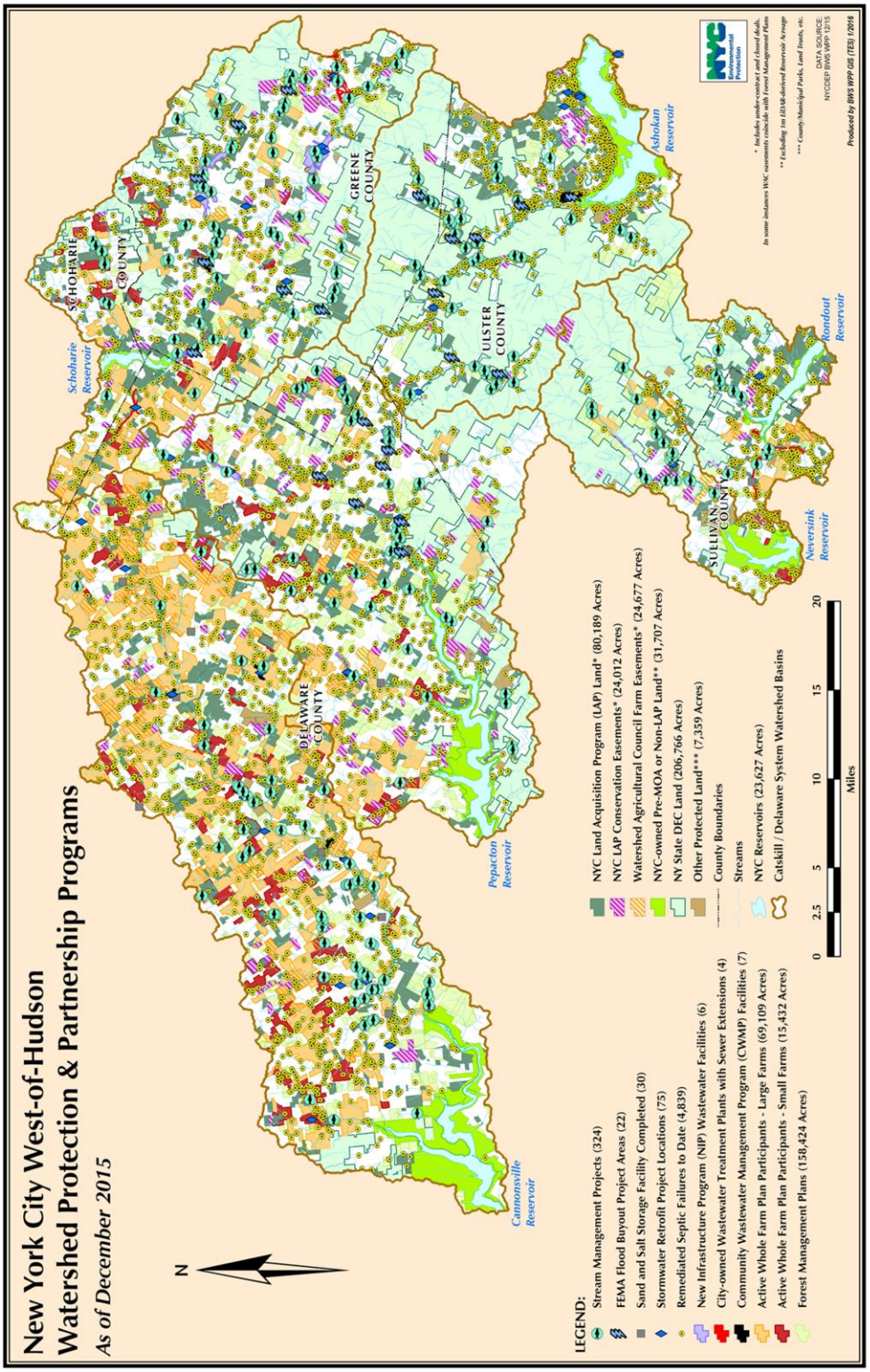


Figure 1.3 Map showing status of the partnership programs West of Hudson.

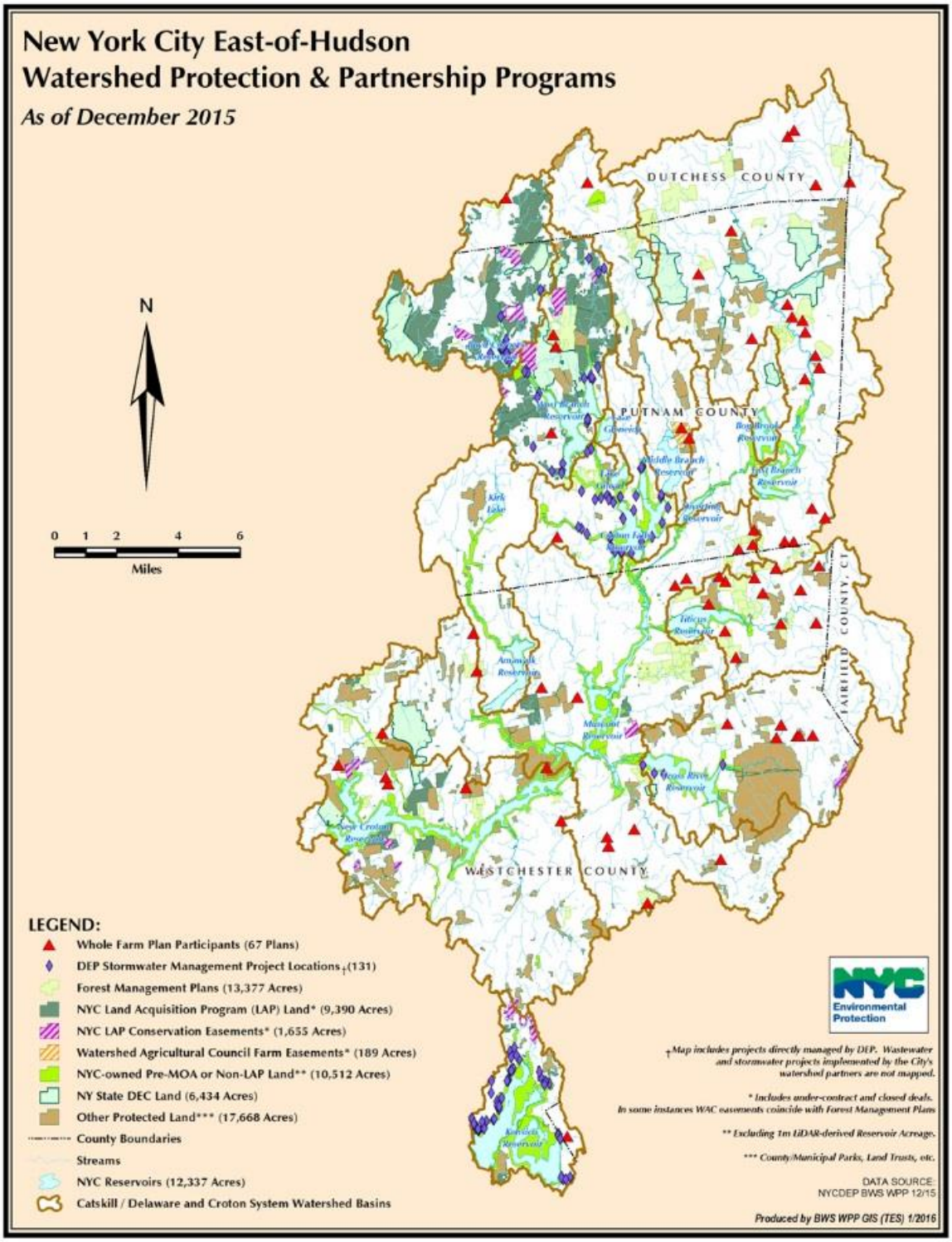


Figure 1.4 Map showing status of the partnership programs East of Hudson.

Waterborne Disease Risk Assessment Program

The Waterborne Disease Risk Assessment Program (WDRAP) continues to track in-City disease rates, with a goal of identifying whether there are any outbreaks that can be linked to the water supply. The Program evaluates multiple data streams daily and over longer periods, and has continued to refine surveillance activities. There was no evidence of an outbreak of waterborne disease in NYC during this period, including following three severe storms (Irene, Lee, and Sandy).

1.3.3 Water Quality Conditions

Every five years, DEP undertakes a comprehensive review of water quality conditions throughout the Catskill/Delaware system. That review, most recently completed and published in March 2016, incorporates a massive amount of water quality data, collected at different spatial and temporal scales, to provide a complete picture of water quality status and trends. DEP then compares those water quality results with information on implementation of source water protection programs, to evaluate program effectiveness and guide decision making on future program implementation. The March 2016 assessment, available on DEP's web site, confirms the continued excellent quality of water from the Catskill/Delaware system and points to certain localized improvements that are a result of program implementation. A summary of those water quality findings is provided below.

Water Quality Monitoring Overview

DEP conducts extensive water quality monitoring throughout the watershed. The 2016 Watershed Water Quality Monitoring Plan (WWQMP) describes this monitoring plan. The plan and its associated addenda are designed to meet the broad range of DEP's many regulatory and informational requirements. The overall goal of the plan is to establish an objective-based water quality monitoring network, which provides scientifically defensible information regarding the understanding, protection, and management of the New York City water supply. The objectives of this monitoring plan have been defined by the requirements of those who ultimately require the information, including DEP program administrators, regulators, and other external agencies. As such, monitoring requirements were derived from legally binding mandates, stakeholder agreements, operations, and watershed management information needs. The plan covers four major areas that require ongoing attention: Compliance, FAD Program Evaluation, Surveillance Monitoring, and Modeling Support, with many specific objectives within these major areas.

As New York City's water supply is one of the few large water supplies in the country that qualifies for Filtration Avoidance, based on both objective water quality criteria and subjective watershed protection requirements, USEPA has specified many requirements in the 2007 FAD and the Revised 2007 FAD that must be met to protect public health. These objectives form the basis for the City's ongoing assessment of watershed conditions, changes in water quality, and ultimately any modifications to the strategies, management, and policies of the long-term watershed protection program. The City also conducts a periodic assessment of the

effectiveness of the watershed protection program. DEP's water quality monitoring data, including data relating to stream benthic macroinvertebrates, are essential to perform this evaluation. Program effects on water quality are reported in the Watershed Protection Summary and Assessment reports which are produced approximately every five years.

Samples collected under the auspices of the WWQMP are brought to DEP laboratories for analysis. The laboratories are certified by NYSDOH's Environmental Laboratory Approval Program (ELAP) for over 100 environmental analyses in the non-potable and potable water categories. These analyses include physical analytes (e.g., pH, turbidity, color, conductivity), chemical parameters (e.g., nitrates, phosphates, chloride, chlorine residual, alkalinity), microbiological parameters (e.g., total and fecal coliform bacteria, algae), trace metals (e.g., lead, copper, arsenic, mercury, nickel), and organic parameters (e.g., organic carbon).

In addition to the water quality monitoring discussed above, DEP has developed a continuous water quality monitoring program and continues to update a Robotic Water Quality Monitoring Network (RoboMon) in the watershed. Continuous monitoring data are obtained at key aqueduct and intake locations, key upstate reservoirs, and selected watershed tributaries to provide critical data for immediate use in decision making by water supply managers, as well as for water quality model development and model forecasting.

In summary, the monitoring plan has been designed to meet the broad range of DEP's regulatory obligations and informational needs. These requirements include: compliance with all federal, state, and local regulations to ensure safety of the water supply for public health; watershed protection and improvement to meet the terms of the 2007 FAD and the Revised 2007 FAD; the need for current and future predictions of watershed conditions and reservoir water quality to ensure that operational decisions and policies are fully supported over the long term; and that ongoing surveillance of the water supply will continue to ensure delivery of the best water quality to consumers.

Water Quality Data Analysis

The accumulation of a long-term database has allowed DEP to identify and address existing water quality conditions, identify long-term trends, guide operations, and determine effectiveness of watershed programs. The 2016 Watershed Protection Program Summary and Assessment provides the most recent evaluation of water quality conditions and uses all data available since the beginning of DEP's first FAD in 1993. This allows DEP to examine trends over more than two decades. It provides a view of water quality changes in the context of variation caused by natural events such as floods and droughts, which are not sufficiently represented in a five- year time period. Long-term data are needed to show the effects of the watershed protection programs because there are time lags between program implementation (causes) and water quality changes (effects). The water quality data from the early 1990s represents conditions at the outset of Filtration Avoidance when many watershed protection programs were in their infancy. Sufficient time has now passed since programs have been in

place that the major effects of programs on water quality have become apparent. Since many programs were implemented in the decade between 2000 and 2010, the current conditions are a phase when the effects of the watershed programs are reflected in water quality, as surface water reaches its new 'steady state' with watershed conditions.

There are several important factors that govern water quality over the long term. Perhaps the two most important are climate, as a determinant of precipitation and therefore water residence times, and land use, as a determinant of substance loadings. Given the general environmental conditions in each basin, DEP has examined the effectiveness of watershed protection programs to maintain a clean water supply through a series of analyses. These include the status and trends of water quality in streams and reservoirs as indicated by various analytes or indices, the trophic response of reservoirs, and pathogen assessment. This has allowed DEP to demonstrate central tendencies and trends in the water quality data over an extended time period during and after watershed protection program implementation.

In addition to water quality samples, macroinvertebrate indices were calculated to provide insight into the ecological conditions of streams and changes in water quality. Macroinvertebrates biologically integrate conditions over time so they are seen as important indicators of stream water quality. The impact of the waterfowl management program and its ability to control and reduce fecal coliform bacteria have been demonstrated over the past 25 years and selected case studies are presented to demonstrate the effectiveness of this program. Finally, an analysis of pathogen transport through the system provides much insight into the benefit of NYC's sequential system of reservoirs and the natural processes that improve water quality as it travels towards distribution. With these approaches, DEP has examined the relationships between watershed protection and water quality changes.

Water Quality Conditions for the Catskill and Delaware Systems

Overall, the water quality in the Catskill and Delaware reservoirs remains excellent which is a reflection of the ongoing investment in watershed protection. Total phosphorus reductions from a combination of wastewater treatment plant upgrades, septic system improvements, and extensive implementation of BMPs have been significant. For example, Cannonsville Reservoir geometric mean total phosphorus was 26.8 µg L-1 in 1991 and was 14.9 µg L-1 in 2015. While the Catskill System encounters intermittent increases in turbidity and phosphorus associated with storm events, the system recovers rapidly.

Water Quality Conditions for the East of Hudson Catskill/Delaware Basin System

Water quality in West Branch and Kensico basins continues to be excellent. Decreasing trends in turbidity, fecal coliforms, and total phosphorus in the inputs to West Branch were attributed to improvements made through watershed protection programs. The Cross River and Croton Falls basins are classified as "potential" Delaware system basins because water from these basins only enters the Delaware Aqueduct when intentionally pumped into it, and this is a rare occurrence. Water quality in the Cross River and Croton Falls basins has been generally

good. The median Trophic State Index (TSI) was in the eutrophic range for both reservoirs and the basins remain listed as phosphorus-restricted. Trends in turbidity were downward for the output from Cross River basin and attributed primarily to recovery from drawdown related to dam repairs. Additional details on the water quality assessment and long-term trends can be found in the 2016 Watershed Protection Summary and Assessment Report.

Trophic Response of Reservoirs

The trophic response of reservoirs to the combined effects of watershed protection programs and major environmental events was examined through four relationships selected from the Programme on Eutrophication sponsored by the Organization for Economic Cooperation and Development. These analyses highlight the biological responses to major environmental drivers such as hurricanes and floods as well as overall shifts in nutrients, algal biomass, and transparency over the course of time and have supported the policy of reducing total phosphorus as a means of eutrophication control.

There have been vast improvements in the Cannonsville Reservoir over the past 25 years for mean and maximum chlorophyll, phosphorus, and Secchi depth. More subtle changes have taken place in the other reservoirs and the trends statistics are appropriate for characterization of those changes. In contrast, the variations in the Catskill System Reservoirs are highly dependent on extreme hydrological events and turbidity that can persist in the reservoirs for several months. Kensico appears to have slowly decreasing phosphorus levels, while West Branch seems to drift up, which may be due to operations. In the East of Hudson (EOH) reservoirs equipped with pump stations that can supplement the Delaware Aqueduct, Cross River and the main basin of Croton Falls generally have similar water quality; however, the upstream sites of Croton Falls tend to be more eutrophic.

Water Quality Modeling Program

In addition to statistical analysis, DEP conducts extensive modeling analyses. Models are used by DEP to manage water quality over both long- and short-term periods. Model analysis using the long-term database allows DEP to separate the effects of important natural factors that influence water quality from the effects of watershed protection programs. Further, it allows DEP to estimate the relative effects of different watershed protection programs and may be used to guide priorities. DEP employs models for short-term events (on the order of months) to optimize reservoir operations and to determine when treatment may be necessary. Model application is thus used at DEP for diagnostic analysis and water supply decision support.

DEP continues to aggressively build its modeling capabilities. In the near future, calibration and validation of the spatially distributed models will give us greater insight into the effects of specific watershed protection measures so that DEP can continue to refine project implementation for maximum effectiveness.

1.4 DEP's Long-Term Program

Over the past 25 years of source water protection, the City has developed and implemented a multi-faceted, comprehensive long-term program that forms the basis for its continued filtration waiver. DEP's plan for the next ten years is outlined in the following sections of this document. The proposed program represents DEP's continued commitment to long-term watershed protection. The City expects that, so long as the Catskill/Delaware system remains unfiltered, these core programs will remain in place in some fashion.

DEP continues to review and refine programs, based on accomplishments to date and watershed and water quality conditions. As described above, virtually every program element has achieved a very high level of implementation, and direct water quality benefits have been observed. In many cases, programs have transitioned from intensive implementation to a maintenance phase. In other cases, program focus has shifted geographically or greater emphasis has been placed on certain types of activities. These program modifications are to be expected – in fact, are necessary – as DEP's efforts have matured. In the coming decade the City will continue to evaluate and adjust programs as needed to ensure the continued effectiveness and cost-effectiveness.

This plan represents the first-ever 10-year source water protection plan developed by DEP. It includes a full suite of programmatic commitments through 2027. By preparing this plan, DEP is demonstrating the City's long-term commitment to support activities that sustain and protect public health. The scope of the plan also provides stakeholders – watershed communities, contracting partners, water supply consumers, environmental parties and regulators – certainty about the levels of implementation across a range of programs for the coming decade.

As part of this plan, DEP will contract with the National Research Council (NRC) to conduct an expert panel review of the source water protection program. In 2000, an NRC panel reviewed the City's proposed watershed management plan and provided a strong endorsement of the approach to public health protection. A new panel will be convened to evaluate DEP's implementation of that plan and to offer suggestions on the next phase of source water protection. DEP expects that the findings of the review will be used to make adjustments to the proposed level and mix of programs set forth in this plan.

Independent of and reinforcing DEP's commitments under the FAD, the 2010 Water Supply Permit requires DEP to fund and implement many of these same programs. Consistent with the language of the Surface Water Treatment Rule, the FAD requires DEP to implement its watershed control program without regard to cost and does not characterize requirements in terms of monetary commitments. Similarly, while the partnership between the City and the watershed communities, among other entities, is an important element of DEP's ability to implement the watershed control program effectively, and therefore important to filtration avoidance, the FAD itself focuses on program implementation rather than specifically on partnership commitments. DEP will comply with its commitments under the Water Supply

Permit, but notes that these requirements are not themselves enforceable requirements of the FAD.

Support from and cooperation with watershed partners is essential to the successful implementation of the City's program. It is important to emphasize that no protection program for the City's water supply, no matter how carefully crafted, can succeed without support and involvement of the City's partners and watershed stakeholders. Perhaps the greatest achievement of the past quarter century has been the development of vital, locally-based organizations working with the DEP on the common goal of watershed protection. Initially the City was reluctant to cede responsibility for program implementation to others, but the development of successful partnerships with organizations like the Catskill Watershed Corporation (CWC), the Watershed Agricultural Council, and county Soil and Water Conservation Districts, led the City to recognize that long-term watershed protection can and will be advanced through such partnerships. Continued cooperation with DEP's implementation partners is an integral part of the City's long-term vision for protecting the water supply. To promote collaboration, over time DEP intends to co-locate a new office with CWC. CWC is already advancing plans for a new facility in Arkville. By sharing work space – centrally located in the heart of the watershed – DEP and CWC can further improve coordination and responsiveness to watershed communities.

In 2015, representatives of watershed communities contacted DEP to voice concerns about some aspects of the source water protection efforts. That outreach resulted in an ongoing series of discussions among a broad group of watershed stakeholders about specific watershed program elements. Consensus has emerged on a number of issues and to the extent possible those agreements are reflected in this document. On other topics, the stakeholders have recognized the need for further, targeted discussion; DEP expects that these discussions will result in more effective and efficient implementation of several programs. DEP is committed to the ongoing discussions and greatly appreciates the cooperative spirit of the dialogue.

2. Long-Term Watershed Protection Program

2.1 Filtration Avoidance Criteria Requirements

The Surface Water Treatment Rule (SWTR) and the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) established requirements for unfiltered surface water supply systems, some specifically identified as filtration avoidance criteria, which require that all surface water supplies provide filtration unless certain source water quality, disinfection, and site-specific avoidance criteria are met. In addition, the supplier must comply with: (1) the Revised Total Coliform Rule (RTCR), and (2) the Stage 1 Disinfectant and Disinfection Byproducts Rule. The 2007 FAD required ongoing monitoring and periodic reporting related to SDWA compliance activities. In addition, there are some reporting requirements relating to SDWA compliance, that while not specifically required under the SWTR, and therefore not included as a FAD reporting requirement below, will be reported elsewhere for SDWA compliance purposes. This includes: 1) reporting to NYSDOH and USEPA on the monthly operational status of the UV plant as required by LT2 and New York State Sanitary Code requirements, and reporting the Stage 2 Disinfectant and Disinfection Byproducts Rule monitoring results; and 2) notifying NYSDOH and USEPA by the end of the day when a sample from a RTCR distribution system compliance site tests positive for *E. coli*.

DEP will continue the above monitoring requirements as specified in the SWTR, and in accordance with the milestones contained therein, and in accordance with any additions/clarifications below.

Table 2.1 Filtration Avoidance Criteria Requirements

Requirement	***Due Date***
Continue to meet SWTR filtration avoidance criteria (40 CFR §141.71 and §141.171, and 10 NYCRR §5-1.30) and submit reports and certification of compliance on: • §141.71(a)(1) and §5-1.30(c)(1) - raw water fecal coliform concentrations • §141.71(a)(2) and §5-1.30(c)(2) - raw water turbidity sampling • §141.71(b)(1)(i)/§141.72(a)(1) and §5-1.30(c)(3) - raw water disinfection CT values • §141.71(b)(1)(ii)/§141.72(a)(2) and §5-1.30(c)(4) - operational status of Kensico and Hillview disinfection facilities, including generators and alarm systems • §141.71(b)(1)(iii)/§141.72(a)(3) and §5-1.30(c)(5) - entry point chlorine residual levels	Monthly

Requirement	*Due Date*
• §141.71(b)(1)(iv)/§141.72(a)(4) and §5-1.30(c)(6) - distribution system disinfection levels (the City will include a discussion of any remedial measures taken if chlorine residual levels are not maintained throughout system) • §141.71(b)(5) and §5-1.30(c)(10) - distribution system coliform monitoring, including a summary of the number of samples taken, how many tested positive for total coliform, whether the required number of repeat samples were taken at the required locations, and which, if any, total coliform positive samples were also *E. coli* positive. For each *E. coli* positive sample, include the investigation of potential causes, problems identified and what has or will be done to remediate problems. Include copies of any public notices issued as well as dates and frequency of issuance.	
All requirements described in §141.71(b)(4) and §5-1.30(c)(8) must continue to be met. Notify NYSDOH/USEPA within twenty-four hours of any suspected waterborne disease outbreak.	Event Based
All requirements described in §141.71(b)(6) and §5-1.30(c)(9) must continue to be met. Submit report on disinfection byproduct monitoring results.	Quarterly
Notify NYSDOH/USEPA within twenty-four hours, if at any time the chlorine residual falls below 0.2 mg/l in the water entering the distribution system.	Event Based
Notify NYSDOH/USEPA by the close of the next business day, whether or not the chlorine residual was restored within 4 hours.	Event Based
Report on the operational status of Kensico Reservoir, West Branch Reservoir (on-line or by-pass), Hillview Reservoir, and whether any of these reservoirs experienced unusual water quality conditions.	Monthly
Regarding the emergency/dependability use of Croton Falls and Cross River source water: (A) The City shall not introduce Croton Falls or Cross River source water into the Catskill/Delaware water supply system without the prior written approval of NYSDOH. (B) As a condition of approval, the City must demonstrate continuing, substantial compliance with the watershed protection program elements being implemented in the Croton Falls and Cross River watersheds that are contained in this Determination. (C) As a condition of approval, the City will submit water quality data and	Continuous

Requirement	*Due Date*
monitor water quality at Croton Falls and/or Cross River, pursuant to the approved sampling plan submitted to NYSDOH/USEPA in May 2010, or as revised thereafter. NYSDOH approval under this Section may include additional conditions, including but not limited to, project schedules or specific operating goals or parameters for the City's water supply facilities (such as maximizing use of the Croton Filtration Plant, or operation of the Catskill/Delaware UV Plant at 3-log inactivation). As used in this Section, the term "NYSDOH" is defined as the primacy agency. In evaluating requests for approval from the City, the primacy agency shall consult with USEPA.	
Contract with the NRC to conduct an Expert Panel review of the City's Long-Term Watershed Protection Plan, water quality and water quality trends, and anticipated future activities that might adversely impact the water supply and its ability to comply with 40 CFR §141.71 and §141.171, and 10 NYCRR §5-1.30. Evaluate the adequacy of the City's Watershed Protection Programs for addressing these concerns and provide recommendations, as necessary, for improving programs. • Issue Commence Work notice to NRC. • Upon request of the NRC provide any necessary background information and respond to any pertinent questions within the scope of the review. • Ensure the schedule for public meetings is widely available either on a project-specific website, NRC website or the DEP website. • Report on the status of the Expert Panel review in the FAD Annual. • Provide the final report to NYSDOH, USEPA and NYSDEC. • Convene a public meeting with the regulators and watershed stakeholders to discuss the major findings and recommendations of the NRC Expert Panel review.	1/31/18 Ongoing Ongoing Annually, 3/31 Commence Work + 33 mo. Date of final report + 4 mo.

Table 2.2 Filtration Avoidance Criteria Reporting Milestones

Report Description	*Due Date*
Report on program implementation in the FAD Annual report.	Annually, 3/31

2.2 Environmental Infrastructure

2.2.1 Septic and Sewer Programs

DEP implements a comprehensive set of programs that serve to reduce the number of failing or potentially failing septic systems in the watershed. The Septic and Sewer Programs are composed of the following elements:

- Septic Remediation and Replacement Program;
- Small Business Program;
- Cluster System Program;
- Septic Maintenance Program;
- Sewer Extension Program; and
- Alternate Design and Other Septic Systems.

Septic Remediation and Replacement Program

The Septic Remediation and Replacement Program provides for pump-outs and inspections of septic systems serving single or two-family residences in the West of Hudson (WOH) watershed; upgrades of substandard systems; and remediation or replacement of systems that are failing or reasonably likely to fail in the near future. Participation is currently available to residential properties within 700 feet of a watercourse or within the 60-day Travel Time Area. The near-term goal is to ensure funding is in place to remediate/replace approximately 300 failing or likely-to-fail septic systems per year.

Table 2.3 Septic Remediation and Replacement Program Planned Activities/Milestones

Activity	***Due Date***
In accordance with Program Rules, provide adequate funding in support of the Septic Remediation and Replacement Program at a funding level sufficient to address 300 septic systems per year.	Ongoing

Small Business Program

The Small Business Septic System Rehabilitation and Replacement Program helps pay for the repair or replacement of failed septic systems serving small businesses (those employing 100 or fewer people) in the WOH watershed. Through CWC, eligible business owners are reimbursed 75% of the cost of septic repairs. The near-term goal is to ensure funding is in place to remediate/replace failing septic systems serving small businesses. As part of discussions with watershed stakeholders in 2016, DEP has agreed to fund an expansion of the CWC Small Business Septic System Program to make local government entities and not-for-profit institutions

eligible for 75% of the costs of repairs to septic systems. DEP has also agreed to provide funding for certain alterations or modifications of septic systems serving small businesses, local government entities and not-for profit institutions; the exact terms of funding for alterations and modifications will be finalized in early 2017.

Table 2.4 Small Business Program Planned Activities/Milestones

Activity	***Due Date***
In accordance with Program Rules, provide adequate funding in support of the Small Business Program provided that the need for such funding has been demonstrated.	Ongoing

Cluster System Program

The Cluster System Program funds the planning, design, and construction of cluster systems in thirteen communities in the WOH watershed. Through CWC, eligible communities may elect to establish districts that would support cluster systems and tie multiple properties to a single disposal system. This enables communities to locate disposal systems on larger sites in areas where existing structures were sited on insufficiently sized lots. The near-term goal is to ensure funding is in place to remediate failing septic systems through construction of cluster systems. DEP intends to work with CWC to evaluate the program and determine whether any modifications are needed to facilitate the advancement of the program.

Table 2.5 Cluster System Program Planned Activities/Milestones

Activity	***Due Date***
In accordance with Program Rules, provide adequate funding in support of the Cluster System Program component of the Septic Remediation and Replacement Program.	Ongoing

Septic Maintenance Program

The Septic System Maintenance Program is a voluntary program open to home owners who constructed new septic systems after 1997 or participated in the septic repair program, and is intended to reduce the occurrence of septic system failures through regular pump-outs and maintenance. Through CWC, home owners are reimbursed 50% of eligible costs for pump-outs and maintenance. As part of the program, CWC also develops and disseminates septic system maintenance educational materials. The near-term goal is to continue to fund 50% of the cost for septic pump-outs to qualified properties to enhance the functioning and reduce the incidence of failures of septic systems throughout the WOH watershed.

Table 2.6 Septic Maintenance Program Planned Activities/Milestones

Activity	*Due Date*
Provide funding, if necessary, to allow maintenance each year of 20% of the total number of septic systems eligible under the Septic Maintenance Program Rules.	Ongoing

Sewer Extension Program

The Sewer Extension Program funds the design and construction of wastewater sewer extensions connected to City-owned WWTPs discharging in the WOH watershed. The goal of this program is to reduce the number of failing or potentially failing septic systems by extending WWTP service to priority areas. DEP completed projects in the towns of Roxbury (Grand Gorge WWTP); Hunter-Haines Falls (Tannersville WWTP); Neversink (Grahamsville WWTP); and Hunter-Showers Road (Tannersville WWTP). DEP anticipates that the sewer extension projects now under construction in Shandaken (Pine Hill WWTP) and Middletown (Margaretville WWTP) will be completed before the 2017 FAD is in place. The near-term goal is to ensure these last projects are complete and conclude program.

Table 2.7 Sewer Extension Program Planned Activities/Milestones

Activity	*Due Date*
Construct sewer extension projects in Shandaken (Pine Hill WWTP), Middletown (Margaretville WWTP).	TBD (expected to be complete before FAD)

Alternate Design Septic Program

The Alternate Design Septic Program funds the eligible incremental compliance costs of the septic provisions of the Watershed Regulations for new septic systems to the extent they exceed state and federal requirements. The City funded the Alternate Design Septic Program under the Watershed MOA. The near-term goal is to support the use of the funding to cover the eligible incremental costs to comply with the septic system provisions of the Watershed Regulations.

Table 2.8 Alternate Design Septic Program Planned Activities/Milestones

Activity	*Due Date*
Support the use of the already provided funding to cover the eligible incremental costs to comply with the septic system provisions of the WRR to the extent that they are not otherwise required by state or federal regulations.	Ongoing

Table 2.9 Septic and Sewer Program Reporting Milestones

Report Description	*Due Date*
Report on program implementation in the FAD Annual Report: • Septic Remediation and Replacement Program; • Small Business Program; • Cluster System Program; • Septic Maintenance Program; • Sewer Extension Program; and • Alternate Design and Other Septic Systems.	Annually, 3/31

2.2.2 Community Wastewater Management Program

The Community Wastewater Management Program (CWMP) funds construction of community septic systems and/or septic maintenance districts in communities identified in Paragraph 122 of the MOA (the 8-22 communities).

Table 2.10 Status of Community Wastewater Management Program projects

Community	*Project*	*Flow* (gpd)*	*Status*
Bloomville	Community Septic w/ Sand Filter	30,000	Completed 2009
Boiceville	Collection System w/ WWTP	75,000	Completed 2010
Hamden	Community Septic w/ Sand Filter	26,000	Completed 2009
DeLancey	Septic Maintenance District	na	Completed 2007
Bovina	Community Septic System	25,000	Completed 2006
Ashland	Collection System w/ WWTP	26,000	Completed 2011
Haines Falls	NA – Sewer Extension Program	na	Completed 2006
Trout Creek	Community Septic w/ Sand Filter	16,000	Completed 2014
Lexington	Community Septic w/ Sand Filter	19,000	Completed 2016

South Kortright	Collection System pump to Hobart	20,000	Completed 2016
Shandaken	TBD	*36,000*	Study Phase
West Conesville	TBD	*15,000*	Study Phase
Claryville	TBD	*16,000*	Study Phase
Halcottsville	TBD	*19,000*	Study Phase
New Kingston	TBD	*13,000*	Study Phase

**Flow in italics is estimated*

The goals of the CWMP are to approve block grants for Shandaken and West Conesville to proceed to design and construction following completion of Study Phase and complete the study, design, and construction of projects for the final three communities (Claryville, Halcottsville, and New Kingston). The timeline of the Design Phase commences when the proposed project outlined in the Study Phase is approved by the parties. The timeline of the Construction Phase commences when the plans drafted during the Design Phase are approved by the parties.

By letter dated November 9, 2016, NYSDOH directed DEP to fund construction of a new WWTP to serve the hamlet of Shokan in the Town of Olive. The letter set forth certain milestones for initiation and completion of the project. DEP is reviewing those milestones and will provide a response in writing to NYSDOH in early 2017.

Table 2.11 Community Wastewater Management Program Planned Activities/Milestones

Activity	***Due Date***
Design complete for Shandaken, West Conesville	One year from date of completed Study Phase (Est. 6/30/17)
Construction complete for Shandaken, West Conesville	Two years from date of completed Design Phase
Preliminary study complete for Claryville, Halcottsville, New Kingston	6/30/17
Design complete for Claryville, Halcottsville, New Kingston	One year from date of completed Study Phase

Construction complete for Claryville, Halcottsville, New Kingston	Two years from date of completed Design Phase

Table 2.12 Community Wastewater Management Program Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual Report: • Shandaken; • West Conesville; • Claryville; • Halcottsville; and • New Kingston.	Annually, 3/31

2.2.3 Stormwater Programs

Future Stormwater Controls Programs

The Future Stormwater Controls Programs pay for the incremental costs of stormwater measures required solely by the Watershed Regulations, but not otherwise required by state and federal law, in stormwater pollution prevention plans and individual residential stormwater plans for new construction after May 1, 1997. As part of the MOA, DEP established two Stormwater Cost-Sharing Programs: (1) Future Stormwater Controls paid for by the City for Single Family Houses; Small Businesses and Low Income Housing Program and (2) the WOH Future Stormwater Controls Program.

The Future Stormwater Controls paid for by the City Program, reimburses low income housing projects and single family home owners 100% and small businesses 50% of eligible costs. The million Future Stormwater Controls Program is administered by CWC and reimburses municipalities and large businesses 100% and small businesses 50% for eligible costs. DEP has committed to replenish funding for the Future Stormwater Controls Program to ensure the continued availability of funding to assist applicants. In addition, the City is working with CWC to provide funding to allow CWC to administer the program under MOA Paragraph 145, which anticipated that the costs of certain Future Stormwater Controls would be paid directly by the City.

Additionally, DEP provided CWC with funds for an appropriate position at CWC to assist applicants undertaking regulated activities to comply with the stormwater provisions of the Watershed Regulations.

The goal of the Future Stormwater Controls Programs is to provide payment of eligible incremental costs to comply with the stormwater provisions of the Watershed Regulations to the extent they exceed State and federal requirements and consistent with the Future Stormwater Controls Program Rules. The funds assist applicants undertaking regulated activities to comply with the stormwater provisions of the Watershed Regulations, and provide funding in accordance with the MOA for certain incremental costs for single family homes, small businesses, and low-income housing.

Table 2.13 Future Stormwater Controls Programs Planned Activities/Milestones

Activity	***Due Date***
Fund, in accordance with the MOA, the eligible incremental costs to comply with the stormwater provisions of the WRR to the extent that they are not otherwise required by federal or State law.	Ongoing
Ensure adequate funding for an appropriate position at CWC to assist applicants undertaking regulated activities to comply with the stormwater provisions of the City's Watershed Regulations.	Ongoing

Stormwater Retrofit Program

The Stormwater Retrofit Program, administered by CWC, provides funding for the design, permitting, construction, and maintenance of stormwater best management practices to address existing stormwater runoff in concentrated areas of impervious surfaces in the WOH watershed based on water-quality priorities.

The goal of the Stormwater Retrofit Program is to continue support of the installation of stormwater best management practices and community-wide stormwater infrastructure assessment and planning consistent with the Stormwater Retrofit Program Rules and within agreed-upon Program funding throughout the WOH watershed. Support the use of Program funding for retrofit projects installed in coordination with Community Wastewater Management Program projects.

Table 2.14 Stormwater Retrofit Program Planned Activities/Milestones

Activity	***Due Date***
Continue to provide the funding needed to allow the Stormwater Retrofit Program to continue at a level of activity that has been maintained since the inception of the Program consistent with the Stormwater Retrofit Program Rules, provided the demonstrated need for such funding continues.	Ongoing

Support the use of Program funding for retrofit projects installed in coordination with Community Wastewater Management Program projects.	Ongoing
Continue to provide the funding needed for the Operations and Maintenance of retrofit projects funded through the Stormwater Retrofit Program consistent with the Stormwater Retrofit Program Rules, provided the demonstrated need for such funding continues.	Ongoing

Table 2.15 Stormwater Programs Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual Report • Future Stormwater Controls Programs; and • Stormwater Retrofit Program.	Annually, 3/31

2.3 Protection and Remediation Programs

2.3.1 Waterfowl Management Program

In 1992, as part of DEP's original Watershed Protection/Filtration Avoidance Program, a Waterfowl Management Program was established to measure the level of potential impact imposed by wildlife at the Kensico Reservoir. Waterbird species (geese, gulls, ducks, swans, cormorants, and duck-like birds) were surveyed to determine species richness (species diversity) and evenness (species population). Preliminary surveys conducted by DEP indicated several waterbird populations fluctuations occurred daily (diurnal/nocturnal), seasonally, and spatially on the reservoirs. A strong relationship between avian populations and bacteria (fecal coliform) levels from untreated water samples was established. As a result, DEP instituted a Waterfowl Management Program starting in 1993 to reduce or eliminate where possible, all waterbird activity in order to mitigate seasonal fecal coliform bacteria elevations. A similar program was also established on a daily, year-round basis at Hillview Reservoir. The program has continued through the present with an expansion for "as needed" services to several more reservoirs. The Waterfowl Management Program remains an important element of the FAD. Since its inception in 1993, the program has been highly effective in controlling fecal coliform contributions from birds which assists the City in meeting federal and state drinking water quality standards.

Under the new Filtration Avoidance Determination period, the Waterfowl Management Program will continue the waterbird management at Kensico Reservoir and Hillview Reservoir through a permanent program and including several other reservoirs throughout the NYC Water

Supply on an "as needed" basis. Each reservoir has been categorized with a different level of mitigative intensity using similar waterfowl management techniques including a standard daily operation at Kensico and Hillview Reservoirs and an "as needed" program triggered by increases in bacteria levels and elevated waterbird populations at three additional reservoirs (West Branch, Rondout, and Ashokan). An "as needed" program will also be implemented for Croton Falls and Cross River Reservoirs prior to the start-up of the Reservoir's pump station. In addition, a variety of bird deterrent measures will be employed and modified as deemed necessary on an annual basis.

The term "as needed" refers to implementation of avian management measures based on the following criteria:

- Fecal coliform bacteria concentrations approaching or exceeding 20 colony-forming units at reservoir effluent structures coincident with elevated bird populations;
- Current bird populations, including roosting or staging locations relative to water intakes;
- Recent weather events;
- Operational flow conditions within the reservoir (i.e., elevations and flow patterns and amounts);
- Reservoir ice coverage and watershed snow cover; and
- Determination that active bird management measures would be effective in reducing bird populations and fecal coliform bacteria levels.

The term "bird dispersal" refers to use of pyrotechnics, motorboats, airboats, remote control motorboats, propane cannons, and other methods employed to physically chase or deter waterbirds from inhabiting the reservoirs. The term "bird deterrence" refers to preventive methods employed to prevent waterbirds from inhabiting the reservoirs. Such bird deterrent measures include nest and egg depredation, overhead bird deterrent wires, bird netting on shaft buildings, meadow maintenance, and other methods.

The management of waterbird populations will continue to assist New York City in maintaining compliance with the federal Surface Water Treatment Rule standard for fecal coliform bacteria.

Table 2.16 Waterfowl Management Program Planned Activities/Milestones

Activity	***Due Date***
Active Waterbird Dispersal – Kensico Reservoir	Annually, 8/1 to 3/31
Active Waterbird Dispersal – Hillview Reservoir	Year-round
"As Needed" Bird Dispersal – West Branch, Rondout, Ashokan, Croton Falls, and Cross River Reservoirs	Annually, 8/1 to 4/15
"As Needed" Bird Deterrent Measures – Kensico, West Branch, Rondout, Ashokan, Croton Falls, Cross River, and Hillview	Year-round

Table 2.17 Waterfowl Management Program Reporting Milestones

Report Description	***Due Date***
Annual summary of Waterfowl Management Program activities at all reservoirs, including wildlife management at Hillview Reservoir (8/1 to 7/31)	Annually, 10/31

2.3.2 Land Acquisition

LAP was initiated in 1997 following execution of the Watershed Memorandum of Agreement, the Water Supply Permit, and the 1997 FAD. In the last twenty years, the City has secured over 140,000 acres of land and conservation easements ("CEs"), which is added to 34,193 acres of protected buffer land surrounding the reservoirs that was owned by the City as of 1997.

DEP efforts to acquire land have been particularly successful in the highest priority areas. As of 1997, only 2.3% of land in the West Branch/Boyd's Corners Reservoir basin was owned by the City, with another 12.6% protected by other entities; today, 34.2% is owned by the City and 49.1% of the basin is protected in total. Similarly, only 1.9% of land in the Rondout Reservoir basin was owned by the City in 1997; 14.5% is now owned by the City and, including land owned by other entities, Rondout is now 50.9% protected. 41.4% of the Kensico basin, 66.5% of the Ashokan, and 61.2% of the Neversink basin are now protected. Thus all of the highest priority basins, as well as Neversink, enjoy levels of protection between 41% and 66% due principally or in part to the City's acquisition efforts since 1997. The remaining basins of the CAT/DEL system – Cannonsville, Pepacton, and Schoharie – stand at 23%, 33%, and 34% protected, respectively. Since 1997, almost entirely through the City's efforts, protected status of the entire watershed has increased from 24.7% to 38.4%.

The City concentrates on acquisition of properties that contain both development potential and proximity to surface water features, where development would pose a relatively greater threat to future water quality than on properties without both of those elements. The quality of acres protected by the City – in addition to the overall quantity and their location relative to the City's distribution system – is therefore important as well.

The significant progress made since 1997 in protecting land within various priority areas, basins, and sub-basins has led to shifts in LAP strategies over time. The 2012-2022 Long Term Plan for LAP (issued by the City in September 2009) accounts for this progress and refocused acquisition activities toward less-protected basins and sub-basins. This shift likewise reflects the fact that land in many of the basins where the City has made significant progress is relatively more expensive than land in less-protected basins. Thus the marginal benefits of increasing protected status from, say, 50% to 51% in an expensive and highly-protected sub-basin is generally considered less compelling or cost-effective than increasing protected status from 10% to 11% in a less-protected, lower-cost sub-basin.

In 1997 as part of the MOA, DEP committed to provide funds to watershed communities to offset any costs incurred by the communities in the review of proposed City land purchases. In discussions with stakeholders in 2016, DEP has agreed to increase the cap on the funding available for eligible community costs related to the review of acquisitions to $40,000 per community.

The City's successor Water Supply Permit (WSP), issued by NYSDEC on December 24, 2010, authorizes the City to acquire up to 106,712 acres of land or CEs between January 2010 and January 2025. In 2022, DEP will submit an application to NYSDEC for renewal of the WSP. Because the existing WSP expires during the period of this 10-year plan, DEP's solicitation plan matches the term of the existing WSP. If and when the WSP is renewed , DEP will propose additional solicitation based on LAP status. Prior to receiving the 2010 WSP, DEP completed an environmental impact statement (EIS), which concluded that the maximum acreage DEP projected acquiring in the watershed would not have a significant adverse environmental impact. In the context of the EIS, DEP conducted a number of "Town Level Assessments," analyses of certain acquisition levels to assess potential impacts on the amount of remaining developable land in watershed communities. Since 2010, acquisitions in a handful of communities has approached, and in one case exceeded, the levels that were assessed. While approaching or exceeding of these assessment levels does not indicate that there is, or will be, a significant adverse environmental impact in these communities, DEP has committed to refreshing the analysis in approximately 20 watershed towns based on currently available data. Pending completion of that revised analysis, which will commence in early 2017, DEP intends to temporarily suspend outgoing solicitation of landowners in seven towns; DEP will continue to accept landowner-initiated discussions in those towns.

In 2016, DEP reconvened a group of land trusts, along with watershed community representatives and regulatory agencies, to revisit opportunities for land trust participation in DEP's efforts to protect public health through land protection. Those discussions are ongoing and may result in specific initiatives that complement existing LAP efforts.

The goals for the Land Acquisition Program through 2027 are to:

- Continue to acquire land and CEs in and pursuant to all program requirements set forth in the MOA, FAD and WSP;
- Adjust solicitation levels to account for the high level of protection achieved to date by LAP; and
- Continue to work with and support partners to secure properties and CEs pursuant to the applicable programs – the Farm and Forest Conservation Easement Program(s), the NYC-Funded Flood Buyout Program (NYCFFBO), and the Streamside Acquisition Program (SAP), and related requirements.

Table 2.18 Land Acquisition Program Planned Activities/Milestones

Activity	***Due Date***
Continue to provide sufficient funding to support the Land Acquisition Program	Ongoing
Submit solicitation plans for each two-year period. Plans will include a commitment to solicit at least 35,000 acres annually through 2024. SAP and NYCFFBO acres may be credited 2 acres for every 1 solicited pursuant to the agreed methodology. A total of up to 10,000 acres/year of WAC, SAP, and NYCFFBO acres may be credited towards solicitation goals.	Biennially beginning October 2018
During annual budget discussions with NYSDOH, USEPA and NYSDEC, discuss potential need for any additional monies beyond that already committed to all land acquisition programs. If such funding is needed, sequester the funds.	Annually, 11/30
Continue implementation of a $5 million Pilot SAP.	Ongoing, in accordance with the 2010 WSP
Continue to work with land trusts regarding large properties with dwellings that could be pre-acquired by land trusts and vacant portions conveyed to the City, subject to support by the local town and interested land trust(s).	Ongoing, in accordance with the 2010 WSP

Activity	*Due Date*
Implement the NYCFFBO program, which is consistent with the 2010 WSP, as amended, and agreements with local stakeholders. Properties may be eligible for the Program based on expected flood mitigation and water quality benefits derived.	Ongoing
Based on the requirements of the Water Supply Permit, DEP shall submit written evaluation of its ancillary programs to NYSDOH, USEPA and NYSDEC, making recommendations as to whether the WAC easement acquisition Programs, NYCFFBO Program and SAP should be continued, modified, or terminated, as well as any proposed improvements to the programs. If a determination is made by NYSDOH, USEPA, NYSDEC, and the City not to continue any of the programs, all unused funds allocated to such programs, with any earnings thereon, are to be returned to the City to be deposited in the LAP-segregated account for use by the LAP.	12/15/18
If requested by a local governmental entity which has applied to Federal Emergency Management Agency (FEMA) for funding, participate in any future FEMA/State Office of Emergency Management (SOEM) Flood Buy-out (FBO) Program, providing up to 25% of the eligible costs as the local match for each watershed property participating in the program.	As required by FEMA/SOEM FBO program rules
Submit application for renewal of the Water Supply Permit.	6/30/22

Table 2.19 Land Acquisition Program Reporting Milestones

Report Description	*Due Date*
Submit semi-annual reports on program activities and status.	Semi-annually, 3/31 in FAD Annual Report and 7/31

2.3.3 Land Management

The City has made a significant investment in purchasing water supply lands and conservation easements. Purchasing the land is one step; however, to maximize the utility of these lands in protecting the long-term water supply for the City, they must be monitored, managed and secured properly. Effective and routine monitoring of lands and easements is vital to discovering encroachments, timber trespass and overuse of fee lands and potential violations

for easements. DEP inspects fee lands on a prioritized basis per its fee monitoring policy (up to once per year) and easements bi-annually which enables DEP to identify and address encroachments expeditiously.

The City supports and provides for many recreational uses of its land. As the second largest public land holder in the watershed, the City has been successful in opening many of its lands and waters for expanded recreational uses, consistent with its mission to protect water quality. Improving some of these lands for recreational access, particularly along the reservoirs can help address the impacts of overuse if they arise. City lands can also be an important economic component to local communities and the City continues to allow various uses of its lands such as issuing revocable land use permits and allowing agricultural uses.

The goals of the Land Management Program are to:

- Conduct routine monitoring and inspections of City watershed protection lands to meet the primary mission of water quality protection;
- Ensure encroachments and other unauthorized uses of City land are dealt with in a timely manner;
- Facilitate and coordinate the protection and wise use of City lands and natural resources;
- Provide community benefits through allowing compatible recreation and agricultural uses and issuing revocable land use permits;
- Ensure the long-term protection and management of the City's significant investment in fee-lands conservation easements;
- Ensure that all conservation easements - those held by DEP and WAC - are administered effectively including regular monitoring, consideration of activity requests, and documentation and correction of any violations that occur; provide for stewardship funding to WAC as previously agreed; and
- Engage recreational users through education and outreach.

Table 2.20 Land Management Program Planned Activities/Milestones

Activity	***Due Date***
Monitor and actively manage water supply lands	Ongoing
Monitor and enforce DEP watershed conservation easements including those held by WAC	Ongoing
Continue to assess and implement strategies to increase the public's	Ongoing

recreational use of water supply lands	
When appropriate, inform regulators if and when recreational use policy or proposals are modified to any significant degree	Ongoing
Engage recreational users of City land through outreach and events	Ongoing

Table 2.21 Land Management Program Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual report.	Annually, 3/31

2.3.4 Watershed Agricultural Program

The Watershed Agricultural Program (WAP) represents a successful longstanding partnership between DEP and the Watershed Agricultural Council (WAC) that began in 1992 as a pilot program on ten watershed farms and has since accumulated over two decades of experience, local leadership, and extensive on-the-ground accomplishments spanning across more than 440 farms. The WAP's primary activities include the voluntary development of Whole Farm Plans and the implementation of agricultural BMPs, along with the establishment of riparian buffers through the federal Conservation Reserve Enhancement Program (CREP). The WAP also supports nutrient management planning, precision feed management, and diverse educational programs that collectively provide farmers with a comprehensive suite of technical assistance and financial incentives to improve farm management and reduce pollution risks.

To date, the WAP has developed more than 440 Whole Farm Plans (approximately 350 of which are still active) and implemented over 7,100 BMPs on watershed farms, in addition to enrolling more than 1,800 acres of riparian buffers in the CREP. Nearly 120 farms participate in the Nutrient Management Credit Program and up to 60 farms are being recruited for the new Precision Feed Management Program. For the past five years, the WAP has met or exceeded all of its FAD metrics, many of which have been set at the 90% participation threshold for active large farms in the West of Hudson watershed. However, the WAP's historical focus on recruiting new participants and developing Whole Farm Plans for these participants has resulted in the accumulation of a large BMP workload that needs to be addressed and managed in a more sustainable manner moving forward.

After two decades of expansion, the WAP is now transitioning into a mature program that is striving to balance water quality priorities with the need to maintain positive relationships with hundreds of voluntary participants. Over the next few years, it will be crucial for the WAP to remain flexible and responsive to participant needs and pollution risks in the context of shifting

farmer demographics and evolving agricultural operations. Looking ahead, priority WAP activities will include the need to repair or replace existing BMPs in a timely manner to maintain nearly $60 million worth of water quality investments, and managing the growing complexity of an extensive portfolio of voluntary Whole Farm Plans in various stages of implementation. Within this portfolio, the WAP has identified nearly $5 million worth of BMP repairs/replacements and over $31 million worth of new BMPs that are pending implementation (of which $24 million are in the highest priority pollutant categories I-VI); reducing the backlog of BMPs and improving the timeliness of BMP implementation across the portfolio of Whole Farm Plans that are already approved will become an increased focus of the WAP in the years ahead.

Current goals of the program are to:

- Develop a new approach for investigating and repairing certain WAP-implemented BMPs using an in-house field crew of WAP technicians, with a goal of reducing the BMP backlog and becoming more responsive to the BMP repair needs of participants;
- Maintain at least 135 eligible farms in the Nutrient Management Credit Program;
- Maintain up to 60 eligible farms in the Precision Feed Management Program; and
- Engage greater numbers of WAP participants in farmer education programs in order to improve and enhance farm operation decisions and management behaviors.

Table 2.22 Watershed Agricultural Program Planned Activities/Milestones

Activity	***Due Date***
Manage the current portfolio of active Whole Farm Plans, including the revision of existing plans as needed and the development of new plans on eligible priority farms on a case-by-case basis	Ongoing
Conduct annual status reviews on at least 90% of all active Whole Farms Plans every calendar year, with a goal of 100%	Ongoing
Continue to implement new priority BMPs on active participating farms with Whole Farm Plans according to the following milestones: • Design, encumber, and schedule for implementation within a two-year timeframe at least 50% of all identified BMPs within pollutant categories I-VI by the end of calendar year 2022 • By the end of 2024, implement all viable BMPs that were designed and encumbered through calendar year 2022	Ongoing 12/31/22 12/31/24

Activity	*Due Date*
Continue to repair/replace existing BMPs on active participating farms with Whole Farm Plans according to the following milestones: • Design, encumber, and schedule for implementation within a two-year timeframe at least 50% of all identified BMPs needing repair/replacement by the end of calendar year 2022 • By the end of 2024, repair/replace all viable BMPs that were designed and encumbered through calendar year 2022	Ongoing 12/31/22 12/31/24
Continue to develop and update nutrient management plans on active participating farms that require such a plan	Ongoing
Continue to offer the Nutrient Management Credit Program to eligible farms	Ongoing
Continue to implement the Precision Feed Management Program on up to 60 eligible farms	Ongoing
Continue to develop new CREP contracts and re-enroll expiring contracts as needed	Ongoing
Continue to implement a Farmer Education Program	Ongoing
Continue to implement an Economic Viability Program	Ongoing
In consultation with WAC, assess the adequacy of current WAP metrics and submit a report that recommends the continuation of current metrics and/or the consideration of potential new metrics.	6/30/23
Meet with the NYSDOH/USEPA and NYSDEC to discuss the WAP's metrics and specifically to discuss future BMP implementation milestones for calendar year 2024 and beyond	9/30/23

Table 2.23 Watershed Agricultural Program Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual report including: • Number of new and revised Whole Farm Plans completed and approved, as well as the total number and percentage of active plans in relation to the current universe of WAP participants; • Number, types and dollar amounts of both new BMPs and repaired/replaced BMPs implemented each year; • Number, types, and dollar amounts of both new BMPs and repaired/replaced BMPs designed and scheduled for implementation in the following year; • Cumulative progress made each year toward reducing the BMP backlog in relation to projected BMP implementation milestones for 2022; • Number and percentage of annual status reviews completed on active Whole Farm Plans; • Number of new and updated nutrient management plans completed, as well as the percentage of current plans on all active participating farms that require such a plan; • Number of farms participating in the Nutrient Management Credit Program; • Number of farms participating in the Precision Feed Management Program and a summary of accomplishments; • Number of new and re-enrolled CREP contracts completed, along with a summary of total enrolled and re-enrolled acres; and • Summary of Farmer Education Program accomplishments.	Annually, 3/31
WAP Metrics Assessment and Recommendations Report	6/30/23

2.3.5 Watershed Forestry Program

The Watershed Forestry Program is a longstanding partnership between DEP, the Watershed Agricultural Council, and the United States Forest Service that began in 1997 and has since accumulated nearly two decades of experience working closely with landowners, loggers, foresters, and the wood products industry. A primary focus of the Watershed Forestry Program is to promote good forest stewardship and encourage long-term management of the watershed forests for both water quality protection and economic viability purposes. A secondary focus is to promote the value and importance of a working forest landscape to both upstate watershed residents and downstate water consumers through targeted education and public outreach.

To achieve its objectives, the Watershed Forestry Program supports the development and implementation of forest management plans; the implementation of BMPs during and after timber harvesting operations; professional training for loggers and foresters; educational programs for watershed landowners; teacher training and educational programs for upstate and downstate students; and coordination of a watershed model forest program that supports demonstration purposes as well as education and outreach.

In recent years, the Watershed Forestry Program has placed greater emphasis on internal assessment and refinement, which has produced various programmatic modifications and will likely result in continued future improvements. The most significant example is the 2014-2015 redesign of the WAC Forest Management Planning Program, which resulted in a new eligibility requirement that all future WAC-funded plans and plan updates must enroll in New York's forest tax abatement program and the development of a new interactive website for landowners (MyWoodlot.com); this type of innovation is important to ensure continued program effectiveness based on twenty years of knowledge and experience.

Another tool for monitoring future program effectiveness is the Conservation Awareness Index (CAI), which is a recently developed survey that assesses landowners' awareness of four conservation choices they are likely to face; CAI represents a promising new tool to assist with future evaluation efforts.

The goals of the Watershed Forestry Program are to:

- Continue to monitor the use and progress of the new MyWoodlot.com website as a tool for understanding the needs and interests of watershed landowners.
- Explore potential modifications and improvements to the Management Assistance Program (MAP) that may be needed to support and compliment the recently redesigned WAC Forest Management Planning Program.

Table 2.24 Watershed Forestry Program Planned Activities/Milestones

Activity	***Due Date***
Continue to support the development of forest management plans and the implementation of these plans through the Management Assistance Program (MAP), with a goal of completing at least 60 MAP projects per year	Ongoing
Continue to support the implementation of forestry BMPs, with a focus on road BMP projects and forestry stream crossing projects	Ongoing
Continue to support the Croton Trees for Tribs Program, with a goal of completing 6 projects per year	Ongoing
Continue to support professional training for loggers and foresters	Ongoing
Continue to support educational programs for landowners	Ongoing
Continue to support school-based education programs for teachers and students in both the watershed and New York City	Ongoing
Continue to support and coordinate four watershed model forests	Ongoing

Table 2.25 Watershed Forestry Program Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual report including: • Number of forest management plans completed and acres of forestland enrolled in the 480-a program; • Number and types of MAP projects completed; • Number and types of forestry BMP projects completed; • Number of Croton Trees for Tribs projects completed; • Summary of logger and forester training accomplishments; • Summary of landowner education accomplishments;	Annually, 3/31

• Summary of school-based education accomplishments; and • Summary of model forest accomplishments.	
Report on CAI evaluation results for the watershed forest management planning program and landowner education programs	12/31/21 12/31/26

2.3.6 Stream Management Program

The City will continue to implement the SMP through a series of contractual partnerships with the County Soil and Water Conservation Districts (SWCDs) and the Cornell Cooperative Extension of Ulster County. Program components include annual action planning based on stream assessments and stakeholder input; water quality-driven Stream Projects; stakeholder-driven Stream Management Implementation Program (SMIP) projects; the Catskill Streams Buffer Initiative (CSBI); Flood Hazard Mitigation projects; and Education, Outreach and Training.

The SMP continues to strengthen and improve these core program components through advances in staff experience and professional development, ongoing assessments of river corridors and floodplain modeling, and close coordination with stakeholders.

The SMP delivers both water quality-driven projects and projects intended to meet community and stakeholder stream management priorities.

- Water Quality-driven projects – SMP basin teams will initiate an expedited review of current water-quality in each reservoir basin, review the ability to impact water quality through stream management activities in the basins, and renew or revise water quality-based project priorities. This process will guide the selection of the next round of water-quality driven projects. These projects treat a documented source of water quality impairment or prevent an emerging source. They can be reach-scale channel stability restorations and/or hillslope stabilizations that remove turbidity sources or they can be smaller scale (bank stabilization), treating a documented source of water quality impairment where channel modifications are unnecessary or impractical.
- Stakeholder-driven projects are delivered through the Stream Management Implementation Program (SMIP), which funds projects included in or supported by stream management plans developed by municipalities that have entered into Memorandum of Understandings (MOUs) with a SWCD. While many of these projects improve or protect water quality, and those that do are prioritized, these projects are multi-objective and are intended to advance stakeholder interests in stream management. SMIP projects can include flood hazard mitigation projects;

enhanced recreational access; upgrading undersized culverts to improve stream stability and water quality; studies in habitat, stream and ecosystem integrity; critical area seeding and roadside ditch best management practices; support for municipal policy development; training scholarships for stakeholders; and the development and delivery of school programs.

Additionally, in response to Tropical Storms Irene and Lee in 2011, the City and watershed stakeholders developed the Local Flood Hazard Mitigation Program (LFHMP) to both mitigate the hazards caused by flooding in streamside communities and address sources of pollution related to flood waters. The LHFMP commenced by conducting Local Flood Analysis (LFA) to identify factors that exacerbate flooding and flood risks in population centers. Projects are expected to move toward implementation in the near future. The City has provided funding for the Flood Hazard Mitigation Implementation Program (FHMIP) through a contract with the Catskill Watershed Corporation to implement LFA recommended projects. Additional funding has been earmarked for floodplain property acquisition through the DEP Land Acquisition Program. Funding has also been provided through the SMP contracts to fund LFAs and implement flood hazard mitigation projects involving streams and floodplains. The highest priority projects identified in LFAs are those that would lower flood elevations at a community or stream reach scale.

The City will also continue to work with the United States Geological Survey to conduct the ongoing turbidity and suspended sediment source and yield monitoring study that began in October 2016 in the Esopus Creek and Stony Clove Creek watersheds. This study evaluates stream management projects' effectiveness in turbidity reduction and its findings will be used to prioritize site selection for future stream management projects. At least three turbidity reduction stream projects will be identified in the Stony Clove watershed and implemented as part of the study.

In 2016, the City initiated a Stream Studies Program to support the research needs for stream management objectives. The first phase of this new effort includes (1) conducting the Esopus Creek and Stony Clove Creek turbidity/suspended sediment studies with USGS, (2) updating the Catskill Mountain bankfull discharge and channel geometry regional curves, and (3) expanding the Natural Channel Design Reference Reach database. Starting in 2017, the SMP will work with SMP partners to determine what additional programmatic research is necessary to support stream management objectives for the West of Hudson watersheds. Stream bedload sediment transport is a potential research topic identified by the City and the SMP partners. Pursuing coarse sediment transport data in mountain streams dominated by storm-driven hydrology is a very technically challenging task. The City will work with SMP partners to determine the need for this data, investigate options to obtain needed data for successful program implementation, and initiate potential research efforts where warranted.

The Catskill Streams Buffer Initiative seeks to restore riparian buffers where gaps exist along stream corridors using Catskill native plant materials, as well as to educate landowners about the importance of stewarding intact riparian buffers. The focus of CSBI has been on non-agricultural lands and has complemented the Conservation Reserve Enhancement Program which restores riparian buffers on agricultural lands. CREP eligibility criteria expanded recently to allow CREP to be implemented on non-agricultural lands that have a past history of agricultural use. In this FAD period, a partnership between CSBI and CREP will be explored to enable CREP to be implemented through the CSBI on these non-agricultural lands.

Education, outreach and training initiatives continue to be an essential component of the SMP, providing knowledge, tools, and funding to the numerous individual and agency stream managers in the Watershed. The SMP will maintain the existing level of staffing and support to each SMP basin program team to ensure that new stakeholders are quickly educated and integrated into the SMP.

Table 2.26 Stream Management Program Planned Activities/Milestones

Activity	***Due Date***
Water-Quality Based Stream Projects and Site Selection	
• DEP and Contract Partners will meet to review water quality analyses to outline the water quality basis for project site selection and to prioritize the main stems and/or sub-basins for stream feature inventories	12 months after 2017 FAD effective date
• Six stream feature inventories will be conducted in the prioritized tributaries/main stems of the major SMP basins (Schoharie, Ashokan, Nev/Ron, Cannonsville and Pepacton) to identify water quality threats and support project site prioritization	12/31/22
• Design and complete construction of 24 Stream Projects* that have a principal benefit of water quality protection or improvement. A minimum of 3 of the 24 shall be in the Stony Clove watershed (Ashokan) to support the Water Quality Monitoring Study and a total of at least 6 of the 24 projects shall be in the Ashokan watershed. Stream Projects will be selected based on a water quality-based site selection process and in accordance with the review and prioritization of basin-scale water quality priorities described above. Beginning in 2017, projects completed beyond those required for the Revised 2007 FAD will be counted towards this requirement.	12/31/27

Activity	*Due Date*
• The City will propose projects for FAD approval in November of each year * Stream Projects may be delayed due to flood events which necessitate a shift in program focus to response and recovery operations. Floods can also change project priorities. Delays can also result from shifts in landowner cooperation.	Annually, 11/30
CSBI Continue implementation of CSBI by providing technical assistance and conservation guidance to riparian landowners. (This program is also included in the Riparian Buffer Protection Program.)	
• Convene annual meeting of Riparian Buffer Working Group	Annually, 2/28
• Facilitate the supply of native plant materials to the CSBI	Ongoing
• Implement Education, Outreach, and Marketing Strategy with partners	Ongoing
• Seek to establish a partnership between the CSBI program and the CREP program to enable CREP to be implemented on former agricultural lands through the CSBI	12/31/17
• Review progress in extending CREP to eligible non-agricultural lands through CSBI	6/30/21
• Complete revegetation of a minimum of 5 streambank miles throughout the West of Hudson watershed. This metric may be adjusted upon review of progress in extending CREP to former agricultural lands through a partnership with the CSBI.	11/30/27
SMIP Continue the local funding programs for the enhanced implementation of stream management plan recommendations, including LFA recommended projects, in the Schoharie, Cannonsville, Pepacton, Neversink, Rondout and Ashokan basins. Complete commitment of funds for a minimum of 100 SMIP projects throughout the West of Hudson watershed.	Ongoing
Education/Outreach/Training Continue to implement the Education/Outreach/Training strategy for	Ongoing

Activity	*Due Date*
municipal officials with program partners and maintain base education and outreach existing programming in the SMP basin programs	
Annual Meeting and Action Plans Meet annually with county contracting partners to review progress made in the previous year within each program area (Stream Projects, CSBI, SMIP, LFHMP and Education/Outreach/Training) and re-evaluate priorities as the basis for preparing new Action Plans for the coming year, especially after major flood events. Action plans and program activities should place priority on projects that will enhance water quality, and restore or protect stream system stability. This meeting will also provide an opportunity for discussion on the research advanced by each basin team and DEP during the year as well as next steps.	Annually, 2/28
Addendum A Coordinate with NYSDEC regarding the implementation of Addendum A to the 1993 Memorandum of Understanding between NYSDEC and the City as it pertains to the review of Article 15 Stream Disturbance Permits, to enhance coordination between the agencies with the goal of ensuring consistency with the recommendations in stream management plans and implementation of stream management projects	As Needed
Local Flood Hazard Mitigation Program (LFHMP) • Complete LFAs and provide funding toward implementation of LFA-recommended projects through both the SMP and the CWC in the West of Hudson watershed • Coordinate the LFHMP funding program with State and Federal flood hazard mitigation agencies to ensure consistency and thereby maximize funding to the Watershed communities • Continue to provide technical support, education, and training to watershed communities to support their use of Flood Insurance Rate Maps (FIRMs) and their participation in a variety of floodplain management, flood hazard mitigation, and flood preparedness programs	12/31/27 Ongoing Ongoing

Activity	*Due Date*
Water Quality Monitoring Studies • Continued collection and analysis of data for the Esopus Creek Watershed Turbidity/Suspended Sediment Study • Submit the final Esopus Creek Watershed Turbidity/Suspended Sediment Study Design • Submit 3 proposed Stony Clove restoration projects for approval	Ongoing 1/31/17 1/31/19
Ashokan Projects Complete construction of 7 stream management projects within the Ashokan basin with a goal of protecting water quality, in particular by reducing turbidity.	11/30/18
Progress Meeting Convene progress meetings with NYSDOH/USEPA and NYSDEC. An office-based meeting shall be held by 8/30, and a field-based meeting shall be held following construction season by 10/31	Twice a year, by 8/30 and 10/31

Table 2.27 Stream Management Program Reporting Milestones

Report Description	*Due Date*
Water Quality Based Stream Projects and Site Selection Submit brief basin specific reports outlining the water quality basis for Stream Project Site Selection in the basin during the FAD period and that prioritizes main stem and/or sub-basins for stream feature inventories	12 months from the date of FAD issuance
CSBI Submit a brief summary report reviewing progress in establishing a partnership with the CREP to implement CREP on eligible non-agricultural lands through the CSBI. Review progress in extending CREP to eligible non-agricultural lands through CSBI.	12/31/17 6/30/21
Action Plans Each year, submit a rolling two-year Action Plan for each basin that	Annually, 5/31

Report Description	*Due Date*
outlines the upcoming projects in the program areas (Stream Projects, CSBI, SMIP, Education/Outreach/Training, LFHMP)	
Local Flood Hazard Mitigation Program (LFHMP) Evaluate the LFHMP for its contribution to the protection of water quality and recommend steps for enhancing this protection in the future	6/30/18 6/30/21
Water Quality Monitoring Studies Submit biennial status reports on study findings Submit first five year study findings Submit final study findings	 Commence 3/31/19 11/30/22 11/30/27
Annual Report Report on program implementation in the FAD Annual Report: • site selection of water quality based projects; • Catskill Stream Buffer Initiative; • Stream Management Implementation Projects; • Local Flood Hazard Mitigation Program; and • Water Quality studies.	Annually, 3/31

2.3.7 Riparian Buffer Protection Program

The Riparian Buffer Protection Program, initiated under the 2007 FAD, now consists of several separate efforts undertaken by different DEP units, including the Land Acquisition, Watershed Agricultural, Stream Management, and Forestry Programs. The multi-program approach to protecting and restoring buffers ensures buffers on both public and private land are protected, managed and in many cases restored.

The Riparian Buffers Protection Program is enhanced by DEP's Streamside Acquisition Program[1] which is currently piloting the acquisition of riparian buffers in designated areas within the Schoharie Watershed. This FAD section includes this requirement, and it is also referenced in the Land Acquisition Program section.

[1] Formerly titled the Riparian Buffer Acquisition Program.

The City will continue to implement the Program. The general milestones set forth in previous FAD requirements remain relevant and form the basis for near-term FAD implementation requirements of the RBP Program. The City will continue to implement the RBP Program in accordance with the milestones below.

Table 2.28 Riparian Buffers Protection Program Planned Activities/Milestones

Activity	***Due Date***
Continue existing programs that are protective of riparian buffers including, but not limited to, watershed regulations, agricultural programs, land acquisition, stream management, and land management	Ongoing
Continue implementation of CREP	Ongoing
Continue implementation of the CSBI by providing technical assistance and conservation guidance to riparian landowners. • Convene annual meeting of Riparian Buffer Working Group • Facilitate the supply of native plant materials to the CSBI • Implement Education, Outreach, and Marketing Strategy with partners • Seek to establish a partnership between the CSBI program and the CREP program to enable CREP to be implemented on former agricultural lands through the CSBI • Review progress in extending CREP to eligible non-agricultural lands through CSBI • Complete revegetation of a minimum of 5 streambank miles throughout the West of Hudson watershed. This metric may be adjusted upon review of progress in extending CREP to former agricultural lands through a partnership with the CSBI.	 Annually, 2/28 Ongoing Ongoing 12/31/17 6/30/21 11/30/27
Continue to seek enhanced management agreements (voluntary 10-year or purchased perpetual) for all current and future stream restoration projects	Ongoing
Continue implementation of the Pilot Streamside Acquisition Program	Ongoing, in accordance with the 2010 WSP

Table 2.29 Riparian Buffers Protection Program Reporting Milestones

Report Description	*Due Date*
SAP Based on the requirements of the Water Supply Permit, DEP shall submit written evaluation of the SAP and discuss whether it should be continued, modified, or terminated, as well as any proposed improvements to the program	12/15/18
CSBI Submit a brief summary report reviewing progress in establishing a partnership with the CREP to implement CREP on eligible non-agricultural lands through the CSBI. Review progress in extending CREP to eligible non-agricultural lands through CSBI.	12/31/17 6/30/21
The FAD annual report will reference the other FAD programs where the completed Riparian Buffer Protection Program details will be described	Annually, 3/31

2.3.8 Ecosystem Protection Program

The Ecosystem Protection Program combines goals and activities for numerous programs as provided below.

Forestry

The City has significant forest land holdings and continues to acquire forest lands for the management and protection of the water supply. These forests must be professionally managed to meet the goals for maintaining forest ecosystem integrity to protect and enhance the water supply. Older City lands are commonly declining in forest vigor, have limited diversity and/or have little to no forest regeneration critical for the future of the forest. Some recently acquired City lands have trees with low forest vigor due to management practices of previous landowners. To address these forest conditions, DEP foresters conduct forest assessments and implement silvicultural prescriptions to increase the diversity of species and age structure to enhance forest vigor and resiliency to meet the forest goals.

With the purpose of protecting water quality through the long-term management of City forest lands, a comprehensive watershed forest management plan was completed in 2011 in partnership with the U.S. Forest Service. The Watershed Forest Management Plan defines the desired forest conditions and sets forth the management goals, objectives, strategies and

guidelines for all current and future City-owned water supply lands, and basin specific objectives where appropriate, based on current scientific principles for the management of watersheds and natural resources. These goals, objectives and guidelines set the direction for the Agency and its programs in the long term management of the watershed forest resources for the enhancement and protection of the water supply. As part of the 2011 Watershed Forest Management Plan, an assessment of the current forest conditions was completed which included a comprehensive forest inventory. The plan and inventory identified forest stands where silvicultural practices are required to be implemented to meet the desired forest conditions. The DEP Forest Management Program continues to implement these silvicultural practices through forest management projects. Updating forest inventories, implementing timber harvests, and reviewing forestry proposals from landowners who have sold conservation easements to NYC are core activities of the program in furtherance of the goals and objectives of the Forest Management Plan.

Wetlands

Wetlands improve water quality, attenuate storm flows, reduce flooding and erosion, maintain stream baseflow, and provide wildlife habitat, recreation and educational opportunities. The Wetlands Protection Program collects information about the characteristics, distribution and functions of wetlands to inform regulatory and partnership protection programs. Wetland permit applications and other land use proposals are reviewed to minimize potential impacts to wetlands to the extent practicable.

The Wetland Protection Strategy was first implemented in 1996 and most recently updated in 2012. The strategy includes research and mapping programs such as a pilot mapping project using LiDAR and reference wetland monitoring. Part of DEP's strategy is to protect wetlands through other programs such as regulatory reviews, land acquisition, and agricultural programs.

Invasive Species

The Invasive Species Program was formed to develop and implement a comprehensive strategy to identify, prioritize and address invasive species threats to the water supply and coordinate monitoring and management. Invasive species can cause direct harm to water supply infrastructure through clogging of intakes and pipes potentially costing millions of dollars of damage. Invasive species also can impact biodiversity and water quality potentially through degradation of the natural ecosystems that the water supply relies on.

Recognizing the threat that invasive species pose to water quality, water supply infrastructure, and ecosystems generally, the Invasive Species Program has been taking steps to comprehensively address the prevention, early detection, rapid response and management of the most damaging invasive species. Efforts are coordinated internally through the inter-disciplinary Invasive Species Working Group and with external partners through DEP's involvement with the Partnerships for Regional Invasive Species Management, the NYS Invasive Species Advisory Committee and other federal and state agencies.

The Invasive Species Management Strategy covers the topics of prevention and pathway risk mitigation, early detection and rapid response to new invasive species, control and management of existing invasive species where appropriate, mitigation of the impacts from species that can't be controlled, restoration of areas that have been heavily impacted by invasive species, intra-agency and external partnership collaborations to address these issues. These are all areas that have been and will continue to be critical to managing invasive species that may impact the watershed.

The goals of the Ecosystem Protection Program are as follows:

Forestry

The goal of the Forest Management Program is to protect water quality by increasing the diversity of species and age structure of City forest lands to enhance forest vigor and forest resiliency. Promoting these forest conditions increases nutrient retention in the forest and promotes a forest that effectively responds to catastrophic events to enhance the watershed protection functions of the forest, thus protecting the water supply.

The near term Forest Management Program goals will focus on implementing the comprehensive Watershed Forest Management Plan and will include the following:

- Continued implementation of silvicultural activities such as timber harvesting guided by the use of DEP's Conservation Practices and enhanced best management practices.
- Implementation of assessment strategies for lands acquired since the development of the Plan including forest inventories and assessment, and incorporation of newly acquired lands into the management regime.
- Assessment of forest/deer impacts and management strategies to promote forest regeneration. Deer browsing is one of the primary limiting factors for forest regeneration success.
- Maintain data collection and analysis for the Continuous Forest Inventory (CFI) project.

Wetlands

- Expand the pilot LiDAR wetland mapping and connectivity assessment to the entire watershed. Produce a National Wetland Inventory (NWI)-compliant GIS wetland layer for the entire watershed using LiDAR-derived data, high resolution aerial photography, and other ancillary data sources to improve the accuracy and completeness of wetland mapping and connectivity assessment.
- Enhance the Reference Wetland Monitoring Program based on the recommendations of the reference wetland standards report and strengthen the efficacy of this study.

Invasive Species

- Implementation of key aspects of the Invasive Species Management Strategy to promote sustainable native communities.

Table 2.30 Ecosystem Protection Program Planned Activities/Milestones

Activity	*Due Date*
Forestry	
• Implement the Watershed Forest Management Plan	Ongoing
• Update the Watershed Forest Management Plan	12/24/17
• Revise the Watershed Forest Management Plan	3/31/27
• Continue to conduct forest inventories on City-owned lands, including long-term CFI plots	Ongoing
• Continue to assess and mitigate deer impacts on forest regeneration on City-owned lands	Ongoing
Wetlands	
• Update Wetlands Protection Strategy	3/31/18
• Update the wetland GIS data for the watershed using LiDAR derived data and high resolution photography	3/31/22
• Continue reference wetland monitoring	Ongoing
• Review federal, state and local wetland permit applications	Ongoing
Invasive Species	
• Continue to implement the Invasive Species Management Strategy	Ongoing
• Engage watershed partners and residents to coordinate efforts in invasive species prevention and control	Ongoing

Table 2.31 Ecosystem Protection Program Reporting Milestones

Report Description	*Due Date*
Submit updated Watershed Forest Management Plan	12/24/17
Submit revised Watershed Forest Management Plan	3/31/27

Submit updated Wetlands Protection Strategy	3/31/18
Summary of wetland mapping and connectivity assessment results for the watershed	3/31/22
Submit updated Invasive Species Implementation Strategy	3/31/22
Report on program implementation in the FAD Annual report including: • Updates on forest inventories; • Forestry projects; • Wetland mapping; • Wetland permit reviews; • Wetland protection efforts; and • Invasive species activities.	Annually, 3/31

2.3.9 Nonpoint Source Pollution Strategy for East of Hudson Catskill/Delaware Basins

DEP developed a non-point source program for the West Branch, Boyd's Corner, Croton Falls and Cross River Reservoir basins. DEP addresses concerns in these East of Hudson watershed basins through the continued implementation of the Watershed Regulations, involvement in project reviews, inspection and maintenance of existing stormwater management facilities, a septic repair program, and through a program to reduce stormwater pollution through the construction of stormwater retrofits.

The near-term goals of the program are to continue the reduction of nonpoint source pollution to the four East of Hudson CAT/DEL reservoirs. The initiatives implemented to achieve that goal include:

- Operation and Maintenance – Regularly inspect the existing stormwater management facilities and identify maintenance needs in order to achieve the designed removal efficiencies.
- Reduce the Potential Pathogen Risk – Continue to implement the Septic Repair Reimbursement Program and conduct inspection of sanitary sewers to prevent possible discharges of wastewater.
- Reduce the Potential Pollutant Load – Reduce pollutant loads through a grant program to assist in funding the design and construction of new stormwater retrofits built in CAT/DEL basins located East of Hudson.

Table 2.32 East-of-Hudson Nonpoint Source Protection Program Planned Activities/Milestones

Activity	*Due Date*
Maintenance of EOH Stormwater Facilities	Ongoing
Stormwater Remediation Projects Complete construction of two stormwater retrofits. • Maple Avenue (Cross River); and • Drewville Road (Croton Falls).	12/31/19
EOH Stormwater Retrofit Grant Program DEP will support the design and construction of stormwater retrofits in the four CAT/DEL basins located East of Hudson by providing funding sufficient for the capital costs of retrofits mandated by NYSDEC to treat runoff from high density development within those basins. The ratio of funding to be provided by DEP to the total amount allocated for stormwater retrofits East of Hudson will be no greater than the ratio of the phosphorus reductions required in the CAT/DEL basins to the phosphorus reductions required in the entire East of Hudson watershed.	Approximately 18 months from date of FAD (Est. 12/31/18)
DEP will continue to make City lands available for stormwater retrofit projects constructed by EOH Watershed communities so long as DEP determines that the projects will not pose a threat to water quality or DEP operations related to the water supply.	Ongoing
East of Hudson Septic Repair Program (SRP) • Implement SRP in four CAT/DEL basins located East of Hudson in accordance with program plans • Continue to provide technical assistance in support of EOH septic management programs	Ongoing
Video Sanitary Sewer Inspection • Video Sanitary Sewer Inspection of four CAT/DEL basins located East of Hudson • Complete mapping of new sewer areas (if any) • Complete inspection of targeted areas • Identify potential defects	3/31/21

• Notify entities responsible for remediation of identified deficiencies.	

Table 2.33 East-of-Hudson Nonpoint Source Protection Program Reporting Milestones

Report Description	***Due Date***
Report on implementation of two EOH Stormwater Remediation Projects	Quarterly until completed (3/31, 6/30, 9/30, 12/31)
Report on program implementation in the FAD Annual Report • Maintenance of EOH Stormwater Facilities; • Stormwater Remediation Projects; • Stormwater Retrofit Grant Program; • East-of-Hudson Septic Repair Program; and • Video Sanitary Sewer Inspection.	Annually, 3/31

2.3.10 Kensico Water Quality Control and Related Programs

The Kensico Reservoir, located in Westchester County, is the terminal reservoir for the City's CAT/DEL water supply system. Because it provides the last impoundment of CAT/DEL water prior to entering the City's distribution system, protection of this reservoir is critically important to maintaining water quality for the City. The Kensico Water Quality Control Program reduces non-point source pollution in the Kensico Reservoir through various stormwater and wastewater projects.

The near-term goals of the program are to:

- Operation and Maintenance – DEP will continue regular inspections of the existing stormwater management facilities and identify maintenance needs to maximize their removal efficiency.
- Reduce the Potential Pathogen Risk – Continue to implement the Septic Repair Reimbursement Program, monitor the early warning sanitary sewer overflow protection system, and inspect targeted sanitary sewers in order to reduce possible discharges of wastewater.

- Reduce the Potential Risk of Turbidity at Effluent Chambers – Complete shoreline stabilization project at Shaft 18 and review timeline for assessing and/or dredging effluent chambers to prevent possible resuspension of sediment.

Table 2.34 Kensico Water Quality Control Program Planned Activities/Milestones

Activity	***Due Date***
Inspect and maintain non-point source management facilities within the Kensico Reservoir Basin: • Stormwater management facilities; • Turbidity curtain; and • Spill containment measures.	Ongoing
Complete Shaft 18 shoreline stabilization project	12/31/21
Oversee remote monitoring system at Westlake Sewer Extension	Ongoing
Implement Septic Repair Reimbursement Program	Ongoing
Video Sanitary Sewer Inspection Program: • Complete mapping of new sewer areas; • Complete reinspection of targeted areas; • Identify potential defects; and • Notify entities responsible for remediation of identified deficiencies.	3/31/21

Table 2.35 Kensico Water Quality Control Program Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual Report, including: • O&M of non-point source management facilities; • Westlake sewer monitoring program; • Shaft 18 shoreline stabilization;	Annually, 3/31

• Septic Repair Program; • Video Sanitary Sewer Inspection; • Kensico Scat Sanitary Survey; and • Westchester County Airport, as needed.	

2.3.11 Catskill Turbidity Control

High turbidity levels are associated with high flow events, which can destabilize stream banks, mobilize streambeds, and suspend the glacial clays that underlie the streambed armor. The design of the Catskill System takes into account the local geology, and provides for settling within Schoharie Reservoir, Ashokan West Basin, Ashokan East Basin, and the upper reaches of Kensico Reservoir. Under most circumstances the extended detention time in these reservoirs is sufficient to allow the turbidity-causing clay solids to settle out, and the system easily meets the SWTR turbidity standards (5 NTU) at the Kensico effluent. However, occasionally after extreme rain/runoff events in the Catskill watershed, DEP has had to use the coagulant aluminum sulfate (alum) to enhance the settling rate of suspended solids to control high turbidity levels.

Since 2002, DEP has undertaken a number of studies and implemented significant changes to its operations to better control turbidity in the Catskill System. Many of these measures have been implemented pursuant to the 2002 and 2007 FADs and the Shandaken Tunnel and Catalum SPDES Permits. A comprehensive analysis, the Catskill Turbidity Control Study, was conducted by DEP in three phases between 2002 and 2009. Based on the results of this study, DEP selected several implementation alternatives, specifically: modifying operations, particularly at Ashokan Reservoir, to manage turbidity; a system-wide Operations Support Tool (OST) that allows DEP to optimize reservoir releases and diversions to balance water supply, water quality, and environmental objectives; an interconnection of the Catskill Aqueduct and the Delaware Aqueduct (CAT/DEL Interconnect, CDIC), to improve overall system flexibility; and structural improvements to the Catskill Aqueduct stop shutter facilities to minimize the amount of water diverted from Ashokan Reservoir to Kensico Reservoir during turbidity events while meeting the supply needs of wholesale customers with connections to the Catskill Aqueduct. DEP has now completed implementation of all these measures.

In addition to the structural and operational changes listed above, DEP's multi-tiered water quality modeling program provides support to the program to control turbidity in the Catskill system. Water quality models are an integral part of OST and provide valuable information to guide the operation of the water supply to minimize the impact of turbidity events while considering longer-term system operating requirements.

Catalum SPDES Permit and Environmental Review

The Catalum State Pollutant Discharge Elimination System (SPDES) Permit sets forth the conditions under which the City is allowed to treat Catskill Aqueduct water with alum prior to entering Kensico Reservoir. The City and NYSDEC agreed to an interim operating protocol for the Ashokan Release Channel in October 2011. A modified version of that protocol was incorporated into an Order on Consent (DEC Case No.: D007-0001-11)(CO) which was executed by the City and NYSDEC on October 4, 2013 in connection with the Catalum SPDES permit.

In June 2012, consistent with the Catalum consent order, DEP requested a modification to the Catalum SPDES Permit to incorporate measures to control turbidity in water diverted from Ashokan Reservoir and to postpone dredging of alum floc at Kensico Reservoir until completion of certain infrastructure projects. As part of the environmental review process for the permit modification request, for which NYSDEC is the lead agency, once NYSDEC issues a final scope of work for the Environmental Impact Statement (EIS), the City is required to prepare a draft of the Draft EIS (DEIS) and a draft of the final EIS (FEIS), which will analyze the potential environmental and socioeconomic impacts resulting from the proposed modifications to the Catalum SPDES permit.

The Catalum EIS will evaluate the potential for significant adverse environmental impacts to both the Ashokan Reservoir/lower Esopus Creek and Kensico Reservoir that may occur from implementation of the turbidity control measures proposed to be incorporated into the Catalum SPDES Permit as well as from the postponement of dredging of Kensico Reservoir. The EIS will evaluate a suite of alternatives at Ashokan Reservoir, along the Catskill Aqueduct and at Kensico Reservoir as well as implementation of DEP's turbidity control measures as a whole. Where potential adverse impacts are identified, reasonable and practicable measures that have the potential to avoid, mitigate, or minimize these impacts will be identified.

NRC Expert Panel Review

As required by the Revised 2007 FAD, DEP contracted with the National Research Council (NRC) to conduct an expert panel review of the City's use of OST. The NRC is in a unique position to bring together a group of experts with the breadth of experience and expertise needed to undertake this independent study and to ensure a comprehensive and scientifically objective product.

The goals of the Expert Panel are to:

- evaluate the effectiveness of the City's use of OST for water supply operations, and identify ways in which the City can more effectively use OST to manage turbidity;
- evaluate the performance measures/criteria that the City uses to assess the efficacy of Catskill Turbidity Control, and recommend additional performance measures, if necessary;

- review the City's proposed use of OST in evaluating the proposed modification to the Catalum SPDES Permit as well as the alternatives to be considered in the environmental review of those proposed modifications; and
- review DEP's existing studies of the potential effects of climate change on the City's water supply to help identify and enhance understanding of areas of potential future concern in regard to the use of OST.

The final report from the expert panel will be a public document which will be posted on both the NRC and DEP websites. The recommendations and results will be incorporated in the Catalum EIS as appropriate.

The timing of the work of the Expert Panel is intended to align with the environmental review. To the extent possible, the Expert Panel recommendations will be made available in time to inform the development of the draft of the DEIS which DEP will provide to NYSDEC in connection with the proposed modification of the Catalum SPDES Permit.

In the event that DEP determines, based on the conclusions of the FEIS, that modification of the Phase III Catskill Turbidity Control Implementation Plan is necessary, the City will be required to propose alternative measures for achieving turbidity control and a timeline for implementing those alternatives.

Table 2.36 Catskill Turbidity Control Planned Activities/Milestones

Activity	***Due Date***
Continue to utilize and update OST	Ongoing
Conduct the Expert Panel review of DEP's use of OST. • Upon request of the Expert Panel, provide any information necessary to assess the City's turbidity and water system modeling programs and to respond to the questions the Panel has been asked to address • Provide the final report to the regulators and the Watershed Inspector General (WIG) • Submit final revised performance measures/criteria for evaluating the efficacy of Catskill Turbidity Control measures, taking into consideration the Expert Panel recommendations, for review and approval by NYSDOH, USEPA and NYSDEC.	Ongoing When released by NRC 6 months after NRC Expert Panel report
Annually convene a progress meeting with NYSDOH, USEPA,	Annually, 10/31

NYSDEC and the WIG to provide a forum for discussion of the status of the Catskill Turbidity Control measures, management of turbidity events reported in the March Annual Report and subsequent events, use of performance measures to assess program efficacy, status/results of the DEIS and FEIS, and other matters related to turbidity control. In addition, DEP will facilitate discussion of the following items: • the Expert Panel Report. This discussion may occur at the next annual meeting after the Report is submitted or NYSDOH may, at its option, request that DEP convene a separate meeting to discuss the Expert Panel Report, in addition to the annual meetings. Consistent with NRC's procedures, the City will ask some or all members of the Expert Panel, and/or staff of the organization, to participate in this meeting; • the DEIS. This discussion may occur at the next annual meeting after the DEIS is issued by NYSDEC, or NYSDOH may, at its option, request that DEP convene a separate meeting to discuss the DEIS, in addition to the annual meetings; and • the Catskill Turbidity Control measures report that is due 3 months after issuance of the FEIS. This discussion may occur at the next annual meeting more than three months after issuance of the FEIS or NYSDOH may, at its option, request that DEP convene a separate meeting to discuss this report, in addition to the annual meetings.	

Table 2.37 Catskill Turbidity Control Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual Report	Annually, 3/31
Provide the final report on NRC Expert Panel to the regulators and the Watershed Inspector General (WIG).	When released by NRC
Report on final revised performance measures/criteria for evaluating the efficacy of Catskill Turbidity Controls.	6 months after submission of Expert Panel report

Report on Catskill Turbidity Control Rondout West Branch Tunnel (RWBT) Shutdown Management Plan, including consideration of maintaining water quality during the RWBT repair and shutdown.	One year prior to the planned RWBT shutdown
Report on whether, based on the conclusions of the FEIS, the City intends to modify its use of turbidity control measures identified in the Phase III Catskill Turbidity Control Implementation Plan, and/or implement any other turbidity control measures. If so, the City shall submit a modification of the Phase III Plan, proposing alternative measures for achieving turbidity control and a timeline for implementing those alternative measures.	3 months after NYSDEC issuance of FEIS

2.4 Watershed Monitoring, Modeling, and GIS

2.4.1 Watershed Monitoring Program

DEP conducts extensive water quality monitoring throughout the watershed. The watershed monitoring conducted by the Water Quality Directorate (WQD) is defined in the 2016 Watershed Water Quality Monitoring Plan (WWQMP). The WWQMP is designed to produce the appropriate data for reports related to regulatory compliance, FAD Program evaluation, modeling, and surveillance. The WWQMP is amended through the use of addenda, to address and track changes in the monitoring program as they occur. Significant changes to the monitoring plan are reviewed and approved by NYSDOH in advance of implementation. Water quality results from the routine monitoring programs throughout the watershed are stored in a database, which includes data for reservoirs, streams, and aqueducts. If major changes in watershed activities are anticipated in the near future, DEP will review the monitoring plan and work with regulatory partners to make changes as appropriate.

The water quality database serves both short-term and long-term objectives. Daily results are used for regulatory compliance and operational guidance. Upon completion of a year of data collection, results are summarized in the Watershed Water Quality Annual Report. Over the longer term, a more comprehensive evaluation of the routine monitoring data is conducted to define water quality status and long-term trends, as well as demonstrate the effectiveness of ongoing watershed protection efforts. This evaluation is described in the Watershed Protection Program Summary and Assessment Report produced every five years by DEP. The water quality database is also essential to water quality modeling and long-term planning for climate change. In summary, monitoring data is essential to meet the many long- and short-term aspects of water supply operation, tracking landscape and water quality changes, and planning for the future.

The goals of DEP's Watershed Monitoring Program are as follows:

- Provide water quality results for keypoints (i.e., aqueduct locations), streams, reservoirs, and wastewater treatment facilities collected through routine programs to

guide operations, assess compliance, and provide comparisons with established benchmarks. Describe these results and ongoing research activities in Watershed Water Quality Annual Reports.

- Use water quality data to evaluate the source and fate of pollutants and assess the effectiveness of watershed protection efforts and water supply operations. Provide a comprehensive evaluation of watershed water quality status and trends, and other research activities, to support assessment of the effectiveness of watershed protection programs.
- Actively participate in forums (e.g., seminars, discussion groups) for the exchange of information between DEP and outside agencies regarding watershed research activities and pathogen investigative work.
- Coordinate a technical working group on pathogen studies to discuss the latest research on pathogen sources, transport and fate in the environment; effectiveness of management practices on reducing pathogen concentrations; and identifying additional monitoring and/or research needs.
- Provide after action reports on all non-routine chemical treatments and other significant or unusual events that have potential to impact water quality.

Table 2.38 Watershed Monitoring Program Planned Activities/Milestones

Activities	***Due Date***
Annual participation in educational seminars on watershed monitoring and management	Ongoing
Coordinate annual Pathogen Technical Working Group meeting	Annually, 5/31
Provide after action reports on all non-routine chemical treatments and other significant or unusual events that have the potential to impact water quality	Upon completion as specified for each action

Table 2.39 Watershed Monitoring Program Reporting Milestones

Report Description	***Due Date***
Submit Watershed Water Quality Annual Report, including comprehensive chapters on: • Kensico Reservoir water quality;	Annually, 7/31

• Pathogens; • Modeling; • Educational Seminars on watershed monitoring and management; and • Ongoing Research.	
Submit Watershed Protection Program Summary and Assessment Report	3/31/21

2.4.2 Multi-Tiered Water Quality Modeling Program

The models developed and applied by DEP's Water Quality Modeling Program fall into four general classes:

1. watershed models that simulate hydrology and stream water quality, including processes associated with agricultural, forested, and urban lands, and with water quality including turbidity, nutrients, organic carbon, and disinfection byproduct (DBP) precursors;
2. reservoir models that simulate the effects of watershed hydrology, nutrient inputs, and operations on reservoir nutrient and chlorophyll levels, the production and loss of organic carbon;
3. system operation models that simulate the demands, storage, transfer, and quality of water throughout the entire NYC reservoir system; and
4. stochastic weather generators, which generate synthetic time series of weather variables such as precipitation and air temperature; when combined with watershed, reservoir, and system models, allows evaluation of the impacts of climate change and extreme events on supply system operation and water quality.

These models encapsulate the key processes and interactions that control generation and transport of water, sediment, organic carbon and nutrients from the land surface, through the watersheds and reservoirs, and the supply system.

Research and development is an integral component of the Water Quality Modeling Section's mission, and leads to improvements to existing models, adaptation of new models and development of model applications. Results of these applications have been published in the peer reviewed literature and have distinguished DEP as a leader in the use of models to support water supply management by evaluating the impacts of changing management programs, climate, land use, population, and reservoir operations. For example, through its membership in the Water Utility Climate Alliance (WUCA), DEP was one of four U.S. water utilities that took a national leadership role by demonstrating the use of models to evaluate the impacts on climate change through the Piloting Utility Model Applications (PUMA) initiative. DEP will make published journal articles that are produced by the Water Quality Modeling Group available as a supplement to the Watershed Water Quality Annual Report.

DEP conducts this modeling work with in-house staff, and through the work of full-time post-doctoral researchers and affiliated part-time university experts working under contract. The combined scientific expertise of the DEP scientific staff and the post-doctoral and faculty experts allows state-of-the-art modeling approaches and technology to be combined with detailed system knowledge and supporting data.

The goals of the Water Quality Modeling Program are the development and application of models in the following areas:

- Prediction of turbidity transport in the Catskill system, and Kensico and Rondout Reservoirs, and to provide guidance for reservoir operations to minimize the impact of turbidity events;
- Integration of the Rondout turbidity model into the Operations Support Tool;
- Development and testing of turbidity models for other Delaware system reservoirs, beginning with Neversink;
- Evaluation of the effectiveness of watershed management programs implemented through the FAD/MOA on maintenance and improvement of water quality;
- Continue model development and application to forecast the effects of climate change on water supply quantity and quality;
- Development and testing of models to simulate watershed sources, and reservoir fate and transport, of organic carbon and disinfection byproduct precursors; and
- Allow evaluation of impacts of infrastructure improvements (both during and following), including the RWBT repair project.

Table 2.40 Multi-Tiered Modeling Program Planned Activities/Milestones

Activity	***Due Date***
Update and enhance data describing land use, watershed programs, meteorology, stream hydrology and water quality, reservoir quality and operations data to support modeling	Ongoing
Provide modeling and technical support for Catskill Turbidity Control measures including the applications of OST	Ongoing
Use reservoir turbidity models and OST to support operational decisions in response to episodes of elevated turbidity	Ongoing

Apply and test new models to support watershed management and long-term planning	Ongoing
Development and testing of fate and transport models for organic carbon and disinfection byproduct precursors in Cannonsville and Neversink Reservoirs	Ongoing
Develop future climate scenarios for use as inputs to DEP watershed and reservoir models; scenarios may be based on: (a) historic time series, and (b) synthetic weather generators	Ongoing
Develop model applications that simulate the impacts of future climate change on watershed hydrology, reservoir water quality, and water system operations	Ongoing
Hold an annual progress meeting with regulators to present and discuss modeling results	Annually, 11/30

Table 2.41 Multi-Tiered Modeling Program Reporting Milestones

Report Description	***Due Date***
Submit program Status Report, including updates on the modeling activities described above in the Watershed Water Quality Annual Report.	Annually, 7/31
Report on Modeling Analysis of FAD Programs in the Watershed Protection Program Summary and Assessment Report.	03/31/21

2.4.3 GIS Program

DEP's upstate Geographic Information System is used to manage the City's interests in the lands and facilities of the upstate water supply system, and to display and evaluate the potential efficacy of watershed protection programs through maps, queries, and spatial analyses. The GIS is also used to support watershed and reservoir modeling of water quantity and quality, as well as modeling of water supply system operations. GIS resources are utilized by staff at offices throughout the watershed, directly and via the Watershed Lands Information System (WaLIS).

WaLIS is a custom database application that manages information about the watershed lands and resources owned by DEP and its neighbors. It is a labor-saving system that uses GIS data analyses, relational database management, document management, workflow and reporting

capabilities to support the Watershed Protection Programs Directorate as well as other groups throughout DEP. GIS and WaLIS save users a significant amount of time by automating tasks previously done manually, such as analyzing data, creating maps, tracking/auditing information and generating reports.

Since 1997, the GIS Program has provided technical support and data development for a variety of protection programs and modeling applications in areas such as:

- SEQRA review and regulatory mapping;
- land acquisition prioritization;
- open space mapping;
- infrastructure mapping;
- forestry management;
- water quality compliance monitoring;
- reservoir morphometry (bathymetry);
- stream assessment;
- land cover and impervious surface mapping and tracking;
- modeling evaluation of watershed management programs;
- land use, soil, and meteorological inputs for modeling; and
- climate change impact assessment.

GIS staff routinely:

- acquire, update, or develop new GIS data and metadata;
- perform GIS analysis and research;
- produce maps and statistical reports;
- fulfill requests for Bureau-specific data from other agencies and watershed stakeholders;
- train and support other DEP staff, interns, and local government agents in the use of Global Positioning Systems (GPS) for project-specific data gathering efforts; and
- provide support in the acquisition, management, and analysis of remotely-sensed data such as aerial imagery for watershed-wide land use and topographical (terrain) mapping.

The Bureau's GIS will continue to be a useful tool in four primary areas:

- inventory and track water supply lands and facilities;

- perform analysis of land use and terrain to map development, agriculture, forest, and hydrography;
- provide estimation of the effects of watershed management programs on long-term water quality; and
- support watershed and reservoir modeling of water quantity and quality, and modeling of system operation.

Table 2.42 GIS Program Planned Activities/Milestones

Activity	***Due Date***
Continue to provide GIS technical support for protection programs, monitoring programs, and modeling applications	Ongoing
Continue to develop and update GIS data and metadata, including acquisition of high-resolution aerial data and their derived products as needed	Ongoing
Continue to improve and maintain GIS infrastructure to evolve with changing technology and growing database needs	Ongoing
Continue to fulfill requests for Bureau-specific GIS data from other agencies and watershed stakeholders	Ongoing

Table 2.43 GIS Program Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual Report, including: • GIS technical support for protection programs, monitoring programs, and modeling applications; • Completion or acquisition of new GIS data layers and aerial products in the BWS GIS spatial data libraries; • GIS infrastructure improvement; and • GIS data dissemination summaries.	Annually, 3/31

2.5 Regulatory Program

2.5.1 Watershed Rules and Regulations and Other Enforcement/Project Review

DEP's Watershed Regulatory Program consists of Project Review and Regulatory Enforcement. DEP's Revised 2007 FAD required the City to administer and enforce applicable environmental regulations, which include the Watershed Regulations, including the regulations and standards incorporated by reference, the SPDES, and State Environmental Quality Review Act (SEQRA).

The program is coordinated through a Memorandum of Understanding (MOU) between NYSDEC and the City. The MOU established the Watershed Enforcement Coordination Committee (WECC), which meets quarterly to address non-compliance of Stormwater Pollution Prevention Plans through formal enforcement and/or compliance assistance under specific inter-agency protocols. The WECC process is designed to address instances of significant non-compliance in a timely and appropriate manner.

With completion of all required upgrades of WWTPs as part of the 2007 FAD WWTP Upgrade Program, the City, in accordance with Public Health Law § 1104 and the MOA, is obligated to pay for capital replacement of Watershed Equipment and Methods at all public WWTPs and all (public or non-public) WWTPs that existed or were under construction as of November 2, 1995 and that are required by the Watershed Regulations and not otherwise required by federal or state law. DEP, with the assistance of NYSEFC, will administer a program to fund required capital replacement needs. Replacement work conducted under these provisions will be reported in the FAD Annual Report.

DEP is working towards revising the Watershed Regulations to provide for greater consistency with the State's regulatory program for stormwater and wastewater, and also in response to concerns raised by West of Hudson stakeholders. Among other things, DEP is planning to amend the provisions relating to noncomplying regulated activities, subsurface sewage treatment systems, holding tanks, stormwater pollution prevention plans, and variances. DEP will continue to discuss the proposed revisions with stakeholders before beginning the rulemaking process.

The goals of the Watershed Rules and Regulations program are to continue to:

- Facilitate optional pre-application meeting requests, receive applications for approval of regulated activities, perform review of SEQRA notices, perform project reviews in accordance with the Watershed Regulations and monitor construction activity. The project history is recorded in a database to assist DEP in ensuring that projects undertaken within the NYC watershed have received necessary DEP approvals. Additionally, the database tracks DEP's efforts to meet its regulatory review timeframes and enables DEP to generate the FAD reports;

- Investigate possible violations of the Watershed Regulations, Environmental Conservation Law, and Clean Water Act. Document system failures, illicit discharges and construction site non-compliance; issue Notices of Violation as necessary, and review corrective action plans for all violations. Observe and document remediation efforts and perform close out actions. These activities are recorded in a database to track all Bureau enforcement actions. The Enforcement Activity FAD Report also includes DEP Police involvement and enforcement of environmental and public health requirements, including petroleum/chemical spills in the watershed, and hazardous and solid waste dumping in the watershed; and
- Continue DEP's commitment to pay for Capital Replacement of Watershed Equipment and Methods at eligible WWTPs.

Table 2.44 Watershed Rules and Regulations Planned Activities/Milestones

Activity	***Due Date***
Enforce the Watershed Regulations and other applicable regulations. Continue to promote compliance guidance to applicants seeking approval, through pre-application conferences and providing guidance documents	Ongoing
Work with NYSDEC, in accordance with Addendum S of the DEP/NYSDEC Memorandum of Understanding, to improve coordination of stormwater enforcement and compliance activities between agencies and with the State Attorney General's Office. Such enforcement and compliance coordination will apply, but not be limited to, all effective NYSDEC general permits for construction activity. Stormwater Watershed Enforcement Coordination Committee meetings with involved agencies will be held at least twice per year or more as needed	Ongoing
Develop and submit a timeline for completing proposed changes to the Watershed Regulations which includes meetings with stakeholders as appropriate and a target date for adoption by the City	2 months after 2017 FAD effective date
Update guidance documents affected by Watershed Regulation changes to assist applicants undertaking regulated activities in complying with the Watershed Regulations. Submit the updated guidance documents in accordance with the MOA.	18 months after Watershed Regulation's effective date

Table 2.45 Watershed Rules and Regulations Reporting Milestones

Report Description	*Due Date*
Submit reports consisting of: • Summary table, with corresponding maps, of new project activities that may affect water quality including variance activities and review of new/remediated septic systems in the Catskill/Delaware watershed basins as well as in the Croton Falls and Cross River basins east of the Hudson River; • Summary table (inventory) of all development projects proposed and their SEQRA status, with corresponding maps; and • Summary table of projects under construction, by basin, with corresponding maps.	Semi-annually, 4/30 and 10/31
Submit reports on the status of the City's regulatory enforcement actions in the Catskill/Delaware watershed basins, including the Croton Falls and Cross River basins	Semi-annually, 4/30 and 10/31
Submit an update annually on Capital Replacement of the Watershed Equipment and Methods at eligible WWTPs	Annually, 3/31
Report on the analyses used to determine the phosphorus-restricted and coliform-restricted status of each reservoir, as part of the Watershed Water Quality Annual Report	Annually, 7/31
Submit report on the progress of the proposed changes to the Watershed Regulations until adopted	Semi-annually, 4/30 and 10/31

2.5.2 WWTP Compliance and Inspection

The goal of the WWTP Compliance and Inspection Program is to prevent degradation of source waters from the threat of contamination from WWTPs discharging in the watershed. To ensure compliance with the Watershed Regulations and SPDES permits, the City through the WWTP Compliance and Inspection Group performs onsite inspections, conducts sample monitoring, provides compliance assistance, and takes enforcement actions when needed. The program is coordinated through a MOU between NYSDEC and the City. The MOU established the Watershed Enforcement Coordination Committee, which meets quarterly to address non-compliance through formal enforcement and/or compliance assistance under specific inter-agency protocols. The WECC process is designed to address instances of significant non-compliance in a timely and appropriate manner. In addition, the City's Water Quality sampling program regularly monitors the effluent of all treatment plants in the watershed and uses the

results of sampling to assist WWTP operators to meet compliance requirements or to initiate enforcement actions as necessary.

The general milestones set forth for the Revised 2007 FAD remain relevant and form the basis for program implementation within the 2017 FAD.

Table 2.46 Wastewater Treatment Plant Compliance and Inspection Program Planned Activities/Milestones

Activity	***Due Date***
Perform monitoring at all New York City-owned WWTPs in accordance with their SPDES permits, and grab sample monitoring monthly at all non-New York City-owned WWTPs discharging in the Catskill/Delaware watershed. At least once annually, for the non-City-owned WWTPs, samples shall be collected and analyzed in accordance with the monitoring requirements of each facility's SPDES permit. Continue to provide assistance to owner/operators of non-City-owned WWTPs as needed.	Ongoing
Continue to take timely and appropriate enforcement actions against non-City-owned WWTPs for noncompliance with the Watershed Regulations and SPDES discharge permit requirements, in accordance with the WECC enforcement coordination protocol of the NYSDEC/DEP MOU	Ongoing
Conduct at least four on-site inspections for year-round SPDES permitted facilities and at least two on-site inspections for seasonal SPDES permitted facilities per year at all WWTPs in the watershed	Ongoing

Table 2.47 Wastewater Treatment Plant Compliance and Inspection Program Reporting Milestones

Report Description	***Due Date***
Report on the Wastewater Treatment Plant Compliance and Inspection Program, including: • WWTP Inspection Summary Reports; and • Enforcement Actions.	Semi-annually, 3/31 (July 1 to Dec. 31) and 9/30 (Jan. 1 to June 30)

Report Description	*Due Date*
Submit WWTP Water Quality Sampling Monitoring Report	Semi-annually, 3/31 (July 1 to Dec. 31) and 9/30 (Jan. 1 to June 30)
Report by email to NYSDOH all sewage spills exceeding 500 gallons within 24 hours of the City becoming aware of the spill	Ongoing

2.6 Catskill/Delaware Filtration Plant Design

In 1993, USEPA issued a FAD for the Catskill/Delaware water supply that required the City to proceed with conceptual and preliminary design of a water filtration facility that could be built in the event that filtration was someday deemed necessary. The 1997 FAD added deliverables for Final Design and the completion of a FEIS, but included a provision for the City to seek relief from these deliverables if the remaining conditions of the FAD were being adequately addressed and the Catskill/Delaware water supply appeared likely to meet federal water quality standards for the foreseeable future. The City was able to demonstrate the efficacy of its long-term source water protection strategy and was given relief from preparing a Final Design and FEIS. Having addressed the milestones and conditions of the FAD, and given the long-term outlook for meeting water quality standards, the 2002 FAD, and subsequent FADs, required the City to update the preliminary filtration designs every two years.

While the City remains confident that source water protection is an effective and sustainable public health protection strategy, it is prudent to ensure that filtration plans are kept up to date in case it becomes necessary to construct a plant. Accordingly, DEP is proposing to contract for a comprehensive review and study of filtration technologies and pilot testing to support the creation of a new conceptual design. The existing Catskill/Delaware filtration conceptual design documents are largely based on work completed nearly 25 years ago. The City believes it is appropriate to refresh the design process to take advantage of advances in water treatment technology and knowledge since the original work was completed. The project is expected to include bench-scale and full-scale pilot studies and independent review and input from water treatment experts in the engineering community. A new study of filtration methods and technologies for the Catskill/Delaware filtration plant will ensure that the design concepts and documents are current and reflect current operational and technology needs. This will minimize the overall time to commence filtration in the event that DEP or the primacy agency later determines that filtration is necessary.

Table 2.48 Catskill/Delaware Filtration Plant Design Planned Activities/Milestones

Activity	*Due Date*
Advertise for Request for Proposals	12/31/16
Issue Notice to Proceed	3/31/18
Commence bench pilot studies	11/30/19
Complete pilot studies and submit report	6/30/24
Submit conceptual design	3/31/26

Table 2.49 Catskill/Delaware Filtration Plant Design Reporting Milestones

Report Description	*Due Date*
Report on status of design review	Annually, 3/31
Submit pilot studies report	6/30/24
Submit Final Report on conceptual design	3/31/26

2.7 Waterborne Disease Risk Assessment Program

In order to continue to operate under a Filtration Avoidance Determination, NYC must continue to demonstrate that water consumers served by the NYC water supply are adequately protected against waterborne disease (per SWTR 40 CFR §141.71 (b)(4)). Particularly NYC must be able to sufficiently demonstrate that there are no waterborne outbreaks of giardiasis or cryptosporidiosis.

Since the promulgation of the SWTR in 1989, and the initiation of a NYC Waterborne Disease Risk Assessment Program (WDRAP) in 1993, some significant changes in water quality regulation and water treatment have occurred. In NYC, the Catskill/Delaware UV plant was constructed and began operation in 2012 (also the Croton filtration plant began delivering water into distribution in 2015). With these treatment facilities now in operation, NYC has major additional protection against any risk of waterborne disease due to pathogens such as Cryptosporidium. Public health monitoring under WDRAP continues to serve in assessing and assuring the safety of the water supply.

Table 2.50 WDRAP Planned Activities/Milestones

Activity	*Due Date*
Continue to operate Waterborne Disease Risk Assessment Program	Ongoing
In relation to any water quality "event" involving the NYC water supply (e.g., increased turbidity levels, pathogen detection, disruption of operations), DEP will provide NYSDOH and USEPA with syndromic surveillance system information	Event based
Notify NYSDOH and USEPA whenever DEP is notified by the New York City Department of Health and Mental Hygiene of any signs of community gastrointestinal illness in which public drinking water supply appears to be the source of the illness.	Event based
Continue to implement the Turbidity Action Plan and annually update the contract information	Event based

Table 2.51 WDRAP Reporting Milestones

Report Description	*Due Date*
Submit Annual Report on program and program findings, implementation and analysis	Annually, 3/31

2.8 Administration

Beginning in the early 1990s, DEP hired hundreds of professionals in a variety of fields to support its comprehensive watershed protection program. The efforts of this dedicated staff allow the City to successfully implement the elements of the overall protection effort.

DEP is committed to maintaining the level of staffing, funding, and expertise necessary to support all elements of the City's Long-Term Watershed Protection Program and to meet all associated milestones. Upon request of NYSDOH, DEP will convene a meeting with CWC, Stream Management Program partners, WAC, and/or other FAD program partners, to discuss program administrative issues such as contracts and funding. Additionally, a new section has been added to the annual report to provide the status of key partnership contracts.

Table 2.52 Administration Program Planned Activities/Milestones

Activity	*Due Date*
DEP, in consultation with the New York City Office of Management and Budget, will make a presentation to the NYSDOH/USEPA/NYSDEC on the amount of money appropriated and spent for watershed protection programs and its adequacy to meet program objectives and FAD requirements.	Within 60 days of annual report

Table 2.53 Administration Program Reporting Milestones

Report Description	*Due Date*
Report annually on: • actual filled staff position levels versus available positions for each division and section involved in supporting the watershed protection program, and confirm that resource levels are adequate to ensure that all program goals/FAD requirements are met. Contractor support staff will be noted; • amount appropriated in the City budget for watershed protection programs for the upcoming fiscal year, specifically the amount (capital and expense) spent during the previous year, the amount appropriated for the current year, and the amount planned for the year thereafter. The amount spent, appropriated, and planned will be broken down by program, to the extent practicable. The report will also include costs for technical consultant contracts identified in the FAD; and • status of key partnership contracts including: contract issues (i.e., change orders, planning for successor contract) and funding projections.	Annually, 9/30

2.9 Education and Outreach

The Watershed Education and Outreach Program is a collaborative and comprehensive undertaking that involves DEP working with numerous partners in both the watershed and New York City to educate, inform, teach, train, promote, publicize, and generally raise awareness about the importance of the water supply system and the critical need to protect the source of this water supply for current and future generations. Certain elements of the Watershed Education and Outreach Program are achieved through individual watershed programs and partnerships that target a specific audience with a specific message on a specific topic, whereas other elements are achieved through direct stakeholder engagement or active participation in local community events where information can be disseminated easily and quickly to a broad public audience. The continued use of websites, press releases, newsletters, publications, and newer technology such as social media and e-news complements all these efforts.

Viewed in its entirety, the Watershed Education and Outreach Program embodies the classic example of "the whole is greater than the sum of its parts," in which a collection of individual efforts contributes their distinct accomplishments towards achieving the unified goal of increased knowledge, awareness and appreciation of the water supply system and the City's Long-Term Watershed Protection Strategy. Virtually every watershed protection program funded or supported by DEP accomplishes some degree of public education or outreach, which DEP attempts to track and quantify with a focus on characterizing the key target audiences reached. The primary watershed programs that focus on education and outreach include the CWC Public Education Grants Program, Watershed Agricultural Program, Watershed Forestry Program, Stream Management Program, and Land Management Program (Watershed Recreation).

The goals of the Public Education and Outreach Program are to:

- Continue to track and document the estimated numbers and types of audiences reached via targeted watershed education and/or training programs; and
- Continue to track and document the diverse range of community public outreach events that are sponsored or attended by DEP and its watershed partners.

Table 2.54 Education and Outreach Program Planned Activities/Milestones

Activity	***Due Date***
Continue to support the CWC Public Education Grants Program	Ongoing
Continue to support targeted education and professional training programs for specific adult audiences through the ongoing efforts of existing watershed protection programs	Ongoing
Continue to support school-based education programs for both	Ongoing

upstate and downstate audiences (teachers and students)	
Continue to support and/or participate in various watershed community outreach events and public meetings	Ongoing
Continue to utilize websites, press releases, newsletters, publications and social media to disseminate information about the water supply and watershed protection programs	Ongoing

Table 2.55 Education and Outreach Program Reporting Milestones

Report Description	***Due Date***
Report on program implementation in the FAD Annual Report, summarizing key activities and accomplishments such as: • CWC Public Education Grants Program; • Watershed Agricultural Program; • Watershed Forestry Program; • Stream Management Program; and • Watershed Recreation.	Annually, 3/31

2.10 Reporting

The proposed reporting milestones from the watershed protection programs are compiled below. Details on each report and program can be found in earlier sections of this Long Term Plan.

Table 2.56 List of Reoccurring Reports

Reporting Milestones	***Due Date***
Filtration Avoidance Criteria Report	Monthly
Trihalomethane Monitoring Report	Quarterly
Waterfowl Management Program	Annually, 10/31
Land Acquisition Program	Semi-annually, 3/31, 7/31
Stream Management Program – Action Plans	Annually, 5/31
Stream Management Program – Water Quality Monitoring Study, status reports	Biennially, commencing 3/31/19
EOH Stormwater Remediation Project status report	Quarterly until completed, 3/31, 6/30, 9/30, 12/31
Watershed Water Quality Annual Report	Annually, 7/31
Watershed Protection Program Summary and Assessment Report	3/31/21
WWTP Monitoring Report	Semi-annually, 3/31, 9/30
WWTP Inspection Report	Semi-annually, 3/31, 9/30
Watershed Regulations Project Review Report	Semi-annually, 4/30, 10/31
Watershed Regulations Enforcement Report	Semi-annually, 4/30, 10/31
Progress Report on Revisions to the Watershed Regulations	Semi-annually, 4/30, 10/31
Waterborne Disease Risk Assessment Program	Annually, 3/31
FAD Budget and Staffing Report	Annually, 9/30

FAD Annual Report, including status of the following programs: • SWTR Compliance; • FAD Expert Panel; • Septic Remediation and Replacement Program; • Small Business Septic Program; • Sewer Extension Program; • Community Wastewater Management Program; • Stormwater Program; • Stormwater Retrofit Program; • Land Acquisition Program; • Land Management Program; • Watershed Agricultural Program; • Watershed Forestry Program; • Stream Management Program; • Riparian Buffer Program; • Ecosystem Protection Program; • East of Hudson Nonpoint Source Program; • Kensico Programs; • Catskill Turbidity Controls; • Watershed Monitoring Program; • Watershed Modeling Program; • GIS Program; • Watershed Rules and Regulations; • WWTP Compliance and Inspection; • WWTP Capital Replacement Program; • Catskill/Delaware Filtration Plant Design status; • Waterborne Disease Surveillance Program; and • Education and Outreach Program.	Annually, 3/31

Table 2.57 List of Significant One-time Reports

Reporting Milestones	***Due Date***
Application for renewal of the Water Supply Permit.	6/30/22
Watershed Agricultural Program – Metrics Assessment and Recommendations Report	6/30/23
Watershed Forestry Program – Report on CAI evaluation results	12/31/21 12/31/26
Stream Management Program – basin specific reports	12 months after 2017 FAD effective date
Stream Management Program – brief report on CREP and CSBI partnership	12/31/17
Stream Management Program – CSBI/CREP progress report	6/30/21
Stream Management Program – Local Flood Hazard Mitigation Program evaluation	6/30/18 6/30/21
Stream Management Program – Water Quality Monitoring Study, initial findings report	11/30/22
Stream Management Program – Water Quality Monitoring Study, final report	11/30/27
Streamside Acquisition Program Evaluation	12/15/18
Updated Watershed Forest Management Plan	12/24/17
Revised Watershed Forest Management Plan	3/31/27
Updated Wetlands Protection Strategy	3/31/18
Summary Report on Wetland LiDAR Mapping	3/31/22
Updated Invasive Species Implementation Strategy	3/31/22
Final revised performance measures/criteria for Catskill Turbidity Controls	6 months after NRC Expert Panel Final

	Report
Catskill Turbidity Control RWBT Shutdown Management Plan	One year prior to the planned RWBT shutdown
Report on whether the City intends to modify its use of turbidity control measures	3 months after NYSDEC issuance of FEIS
Watershed Protection Program Summary and Assessment Report	3/31/21
Catskill/Delaware Filtration Plant – pilot studies report	6/30/24
Catskill/Delaware Filtration Plant – final conceptual design	3/31/26

New York City Department of Environmental Protection
Bureau of Water Supply

Proposed Modifications to the Long-Term Land Acquisition Plan 2012-2022

April 2018

Prepared in accordance with Section 4.2 of the NYSDOH
2017 Filtration Avoidance Determination

Prepared by: DEP, Bureau of Water Supply

2017 FAD Deliverable:
If warranted based on the updated Town Level Assessments and comments received, modify the 2012-2022 Long-Term Land Acquisition Plan and submit to NYSDOH for approval. Such a submission may include recommendations for modifications to the solicitation and funding milestones for the core Land Acquisition Program (LAP).

I. Introduction

The 2007 Filtration Avoidance Determination (FAD) required the New York City Department of Environmental Protection (DEP) to apply for a new Water Supply Permit (WSP) in 2010 as a successor to the City's first WSP issued in 1997. As a prelude to that permit application, and pursuant to a FAD requirement for the Land Acquisition Program (LAP), DEP prepared and submitted in September 2009 a Long-Term Land Acquisition Strategy (Long-Term Plan) covering the period from 2012 to 2022. This Long-Term Plan describes the City's proposed approach to land acquisition under the successor WSP, including a refocused solicitation strategy and several new program components. Concurrently, and in support of the new WSP, DEP issued a Final Environmental Impact Statement (FEIS) on the "Extended New York City Watershed Land Acquisition Program" in December 2010.

Pursuant to the FEIS, the WSP authorized DEP and its partners to acquire no more than 105,043 acres in the West of Hudson (WOH) watershed through 2025. The FEIS concluded that the acquisitions authorized by the WSP were not expected to result in potential significant adverse socioeconomic conditions in the WOH watershed. This conclusion was supported by, among other things, projections of acreage to be acquired through LAP in 20 towns that were chosen for in-depth evaluation, along with assessments of the impacts of such projected acquisitions on the supply of developable land in watershed towns. However, the FEIS did not assume limitations on the number of acres to be acquired in any given town, nor did the WSP impose such limitations.

During stakeholder negotiations leading up to the 2017 FAD, watershed communities identified one town (Delhi) where acquisitions by DEP and the Watershed Agricultural Council (WAC) together had exceeded the FEIS assumptions about the projected acres to be acquired through 2025, and were approaching the projected figures in several other towns. As a result of subsequent discussions on this topic, DEP agreed to temporary limits on LAP outgoing solicitation in eight towns, as detailed in the "Third Supplement to the December 2010 Agreements Among West of Hudson Watershed Stakeholders: Commitments Relating to the 2017 FAD" (2017 Side Agreement). Pursuant to those same discussions and the 2017 Side Agreement, DEP issued updated Town Level Assessments in April 2017 for 21 WOH towns. The purposes of those Assessments were to (a) update the methodology employed in the FEIS, and (b) evaluate the projected effect of continued land acquisition on the supply of developable land in those towns between 2017 and 2025. Table 1 (attached to the end of this deliverable) summarizes the results of the 2017 Town Level Assessments.

In response to the 2017 Town Level Assessments, DEP received comments and data analyses from numerous watershed stakeholders including Delaware County, the Catskill Watershed Corporation (based on analyses conducted by Chazen Company), Greene County Soil and Water District, and several individual watershed towns.

As a whole, these comments and reports supported DEP's methodology concerning the definition of developable land, but differed in their assessment of DEP's findings and conclusions regarding the effect of future LAP acquisitions on the supply of developable land available to sustain future community growth, and in their recommendations for modifications to LAP. While some stakeholders have urged only small, targeted adjustments to DEP's acquisition criteria and methods, others have proposed more fundamental changes to LAP, including replacement of core LAP acquisitions with a rental program aimed at riparian property.

DEP recognizes that the National Academies of Science, Engineering, and Medicine will be convening an Expert Panel to conduct a comprehensive review of the City's overall Watershed Protection Strategy to be issued in 2021; that process may result in further adjustments to LAP solicitation goals, acreage, and methods. Consistent with the recommendations of several stakeholders, DEP will look to the results of this review before making major or long-term changes to the Long Term Plan and will incorporate any such proposed changes into its 2023-2033 Long-Term Land Acquisition Plan to be issued in 2022.

Pending the Expert Panel's work, DEP has sought to address two important community concerns:

- LAP should reduce acquisition of developable land near population centers and centralized service areas to avoid constraining potential future development; and

- In towns that have approached FEIS acquisition projections, LAP should shift focus toward properties that contain greater surface water criteria.

In response to these concerns, DEP proposes modifications to the core LAP solicitations as detailed in the 2012 to 2022 Long-Term Plan. These proposed modifications will enable DEP to maintain a robust solicitation strategy in keeping with the 2017 FAD and do not include any revisions to the solicitation acreage requirements in the 2017 FAD.

The specific proposed modifications to core LAP solicitation are presented in Section II, a discussion of how these modifications will be implemented is in Section III, and the implications for the Long-Term Plan are provided in Section IV. Potential next steps are outlined in Section V.

II. Modifications to Core LAP Solicitation

DEP proposes to implement the following stepped limitations on LAP acquisitions and solicitations:

1. **Revise Natural Features Criteria (NFC) limits in Priority Areas 2, 3 and 4:**

   a. Raise the minimum Surface Water Criteria (SWC) needed for acquisition (not solicitation) from 7% to 15% for properties that do not adjoin City land.

Note: The provisions of Special Condition (SC) 9(a)(3) of the WSP regarding the presence of steep slopes on at least 50% of a property would continue to qualify a property for acquisition, regardless of the percent SWC.

b. Within a half-mile zone around the 1997 hamlet designated areas, raise the minimum SWC needed for acquisition to 30%.

Note: The 30% SWC minimum would apply to the entirety of any LAP fee or conservation easement acquisition which contains land within the half-mile buffer zone. The provisions of SC 9(a)(3) of the WSP regarding the presence of steep slopes on at least 50% of a property would continue to qualify a property for acquisition, regardless of the percent SWC.

c. If LAP has acquired either 60% of the FEIS projection since 2010, or more than 2,000 acres since 2010, the minimum SWC would be raised to 50% within the half-mile zones around the 1997 hamlet designated areas. This proposal would currently include the towns of Andes, Walton, Delhi, Middletown, Roxbury, Kortright, Bovina and Windham.

Note: In affected towns, the 50% SWC minimum would apply to the entirety of any LAP fee or conservation easement acquisition which contains land within the half-mile buffer zone. As detailed in SC 9(a)(3), the presence of 50% steep slopes on a property would continue to qualify a property for acquisition, regardless of the percent SWC. DEP will update the cumulative acres acquired in each municipality annually through December, and will provide written notice of the updated figures to the FAD regulators, the signatories to the 2017 Side Agreement, and the affected towns by January 31. For purposes of compliance with Proposal 1(c), DEP will use the appraisal date to determine whether acquisitions within the half-mile buffer zone will adhere to the 30% (proposal 1(b)) or 50 % threshold.

During discussions with watershed stakeholders on the above Proposals 1(b) and 1(c), it was suggested that a fixed-radius buffer might be too rigid for certain communities, in which case buffers designed by a town could be considered as an alternative. DEP is amenable to this approach, and therefore proposes to use the fixed half-mile buffers until such time that a zone that is more reflective of community planning and infrastructure concerns can be negotiated with interested communities through a process that would involve stakeholder discussions and concurrence of the FAD regulators.

2. **Designated Areas:** Offer each WOH town the ability to designate up to 100 acres of new land that would be off limits to LAP acquisition. Within a given county, interested towns could reallocate these 100 acres. For example, Town A might use 50 acres while Town B might use 150 acres.

Note: Towns would be able to designate whole tax parcels, or partial parcels provided the configuration of the un-designated portion remaining would meet town subdivision requirements. Designated parcels would not need to be contiguous. The towns would be

able to designate parcels on a rolling basis (no deadline for passing a resolution). Upon receipt of a municipal resolution pursuant to this proposal, DEP will refrain from soliciting or ordering any appraisal of the designated lands from that point forward. In the event that a property has had an appraisal ordered prior to receipt of the resolution by a municipality, DEP may complete the appraisal, make the offer, and acquire the affected property if that offer is accepted.

3. **Solicitation Method:** Limit DEP to incoming solicitations in a town once 100% of the FEIS projection is reached, or in which more than 4,000 acres have been acquired since 2010. This proposal would currently include Andes, Delhi and Walton.

   Note: DEP will update the cumulative acres acquired towards these goals annually through December, and will provide written notice of the updated figures to the FAD regulators, the signatories to the 2017 Side Agreement, and the affected towns by January 31. Limitations on outgoing solicitation would take effect upon such notice for that and ensuing program years.

   In the context of ongoing discussions with stakeholders about a variety of matters pertaining to LAP, as discussed in Section V below, DEP is open to considering adjustments to Proposal 3 which would consider the proportion of all protected lands (including those owned by the State and certain other third parties) in certain communities, while also factoring in the need to identify zones such as Priority Area 1 and Areas of High Focus that might be exempted from such limitations.

4. **WAC Farm and Forest Easement Programs / Streamside Acquisition Program (SAP) / New York City-Funded Flood Buyout Program (NYCFFBO):** Acres acquired under these satellite programs would count toward the FEIS projection and acreage threshold limits listed in Proposals 1(c) and 3, but the revised SWC minimums and revised solicitation constraints would only apply to core LAP acquisitions (fee and conservation easements). In other words, acreage acquired by WAC / SAP / NYCFFBO would continue to follow current SWC, not the revised criteria listed above, even once core LAP is limited by the revised limitations.

III. Implementation of Modified LAP Core Solicitation Procedures

DEP's proposed modifications to core LAP solicitation can be implemented using existing program and database tools. Annual solicitation is managed by DEP through its internal Watershed Lands Information System (WaLIS) database, which incorporates state-of-the-art GIS technology to guide and track solicitation efforts. Specific capabilities that will facilitate implementation of new solicitation procedures include:

1. **GIS-overlays for SWC are updated in real-time**. Properties that have been solicited are represented spatially in the GIS, enabling staff to view real-time information regarding the percent coverage of SWC on each property. Using this capability, solicitation reports will be revised to incorporate the revised thresholds, also taking into account adjacency to City land, proximity to 1997 designated area buffers, and limitations by towns based on acquisitions since 2010.

2. **Parcel-specific design support**. Using WaLIS, DEP is able to configure proposed subdivisions so that revised thresholds for SWC would be met upon acquisition of a given property. The GIS allows DEP to determine the percent SWC accurately and quickly, providing critical support to this complex task.

IV. Modifications to the Long-Term Plan

DEP's proposed modifications to core LAP solicitation are generally consistent with the Long-Term Plan, though in some cases these modifications will shift DEP's emphasis on how and where the Long-Term Plan strategies are implemented. For example, DEP's proposed modifications will somewhat change the characteristics of properties to be acquired (by raising the minimum thresholds for SWC) and location of those properties within many towns (by increasing SWC thresholds for properties in close proximity to 1997 hamlet designated areas). In addition, solicitation in a few towns where significant acquisitions have occurred since 2010 (currently Delhi, Andes, and Walton) will be reduced. The specific strategies detailed in the Long-Term Plan, and how they are consistent with or might be impacted by these modifications, are discussed below:

1. **Areas of Focus:** Since 2010, DEP has placed extra emphasis in its core LAP solicitation on certain sub-basins based on their proximity to reservoir intakes and/or lower levels of protected land (Areas of High Focus) and on certain reservoir basins based on the overall level of protection and contribution to future supply. The Areas of High Focus are shown in Figure 1. DEP has largely been successful in increasing the proportion of core LAP acquisitions occurring in these areas since 2010.

   As shown in Figure 1, the Areas of High Focus are located in the Towns of Tompkins, Masonville, Walton, Colchester, Andes, Bovina, Roxbury, Prattsville, and Lexington. Based on current levels of acquisition, Proposal 3 will limit LAP's ability to send out-going solicitation letters to properties in the portion of the Loomis Brook sub-basin located in Walton, as well the Fall Clove and Tremper Kill sub-basins located in Andes. The two latter sub-basins in particular have already seen a significant increase in the percentage of protected land since 2010 as a result of these designations. LAP will continue acquisitions in these areas through owner-initiated solicitation.

   Beyond the limitations on outgoing solicitation in Proposal 3, the changes in SWC thresholds contained in Proposals 1(a), 1(b) and 1(c) will not alter DEP's ability to continue acquisitions in these Areas of Focus; rather they will ensure that continued acquisitions in these areas will focus on properties with higher proportions of water-rich features.

2. **Property-Type Strategies:** The proposed modifications to core LAP solicitation are consistent with three strategies from the Long-Term Plan regarding specific types of properties for which DEP would seek to increase acquisition during the 2012 to 2022 timeframe:

   a. **Parcels Adjoining previously-acquired City Land** – Proposal 1(a) directly reinforces the existing strategy to increase and encourage the acquisition of land

adjoining other City-owned properties. This strategy seeks to build on existing City-owned natural areas that promote water quality protection, with a focus on increased ecosystem protection through acquisitions which include wetlands, stream buffers and/or forests. In addition, this strategy can reduce fragmentation and parcelization of the landscape and enhance existing recreation areas.

b. Smaller Vacant Parcels in proximity to SWC – Proposals 1(a) and 1(b) reinforce DEP's strategy of acquiring properties with a high proportion of SWC, especially the increased thresholds for properties in and around hamlet designated areas. This strategy is also supported by continued implementation of the pilot SAP in the Schoharie basin. Additionally, DEP has received positive comments regarding its proposal to increase SWC thresholds to 30% or 50% in proximity to 1997 hamlet designated areas.

c. Conservation Easements – Since 2010, DEP has revised its conservation easement selection policy to focus on larger properties with significant water quality protection features. This policy is fully consistent with the increased SWC thresholds proposed in Proposals 1(a) and 1(b).

3. Solicitation Procedures: The solicitation strategies contained in the Long-Term Plan are also compatible with the proposed modifications to core LAP solicitation:

a. Continue to Solicit Significant Properties throughout the Catskill/Delaware System – The City's commitment to a robust solicitation effort throughout the Catskill/Delaware System remains in effect. Solicitation of significant properties East of Hudson and in the highly-protected WOH basins will continue and DEP will continue to meet the solicitation requirements set forth in the 2017 FAD.

b. Variable Solicitation Schedules – Changes to DEP solicitation intervals by location (more frequent for High Focus Areas) and response type (i.e. non-responders vs. not interested owners) have proven instrumental in focusing core LAP solicitation on areas and property types most worthy of acquisition. In 2018, DEP will refine its solicitation strategy to accommodate modifications contained in Proposals 1(a), 1(b), and 1(c). For example, while acquisition of properties with less than 30% SWC near 1997 hamlet designated areas will be precluded, DEP may decide to increase the frequency of solicitation for the remaining eligible properties with more than 30% SWC.

c. Owner-Initiated Contacts – The Long-Term Plan recognized that owner-initiated solicitations have a historically high success (eventual acquisition) rate, which is due to the owner's demonstrated motivation to sell. Proposal 3 retains this important tool, thereby allowing such motivated landowners to engage with DEP through the core LAP.

V. Conclusion and Next Steps

Pursuant to the 2017 FAD, DEP's specific proposals to modify core LAP solicitation are being submitted via this deliverable for approval by the NYS Department of Health. Upon such approval, and consistent with the 2017 Side Agreement, DEP will modify core LAP solicitation and acquisition in accordance with these new procedures, which will replace and supersede the current limitations on outgoing solicitations outlined in the 2017 Side Agreement.

Consistent with recent stakeholder discussions, DEP is committed to continuing a conversation with watershed stakeholders about the scope of future LAP activities. As noted above, Proposals 1(b), 1(c), and 3 incorporate the potential for refinements based on further discussions and town-specific information. Moreover, while the 2017 FAD identifies the Expert Panel as the primary vehicle to evaluate LAP progress and future strategies leading up to DEP's submission of new ten-year Long-Term Plan in 2022, a number of additional FAD deliverables which will be submitted prior to issuance of findings by the Expert Panel will involve further discussion among the stakeholders. In particular, the following FAD deliverables will involve ongoing discussion over the next two years, potentially resulting in other modifications to core LAP solicitations:

June 2018	Report on exploring a program to protect Farms in Transition.
June 2018	Submit an evaluation of the New York City-Funded Flood Buyout Program.
June 2018	Submit a progress report on a workgroup to assess opportunities to use potentially-developable LAP-acquired fee lands to facilitate relocation of development out of floodplains.
March 2019	Submit a proposed approach to provide payments or incentives to increase participation by landowners in SAP.

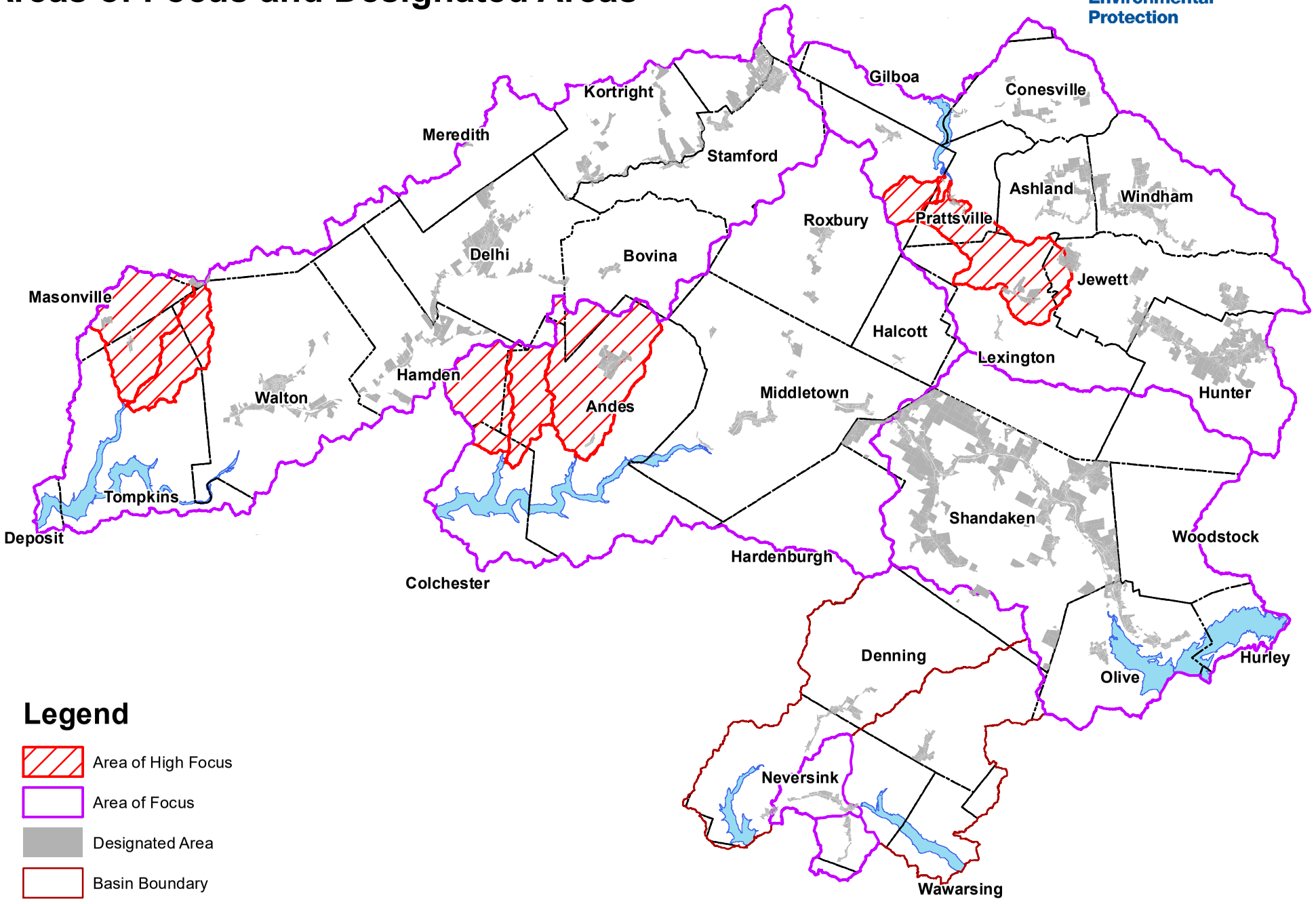
In sum, DEP believes that the proposed modifications, based on the results of the 2017 Town Level Assessments and stakeholder discussions, represent a thoughtful and incremental approach to refining the LAP program to focus on the most important properties for watershed protection.

Table 1: 2017 Town Level Assessments, Remaining Developable Land by Town

		A	B	C	D	E	F	G
				B/A		D/A	A-(B+D)	F/A
Town	**County**	**Available Developable Acres, as of 1/1/2017**	**Projected Acres of City & WAC FE Developable Land Acquired 2017-25**	**% of 2017 Developable Land Acquired through 2025**	**Projected Acres of Residential Demand for Developable Land, 2017-25**	**% of 2017 Developable Land Needed for Residential Demand through 2025**	**Developable Land Acres Remaining after LAP & Residential Demand in 2025**	**% of 2017 Developable Land Remaining in 2025**
Andes	Delaware	3,445	697	20.2%	163	4.7%	2,585	75.0%
Bovina	Delaware	2,313	686	29.7%	39	1.7%	1,588	68.7%
Delhi	Delaware	3,061	487	15.9%	141	4.6%	2,433	79.5%
Hamden	Delaware	3,226	364	11.3%	309	9.6%	2,553	79.1%
Kortright	Delaware	2,090	268	12.8%	115	5.5%	1,707	81.7%
Meredith	Delaware	3,199	587	18.3%	67	2.1%	2,545	79.6%
Middletown	Delaware	4,639	799	17.2%	285	6.1%	3,555	76.6%
Roxbury	Delaware	3,670	599	16.3%	108	2.9%	2,963	80.7%
Stamford	Delaware	931	248	26.6%	140	15.1%	543	58.3%
Walton	Delaware	4,449	861	19.4%	217	4.9%	3,371	75.8%
Ashland	Greene	1,652	173	10.5%	207	12.5%	1,272	77.0%
Halcott	Greene	622	113	18.2%	14	2.3%	495	79.6%
Hunter	Greene	2,459	339	13.8%	229	9.3%	1,891	76.9%
Jewett	Greene	2,490	284	11.4%	227	9.1%	1,979	79.5%
Lexington	Greene	1,455	343	23.6%	173	11.9%	939	64.5%
Prattsville	Greene	1,318	189	14.3%	98	7.4%	1,031	78.2%
Windham	Greene	1,816	139	7.7%	300	16.5%	1,377	75.8%
Conesville	Schoharie	584	108	18.5%	139	23.8%	337	57.7%
Neversink	Sullivan	3,243	556	17.1%	173	5.3%	2,514	77.5%
Denning	Ulster	953	403	42.3%	43	4.5%	507	53.2%
Olive	Ulster	631	169	26.8%	116	18.4%	346	54.8%
21 Town Totals:		**48,246**	**8,412**	**17.4%**	**3,303**	**6.8%**	**36,531**	**75.7%**

Figure 1

West-of-Hudson Watershed
Areas of Focus and Designated Areas



Source: NYCDEP GIS, 2018
Produced: 4/13/2018, TMS

NYSBA EELS Fall 2018 Meeting

NYC's Watershed Protection Land Acquisition Program

Hilary Meltzer, Deputy Chief
Environmental Law Division
New York City Law Department

1) Background: Why NYC Has a Watershed Land Acquisition Program

a) Surface Water Treatment Rule. Among other things, in order to qualify for filtration avoidance, a public water system must have a "watershed control program which minimizes the potential for contamination by Giardia lamblia cysts and viruses in the source water"

> *The public water system must demonstrate through ownership and/or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the microbiological quality of the source water.*
>
> 40 CFR § 141.71(b)(2) (emphasis added)

b) In the early 1990s, when NYC first sought filtration avoidance, the percentage of the NYC watershed in public ownership was significant lower than the percentage of public ownership of other large water supplies seeking filtration avoidance

i) In early 1990s, of the roughly 1 million acres in the West of Hudson watershed, the City owned approximately 35,500 (excluding the reservoirs), and the State owned another 202,000) – a total of ~24% of the land was publicly owned

ii) San Francisco: 100% of the Hetch Hetchy watershed is publicly owned; water from the Hetch Hetchy system remains unfiltered

iii) Seattle: 100% of the watershed is publicly owned; Seattle's water supply has a "Limited Alternative to Filtration" which was authorized by an amendment to SDWA in 1996, 42 U.S.C. § 300g-1(b)(7)(C)(v)

iv) Portland, OR: 100% of the watershed is publicly owned; in 2017, the City of Portland and the Oregon Health Authority entered into an administrative consent order requiring Portland to filter, https://www.portlandoregon.gov/water/article/666677

v) Boston: approximately 70% of the watershed is currently publicly owned. EPA sued in 1998 seeking an injunction to filter; the Massachusetts Water Resources Authority ultimately prevailed in litigation challenging the filtration order, *United States v. Mass. Water Res. Auth.*, 256 F.3d 36 (1st Cir. 2001), and has continued to operate the system without filtration since then

c) NYC Department of Environmental Protection Long-Term Watershed Protection Program Plan (Appendix F; the 2016 Plan builds on a series of watershed protection plans since the early 1990s)

i) The population of the West of Hudson watershed was approximately 76,000 in the early 1990s.[1] Written agreements with all landowners not practical, so NYC instead proposed a combination of land acquisition and:

(a) Updated Watershed Regulations (10 NYCRR Part 128; Rules of the City of New York, Title 15, Chapter 18)

(b) Agreements with (and funding for) owners of all WWTPs in the watershed (MOA Paragraph 141, available at https://www.dos.ny.gov/watershed/pdf/agreement/NYCMOA-V.pdf)

(c) Agreements with (and funding) for owners of many farms and tracts of forested land through the Watershed Agricultural Council; information available at https://www.nycwatershed.org/

2) Land Acquisition Statistics:

i) NYC funding for watershed land acquisition since 1997:

MOA/1997 FAD:	$300,000,000
2007 FAD:	$241,000,000
Revised 2007 FAD (2014):	$50,000,000
2017 FAD:	$69,000,000
	$670,000,000

ii) NYC acquisitions since 1997:

(1) Fee acquisitions: 1,145 properties, 95,716 acres[2]

(2) NYC conservation easement acquisitions: 170 properties, 25,984 acres

(3) WAC conservation easement acquisitions: 156 properties, 28,643 acres

3) Legal Framework for NYC Land Acquisition Program

a) The requirement that NYC fund and implement the Land Acquisition Program comes from its Filtration Avoidance Determinations, issued by NYSDOH in consultation with USEPA (Appendix E)

[1] The watershed population has increased by approximately 5% since 1990. Final Environmental Impact Statement for the Extended New York City Watershed Land Acquisition Program, December 2010, p. 3-11, available at http://www.nyc.gov/html/dep/html/environmental_reviews/lap.shtml

[2] The fee acquisitions include 56 FEMA flood buyouts (60 acres), 10 NYC-funded flood buyouts (40 acres), and 12 properties in the Streamside Acquisition Program (92 acres)

i) Every NYC FAD (since 1993) has included requirements to acquire land for watershed protection

ii) Current requirements are set forth in Section 4.2 of the 2017, Appendix E, pp. 35-42

b) Authorization for NYC to acquire land for watershed protection comes from its Water Supply Permits (issued by NYSDEC)

i) The 1997 MOA settled the administrative adjudicatory proceeding concerning NYSDEC authorization for NYC's land acquisition program; the 1997 Water Supply Permit reflects the terms memorialized in MOA Article II (Appendix D)

ii) In 2010, the West of Hudson stakeholders agreed to a new Water Supply Permit (Appendix B) and entered into the 2010 "Side Agreement" modifying the 1997 MOA, including acquiescing in the 2010 Permit (Appendix H is the Agreement among West of Hudson Watershed Stakeholders concerning NYCDEP's Continuation of its Land Acquisition Program, December 2010, "2010 Land Acquisition Agreement")

iii) The stakeholders have agreed to two further modifications to the 2010 Water Supply Permit:

(1) Modifications relating to the FEMA flood buyout program following Hurricane Irene and Tropical Storm Lee in 2011 (Appendix I is the Supplemental Agreement among West of Hudson Watershed Stakeholders concerning DEP's Participation in Federal or State Flood Buy-Out Programs, August 2013, "2013 Land Acquisition Agreement")

(2) Modifications relating to the NYC-funded flood buyout program established under the 2014 revision to the 2007 FAD (Appendix J is the Second Supplemental Agreement among West of Hudson Watershed Stakeholders concerning New York City-Funded Flood Buyout Program, July 2016, "2016 Land Acquisition Agreement")

4) Program Principles and Enhancements Designed to Address Community Concerns

a) Principles established in MOA Article II and 1997 Water Supply Permit

i) Willing buyer/willing seller; solicitation targets rather than acquisition targets (Appendix D, ¶¶ 59, 60 and 65)

ii) Confirmation that NYC will pay property taxes (Appendix D, ¶¶ 79 and 80)

iii) No acquisition of property with habitable dwellings (Appendix D, ¶ 67)

iv) Size and natural features criteria (Appendix D, ¶ 63)

v) Recreational use of water supply lands (Appendix D, ¶ 72)

vi) Designation of non-acquirable land – allowing communities to make certain hamlets and other areas off limits for fee acquisition (Appendix D, ¶ 68)

(1) Good for water quality – encourages growth in areas with infrastructure to support development

(2) Supports community economic vitality

(3) Note potential tension between the interests of local governments and the interests of individual property owners

vii) NYC Watershed Protection and Partnership Programs providing direct support for economic vitality including, among many other things, septic system repairs and replacements (Appendix D, ¶ 85)

b) New commitments memorialized in the 2010 Water Supply Permit and 2010 Land Acquisition Agreement:

i) Expanded hamlets as potentially non-acquirable land (Appendix B, Special Condition 10; Appendix H, Whereas Clause H)

ii) Extension of designation of non-acquirable land to include DEP and WAC conservation easements as well as fee acquisition (Appendix B, Special Condition 10; Appendix H, Whereas Clause H)

iii) More rigorous natural features criteria (Appendix B, Special Condition 9)

iv) Riparian Buffer/Streamside Acquisition Program, focused on acquisition of less developable properties or portions of properties (Appendix B, Special Condition 29)

v) Significant commitments concerning:

(1) Continuation/extension of numerous Partnership Programs (Appendix B, Special Conditions 25 and 26)

(2) Stewardship of City-owned land (Appendix H, ¶¶ 15-19)

(3) Stewardship of WAC Conservation Easements (Appendix H, ¶¶ 7-11 and Exhibits 3 and 4)

(4) The City's payment of property taxes for watershed lands, including dams and reservoirs (Appendix H, ¶¶ 12-14 and Exhibits 6 and 7)

c) Further commitments following the severe flooding caused by Hurricane Irene and Tropical Storm Lee in 2010:

i) Local Flood Hazard Mitigation

(1) City funding, primarily through county soil and water conservation districts, for local flood analyses (Appendix E, pp. 55-56; see also Appendix E, p. 6, which notes that this program was first memorialized in the Revised 2007 FAD in 2014)

(2) City funding through the Catskill Watershed Corporation for implementation of certain projects identified in local flood analyses (*Id.*)

ii) FEMA Flood Buyout Program (Appendix B, Special Condition 7(b), Appendix I)

(1) NYC pays the local match for FEMA buyouts; properties generally don't meet other conditions for eligibility (such as size and natural features criteria)

(2) In connection with the FEMA buyouts, the 2014 modification to the 2010 Water Supply Permit allowed, for the first time, watershed land paid for by the City to be owned by watershed municipalities

iii) City-Funded Flood Buyout Program, established under the Revised 2007 FAD in 2014 (Appendix B, Special Condition 7(b), Appendix E, p. 42 and reference on p. 6 to inclusion in Revised 2007 FAD, Appendix J)

(1) Available for properties not eligible for FEMA buyouts but which are either subject to flood or erosion hazard or necessary for local flood hazard mitigation, relocation, or other stream projects

(2) As with FEMA buyouts, the 2016 modification to the 2010 Water Supply Permit allowed watershed municipalities to own NYC-funded buyout properties

iv) Under both flood buyout programs, local governments that hold title to properties paid for by NYC have opportunities to use those properties for open space, recreation, or flood hazard mitigation purposes

d) In connection with 2017 FAD:

i) DEP prepared updated assessments of the potential impacts of the Watershed Land Acquisition Program on 21 West of Hudson watershed towns (Appendix E, p. 37; Appendix K,[3] ¶ 2(k))

ii) Based on those Updated Town Level Assessments and stakeholder responses, DEP proposed to modify its solicitation plan (Appendix G)

iii) DEP has convened a workgroup to explore payment approaches or incentives that might increase participation in the Streamside Acquisition Program (Appendix E, p. 41). These potential incentives include the possibility of local government ownership of SAP properties (similar to flood buy-out programs)

iv) DEP will participate in a workgroup to explore using LAP properties for relocation of development out of floodplains (Appendix E, p. 41; Appendix K, ¶ 2(l))

v) DEP has contracted with the National Academies of Sciences, Engineering, and Medicine for an expert panel review of the New York City Watershed Protection

[3] Appendix K is the Third Supplemental Agreement among West of Hudson Watershed Stakeholders: Commitments Relating to the 2017 Filtration Avoidance Determination, April 2018

Program (Appendix E, pp. 17 and 20; information about the Expert Panel is available at http://nas-sites.org/dels/studies/nyc-watershed/)

References to accompanying materials:

Appendix B	June 15, 2016 Modified Water Supply Permit authorizing the NYC Watershed Land Acquisition Program
Appendix D	1997 NYC Watershed Memorandum of Agreement, Article II (Land Acquisition Program)
Appendix E	2017 NYC Filtration Avoidance Determination
Appendix F	NYC Department of Environmental Protection 2016 Long-Term Watershed Protection Program Plan
Appendix G	2018 DEP Proposed Modifications to Solicitation Strategy
Appendix H	2010 West of Hudson Side Agreement (2010 Water Supply Permit)
Appendix I	2013 West of Hudson Supplemental Side Agreement (FEMA Flood Buyout Program)
Appendix J	2016 West of Hudson Second Supplemental Side Agreement (NYC-Funded Flood Buyout Program)
Appendix K	2018 West of Hudson Third Supplemental Side Agreement (2017 FAD)

AGREEMENT AMONG WEST OF HUDSON WATERSHED STAKEHOLDERS

CONCERNING

NYCDEP'S CONTINUATION OF ITS LAND ACQUISITION PROGRAM

AGREEMENT, dated as of the 27th day of December two thousand and ten, agreed to and executed by and among the following parties (collectively, the "Parties" and individually a "Party"):

The City of New York ("City"), including the Department of Environmental Protection ("DEP"), a municipal corporation with its principal office at City Hall, New York, New York 10007;

The Coalition of Watershed Towns ("CWT"), an inter-municipal body composed of municipalities located wholly or partially within the portion of the New York City Watershed that lies west of the Hudson River, which have duly entered into a cooperative agreement pursuant to Section 119-o of the New York General Municipal Law, having its principal office at Tannersville, New York;

The County of Delaware, a county corporation with its principal office at 111 Main Street, Delhi, New York 13753;

The Town of Hamden, a municipal corporation with its principal office at Town Hall, Route 10, DeLancey, NY 13782;

The Town of Roxbury, a municipal corporation with its principal office at 53690 State Highway 30, Roxbury, NY 12474;

The Catskill Watershed Corporation ("CWC"), an independent locally-based and locally administered not-for-profit corporation, organized and existing under section 1411 of the New York State Not-for-Profit Corporation Law and having its principal office at PO Box 569, Main Street, Margaretville, New York 12455;

The Catskill Center for Conservation and Development ("Catskill Center"), a not-for-profit corporation having its principal offices at PO Box 504, Route 28 Arkville, New York 12406;

New York Public Interest Research Group, Inc. ("NYPIRG"), a not-for-profit corporation having its principal offices at 9 Murray Street, New York, New York 10007;

Open Space Institute, Inc. ("OSI"), a not-for-profit corporation having its principal offices at 1350 Broadway, New York, New York 10018;

The Trust for Public Land ("TPL), a not-for-profit corporation having its principal offices at 116 New Montgomery Street, San Francisco, California 94150; and

Riverkeeper, Inc. ("Riverkeeper"), a not-for-profit corporation having its principal offices at 828 South Broadway, Tarrytown, New York.

WITNESSETH:

A. WHEREAS, on January 21, 1997, the Parties, among other entities, entered into the Watershed Memorandum of Agreement ("Watershed MOA" or "MOA"), which established a partnership in which the parties agreed "to cooperate in the development and implementation of a Watershed Protection Program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities."

B. WHEREAS, among the programs the Parties agreed to in the Watershed MOA is a program for DEP to acquire land in the Watershed for watershed protection, subject to the terms of the Watershed MOA and of the water supply permit issued by NYSDEC on January 21, 1997 ("1997 Water Supply Permit"). Pursuant to the Watershed MOA, the City allocated Two Hundred Fifty Million Dollars ($250,000,000) to the Land Acquisition Program ("LAP") in 1997, and an additional Fifty Million Dollars ($50,000,000) to the LAP between 2002 and 2008. DEP has complied with the obligation to allocate $300,000,000 to the LAP in accordance with the MOA and exhausted those funds in the implementation of the LAP in accordance with the MOA.

C. WHEREAS, the Watershed MOA and the 1997 Water Supply Permit included a number of provisions intended to strike a balance between watershed protection and the economic concerns of the Watershed communities, including any watershed municipality that was a signatory to the MOA ("Watershed Municipal Parties"). Among other things, under MOA paragraph 68(a), and Special Condition 10(a) of the 1997 Water Supply Permit, West of Hudson towns and villages were entitled to designate properties to be excluded from acquisition in fee by DEP. The properties that West of Hudson towns and villages were allowed to so designate for exclusion included villages, commercial or industrial areas, village extensions, and hamlets as defined and described in the Watershed MOA (collectively, "1997 Designated Areas").

D. WHEREAS, similarly, MOA paragraph 63 and Special Condition 9 to the 1997 Water Supply Permit delineated priority areas for acquisition and established natural features criteria that properties in priority areas 2, 3 and 4 must exhibit in order to be eligible for City acquisition.

E. WHEREAS, as required by the July 2007 Filtration Avoidance Determination ("2007 FAD"), the City is committed to allocating an additional Two Hundred Forty-One Million Dollars ($241,000,000) to the LAP (the "2007 FAD LAP Allocation"). The 2007 FAD required the City to submit a long-term land acquisition strategy and plan, covering the period 2012-2022, to EPA, NYSDOH and NYSDEC. The 2007 FAD required the City, in developing this plan, to seek input from interested parties and consider a wide range of information including development trends, agricultural trends, revitalization, local land use policies, parcelization, and forest cover. The City has allocated funds as required by the 2007 FAD and is now implementing the LAP in accordance with the 2007 FAD.

F. WHEREAS, in December 2007, the CWT and the Towns of Roxbury and Hamden filed a Combined CPLR Article 78 Proceeding and Declaratory Judgment Action against the City, DEP, DOH, and the DOH Commissioner, challenging, among other things, the adequacy of the environmental review of the additional allocation of funds to the LAP under the 2007 FAD.

G. WHEREAS, since soon after that litigation was commenced, the Parties and/or their representatives have been negotiating in good faith to address a number of concerns raised by the petitioners in that litigation as well as to eliminate, or narrow, concerns regarding terms of the successor to the 1997 Water Supply Permit (the "2010 Water Supply Permit"). Among the key issues which the Parties have discussed is the desire of some watershed communities to expand the 1997 Designated Areas.

H. WHEREAS, the Parties have reached agreement on the terms set forth in the 2010 Water Supply Permit attached as Exhibit 1, which was issued by NYSDEC on December 24, 2010. Among other things, the 2010 Water Supply Permit incorporates agreements reached among the Parties concerning expansions to hamlet areas in certain West of Hudson towns and numeric thresholds ("Special Criteria") for natural features criteria applicable in Priority Areas 2, 3, and 4. Moreover, the 2010 Water Supply Permit incorporates commitments by the City to continue funding key Watershed Protection and Partnership Programs at historic levels, which the Parties agree represents an appropriate level of funding for the duration of the permit, absent material changed circumstances such as new regulatory requirements.

I. WHEREAS, by its terms, the 1997 Water Supply Permit was a ten-year permit with an optional five-year renewal. The City exercised this renewal option in 2007. The 1997 Water Supply Permit has been superseded by the 2010 Water Supply Permit.

J. WHEREAS, the parties are in agreement that the 2010 Water Supply Permit shall be implemented as a continuation of the Land Acquisition Program established by the Watershed MOA and the 1997 Water Supply Permit.

K. WHEREAS, the City's LAP, the City's Watershed Regulations, and the other programs and conditions contained in the Watershed MOA, when implemented in conjunction with one another, are intended to protect water quality while allowing existing development to continue and future growth to occur in a manner that is consistent with the existing community character and planning goals of each of the Watershed communities. The City's land acquisition goals recognize the importance of ensuring that the availability of developable land in the Watershed will remain sufficient to accommodate projected growth without adverse effects on water quality and without substantially changing future population patterns in the Watershed communities.

L. WHEREAS, consistent with the 2007 FAD, the City submitted an application for a new water supply permit to NYSDEC on January 21, 2010, seeking a successor Water Supply Permit to authorize DEP acquisition of land and conservation easements in the watershed through the LAP (including WAC acquisition of agricultural easements), subject to the specified terms and conditions. Paragraph 62 to the Watershed MOA provides that "the

parties retain their full legal right with respect to … requests by the City" to extend the City's water supply permit beyond January 2012.

M. WHEREAS, on May 28, 2010, DEP, as SEQRA Lead Agency, submitted a draft Environmental Impact Statement (DEIS) in support of the 2010 Water Supply Permit Application and evaluating the environmental impacts from the continuation of the LAP. Specifically, the DEIS examines the potential environmental impacts of continuation of the LAP in several specific impact categories, including: land use and community character, socioeconomic conditions (including possible impacts on the supply of developable land, housing prices, industries and business, and local government and school district financing), water quality and natural resources, open space and recreation, and cultural resources. On June 17, 2010, NYSDEC determined that application to be complete, and NYSDEC and DEP scheduled joint public hearings on the permit and the DEIS, respectively. On December 10, 2010, DEP submitted the final Environmental Impact Statement.

NOW, THEREFORE, in consideration of the promises and of the mutual covenants and agreements herein set forth, and of the undertakings of each party to the other parties, the Parties do hereby promise and agree as follows:

Supplemental Provisions Relating to the City's and WAC's Acquisition of Land and/or Conservation Easements

(1) Uninhabitable Dwellings or Accessory Structures on Vacant Lands. In accordance with Special Condition 8 of the 2010 Water Supply Permit, the City will acquire only vacant land West of Hudson as defined therein. The Parties recognize that in certain circumstances, there may be some ambiguity concerning whether or not a structure is an uninhabitable dwelling. The City will make good faith efforts to comply with the restriction against acquiring land in fee that contains a structure other than an uninhabitable dwelling or accessory structure. Unless a municipality pursues an issue concerning the City's acquisition of a structure other than an uninhabitable dwelling or accessory structure during the Local Consultation Process, the Parties agree that the City's acquisition of a parcel containing such a structure shall not render the City in violation of the 2010 Water Supply Permit.

(2) Publicity and Advertising in the Town of Shandaken. Consistent with Special Condition 10(c) of the 2010 Water Supply Permit, due to the high percentage of publicly-owned land in the Town of Shandaken, for the duration of DEP's land acquisition under that Permit, the City and WAC shall not solicit the purchase of a conservation easement or land in fee from any landowner in the Town of Shandaken directly. However, the Parties agree that nothing in Special Condition 10(c) shall limit the City's or WAC's ability to conduct general publicity or educational programs. The City and WAC may place public advertisements concerning the LAP (i.e., the City's program to acquire in fee simple or conservation easement, and WAC's program to buy conservation easements on, property within the watershed), without reference to the City's or WAC's interest in acquiring interests in any particular properties or properties in any particular geographical area or political subdivision within the watershed, so long as such advertisements or the media in which they are placed are not focused solely or primarily on or in the Town of Shandaken. If invited in writing by the supervisor of the Town of Shandaken, the

City and/or WAC may advertise, participate in, or hold public meetings within the Town concerning the LAP.

(3) Local Consultation. In accordance with the Local Consultation procedures set forth in Special Condition 12 of the 2010 Water Supply Permit, the City is required to state to a local government whether a parcel satisfies the size, natural features criteria, and vacant land definition, as well as whether the parcel is excluded from acquisition or eligible and authorized for acquisition. The Parties agree that the information submitted by DEP or WAC in the Local Consultation Process will be based on the best information available to DEP or WAC at that time, and may be incomplete or imprecise due to the fact that surveys, title searches, and other detailed inspections are generally not undertaken until the latter stages of the contract. The Parties further agree that DEP or WAC must respond to comments concerning potable water and sewage disposal only with respect to conservation easements with building envelopes or acceptable development areas.

(4) Additional Environmental Review for Purchase of Replacement Lands after Expiration of the 2010 Water Supply Permit. In accordance with MOA paragraph 82 and Special Condition 21 of the 2010 Water Supply Permit, the conservation easements that the City conveys to NYSDEC on fee lands acquired under the LAP provide that, with the prior agreement of USEPA and NYSDOH, the City may sell such lands free of the easement restriction in order to purchase already identified replacement lands located in a higher Priority Area, as that term is used in the 2010 Water Supply Permit. The City agrees that prior to acquiring any such replacement lands after the expiration of the 2010 Water Supply Permit (and of any successor to that Permit), the City shall obtain all necessary permits and comply with the New York State Environmental Quality Review Act, ("SEQRA"), ECL § 8-0101 *et seq.*; 6 NYCRR Part 617.

(5) Limitation on Grandfathering of Properties Not Meeting the Special Criteria. Special Condition 9(i) of the 2010 Water Supply Permit establishes a 12-month period during which the City may pursue acquisition of properties not meeting the Special Criteria set forth in Special Condition 9(a) where the City ordered an appraisal prior to the Effective Date of this Permit. The City represents and the Parties recognize that since June 17, 2010, the City has not ordered appraisals for properties in the west of Hudson watershed not meeting the Special Criteria.

Supplemental Provisions Relating to the Enhanced Land Trust Program

(6) Land Trusts. The City will work with the land trust community to develop a program through which owners of west-of-Hudson properties that contain substantial improvements including habitable dwellings, and who are not interested in selling the vacant portion(s) of their property directly to the City, could convey their property to a land trust. The land trust (LT) would facilitate subdivision of the property prior to conveying the vacant parcels(s) to the City, thereby meeting the requirements of MOA Paragraph 67, and conveying the improved parcel(s) on the open market. The Parties have negotiated core elements of the program, which are detailed herein in Exhibit 2 ("Enhanced Land Trust Program Outline") and will be further developed for expected implementation within 12 months of this Agreement.

Supplemental Provisions Relating to Stewardship of WAC Conservation Easements

(7) DEP/WAC Program Agreement. The City will seek to modify its Program Agreement with the Watershed Agricultural Council ("WAC") in accordance with paragraphs (8), (9), and (10) below.

(8) Transparency.

a. Notwithstanding WAC's view that it is not subject to the New York State Public Officers Law, Pub. Off. Law § 84 *et seq.*, including but not limited to the Freedom of Information Law and the Open Meetings Law, and that members of its board and committees are not public officers within the meaning of that law, DEP will seek to modify the Program Agreement to require WAC to adopt, maintain, and comply with the draft Transparency Policy attached as Exhibit 3 ("Transparency Policy"), or a successor Transparency Policy adopted in accordance with subparagraph b. below, which includes dispute resolution procedures.

b. The Transparency Policy may be modified so long as any successor policy is at least as protective of public access to meetings and documents as the Transparency Policy attached as Exhibit 3. In order to modify the Transparency Policy, WAC must convene the Council's Executive Committee to develop draft revisions. Once the draft revisions have been developed, the draft will be posted on WAC's website for a period of no less than 30 days. During this comment period, public comments on the draft may be submitted to WAC for review and consideration, and WAC shall make itself available, upon request, to meet with any interested MOA signatories or their representatives to discuss such comments. After the comment period has closed, WAC will review and incorporate relevant comments into the draft where appropriate prior to voting on the approval of the final document. Alternatively, WAC may, in its sole discretion, in lieu of maintaining a Transparency Policy, agree to be bound by the Freedom of Information Law and the Open Meetings Law.

c. The City agrees that the transparency requirements set forth in the Transparency Policy will apply to WAC and to any non-governmental organization that succeeds WAC as the grantee of agricultural easements acquired pursuant to the LAP. The City will seek to ensure that WAC amends the Model Conservation Easement within six months of the effective date of the 2010 Water Supply Permit to incorporate a requirement that a successor organization comply with the Exhibit 3 if it is not required to comply with the Freedom of Information Law and the Open Meetings Law.

d. Nothing herein shall affect the rights of the Parties to this Agreement under the Public Officers Law.

(9) Guidance Documents**.** The City will ensure that WAC makes best efforts to develop key guidelines for the Agricultural Easement Program in accordance with the schedule set forth in Exhibit 4. So long as WAC diligently pursues development of these guidelines and completes the guidelines within three years from the Effective Date of the Water Supply Permit in a manner consistent with the protocol set forth below, the City shall be deemed in compliance with this schedule.

a. As part of the preparation of such guidance documents, WAC shall convene a working group of the easement committee to develop a draft guidance document. Once the draft document has been developed, the draft will be posted on WAC's website for a period of no less than 30 days. During this comment period, public comments on the draft may be submitted to WAC for review and consideration, and WAC shall make itself available, upon request, to meet with any interested MOA signatories or their representatives to discuss such comments. After the comment period has closed, WAC's Easement Committee will review and incorporate relevant comments into the draft where appropriate prior to voting on the approval of the final document.

b. Reserved rights under the Model Conservation Easement (e.g., communication towers or devices, wind turbines, satellite or television antennae or similar equipment, Farm Support Housing and other buildings used for rural enterprises, Commercial Forestry, Commercial Bluestone Mining, rights of way and utility easements) are permitted uses, subject to WAC approval. The guidance documents being prepared by WAC to address such reserved rights shall allow such uses subject to conditions that will ensure that the proposed activity will not substantially diminish or impair the agricultural, forestry, or water quality values of the Property.

c. The guidance documents will specify, for each reserved right, what constitutes consistency with the conservation purposes of the easement, with reference to and consistent with the laws and policies identified in paragraphs C. through H. of the recitals in the Model Conservation Easement. The guidance documents will provide that if a Grantor's request is denied, the denial shall set forth in detail a site-specific basis for such denial.

(10) The Program Agreement as modified will provide that if WAC is in material breach of the Program Agreement including, but not limited to, the terms described in paragraphs (8) and (9) above, upon written notice from the City, WAC shall not execute any contracts for purchase of conservation easements unless and until such breach is cured. Outstanding purchase offers may remain in effect for a period of up to six months beyond such a suspension of acquisitions to allow for the breach to be cured. If the breach is not cured within six months of the City's notifying WAC of the breach, the City may exercise its right to terminate the Program Agreement. In order to ensure that the objectives and purposes of this agreement are satisfied, subject to its reasonable enforcement discretion, the City agrees to vigorously enforce the terms of the Program Agreement required hereunder. Nothing herein constitutes a guarantee that WAC will comply with the foregoing provisions.

(11) Unless the City and WAC have executed a modification to the Program Agreement in accordance with paragraphs (8), (9), and (10) above within one year of the effective date of the 2010 Water Supply Permit, the City shall exercise its right to terminate the Program Agreement and will not enter into a successor agreement unless such successor agreement incorporates the applicable terms and conditions of this Agreement.

a. No later than ten months after the effective date of the Permit, the City shall notify DEC of the status of the modifications to the Program Agreement.

b. The City may request that DEC extend the deadline for no more than 180 days beyond the year for modification of the Program Agreement as specified herein, by submitting a written explanation of the basis for the request, including an estimate of when the City expects the modification of the Program Agreement to be executed.

c. It is the Parties' understanding that DEC will not unreasonably deny such a request for an extension.

Supplemental Provisions Relating to Real Property Taxes

(12) Real Property Taxes: Watershed Conservation Easements. The Parties shall support State legislation to amend Article 5, Title 4-a of the Real Property Tax Law as set forth in Exhibit 5.

(13) Real Property Tax Litigation Avoidance Program. The description of the Tax Litigation Avoidance Program ("TLAP Description") is attached as Exhibit 6.

(14) Templates for Valuation of Unique Properties.

a. The City and certain towns have completed templates for the valuation of certain of the City's wastewater treatment plants in the West of Hudson watershed. If any other towns in the West of Hudson watershed decide to use the template for a City-owned wastewater treatment plant, the City will agree to complete the template with the town substantially similar to the existing templates for other wastewater treatment plants.

b. The current draft of the template the City and CWC are negotiating for valuation of the City's West of Hudson reservoirs is attached as Exhibit 7. As set forth in the TLAP Description, the parties have agreed to complete negotiation of the reservoir template within six months of the effective date of the 2010 Water Supply Permit. Unless otherwise agreed to by the City and CWC the final template will be substantially the same as Exhibit 7.

c. The City and CWC will negotiate a template for valuation of the City's West of Hudson impoundments. Those parties have agreed that the template will provide for a 150-year service life for the impoundments for purposes of depreciation. As set forth in the TLAP Description, the parties have agreed to

complete negotiation of the impoundment template within twelve months of the effective date of the 2010 Water Supply Permit.

d. As set forth in the TLAP Description, within eighteen months of the effective date of the 2010 Water Supply Permit, the City and CWC will negotiate a template for valuation of the City's West of Hudson sewer lines, provided that the City has not, within 18 months of the effective date of the Water Supply Permit, by motion or otherwise, established that such properties are not subject to real property taxation, or filed a motion seeking such a determination.

e. The templates are intended to provide an objective methodology to assess the City's watershed properties, applying appropriate cost factors to the measurable elements of the City's taxable properties. RS Means cost data will be used for cost factors in the templates, unless they can be shown by documented examples to be inappropriate for a project on the scale of a reservoir, in which case another appropriate cost factor shall be used, provided such factor is agreed to by the City and CWC.

f. The valuation methodology reflected in the templates described above reflects negotiations in the TLAP program. The City will not be bound by any elements of the templates in negotiations or litigation with any Assessing Authorities that do not agree to participate in the TLAP program.

Supplemental Provisions Concerning the City's Stewardship of Fee and Easement Property

(15) Availability and Disposition of Natural Resources.

a. DEP will work with the local communities and local stakeholders (farmers, blue stone miners, maple syrup farmers, foresters/loggers, etc.) to help ensure that the natural resources (including commodities such as timber and bluestone as well as recreational opportunities) are available on City-owned lands, on a case by case basis, subject to water quality, operational, and other reasonable concerns, consistent with the terms of DEC's conservation easement on such property. Access to natural resources is to be encouraged and DEP will continue to explore options, expand and develop programs (including working with local stakeholders) to facilitate such access.

b. The City has determined that there are alternatives to public bidding for sale of natural resources on lands owned by the City in fee and will begin to develop protocols to allow such alternatives. In this connection, DEP will begin work on a firewood program and hopes to initiate such a program by July 2011.

(16) Allocation of Rights Associated with Conservation Easements. Under the WAC and DEP conservation easements, landowners retain all rights, other than those rights granted under those easements, associated with ownership in fee of the subject property

including, but not limited to, any revenues associated with lawfully permitted uses of such property and not precluded by the easement.

(17) Regulations Adopted Pursuant to ECL Article 49. The Parties agree that Watershed Conservation Easements (including WAC easements) are subject to any and all applicable requirements in Article 49 of the Environmental Conservation Law ("ECL") including, but not limited to, any regulations duly promulgated by NYSDEC pursuant to ECL § 49-0305(7).

(18) Expanded Boating Program. In accordance with Special Condition 15(g) of the 2010 Water Supply Permit, the City is committed to continue the Cannonsville Pilot Boating Program (for the purposes of this paragraph, the "Boating Program") including cooperating with CWC to complete the evaluation study to gather data from the Boating Program regarding its impact, if any, upon water quality, and providing recreational opportunities as well as establishing criteria for evaluating the Program. Depending on the results of evaluation study, the City is committed to continue and possibly expand the program to other reservoirs.

(19) Revocable Permits for use of watershed property owned in fee by DEP.

a. DEP is generally willing to consider utility or ingress/egress access (subject to reasonable conditions to protect water quality and DEP operational needs) when there are no viable (i.e. practical and affordable) alternatives to crossing DEP property. When utility access is granted, absent compelling circumstances, the City has not sought and does not seek to revoke permission.

b. DEP has provided in the past and, upon request in the future from banks or property buyers or sellers, will provide letters explaining the revocable permit program and, in particular, explaining that revocation is extraordinarily rare and associated with activities under the control of landowners, such as encroachment on City land.

Modifications to Local Laws

(20) Town of Hamden Subdivision Law. In order to modify the boundaries or exclusion status of its designated areas, in its resolution concerning its proposed modification of the boundaries or exclusion status of its designated areas pursuant to Special Condition 10 of the Draft Permit, the Town of Hamden shall also commit to amend Section 310 of the Town of Hamden Subdivision Regulations, "Conservation Easements," to clarify that conservation easements do not require subdivision approval. The amended rule may require that the purchaser of a conservation easement on property in the Town of Hamden make a presentation of the easement to the Planning Board after entering into a purchase contract for the easement and before the closing, and may provide for a nominal fee in connection with such presentations. The rule may also authorize the Planning Board to issue a non-binding, advisory opinion concerning the conservation easement, addressing such topics as access to any building envelopes and the availability of suitable areas for a well and septic system within such building envelopes.

(21) Town of Kortright Subdivision Law. In order to modify the boundaries or exclusion status of its designated areas, in its resolution concerning its proposed modification of the boundaries or exclusion status of its designated areas pursuant to Special Condition 10 of the Draft Permit, the Town of Kortright, shall also commit to amend Section 3.10 of the Town of Kortright Subdivision Law, "Conservation Easements," to clarify that conservation easements do not require subdivision approval. The amended rule may require that the purchaser of a conservation easement on property in the Town of Hamden make a presentation of the easement to the Planning Board after entering into a purchase contract for the easement and before the closing, and may provide for a nominal fee in connection with such presentations. The rule may also authorize the Planning Board to issue a non-binding, advisory opinion concerning the conservation easement, addressing such topics as access to any building envelopes and the availability of suitable areas for a well and septic system within such building envelopes.

General Provisions, Disposition of Pending Litigation, and Limitations on Future Challenges

(22) Limitation on Challenges to the LAP, the 2010 Water Supply Permit, and the City's Environmental Review of the Continuation of the LAP. The Parties hereby waive their rights under Section 62 of the Watershed MOA to oppose the 2010 Water Supply Permit. In particular, no Party will pursue, nor will CWT, financially or otherwise, support any of its member municipalities in pursuing, and nor will Delaware County, financially or otherwise, support any of the towns in Delaware County in pursuing, any administrative or judicial proceeding challenging the 2010 Water Supply Permit, or the 2010 environmental review of the continuation of the LAP. Should entities other than the Parties request or commence administrative or civil legal proceedings, the Parties also agree to support one another's application for full party status to support the issuance of the 2010 Water Supply Permit. Such support does not require any Party to become a party to any proceeding.

(23) Enforceability of this Agreement and the 2010 Water Supply Permit. The Parties to this Agreement intend this Agreement and the conditions of the 2010 Water Supply Permit to be binding and enforceable commitments. The City is responsible for the compliance of its contractors with its obligations under this Agreement. These conditions may be enforced pursuant to paragraphs 177 and 180 through 183 of the MOA by the parties to the Watershed MOA. No Party will assert a defense based on the alleged inapplicability of the MOA to the Land Acquisition Program in the event of litigation seeking to enforce the terms of the continuation of the LAP under the 2010 Water Supply Permit. Nothing herein shall be construed to modify, supersede or be inconsistent with the terms and conditions of the 1997 MOA. This Agreement may be enforced in a court of competent jurisdiction and such action shall be governed by the Laws of the State of New York. In any action relating to real property, the City will not oppose venue in the Supreme Court of the county in which the property is located. Except as set forth above in this paragraph, nothing in this Agreement shall act to confer third party beneficiary rights on any person or entity not party to this Agreement.

(24) Term of Agreement. This Agreement shall be effective as of the 27th day of December in the year two thousand and ten. Paragraphs (4) (Additional Environmental Review for Purchase of Replacement Lands after Expiration of the 2010 Water Supply Permit), (8) (WAC Transparency), (9) (Guidance Documents for Accessing Reserved Uses/Reserved Rights), (15) (Availability and Disposition of Natural Resources), (16) (Allocation of Rights

Associated with Conservation Easements), (17) (Regulations Adopted Pursuant to ECL Article 49), and (23) (Enforceability of this Agreement and the 2010 Water Supply Permit) shall remain in effect for so long as the City or WAC owns land in fee or conservation easements under the LAP. The remaining paragraphs shall remain in effect for the duration of the 2010 Water Supply Permit. This Agreement shall bind the parties and their successors and assigns.

(25) Execution. This Agreement may be executed in one or more counterparts or by facsimile or other electronic means, each of which when executed and delivered shall be an original, and all of which executed shall constitute one and the same instrument.

(26) Additional Parties. This Agreement may be signed by additional parties to the MOA. Such signing will become effective, and such party will be deemed a Party to this Agreement, upon filing with the City a duly executed and acknowledged original signature page. The City will forward a copy of any such executed signature pages to the other Parties.

(27) Authorization to Execute. The Parties signing this Agreement represent that they have been duly authorized to enter into this Agreement pursuant to their respective lawful authorities.

Exhibits

1. 2010 Water Supply Permit
2. Attachment detailing the core elements of Land Trust Program
3. Watershed Agricultural Council ("WAC") Transparency Policy
4. Schedule for WAC Agricultural Easement Guidelines Development
5. Proposed State Legislation to amend Article 5, Title 4-a of the Real Property Tax Law
6. Tax Litigation Avoidance Program Description
7. Draft Template for Valuation of City's West of Hudson Reservoirs

DEC ID# 0-9999-00051/00001

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER	EFFECTIVE DATE
0-9999-00051/00001	December 24, 2010
FACILITY/PROGRAM NUMBER(S) WSA #11,352 Date Filed: January 20, 2010 Ext. No.	EXPIRATION DATE(S) As per Special Condition 3

PERMIT

Under the Environmental Conservation Law (ECL)

TYPE OF PERMIT (Check All Appropriate Boxes)

X NEW X RENEWAL X MODIFICATION PERMIT TO CONSTRUCT X PERMIT TO OPERATE

	ARTICLE 15, TITLE 5: PROTECTION OF WATER		ARTICLE 17, TITLES 7, 8: SPDES		ARTICLE 27, TITLE 9; 6NYCRR 373: HAZARDOUS WASTE MGMT.
X	ARTICLE 15, TITLE 15: WATER SUPPLY		ARTICLE 19: AIR POLLUTION CONTROL		ARTICLE 34: COASTAL EROSION MANAGEMENT
	ARTICLE 15, TITLE 15: WATER TRANSPORT		ARTICLE 23, TITLE 27: MINED LAND RECLAMATION		ARTICLE 36: FLOODPLAIN MANAGEMENT
	ARTICLE 15, TITLE 15: LONG ISLAND WELLS		ARTICLE 24: FRESHWATER WETLANDS		ARTICLES 1, 3, 17, 19, 27, 37; 6NYCRR 380: RADIATION CONTROL
	ARTICLE 15, TITLE 27: WILD, SCENIC & RECREATIONAL RIVERS		ARTICLE 25: TIDAL WETLANDS		ARTICLE 27, TITLE 3, 6NYCRR 364: WASTE TRANSPORTER
	6NYCRR 608: WATER QUALITY CERTIFICATION		ARTICLE 27, TITLE 7: 6NYCRR 360: SOLID WASTE MANAGEMENT		OTHER:

PERMIT ISSUED TO	TELEPHONE NUMBER
New York City Department of Environmental Protection	718-595-6586
ADDRESS OF PERMITTEE 59-17 Junction Boulevard, Flushing, NY 11373	
CONTACT PERSON FOR PERMITTED WORK Caswell F. Holloway, Commissioner	TELEPHONE NUMBER
NAME AND ADDRESS OF PROJECT/FACILITY N/A	
LOCATION OF PROJECT/FACILITY Counties of Putnam, Westchester, Dutchess , Greene, Sullivan, Schoharie, Ulster, Delaware	

COUNTY	TOWN/CITY/VILLAGE	WATERCOURSE/WETLAND NO.	NYTM COORDINATES
Multiple	Multiple	N/A	E: N:

DESCRIPTION OF AUTHORIZED ACTIVITY:

Land and easement acquisition and management program (Land Acquisition Program or LAP) within the New York City water supply watershed for the purpose of water quality protection.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

REGIONAL PERMIT ADMINISTRATOR:	ADDRESS
William J. Clarke	NYSDEC, Region 4 Headquarters 1130 North Westcott Road, Schenectady, NY 12306

	DATE	
William J. Clarke	12/24/2010	Page 1 of 30

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

GENERAL CONDITIONS

1. Facility Inspection by the Department

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. Relationship of this Permit to Other Department Orders and Determinations

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications for Permit Renewals or Modifications

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

The permittee must submit a renewal application at least:

a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and

b) 30 days before expiration of all other permit types.

Submission of applications for permit renewal or modification are to be submitted to:

NYSDEC Regional Permit Administrator, Region 4
1150 North Westcott Road, Schenectady, NY 12306
(for Albany, Columbia, Greene, Rensselaer, Montgomery, & Schenectady Counties)

NYSDEC Deputy Regional Permit Administrator, Region 4
Stamford Field Office, 65561 SH 10, Stamford, NY 12167
(for Delaware, Otsego, & Schoharie Counties)

4. Permit Modifications, Suspensions and Revocations by the Department

The Department reserves the right to modify, suspend or revoke this permit in accordance with 6 NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;

b) failure by the permittee to comply with any terms or conditions of the permit;

c) exceeding the scope of the project as described in the permit application;

d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

Special Conditions
Table of Contents

1. **Authorization.** As authorized by and pursuant to all the terms and conditions of this permit, including attached exhibits, the City of New York ("City"), through the New York City Department of Environmental Protection ("NYCDEP"), may acquire fee title to, or Watershed Conservation Easements (which also include Watershed Agricultural Easements, Watershed Forest Easements, and Riparian Buffer Easements) on, parcels of land located within the Watershed of the New York City water supply system (Watershed). The terms and conditions of this permit draw their statutory authorization from and are designed to ensure that the project is consistent with, section 15-1503(2) and 15-1503(4) of the Environmental Conservation Law and implementing regulations 6NYCRR601. Nothing herein shall be construed to diminish any obligation of the City arising out of the prior approvals or permits issued by NYSDEC, or its predecessors, including the Water Supply Commission, Conservation Commission and Water Power and Control Commission. This authorization shall not exceed 106,712 acres in total City acquisitions in fee title and Watershed Conservation Easements across the entire Watershed which are acquired (i.e. executed contract to purchase) from January 1, 2010 forward of which no more than 105,043 acres shall be located in the West of Hudson watershed.

2. **Scope.** The 2007 USEPA filtration avoidance determination requires the City to commit Two Hundred Forty One Million Dollars ($241,000,000) in funding a Land Acquisition Program ("LAP") to acquire fee title to, or Watershed Conservation Easements on, parcels of land in the Catskill and Delaware Watershed. This follows upon an earlier filtration avoidance determination embodied in the 1997 Water Supply Permit and the intergovernmental 1997 New York City Watershed Memorandum of Agreement or MOA that required the City to allocate Two Hundred Fifty Million Dollars ($250,000,000) to the LAP and an additional Fifty Million Dollars ($50,000,000) to the LAP between 2002 and 2008. The City's LAP, the City's Watershed Regulations, and the other programs and conditions contained in the Watershed MOA, when implemented in conjunction with one another, are intended to protect water quality while allowing existing development to continue and future growth to occur in a manner that is consistent with the existing community character and planning goals of each of the Watershed communities. The City's land acquisition goals recognize the importance of ensuring that the availability of developable land in the Watershed will remain sufficient to accommodate projected growth without adverse effects on water quality and without substantially changing future population patterns in the Watershed communities.

3. Permit Duration. The following special conditions shall expire 15 years from the effective date of this permit: Special Conditions 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 22, 25, 26, 27, 29, 30, 31, 33, and 34. All other special conditions shall remain in effect unless modified pursuant to 6NYCRR621. Operational non expiring permit conditions shall consist of:

3. Permit Duration
4. Definitions
15. Recreational Uses: City Property Owned in Fee Simple for Watershed Protection.
16. Uses: LAP Fee and Easement Property
18. Real Property Taxes: Newly Acquired In Fee
19. Real Property Taxes: Watershed Conservation Easements
20. Limitation on Transfers to Tax Exempt Entities
21. Land Held in Perpetuity for Watershed Protection
23. Water Conservation Program Updates and Approval
24. Water Conservation Program Implementation
28. Notices and Submittals
32. Forest Management Plan

4. **Definitions.** The following terms, as used in this permit, shall have the meaning set forth below:
   a. "CAPA" means the City Administrative Procedure Act, chapter 45 of the New York City Charter.

b. "Catskill and Delaware System" means the Ashokan, Cannonsville, Kensico, Neversink, Pepacton, Rondout, Schoharie, and West Branch/Boyd's Corner Reservoirs, and the tunnels, dams and aqueducts which are part of and connect the above listed reservoirs.

c. "Catskill and Delaware Watershed" means the drainage basins of the Catskill and Delaware System. A map of this watershed is set forth in Exhibit 1.

d. "Catskill Watershed Corporation" or "CWC" means an independent locally-based and locally administered not-for-profit corporation, organized under Section 1411 of the Not For Profit Corporation Law (the "CW Corporation") established in order to foster a working partnership between the City and the WOH Communities, and to manage certain programs more fully described in Special Condition 25 and Exhibit 14 required by this permit under contract to New York City.

e. "City" means the City of New York, a municipal corporation with its principal office at City Hall, New York, New York 10007. The City is subject to all the terms and conditions in this Water Supply Permit through its implementing agency the NYC Department of Environmental Protection and is responsible for assuring all of its contractors adhere to the same.

f. "Cluster Development" means the concentrated grouping of residential or commercial development so as to protect water quality and preserve the open space of the development parcel. Cluster Development is also defined within NYS Town Law Section 278 as follows: cluster development shall mean a subdivision plat or plats, approved pursuant to this article, in which the applicable zoning ordinance or local law is modified to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping in order to preserve the natural and scenic qualities of open lands.

g. "Coalition of Watershed Towns" or "Coalition" means the inter-municipal body composed of the municipalities located wholly or partially within that portion of the New York City Watershed that lies west of the Hudson river, which have duly entered into a cooperative agreement, pursuant to § 119-o of the New York General Municipal Law, having its principal office at Tannersville, New York.

h. "Croton System" means the Amawalk, Bog Brook, Cross River, Croton Falls, Diverting, East Branch, Middle Branch, Muscoot, New Croton, and Titicus Reservoirs, Kirk Lake, Lake Gleneida and Lake Gilead, and the tunnels, dams and aqueducts which are part of and connect the above listed reservoirs and controlled lakes.

i. "Croton Watershed" means the drainage basins of the Croton System. A map of this watershed is set forth in Exhibit 1.

j. "Drainage Basin" or "Reservoir Basin" means, for purposes of defining the boundaries of the drainage basin of each reservoir or controlled lake, the area of land that drains surface water into, or into tributaries of, a reservoir or controlled lake of the Catskill and Delaware or Croton Systems.

k. "East of Hudson" or "EOH" means the drainage basins of the specific reservoirs and controlled lakes of the New York City Watershed located east of the Hudson River in the New York counties of Dutchess, Putnam, and Westchester.

l. "Effective Date" means the date as shown on Page 1 of the issued permit.

m. "Executive Committee" means the Executive Committee of the WPPC.

n. "Individual Landowner Forest Management Plan" means a document prepared by a professional forester that is based upon the goals and objectives that individual owners have for their forested properties and updated on a ten year basis. It is a document which shows by maps, tables and written text, the boundaries and size of the forest, what kind and sizes of trees it contains, what needs to be done to produce and harvest forest products or to achieve other non-timber related objectives and how such activities should be designed in order to minimize negative impacts to water quality.

o. "Filtration Avoidance Determination or "FAD" means the written determination of the United States Environmental Protection Agency, or the New York State Department of Health, determining that surface source waters may be used as a public water supply without filtration.
p. "Land" means fee title in real property or Watershed Conservation easements on real property, unless a different meaning is clearly intended by the context.
q. "NYCDEP" means the New York City Department of Environmental Protection, a mayoral agency of the City of New York organized and existing pursuant to the New York City Charter and its contractors.
r. "NYSDEC" means the New York State Department of Environmental Conservation, an executive agency of the State of New York organized and existing pursuant to the New York Environmental Conservation Law.
s. "NYSDOH" means the New York State Department of Health, an executive agency of the State of New York organized and existing pursuant to the New York Public Health Law.
t. "Primacy Agency" means the United States Environmental Protection Agency or the New York State Department of Health, whichever has primary enforcement responsibility for implementation of the federal Surface Water Treatment Rule (40 CFR §141.70 et seq.) pursuant to §1413 of the federal Safe Drinking Water Act (42 U.S.C. §300g-2).
u. "Riparian Buffer Easement" means a Watershed Conservation Easement, as defined below in paragraph (cc.) on real property (including floodplains) adjacent to streams, lakes, rivers, wetlands, and/or water bodies acquired pursuant to the Riparian Buffer Program described in Special Condition 29.
v. "Riparian Buffer in fee" means real property (including floodplains) adjacent to streams, lakes, rivers, wetlands, and/or water bodies acquired in fee pursuant to the Riparian Buffer Program described in Special Condition 29.
w. "TMDL" means Total Daily Maximum Load. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations for point source discharges, load allocations for nonpoint sources, and a margin of safety.
x. "Uninhabitable Dwelling" means a dwelling which is deteriorated to the extent that: either the cost of rehabilitation which would prevent the continued deterioration of primary components will exceed sixty percent (60%) of the fair market value of the structure (as established by the City's appraisal) or rehabilitation will not prevent the continued deterioration of primary components of the dwelling which will result in unsafe living conditions; and it has not been occupied for one year immediately prior to the signing of an option. As used herein, the term "primary components of a dwelling" shall include: foundations, exterior wall framing, rafters, roof decks, roof coverings, porches, floor joists, sills, headers, electrical systems, heating systems, plumbing systems and septic systems.
y. "USEPA" means the United States Environmental Protection Agency, an executive agency of the United States, organized and existing under the laws of the United States, with its principal office at 401 M Street, S.W., Washington, D.C. 20460.
z. "Watershed" or "New York City Watershed" means the drainage basins of the Catskill and Delaware and Croton Systems.
aa. "Watershed Agricultural Council" or "WAC" means an independent locally-based and locally administered not-for-profit corporation, organized under Section 1411 of the Not For Profit Corporation Law (the "Watershed Agricultural Council") established in order to foster a working partnership between the City and the WOH Communities, and to implement and manage certain programs under contract to New York City including but not limited to Watershed Agricultural Easements.

bb. "Watershed Agricultural Easement" means a Watershed Conservation Easement, as defined below in paragraph (cc.), on real property in active agricultural production or designated for future agricultural production. Such easements shall allow agricultural production.

cc. "Watershed Conservation Easement" means an easement, covenant, restriction or other interest in real property, created under and subject to the provisions of Article 49 of the New York Environmental Conservation Law, which limits or restricts development, management or use of such real property for the purpose of maintaining the open space or natural condition or character of the real property in a manner consistent with the protection of water quality generally and the New York City drinking water supply specifically. It also includes Watershed Agricultural Easements, Watershed Forest Easements, and Riparian Buffer Easements)

dd. "Watershed Forest Easement" means a Watershed Conservation Easement, as defined in paragraph (cc.), on real property in forest production or designated for future forest production. Such easements shall allow forest production.

ee. "Watershed MOA" or "MOA" means the agreement, entered on January 21, 1997, among the State of New York, the City of New York, the United States Environmental Protection Agency, Catskill Watershed Corporation, the Coalition of Watershed Towns, certain watershed municipalities, and certain environmental groups which established a framework for a "partnership to cooperate in the development and implementation of a Watershed protection program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities."

ff. "Watershed Protection and Partnership Council" or "WPPC" shall mean a group formed to aid in the protection of drinking water quality and the economic vitality of the Watershed communities. The Council will represent a broad-based diverse group of interests that share the common goal of protecting and enhancing the environmental integrity of the Watershed and the social and economic vitality of the Watershed communities. The Council shall consists of twenty-seven (27) members (sixteen (16) members constituting an executive Committee and eleven (11) additional members), which shall include representatives from the State and City of New York, local governments in the Watershed, the USEPA, business, the environmental community, and water supply consumers.

gg. "Watershed Regulations" means the watershed rules and regulations applicable to the New York City Watershed, codified as Rules of the City of New York ("RCNY"), Title 15, Chapter 18 and New York Codes, Rules and Regulations, Title 10, Part 128 pursuant to Public Health Law Section 1100.

hh. "1997 Designated Areas" means the villages, village extensions, hamlets, and commercial or industrial areas designated in accordance with paragraph 68 of the Watershed MOA.

ii. "1997 Water Supply Permit" means the water supply permit issued by NYSDEC on January 21, 1997, DEC Permit Number 0-9999-00051/00001.

jj. "Water Supply System" means the system of reservoirs, controlled lakes, structures and facilities such as dams, tunnels, and aqueducts which collect source water for the New York City drinking water supply and transport it to the City of New York.

kk. "West of Hudson" or "WOH" means the Catskill and Delaware drainage basins of the specific reservoirs of the New York City Watershed located west of the Hudson River in the New York counties of Greene, Delaware, Ulster, Schoharie, and Sullivan.

ll. "WWTP" means wastewater treatment plant.

5. **Willing Sellers/No Eminent Domain.** The City may acquire fee title to, or Watershed Conservation easements on, real property from willing sellers only. This permit does not authorize the use of any powers of eminent domain.

6. **Mapping of Priority Areas.**
   a. The Catskill and Delaware Watershed has been mapped, in descending order of priority for acquisition and protection, into Priority Areas 1A, 1B, 2, 3, and 4 by the City as shown in Exhibits 2 (West of Hudson) and 3 (East of Hudson).

      i. Priority Area 1A is the highest priority. It consists of portions of reservoir basins that are within 60-day travel time to distribution and are in close proximity to an aqueduct intake. It consists of portions of the basins of the Kensico, West Branch, Ashokan, Rondout, Neversink, Pepacton, and Cannonsville Reservoirs. Priority Area 1B consists of portions of reservoir basins that are within 60-day travel time to distribution and not Priority Area 1A. It consists of: all of Boyd's Corners Reservoir basin; the remaining portions of the basins of Kensico, West Branch, and Rondout Reservoirs; and portions of the basins of Ashokan, Cannonsville, and Pepacton Reservoirs.
      ii. Priority Area 2 consists of the remaining portion of the Ashokan Reservoir basin (portions of terminal reservoir basins that are not within priority areas 1A or 1B).
      iii. Priority Area 3 consists of portions of reservoir basins with identified water quality problems that are not in priority areas 1A, 1B, or 2.
      iv. Priority Area 4 is the lowest priority. It consists of the remaining areas within the Watershed.

   b. The Croton Watershed has been mapped by the City into Priority Areas A, B, and C; A being the highest priority.

      i. The Croton Watershed priority areas are as follows: A (New Croton, Croton Falls, and Cross River Reservoirs); B (Muscoot and portions of Amawalk and Titicus Reservoirs within 60-day travel time to distribution); C (remaining reservoir basins and sub-basins beyond 60-day travel time to distribution).

   A map of the boundaries of these Priority Areas is set forth in Exhibit 3 of this permit.

7. **Eligibility and Authorization for Acquisition.**
   a. To be eligible and authorized for acquisition by the City in fee, parcels of land must be vacant, as defined in Special Condition 8, and meet the size and natural features criteria, as set forth in Special Condition 9, and not fall under the acquisition exclusions (hamlet or village designations), as set forth in Special Condition 10. Acquisition eligibility and authorization for Riparian Buffer fee parcels shall be determined solely based upon their meeting the surface water features thresholds (but not steep slopes thresholds) in Special Condition 9.a.2.a - d. and falling outside the acquisition exclusion areas (hamlet or village designations) in Special Condition 10 unless such exclusion is waived in individual municipalities by the town or village boards by resolution authorizing the Riparian Buffer Program and the specific parcels described and covered by such program.
   b. Parcels of land participating in a federal or state flood buy-out program need neither be vacant, as defined in Special Condition 8, nor meet the size and natural features criteria, as set forth in Special Condition 9 nor are such parcels subject to the acquisition exclusions (hamlet or designations) in Special Condition 10.
   c. To be eligible and authorized for acquisition as Watershed Conservation Easements (except for Watershed Agricultural Easements and Riparian Buffer Easements) by the City, parcels of land must meet the size and natural features criteria set forth in Special Condition 9 and not fall under the acquisition exclusions (hamlet or village designations) in Special Condition 10. All Watershed Conservation Easements may be acquired on land regardless of whether the land is vacant, as defined in Special Condition 8. Acquisition eligibility and authorization for Watershed Agricultural Easement parcels shall be determined solely based upon falling outside the acquisition exclusion areas (hamlet or village designations) in Special Condition 10.

Acquisition eligibility and authorization for Riparian Buffer Easement parcels shall be determined solely based upon their meeting the surface water features thresholds (but not steep slopes thresholds) in Special Condition 9.a.2.a - d and falling outside the acquisition exclusion areas (hamlet or village designations) in Special Condition 10 unless such exclusion is waived in individual municipalities by the town or village boards by resolution authorizing the Riparian Buffer Program and the specific parcels described and covered by such program.

8. Vacant Lands Defined.

a. Vacant land West of Hudson means land on which there are no structures, other than uninhabitable dwellings or accessory structures (sheds, barns, etc.). If a parcel contains a habitable dwelling, the City will acquire the parcel in fee only if the owner subdivides the parcel so that the City only takes title to the portion of the parcel without the habitable dwelling. The subdivided parcel containing the habitable dwelling must include an adequate area for septic field, reserve area and well. If a parcel acquired in fee contains an uninhabitable dwelling or accessory structure, the City will remove it within two years of acquiring title if requested to do so by the respective town or village during the local consultation period.

b. Vacant land East of Hudson means land on which there are no inhabited structures at the time the City acquires title. If the City is interested in a parcel that contains a structure that would be inhabited at the time the City acquires title, the parcel must be subdivided so that the City only takes title to the portion of the parcel without the inhabited structure.

c. The City shall be authorized to use land trusts operating under the Enhanced Land Trust Program established pursuant to Special Condition 33 for WOH as LAP contractors to acquire lands described in this special condition providing that the following requirements are adhered to: the subdivision of the parcels is carried out according to the criteria in 8.a above, the vacant land is conveyed to the City, the portion of the properties containing the habitable dwellings are fully maintained so as to not diminish their monetary value, all local tax (including ad valorem) payments are kept current and such subdivided habitable dwelling properties are placed for sale in the open real estate market. In order for this provision to take effect the Town or Village Board shall adopt a resolution pursuant to such procedures determined to be applicable by such Board within 180 days of the Effective Date of this Permit. Every five years, from the Effective Date of the Permit any Town or Village Board shall have a 180 day window following these five year anniversary dates (12/24/2015, 12/24/2020, 12/24/2025) to reassess and if it so chooses to implement the provisions of this paragraph or rescind any prior adopted resolution. All such resolutions shall be provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption.

9. Size and Natural Features Criteria.

Applicability defined herein and within Special Condition 7 above.

a. West of Hudson:

1. Size

All eligible and authorized parcels must:

a. In Priority Area 1A be at least one acre in size.

b. In Priority Area 1B must be at least five acres in size.

c. In Priority Areas 2, 3, and 4 must be at least ten acres in size

2. Surface Water Features/Slopes:

All eligible and authorized parcels only in Priority Areas 2, 3, and 4 must either:

a. Be at least partially located within 1,000 feet of a reservoir; or

b. Be at least partially located within the 100-year flood plain; or

c. Be at least partially located within 300 feet of a watercourse, as defined in the Watershed Regulations; or

d. Contain in whole or in part a federal jurisdiction wetland greater than five (5) acres or NYSDEC mapped wetland; or

e. Contain ground slopes greater than fifteen percent (15%).

3. Special Criteria:

All eligible and authorized parcels only in Priority Areas 2, 3 and 4 must either:

a. Be no less than seven percent (7%) Surface Water Features, as set forth in 9.a.2.a - d above, or

b. Be no less than fifty percent (50%) slopes of 15% or greater as set forth in 9.a.2.e above.

b. Parcels which meet the natural features criteria, as set forth in subparagraph a.2, adjoining to lands owned in fee by the City or owned in fee by the State and which would otherwise not be eligible and authorized under the above Special Criteria, as defined in subparagraph a.3 of this special condition, are eligible and authorized for acquisition in fee by the City subject to the following restrictions: 1) individual acquisitions cannot exceed 25 acres, 2) total acquisitions cannot exceed 1,500 acres in West of Hudson over the life of this permit condition, 3) total acquisitions cannot exceed 300 acres in any one county over the life of this permit and 4) such acquisitions must be for one or more of the following purposes of: a) enhancing recreational access or use, b) addressing access deficiencies such as proposed or existing recreational trail interconnections or trailheads, c) State or City owned in fee parcel access, d) addressing land management issues such as preventing unauthorized uses on State or City owned lands, or e) to provide for linking City or State owned lands or to achieve consolidation by purchasing private in-holdings found within City or State owned land.

c. The City may acquire parcels of land West of Hudson that do not meet the above size requirements applicable to Priority Areas 1B, 2, 3 and 4 throughout a town or village or only for those parcels located, at least partially, in a 100-year floodplain, if the Town or Village Board waives the size requirements by resolution adopted pursuant to such procedures determined to be applicable by such Board within 180 days of the Effective Date of this Permit. Every five years, from the Effective Date of the Permit any Town or Village Board shall have a 180 day window following these five year anniversary dates (12/24/2015, 12/24/2020, 12/24/2025) to reassess and if it so chooses to implement the provisions of this paragraph or revoke a prior waiver if granted. All such resolutions shall be provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption.

d. There are no parcel size requirements East of Hudson.

e. In the Croton Watershed, the City will prioritize its acquisitions based on the Priority Area in which the parcel is located and the natural features of the parcel which could affect water quality.

f. The City may aggregate adjoining tax parcels being acquired at one time, or being aggregated with adjoining City-owned land, to meet the minimum acreage (size) requirements as set forth in 9.a.1 above.

g. The City may aggregate adjoining tax parcels being acquired at one time to meet the Natural Features Criteria as set forth in 9.a. above so long as the parcels are under related family member ownership or related corporate ownership.

h. The natural features criteria determinations of parcel eligibility and authorization shall be based upon information contained in the City's geographic information system, or if available site inspection information, as of the parcel appraisal order date. Where and if available, new, verified, more up to date information shall be used to govern parcel eligibility and authorization up to the conclusion of the local consultation process as set forth in Special Condition 12 including the dispute resolution process as set forth in 12.h.

i. Any unacquired parcels not meeting the Special Criteria in this condition but which have appraisal orders which precede the Effective Date of this Permit shall continue to be considered eligible and authorized for acquisition for up to 12 months from the effective date of this permit whereupon such eligibility ceases unless a purchase contract has been signed between the City and the seller.

10. Exclusions from Acquisition (Designated Hamlet and Village Areas).

a. West of Hudson. The following land areas described in subparagraphs i - iv below are hereby excluded from acquisition by the City in fee and Watershed Conservation Easement only if a town or a village designates them as Designated Hamlet (or Village) Areas by Town (or Village) Board resolution within 180 days of the Effective Date of the permit. Such Town or Village Board designation resolutions shall describe the excluded (hamlet or village) land parcels within their jurisdiction covered in subparagraphs i – iv below. Towns and Villages shall have the option to remove parcels from coverage so they would not be part of the designated hamlet or village area. Towns and Villages considering such resolutions shall provide for the following: 1) written notification via regular US Postal Service mail to the affected landowners within their jurisdiction as shown in Exhibits 4 and 5 using the mailing addresses found in the most current municipal tax rolls, 2) general notice to the public via local newspapers, and 3) a public comment period of no less than 30 days following such notices. Then within 21 days following their adoption, Town or Village Board designation resolutions must be submitted by the towns or villages to NYSDEC, the City and affected landowners with a certification and documentation that all requirements of this Special Condition and all applicable laws and regulations have been followed. Thereupon the resolution will take effect and becomes binding upon the City. NYSDEC retains final authority to resolve any dispute under this special condition between the City and Town or Village using the process as set forth in Special Condition 12.h. Towns may designate hamlet areas under subparagraphs ii. and/or land areas under iii. and iv. below. The excluded land areas under this paragraph can consist of only:

   i. land within an incorporated village designated by the Village Board (Designated Village Area); and
   ii. land parcels within a town and designated as hamlet in whole or in part by the Town Board (Designated Hamlet Area) from the list of tax parcels and maps in Exhibits 4 and 5; and
   iii. up to 50 acres of land within a town designated by the Town Board; provided that the lands are outside Priority Area 1A, are identified as whole tax map parcels, and are identified as commercial or industrial areas and provided that any acreage previously so designated by Town Boards is set forth in Exhibits 4 and 5; and
   iv. lands within a town designated by the Town Board; provided that the lands are designated by tax map parcel and are located within one-quarter mile of a village and abutting the roads set forth in Exhibit 6 of this permit.

b. The 1997 Town or Village Board Designated Areas by resolution which implemented an acquisition in fee only exclusion made pursuant to the provisions of the 1997 Water Supply Permit shall continue (except for the Town of Shandaken) unless superseded by the new designations authorized in Paragraph a of this Special Condition.

c. Commencing on the Effective Date of this Permit except for Riparian Buffers in fee or Easements, the City shall not solicit the purchase of either land in fee or Watershed Conservation Easements from any landowner in the Town of Shandaken directly. Specifically, the City will not intentionally initiate contact with any landowner concerning opportunities to sell real property interests, whether by mail, by telephone, in person, or otherwise. Notwithstanding the City's agreement not to solicit landowners directly, nothing herein shall prevent the City from receiving, responding to, or acting upon unsolicited inquiries from owners of land in the Town of Shandaken.

d. East of Hudson, the City shall not acquire fee title to property zoned commercial or industrial as of the date of the City's solicitation, except that the City may acquire up to five percent (5%) of the total acreage of such property within any town or village unless a town or village in Westchester County agrees, by resolution, to a higher percentage in such town or village.

e. Any unacquired parcels which become part of the area excluded from acquisition (hamlet designation) under paragraph a. of this condition and have appraisal orders that precede the Effective Date of this Permit shall continue to be considered eligible and authorized for acquisition for up to 12 months from the Effective Date of this Permit whereupon such eligibility ceases unless a purchase contract has been signed between the City and the seller.

f. Every five years, from the Effective Date of the Permit any town or village shall have a 180 day window following these five year anniversary dates (12/24/2015, 12/24/2020, 12/24/2025) to reassess and if it so chooses to: 1) implement the provisions of Paragraph a. of this Special Condition or 2) rescind any prior designation pursuant to such procedures determined to be applicable by such Board with such resolutions provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption in order for them to take effect. If the Town of Shandaken exercises this option then the provisions of paragraph c. in this special condition are no longer in effect. In order to maintain eligibility and acquisition authorization for any pending parcel specific land acquisition process in those communities the City shall have three months after receiving the town or village board resolution in which to order an appraisal and 12 months for purchase contracts to be signed by the City and the seller otherwise such parcels become excluded from acquisition. The City shall not solicit additional acquisitions upon passage and subsequent submittal to NYSDEC and the City of the designation resolution.

g. As provided for in Special Condition 7.c above, Riparian Buffer in fee or easements may be acquired by the City even if within a Designated Village or Hamlet Area if the Town or Village Board waives by resolution which may be adopted at any time pursuant to such procedures determined to be applicable by such Board thereby authorizing the Riparian Buffer Program and the specific parcels described and covered. Such resolutions must be provided to NYSDEC, NYSDOH and NYCDEP within 21 days of their adoption in order for them to take effect.

h. For the Towns of Ashland, Delhi, Hamden, Walton and Windham, the parcels referenced in the cluster development Town Board resolutions attached as Exhibit 13 shall be eligible for coverage under this Special Condition only if such resolutions remain in force. Such resolutions shall encourage and authorize town planning boards to approve cluster development projects.

11. Acquisition Procedures.

At request of a town or village, the City shall make a presentation describing the process the City intends to use to solicit acquisitions.

a. West of Hudson, the City may make a joint presentation to groups of up to three towns and/or villages. With the consent of the involved towns or villages, the City may also make a joint presentation to groups of more than three towns and/or villages West of Hudson, or to any number of towns and/or villages East of Hudson.

b. Such presentation shall also include an indication of what land is eligible for acquisition in such town or village (including a map of the town or village reflecting the priority areas and applicable Natural Features Criteria) and the estimated acreage that the City expects to acquire.

c. The City may solicit landowners directly and acquire such land except as restricted by Special Conditions (SC) 7 – Eligibility and Authorization for Acquisition, SC 8 – Vacant Lands Defined, SC 9 – Size and Natural Features Criteria and SC 10 – Exclusions from Acquisition. The City may also receive, and act upon, unsolicited inquiries from landowners at any time subject to the restrictions of Special Conditions 7, 8, 9 and 10.

12. Local Consultation.

a. Prior to acquiring any land or Watershed Conservation Easements, the City will consult with the town or village in which the parcel is located. The consultation will ensure that the City is aware of and considers the town's or village's interests and that the terms of this permit are complied with.

b. The City will provide a local government consultation package with copies to NYSDOH, EPA and NYSDEC that will: 1) identify for the town or village, and for the appropriate County and for NYSDEC, the parcels of any land or Watershed Conservation Easements for which the City has entered into an option or contract to purchase, any structures which may be located on the property; 2) state the City's determination of whether structures are uninhabitable or accessory; 3) include a map or maps depicting the tax parcel boundary of the acquisition property, including the location and attributes of "envelopes" within the proposed acquisition; 4) include an aerial photo of the affected property (if available); 5) identify exclusions (if any) from the acquisition; 6) describe any proposed recreational uses; 7) describe all historical uses including natural resources; 8) identify known available natural resources; 9) include the Community Review Fact Sheet; 10) include a brief summary concerning and map depicting the proposed acquisition and any adjacent proposed City acquisitions in fee or easements including rights of way or adjacent existing City or State owned land in fee or easement; 11) describe any proposed fencing and signing; 12) include the form of easement agreement (if an easement is being acquired); and 13) state that the parcel meets these acquisition criteria: a) Special Condition 9 Size and Natural Features Criteria, b) Special Condition 8 Vacant Lands Defined, c) Special Condition 7 Eligibility and Authorization for Acquisition and d) Special Condition 10 Exclusions from Acquisition.

c. The City will diligently attempt to group together parcels for review by the town or village and to minimize the number of times it submits parcels for review, and will submit such parcels for review no more frequently than on a monthly basis. The City shall allow the town or village a total of 120 days to undertake all the following:

- review and assess the information contained in the City's submission;
- conduct public review and interagency consultation where so desired by the town or village; and
- submit comments to the City.

e. The town or village review and comments (which may be supplemented with comments from the county) may include:

- consistency with the natural features criteria in Special Condition 9;
- consistency with the size requirements in Special Condition 9;
- consistency with the vacancy requirements in Special Condition 8;
- consistency with local land use laws, plans and policies;
- the City's proposed fencing and signing;
- proposed recreational uses;
- available natural resources and access thereto;
- access to any development areas;
- potable water;
- sewage disposal;
- consistency with set-back requirements and local land use regulation; and
- natural resource criteria.

f. In the event of a mortgage foreclosure, tax foreclosure or judgment sale, the City may submit a parcel for review to a town or village without obtaining an option or contract to purchase.

g. The City will respond to local government comments and provide notice of any proposed City actions, within thirty (30) days of receipt. Unless a town or village notifies the City of its intent to file an appeal within thirty (30) days of receiving the City's response and an appeal is filed pursuant to paragraph h. below the City may proceed to acquire the parcels

identified in the local consultation process in the village or town. In the event of any dispute, the acquisition of any specific parcel involved shall not proceed except under the dispute resolution/final decision provisions of paragraph h. below.

h. Disputes between the City and the town or village over whether a particular parcel meets the vacancy, size, or natural features criteria contained in this permit in Special Conditions 8 and 9 will be submitted by the City to NYSDEC (attention: NYSDEC Office of Hearings) prior to the City's acquisition or may be submitted by the disputing town or village no later than thirty (30) days of receiving the City's response to comments under paragraph g above. This dispute, will be resolved based upon the facts as submitted and the terms and conditions of this permit by NYSDEC through a designated Administrative Law Judge in the NYSDEC Office of Hearings. The responding party (the town or village, or the City) may make a submission to NYSDEC in response to the position advocated by the party initiating the dispute resolution process within fifteen (15) days following the City's receipt of the initial submission. NYSDEC shall resolve such dispute or issue a final binding decision within thirty (30) days of the responding party's submittal deadline. NYSDEC's decision shall be a final decision for purposes of Article 78 of the New York Civil Practice Law and Rules. Unless otherwise specified, either party (the City or the community) has sixty (60) days from the date of the NYSDEC decision to commence an Article 78 proceeding in respect of NYSDEC's decision. In the event NYSDEC does not resolve the dispute or issue a final decision within the thirty (30) day time period specified herein then the City may send a request to NYSDEC in writing by certified mail, return receipt requested with copies to the disputing town or village, to issue a final decision pursuant to this paragraph. The Petition in an Article 78 proceeding shall name the City as a Respondent. If within thirty (30) days of the receipt of this letter the dispute is not resolved or a final decision by NYSDEC is not issued then a final NYSDEC decision finding that the disputed acquisition parcels have met the vacancy, size, or natural features criteria contained in this permit in Special Conditions 8 and 9 shall be deemed to have been granted.

i. To assist towns and villages in the Watershed in their review and comment on proposed City land acquisition in such towns and villages, and the designation of hamlets, commercial/industrial areas, and village extensions and periodic determinations with respect to such designations in Special Condition 10, the City will reimburse each town or village where the City seeks to acquire lands or Watershed Conservation Easements, for actual costs incurred, up to Thirty Thousand Dollars ($30,000), in the West of Hudson Watershed, up to Twenty Thousand Dollars ($20,000) in the East of Hudson portions of the Catskill and Delaware Watershed , and up to Ten Thousand Dollars ($10,000), per town or village in the Croton Watershed and not in the Catskill/Delaware Watershed, Such funding has previously been allocated pursuant to MOA ¶ 148 and the 2007 FAD.

13. Fair Market Value.

a. The purchase price of all land and Watershed Conservation Easements acquired shall reflect fair market value, as determined by an independent appraisal obtained at the direction of the City and performed by an independent, New York State certified appraiser.

b. Notwithstanding (a) above, the City may acquire property at less than the fair market value at public auction or at a directly negotiated sale from a bank, other financial institution, or taxing authority in the context of a mortgage foreclosure, tax foreclosure, or legal judgment.

c. Fair market value shall be determined in accordance with the following definition from the Uniform Standards of Professional Appraisal Practice adopted by the Appraisal Standards Board of the Appraisal Foundation, or in accordance with relevant successor language.
The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this

definition is the consummation of the sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their best interest;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in U.S. dollars, or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property, sold unaffected by special or creative financing sales concessions granted by anyone associated with the sale.

d. For purposes of determining fair market value if all other required governmental permits and approvals have been granted, the appraiser shall assume that any necessary City approvals have also been granted.

e. In determining the fair market value, the independent appraisers hired by the City will consider information from a second appraisal, provided by the landowner and made at the landowner's or a third party's expense, provided the second appraisal is made by a New York State certified appraiser and was completed no earlier than one year prior to the City's appraisal and no later than six (6) months after the owner received the City's appraisal. Upon request by the landowner or a third party, the City may extend the time period for completion of a second appraisal.

14. **Schedule.** The City will solicit acquisitions in accordance with the applicable solicitation plan prepared and submitted to NYSDEC, NYSDOH and USEPA pursuant to the 2007 FAD or its successor (Exhibits 7: 2007, Exhibit 8: 2008-10. The City may, at any time, respond to direct inquiries from property owners anywhere in the Watershed, subject to all applicable Special Conditions in this permit.

15. **Recreational Uses: City Property Owned in Fee Simple for Watershed Protection.**

a. The City will consult during the 120-day review period specified in Special Condition 12 with NYSDEC, NYSDOH, USEPA local governments, and the appropriate regional Sporting Advisory Subcommittee, if any, regarding the recreational uses the City deems appropriate on newly acquired parcels in fee.

b. The City shall allow historic recreational uses, including fishing, trapping, hiking, and hunting, to continue on newly acquired parcels in fee, subject to rules and regulations adopted or permits issued by NYCDEP, unless NYCDEP determines, on a rational basis, that such uses threaten public safety or threaten to have an adverse impact on water quality or NYCDEP operations related to water supply.

c. The following recreational uses are more likely to be allowed on City land, if appropriate, subject to rules and regulations adopted, or permits issued, by NYCDEP: fishing (including fishing by boat) under regulation; hiking, especially where parcels intersect State trails, snowshoeing; cross country skiing; bird watching, educational programs, nature study and interpretation; and hunting (only in certain areas under certain conditions).

d. The following activities are not likely to be allowed on City property even if the property was historically utilized for these purposes: boating (other than for permitted fishing by boat and the pilot boating program in paragraph g. of this condition); snowmobiling (except as per paragraph f. of this condition); camping; motorcycling; mountain bicycling; and horseback riding.

e. Seven (7) years from the Effective Date of the Permit the City shall consult pursuant to paragraph 15.a above regarding recreational uses on City owned property owned in fee simple using the procedures in this special condition and based upon such consultation evaluate if there should be any changes in the allowable recreational uses specified herein. A report shall be prepared and submitted to NYSDEC within 6 months after such consultation. Thereafter, upon

request from NYSDEC, the City shall follow the consultation procedures described in 15.a above and prepare and submit a report to NYSDEC within twelve (12) months after receiving such request. Such requests will be made in writing, will include specific recommendations concerning changes in the allowable recreational uses for the City to consider, and may be made no more often than once every ten (10) years.

f. Snowmobile Trails. The City will continue to allow snowmobile access on specific City-owned parcels under the following conditions:
   i. A qualified organization must obtain a land use permit for trails that are part of a regional NYSDEC-sanctioned network to cross City property;
   ii. Use of the trails must not pose a threat to water quality or NYCDEP operations related to water supply; and
   iii. A qualified organization must take responsibility for establishment and maintenance of trails.

g. Expanded Boating Program. The City will continue the Cannonsville Pilot Boating Program (for the purposes of this paragraph, the "Boating Program") including cooperating with CWC to complete the evaluation study to gather data from the Boating Program regarding its impact, if any, upon water quality, and providing recreational opportunities as well as establishing criteria for evaluating the Program. With this study in hand, NYCDEP shall consult with NYSDEC and NYSDOH prior to making any determination if the Boating Program should be continued and/or expanded to other City owned reservoirs.

16. Uses: LAP Fee and Easement Property.

a. Permitted uses on land acquired in fee by the Land Acquisition Program (LAP): As described in Special Condition 15.b and c.

b. Uses not likely to be allowed on LAP-acquired fee land: As described in Special Condition 15.d. above.

c. Prohibited Uses on LAP-acquired fee land: as described in the declaration of restrictions contained in the grant of conservation easement to NYSDEC as shown in Exhibit 9 or as revised by NYSDEC in consultation with NYCDEP.

d. Reserved Uses/Reserved Rights:
   1. The Reserved Uses/Reserved Rights that may be available on LAP Fee and Easement Property include, but are not limited to: communication towers, wind turbines, Farm Support Housing and other buildings used for rural enterprises (Watershed Agricultural Easements only), Commercial Forestry, Commercial Bluestone Mining, and public or private rights of way and utility easements.

   2. Watershed Conservation Easements Acquired after the Effective Date of this Permit.
      a. The City will incorporate into NYCDEP Watershed Conservation Easements appraised on or after the Effective Date of this Permit provisions for the reserved uses/reserved rights listed in subparagraph d.1. above and also provide that the City must review such applications to exercise reserved uses/reserved rights on a case by case basis subject to the terms of the Easement and a determination that the proposed use will not pose a threat to water quality or NYCDEP operations related to water supply.
      b. The City will ensure that Watershed Agricultural Easements appraised on or after the Effective Date of the Permit shall conform to the WAC model easement found in Exhibit 10, and shall provide the rights provided in paragraphs 2.s, 3, 8, 19, 20, and 24 of the model easement dated September 2, 2010.
      c. Any unacquired easement parcels shall not be subject to paragraphs d.2.a. and b. of this condition if their appraisal orders precede the Effective Date of this

Permit and the landowner has declined the opportunity to convert the easement to the versions of the NYCDEP and WAC model easements described in paragraphs 16.d.2.a and 16.d.2.b above and a purchase contract has been signed between the City and the landowner/seller within 12 months from the Effective Date of this Permit. Otherwise paragraphs 16.d.2.a. and b. apply.

3. Watershed Conservation Easements Executed Prior to the Effective Date of this Permit.
a. Upon request from a grantor of an easement acquired prior to the Effective Date of this Permit, based on a specific proposal to undertake a use that would be a Reserved Use under this Permit but is not included in the existing easement, the City shall make (or shall ensure that its contractor makes) diligent efforts to execute and record amendments to the easement, or otherwise to allow the use if it is permissible without such an amendment, subject to reasonable conditions, so long as:
i. The grantor provides the following information about the proposed use:
1. A project description;
2. A map depicting the proposed area for the activity and approximate area(s) of disturbance;
3. A list of all required regulatory approvals associated with the proposed use; and
4. Information demonstrating that the proposed use will not pose a threat to water quality or NYCDEP operations related to water supply.
ii. Any modification to the easement is made subject to all applicable laws and requirements.

b. The City shall ensure the following actions: 1) within 180 days of the Effective Date of this Permit, WAC will send a letter to grantors of Agricultural Easements offering to amend existing Agricultural Easements; 2) the letter will specifically propose to add new language to the existing Easement, including but not necessarily limited to sections 2.s, 3, 8, 19, 20, and 24 of the updated model Agricultural Easement, attached as Exhibit 10; 3) the letter will state that WAC will pay for all costs associated with such amendments where grantors agree to amend; and 4) implementation of these provisions.

4. The NYS Conservation Easement for new fee parcels may include the reserved uses/rights as defined in 16.d.1 above. Such NYS Conservation Easements shall provide for the review and approval by the NYSDEC of each proposed wind energy tower/structure or communications tower/structure in accordance with the model NYS Conservation Easement attached as Exhibit 9 unless the NYSDEC waives such individual project review and approval in writing. The City may request on a case by case basis for specific project proposals that NYSDEC amend specific NYS Conservation Easements in order to provide for the wind energy or communications tower reserved uses enumerated in d.1 above. Any modification to such an easement or to the model easement shall be subject to all applicable laws and requirements.

17. Watershed Conservation Easements. In addition to acquisition in fee, the City may acquire Watershed Conservation Easements in accordance with Article 49 of the New York State Environmental Conservation Law and any implementing regulations. The Watershed Conservation Easements will be acquired at fair market value in accordance with Special Condition 13. Watershed Conservation Easements shall consist of Watershed Conservation Easements, Watershed Agricultural Easements, Watershed Forest Easements and Riparian Buffer Easements acquired by either the City or on behalf of the City as part of a contractual agreement between the

City and organizations or governmental agencies, individuals or companies pursuant to all the provisions of this permit.

18. Real Property Taxes: Newly Acquired in Fee under the City's Land Acquisition Program.

a. The City will not challenge the initial assessed value or adjustments to the assessed value of parcels to be acquired pursuant to the land acquisition program set forth in this permit provided the initial assessed or adjusted value for such parcel does not exceed the fair market value of the parcel multiplied by the applicable equalization rate or a special equalization rate for that assessing unit. For purposes of this paragraph, fair market value equals the parcel's appraised value as finally determined by the City's independent appraiser.

b. The City will not challenge future assessments on any parcel acquired pursuant to the land acquisition program set forth in this permit or the 1997 Water Supply Permit, provided that in any Town or Village both of the following two conditions are met: (1) the rate of increase of the total assessed value of all parcels purchased by the City under the land acquisition program, as measured from the assessment roll in any year over the assessment roll of the prior year is not greater than the equivalent rate of increase in total assessed value of all non-City-owned parcels classified as forest or vacant; and (2) the ratio of the total assessed value of all parcels purchased by the City under the land acquisition program in the town to the total assessed value of all taxable parcels in the town does not increase from the prior year (after excluding any City acquisitions not included in the prior year's calculation). With respect to each parcel purchased by the City, since the beginning of the LAP in 1997 as well as after the Effective Date of this Permit, this commitment with respect to challenges of future assessments shall last for thirty (30) years from the date of each purchase.

c. The City will not seek to have any parcels acquired pursuant to this land acquisition program consolidated for purposes of reducing the City's property taxes.

d. The City shall retain its right as a property owner to challenge in court, or otherwise, assessments of parcels purchased under the land acquisition program if the provisions of paragraphs (a) and (b) are not satisfied. In any such challenge, the City will not seek to have the assessed value of the parcel reduced below the highest value which would result in the assessed value of the parcel satisfying the limitation set forth in paragraph (a) or in the total assessed value of all parcels purchased by the City under the land acquisition program in the town satisfying the limitations set forth in paragraph (b) above.

e. Except as provided in paragraph (c), the City retains all legal rights held by property owners with respect to any town-wide or county wide revaluation or update (as those terms are defined in Section 102, subdivisions (12-a) and (22) of the RPTL) currently being undertaken or which may be undertaken in the future.

f. The City shall also make payment for real property tax and ad valorem levies upon properties covered by this Special Condition.

g. The City shall assure the provisions of this special condition are incorporated into an instrument binding upon the recipient and if successors or assignees in the event of any property transfer or sale.

19. Real Property Taxes: Watershed Conservation Easements. The City shall support the enactment by the State Legislature of amendments as set forth in Exhibit 11 or its equivalent. Among other changes such amendments in Exhibit 11 would extend this statute so its provisions do not expire on 12/31/2016 and also expand property tax payment obligations by the City to include agriculturally exempt Watershed Agricultural Easements pursuant to Article 25-AA Agricultural and Markets Law acquired after 12/31/2010.

a. Article 5, Title 4-a of the New York Real Property Tax Law is the applicable state law which applies to Watershed Conservation Easements and Watershed Agricultural Easements. After December 31, 2010 the City shall also be bound by the proposed amended provisions in Exhibit 11 unless it or its equivalent has been enacted into law. Should the current statute expire then the

City shall be bound by the provisions of Exhibit 11 in its entirety. Unless Exhibit 11 or its equivalent is enacted into statute the City may not enter into purchase contracts to acquire Watershed Conservation Easements (WCE) or Watershed Agricultural Easements (WAE) except in those towns or villages where the City has entered into agreements with each applicable local property tax and assessing authority or jurisdiction (Local Authority[ies]) to implement the proposed amended provisions of Exhibit 11 on the following schedule: 1) WAEs proposed for acquisition after 12/31/2010, 2) WCEs (including continuation for WAEs) proposed for acquisition after 12/31/2016. In the event the Local Authority[ies] does/do not execute within ninety (90) days a signed agreement provided by the City then the City may execute purchase contracts within that town or village. Exhibit 11 includes the City paying local property tax levies for agriculturally exempt Watershed Agricultural Easements pursuant to Article 25-AA Agricultural and Markets Law which are acquired after December 31, 2010 as well as the continuation past December 31, 2016 of the City's obligation to pay local property taxes for Watershed Conservation Easements and Watershed Agricultural Easements acquired by the City under the LAP. Such agreements shall expire only if Exhibit 11 or its equivalent is enacted into law.

a. The City will provide to the respective Towns and Villages, as part of the local consultation process, and to the respective sellers, a generic description in plain language of the real property tax consequences to a seller arising from the City's purchase of a Watershed Conservation Easement.
b. The City shall assure the provisions of this special condition are incorporated into an instrument binding upon the recipient and if successors or assignees in the event of any property transfer or sale.

20. Limitation on Transfers to Tax Exempt Entities. The City will not transfer land including Watershed Conservation Easements, acquired pursuant to this land acquisition program to a tax exempt entity unless the entity executes a binding agreement with the City to comply with the provisions of Special Conditions 18 and 19.a plus 19.c which includes payments in place of property taxes and ad valorem levies as well as with any agreements and requirements that run with the land. This binding agreement shall also provide for the tax exempt entity to enter into its own written agreements acceptable to and with each applicable local property tax and assessing authority or jurisdiction to make payments equal to real property tax and ad valorem levies to satisfy the provisions of this special condition and the binding agreement. The City shall also in each such binding agreement entered into pursuant to this Special Condition make each such local property tax and assessing authority or jurisdiction in which the land subject to transfer to a tax exempt entity is situated, a third party beneficiary. Such agreement will grant each such third party beneficiary the right to enforce against the tax exempt entity and obtain specific performance as a remedy as well as shall run with the land and apply to future grantees or assignees.

21. Land Held in Perpetuity for Watershed Protection. (a) The City will grant a conservation easement that shall run with the land on all land acquired in fee under the land acquisition program to NYSDEC to ensure that such land is held in perpetuity in an undeveloped state in order to protect the Watershed and the New York City drinking water supply. Such easement shall also provide that the Primacy Agency shall have enforcement rights or be specified as a third-party beneficiary with a right to enforce the easement. With respect to lands in Priority Areas 3, 4 or C, such easements will provide that, with the prior agreement of USEPA and NYSDOH, the City may sell such lands free of the easement restriction, in order to purchase already identified replacement lands located in a higher Priority Area. In addition, any lands to be sold shall be offered in the first instance to NYSDEC for the option to acquire pursuant to applicable New York State and NYC laws at fair market value or a mutually agreed upon acquisition price. If so, the replacement lands thus acquired will similarly be subject to conservation easements. The City will not use the granting of conservation easements to reduce property tax liability on the property it acquires. In order to acquire any replacement lands during the term of the land acquisition program, the City shall comply with all of the requirements of this permit. Replacement LAP land

acquisition shall be governed by the provisions of this permit which shall survive expiration for this express LAP purpose.
(b) Watershed Conservation Easements acquired by the City shall be held in perpetuity in order to protect the Watershed and the New York City drinking water supply.

22. Acquisition Reports. The City shall submit acquisition reports every six months from the Effective Date of the Permit to the Primacy Agency (USEPA or NYSDOH), NYSDEC, and the Watershed Protection and Partnership Council. Such reports will include the following information for all parcels and easements acquired during the reporting period: address; description of the property, including any easement; county and town where property is located; tax map number; acreage; closing date; and map of property. The acquisition report shall also contain cumulative totals of acreage solicited and acreage acquired identified by town and Priority Area. Such Reports may be consolidated with reports required to be submitted under a Filtration Avoidance Determination.

23. Water Conservation Program Updates and Approval. The City shall update its current Water Conservation Program dated December, 2006 (Exhibit 13) ("Program") every 5 years thereafter and submit four (4) copies and one electronic copy in PDF, or similar form, of the updated Program to the NYSDEC for approval by no later than six (6) months prior to the end of the five year period. The written Water Conservation Program must be submitted to NYSDEC with sufficient detail and analysis to explain any data, objectives, proposals, estimated savings, measurements, milestones, methods of documentation, results or conclusions contained therein.

24. Water Conservation Program Implementation. The City shall continue to carry out all elements of its approved Water Conservation Program ("Program"). Within one year after the approval of the latest Program by the NYSDEC, and annually thereafter, the permittee must submit to the NYSDEC four (4) copies and one electronic copy in PDF, or similar form, of a Water Conservation Report ("Report"). The Report must address each element of the approved Program and any additional water conservation measures planned or being carried out by the permittee. The Report must be in the same format as the Program and must also include an update on the progress of implementation of all elements of the Program to date, an identification of accomplishments over the previous year; and an explanation for any failure to accomplish an element of the Program. The Report shall also specifically include, but not be limited to, a table that includes the number of meters installed; leaks repaired; miles of water main repaired and replaced; miles of water main leak surveyed; hydrants repaired or replaced; water fixtures rebated and water conservation surveys completed for the City's five boroughs. Each category shall also include the estimated daily gallons of water saved by each action.

25. Programs to Foster Cooperation and Requirement to Fund Watershed Protection and Partnership Programs.

a. Pursuant to Section 15-1503(4) of the Environmental Conservation Law, in addition to the foregoing conditions, NYSDEC has determined that the implementation, by the City, of the following programs, originally established by the 1997 Watershed MOA, incorporated as conditions in the 1997, 2002 and 2007 FADs and made a condition of the 1997 Water Supply Permit, as well as those programs identified below will foster cooperation with persons affected by the land acquisition program and assure the LAP is just and equitable to all affected municipalities and their inhabitants and in particular with regard to their present and future needs for sources of water supply. Except as otherwise provided in this permit, the City is required to execute and maintain Valid and Enforceable Program Contracts which implement the programs set forth below and as further described in the following provisions of the MOA which are incorporated by reference as Exhibit 14, and the following Watershed Protection and Partnership Programs: Septic Remediation and Replacement Program; Septic Maintenance Program; Community Wastewater Management Program; Stormwater Retrofit Program; Local Consultation Program; Education and Outreach Program; Tax Litigation Avoidance Program; CWC Operating Funds; Watershed Agricultural Program; Stream Management Program; and East of Hudson Non-Point Source

Pollution Control Program. The City's obligation to execute and maintain Valid and Enforceable Program Contracts for such programs is an independent requirement of this permit and shall continue whether or not the Watershed MOA is valid and enforceable. Nothing in this Permit limits the City's obligations under the MOA.

Exhibit 14 Paragraph	Description
120	Funding of the Catskill Watershed Corporation.
121	SPDES Upgrades.
122	New Sewage Treatment Infrastructure Facilities for Towns, Villages and Hamlets and Community Wastewater Management Program
125	Stormwater Retrofits, including continuation thereof.
126	Sand and Salt Storage Facilities, including continuation thereof.
131	Public Education, including continuation thereof
136	Tax Consulting Fund, which is hereby replaced by the Tax Litigation Avoidance Program
141	Upgrades to Existing WWTPs to comply with Watershed Regulations.
144	Phosphorus Controls in Cannonsville.
148	Local Consultation on Land Acquisition Program., including continuation thereof.

For purposes of this Special Condition, a Valid and Enforceable Program Contract shall mean a contract: (i) for which the City has appropriated sufficient funds to fulfill its obligations under this special condition and to make payments as they become due and owing; (ii) which has been registered pursuant to section 328 of the City Charter; and (iii) which remains in full force and effect and enforceable under applicable law during the term required by this permit. A failure by the City to comply with the condition requiring a valid and enforceable program contract for a program shall not be a violation of this permit if (i) the City continues to make timely payments for the program in accordance with the terms of the relevant paragraph of the MOA and the applicable program contract or (ii) the City has properly terminated the contract pursuant to the terms thereof and the City complies with its obligations to continue to fund or complete the subject program. For purposes of this Special Condition, a payment to be made by the City shall not be considered made to the extent such payments are required to be refunded to the City. In order to ensure the continuity of the programs in paragraph "b" below, the City shall meet annually with CWC prior to the end of CWC's fiscal year (December 31) to evaluate and confirm the availability of adequate and sufficient funding to meet the City's obligations.

b. Watershed Protection and Partnership Programs. In order to continue watershed protection and partnership programs, the City shall provide adequate levels of funding for continuation of all of the Watershed Protection and Partnership Programs required in this permit and in the 2007 FAD and any subsequent FAD or FAD amendment including adequate funding to the CWC and WAC, as described and set forth below:

1. Septic Remediation and Replacement Program:
   i. Through October 2013, consistent with the terms of the 2007 FAD and pursuant to the City's Program Agreement with CWC, the City shall continue to pay CWC One Million, Three Hundred Thousand Dollars ($1,300,000) each quarter to fund the Septic Remediation and Replacement Program as established pursuant to Watershed MOA paragraph 124 and as subsequently modified under the 2002 and 2007 FADs. These funds include funds available

for the Small Business Program and the Cluster System Program as set forth below. For the duration of this Permit, the City will continue to fund the Septic Remediation and Replacement Program at a level to allow a minimum of three hundred (300) septic systems per year to be remediated or replaced, provided that CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Septic Remediation and Replacement Program (including the Small Business Program and the Cluster System Program) shall be incorporated herein and made enforceable conditions of this Permit.

ii. The City shall support the continued use of the Four Million Dollars ($4,000,000) allocated under the 2007 FAD for the Small Business Program for the duration of this Permit for the purposes described in the 2007 FAD, as refined through the development of the Program Rules. For the duration of this Permit, the City will provide comparable and adequate funding for the Small Business Program, provided that CWC demonstrates that the need for such funding continues.

iii. The City shall support the continued use of the Two Million Dollars ($2,000,000) allocated under the 2007 FAD for the Cluster System Program for the duration of this Permit for the purposes described in the 2007 FAD, as refined through the development of the Program Rules. The City agrees that cluster systems may be an effective solution to address certain problematic septic systems on lots with inadequate space and/or soils to accommodate individual systems in compliance with applicable regulations, and that rather than simple cooperative agreements among common users to a proposed cluster system that are only subject to private enforcement, municipal management and sewer district formation will be needed. Pursuant to the 2007 FAD, the City has identified thirteen areas/small hamlets that may be candidates for or in need of cluster systems. To determine the feasibility of such cluster systems, the City shall, in cooperation with CWC, consider the following issues: determining whether an individual town agrees that there is a need for a collective engineered intervention in a specific identified hamlet; identifying a willing host site for a collective system; establishing a sewer use ordinance; and overseeing project management by CWC or its agents. NYCDEP shall work with CWC to explore implementation of projects under these terms and to continue to examine the program terms to facilitate the advancement of cluster systems. In the event that CWC determines that it is not feasible to further pursue this program, the City shall allow CWC to allocate any remaining funds to either or both the Septic Remediation and Replacement Program or the Small Business Program.

2. Septic Maintenance Program: The City shall support the continued use of the One Million, Five Hundred Thousand Dollars ($1,500,000) allocated and paid to CWC under the 2002 FAD for the Septic Maintenance Program. For the duration of this Permit, the City will provide additional funding, if necessary, to allow maintenance each year of 20% of the total number of septic systems eligible for maintenance under CWC's Septic Maintenance Program Rules, as revised February 28, 2008, provided that CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Septic Maintenance Program shall be incorporated herein and made enforceable conditions of this Permit.

3. Community Wastewater Management Program: As set forth in the 2007 FAD and as a continuation of the New Infrastructure Program established pursuant to Paragraph 122 of the Watershed MOA, the City shall provide sufficient funding to design and complete Community Wastewater Management Program projects for the remaining communities as set forth in the list contained in MOA Paragraph 122. This includes the hamlets of Trout Creek, Lexington, South Kortright, Shandaken, West Conesville, Claryville, Halcottsville, and New Kingston. Consistent with the City's Program Agreement with CWC, the City shall make payment based on invoices from CWC as needed for project design and implementation costs. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Community Wastewater

Management Program shall be incorporated herein and made enforceable conditions of this Permit.

4. Stormwater Retrofit Program: Through October 2013, the City shall support the continued use of the Four Million, Six Hundred Fifty Thousand Dollars ($4,650,000) allocated under the 2007 FAD for the Stormwater Retrofit Program established pursuant to Paragraph 125 of the Watershed MOA. For the duration of the Permit, the City shall continue to fund the Stormwater Retrofit Program to allow the Program to continue at a level of activity that has been maintained since the inception of the Program, consistent with the processes set forth in CWC's Stormwater Retrofit Program Rules, as revised October 6, 2009, provided CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Stormwater Retrofit Program shall be incorporated herein and made enforceable conditions of this Permit.
5. Local Consultation on Land Acquisition Program: The City shall continue to make available up to Thirty Thousand Dollars ($30,000) per town or village in the West of Hudson Watershed allocated pursuant to Paragraph 148 of the Watershed MOA and the 2007 FAD for the Local Consultation Program, for purposes described in MOA Paragraph 148 and the 2007 FAD, for the duration of this Permit. The City shall also continue to make available up to Twenty Thousand Dollars ($20,000) per town or village in the East of Hudson portions of the Catskill/Delaware Watershed allocated pursuant to MOA Paragraph 148 for the Local Consultation Program, for purposes described in the 1997 MOA, for the duration of this Permit. The City shall also continue to make available up to Ten Thousand Dollars ($10,000) per town or village in the Croton Watershed and not in the Catskill/Delaware Watershed, for purposes described in the 1997 MOA, for the duration of this Permit.
6. Education and Outreach Program: As set forth in the 2007 FAD, the City shall continue to make available up to Eight Hundred Thousand Dollars ($800,000) to fund the Education and Outreach Program as established pursuant to Paragraph 125 of the Watershed MOA. Consistent with the City's Program Agreement with CWC, the City shall make payment based on invoices from CWC as needed for eligible projects. For the duration of the Permit, the City will continue to fund the Education and Outreach Program at a minimum level of Two Hundred Three Thousand, Seven Hundred Thirty Four Dollars ($203,734) per year, provided that CWC demonstrates that the need for such funding continues. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund the Education and Outreach Program shall be incorporated herein and made enforceable conditions of this Permit.
7. Catskill Watershed Corporation General Operating Expenses:
   i. General Operating Expenses: For the duration of this permit, the City will continue to fund CWC General Operating Expenses as needed, based on requests for such funding from CWC, which the City shall not unreasonably deny. The City estimates that the total funding will be approximately Four Million, Three Hundred Seventy-Three Thousand, Six Hundred Twenty-Five Dollars ($4,373,625) over the duration of this Permit. The City shall be bound to provide no less than this amount to fulfill such CWC funding requests.
   ii. Stormwater Coordination Position: Through 2013, consistent with the terms of the 2007 FAD and pursuant to the City's Stormwater Technical Assistance contract with CWC, the City shall continue to pay CWC Forty-Eight Thousand Dollars ($48,000) each year to fund a position at CWC to assist the regulated community in complying with the stormwater provisions of the City's Watershed Regulations. For the duration of this Permit, the City will ensure adequate funding and continue to fund an appropriate engineering position at CWC (salary plus cost of standard fringe benefits) to assist applicants undertaking regulated activities to comply with the stormwater provisions of the City's Watershed Regulations. In addition, conditions of any subsequent FAD or FAD amendment requiring the City to fund such an engineering position at the Catskill Watershed Corporation, including annual salary

plus cost of standard fringe benefits, shall be incorporated herein and made enforceable conditions of this Permit.

8. Tax Litigation Avoidance Program: For the duration of this Permit, the City will fund the Tax Litigation Avoidance Program (TLAP) pursuant to which the City will provide funds in an initial amount of Five Hundred Thousand Dollars ($500,000), and continued funding up to a cap of Two Million Dollars ($2,000,000) plus a one time additional reasonable amount for any individual Assessing Authority to be used for the purposes of the TLAP to be administered by the CWC, for use by the jurisdictional local property tax assessing authorities (Assessing Authority[ies]) for the purpose of seeking to avoid the costs and risks of litigation over taxes assessed on dams, reservoirs, wastewater treatment plants and, to the extent applicable, sewer lines (Unique Properties) owned by the City. The City will seek to enter into a Program Agreement with CWC within nine months of the date of this Permit, setting forth the terms and conditions under which TLAP funds may be used by CWC to retain an expert to assist the Assessing Authority in (i) applying and updating templates for assessing Unique Properties owned by the City; (ii) evaluating a Valuation Report provided by the City to an Assessing Authority; and (iii) valuing Unique Properties where the Assessing Authority has undertaken a town-wide revaluation. In addition, under certain limited circumstances, the City will provide limited reimbursement for costs of litigation. The City will not challenge future assessments of Unique Properties, where templates have been established and the Assessing Authorities have used those templates, provided that the City does not dispute the manner in which the Assessing Authority has applied the template. Disputes will be resolved in accordance with the TLAP Program Agreement. The City shall provide a copy of the program agreement to NYSDEC when executed.

9. Gap Funding: The City will provide reimbursement to CWC of any funds transferred from CWC's Future Stormwater Program to the CWC Septic Program and/or the CWC Stormwater Retrofit Program for the purpose of ensuring continuation of those programs and from the Catskill Fund for the Future to CWC Operating accounts and/or the TLAP pending final funding agreements under the terms of the Second Five Years of the 2007 Filtration Avoidance Determination ("2012 FAD Reauthorization") or of a subsequent Filtration Avoidance Determination, if such a Determination is issued ("2017 FAD" and/or 2022 FAD"). Such reimbursement from the City, including interest foregone by CWC by virtue of having temporarily allocated money from the Future Stormwater Program and/or the Catskill Fund for the Future, shall be provided for in agreements or change orders. The City shall not oppose such agreements and/or change orders being included as conditions of the 2012 FAD Reauthorization or the 2017 FAD.

10. Geographic Information System: As set forth in the 2007 FAD, the City shall continue to disseminate data to stakeholders and the public as appropriate, including notification of data availability to communities and responses to requests for data.

11. Watershed Agricultural Program: Through October 2012, consistent with the terms of the 2007 FAD and pursuant to the City's Program Agreement with WAC, the City shall continue to make available up to Thirty-Two Million Dollars ($32,000,000) to fund the Watershed Agricultural Program. Consistent with the City's Program Agreement with WAC, the City shall make payment based on quarterly invoices from WAC, subject to the terms of the Program Agreement, for farm plans and associated best management practices (BMPs), forest plans and forest BMPs, and other eligible costs relating to WAC's farm and forestry programs. For the duration of this Permit, the City's commitments to fund the Watershed Agricultural Program pursuant to any subsequent FAD or FAD amendment shall be incorporated herein and made enforceable conditions of this Permit.

12. Stream Management Program: Consistent with the terms of the 2007 FAD and pursuant to the City's contracts with Soil and Water Contract Districts in Delaware County ($8,251,000), Greene County ($10,748,506), Ulster County ($4,460,000), and Sullivan County ($3,292,684) and with

Ulster County Cornell Cooperative Extension ($3,647,570), the City shall provide funding for the continuation of each of the existing Stream Corridor Management Program contracts. For the duration of this Permit, the City commits to fund the Stream Corridor Management Program pursuant to any subsequent FAD or FAD amendment which shall be incorporated herein and made an enforceable condition of this permit.

26. Restriction on Acquisition of Title.

a. The City shall not acquire title to land or Watershed Conservation Easements on land (hereinafter referred to as "Restrictions") as described below in subparagraph (c) if (1) the City has not appropriated funds for one or more of the programs listed in subparagraph (c) below and thereafter the City fails to make a payment that would otherwise be due and owing under a contract for such unappropriated program and (2) the City has not cured the failure to make such payment within thirty (30) days of the date the payment was due and owing. For purposes of this paragraph only, a failure to make a payment shall be deemed cured if the City makes such payment, with interest at 9% compounded annually from the date such payment was due and owing.

b. Except as provided in paragraph (a) above, the City shall not acquire title to land or Watershed Conservation Easements on land (hereinafter referred to as "Restrictions") as described below in subparagraph (c) if (1) for one or more of the programs listed below, the City does not have a valid and enforceable program contract during the term set forth in Exhibit 14 and thereafter the City fails to make a payment that would otherwise be due and owing under such invalid or unenforceable contract and (2) the City had not cured the failure to make such payment within 8 months of the date the payment would otherwise have been due and owing. The 8 month period is intended to provide the City with time to attempt to resolve the matter which caused the program contract to become invalid and unenforceable without interruption to the land acquisition program. For purposes of this paragraph only, a failure to make a payment shall be deemed cured if the City makes such payment, with interest at 6.5% compounded annually from the date such payment was due and owing.

c. The programs for which such failure to make payment and to timely cure late payment shall lead to Restrictions to the water supply permit under this subpart are: (1) with respect to acquisitions in West of Hudson: Catskill Watershed Corporation Funding, SPDES Upgrades; New Sewage Treatment Infrastructure Facilities; Sand and Salt Storage; Septic Remediation and Replacement Program; Septic Maintenance Program; Community Wastewater Management Program; Stormwater Retrofit Program; Education and Outreach Program; Tax Litigation Avoidance Program; Stream Management Program, (2) with respect to acquisitions in East of Hudson: Non-Point Source Control Program, and (3) with respect to acquisitions in the entire Watershed: Upgrades to Existing WWTPs to Comply with Watershed Regulations; Watershed Agricultural Program and Local Consultation on Land Acquisition.

d. If the water supply permit is Restricted under this Special Condition, the City shall not acquire title to land or Watershed Conservation Easements on land under this permit until, with respect to the program for which the failure to pay led to the Restrictions, the City has made all missed payments which the City failed to pay and which would otherwise be due and owing except that the City failed to maintain a valid and enforceable contract, as provided in paragraphs (a) and (b), as well as interest on such missed payments at the rate set forth in paragraphs (a) or (b), whichever is applicable.

e. The following process shall govern Restrictions on the City's acquisition of an interest in land or Watershed Conservation Easements on land pursuant to this water supply permit under this paragraph:

(i) The City shall notify in writing NYSDEC (Attention: Chief Permit Administrator) the individual members of the Executive Committee, and the CW Corporation as soon as practicable of the commencement of any litigation seeking to invalidate one or more program contracts. The

purpose of the notice is to provide the Parties at the earliest possible point in the litigation an opportunity to discuss such dispute. Additionally, the City will keep such parties advised of the status of the litigation.

(ii) If the conditions set forth in paragraphs (a) or (b) are met, the party to whom the City would otherwise have owed the missed payment ("Contracting Party") may notify the City, the Executive Committee, and NYSDEC in writing that the condition of this permit requiring a valid and enforceable program contract has been violated and that thereafter the City missed a payment under such contract, and that the City has not cured the failure to make such missed payment. The City shall have 10 days from its receipt of the notice to respond in writing to the Contracting Party, the Executive Committee and NYSDEC. If the City agrees with the notice or does not respond within 10 days, the City's permit shall be restricted without further proceedings and the City will not acquire title to land or Watershed Conservation Easements on land under this permit. If the City disputes the notice, NYSDEC shall have 15 days from its receipt of the City's response to determine, after consulting with the City, Executive Committee and Contracting Party, whether the condition requiring a valid and enforceable program contract has been violated and whether thereafter the City has missed a payment under such contract and whether the City has not cured the failure to make such missed payment. If NYSDEC determines that these criteria exist, it shall notify the City, the Executive Committee and the Contracting party of its determination within 5 days and the City will not acquire title to land or Watershed Conservation Easements on land under this permit.

(iii) If the water supply permit has been Restricted pursuant to subparagraph (d)(ii) above, and the City believes it has met the conditions set forth in paragraph (c) above so that the Restrictions should be lifted, the City may notify the Executive Committee, NYSDEC and the Contracting Party in writing. The Contracting Party shall have 10 days from its receipt of the City's notice to respond in writing to the City, the Executive Committee and NYSDEC. If the Contracting Party agrees with the City's notice or does not respond within 10 days, the City may resume land acquisition without further proceedings. If the Contracting Party disputes the notice, NYSDEC shall have 15 days from its receipt of the Contracting Party's response to determine, after consulting with the City, Executive Committee and Contracting Party, whether the missed payments have been paid with interest at the applicable rate. If NYSDEC determines that such missed payments have been paid with interest, it shall notify the City, the Executive Committee and the Contracting Party of its determination in writing within 5 days, and the City may thereafter resume land acquisition under this permit.

27. Primacy Agency Determination. The Primacy Agency has regulatory authority under the federal Safe Drinking Water Act and Surface Water Treatment Rule to review and approve any request by the City for a filtration waiver for the Catskill and Delaware portions of the Watershed and to incorporate and enforce conditions to any such Filtration Avoidance Determination it may issue. The Primacy Agency's authority is undiminished by this Water Supply Permit. If the Primacy Agency determines, as part of its review and approval process for such a request that the Natural Features Criteria as contained in Special Condition 9 and/or acquisition exclusions (hamlet or village designations) contained in SC 10 are having or have had a detrimental impact on the ability of the City to protect water quality by unduly restricting the acquisition of land in fee and Watershed Conservation Easements, the Primacy Agency may notify NYSDEC in writing (with copies to the MOA signatories and others upon request) to request the Natural Features Criteria be modified through the formal modification process as a new permit application as set forth in 6 NYCRR621.

28. Notices and Submittals. Except to the extent that any other paragraph specifically requires or authorizes a different form of notice, any notice required or permitted to be given hereunder shall be in writing, and shall be delivered by certified mail, postage prepaid, or by hand, or by overnight courier, or by telecopy confirmed by any of the previous methods, addressed to the receiving party at its address as shown on Exhibit 15 or at such

other or further address as the receiving party shall provide to the other parties in writing from time to time. If any organizations which are to receive any notice, material or information from the City under the terms of this permit are not established or cease to exist, such notice, material or information shall be submitted by the City to NYSDEC.

29. Riparian Buffers Program.

a. The City shall allocate initially Five Million Dollars ($5,000,000) of the LAP funds for a program for acquiring Riparian Buffers -in easement or fee as part of a Riparian Buffers Program (RBP) which shall be implemented within 18 months of the Effective Date of this permit and run for no less than 3 years thereafter.

b. The goals, acquisition criteria, procedures (including implementing entity), and evaluation criteria for the RBP will be developed into a Report (PDI Report) with full City participation through an intergovernmental cooperative effort (RBP Program Development Initiative [PDI) between the City, Coalition of Watershed Towns (CWT), the Town of Hunter and Greene Land Trust (lead implementing organization) funded by a grant from the Catskill Watershed Corporation (CWC) Local Technical Assistance Program ("LTAP Grant") with the input of a consultative working group including but not limited to NYCDEP, NYSDEC, NYSDOH, CWC, CWT, Delaware County, Greene County, Schoharie County, NRDC, Riverkeeper and NYPIRG.

c. The City shall submit to NYSDEC a written recommendation regarding the implementation of the Program no less than 3 months before the implementation deadline in paragraph a. of this special condition. If the City's recommendation identifies a need to modify this permit then such recommendation shall be accompanied by a permit modification application. NYSDEC will, after consultation with NYSDOH, NYCDEP, and other agencies or local governments, make a written determination on whether or not it should be implemented and/or expanded beyond the Schoharie Reservoir Basin. Such written determination shall include addressing NYCDEP recommendations.

d. Pursuant to Special Condition 7 above RBP acquisitions in fee or easement shall be subject only to the eligibility criteria of surface water features in Special Condition 9 Natural Features Criteria and the acquisition excluded areas (hamlet designations) in Special Condition 10. The acquisition exclusion areas (hamlets) may be waived in individual municipalities by the town or village boards by resolution which shall cover the Riparian Buffer Program and the specific parcels described and covered by such program.

e. The RBP will be implemented in conjunction with one or more Stream Management Plans developed under the City's Stream Management Program, and will be carried out in partnership with one or more land trusts which shall be bound by contract to the City to implement and comply with the provisions of this permit. Consistent with the PDI Report, the land trust(s) will be responsible for coordinating with NYCDEP on tasks that may include but are not limited to: landowner outreach and contact, establishing eligibility and criteria; drafting legal documents; coordinating with NYCDEP to minimize multiple program solicitations; obtaining local approval to pursue acquisitions under the RBP that do not comply with the terms and conditions otherwise applicable to the LAP pursuant to this Permit; ordering appraisals and making purchase offers; acquiring eligible property interests; managing the Local Consultation process; identifying and implementing management practices linked to the goals of riparian buffer protection; stewarding, administering, monitoring, and enforcing the terms of riparian buffer easements or fee acquisitions; and allowing for public access on land acquired in fee simple where applicable. In the event a qualified land trust is not found then the City shall fully implement the program itself.

f. An evaluation report on the effectiveness of the RBP meeting the requirements of this permit and Filtration Avoidance Determination as well as the goals and evaluation criteria to emerge from the PDI, including recommendations on any proposed changes, if necessary, to improve the program, shall be submitted by NYCDEP to NYSDEC within 6 months before the end of the initial 3 year program period in paragraph a. of this special condition. NYSDEC will evaluate

this program and, after consultation with NYSDOH, NYCDEP, as well as other agencies or local governments, make a written determination on whether or not it should be continued and/or expanded beyond the Schoharie Reservoir Basin. Such written determination shall include addressing NYCDEP recommendations.

30. Revocable Permits for Use of Watershed Property Owned In Fee by NYCDEP.
The City shall amend its revocable permit regulation Title 15, Chapter 17 (Issuance of Temporary Permits for the Occupation of City Property), Section 17-06 (Fees and Charges) of the Rules of the City of New York (RCNY) permit fee schedule to provide for a waiver or reduction for certain municipal and recreational uses.

31. Watershed Forest Conservation Easement Program.

a. The City shall develop and implement a Watershed Forest Conservation Easement Program within 12 months from the Effective Date of the permit. The Watershed Forest Conservation Easement Program shall be implemented by the City and through WAC or another qualified local and/or regional land trust or by the City on its own. This program shall include the acquisition of Watershed Conservation Easements on eligible lands. The City shall initially commit Six Million Dollars ($6,000,000) to support this program. Eligible lands shall include the following:
   i. Land enrolled in WAC's Forest Management Program for which an Individual Landowner Forest Management Plan has been developed; or
   ii. Land enrolled in NYSDEC's Forest Stewardship Program or Section 480A Forest Tax Law for which an Individual Landowner Forest Management Plan has been developed; or
   iii. Other land important for watershed, water quality and/or forestry protection.

b. This program shall be implemented for an initial period of (5) five years. NYCDEP shall submit a written evaluation on the effectiveness of the Watershed Forest Conservation Easement Program in meeting the requirements of this permit and Filtration Avoidance Determination and include recommendations concerning continuation and funding of this Program as well as on any proposed changes, if necessary, to improve the Program. This written evaluation is to be submitted to NYSDEC and NYSDOH (4) four years and (3) three months from the date on which the Watershed Forest Conservation Easement Program commences. NYSDEC will evaluate this Program and, after consultation with NYSDOH, NYCDEP, as well as other agencies or local governments, make a written determination on whether or not it should be continued and/or expanded. Such written determination shall include addressing the recommendations of NYCDEP. If the Program is implemented by WAC or another qualified local and/or regional land trust and a determination is made not to continue the program, all unused funds, including earnings thereon, shall be returned to the City and shall remain available for land acquisition.

32. Forest Management Plan. The City is preparing a forest management plan for its watershed lands, pursuant to Section 4.3 of the 2007 FAD, which is due in November 2011. The plan will include a comprehensive forestry inventory on all lands owned by the City. The NYCDEP Forest Management Plan will include a discussion of fire risk management. The City will conduct a consultation process commencing no less than three months prior to the completion of the plan that will at a minimum include NYSDEC and Delaware County, as well as other Counties and any other interested stakeholders, to cover fire risk management aspects of the plan, forestry practices (including those of NYSDEC) and forest health. The plan shall contain an implementation schedule that shall go into effect once the plan has been submitted to and accepted by the Primacy Agency. The implementation schedule shall also provide for updating the plan 7 years from the Effective Date of the Permit and every 10 years thereafter when

requested in writing by either the Primacy Agency or NYSDEC. Such plan updates shall be in accordance with the provisions and process specified in this special condition.

33. **Enhanced Land Trust Program.** The City shall develop and implement a program to collaborate with land trusts to acquire properties including but not limited to land with habitable dwellings, in accordance with the provisions of Special Condition 8. Through this Program, in municipalities that have adopted resolutions allowing one or more specified land trusts to work with NYCDEP on acquisitions under this Program, land trusts may acquire property on behalf of the City in accordance with this permit. The City shall continue to participate in the Land Trust Working Group, with representatives of land trusts, the Coalition of Watershed Towns, CWC, and Delaware County, which has developed a number of terms and conditions for the Enhanced Land Trust Program and which will continue to provide guidance as the Program is implemented.

34. **East of Hudson Non-Point Source Stormwater Program.**

a. In order to foster continued partnership and cooperation in the protection of the City's water supply watershed, the City shall provide a total of Fifteen Million, Five Hundred Thousand Dollars ($15,500,000) ("EOH NPS Fund") to the EOH Watershed Communities to help fund the first five year plan for the stormwater retrofit program to be implemented under the heightened requirements for phosphorus reduction applicable to the EOH Watershed Communities. The City shall make Ten Million Dollars ($10,000,000) of the EOH NPS Fund available within 12 months of the Effective Date of this Permit. Provided that no East of Hudson Community brings a legal challenge to this Special Condition of this Permit within 120 days of the Effective Date of this Permit, the City shall make the remaining Five Million, Five Hundred Thousand Dollars ($5,500,000) of the EOH NPS Fund available within 6 months of receiving written notification that the first Ten Million Dollars ($10,000,000) have been committed via binding agreements.

b. Up to Two Hundred Thousand Dollars ($200,000) of the EOH NPS Fund will be available to the EOH Watershed Communities to prepare a report analyzing the potential opportunities for phosphorus reduction in stormwater runoff on lands owned by the City in the EOH Watershed, including a calculation of the total possible phosphorus reduction, the drainage area captured and treated, the estimated cost of such reduction, a description of the retrofit projects on City lands and a timetable for possible implementation of such projects.

c. Up to Fifty Thousand Dollars ($50,000) of the EOH NPS Fund will be available for the establishment of a Regional Stormwater Entity to administer and coordinate compliance with the MS4 Program.

d. On or before December 31, 2013, the City shall enter into discussions with the NYSDEC and the EOH Watershed Communities regarding requirements for future EOH phosphorus reductions in stormwater as required under the heightened requirements for phosphorus reduction applicable to the EOH Watershed Communities. In these discussions, the City will consider, among other things, any projects on City lands in the EOH Watershed that would be appropriate for the EOH Communities' Stormwater Management Programs identified in the report prepared pursuant to Paragraph b. above. The City shall make lands available for such projects so long as it determines that the projects will not pose a threat to water quality or NYCDEP operations related to water supply.

e. On or before December 31, 2014, if the City agrees to provide additional assistance to the EOH Communities to achieve the heightened requirements for phosphorus reductions applicable in the EOH Watershed, including but not limited to additional funding, the City shall request that this special condition be modified to incorporate such commitments. If City lands are identified as appropriate for stormwater management projects pursuant to Paragraphs b. and d. above, the City's making such lands

available shall constitute all or a portion of any additional assistance it agrees to provide. Any such required amendment of this special condition shall not require or constitute a reopening of any other provision of this permit. For the duration of this Permit, any City agreement to provide additional funding for the East of Hudson Non-Point Source Stormwater Program as described in this subparagraph shall be incorporated herein and made enforceable conditions of this Permit.

f. Consistent with the terms of the 2007 FAD, the City shall make available Four Million, Five Hundred Thousand Dollars ($4,500,000) to the EOH Watershed Communities to help fund the first five year plan for the stormwater retrofit program implemented under the heightened requirements for phosphorus reduction in stormwater applicable to the EOH Watershed Communities in the Croton Falls and Cross River basins within the East of Hudson Watershed and any upstream/hydrologically connected basins and shall be made available on the same expedited basis as the funding set forth in subsection "a" hereof.

g. For the duration of this Permit, the City's commitment to fund the heightened requirements of the East of Hudson Non-Point Source Program (which encompasses the stormwater retrofit program and related projects) pursuant to any subsequent FAD or FAD amendment shall be incorporated herein and made enforceable conditions of this Permit. Consistent with the terms of the 2007 FAD, and as set forth in the MS4 SPDES General Permit No. GP-0-10-002 issued by NYSDEC on April 29, 2010 ("the MS4 Permit") (which contains the NYSDEC TMDL reduction requirements, including the heightened requirements applicable to the EOH Watershed Communities), the MS4 requirements are requirements of federal and State law. As stated in the MS4 permit, meeting those requirements is the responsibility of the EOH Watershed Communities.

h. On or before June 30, 2011, the City shall work with the NYSDEC and the EOH Watershed Communities to develop program rules that assure that the funds provided by the City pursuant to this special condition will be easily accessible by the EOH Watershed Communities and will be fully allocated for the implementation of the pending five-year plans for the stormwater retrofit program to be implemented under the heightened requirements for phosphorus reduction applicable to the EOH Watershed Communities, consistent with all applicable legal requirements and the City's fiduciary obligations.

Exhibits:[Corresponding Special Condition]

1. Map of Catskill and Delaware Water Supply and Watershed and Map of Croton Water Supply and Watershed [4c]
2. Catskill and Delaware Watershed Priority Areas West-of-Hudson [6.a]
3. Catskill, Delaware and Croton Watershed Priority Areas East-of-Hudson [6.a, 6.b]
4. List of Tax Parcels in West of Hudson Hamlet Areas [10.a.ii]
5. Maps of West of Hudson Hamlet Areas [10.a.ii]
6. Defined West of Hudson Roads Eligible for Land Acquisition Exemption [10.a.iv]
7. 2007 Solicitation Schedule [14]
8. 2008-2010 Solicitation Plan [14]
9. Model Conservation Easement to be Held by NYSDEC on City Fee Lands [16.c]
10. Model WAC Conservation Easement [16.d.2.b]
11. Draft Legislation to Amend Article 5, Title 4-a of the RPTL for Taxation of Watershed Conservation Easements [19]
12. City's Water Conservation Program dated December 2006 [23]
13. Cluster Development Resolutions [10.h]
14. Watershed Memorandum of Agreement [25 & 26] [incorporated by reference]
15. Notice Addresses

The Enhanced Land Trust Program

The Successor Water Supply Permit includes provisions for an Enhanced Land Trust Program (Program), an enhancement to existing opportunities for DEP to partner with land trusts. The Land Trust (LT) Working Group has agreed to the following parameters for the Program, which is designed to facilitate acquisition in fee of large properties with or without dwellings, where landowners prefer not to work directly with the City, or prefer not to subdivide out any habitable dwelling(s) as is otherwise required by the 1997 New York City Watershed MOA. Under the MOA, the City cannot acquire property with structures other than "uninhabitable dwellings." While the City may acquire the vacant portions of such property, some landowners have not been willing to subdivide property that would, but for one or more habitable dwellings, be eligible for acquisition and desirable for water quality protection.

The Program will focus initially on what will be a defined group of properties whose sum total acreage will be agreed to at the outset of the Program. The LT Working Group, which met twice between July and September 2010 and will continue to meet for the duration of the Program to exchange information and address issues as they arise, may consider expanding the scope of the Program as implementation progresses. Under the Program, a LT could acquire an eligible property, convey the vacant portion(s) to the City, and separately convey the dwelling(s) (if any) on the remaining parcel(s) to another buyer. The Program parameters are as follows:

A. Land Trust eligibility for the Program and Local Consultation

LTs will consult with municipal governments about local planning goals and potential interest in partnering with LTs. Prior to the LT conducting any property-specific activities under the Program, a municipality must "opt in" to the Program for a specific LT's involvement for 5-year periods, by resolution. Purchase contracts between a LT and landowner signed within the 5-year periods would remain valid and available for eventual conveyance to the City even if the town rescinded its resolution after the 5-year period. Pending negotiations that had not reached the contract stage by the end of a 5-year period, if the town rescinded its resolution, would not be 'grandfathered'. An indeterminate period (following execution of the WSP Agreement) is available for town leaders to be informed about this Program by the Coalition and/or LTs, and for towns to formally resolve whether any or all LTs may work on this Program within their bounds. Where a property spans more than one town, the parcel containing the dwelling would be eligible for acquisition under the Program only if the town in which the dwelling exists has opted in to the Program.

i. DEP will coordinate the Local Consultation (LC) process (WSP Special Condition XX) for properties to be acquired by LTs prior to the LT entering into a purchase contract with a seller. The process would serve for both the LT's acquisition from the original landowner and also the City's acquisition from the LT. If a deal is modified in a significant way before closing, LC would be resubmitted (as is the case currently when the City submits acquisitions for LC).

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B. Habitable Dwellings:

i. LTs may acquire property with habitable dwellings for purposes of selling one or more vacant portions, without dwelling(s), to the City. Following subdivision of the dwelling(s) as necessary to sell the vacant portion(s) to the City, the LT will promptly offer the parcel(s) with the habitable dwelling(s) for sale at a competitive price on the open market. No new or additional deed restrictions or covenants – other than those required to create sufficient access for new parcels, or to obtain subdivision approval – shall be created by the landowner or by the LT. The City will pay for all costs (except costs for those services donated by the LT and those not agreed to by the City and LT prior to entering a program contract or purchase contract) related to acquisitions, subdivisions, and dispositions by the LT, including costs associated with the "dwelling" parcel, subject to City approval of the configurations and costs of such projects. These costs, as agreed to under program contract or purchase contract, may include day-to-day property management issues (lawn mowing, snow-plowing, roof repairs, insurance, routine maintenance, etc) as well property taxes for a period up to X years or until the LT sells the properties (whichever is shorter).

C. Identification of Appropriate Properties or Categories of Properties:

i. In order to be eligible for this Program initially, properties must:

a. Be of interest to the City for acquisition;

b. Be over X acres in size;

c. Be owned by landowners who are unwilling to subdivide out the dwelling themselves, and/or who have been unresponsive to – or rejected – the City's solicitations.

ii. The LT Working Group may modify these criteria over time.

a. Ground Rules:

i. Eminent domain shall not be used by the City or by any LT participating in the Program. (SC 5)[1]

ii. This Program will not operate in Designated Areas where towns have opted to exclude LAP. (SC 10)

iii. This Program will be limited to those LTs that have been 'accepted' by town resolution.

iv. There will be no acquisition of properties which fail to meet Natural Feature Criteria thresholds. (SC 9)

Comment [DTT1]: The Working Group did not agree on a minimum size, but rather distributed a list of properties larger than 400 acres that otherwise met the criteria. The Group then agreed that 400 acres should not be the defining threshold, but that smaller properties should also be considered. DEP will develop a list so that towns have a sense of the maximum acreage that would be involved in their municipality.

[1] This and similar references are to Special Conditions in the Successor Water Supply Permit.

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v. There will be full transparency – LTs will explain to landowners that the vacant property would be planned for eventual conveyance to DEP, regardless of whether or not there is an advance written commitment that the City will acquire the property.

vi. LTs will not seek tax exempt status for any property acquired under the Program. (SC 18)

vii. If any covenants restricting recreational or other uses are added to a property's deed following the commencement of negotiations between a landowner and a LT, the property shall not be eligible under the Program (unless such covenants are removed).

D. Proposed Process:

i. After the WSP is issued, CWT and/or any interested watershed county would hold meetings with LTs and towns to describe the Program. The presentation(s) would state that towns must elect by resolution to allow specifically-named LTs to pursue acquisitions within their borders that could result in purchase of property with dwellings, and that such resolutions would last a minimum of five years and remain in effect thereafter unless changed by the town no later than X months following the end of each five-year period. The presentations would also inform towns that LTs would potentially acquire properties at below FMV, and that dwellings would be subdivided and conveyed within the marketplace while vacant land would be conveyed to the City under rules established by the MOA and WSP. Acquisitions involving properties with habitable dwellings will not be allowed in Towns that do not adopt a formal resolution in regard to this Program.

Comment [DTT2]: This detail has not been addressed by the LT Working Group yet.

ii. In towns that pass such resolutions, the City and LTs will consult together about which properties would be solicited.

iii. LTs will then contact landowners to pursue acquisitions; the LT will describe the entire program to landowners with full transparency.

iv. If a landowner is interested in receiving a purchase offer, the City and LT will coordinate regarding project design, expected subdivision configuration, and ordering and review of appraisal,. An appraisal report will be ordered, reflecting the existing configuration of the property; if a landowner accepts the offer within six months of receiving it, a second report may be commissioned which would reflect the expected configuration following subdivision. The former value will be the basis of the purchase offer by the LT to the landowner,[2] while the latter value will reflect the FMV price to be

[2] As discussed below, if the LT has donated its staff time to the project, the LT may negotiate a price for less than FMV with the seller, if and as such process is explained by the LT to the seller. Under certain circumstances, a landowner may take advantage of donating a portion of the purchase price to the land trust in a structured "bargain sale".

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paid by the City to the LT as well as the FMV for the subdivided portion with the dwelling. If subdivision approval is sought during the purchase contract, the plat should not be filed until after the conveyance from seller to LT, to ensure that the appraisal upon which FMV was established matches the configuration acquired. LTs have requested and the City has agreed to revise its appraisal policy for this Program to provide for a two-year window during which the fair market value representing the City's purchase offer to the LT would remain valid. This is because the time between the LT purchase offer to the landowner and the LT entering contract with the City is likely to be considerably longer than the City's current policy window of six months. Following review of the appraisal report by the City and LT, the LT will present a purchase offer to the landowner.

v. If a landowner accepts the purchase offer, the City shall coordinate Local Consultation prior to the LT entering contract with seller, or alternatively the LT can enter contracts contingent upon results of Local Consultation that might influence whether or how a project can proceed.

vi. If such local requirement exists, septic percolation / test pit requirements (for the vacant parcel(s) to be subdivided and conveyed to the City) may be waived by the town.

vii. The City will directly assume the costs of the following specific site services through its vendors during the LT's purchase contract in order to minimize (a) unnecessary duplicative costs by the LT, and (b) the time needed for eventual conveyance to the City:

1. Appraisal report(s)
2. Survey (including subdivision costs up to $5,000 for subdivision of one dwelling and $3,000 for each additional dwelling or parcel outside the watershed that requires independent subdivision);
3. Site inspection (phase I and/or II) reports;
4. Title report

viii. During or prior to the purchase contract between landowner and LT, subdivision will take place. If subdivision occurs prior to this contract, the City may not pay vendors for services directly, in which case City and LT may need to negotiate a structure for reimbursement. If the property being subdivided prior to contract is not placed under contract, the City will have no obligation to pay for such costs.

ix. After the LT acquires the property, the City and LT will as quickly as possible enter into a purchase agreement for the vacant parcel, and the LT will seek to sell the "dwelling parcel" to the highest bidder on the open market. If the eventual selling price of the dwelling parcel is more than X% higher than the fair market value as established by the most recent

Comment [DTT3]: This amount is to be sufficient to include at least the LT's transaction costs not covered by the City, because the LTs are not willing to track all such incidentals, staff time, etc.

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appraisal, [redacted] The City will pay for the LT's carrying costs – including property taxes and agreed-upon maintenance – for both the 'vacant' and 'dwelling' properties during the period of LT ownership. The LT will maintain the 'dwelling parcel' in "as-is or better" condition during the term of its ownership.

Comment [DTT4]: This is a place-holder; the land trusts may not be willing to establish such an account, and there remains the question of "whether funds are fungible" to address.

x. The City acquires the vacant parcel and a private buyer acquires the 'dwelling parcel', if any. If, after X years, the LT does not sell the 'dwelling parcel', the City shall have no further liability and LT shall remain responsible for maintenance and property tax payments until such time as the parcel is conveyed to a private buyer.

Fair Market Value (FMV).

a. The purchase price of all land acquired by the City from a LT shall reflect FMV, as determined by an independent appraisal obtained by an independent, New York State certified appraiser commissioned by the City jointly with the LT. The purchase price of all land acquired by a LT from a landowner shall reflect FMV, as determined by an independent appraisal obtained by an independent, New York State certified appraiser commissioned by the City jointly with the LT, or at less than such FMV as subject to the conditions described herein.

a. Notwithstanding other procedures outlined herein, and only in compliance with the MOA, an LT or the City may acquire property at less than the fair market value at a public auction or at a directly negotiated sale from a bank, other financial institution, or taxing authority in the context of a mortgage foreclosure, tax foreclosure, or legal judgment.

b. For the purpose of determining FMV if all other required governmental permits and approvals have been granted, the appraiser shall assume that any necessary City regulatory approvals have also been granted.

c. In determining the FMV, the independent appraisers hired by the City will consider information from a second appraisal, provided by the landowner and made at the landowner's, provided the second appraisal is made by a New York State certified appraiser and was completed no earlier than one year prior to the date of the City's appraisal and no later than six (6) months after the owner received the City's appraisal. Upon request, the City may extend the time period for completion of a second appraisal.

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WAC TRANSPARENCY POLICY

Preamble

The effectiveness of the Watershed Agriculture Council (hereinafter called WAC or the Council) has and will continue to be rooted in an all inclusive approach to governance of the organization as well as planning and implementation of programs. The Council is committed to transacting business in an open and transparent manner. Although WAC is not subject to the New York State Public Officers Law, Pub. Off. Law § 84 *et seq.*, including but not limited to the Freedom of Information Law and the Open Meetings Law, and members of its board and committees are not public officers within the meaning of that law, WAC is nevertheless committed to transacting business in an open and transparent manner similar to the procedures contained in the Public Officers Law.

Disclosure of Documents and Records:

1. Policy.

    a. The Council, Executive Committee, and Easement Committee will make available for public inspection and copying all records, except those that are exempt from disclosure as hereinafter set forth. Minutes of the Council, Executive Committee of the Council, and the Easement Committee will be available within five business days after they have been approved, generally at the next meeting of the appropriate body. Minutes disclosed to the public will not contain information that is exempt from disclosure as provided herein or, if any such exempt information is contained in the minutes, such information will be redacted prior to the minutes being disclosed to the public.

2. Procedure.

    a. Requests for documents should be made to the Executive Director of the Council. Within five business days of the receipt of a written request for a document or record reasonably described, WAC shall: (1) make such record available to the person requesting it, (2) deny such request in writing or (3) furnish a written acknowledgement of the receipt of such request and a statement of the approximate date, which shall be reasonable under the circumstances of the request, when such request will be granted or denied. WAC shall not deny a request on the basis that the request is voluminous or that locating or reviewing the requested records or providing the requested copies is burdensome. WAC shall make available only documents that actually exist. It shall have no obligation to produce, create or compile documents or records that are not maintained by WAC, even if the information requested does exist in other forms.

    b. If WAC determines to grant a request in whole or in part, and if circumstances prevent disclosure to the person requesting the record or records within twenty business days from the date of the acknowledgement of the receipt of the request, WAC shall state, in writing, both the reason for the inability to grant the request

within twenty business days and a date certain within a reasonable period, depending on the circumstances, when the request will be granted in whole or in part.

c. Upon payment of the reasonable fee prescribed therefor, WAC shall provide a copy of such record and certify to the correctness of such copy if so requested, or as the case may be, shall certify that it does not have possession of such record or that such record cannot be found after diligent search.

d. WAC shall, provided it has reasonable means available, accept requests for records submitted in the form of electronic mail and shall respond to such requests by electronic mail if the documents requested are available in digital format.

3. Documents and Records Exempt from Disclosure.

a. The following documents and records are exempt from disclosure pursuant to this Policy: (a) if they are specifically exempted from disclosure by state or federal statute; (b) if disclosed would constitute an unwarranted invasion of personal privacy as determined by the Council; (c) if disclosed would impair present or imminent contracts, contract negotiations, or collective bargaining negotiations; (d) are trade secrets or are submitted to WAC by a commercial enterprise or derived from information obtained from a commercial enterprise and which if disclosed would cause substantial injury to the competitive position of the subject enterprise; (e) are compiled for law enforcement purposes; (f) if disclosed could endanger the life or safety of any person; (g) are inter-agency or intra-agency materials which are not: (I) statistical or factual tabulations or data; (II) instructions to staff that affect the public; (III) final agency policy or determinations; or (IV) external audits; and (h) if disclosed, would jeopardize the capacity of WAC to guarantee the security of its information technology assets, such assets encompassing both electronic information systems and infrastructures.

4. Appeals.

a. Except as provided in paragraph five, below, any person denied access to a record may within thirty days appeal in writing such denial to the Council, which shall consider such appeal at its next meeting after receipt of such appeal, and fully explain in writing to the person requesting the record the reasons for further denial, or provide access to the record sought.

b. A person denied access to a record in an appeal determination under the provisions of subparagraph (a) of this paragraph may initiate the Binding Dispute Resolution Process described below within sixty days of such denial.

5. Special Conditions Related to Trade Secrets.

    a. A person who submits any information to WAC may, at the time of submission, request that WAC except such information from disclosure as a trade secret. Furthermore, a person or entity who submits or otherwise makes available any records to WAC may, at any time, identify those records or portions thereof that may contain critical infrastructure information, and request that WAC except such information from disclosure under this Policy. Where the request itself contains information which if disclosed would defeat the purpose for which the exception is sought, such information shall also be excepted from disclosure. The request for an exception shall be in writing and state the reasons why the information should be excepted from disclosure. Information submitted as provided in this paragraph shall be excepted from disclosure and be maintained apart by WAC from all other records until fifteen days after the entitlement to such exception has been finally determined or such further time as ordered by a court of competent jurisdiction.

    b. On the initiative of WAC at any time, or upon the request of any person for a record excepted from disclosure pursuant to this subdivision, WAC shall:

        i. inform the person who requested the exception of WAC's intention to determine whether such exception should be granted or continued;

        ii. permit the person who requested the exception, within ten business days of receipt of notification from WAC, to submit a written statement of the necessity for the granting or continuation of such exception;

        iii. within seven business days of receipt of such written statement, or within seven business days of the expiration of the period prescribed for submission of such statement, issue a written determination granting, continuing or terminating such exception and stating the reasons therefor; copies of such determination shall be served upon the person, if any, requesting the record and the person who requested the exception.

    c. A denial of an exception from disclosure under subparagraph (b) of this paragraph may be appealed by the person submitting the information and a denial of access to the record may be appealed by the person requesting the record in accordance with this subdivision:

        i. Within seven business days of receipt of written notice denying the request, the person may file a written appeal from the determination of the agency with the head of WAC, the chief executive officer or governing body or their designated representatives.

ii. The appeal shall be determined within ten business days of the receipt of the appeal. Written notice of the determination shall be served upon the person, if any, requesting the record and the person who requested the exception. The notice shall contain a statement of the reasons for the determination.

d. Binding dispute resolution to review an adverse determination pursuant to subparagraph (c) of this paragraph may be commenced pursuant to the binding dispute resolution process described below within sixty days of such determination.

WAC Open Meetings:

1. WAC will provide notice of Council, Executive Committee, and Easement Committee meetings at least one week prior to the meetings on its web site, www.nycwatershed.org.(with the exception of emergency meetings). WAC will also provide notice of such meetings by electronic mail to anyone who requests such notice by sending a request to info@nycwatershed.org.

   a. The notice shall include the time and location of the meeting as well as a proposed agenda.

   b. Meetings of the Council, Executive Committee, and the Easement Committee will be open to the public except when the Council, Executive Committee, or the Easement Committee goes into executive session for the purposes hereinafter set forth.

   c. The agenda provided to the public will identify the topics proposed to be discussed in such executive sessions, but will not include names or any other identifying information associated with specific properties to be discussed in executive session.

   d. The Council, Executive Committee, and the Easement Committee will take minutes at all meetings, which will consist of a record or summary of all motions, proposals, resolutions and any other matter formally voted upon and the vote thereon. Minutes will consist of a record or summary of the final determination of such action, and the date and vote thereon, provided, however, that such summary need not include any matter which is not subject to disclosure pursuant to this policy.

   e. No voting may take place in executive session. The Council, Executive Committee, or the Easement Committee may go into executive session upon a majority vote of the members present, taken in an open meeting pursuant to a motion identifying the general area or areas of the subject or subjects to be considered, for the following purposes:

(a) matters which will imperil the public safety if disclosed;

(b) any matter which may disclose the identity of a law enforcement agent or informer;

(c) information relating to current or future investigation or prosecution of a criminal offense which would imperil effective law enforcement if disclosed;

(d) discussions regarding proposed, pending or current litigation;

(e) contract or collective bargaining negotiations;

(f) the medical, financial, credit or employment history of a particular person or corporation, or matters leading to the appointment, employment, promotion, demotion, discipline, suspension, dismissal or removal of a particular person or corporation or matters that, if discussed in public would constitute an unwarranted invasion of personal privacy; or

(g) the proposed acquisition, sale or lease of real property or interests therein, including the name of the property owner, the exact location of the property and the amount intended to be paid for the property or interest therein.

2. Any person who is allegedly aggrieved by being barred from a public meeting or was allegedly damaged by the failure of WAC to provide notice of a public meeting in the manner set forth above may initiate the binding dispute resolution process described below within sixty days of the date the minutes of such meeting have been (or should have been, pursuant to this Transparency Policy) made available to the public. In any such proceeding, if the ALJ determines that WAC failed to comply with this policy, the ALJ shall have the power, in its discretion, upon good cause shown, to declare that WAC violated this policy and/or declare the action taken in relation to such violation void, in whole or in part, without prejudice to reconsideration in compliance with this policy.

3. An unintentional failure to fully comply with the notice provisions set forth in paragraph 1 above shall not be grounds for invalidating any action taken at a meeting of the Council, Executive Committee, or the Easement Committee.

Binding Dispute Resolution:

1. If a dispute arises in connection with WAC's compliance with this Transparency Policy, following any appeal provided for above, the allegedly aggrieved party may refer the dispute to binding arbitration by requesting in writing that NYSDEC appoint an Administrative Law Judge ("ALJ") to act as an Arbitrator to conduct the arbitration and issue a binding determination. The ALJ shall conduct the arbitration under the version of

the AAA Commercial Dispute Resolution Procedures Expedited Procedure Rules then in effect and/or, upon the consent of all parties, a less formal procedure consistent with the nature and complexity of the dispute.

2. The party seeking arbitration shall provide simultaneous notice to the other party by certified mail with return receipt requested or by overnight mail. The request shall state with particularity the nature of the issue in question.

3. Except as provided below, each party will bear its own costs, including half of any costs assessed by NYSDEC for the ALJ's time and expenses. If the ALJ determines that WAC failed to comply with its Transparency Policy, WAC will be solely responsible for any costs assessed by NYSDEC for the ALJ's time and expenses. If the ALJ determines that WAC has complied with its Transparency Policy alleged aggrieved party will be solely responsible for any costs assessed by NYSDEC for the ALJ's time and expenses.

4. In the case of a decision by the ALJ that WAC failed to disclose a document or record that it should have disclosed pursuant to this Policy, the sole authority of the ALJ shall be to order its disclosure and to allocate the costs and expenses of the binding dispute resolution process as set forth above. In the case of a decision by the ALJ that WAC took an action in violation of the open meetings policy contained herein, the authority of the ALJ shall be limited to rescinding the action or actions taken at such meeting that in fact damaged the party initiating the dispute resolution process (if the ALJ determines that rescission is the appropriate resolution in light of the circumstances presented) and to allocate the costs and expenses of the binding dispute resolution process as set forth above. This binding dispute resolution process is intended to address only the failure of WAC to comply with this Policy. The ALJ shall not have the authority to review the substance of actions taken by the Council or the Easement Committee. The decision of the ALJ is binding upon the parties and may be filed and enforced as a judgment.

Attachment 4:

Estimated Schedule for Development of WAC Reserved Rights Guidelines

Reserved Rights Guidelines

Completed

1. Timber Harvest – Forest Management Plan – 5/7/2009
2. Rights of Way (newer version of CE) – 7/15/2010
3. Timber Harvest – Forest Harvest Plan – 10/1/2009
4. Subdivision (two approvals – preliminary and final) – 10/2/2008

Planned for 2011

5. Accumulation or storage of debris or refuse outside an ADA
6. Future Acceptable Development Area citing
7. Rural Enterprise buildings in ADA
8. Septic System outside ADA (newer version of CE)
9. Stream Bed and Bank Work
10. Wind Turbines, Cell Towers and Commercial Antennae outside ADA

Planned for 2012

11. Agricultural Structures greater than 5000 sq ft aggregate outside an ADA
12. Application of domestic septic effluent, or commercial or industrial sewage sludge
13. Bluestone Mining
14. Creation of Farm Support Housing in ADA
15. Pesticide and Fertilizer application in an FCEA
16. Recreational structures outside ADA over 1000 sq ft aggregate

REAL PROPERTY TAX LAW
ARTICLE 5. ASSESSMENT PROCEDURE
TITLE 4-A. ASSESSMENT AND TAXATION OF WATERSHED CONSERVATION EASEMENTS AND WATERSHED AGRICULTURAL EASEMENTS ACQUIRED BY OR ON BEHALF OF THE CITY OF NEW YORK FOR WATERSHED PROTECTION PURPOSES

§ 583. Definitions

As used in this title:

1. "City" means the city of New York.

2. "Tax", "taxes" and "taxation" mean a charge imposed on real property by or on behalf of a county, city, town, village, or school district for municipal or school district purposes, and any special ad valorem levy or special assessment.

3. "Watershed agricultural easement" means a watershed conservation easement which allows the land subject to such easement to be utilized in agricultural production.

4. "Watershed conservation easement" means an easement, covenant, restriction or other interest in real property purchased by or on behalf of the city of New York [on or before December thirty-first, two thousand sixteen] that is located in those areas of the counties of Delaware, Dutchess, Greene, Putnam, Schoharie, Sullivan, Ulster and Westchester located in the watershed of the New York city water supply, created under and subject to the provisions of article forty-nine of the environmental conservation law which, for the purpose of maintaining the open space, natural condition, or character of the real property in a manner consistent with the protection of water quality generally and the New York city water supply specifically, limits or restricts development, management or use of such real property.

§ 584. Taxation of watershed conservation easements and watershed agricultural easements

Any watershed conservation easement shall be subject to taxation for all purposes except as hereafter provided. A watershed agricultural easement shall be subject to taxation as provided in section five hundred eighty-five of this title. The procedures set forth in this title shall govern the levy and payment of taxes on watershed conservation easements and watershed agricultural easements.

§ 585. Taxation or exemption of watershed agricultural easements

1. Any watershed agricultural easement acquired before January first, two thousand eleven shall be exempt from taxation on any assessment roll on which the land subject to the easement qualifies for and receives an agricultural assessment pursuant to article twenty-five-AA of the agriculture and markets law.

2. Any watershed agricultural easement which burdens land which does not receive an agricultural assessment pursuant to article twenty-five-AA of the agriculture and markets law or which is acquired on or after January first, two thousand eleven shall be subject to taxation for all purposes. The taxes levied on such easement shall be levied as provided in this title.

§ 586. Assessment of watershed conservation easements and watershed agricultural easements

1. Upon acquisition of a watershed conservation easement or a watershed agricultural easement, there shall be determined an allocation factor applicable to each parcel subject to such easement. The allocation factor shall be the portion of the value of each parcel which the easement represents, expressed as a percentage. This percentage shall be a fraction, the numerator of which is the fair market value of the easement as finally determined by the city's independent appraisal and the denominator of which is the fair market value of the land subject to the easement, exclusive of improvements and unencumbered by the easement, as finally determined in the city's independent appraisal. The city shall forthwith certify each such allocation factor to the appropriate assessing unit and to the owner of the land subject to the easement. The city shall supply to the assessing unit and the state board the following information used in conjunction with the acquisition of the easement:

(a) the fair market value of the easement as finally determined in the city's independent appraisal;

(b) the fair market value of the land subject to the easement exclusive of improvements and unencumbered by the easement as finally determined in the city's independent appraisal;

(c) the fair market value of each improvement, on the land subject to the easement, as finally determined by the city's independent appraisal;

(d) the name and address of the owner;

(e) the location of the parcel including the tax map parcel designation;

(f) the date the easement was acquired; and

(g) such other information as the assessor may subsequently require for assessment purposes.

2. The assessment of a watershed conservation easement or watershed agricultural easement shall be determined by multiplying the allocation factor for that easement as computed in subdivision one of this section by the assessment determined by the assessor for the land subject to such easement exclusive of the improvements thereon. After subtracting the assessment for each watershed conservation easement or watershed agricultural easement from the parcel's total assessment, the remaining assessment shall be entered on the assessment roll as taxable to the owner of the property. Each watershed conservation easement or watershed agricultural easement, whether it encumbers the entire parcel or only a portion thereof, shall be entered as a separate parcel on the taxable portion of the assessment roll and shall be assessed in the name of the city of New York.

3. Not later than twenty days prior to the date provided by law for the completion of the tentative assessment roll in any assessing unit in which watershed conservation easements or watershed agricultural easements are subject to taxation, but in no event any earlier than the taxable status date for such roll, the assessor shall notify the city of the amount of the assessments of such easements and the amount of the assessments of the lands subject to such easements. In the case of a village which has enacted a local law as provided in subdivision three of section fourteen hundred two of this chapter, the town or county assessor, who prepared a copy of the applicable part of the town or county assessment roll

for village tax purposes, shall also notify the city of the amount of the assessments of such easements and the amount of the assessments of the lands subject to such easements located within the village.

4. The city and the owner of the burdened parcel shall each be a person aggrieved by the assessment of the parcel or parcels burdened by watershed conservation easements or watershed agricultural easements for the purpose of seeking administrative and/or judicial review of such assessments. Whenever the city or property owner seeks administrative or judicial review of the assessment of the land subject to such easement, the party seeking review shall provide a copy of the complaint or petition to the other party with an interest in the parcel subject to the easement within twenty days of the filing of a complaint or the service of a petition. The noncomplaining party (owner or city) shall be deemed a party to the proceeding with full rights to participate and bound by the determination of such proceeding.

5. (a) Where a watershed conservation easement or agricultural conservation easement is acquired:

(i) On a parcel of property which is otherwise fully exempt from taxation, the assessor shall determine the taxable [assessment] <u>assessed value</u> of the easement by multiplying the allocation factor by the total assessed value of the land; or

(ii) On a parcel of property which is partially exempt from taxation, the assessor shall determine the taxable [assessment] <u>assessed value</u> of the easement by multiplying the allocation factor by the total assessed value of the land; or

(iii) On a parcel of property which is partially exempt from taxation, the taxable assessed value of the burdened parcel shall be calculated by pro-rating the partial exemption in the same proportion as the allocation factor. The owner of the burdened parcel shall be entitled to the pro-rated portion of the exemption.

(b) The provisions of this subdivision shall not apply to [parcels receiving an agricultural assessment pursuant to article twenty-five-AA of the agriculture and markets law] <u>watershed agricultural easements as described in subdivision one of section five hundred eighty-five of this title or to parcels burdened by such easements</u>.

[6. Whenever a watershed conservation easement or watershed agricultural easement encumbers only a portion of a parcel, the assessor shall henceforth enter that portion of the parcel encumbered by such easement as a separate parcel on all subsequent assessment rolls.]

7. Whenever a watershed conservation easement or watershed agricultural easement encumbers a parcel containing improvements, those improvements shall be separately assessed in the name of the owner thereof.

§ 587. List of watershed conservation easements and watershed agricultural easements

The city shall annually transmit to the state board, to the assessors of each assessing unit in which the city has acquired watershed conservation easements and watershed agricultural easements, and to town or county assessors, who prepare a copy of the applicable part of the town or county assessment roll for village tax purposes as provided in subdivision three of section fourteen hundred two of this chapter, for each such village in which such easements have been acquired, a list of all such easements therein. Such list shall be used by the assessors in preparing the assessment roll or, for village tax purposes the copy of the applicable part, and shall include the appropriate allocation factor or factors,

and each such easement shall be entered as a separate parcel on the tentative assessment roll by the assessor.

§ 588. Payment of taxes on parcels subject to a watershed conservation easement or watershed agricultural easement

1. The city shall pay taxes levied on watershed agricultural easements and watershed conservation easements pursuant to the foregoing sections of this title in the same manner as any other taxes levied upon real property.

2. Payment of taxes by the owner of a parcel burdened by a watershed conservation easement or watershed agricultural easement made taxable pursuant to this title based upon the assessment of the parcel without consideration of that easement shall entitle that owner to a refund pursuant to section five hundred fifty-six of this article, equal to any taxes payable by the city upon such easement. Such owner shall present the certificate issued pursuant to this section and proof of payment to the tax levying body.

§ 589. Change in allocation factor

[1. The allocation factor determined in subdivision one of section five hundred eighty-six of this title shall remain in effect for at least twenty years from the date it is initially certified to the assessing unit.]

2. At any time after [twenty years from the date] the allocation factor is initially certified to the assessing unit, upon the request of the city or the owner of the parcel burdened by the easement, the office of real property services may compute and certify a new allocation factor based on a change in circumstances. A request for a review of the allocation factor shall be made by submitting to the state board (a) a written request by the landowner, (b) a written request by the city setting forth the claimed change in circumstances, (c) a written stipulation entered into by the city and the landowner setting forth the new allocation factor, or (d) an appraisal or appraisals performed by a licensed real estate appraiser within one year of submission setting forth the current fair market value of the easement and the current fair market value of the land subject to the easement exclusive of improvements and unencumbered by the easement. The state board shall define the changes in circumstances required to change the allocation factor. The party seeking the change in allocation factor shall provide copies of the appraisals and written request to the other party.

3. If one party objects to a change in the allocation factor, the party may submit the appraisals specified in subdivision two of this section within ninety days of receipt of the other parties' appraisal or written request.

4. The office of real property services shall review the materials submitted and issue a current allocation factor determined by the materials submitted.

5. If judicial review is sought to challenge a determination under this section, the action shall be commenced in the county in which the real property is located.

§ 589-a. Authority to promulgate rules

In addition to any other authority conferred upon the state board by statute, the state board is hereby authorized to promulgate rules and mandate the use of forms to implement the provisions of this title.

Tax Litigation Avoidance Program (TLAP) Description
December 10, 2010

As part of the negotiations for a Water Supply Permit for the continuation of the Land Acquisition Program (LAP), the City of New York (City), the Coalition of Watershed Towns (CWT), and the Catskill Watershed Corporation (CWC) have discussed the formation of a Tax Litigation Avoidance Program (TLAP). Through the TLAP, the City would provide funds, to be administered by the CWC, for use by watershed Assessing Authorities (towns and villages) for the purpose of avoiding the costs and risks of litigation over taxes assessed on City real property as well as provide data and information to enable assessing authorities to set fair assessments on certain City owned properties in the West of Hudson Watershed. As further detailed below, TLAP funds could be used by CWC to (i) develop and/or complete generic templates for determining the equalized fair market value of reservoir lands, impoundments, and collection systems serving wastewater treatment plants owned by the City; (ii) assist Assessing Authorities in evaluating Valuation Reports provided by the City proposing template values concerning properties within the jurisdiction of the Assessing Authority; and (iii) assist Assessing Authorities in completing and/or or updating such templates no more frequently than at three-year intervals during the pendency of the TLAP. In addition, TLAP funds can, under certain limited circumstances described herein, provide limited reimbursement for Assessing Authorities' costs of litigation. Under the terms of this Agreement, the TLAP will have a term of 15 years, co-terminous with the duration of the Water Supply Permit.

I. <u>The TLAP Properties and Template Application</u>

1. The properties covered by TLAP consist of those listed in Exhibit A attached hereto (TLAP Properties).

2. Within 60 days of the commencement of work date of the TLAP Contract, CWC and the City shall develop Program Rules, a generic participation agreement, and a generic stipulation of abeyance for any pending litigation.
3. Development of Templates:
    a. Within 6 months of the effective date of the Water Supply Permit, the City and CWC shall finalize a generic template for reservoirs.
    b. Within 12 months of the effective date of the Water Supply Permit, the City and the CWC shall finalize one or more generic templates for the impoundments. The generic templates for the impoundments will conform with the form and substance of the reservoir templates except for factors directly applicable to the impoundment structures.
    c. Within 18 months of the effective date of the Water Supply Permit, the City and the CWC shall finalize a generic template for the sewer collection systems, provided that the City has not, within 18 months of the effective date of the Water Supply Permit, by motion or otherwise, established that such properties are not subject to real property taxation, or filed a motion seeking such a determination.
    d. Upon completion of each generic template, CWC shall provide a draft copy for review and/or comment to each Assessing Authority that is presently a party to a proceeding commenced pursuant to RPTL Article 7 concerning a property that could be subject to that template.
    e. All time periods described herein shall be subject to reasonable extension upon agreement by the parties.

f. CWC may use TLAP funds to a maximum of $50,000 to retain outside appraisers/experts for the development of the generic templates. CWC will endeavor to use such funds in a cost-effective manner, in order to preserve TLAP funds to support expert review of Valuation Reports. The City will not unreasonably withhold agreement to increase that amount for up to an additional $50,000 if CWC demonstrates that the actual and reasonable costs for engineers or other experts exceed that cap and that such additional funds are reasonable and necessary to complete the generic templates. If these funds are exhausted before the generic templates are complete, the City agrees to consider a request for additional funds to complete the remaining templates, based on a demonstration of need.

4. Within sixty days of an Assessing Authority's receipt of a generic template and commencement date of TLAP contract (including completion of program rules, generic participation agreement, and stipulation of abeyance), any Assessing Authority that is a party to an Article 7 proceeding concerning property that could be subject to that template shall notify the City and CWC if it intends to participate in the TLAP.

5. The City and each such participating Assessing Authority shall then agree to a stipulation ("Stipulation of Abeyance") that provides that (i) the pending Article 7 matter(s) shall not be prosecuted until a participating Assessing Authority comes to an agreement with the City regarding assessment of the property in question, or affirmatively declines to further participate in the TLAP process; (ii) the City shall not challenge on grounds of over-valuation an assessment that is equal to or

less than the final template value as determined in the Valuation Report or otherwise agreed to by the City and the Assessing Authority; and (iii) that the City will not challenge such assessment in any future year provided that the assessment is not greater than the final value determined pursuant to the appropriate template, provided that (a) the City does not dispute the manner in which the Assessing Authority has applied the template; and/or (b) the City does not dispute the starting values used in the template. In addition, and upon approval of both the CWC and the Assessing Authority, CWC and the Assessing Authority shall execute an agreement ("Participation Agreement") providing, among other things, that the Assessing Authority and CWC shall comply with the confidentiality provisions described in this memorandum, shall, as more fully described below, cause the appropriate individuals to execute Confidentiality Agreements, and that CWC shall procure an expert to review the Valuation Report to assist the Assessing Authority in its review of the Valuation Report. The City shall be a third party beneficiary of every Participation Agreement.

6. Where a template with values for a City-owned wastewater treatment plant has been established prior to the effective date of the Water Supply Permit, the Assessing Authority would not be eligible to request assistance under TLAP until the template is updated. For any town that has not yet completed a template for a City-owned wastewater treatment plant, TLAP funds would be available for the such completion as well as for any updates undertaken pursuant to Section I, Paragraph 7 below.

7. Template values for TLAP Properties may require updating. TLAP funds would be made available to update template values on such properties no more frequently than every 3 years, unless there is an intervening City challenge to the assessment.
8. Notwithstanding the foregoing, if improvements or changes are made to a property subject to a template, an Assessing Authority could request assistance under TLAP to update that template.
9. TLAP funds may only be used to review a single valuation report on a given property at any one time. To the extent a given property is assessed by multiple Assessing Authorities (e.g., a town and a village), only one of those entities can participate in the program.

II. City's Process for Preparing a Valuation Report

1. For properties that are not the subject of pending Article 7 petitions, if the City believes the property is overassessed, it reserves the right to file a grievance and take other steps necessary to preserve its rights to administrative or judicial review of the assessment.
2. To the extent that there are pending Article 7 petitions, the City commits to negotiate in good faith with the Assessing Authority to apply the appropriate template (or, if the applicable template has not yet been completed, to agree upon a generic template with CWC) for valuing the subject property.
3. Until such time as generic templates are completed for reservoirs, impoundment structures and sewer collection systems, the City will refrain from filing any Article 7 petitions challenging assessments where those assessments have not

been changed from the previous year, unless the City filed such a petition in the previous year, in which case the City may continue to file grievances and petitions to preserve its rights. Where an RPTL Article 7 proceeding is pending on an assessment, the City will enter into a stipulation, within 90 days after the effective date of the Water Supply Permit, if the Assessing Authority chooses to put the proceeding into abeyance pending the Assessing Authority's decision under Section I.4. If an assessment has been changed and the City desires to file a petition challenging the assessment the City will stipulate with the relevant Assessing Authorities to adjourn the proceeding after filing pending the Assessing Authority's decision under Section 1.4.

4. Where a generic template has been completed, and the Assessing Authority has determined to participate in TLAP per Section I. 4, the City will stipulate with the Assessing Authority to adjourn the proceeding after filing to provide sufficient time for the preparation of the Valuation Report and the Assessing Authority's review thereof ("Stipulation of Abeyance").
5. Notwithstanding the City filing a grievance, the City will seek to resolve the grievance without court intervention by preparing and providing the affected Assessing Authority with a Valuation Report.
6. The City will hire the necessary expert(s) as described in Section III below and will prepare a Valuation Report specifically for the purpose of review and discussion with the Assessing Authority.
7. A Valuation Report will summarize the data and analysis used, identify sources of all data, and provide the conclusions of the appraiser and/or engineer primarily

focusing on determining the values for each of the applicable line items within the appropriate template. The goal of the Valuation Report is to provide information and a completed template so that the Assessing Authority can make a decision on whether to amend its assessment. An expert retained by CWC for review of the Valuation Report shall have access to all data reviewed by the Valuation Report author(s).

III. Process for Retention of City Expert to Prepare Valuation Report

1. If the City files a grievance and an Assessing Authority agrees to participate in TLAP, the City shall begin the process to prepare a Valuation Report and will submit the proposed appraiser/engineer's name, expertise and qualifications to the designated representatives of the affected Assessing Authority and CWC for approval (City Expert).
2. The Assessing Authority and CWC shall have five weeks from the date of receipt of the submission by the City to approve or object to such City Expert. If no action is taken by the end of the five-week period, such City Expert shall be deemed to have been approved. Any objection to the City Expert can be based only upon that expert's qualifications and expertise. Any objection to the City Expert must be submitted in writing describing the asserted deficiencies of said expert. Approval of the City Expert cannot be unreasonably withheld. Approval by either representative shall be deemed sufficient.

IV. Assessing Authority Review of Valuation Reports and Confidentiality Requirements

1. If an Assessing Authority requests that CWC retain an appraiser and/or engineer to review and evaluate the Valuation Report (CWC's Expert),[1] the CWC will submit the proposed appraiser/engineer's name, expertise and qualifications to the two designated representatives of the City for approval.
2. The City representatives shall have five weeks from the date of receipt of the submission by CWC to approve or object to CWC's Expert. If no action is taken by the end of the five-week period, CWC's Expert shall be deemed to have been approved. Any objection to CWC's Expert can be based only upon that expert's qualifications and expertise. Any objection to CWC's Expert must be submitted in writing describing the asserted deficiencies of said expert. Approval of CWC's Expert cannot be unreasonably withheld. Approval by either representative of the City shall be deemed sufficient.
3. Within 60 days of the commencement of work date of the TLAP Contract, CWC and the City will develop TLAP Program Rules and the form of a Participation Agreement to be executed by each Assessing Authority that participates in TLAP, which will provide that the Valuation Report would be used only for the purposes of negotiation and discussion. The TLAP Program Rules will require that each Assessing Authority execute a Participation Agreement before CWC obtains funds or benefits from the TLAP Program and provide a resolution authorizing same. At a minimum, the Participation Agreement will provide that the Valuation

[1] As necessary, a town may need the services of both an appraiser and an engineer. For the purpose of this Agreement, the term "expert" shall include "experts."

Report will be kept confidential by those individuals who review the Valuation Report and shall not be disclosed to any other individuals or entities including, but not limited to, the media. The Participation Agreement shall also provide that the Valuation Report may not be used by or against any party in any litigation or motion practice including, but not limited to, trial, motion for discovery or preclusion of evidence or as a tool in cross-examination. The foregoing evidentiary prohibition shall not, however, apply to proof required for any attorneys' fees claim as provided for herein, any claim for breach of a Stipulation of Abeyance, or by any other agreement between the City and an Assessing Authority that provides for the admission, in whole or in part, of a Valuation Report. The City shall be a third party beneficiary of each executed Participation Agreement.

4. The Participation Agreement will identify those individuals, specific to the CWC and Assessing Authority involved, who will be reviewing the Valuation Report. For instance, if the Assessing Authority were a town, the reviewers might include the Town Supervisor, Town Clerk, Town Board Members, Town Assessor, or Town Attorney/Attorney for the Town. The Participation Agreement will also identify those individuals who will be reviewing the Valuation Report on behalf of the CWC.
5. The Participation Agreement will also specifically provide that outside counsel to the Assessing Authority, with the exception of the Attorney for the Town or Village referred to in IV.4 above, will not have access to the Valuation Report.

6. To the extent the CWC, Assessing Authority, or the City wishes to provide someone other than the identified individuals access to the Valuation Report, the Participation Agreement shall provide that the requesting party (the CWC, Assessing Authority or the City) must provide the others prior written notice setting forth the identity of such person and the reason for the review.
7. Prior to reviewing the Valuation report, each individual named shall sign a confidentiality agreement in the form agreed to by CWC and the City ("Confidentiality Agreement").
8. To the extent CWC retains an expert to assist in the Assessing Authority's review of the Valuation Report, that expert shall enter into the Confidentiality Agreement prior to obtaining access to the Valuation Report. The City's expert(s) will also be required to enter into the Confidentiality Agreement.
9. If the CWC or an Assessing Authority receives a Freedom of Information Law (FOIL) request for the release of the Valuation Report for an assessment that is in dispute, undergoing a revaluation, or is in litigation, the CWC and/or Assessing Authority agree to assert the Inter-agency materials exception to release of the document. If the head officer, chief executive, or designated records access officer of CWC or an Assessing Authority receives an appeal of a denial of a request for a Valuation Report, the CWC and/or Assessing Authority shall respond and assert the Consultant Report exception to release of the document. The CWC and/or Assessing Authority shall forward to the City copies of the FOIL request, the CWC and/ or Assessing Authority response, and, if applicable, the appeal and response to such appeal.

10. In the event that such a denial of a FOIL request is appealed pursuant to CPLR Article 78 and Section 89 of the Public Officers Law, CWC and/or the Assessing Authority shall inform the City of such appeal. The Corporation Counsel of the City shall file a Motion to Intervene in any such appeal and the CWC and/or the Assessing Authority shall not contest the City's Motion. The CWC and/or the Assessing Authority shall support the City's efforts to successfully litigate the CPLR Article 78 matter. CWC and/or the Assessing Authority shall cooperate fully with counsel for the City in any related FOIL proceedings. Any costs for defense by CWC and/or the Assessing Authority shall be an eligible expense for payment under TLAP.

V. City/Assessing Authority Discussions of Valuation Report and Limitations on Litigation

1. If the parties reach agreement on the fair market value of the TLAP property, the City will discontinue its grievance or petition to the extent an assessment is claimed to be excessive.
2. If the parties cannot agree on fair market value, the City will proceed with its challenge. At the Assessing Authority's election and as provided below, however, the City will limit its challenge to any disputed template line(s).
3. If the dispute is limited by the Assessing Authority and rests upon a disagreement over the determination of any line item(s) in the template, then the parties agree that any court proceeding will be limited to the determination of the line item(s) and that the parties will stipulate to the template methodology and all agreed-upon values and factors.

4. In any litigation, the City may not submit proof of value for any line item that is less than the amount presented in the City's Valuation Report for that line item.

VI. Revaluation

1. TLAP funds may be used by CWC to assist an Assessing Authority in determining the fair market value of the City's property where the Assessing Authority has undertaken a revaluation of all properties within its geographic boundary.
2. In an Assessing Authority where the City owns TLAP Property and the Assessing Authority has decided to conduct a revaluation of all properties within its geographic boundary, the City will assist the Assessing Authority in determining the fair market value of such City property. Prior to the assessment roll being prepared, upon request from the Assessing Authority, the City will prepare a Valuation Report as described in Section II, Paragraph 6. As provided in Section IV, upon request of the Assessing Authority, CWC will retain an expert to assist the Assessing Authority in its review of the Valuation Report. Similarly, a requesting Assessing Authority must also execute a Participation Agreement.
5. If the Assessing Authority assesses the TLAP Property as reflected on the Valuation Report, or as ultimately agreed upon with the City, the City will not file a grievance or petition claiming that the assessment is excessive.
6. If the parties cannot agree on fair market value, the City can proceed with an Article 7 challenge. At the Assessing Authority's election and as provided below, City will agree to limit the challenge to any disputed template line(s).

7. If the dispute is limited by the Assessing Authority and rests upon a disagreement over the determination of any line item(s) in the template, then the parties agree that any court proceeding will be limited to the determination of the line item(s) and that the parties will stipulate to the template methodology and all agreed-upon values and factors.

8. In any litigation, the City may not submit proof of value for a line item that is less than the amount presented in the City's Valuation Report for that line item.

VII. Inequality Claims

1. Nothing contained herein shall affect nor limit the City's right, if any, to claim inequality of the assessment as defined under RPTL § 701 (8).

2. Where the City challenges an assessment as unequal, the parties may rely upon any agreement reached as to the fair market value of TLAP Property. No TLAP funds will be available to defend litigation over the inequality of assessment claim, other than as may be necessary to determine the fair market value of the property. In any such litigation, the Assessing Authority will have the option to rely on the State Equalization Rate for its proof of the appropriate ratio in such a proceeding.

VIII. TLAP Funding

1. TLAP will be administered by CWC pursuant to a program contract that will be duly executed by the City within nine months of the effective date of the WSP. The program contract will require the City to fund TLAP in the initial amount of $500,000.00, payable within sixty (60) days of the execution of the program contract and will provide additional funding as requested by CWC in increments

not exceeding $500,000.00. Such additional payments shall be made within ninety (90) days of the request by CWC. The total amount of TLAP funding will not exceed $2,000,000.00; however a reasonable amount of additional funding will be made available for any Assessing Authority if the TLAP cap has been reached before that Assessing Authority has had an opportunity to participate in TLAP.

2. The program rules to be developed by the City and CWC will include a procedure by which Assessing Authorities would request assistance of CWC through TLAP for CWC retain an expert as set forth herein.
3. CWC will disburse funds based upon disbursement/invoice requests submitted by a retained expert or an Assessing Authority after it has entered into the Confidentiality Agreement with the City and after the City has approved CWC's Expert. The disbursement requests submitted to CWC shall include the fees to be paid to and, with specificity, describe work to be performed by CWC's Expert. Provided that the work reflected on the request covers authorized work (i.e. tasks needed to review the Valuation Report, not including the preparation of any type of self contained appraisal, nor payment to attorneys) the CWC shall disburse the requested funds. TLAP Funds may also be used for CWC administrative costs to administer and manage the TLAP.
4. The CWC shall maintain complete and accurate records in readily accessible files on all of the disbursements made from the Fund.

5. The CWC will provide quarterly reports reflecting the amount of the funds disbursed to the Assessing Authority or retained expert and the identity of the appraiser/expert retained.
6. The City shall have the right to review all disbursement requests. If disbursements are made for unauthorized work, the City shall have the right to recover the amount paid for such unauthorized work directly from TLAP funds.
7. An Assessing Authority will not receive TLAP funds to commission a competing appraisal to be used at trial.
8. The Retained Expert must prepare a written review/critique of the City's Valuation Report and a copy of such report must be provided to the City subject to the same Confidentiality Agreement described above.
9. If an Assessing Authority substantially prevails in the litigation, the City will be responsible for reimbursing two-thirds of the Assessing Authority's attorneys' fees, expert fees, and litigation costs up to $90,000.00. "Substantially prevails" shall be defined as a final judgment by the Court that awards a value on the disputed component of a template that is 15% or greater than the City's final offer on that individual template line item before it commenced litigation.
10. After the conclusion of two trials in which Assessing Authorities substantially prevail and are awarded attorneys fees as provided in Section VII, Paragraph 9, the City, CWC and CWT will confer to assess if changes are necessary in the attorneys' fees and disclosure provisions of TLAP. The issues to be considered are (i) whether there have been any breaches of confidentiality of Valuation Reports or settlement discussions and whether any breach has materially harmed

any party; and (ii) whether the provisions of Section VIII, Paragraph 9 are fair and equitable to the Assessing Authorities. The City, CWC and CWT will have eight (8) months to reach an agreement as to whether there should be changes to the TLAP on the above listed issues. If the parties cannot reach agreement, the dispute shall be referred to an Administrative Law Judge (ALJ) of the DEC for determination. The City shall be responsible for any costs of the referral to the ALJ. The decision of the ALJ shall be considered a final determination and may be the subject of judicial review pursuant to Article 78 of the CPLR. For the duration of the discussions and ALJ review under this paragraph, and during the pendency of any Article 78 proceeding commenced by CWC and/or CWT, the City shall continue to be bound by the provisions of Section VII, Paragraph 9 until final agreement or resolution. In the event that the City commences an Article 78 proceeding challenging the ALJ's determination, however, the City may, at its election, cease to be bound by the provisions of Section VII, Paragraph 9 above, in which case the City shall also cease acquisitions pursuant to the Water Supply Permit. CWC may utilize TLAP funds for CWC's participation in the process and litigation described in this paragraph.

Exhibit A

WOH Pre-MOA Lands by County, Town and Tax Map Number

(excluding Aqueducts and Shaft Sites)

Delaware County

Town	Village	Tax Map Number	Assessed Acres	Description	School_District
Andes		325.-1-11	516.56	Pepacton Reservoir	Andes
Andes		325.-1-12	43.41	Pepacton Reservoir	Margaretville
Andes		343.-1-4	4,255.13	Pepacton Reservoir	Andes
		Andes Sub-Total:	**4,815.10**		
Colchester		342.-2-1	6,806.91	Pepacton Dam	Downsville
		Colchester Sub-Total:	**6,806.91**		
Deposit		350.-1-1	2,217.80	Cannonsville Dam	Deposit
		Deposit Sub-Total:	**2,217.80**		
Middletown	Margaretville	1.-46-99	0.00	Margaretville Sewer Lines	Margaretville
Middletown	Margaretville	306.14-1-2	42.90	Margaretville WWTP	Margaretville
Middletown		1.-46-98	0.00	Margaretville Sewer Lines	Margaretville
Middletown		325.-3-1	54.69	Pepacton Reservoir	Andes
Middletown		326.-1-1.1	562.90	Pepacton Reservoir	Margaretville
Middletown		326.-1-1.2	1,001.83	Pepacton Reservoir	Margaretville
		Middletown Sub-Total:	**1,662.32**		
Roxbury		1.-48-99	0.00	Grand Gorge Sewer Lines	Roxbury
Roxbury		92-1-9	2.60	Grand Gorge WWTP	Roxbury
Roxbury		114.-1-1	175.70	Schoharie Reservoir	Roxbury
Roxbury		114.-1-3	404.90	Schoharie Reservoir	Gilboa-Conesville
		Roxbury Sub-Total:	**583.20**		
Tompkins		270.-1-30	244.33	Cannonsville Reservoir	Walton
Tompkins		270.-1-31	2,813.16	Cannonsville Reservoir	Deposit

WOH Pre-MOA Lands by County, Town and Tax Map Number

(excluding Aqueducts and Shaft Sites)

Delaware County (Continued)

Town	Village	Tax Map Number	Assessed Acres	Description	School_District
Tompkins		312.-1-2	247.45	Cannonsville Reservoir	Walton
Tompkins		312.-1-3	2,750.40	Cannonsville Reservoir	Deposit
Tompkins		313.-1-8	4,778.85	Cannonsville Reservoir	Walton
Tompkins		332.-1-1	1,192.66	Cannonsville Reservoir	Deposit
Tompkins		332.-1-2	87.84	Cannonsville Reservoir	Deposit
Tompkins		332.-1-3	315.32	Cannonsville Reservoir	Deposit
Tompkins		335.-1-10	527.76	Cannonsville Reservoir	Walton
Tompkins		350.-2-3	2,802.11	Cannonsville Reservoir	Deposit
Tompkins		353.-2-20	6.11	Cannonsville Reservoir Buffer	Hancock
		Tompkins Sub-Total:	**15,765.99**		
Walton		315.-2-3	1,980.68	Cannonsville Reservoir	Walton
		Walton Sub-Total:	**1,980.68**		
		Delaware County Summary:	**33,832.00**		

WOH Pre-MOA Lands by County, Town and Tax Map Number

(excluding Aqueducts and Shaft Sites)

Greene County

Town	Village	Tax Map Number	Assessed Acres	Description	School_District
Hunter	Tannersville	181.12-6-1.-1	10.60	Tannersville WWTP	Hunter-Tannersville
		Hunter Sub-Total:	**10.60**		
Prattsville		42.00-1-6	70.50	Schoharie Reservoir	Gilboa-Conesville
Prattsville		74.00-1-31	238.20	Schoharie Reservoir	Gilboa-Conesville
		Prattsville Sub-Total:	**308.70**		
		Greene County Summary:	**319.30**		

WOH Pre-MOA Lands by County, Town and Tax Map Number

(excluding Aqueducts and Shaft Sites)

Schoharie County

Town	Village	Tax Map Number	Assessed Acres	Description	School_District
Conesville		208.-3-15	359.10	Schoharie Reservoir	Gilboa-Conesville
		Conesville Sub-Total:	**359.10**		
Gilboa		214.-2-2	1,047.30	Gilboa Dam	Gilboa-Conesville
		Gilboa Sub-Total:	**1,047.30**		
		Schoharie County Summary:	**1,406.40**		

WOH Pre-MOA Lands by County, Town and Tax Map Number

(excluding Aqueducts and Shaft Sites)

Sullivan County

Town	Village	Tax Map Number	Assessed Acres	Description	School_District
Neversink		20.-1-24.1	1,221.41	Rondout Reservoir	Tri-Valley
Neversink		23.-1-1	5,966.96	Neversink Dam	Tri-Valley
Neversink		26.-1-29	57.28	Grahamsville Complex (incl. WWTP)	Tri-Valley
		Neversink Sub-Total:	**7,245.65**		
		Sullivan County Summary:	**7,245.65**		

WOH Pre-MOA Lands by County, Town and Tax Map Number

(excluding Aqueducts and Shaft Sites)

Ulster County

Town	Village	Tax Map Number	Assessed Acres	Description	School_District
Hurley		46.2-3-1	5,689.59	Hurley Dikes	Onteora
		Hurley Sub-Total:	**5,689.59**		
Marbletown		46.4-1-29	565.90	East Dike	Rondout Valley
		Marbletown Sub-Total:	**565.90**		
Olive		45.2-1-1	8,042.40	Ashokan Reservoir & Dam	Onteora
		Olive Sub-Total:	**8,042.40**		
Shandaken		4.14-1-46	11.70	Pine Hill WWTP	Onteora
Shandaken		4.14-1-46.-1600	10.90	Pine Hill Sewer Lines	Onteora
		Shandaken Sub-Total:	**22.60**		
Wawarsing		66.4-1-29	2,306.60	Merriman Dam (Rondout)	Ellenville
		Wawarsing Sub-Total:	**2,306.60**		
		Ulster County Summary:	**16,627.09**		

Valuation of City of New York Reservoir Lands West-of-Hudson

Sheet 1 - RCNLD Claculations

MUNICIPALITY/ RESERVOIR:

ROLL YEAR

LAND

1)	Hamlet Acres ($ per lot * # of lots)[1]		$0
1a)	Hamlet Add-On Factor (Line 1 * 25 %)		$0
2)			$0
3)	Rural Acres ($per acre * # acres)[2]		$0
3a)	Rural Add-On Factor (Line 3 * 15 %)		$0
4)			$0
5)	... LandTotal (lines 1 to 4)	Total:	$0

REPRODUCTION COST NEW

Direct Costs

6)	Fencing[3]		$0
7)	Highway Relocation[4]		$0
8)	Utilities[5]		$0
9)	Site Preparation (removals)[6]		$0
10)	Site Preparation (clearing & grubbing)[7]		$0
11)	New Structures and Other Improvements (inc bridges)[8]		$0
12)	... Direct Costs Subtotal (lines 6 to 11)	Subtotal:	$0
13)	Location Factor (line12 * RS Means factor) [9]		$0
14)	Construction Contingencies (line 13 * x%) [10]		$0
15)	... Direct Costs Adjustments Subtotal (lines 13 + 14)	Subtotal:	$0
16)	Contractor's General Costs (line 15 * x%)[11]		$0
17)	Total Direct Costs (lines 15+16)	Total:	$0

Indirect Costs

(Excepting line 18, each a % of Direct Costs, line 17)

18)	Surveying[12]		$0
19)	Project Design and Engineering[13]		$0
20)	Project Permitting, Environmental Review & related Legal Costs (Line 17 * 2%)[14]		$0
21)	Project Management (including Wicks Law costs)[15]		#VALUE!
22)	Owner's Liability Insurance[16]		$0
23)	Allowance for Funds Used During Construction (AFUDC)[17].		
24)	... Indirect Costs (lines 18 to 23)	Total:	#VALUE!
25)	Reconstruction Cost New (lines 17+24)	RCN Total:	#VALUE!
26)	RCN Adjusted to Valuation Year (line 25 * Index #)		$0

PHYSICAL DEPRECIATION

		(Based on Depreciation Tables via Worksheet 3)	
27)	Reservoir Corpus[18]		None
28)	Buildings and support structures pursuant to RPTL §102(12)(b)[19]		$0
29)	Apparatus pursuant to RPTL §102(12)(f).[20]		$0
30)	... Total Physical Depreciation (lines 27 to 29)	D Total:	$0

VALUE

31)	Reconstruction New Less Depreciation (line 26 less line 30)	#VALUE!
32)	RCNLD plus Land (lines 5+31)	#VALUE!
33)	Equalization Rate (State Determination)	
34)	Indicated Assessed Value (line 32 * line 33)	#VALUE!

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[1] Hamlet valuation will be determined as follows:

a) Hamlets currently underwater within a town will be identified by the historical acquisition maps assisted as necessary by the historical applicable USGS maps to identify the hamlet areas.

b) A count would be made of all of the parcels in the hamlet(s), looking at parcels that either had improvements or were "developable" within the thickly settled area.

c) Comparables sales would be determined by arms-length transactions of vacant developable lots of 1 acre or less in hamlets or villages within the subject town. If there are not enough comparables in the subject town meeting that definition, sales in hamlet or village areas in nearby towns with similar market conditions may be used . The goal would be to find 10 comparable sales to give a statistically valid comparison, but depending upon the availability of comparable sales, that number could be adjusted.

d) The mean (or average) price of the comparables would be multiplied by the number of hamlet parcels in the town.

e) It will be necessary to calculate the total acreage included in the hamlets. That will be done by adding up the actual acreage for the parcels in the hamlet, with a cap of 2 acres per parcel. That total acreage would then be subtracted from the town total acreage area to arrive at the rural acreage figure.

[2] Rural valuation will be determined as follows:

a) Using a Mass Valuation Methodology that gathers sales data for all arms-length transactions (including NYC acquisitions) of vacant land parcels 25 acres or larger in size. For a statistically valid sampling the goal is to acquire a minimum of 30 comparable sales.

b) Open issue to define the scope of sales to be included in the data taking into account nearby towns with similar market conditions as necessary, and how many years of sales data to accumulate.

c) A weighted average of sales price per acre will be determined (sum of all sale prices/sum of all acres)

d) The weighted average will be multiplied by the total acreage in the town less the hamlet acreage.

[3] Use RS Means based upon appropriate material and length

[4] Use RS Means based upon appropriate material and length

[5] Methodology is open for discussion. An RS Means factor times a category of utility are the likely parameters.

[6] Methodology is open for discussion. An RS Means factor for removal of structures times an estimated number of structures and factors for calculating cemetery relocation and gas station relocation are under discussion.

[7] The extent of clearing will be determined by reference to original plans to determine amount cleared for the reservoirs and any associated construction activities. Modern construction techniques will be consulted to determine the area to be grubbed. The area of clearing and grubbing will be presumed to at least equal the area of the reservoir at the mean high water line. The selected RS Means category should reflect an average of the type of vegetation present throughout the area. An appropriate RS Means component will be utilized, which may have a factor incorporated to reflect the scale of the work if determined to be appropriate.

[8] Engineering estimates or RS Means where appropriate for reconstruction costs of structures. Actual costs for any new construction.

[9] Specific location factor under RS Means to be determined.

[10] Percentage of construction contingency to be determined upon consultation with engineers.

[11] Percentage of contractors' general costs to be determined upon consultation with engineers.

[12] The method of measuring surveying cost is to be determined upon consultation with engineers.

[13] The percentage for Project Design and Engineering is to be determined upon consultation with engineers.

[14] An open issue whether Line 5 should be included in the Direct Costs for this line item.

[15] Percentage of project management fees and Wicks Law compliance to be determined upon consultation with engineers.

[16] Percentage to be determined upon consultation with engineers.

[17] Will be determined by multiplying the Direct costs (Line 17 plus the principal payment on the land and tax payments) and Indirect costs (Lines 18 to 22), by the municipal bond rate for the NYC Water Authority, multiplied by one half of the agreed upon duration of construction which will be measured from the date of notice to proceed under the first construction contract for the property.

[18] Depreciation for the reservoir corpus, if any, will be determined after consultation with engineers.

[19] The presumed service lives are as follows: Buildings – 100 years; Roads – 100 years; Fencing – 75 years; Trees where required for stabilization of improvements – 100 years; Bridges – 75 years.

[20] To be determined upon consultation with engineers.

SUPPLEMENTAL AGREEMENT AMONG WEST OF HUDSON WATERSHED STAKEHOLDERS

CONCERNING

DEP'S PARTICIPATION IN FEDERAL OR STATE FLOOD BUY-OUT PROGRAMS

AGREEMENT, dated as of the 12th day of December, two thousand and thirteen, agreed to and executed by and among the following parties (collectively, the "Parties" and individually a "Party"):

The City of New York ("City"), including the Department of Environmental Protection ("DEP"), a municipal corporation with its principal office at City Hall, New York, New York 10007;

The Coalition of Watershed Towns ("CWT"), an inter-municipal body composed of municipalities located wholly or partially within the portion of the New York City Watershed that lies west of the Hudson River, which have duly entered into a cooperative agreement pursuant to Section 119-o of the New York General Municipal Law, having its principal office at Tompkins, New York;

The County of Delaware, a county corporation with its principal office at 111 Main Street, Delhi, New York 13753;

The County of Greene, a county corporation with its principal office at 411 Main Street, Catskill, New York 12414;

The County of Ulster, a county corporation with its principal office at 244 Fair Street, Kingston, New York 12404;

The Catskill Watershed Corporation ("CWC"), an independent locally-based and locally administered not-for-profit corporation, organized and existing under section 1411 of the New York State Not-for-Profit Corporation Law and having its principal office at PO Box 569, Main Street, Margaretville, New York 12455;

The Catskill Center for Conservation and Development ("Catskill Center"), a not-for-profit corporation having its principal offices at PO Box 504, Route 28 Arkville, New York 12406;

New York Public Interest Research Group, Inc. ("NYPIRG"), a not-for-profit corporation having its principal offices at 9 Murray Street, New York, New York 10007;

Open Space Institute, Inc. ("OSI"), a not-for-profit corporation having its principal offices at 1350 Broadway, New York, New York 10018;

The Trust for Public Land ("TPL), a not-for-profit corporation having its principal offices at 116 New Montgomery Street, San Francisco, California 94150; and

Riverkeeper, Inc. ("Riverkeeper"), a not-for-profit corporation having its principal offices at 20 Secor Road, Ossining, New York.

WITNESSETH:

A. WHEREAS, on January 21, 1997, the Parties, among other entities, entered into the Watershed Memorandum of Agreement ("Watershed MOA" or "MOA"), which established a partnership in which the parties agreed "to cooperate in the development and implementation of a Watershed Protection Program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities."

B. WHEREAS, among the programs the Parties agreed to in the Watershed MOA is a program for DEP to acquire land in the Watershed for watershed protection ("Land Acquisition Program"), subject to the terms of the Watershed MOA and of the water supply permit issued by NYSDEC on January 21, 1997 ("1997 Water Supply Permit").

C. WHEREAS, based on extensive negotiations, the Parties and/or their representatives, among other entities, reached agreement on the successor to the 1997 Water Supply Permit (the "2010 Water Supply Permit"), which established the terms and conditions for DEP's continuation of the Land Acquisition Program through December 23, 2025.

D. WHEREAS, the Parties' agreement to the terms of the 2010 Water Supply Permit was memorialized in the Agreement among West of Hudson Watershed Stakeholders Concerning NYCDEP's Continuation of its Land Acquisition Program, dated December 27, 2010 ("2010 LAP Agreement"), which provided, among other things, that the Parties would not oppose the 2010 Water Supply Permit.

E. WHEREAS, following Hurricane Irene and Tropical Storm Lee in August and September 2011, many of the parties to the 2010 LAP Agreement, among other stakeholders, worked to develop ways to focus existing watershed protection programs on issues relating to severe flooding, which can affect both water quality and the viability of watershed communities. Among other things, the stakeholders reached agreement on DEP's acquisition of certain damaged properties in connection with a federal and State buyout program ("Hurricane Irene Buyout Program"), to be implemented in Delaware, Greene, and Ulster Counties, under the Land Acquisition Program.

F. WHEREAS, FEMA and NYS OEM, in coordination with Delaware, Greene, and Ulster Counties, has completed an assessment of properties potentially eligible for the Hurricane Irene Buyout Program. Through that assessment, a list of eligible properties was developed and no additional properties are expected to be added to the Hurricane Irene Buyout Program. DEP's total financial contribution to the Hurricane Irene Buyout Program is not expected to exceed $2.5 million.

G. WHEREAS, the process the Federal Emergency Management Agency ("FEMA") plans to use for determining the fair market value of properties participating in the Hurricane Irene Buyout Program ("Applicable FEMA Procedures") is different from the process

set forth in the 2010 Water Supply Permit and the 1997 New York City Watershed Memorandum of Agreement for determining fair market value for other properties DEP purchases under the Land Acquisition Program. In order to facilitate DEP's participation in the Hurricane Irene Buyout Program, and in any subsequent federal or State buyout program, DEP has requested a modification to Special Condition 7(b) of the 2010 Water Supply Permit to allow the fair market value of buyout properties to be determined in accordance with the Applicable FEMA Procedures.

H. WHEREAS, in some instances, the local communities involved in the Hurricane Irene Buyout Program intend to take and retain title to properties acquired through that Program. In accordance with FEMA requirements, such properties will be subject to deed restrictions that limit future development and thus provide water quality protection ("FEMA Deed Restriction"). While in accordance with Special Condition 21(a) of the 2010 Water Supply Permit, DEP will grant conservation easements to DEC on buyout properties it retains in fee, for properties to be held by local communities, DEP cannot grant such easements. Accordingly, DEP has requested a further modification to Special Condition 7(b) of the 2010 Water Supply Permit to clarify that acquisitions by local communities of properties in any federal or State buyout program do not require DEP to grant such conservation easements.

I. WHEREAS, buyout properties to be held by local communities will be afforded protections by the FEMA Deed Restriction, and by the restrictions applicable to all property in the watershed under the *Rules and Regulations for the Protection from Contamination, Degradation and Pollution of the New York City Water Supply and Its Sources*, 10 New York Codes, Rules and Regulations ("NYCRR") Part 128; 15 Rules of the City of New York ("RCNY") Chapter 18 ("Watershed Regulations").

J. WHEREAS, in an intermunicipal agreement between DEP and the communities participating in the Hurricane Irene Buyout Program, the communities have agreed to include limited additional restrictions/clarification of the FEMA Deed Restrictions (e.g., restricting activity and structures with potential to cause material water pollution) for those properties to which they will take title, in exchange for the City's participation in the Hurricane Irene Buyout Program.

NOW, THEREFORE, in consideration of the promises and of the mutual covenants and agreements herein set forth, and of the undertakings of each party to the other parties, the Parties do hereby promise and agree as follows:

(1) The communities have agreed that, subject to FEMA approval, they will grant DEC a conservation easement for properties to which they take title in connection with DEP's participation in any federal or State buyout program, which will maintain the property for open space, recreational, agricultural or wetland management usage and will incorporate the FEMA Deed Restrictions and will further limit new structures that may be built on the property to:

a. a public restroom that is served by a public sewer system and/or a septic system with a leach field outside of the 100-year floodplain;

b. a facility that is open on all sides and functionally related to open space use which minimizes the impervious coverage of the ground surfaces to the extent practical, and is designed to maintain or restore natural stormwater flows by maximizing infiltration into the ground; or

c. structures that are compatible with open space and proper flood plain management policies and practices which minimizes the impervious coverage of the ground surfaces to the extent practical, and are designed to maintain or restore natural stormwater flows by maximizing infiltration into the ground.

(2) Supplemental Limitation on Challenges to DEP's Proposed Modification to Special Condition 7(b) of the 2010 Water Supply Permit. The Parties hereby waive their rights under Section 62 of the Watershed MOA to oppose modification of Special Condition 7(b) of the 2010 Water Supply Permit, which DEP has requested in connection with the Hurricane Irene Buyout Program, and which would also apply in LAP parcels acquired under a future federal or state buy-out program. DEP has requested that the underlined language below be added to Special Condition 7(b):

> b. Parcels of land participating in a federal or state flood buy-out program need neither be vacant, as defined in Special Condition 8, nor meet the size and natural features criteria, as set forth in Special Condition 9 nor are such parcels subject to the acquisition exclusions (hamlet or designations) in Special Condition 10. Fair Market Value for parcels of land participating in a federal or state funded flood buy-out program may be determined in accordance with either the process established by the Federal Emergency Management Agency, or as set forth in Special Condition 13. Any parcels of land acquired under a federal or state flood buy-out program which will be held in fee by a local government rather than the City, which are protected from development in perpetuity by deed in accordance with the provisions of 42 U.S.C. § 5170c, are not subject to Special Condition 21(a).

In particular, no Party will pursue, nor will CWT, financially or otherwise, support any of its member municipalities in pursuing, and nor will Delaware, Greene, or Ulster County, financially or otherwise, support any of the towns in those respective counties in pursuing, any administrative or judicial proceeding challenging the modification of the 2010 Water Supply Permit to allow for fair market value of properties participating in any federal or State buyout program to be determined in accordance with the Applicable FEMA Procedures. Similarly, no Party will pursue any administrative or judicial proceeding challenging the modification of the 2010 Water Supply Permit to clarify that DEP is not required to grant conservation easements to NYSDEC for properties acquired pursuant to a federal or State buyout program and held in fee by a watershed community. Should entities other than the Parties request or commence administrative or civil legal proceedings, the Parties also agree to support one another's application for full party status to support the modification of the 2010 Water Supply Permit. Such support does not require any Party to become a party to any proceeding.

(3) Enforceability of this Agreement. The Parties to this Agreement intend the terms of this Agreement to be binding and enforceable commitments. The City is responsible for

the compliance of its contractors with its obligations under this Agreement. These conditions may be enforced pursuant to paragraphs 177 and 180 through 183 of the MOA by the parties to the Watershed MOA. No Party will assert a defense based on the alleged inapplicability of the MOA to the Land Acquisition Program in the event of litigation seeking to enforce the terms of the continuation of the LAP under the 2010 Water Supply Permit. Nothing herein shall be construed to modify, supersede or be inconsistent with the terms and conditions of the 1997 MOA. This Agreement may be enforced in a court of competent jurisdiction and such action shall be governed by the Laws of the State of New York. In any action relating to real property, the City will not oppose venue in the Supreme Court of the county in which the property is located. Except as set forth above in this paragraph, nothing in this Agreement shall act to confer third party beneficiary rights on any person or entity not party to this Agreement.

(4) Effect on the 2010 LAP Agreement. Nothing herein affects the validity of the 2010 LAP Agreement, which shall remain in full force and effect in accordance with its terms.

(5) Execution. This Agreement may be executed in one or more counterparts or by facsimile or other electronic means, each of which when executed and delivered shall be an original, and all of which executed shall constitute one and the same instrument.

(6) Authorization to Execute. The Parties signing this Agreement represent that they have been duly authorized to enter into this Agreement pursuant to their respective lawful authorities.

SECOND SUPPLEMENTAL AGREEMENT AMONG WEST OF HUDSON WATERSHED STAKEHOLDERS

CONCERNING THE

NEW YORK CITY-FUNDED FLOOD BUYOUT PROGRAM

AGREEMENT, dated as of the 23rd day of May, two thousand sixteen, agreed to and executed by and among the following parties (collectively, the "Parties" and individually a "Party"):

The City of New York ("City"), including the Department of Environmental Protection ("DEP"), a municipal corporation with its principal office at City Hall, New York, New York 10007;

The Coalition of Watershed Towns ("CWT"), an inter-municipal body composed of municipalities located wholly or partially within the portion of the New York City Watershed that lies west of the Hudson River, which have duly entered into a cooperative agreement pursuant to Section 119-o of the New York General Municipal Law, having its principal office at Delhi, New York;

The County of Delaware, a county corporation with its principal office at 111 Main Street, Delhi, New York 13753;

The County of Greene, a county corporation with its principal office at 411 Main Street, Catskill, New York 12414;

The County of Ulster, a county corporation with its principal office at 244 Fair Street, Kingston, New York 12404;

The County of Schoharie, a county corporation with its principal office at 284 Main Street, Schoharie, NY 12157;

The County of Sullivan, a county corporation with its principal office at 100 North Street, Monticello, NY 12701;

The Catskill Watershed Corporation ("CWC"), an independent locally-based and locally administered not-for-profit corporation, organized and existing under section 1411 of the New York State Not-for-Profit Corporation Law and having its principal office at PO Box 569, Main Street, Margaretville, New York 12455;

The Catskill Center for Conservation and Development ("Catskill Center"), a not-for-profit corporation having its principal offices at PO Box 504, Route 28 Arkville, New York 12406;

New York Public Interest Research Group, Inc. ("NYPIRG"), a not-for-profit corporation having its principal offices at 9 Murray Street, New York, New York 10007;

Open Space Institute, Inc. ("OSI"), a not-for-profit corporation having its principal offices at 1350 Broadway, New York, New York 10018;

The Trust for Public Land ("TPL), a not-for-profit corporation having its principal offices at 116 New Montgomery Street, San Francisco, California 94150;

Riverkeeper, Inc. ("Riverkeeper"), a not-for-profit corporation having its principal offices at 20 Secor Road, Ossining, New York; and

The Natural Resources Defense Council ("NRDC"), a not-for-profit corporation having its principal offices at 40 West 20th Street, New York, NY 10011.

WITNESSETH:

A. WHEREAS, on January 21, 1997, the Parties, among other entities, entered into the Watershed Memorandum of Agreement ("Watershed MOA" or "MOA"), which established a partnership in which the parties agreed "to cooperate in the development and implementation of a Watershed Protection Program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities" ("MOA Objectives").

B. WHEREAS, among the programs the Parties agreed to in the Watershed MOA is a program for DEP to acquire land in the Watershed for watershed protection ("Land Acquisition Program"), subject to the terms of the Watershed MOA and of the water supply permit issued by NYSDEC on January 21, 1997 ("1997 Water Supply Permit").

C. WHEREAS, in December 2007, the CWT, among other entities, filed a Combined CPLR Article 78 Proceeding and Declaratory Judgment Action against the City and DEP, among other respondents, challenging, among other things, the adequacy of the environmental review of the additional allocation of funds to the Land Acquisition Program under the 2007 Filtration Avoidance Determination.

D. WHEREAS, NRDC intervened in the Article 78 Proceeding and Declaratory Judgment Action against the City, by stipulation of the parties to that proceeding and so ordered by the Court on December 22, 2010.

E. WHEREAS, based on extensive negotiations, the Parties and/or their representatives, among other entities, reached agreement on the successor to the 1997 Water Supply Permit (the "2010 Water Supply Permit"), which established the terms and conditions for DEP's continuation of the Land Acquisition Program through December 23, 2025.

F. WHEREAS, the Parties' agreement to the terms of the 2010 Water Supply Permit was memorialized in two similar Agreements, one among West of Hudson Watershed Stakeholders and one among certain parties to the Article 78 Proceeding and Declaratory Judgment Action, including NRDC, concerning NYCDEP's Continuation of its Land Acquisition Program, both dated December 27, 2010 ("2010 LAP Agreements"), which provided, among other things, that the Parties would not oppose the 2010 Water Supply Permit.

G. WHEREAS, following Hurricane Irene and Tropical Storm Lee in August and September 2011, many of the parties to the 2010 LAP Agreement, among other stakeholders, reached further agreements ("2013 Supplemental LAP Agreements") in connection with an overall plan to work together to focus existing watershed protection programs on issues relating to severe flooding.

H. WHEREAS, the 2013 Supplemental LAP Agreement memorialized the Parties' agreement to modifications of Special Condition 7(b) of the 2010 Water Supply Permit to facilitate the Hurricane Irene Buyout Program, to be implemented in Delaware, Greene, and Ulster Counties, under the Land Acquisition Program, in conjunction with the Federal Emergency Management Agency ("FEMA") and the New York State Office of Emergency Management ("NYS OEM"). In particular, the modifications allowed for the use of the FEMA procedures for determining the fair market value of properties participating in the Hurricane Irene Buyout Program. The modifications also allowed for local communities to take and retain title to properties acquired through that Program, establishing a requirement that in such situations, those communities will grant conservation easements to DEC with certain restrictions, including both the restrictions FEMA requires for all buyout properties ("FEMA Deed Restrictions") and additional restrictions memorialized in the 2013 Supplemental LAP Agreement.

I. WHEREAS, the May 2014 Midterm Revisions to the City's 2007 Filtration Avoidance Determination ("FAD") require DEP to commit $15 Million to a New York City-funded flood buyout program ("NYCFFBO Program") to be implemented in accordance with the conditions of the 2010 Water Supply Permit, as amended. In accordance with the FAD, after extensive negotiations and outreach, Watershed Stakeholders have agreed upon a process for property evaluation and selection, as documented in "NYC-Funded Flood Buyout Program Property Evaluation and Selection Process," dated June 1, 2016 ("Process Document"), which relies on a further amendment of the 2010 Water Supply Permit, as described below, to allow DEP to implement the NYCFFBO Program in communities that elect to participate in the Program ("Communities").

J. WHEREAS, MOA Paragraph 67 prohibits DEP from acquiring property in the West of Hudson watershed with structures other than uninhabitable dwellings or accessory structures unless the property is acquired through an acquisition and relocation program administered pursuant to the Hazard Mitigation Grant Program of the Federal Disaster Assistance Act.

K. WHEREAS, as set forth in the Process Document, the NYCFFBO Program includes the following acquisition categories:

1. **Hydraulic Study Properties** – i.e., derived from an engineering analysis conducted under Local Flood Analysis ("LFA"), New York Rising, or another such program;
2. **CWC's Flood Hazard Mitigation Implementation Program** ("FHMIP") – where a property is eligible for Relocation Assistance under CWC's FHMIP;
3. **Individual Buyout Properties** – Necessary for completion of a planned community-approved Stream Project;

4. **Individual Buyout Properties** – Erosion Hazard; and

5. **Individual Buyout Properties** – Inundation Hazard, which does not include properties covered under Category 1 (Hydraulic Study Properties) or properties within the following areas: (1) parcels in areas known as a "designated hamlet or village" (as specified in Attachments R and S in the MOA) and/or Expanded Hamlet Area (as specified in Exhibits 4 and 5 to the 2010 Water Supply Permit); (2) parcels in areas designated as "commercial or industrial area" up to 50 acres in size by the municipality following the procedures of the WSP; and (3) parcels designated along specified public roads (as specified in Attachment T in the MOA) within 1/4 mile extensions from a village.

Properties in any of these categories may have structures other than uninhabitable dwellings and accessory structures; accordingly, the Parties agree that the 2010 Water Supply Permit must be amended for such acquisitions to proceed, and that the Parties' written consent is therefore required.

L. WHEREAS, the Parties recognize that properties acquired under the NYCFFBO Program may include areas where there is no significant erosion or inundation hazard, and which are neither needed nor useful for implementation of a CWC FHMIP project or a stream management project. The Parties further recognize that the Communities may elect to take title to such properties, and that prior to acquisition under the NYCFFBO Program, it may not be practicable for such a property to be subdivided, or for the appropriate boundaries for a subdivided parcel to be determined, in order to allow for potential future land uses on the upland portion. Consistent with the objectives of the NYCFFBO Program (flood mitigation and community sustainability), the Parties have agreed to certain restrictions on future use, applicable at or below the 100-year floodplain elevation, as set forth in further detail in the Process Document and below.

M. WHEREAS, on December 23, 2015, CWT submitted to DEP and the regulatory agencies the following list of proposed modifications and enhancements to the Watershed Protection and Partnership Programs ("Supplemental Partnership Programs"), which CWT asserts are critical to the long-term sustainability of the communities:

1. Future Stormwater Fund
   - (a) Replenishment
   - (b) Eligible costs/allocation
2. MOA Paragraph 145 Stormwater Costs Paid by the City
   - (a) CWC to administer program
   - (b) Payments as project proceeds within 90 days of invoice submission
   - (c) Eligible costs to be consistent with MOA Attachments II and WW and to be determined by CWC
3. Small Business Septic Fund
   - (a) Expansion to public entities and institutions

(b) Engineering evaluations and funding of upgrades to noncomplying regulated activities

(c) Expansion to include all incremental costs of equipment and methods required by the Watershed Regulations that are not required by State or federal law

4. CWC to administer program concerning the City's obligations to pay certain wastewater treatment plant costs under Public Health Law Section 1104.

N. WHEREAS, as set forth below, the Communities have requested, and the City has agreed to, negotiations concerning the Supplemental Partnership Programs, as a condition of the Communities' agreement to the modification of the 2010 WSP; neither such negotiations, nor the Communities' and the City's commitment to those negotiations, independently constitutes a modification of the MOA, and the Parties have not committed to agree to any specific Supplemental Partnership Program Proposal or proposed amendment to the Watershed Regulations.

NOW, THEREFORE, in consideration of the promises and of the mutual covenants and agreements herein set forth, and of the undertakings of each party to the other parties, the Parties do hereby promise and agree as follows:

(1) Property To Be Owned by Communities. Where a Community elects to take title to real property purchased under this program, the Community shall, at the time of closing, grant to DEC a Conservation Easement under Article 49, Title 3 of the New York State Environmental Conservation Law ("Conservation Easement" or "CE"), the purpose of which will be to maintain the property in accordance with the Restrictions in Flood-Prone Areas set forth below. As set forth in the Process Document, properties to which a Community takes title shall be subject to the following conditions:

a. Restrictions in Flood-Prone Areas. The Conservation Easement will apply to that portion of the property within the 100-year floodplain[1] and may also apply to any other area agreed to by the Community and DEC, including area(s) necessary to create reasonable boundaries and/or area(s) necessary for the grantee to gain access from a public road for CE inspection and enforcement purposes. The CE will include the following terms:

i. A whereas clause stating that the parties (the Community and DEC) acknowledge the importance of preserving natural conditions to promote erosion control and flood protection and will seek to preserve natural vegetation, to the extent practical and consistent with the Grantor's long-term flood mitigation plans.

ii. The uses allowable under the CE include and are limited to:

[1] That is, most recently mapped 100-year floodplain as of the date of conveyance of the CE and/or the 100-year floodplain as determined by a site specific flood analysis related to or arising from an LFA or equivalent study and incorporated into a FEMA letter of map amendment.

1. uses that would be considered compatible uses or allowable structures under deed restrictions applicable to properties acquired with FEMA flood buyout funding.[2] Allowable new community structures to promote the use of the property for open space and recreational purposes are limited to:

   (a) a public restroom that is served by a public sewer system and/or a septic system with a leach field outside of the 100-year floodplain;

   (b) a facility that is open on all sides and functionally related to open space use which minimizes the impervious coverage of the ground surfaces to the extent practical, and is designed to maintain or restore natural stormwater flows by maximizing infiltration into the ground; or

   (c) structures that are compatible with open space and proper flood plain management policies and practices which minimizes the impervious coverage of the ground surfaces to the extent practical, and are designed to maintain or restore natural stormwater flows by maximizing infiltration into the ground;

2. uses necessary for the protection, modification, relocation or, where necessary, new construction of infrastructure (water, sewer, roads, telephone and power, including roads providing access to the Upland Portion as defined below), designed in such a way as to avoid exacerbating flood hazards; and

3. flood mitigation projects approved by the Community that are consistent with the goals of flood hazard mitigation and are selected either through: (a) the Local Flood Analysis process ("LFA"), or (b) through another process, such as NY Rising, that includes an engineering analysis meeting the standards of the LFA program.

iii. Once a community has identified a need to acquire a specific parcel, the community is encouraged to prepare, as part of its local flood hazard mitigation plan, a reuse plan for that parcel (the "Re-Use Plan"). The Re-Use Plan will identify the community's long term plan for the management, use and development of that parcel subject to and consistent with the Restrictions in Flood-Prone Areas identified above. The Re-Use Plan will be incorporated into the CE.

iv. In those CEs that do not incorporate a Re-Use Plan, the CE will require notice to and right of objection from DEC of any uses involving new impervious surfaces or grading. In those CEs that do incorporate a Re-Use Plan, the CE will require notice to and right of objection from DEC of any uses involving new impervious surfaces or grading that are not consistent with the Re-Use Plan. The CE will require the Community to use, manage and develop that parcel consistent with the Re-Use Plan.

[2] See FEMA's Model Deed Restrictions that support the requirements of 44 C.F.R. Part 80, available at https://www.fema.gov/media-library-data/20130726-1848-25045-1210/fema_model_deed_restriction.pdf.

v. The CE will require that any use in the Flood Prone Area be consistent with the Flood Prone Restrictions set forth above and be undertaken in accordance with all applicable requirements including, but not limited to, the Watershed Regulations.[3]

b. Uses of Upland Areas. The portion of the property that is not subject to the Conservation Easement ("Upland Portion") may be used and developed in the future, in accordance with all applicable requirements including, but not limited to, the City's Watershed Regulations. Unless and until the Upland Portion is subdivided or used in accordance with subparagraphs (i) through (iii) below, the Upland Portion must be treated in accordance with the Re-Use Plan or, in the absence of a Re-Use Plan, as if it were subject to the terms of the CE.

i. If the Community retains ownership of and uses the Upland Portion for any use that is not consistent with the Re-Use Plan or, in the absence of a Re-Use Plan, would not be allowed under the CE except for relocation of an existing community facility in a floodplain or otherwise subject to erosion or inundation hazard, the appraised value of the Upland Portion must be transferred in accordance with subparagraph (iii) below.

ii. The Community may subdivide the Upland Portion and sell it through an arm's length transaction. If the Upland Portion is sold, the proceeds from the sale of the Upland Portion, less the actual and reasonable expenses incurred by the Community in connection with the NYCFFBO Program, including but not limited to, the cost of subdivision and/or in preparing the property for sale ("Sale Proceeds"),[4] must be transferred in accordance with subparagraph (iii) below.

iii. Sale Proceeds or the appraised value of the Upland Portion as described in the previous two subparagraphs shall be transferred to the CWC's Flood Hazard Mitigation Implementation Program or any other CWC program relating to flood hazard mitigation in the West of Hudson watershed.

1. If CWC no longer administers a flood hazard mitigation program, such funds shall be transferred to DEP to be used for the NYCFFBO Program or, if such does not exist, for purposes related to acquisition of land or management of natural resources and/or public recreational use in the West of Hudson watershed.

2. If the expenses incurred by the Community in connection with the NYCFFBO Program, subdivision and/or sale are greater than the proceeds from such sale, no funds need be transferred.

[3] The Rules and Regulations for the Protection from Contamination, Degradation, and Pollution of the New York City Water Supply and Its Sources, 10 NYCRR Part 128; 15 RCNY Chapter 18.

[4] Actual and reasonable expenses incurred by the community include consultant, legal, engineering, contracting and administrative expenses relating to: (i) the negotiation and execution of any related agreements; (ii) infrastructure improvements to enhance the sale value; (iii) stewardship for the two years immediately preceding the sale; (iv) closing costs (including, if applicable, realtor, appraisal, title, transfer tax, filing fees); and (v) demolition.

(2) Commitment to Negotiate. Beginning no later than May 15, 2016, DEP will enter into good faith negotiations with the Parties and other stakeholders as described below. The Parties acknowledge that NYSDOH has authority:

- as the primacy agency for the City's 2017 Filtration Avoidance Determination ("FAD"), to include requirements relating to Partnership Programs in the FAD consistent with the federal Surface Water Treatment Rule; and
- as the agency which must approve any amendments to the City's Watershed Regulations pursuant to Section 1100 of the Public Health Law, to approve or disapprove any proposed amendments to the Watershed Regulations.

a. Partnership Programs:

i. Scope. DEP, CWC, and CWT will seek to find a satisfactory resolution for each of the objectives identified above as Supplemental Partnership Programs. CWC, and CWT may identify additional issues by June 1, 2016 ("the Additional Issues"); DEP, CWC and CWT will seek to resolve such issues along with those already identified.

ii. Timing. Based upon such negotiations, DEP intends to identify enhancements to its existing Watershed Protection and Partnership Programs, satisfactory to DEP, CWC, and CWT, to achieve the objectives identified as the Supplemental Partnership Programs and the Additional Issues in time to include those enhancements in its Long-Term Watershed Protection Program (to be submitted to NYSDOH on or prior to December 15, 2016). DEP, CWC and CWT will advise NYSDOH and DEC no later than September 30, 2016, if they believe that additional assistance is needed to meet the goals and timeframes set forth below. If DEP, CWC and CWT are not able to agree on enhancements necessary to achieve the objectives identified as the Supplemental Partnership Programs by December 15, 2016, CWC/CWT and/or DEP (or both) may request assistance from NYSDOH in resolving any outstanding issues; such request shall include a writing detailing the outstanding issue and proposed resolution.

iii. Additional Factors. While the Parties agree to open and good faith discussions of issues raised in these negotiations, the City has not agreed to any specific proposal identified in the Supplemental Partnership Programs. The Parties acknowledge that in developing the Long-Term Watershed Protection Program, the City expects to engage in discussions with a variety of stakeholders.

b. Amendments to the Watershed Regulations. The Parties acknowledge that the 1997 Watershed Regulations were developed in conjunction with the MOA in collaboration with the Parties, among other stakeholders, and that the two subsequent amendments were also based on collaborative processes. The City has drafted proposed amendments to the Watershed Regulations based, in part, on concerns expressed by CWT and CWC. Similarly, CWT and CWC have identified areas in which they would like the Watershed Regulations to be amended. Beginning no later than May 15, 2016, the Parties together with other stakeholders

will enter into good faith negotiations to discuss amendments to the Watershed Regulations, including the issues set forth below. The Parties acknowledge that some of these issues may be resolved through process changes rather than through amendments to the Regulations.

i. Scope. The issues to be discussed include:

1. Expediting and simplifying DEP's process for reviewing and approving regulated activities
2. Application of the Watershed Regulations to existing structures and infrastructure, and in particular to noncomplying regulated subsurface sewage treatment systems
3. Other issues identified by CWT as important to community character and sustainability

ii. Timing. The Parties will seek to reach an agreement in principle, including proposed amendments, by May 15, 2017.

iii. Additional Factors. The Parties acknowledge that the Watershed Regulations are a critical element of the City's Long-Term Watershed Protection Program, and thus critical to the City's continued ability to satisfy the federal and State filtration avoidance criteria. In order to achieve the MOA Objectives and to satisfy the filtration avoidance criteria, the Parties will work together, in consultation with NYSDOH and DEC, to identify amendments that, in their judgment, will reduce the regulatory burden on the West of Hudson communities without compromising water quality. The City may amend the Watershed Regulations only with approval from NYSDOH, and must also follow the City's administrative procedures for rulemaking. The Parties further acknowledge that the Watershed Regulations apply in the East of Hudson watershed, and therefore that the East of Hudson communities and other stakeholders not party to this Agreement have an interest in any amendments that will affect their communities

c. Program Contracting Processes.

i. Scope. The Parties will seek to identify improvements to manage the City's contracting, procurement, and contract administration processes as efficiently as possible.

ii. Timing. The Parties will seek to complete these discussions by May 15, 2017, with the hope that any improvements in the process will be in place to facilitate implementation of programs under the 2017 FAD.

iii. Additional Factors. The Parties acknowledge that the City's contracting procedures are subject to a variety of complex requirements under State law, the New York City Charter, the Procurement Policy Board Rules, and other applicable legal requirements. Moreover, the Parties acknowledge that agencies and offices other than DEP and the City Law Department control many elements of the City's contracting process.

(3) Supplemental Limitation on Challenges to DEP's Proposed Modification to Special Condition 7(b) of the 2010 Water Supply Permit. The Parties hereby waive their rights under the Watershed MOA to oppose modification of Special Condition 7(b) of the 2010 Water Supply Permit, which DEP has requested in connection with the NYCFFBO Program. DEP has requested that the underlined language below be added to, and bracketed language below be removed from, Special Condition 7(b):

> b. Parcels of land participating in a federal, [or] state, or City flood buy-out program need neither be vacant, as defined in Special Condition 8, nor meet the size and natural features criteria, as set forth in Special Condition 9 nor are such parcels subject to the acquisition exclusions (hamlet or designations) in Special Condition 10. Fair Market Value for parcels of land participating in a federal, [or] state, or City flood buy-out program may be determined in accordance with either the process established by the Federal Emergency Management Agency, or as set forth in Special Condition 13. Any parcels of land acquired under a federal, [or] state, or City flood buy-out program which will be held in fee by a local government rather than the City which are protected from development in perpetuity by deed in accordance with the provisions of 42 U.S.C. § 5170c or equivalent protections enforceable by the department, are not subject to Special Condition 21(a). The City flood buy-out program referred to in this condition is defined and governed by the process, procedures and criteria defined in the document entitled "City-Funded Flood Buyout Program Property Evaluation and Selection Process", dated [August 18, 2015] (Process). In the event the City proposes a material modification to the Process such proposed modification shall be publicly noticed by NYSDEC for public comment and shall be subject to NYSDEC approval as a permit modification under 6 NYCRR Part 621 Uniform Procedures prior to City implementation of such proposed modification. The City flood buy-out program shall provide for the opportunity prior to acquisition for the municipality to review and approve, conditionally approve or reject the proposed parcels within its boundaries.

In particular, no Party will pursue, nor will CWT, financially or otherwise, support any of its member municipalities in pursuing, and nor will Delaware, Greene, Ulster, Sullivan, or Schoharie County financially or otherwise, support any of the towns in those respective counties in pursuing, any administrative or judicial proceeding challenging the modifications of the 2010 Water Supply Permit concerning DEP's implementation of the NYCFFBO Program in municipalities that have explicitly opted to participate. Should entities other than the Parties request or commence administrative or civil legal proceedings, the Parties also agree to support one another's application for full party status to support the modification of the 2010 Water Supply Permit. Such support does not require any Party to become a party to any proceeding.

(4) Enforceability of this Agreement by NRDC. Independent of the provisions set forth in paragraph (5) below regarding the enforceability of this Agreement by parties to the MOA, pursuant to the enforcement provisions of the MOA, the City and CWT consent to NRDC's enforcement against them of the terms of this Agreement, as binding contractual obligations. Nothing herein shall give NRDC any enforcement rights with respect to the MOA.

(5) Enforceability of this Agreement. The Parties to this Agreement intend the terms of this Agreement to be binding and enforceable commitments. The City is responsible for the compliance of its contractors with its obligations under this Agreement. These conditions may be enforced pursuant to paragraphs 177 and 180 through 183 of the MOA by the parties to the Watershed MOA. No Party will assert a defense based on the alleged inapplicability of the MOA to the Land Acquisition Program in the event of litigation seeking to enforce the terms of the continuation of the LAP under the 2010 Water Supply Permit. Nothing herein shall be construed to modify, supersede or be inconsistent with the terms and conditions of the 1997 MOA. This Agreement may be enforced in a court of competent jurisdiction and such action shall be governed by the Laws of the State of New York. In any action relating to real property, the City will not oppose venue in the Supreme Court of the county in which the property is located. Except as set forth above in this paragraph, nothing in this Agreement shall act to confer third party beneficiary rights on any person or entity not party to this Agreement.

(6) Effect on the 2010 LAP Agreements and the 2013 Supplemental LAP Agreements. Nothing herein affects the validity of the 2010 LAP Agreements or the 2013 Supplemental LAP Agreements, which shall remain in full force and effect in accordance with their terms.

(7) Execution. This Agreement may be executed in one or more counterparts or by facsimile or other electronic means, each of which when executed and delivered shall be an original, and all of which executed shall constitute one and the same instrument.

(8) Authorization to Execute. The Parties signing this Agreement represent that they have been duly authorized to enter into this Agreement pursuant to their respective lawful authorities.

THIRD SUPPLEMENT TO THE DECEMBER 2010 AGREEMENTS

AMONG WEST OF HUDSON WATERSHED STAKEHOLDERS:

COMMITMENTS RELATING TO THE 2017 FILTRATION AVOIDANCE DETERMINATION

AGREEMENT, dated as of the __ day of ____, two thousand eighteen, agreed to and executed by and among the following parties (collectively, the "Parties" and individually a "Party"):

The City of New York ("City"), including the Department of Environmental Protection ("DEP"), a municipal corporation with its principal office at City Hall, New York, New York 10007;

The Coalition of Watershed Towns ("CWT"), an inter-municipal body composed of municipalities located wholly or partially within the portion of the New York City Watershed that lies west of the Hudson River, which have duly entered into a cooperative agreement pursuant to Section 119-o of the New York General Municipal Law, having its principal office at Delhi, New York;

The County of Delaware, a county corporation with its principal office at 111 Main Street, Delhi, New York 13753;

The County of Greene, a county corporation with its principal office at 411 Main Street, Catskill, New York 12414;

The County of Ulster, a county corporation with its principal office at 244 Fair Street, Kingston, New York 12402;

The County of Schoharie, a county corporation with its principal office at 284 Main Street, Schoharie, New York 12157;

The County of Sullivan, a county corporation with its principal office at 100 North Street, Monticello, New York 12701;

The Catskill Watershed Corporation ("CWC"), an independent locally-based and locally-administered not-for-profit corporation, organized and existing under section 1411 of the New York State Not-for-Profit Corporation Law and having its principal office at PO Box 569, Main Street, Margaretville, New York 12455;

The Catskill Center for Conservation and Development ("Catskill Center"), a not-for-profit corporation having its principal offices at PO Box 504, Route 28, Arkville, New York 12406;

New York Public Interest Research Group, Inc. ("NYPIRG"), a not-for-profit corporation having its principal offices at 9 Murray Street, New York, New York 10007;

Open Space Institute, Inc. ("OSI"), a not-for-profit corporation having its principal offices at 1350 Broadway, New York, New York 10018;

The Trust for Public Land ("TPL), a not-for-profit corporation having its principal offices at 116 New Montgomery Street, San Francisco, California 94150;

Riverkeeper, Inc. ("Riverkeeper"), a not-for-profit corporation having its principal offices at 20 Secor Road, Ossining, New York 10562; and

The Natural Resources Defense Council ("NRDC"), a not-for-profit corporation having its principal offices at 40 West 20th Street, New York, New York 10011.

WITNESSETH:

A. WHEREAS, on January 21, 1997, many of the Parties, among other entities, entered into the Watershed Memorandum of Agreement ("Watershed MOA" or "MOA"), which established a partnership in which the parties agreed "to cooperate in the development and implementation of a Watershed Protection Program that maintains and enhances the quality of the New York City drinking water supply system and the economic vitality and social character of the Watershed communities" ("MOA Objectives").

B. WHEREAS, among the programs the Parties agreed to in the Watershed MOA is a program for DEP to acquire land in the Watershed for watershed protection ("Land Acquisition Program" or "LAP"), subject to the terms of the Watershed MOA and of the water supply permit issued by the New York State Department of Environmental Conservation ("NYSDEC") on January 21, 1997 ("1997 Water Supply Permit").

C. WHEREAS, in December 2007, the CWT, among other entities, filed a Combined CPLR Article 78 Proceeding and Declaratory Judgment Action against the City and DEP, among other respondents, challenging, among other things, the adequacy of the environmental review of the additional allocation of funds to the Land Acquisition Program under the 2007 Filtration Avoidance Determination.

D. WHEREAS, NRDC intervened in the Article 78 Proceeding and Declaratory Judgment Action against the City, by stipulation of the parties to that proceeding and so ordered by the Court on December 22, 2010.

E. WHEREAS, based on extensive negotiations, the Parties and/or their representatives, among other entities, reached agreement on the successor to the 1997 Water Supply Permit (the "2010 Water Supply Permit"), which established the terms and conditions for DEP's continuation of the Land Acquisition Program through December 23, 2025.

F. WHEREAS, the Parties' agreement to the terms of the 2010 Water Supply Permit was memorialized in two similar Agreements, one among West of Hudson Watershed Stakeholders and one among certain parties to the Article 78 Proceeding and Declaratory Judgment Action, including NRDC, concerning DEP's Continuation of its Land Acquisition Program, both dated December 27, 2010 ("2010 LAP Agreements"), which provided, among other things, that the Parties would not oppose the 2010 Water Supply Permit.

G. WHEREAS, following Hurricane Irene and Tropical Storm Lee in August and September 2011, many of the parties to the 2010 LAP Agreement, among other stakeholders, reached further agreements ("2013 Supplemental LAP Agreements") in connection with an overall plan to work together to focus existing watershed protection programs on issues relating to severe flooding. The 2013 Supplemental LAP Agreements memorialized the Parties' agreement to modifications of Special Condition 7(b) of the 2010 Water Supply Permit to facilitate the Hurricane Irene Buyout Program.

H. WHEREAS, the May 2014 Midterm Revisions to the City's 2007 Filtration Avoidance Determination required DEP to commit $15 million to a New York City-funded flood buyout program ("NYCFFBO Program"), which required further modifications to

the 2010 Water Supply Permit, as amended. The Parties agreed to those modifications, which incorporate a process for evaluation and selection of properties for the NYCFFBO Program, in the "July 2016 Supplemental Agreement."

I. WHEREAS, the July 2016 Supplemental Agreement also established a framework for negotiations concerning certain proposed modifications and enhancements to the MOA's Watershed Protection and Partnership Programs ("Supplemental Partnership Programs") and other issues including, but not limited to, proposed modifications to the *Rules and Regulations for the Protection from Contamination, Degradation, and Pollution of the New York City Water Supply and Its Sources*, Rules of the City of New York, Title 15, Chapter 18 ("Watershed Regulations").

J. WHEREAS, in accordance with the July 2016 Supplemental Agreement, the Parties discussed the Supplemental Partnership Programs and amendments to the Watershed Regulations and reached a number of resolutions, as described below. For some of the Supplemental Partnership Programs, the resolutions include continued discussions in the context of ongoing work groups, also as described below.

K. WHEREAS, many of the Parties' resolutions concerning Supplemental Partnership Programs were also described in DEP's December 15, 2016 Long-Term Watershed Protection Plan ("Long-Term Plan"), submitted in support of DEP's application for a new Filtration Avoidance Determination ("FAD") for the Catskill/Delaware Water Supply, and in the FAD issued by the New York State Department of Health ("NYSDOH"), as the primacy agency for the FAD, on December 29, 2017, pursuant to the federal Surface Water Treatment Rule ("2017 FAD").

NOW, THEREFORE, in consideration of the promises and of the mutual covenants and agreements herein set forth, and of the undertakings of each party to the other parties, the Parties do hereby promise and agree as follows:

(1) Proposed Amendments to the Watershed Regulations

a. The City has agreed to pursue amendments to the provisions of the Watershed Regulations relating to noncomplying regulated activities, subsurface sewage treatment systems, holding tanks, stormwater pollution prevention plans, sewer systems, and variances. DEP's current proposed revisions, reflecting extensive discussions with the Parties, are set forth in Exhibit A.

b. Among other things, under the proposed revisions, DEP would allow reductions in absorption field size for certain subsurface sewage treatment systems, which do not require SPDES permits and are beyond the 60-day travel time, and which provide enhanced treatment of wastewater to reduce the amount of biochemical oxygen demand and total suspended solids of wastewater effluent. In determining whether a proposed system provides such enhanced treatment and is therefore eligible for a reduction in absorption field size, DEP will consider:

i. Information provided by the applicant concerning pollutant removal, including manufacturer's specifications and supporting data; and

ii. Available guidance from regulatory agencies or other sources including, but not limited to:

- Onsite Wastewater Treatment Systems Manual, 2002, U.S. Environmental Protection Agency or its successor; and
- Residential Onsite Wastewater Treatment Systems Design Handbook, 2012, New York State Department of Health or its successor.

c. DEP has held extensive discussions of the proposed amendments to the Watershed Regulations with stakeholders, including entities that are not Parties to this Agreement. As set forth in the 2017 FAD, DEP submitted a draft of its proposed revisions to NYSDOH, and a timeline for completing proposed changes to the Watershed Regulations, including a target date for adoption by the City, on February 28, 2018.

d. The Parties acknowledge that NYSDOH has authority to approve or disapprove proposed amendments to the Watershed Regulations pursuant to Section 1100 of the Public Health Law ("PHL"). The Parties further acknowledge that in amending the Watershed Regulations, DEP must follow the rulemaking procedures in the City Administrative Procedure Act ("CAPA"), Chapter 45 of the New York City Charter, and that the proposed amendments will also be subject to environmental review pursuant to New York City's Executive Order 91 of 1977 and its amendments establishing the City Environmental Quality Review ("CEQR") procedure, and Article 8 of the Environmental Conservation Law establishing the State Environmental Quality Review Act ("SEQRA") and its implementing regulations (6 NYCRR Part 617).

e. DEP will share the proposed amendments to the Watershed Regulations with the Parties, as they may be revised based on further stakeholder discussions, before commencing the CAPA process. If DEP plans to make any material changes from the draft amendments in Exhibit A, DEP will provide an opportunity for informal discussion about any such further proposed revisions before proceeding with CAPA.

f. Unless DEP proposes material changes from the draft amendments in Exhibit A, the Parties hereby waive any rights under the Watershed MOA including, but not limited to, MOA Paragraph 92, to oppose the amendments to the Watershed Regulations. In particular, no Party will pursue, nor will CWT, financially or otherwise, support any of its member municipalities in pursuing, any administrative or judicial proceeding challenging the amendments to the Watershed Regulations. Should entities other than the Parties request or commence administrative or civil legal proceedings, the Parties also agree to support the amendments to the Watershed Regulations. Such support does not require any Party to become a party to any proceeding.

g. The Parties agree that once DEP duly amends the Watershed Regulations in accordance with the PHL, CAPA, CEQR, and SEQRA, the amended

Watershed Regulations will be effective and enforceable. In particular, the Parties waive any rights reserved under MOA Paragraph 89 with respect to the draft amendments in Exhibit A. The Parties recognize that the 1997 Watershed Regulations, as revised in 2002, have also been promulgated by NYSDOH, and expect that NYSDOH will revise its rules to conform to the amendments to be adopted by DEP.

(2) Supplemental Partnership Programs. With respect to the West of Hudson Watershed, the Parties have agreed as follows:

a. Expanded Septic Program. DEP has agreed to fund an expansion of the CWC Small Business Septic and Septic System Rehabilitation and Replacement Programs to include funding as follows:

i. 100% of the costs of repairs of and qualifying alterations/modifications[1] to septic systems for:

A. Small businesses with 20 or fewer employees[2];

B. Not-for-profit organizations with 5 or fewer locally-based employees; and

C. Governmental entities.[3]

ii. 75% of the costs of repairs of and qualifying alterations/modifications to septic systems up to $100,000 for a single system, plus 100% of any costs over $100,000 for:

A. Small businesses with 21 or more employees; or

B. Not-for-profit organizations with 6 or more locally-based employees.

[1] For purposes of this Program, the term "qualifying alterations/modifications" refers to changes in use of the entity served by the SSTS, , including changes in the flow generated by the entity, such that:

- the SSTS will continue to treat sewage without the admixture of industrial wastes or other wastes as defined in Article 17 of the State Environmental Conservation Law; and
- the design flow of the system following the alteration or modification (or the resumption of use of a discontinued SSTS) is no greater than 200% of the flow that would be attributed to the existing use (or use prior to discontinuation) under current design standards, with a maximum increase of 2000 gpd ("maximum qualifying expansion"), except that if the SSTS is subject to a SPDES permit, the maximum qualifying expansion may be no greater than 200% of the flow limit in the SPDES permit, with a maximum of 2000 gpd.

Expansions beyond the maximum qualifying expansion are not qualifying alterations/modifications. An entity that receives funding for a qualifying alteration/modification that does not include the maximum qualifying expansion may be eligible for funding for future qualifying alteration/modifications, up to the maximum qualifying expansion determined as of the date of the first application to CWC for such funding.

[2] For purposes of this Program, "employee" means full-time equivalent employee.

[3] For purposes of this Program, "governmental entities" includes fire districts and other firefighting organizations, regardless of how such districts or organizations are incorporated. Community septic systems funded under the Community Wastewater Management Program are not eligible for Small Business Septic Funds.

iii. 100% of the cost of any equipment or methods of operation required solely by the Watershed Regulations and not otherwise required by State or federal law for a septic system serving a population center or an entity that is "public" for purposes of PHL Section 1104, as described in the September 27, 1993 NYSDOH Declaratory Ruling, MOA Attachment UU.

iv. Groundwater Disputes: intermediate-sized SSTSs. At the CWC Board's discretion, 100% of the incremental costs associated with a DEP determination of high groundwater based on soils tests, where:

A. The applicant's licensed professional engineer has issued a written report indicating the absence of seasonally high groundwater at the elevation identified by DEP;

B. A DEP licensed professional engineer has provided (or has had an opportunity to provide) a written response justifying DEP's determination; and

C. The CWC Board issues a written finding that upon review of the entire record, the preponderance of the evidence supports the applicant's licensed professional engineer's determination and that the preponderance of evidence does not support DEP's determination of seasonally high groundwater elevation.

v. Groundwater Disputes: individual residential SSTSs. At the CWC Board's discretion, CWC may make Catskill Fund for the Future ("CFF") funds, up to $1.42 million, the amount currently remaining in the Alternate Septic Fund, available to cover the cost of any equipment or methods of operation required solely by the Watershed Regulations and not otherwise required by State or federal law for new septic systems serving single and two family residences and alterations or modifications of such residential septic systems. Eligible costs include, but are not limited to, incremental costs associated with a DEP determination of high groundwater based on soils tests where the applicant's licensed professional engineer has issued a written report indicating the absence of the groundwater condition identified by DEP. Such funds may also be used to pay costs eligible for Alternate Septic Funds under MOA Paragraph 129.

DEP and CWC will work together in good faith to develop a program agreement and program rules for this Expanded Septic Program. The program agreement will allow reimbursement for eligible costs incurred on or after February 14, 2017. Once CWC and DEP have agreed to program rules for this Expanded Septic Program, and until the program agreement is registered, CWC may pursue one or more of the following options for eligible costs:

- Make determinations as to eligible costs, and notify applicants that CWC will reimburse such costs when the program agreement is registered.

- Use funds under the Septic III program agreement to pay for eligible costs upon amendment of that agreement to authorize such use. DEP will work with CWC to amend that agreement, to allow these additional uses for the remaining funds, in advance of registering the new program agreement.
- Temporarily fund the Expanded Septic Program as a Qualified Economic Development Project loan, using earnings from the Catskill Fund for the Future ("CFF"), to pay for eligible costs. DEP will include funds in the program agreement to repay the loan, including interest at the rate authorized by the CFF Program Rules.

Within 90 days of the effective date of that new program agreement, CWC will transfer any remaining Alternate Septic Funds to either or both the Septic Program or the Stormwater Retrofit Program.

b. Septic Maintenance Funds. DEP will work with CWC to amend the program agreement for the Septic System Maintenance Program to provide that small businesses, not-for-profit organizations, and public entities are also eligible for Septic Maintenance Funding for regular pump-outs of septic systems built since 1997 or repaired/replaced under CWC Programs.

c. DEP Application of Emergency Procedures in Reviewing Repairs to Septic Systems. DEP's Watershed Emergency Septic System Repair Review Protocol, dated September 8, 2016 and revised June 7, 2017, is attached as Exhibit B.

d. DEP Review of Soils Tests. DEP's Guidance, dated January 19, 2017, for Percolation Test and Deep Soils Test Exploration Procedures, is attached as Exhibit C. DEP will also support training, to be coordinated by CWC, for DEP project review staff and design engineers.

e. Accepting Septage at WWTPs. DEP will accept septage at the wastewater treatment plants ("WWTPs") that DEP operates in the West of Hudson Watershed in accordance with the letter dated September 22, 2016, from David S. Warne, Assistant Commissioner, DEP Bureau of Water Supply, to Alan Rosa, Executive Director, CWC, attached as Exhibit D.

f. Capital Replacement of Watershed Equipment at WWTPs. The Parties acknowledge that DEP entered into a contract with the New York State Environmental Facilities Corporation ("EFC") to coordinate and fund replacement, as necessary, of equipment and methods that are required solely by the Watershed Regulations and not otherwise required by federal or State law at WWTPs in the Watershed that were in operation or permitted and under construction as of November 2, 1995 or are "public" pursuant to PHL Section 1104. EFC is seeking to terminate its participation in the program and DEP is actively negotiating a contract with a successor partner.

g. Future Stormwater Program. The Parties have agreed to expand both the scope and the funding for the CWC Future Stormwater Program as follows:

i. Replenishment of Future Stormwater Funds. DEP has agreed to provide $4,720,869 to replenish the Future Stormwater Funds held by CWC, to be used in accordance MOA Paragraph 128, on or before May 31, 2019.

ii. Future Stormwater Controls for Single-Family Houses, Small Businesses, and Low-Income Housing (MOA Paragraph 145) Program. DEP has agreed to contract with CWC to fund payments anticipated under MOA Paragraph 145 to be made directly by the City. A draft program agreement is attached as Exhibit E.

iii. In connection with these commitments, the Parties have agreed that CWC will modify the April 2016 revisions to the Future Stormwater Program Rules to clarify that CWC may fund more than 50% of the stormwater costs for a project only if an applicant for funding submits an itemized list demonstrating that the actual, reasonable, and necessary costs for designing, permitting, constructing, and implementing stormwater controls required solely by the Watershed Regulations and not otherwise required by State or federal law ("incremental costs") exceed 50% of the total stormwater costs. The modifications will also clarify that if CWC determines, based on such an itemized list, that the incremental costs are less than 50%, CWC will reimburse only the itemized incremental costs. The draft program rules for the Future Stormwater Program and the MOA Paragraph 145 Program are attached as Exhibit F.

h. Interpretation of Certain Stormwater Pollution Prevention Plan ("SWPPP") Provisions in the Watershed Regulations.

i. Maintenance of Post-Construction Stormwater Controls. DEP will not require deed restrictions as a condition of its approvals for stormwater pollution prevention plans ("SWPPPs"). DEP has developed a model deed restriction, attached as Exhibit G, that it will offer as a resource to applicants, to assist in complying with the requirement for termination of coverage under the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities ("Stormwater General Permit") that there be a mechanism requiring operation and maintenance of post-construction stormwater management practices in accordance with the O&M Plan.

ii. DEP will not require applicants to include off-site soil borrow or disposal areas in SWPPPs unless they are adjacent to the project site, consistent with NYSDEC's Stormwater General Permit.

i. Coordination of Reviews for Projects Requiring Individual Permits. In rare instances involving proposed development projects of unusual size or potential impact, NYSDEC may determine that a project in the Watershed is not eligible for coverage under the Stormwater General Permit but, rather, requires an individual stormwater permit from NYSDEC. The Parties agree that early communication concerning such projects is important. DEP agrees to inform the Environmental Parties to the MOA (Catskill Center, TPL, OSI,

Riverkeeper, and NYPIRG) and NRDC (Environmental Parties to the MOA and NRDC collectively the "Environmental Stakeholders") if it receives notice of a project for which NYSDEC requires an individual stormwater permit. DEP and the municipal parties agree to cooperate and coordinate with other regulatory agencies in the environmental and regulatory reviews of such projects in order to allow for timely and efficient regulatory determinations. Without limiting any Party's discretion to advocate for or against a particular project, the Parties agree that they share the goal of facilitating projects that advance the goals of economic vitality within Watershed Communities and drinking water protection.

j. Contracting Issues. The Coalition of Watershed Towns and other involved municipalities and organizations (the "Watershed Communities," "West of Hudson Communities," or "Communities") raised concerns about certain requirements associated with DEP's administration of contracts that may delay implementation or present other obstacles to the efficient implementation of Watershed Protection and Partnership Programs. DEP hosted a meeting with the Parties and its contracting experts on October 18, 2016 to discuss these issues and potential solutions. DEP provided a summary of issues, a copy of which is attached as Exhibit H, and is following up directly with contracting partners to address specific concerns. DEP is committed to managing its contracting, procurement, and contract administration processes in a manner that minimizes delays and other impediments to efficient program administration, consistent with applicable laws, rules, and procedures. The Parties acknowledge that the City's contracting procedures are subject to a variety of complex requirements under State law, the New York City Charter, the Procurement Policy Board Rules, and other applicable legal requirements. Moreover, the Parties acknowledge that agencies and offices other than DEP and the City Law Department control many elements of the City's contracting process.

k. Land Acquisition Program. DEP's December 10, 2010 Final Environmental Impact Statement for the Extended New York City Watershed Land Acquisition Program ("LAP EIS") concluded that the acquisition of fee and conservation easement interest of 105,043 acres by DEP and the Watershed Agricultural Council ("WAC") in the West of Hudson Watershed – the maximum acquisition authorized under the 2010 Water Supply Permit – would not have a significant adverse impact on land use or community character. This conclusion was based, among other things, on detailed Town Level Assessments for twenty West of Hudson towns, including analyses of available developable land, projections of residential development, and projected LAP acquisitions.

In investigating concerns raised by the West of Hudson communities concerning the LAP, DEP determined that its acquisitions in the Town of Delhi had already exceeded the ten-year projection in the Town Level Assessment for Delhi, and that its acquisitions in several other towns might have soon reached the projections in the LAP EIS. Consistent with its

discussions with the communities, DEP issued updated Town Level Assessments in April 2017 which include projections for:

- LAP acquisitions through 2025, based on DEP's current solicitation strategy;
- residential development through 2025; and
- remaining developable land.

In May 2017, DEP convened a meeting of the Watershed Stakeholders to discuss these results and solicit comments. Written comments were due by October 18, 2017. The Parties agree that a town may use up to $5,000 of the Local Consultation Funds allocated to the town to retain a consultant to assist the town in reviewing the corresponding Town Level Assessment.

If DEP determines, based on the updated Town Level Assessments, the submitted written comments and any other information developed by DEP and/or provided to DEP by takeholders, that it should modify its 2012-2022 Long-Term Land Acquisition Plan, it will submit potential modifications to NYSDOH by April 30, 2018. Such a submission may include recommendations for modifications to the solicitation and funding milestones for the core LAP, and may also include recommendations for further discussions. DEP will share any such proposed modifications of its solicitation plan with the Parties and convene meetings of the Parties to discuss either the reasons that DEP has determined that no modifications are necessary or DEP's proposed modified solicitation plan. The scope of DEP's submission and the stakeholder discussions may include recommendations for modifications to the solicitation and funding milestones for the core LAP.

Pending completion and review of the updated Town Level Assessments, including either adoption of a modified Long-Term Land Acquisition Plan or a determination that no modifications are necessary, DEP has committed to limit "outgoing" solicitations in the towns of Delhi, Windham, Andes, Roxbury, Walton, Kortright, Bovina, Middletown, and Halcott, as set forth below:

- DEP will continue solicitations, in coordination with its partners, in the Streamside Acquisition Program and the NYCFFBO Program.
- DEP will accept "incoming" solicitations – where landowners initiate communication with DEP – in those towns.
- DEP may, at its option, solicit land under its core acquisition program up to the following acreages per town:

Town	Acres
Delhi	0
Windham	1000

Andes	3000
Roxbury	1000
Walton	1000
Kortright	1000
Bovina	1500
Middletown	1500
Halcott	2000

DEP has determined that limiting solicitations as set forth herein will not affect its ability to meet the solicitation targets in the FAD. The Parties agree that DEP is in compliance with the 2010 Water Supply Permit and that supplemental environmental review is not required as a matter of law.

l. Use of DEP Land for Critical Infrastructure or Relocation. The West of Hudson Communities have asked DEP to consider the possibility of making certain lands owned by DEP available for infrastructure or relocation projects, particularly in connection with flood hazard mitigation plans. The Parties have agreed to continue to discuss possible options for such use in the context of hypothetical scenarios that Delaware County is developing, including:

- relocation of a trailer park out of the floodplain;
- relocation of a municipal public safety facility; and
- relocation of a municipal sewer line.

In order to facilitate those discussions, DEP has provided information about the procedures it would need to follow to allow land uses for such purposes, which, in certain cases, would include extinguishment or amendment of the NYSDEC conservation easement.

Interested Parties will meet to continue discussing these scenarios in 2018. While the City has expressed concerns about legal and programmatic obstacles to such transfers, the City is committed to exploring whether practical solutions may exist to address certain situations.

m. Local Consultation Funds. DEP has agreed to increase the cap on the funding available for eligible community costs related to review of land acquisitions, in accordance with the 2010 Water Supply Permit, to $40,000 per incorporated town and village. The program agreement or amendment providing such funds will allow such funds to be used for consultants to assist towns subject to updated Town Level Assessments in reviewing their updated Assessments, including reimbursement of funds used for that purpose prior to registration of the program agreement or amendment. DEP will work with CWC to amend the Local Consultation program agreement to authorize use of funds for consultants to assist towns in reviewing their updated Assessments.

n. Management of City-owned Forestland. The Communities raised concerns over management of City-owned forestland for fire safety. As the Parties recognized, meaningful discussions of fire safety must involve the State, as a major landowner, as well as the City. DEP has agreed to discussions with local emergency management personnel, with the understanding that the State will also be involved.

o. Emergency stream intervention and BMP repairs. The Parties discussed the possibility of establishing a separate fund to be reserved for emergency repair work relating to severe flooding events. In light of DEP's commitment in the Long-Term Plan to repairing and replacing existing BMPs, separate from its commitment to implement new priority BMPs, the Parties have concluded that a separate fund is not necessary. Rather, the funding for repairs should be used in the first instance for emergency repairs, including limited emergency stream intervention where necessary and appropriate to protect BMP investments.

p. Expanded CREP. The Parties discussed changes to the Conservation Reserve Enhancement Program ("CREP") that make federal funding available for fallow agricultural lands, and have agreed to a pilot program to explore how these federal funds can be used to complement ongoing efforts to protect and improve the function of riparian buffers in the West of Hudson Watershed. The goal of the pilot program is to initiate and develop an ongoing collaboration and coordination between the CREP and CSBI programs for fallow agricultural lands. In particular, the Parties agree that the Delaware County Soil and Water Conservation District ("DCSWCD") will fund a position at WAC, for the duration of the pilot program, with funds to be granted from an eligible and mutually agreed upon budget line under the Stream Management Program agreement, to administer a pilot program in Delaware County. The local match required under CREP will be paid with funds allocated under the Catskill Stream Buffer Initiative ("CSBI"), in accordance with existing CSBI program procedures. DCSWCD and DEP will work diligently with WAC to develop and implement this WAC Pilot Program, and further agree that:

- The WAC Pilot Program and associated landowner survey will be limited to Delaware County.
- Eligible landowners, whether in Delaware County or elsewhere in the West of Hudson Watershed, who do not opt to enroll in CREP will continue to be given the opportunity to enroll in CSBI.
- The WAC Pilot Program will not result in the creation of new Whole Farm Plans but rather develop conservation plans (Riparian Corridor Management Plans) to facilitate CREP contracts.
- DCSWCD and DEP will work with WAC and the regulatory agencies to establish a timeframe (approximately 18-24 months from commencement of implementation) for completing an evaluation of the WAC Pilot Program, including development of an evaluation

report using metrics to be agreed upon by DCSWCD, DEP, WAC, and the regulatory agencies.

- On a parallel track with the WAC Pilot Program, DEP will work with the CSBI programs in Greene, Schoharie, Sullivan, and Ulster Counties to establish CREP buffers where possible through the CSBI framework. The Parties agree that information gathered through both efforts will be used for long term program development.

q. SMIP-FHM Benefit Cost Analysis. The Watershed Communities raised concerns about certain projects not being eligible for Stream Management Implementation Program ("SMIP") funding based on a benefit cost analysis ("BCA") that does not take water quality benefits into account. Currently, the use of SMIP-Flood Hazard Mitigation Program ("FHM") funds requires that the estimated benefits of a recommended Local Flood Analysis ("LFA") project outweigh the costs. While the Parties agree that the FEMA benefit cost analysis is useful in applying for State and federal funds and in estimating the structural damages mitigated by a project, they also agree that a 1.0 benefit cost ratio is not required for SMIP-FHM funding eligibility when it is demonstrated that other meaningful water quality benefits will result from the project.

To explore these issues and recognizing that some social and economic benefits not captured by the BCA can be difficult to quantify, and other grant programs may consider such benefits for justifying funding, the Coalition of Watershed Towns has convened a work group to discuss how to evaluate all of the benefits of flood mitigation projects recommended in the LFAs. DEP provided additional information concerning how such benefits could be accounted for in evaluating projects, and made clear that it agrees that projects with significant water quality and flood hazard mitigation benefits should be eligible. The work group has developed a list of additional community benefits that could be described during the LFA process or by the applicant during the application process. This list of community benefits is a tool that can be used to strengthen grant applications to secure outside funding.

The combination of a FEMA BCA, an inventory of the water quality benefits, and a description of community benefits will aid the SMIP-FHM in funding the best community-supported projects in the WOH Watershed. The inventory will provide a level of detail that is practical to obtain and gives a reasonable level of specificity including, where practicable, enumeration of the water quality benefits of a potential SMIP-FHM funded mitigation project. DEP will use the water quality benefits included in the inventory to accurately evaluate implemented projects, report on overall program achievements, and more accurately value the benefit of flood hazard mitigation projects.

The Parties agree that at the completion of the LFA, those entities working with the community on the LFA will actively assist communities as they prioritize projects and seek funding opportunities from relevant sources. The Parties also agree to prioritize projects that have found grant funding to match

SMIP-FHM funding, recognizing that such outside funding may effectively increase the ratio of water quality benefits to costs to be paid by the City.

r. DCSWCD Design Issues. DCSWCD raised a number of issues relating to DEP's reviews of designs of projects funded through the DEP Stream Management Program. The Parties agreed that these issues will continue to be discussed in the technical design working group and the quarterly contract progress meeting between DEP and DCSWCD.

Having completed the stream functions pyramid workshop, DEP and DCSWCD will work cooperatively to clarify project design expectations and priorities, and to maximize effectiveness of the design review process. In particular:

- DEP will attend project initiation/pre-design meetings with DCSWCD at the outset of projects that result in the development of goals, objectives, and scheduled milestones for design submissions, design review, and project implementation.
- DEP will coordinate with DCSWCD on the development of a process and/or procedures for resolving future project disputes if they arise.
- DEP and DCSWCD will work together cooperatively and proactively to identify and evaluate any bottlenecks or inefficiencies in the overall project design submittal and review process.
- Upon agreement about project goals, objectives, and the assessments necessary to diagnose causes of instability, DEP and DCSWCD will agree on the most appropriate nationally accepted Design Standards or other standards mutually agreed upon for each project.
- When DEP funds are being used as the match to outside funding, DEP will use reasonable efforts to work within the timelines and restriction of the grant funding.
- DEP will use reasonable efforts to coordinate design comments from program staff and regulatory staff to avoid conflicting comments.
- DCSWCD and DEP will jointly prioritize projects for design and review, based upon program goals, project objectives, and anticipated project timelines (this will include categories of projects with full review, limited review and cursory/no review).

s. Stream Gauges and Meteorological Station Data. The Watershed Communities proposed that DEP fund a number of new stream gauges in the watershed. DEP does not believe that additional gauges are warranted in connection with water supply operations. The Communities explained that the proposed additional gauges would enable them to obtain better data concerning potential flood events; DEP and DCSWCD are discussing whether it would be useful for DEP to provide the meteorological data that DEP makes available to the National Weather Service ("NWS") to the Communities, either directly or via the NWS website. DEP has also explained that the data

is provided to NWS is not reviewed for quality assurance prior to its submission to the NWS.

t. Relocating Certain DEP Staff to New CWC Office Space. To promote collaboration, over time DEP intends to assign certain regulatory and program staff to the new CWC offices, currently being planned for a location in Arkville. By sharing work space – centrally located in the heart of the watershed – DEP and CWC can further improve coordination and responsiveness to watershed communities. DEP's letter of intent is attached as Exhibit I.

u. Emergency Notification Systems Below Dams. The Watershed Communities proposed that DEP provide funding for emergency notification systems, such as sirens, for communicating with people who live downstream of the dams impounding the City's reservoirs. While DEP has declined to provide such funding, DEP has agreed to meet with emergency management staff to discuss communication and coordination in the event of an emergency. The Parties acknowledge DEP's extensive outreach and communication in connection with an incident at Cannonsville Reservoir in the summer of 2015, as well as during Hurricane Irene and Tropical Storm Lee in 2011.

v. Shokan Community Wastewater Management System. DEP has agreed to fund a community wastewater management system for the hamlet of Shokan in the Town of Olive. CWC has agreed to temporarily fund the engineering study for that project as a Qualified Economic Development Project loan, using the Catskill Fund for the Future ("CFF"), to pay for eligible costs. DEP will include funds in a new program agreement for the Shokan Community Wastewater Management System to repay the loan, including interest at the rate authorized by the CFF Program Rules. DEP and CWC will work together in good faith to develop this program agreement, with the goal of registering the agreement no later than December 31, 2018.

(3) Additional Issues. The Environmental Stakeholders identified a number of issues of concern to them, which were discussed with the governmental and watershed stakeholders on January 20, 2016 and February 14, 2017. The Parties deferred discussion of these issues for the comment process following NYSDOH's July 31, 2017 issuance of the draft 2017 Filtration Avoidance Determination. The Environmental Stakeholders do not waive any rights with respect to pursuing these issues in connection with the draft 2017 Filtration Avoidance Determination, but otherwise agree to the terms herein.

(4) Enforceability of this Agreement by NRDC. Independent of the provisions set forth in paragraph (4) below regarding the enforceability of this Agreement by parties to the MOA, pursuant to the enforcement provisions of the MOA, the City and CWT consent to NRDC's enforcement against them of the terms of this Agreement, as binding contractual obligations. Nothing herein shall give NRDC any enforcement rights with respect to the MOA.

(5) Enforceability of this Agreement. The Parties to this Agreement intend the terms of this Agreement to be binding and enforceable commitments. The City is responsible for the compliance of its contractors with its obligations under this Agreement. These conditions may be enforced pursuant to paragraphs 177 and 180 through 183 of the MOA by the parties to the Watershed MOA. No Party will assert a defense based on the alleged inapplicability of the

MOA to the Land Acquisition Program in the event of litigation seeking to enforce the terms of the continuation of the LAP under the 2010 Water Supply Permit. Nothing herein shall be construed to modify, supersede or be inconsistent with the terms and conditions of the 1997 MOA. This Agreement may be enforced in a court of competent jurisdiction and such action shall be governed by the Laws of the State of New York. In any action relating to real property, the City will not oppose venue in the Supreme Court of the county in which the property is located. Except as set forth above in this paragraph, nothing in this Agreement shall act to confer third party beneficiary rights on any person or entity not party to this Agreement.

(6) Effect on Prior Agreements. Nothing herein affects the validity of the 2010 LAP Agreements, the 2013 Supplemental LAP Agreements, or the July 2016 Supplemental Agreement, which shall remain in full force and effect in accordance with their terms.

(7) Execution. This Agreement may be executed in one or more counterparts or by facsimile or other electronic means, each of which when executed and delivered shall be an original, and all of which executed shall constitute one and the same instrument.

(8) Authorization to Execute. The Parties signing this Agreement represent that they have been duly authorized to enter into this Agreement pursuant to their respective lawful authorities.

Exhibits:

A. Proposed Revisions to the Watershed Regulations, April 2018

B. DEP Watershed Emergency Septic System Repair Review Protocol, June 7, 2017

C. DEP Guidance for Percolation Test and Deep Soils Test Exploration Procedures, January 19, 2017

D. September 22, 2016 Letter from DEP to CWC concerning DEP's Acceptance of Septage

E. DEP-CWC Program Agreement for Future Stormwater Controls for Single-Family Houses, Small Businesses, and Low-Income Housing (MOA Paragraph 145) Program

F. CWC Program Rules for Future Stormwater Program and the MOA Paragraph Program

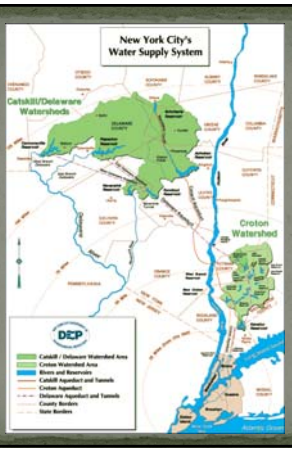
G. Model Deed Restriction for SWPPPs

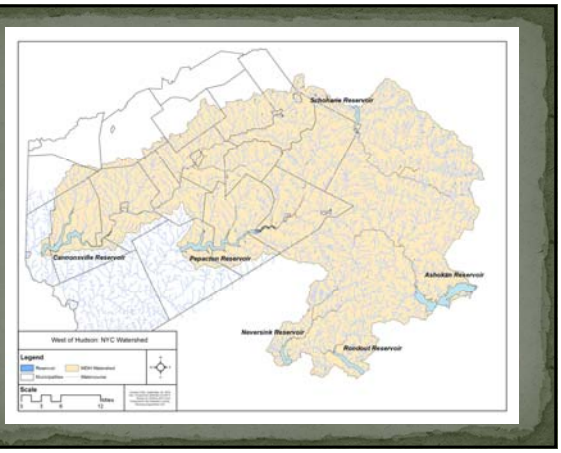
H. DEP Summary of Contracting Issues

I. March 20, 2017 Letter of Intent from DEP to CWC concerning Shared Office Space

Delaware County - A Partner in Watershed Protection

West of Hudson Watershed Community





Stewardship and Watershed Management

Local Stewardship – The Cornerstone of Effective Watershed Management

- Resource management is a way of life .
  - Long term land management – open space, agriculture, & natural resource-based businesses
  - Agriculture- & tourism-based economy
  - Local commitment & investment
  - Buy-in from local advocates
  - Education & outreach from local experts
- Sustainable communities provide for better land & water quality management

Delaware County Action Plan (DCAP)

- Precision Feed Management
- Whole Community Planning
- Local Flood Analyses
- Guide to wastewater management
- Stream Corridor Management Program
- Century 21 Bridge Program
- Three-sided box culverts
- Solid Waste Management – Composting/Recycling Facility

Delaware County

- **2016 Census American Community Survey (ACS)**
  - Population – 46,480
  - Median age – 46.5
  - Total housing units – 31,158
  - Vac./seasonal homes – 9,276 (29.8%)
  - Median household income - $46,055.00
  - Average cost for single family home - $135,200.00
  - Average monthly utility costs - $718.00
  - Commute to work – 23.5 minutes

Factors Impacting Delaware County

- Declining/evolving Agricultural Businesses
  - Fewer haulers for milk – no new pick tickets
  - Farm operations changing from dairy to other uses
  - Lack of succession and transition planning
- New demands on county services (i.e. Social Services, OFA, Mental Health, Public Safety)
  - Suicide rates increasing, depression and changes in family dynamics
  - Opioid/drug arrests and need for drug rehab and drug court services
  - More senior service needs – 90,000 senior meals served from 1/1/2018 – 9/30/2018
- NIMBY mentality
  - Opposition to public projects including energy projects, housing projects and communication projects
- Increased seasonal and vacation housing stock
  - Larger incomes from downstate buyers drive real estate prices out of range for affordable housing for local residents
  - Large number of single family homes purchased for use as AirBNB
  - Seasonal home buyers competing with local residents for limited housing stock
- NY City Land Acquisition Program
  - Large tracts of land with development potential removed from future use through acquisition and easement programs
  - Lands never make it to the open market eliminating competition to the NYC program

Other Factors Effecting Sustainability

- Declining School Populations
  - Declining population and increasing seasonal residency limits the number of school age children
  - Long commutes to school and small class sizes reduce availability for extra curricular activities (sports, clubs, APA courses, etc.)
- Lack of Volunteers – EMS, Ambulance and fire
  - Volunteer fire departments challenged to get enough volunteers to provide service – strong dependence on mutual aid,
  - Ambulance services are limited and can often result in waits of 45 minutes or longer
- Climate Change
  - Delaware County has the most federal declarations for flood events in NY State.
  - Wetter seasons have affected agricultural growing seasons and yields
- Geographic setting
  - Mountainous terrain and a large number of rivers and streams make the region difficult to traverse or develop
  - Geography makes it difficult to provide broadband, high speed internet or cell coverage
- Lack of large scale transportation corridors
  - Limited highway, rail and air access hinders any form of growth other than small businesses and tourism.

Sustainability vs. Water Quality

- What risk does development pose in Delaware County given the many factors that would need to be overcome to provide for any type of large scale development?
  - Local Comprehensive Plans support rural community and sense of place
  - Development requires access to sewer, water and public highways which are limited and expensive to expand
- What impact does the continued core land acquisition program have on sustainability in Delaware County?
  - Real estate values relate to demand and willingness to pay more for property
  - It isn't so much how many acres are purchase but where those acres are – competing for the most developable parcels.
- Is there an acceptable alternative to core land acquisition that meets the needs for water quality protection and limits impacts to sustainability?
  - Stream side acquisition program
  - Greater availability of the Conservation Reserve Enhancement Program (CREP)
- What has Delaware County done to move toward more proactive watershed planning?
  - Stream Corridor Management Planning
  - Local Flood Analysis – Flood buyouts, floodplain restoration and flood protection
  - Continuation of programs into other watersheds in Delaware County for consistent protection throughout the county.

Local Flood Analysis (LFAs)

- Delaware County Stream Program first created flood commissions in Walton and the East Branch in 2010.
- Flooding 2011 brought to light the many issues that the watershed faces when flood waters impact one of the reservoirs.
- Delaware County Core Group partners developed a white paper addressing needs for recovery and long term resiliency as a form of water quality protection.
  - Focused on scientifically designed solutions to flood prevention in population areas
  - Provided a foundation for mitigation in areas that are most relevant to protection of water quality while reducing the amount of lands to be acquired in the core land acquisition program
  - Negotiations with DEP and Regulators created a series of programs to address flood mitigation
    - LFAs developed through the DEP stream program and SWCD contracts
    - Acquisition of flood impacted properties identified by the LFAs through the DEP land acquisition program
    - Relocation of homes and businesses displaced as part of DEP Flood Buyout projects through CWC
    - Flood plain restoration projects through SWCD Stream Program Mitigation Grants Program

THANK YOU!

QUESTIONS?

Shelly Johnson-Bennett, Director
Delaware County Planning
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(607) 832-5444
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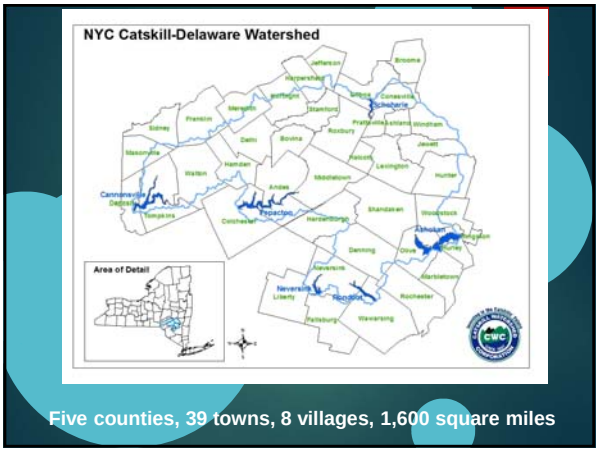


Catskill Watershed Corporation

- Not for Profit Local Development Corporation
- Governed by our by-laws, subject to Open Meetings Law and Freedom of Information Law
- CWC Board of Directors composed of 15 individuals
  12 local directors elected by 39 member towns
  2 Governor appointees, and
  1 representative appointed by the Mayor of New York
- Rigorous financial policy and accounts are annually audited by independent auditor. Board of Directors approve all expenditures or contracts over $10,000
- Per Watershed MOA, most funding decisions are subject to a 15-day notice and right of objection
- Monthly Board and Committee meetings are open to the public

Current Partnership Programs administered by CWC

- Septic Rehabilitation, Replacement and Maintenance
- Community Wastewater
- Stormwater Programs
  - Future Stormwater for new construction
  - Stormwater Retrofits
- Flood Hazard Mitigation Implementation
- Catskill Fund for the Future
- Public Information & Education Program
- Local Technical Assistance – Sustainable Communities

Other CWC Programs

- Tax Consulting Fund
- Local Consultation on Land Acquisition
- Stormwater Technical Assistance
- Stormwater Planning
- Tax Litigation Avoidance Program

Local Consultation

On noticed purchases, Watershed towns and villages have 120 days to comment on:

1. Consistency with Natural Features Criteria
2. Consistency with size requirements
3. Consistency with vacancy requirements
4. Consistency with local land use laws, plans and policies
5. City's proposed fencing and signing
6. Proposed recreational uses
7. Available development areas
8. Potable water natural resources and access thereto
9. Access to sewage disposal
10. Consistency with set-back requirements and local land use regulations; and
11. Natural resource criteria

CWC Local Consultation Funds can reimburse a town/village for:

• Town Consultant Review (ie: County Planning Department to verify compliance with field visit)

• Public Hearing (ie: for local comments on a proposed purchase) including legal notice and hearing officer

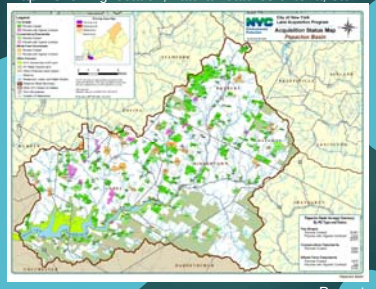
NYCDEP Public Access Area sign

Recreation by Permit Sign South Reservoir Road Margaretville

Fishing Only sign at Ashokan Reservoir in Town of Olive

Local Consultation from NYCDEP

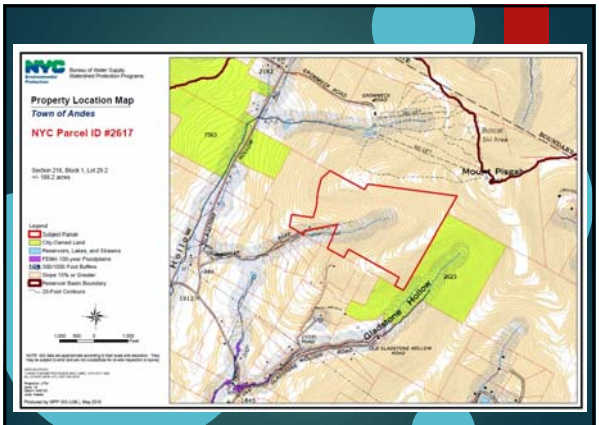
- Community Review Land Acquisition Project Fact Sheet - Describes eligibility and proposed recreational uses (for fee purchases)
- Map – showing location, natural features criteria, etc.

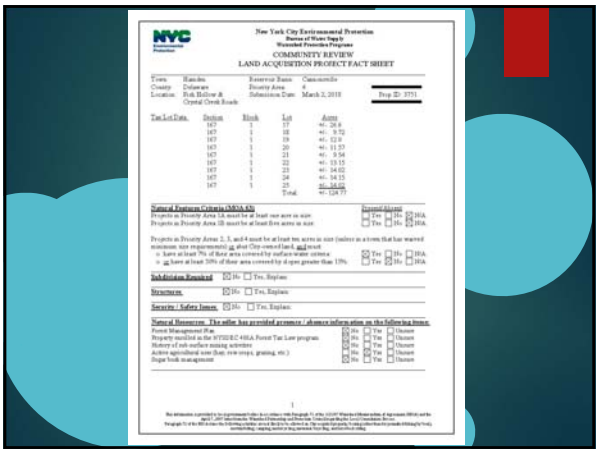


Pepacton Basin Status Map – July, 2018

New York City Environmental Protection
Bureau of Water Supply
Watershed Protection Programs

COMMUNITY REVIEW
LAND ACQUISITION PROJECT FACT SHEET





New York City Environmental Protection
Bureau of Water Supply
Watershed Protection Programs

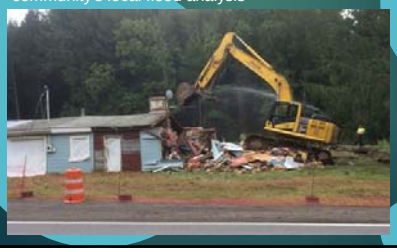
COMMUNITY REVIEW
LAND ACQUISITION PROJECT FACT SHEET

City Funded Flood Buyout Program

- Operates when FEMA program is closed
- Offered by NYCDEP to municipalities in response to Hurricane Irene
- An exception to Land Acquisition Program Requirements of vacancy, minimum size, and natural features criteria
- Flood Buyouts may be owned by NYCDEP or Municipality
- All City funded Flood Buyouts must be approved by the Town where located

Involvement of Catskill Watershed Corporation

- Funding for Outreach Coordinator and Assessment Leads
- Demolition of structures after purchase
- Funding for projects on these properties recommended by a community's local flood analysis



CWC funded demolition of home along Manorkill Stream in Town of Conesville

City Funded Flood Buyout

Eligibility

1. **Property substantially damaged by prior flooding; or**

Fox Hollow, Town of Shandaken
Hurricane Irene Damage

City Funded Flood Buyout

Eligibility

2. **Property Hazard – Inundation hazard or slope failure**

Rosentreter Property, Town of Jewett
Bank Failure on West Kill undermining foundation of residence

City Funded Flood Buyout

Eligibility

3. Recommended by a local flood analysis

Town of Olive Flood Commission walking tour of hamlet of Boiceville

Questions?

cwconline.org
845-586-1400

NYSBA EELS Fall 2018 Meeting

NYC's Watershed Protection Land Acquisition Program

Jeff Senterman, Executive Director
Catskill Center for Conservation and Development

What is the role of the environmental community in the land acquisition program?

Overarching Goal: Ensure clean, safe drinking water for NYC and Hudson Valley residents while ensuring no adverse environmental or community health impacts result from the operation of the water supply

- The task of providing this drinking water includes large scientific, political and economic challenges – all of which benefit from watchdogging by environmental organizations

- While the majority of stakeholders to the MOA are federal, state, county and municipal government agencies or quasi-governmental agencies, the environmental community's position as non-governmental organization (NGO) offers the group a different perspective and different advocacy tools.

Why is the land acquisition program important to the environmental community?

- A recognition that while filtration may be needed in the future, the preferable way to safeguard the drinking water supply was watershed protection. Prevent pollution from entering the system in the first place, instead of trying to filter it out afterwards.

- Protecting watershed lands is the primary line of defense in preventing pollution – a position held by water quality experts, the EPA and the National Academy of Sciences.

- The majority of major unfiltered water systems in the US have been able to avoid a filtration order in large part because the watersheds of those reservoirs are almost completely protected – owned by the water supply or other entities such as the US Forest Service or the National Park Service.

How has the environmental community been involved in the land acquisition program?

- Opposed the proposed filtration order and instead pushed to acquire the most sensitive and fragile lands with high water quality, so as to prevent pollution and haphazard development.

- Supported permanent protection through fee acquisition or conservation easements as a way to keep watersheds rural in character and avoid the suburbanization that was seen in the East of Hudson Watershed.

- During each filtration avoidance determination (FAD) review, the environmental stakeholders have supported the continuation of the land acquisition program and advocated to ensure it remains robust.

- Supported new programs and efforts to protect the sensitive and fragile lands in new ways, such as the NYC Funded Flood Buyout and the Streamside Acquisition Program

How has the Catskill Center been involved in the land acquisition program?

- The Catskill Center is a signatory to the MOA and the only member of the environmental community stakeholders with a focus solely on Catskill issues.

- The Catskill Center has a broad mission to preserve and enhance the environmental, cultural and economic well-being of the Catskills.

- The Catskill Center's work currently focuses on regional advocacy, education and stewardship. The Center is a land trust with several hundred acres of fee holdings and more than 1500 acres of conservation easements across the region.

- The Catskill Center works to ensure that water quality goals are met, while also being balanced with important regional economic concerns, including the ongoing viability of our towns and communities.

- The Catskill Center supports land acquisition to protect sensitive and fragile lands and in recent years has looked to increase the protection of those lands.

    - Special Condition 29 of the 2010 Water Supply Permit sought to establish a Pilot Program for the protection of riparian buffer lands.

    - Working with the Town of Hunter, the Catskill Center prepared a Program Development Initiative Report that described potential programs.

    - Following a request by NYCDEP for a proposal based on the PDI report, in July 2015 the NYCDEP and Catskill Center entered into a contract to establish the Riparian Buffer Acquisition Program (now called the Streamside Acquisition Program), the goal of which was to pilot ways to permanently protect riparian buffer lands.

        - The original program was for 5 years and funded with $5 million from the NYCDEP LAP. The pilot was established only in the Schoharie Reservoir basin and focused on 300-foot buffers, floodplains and wetland areas adjacent to streams. Acquisitions throughout the municipalities in the Schoharie Basin, including within the hamlet designated areas (something the traditional LAP cannot do) if a Town opts-in their hamlet designated areas.

    - Under the Streamside Acquisition Program (SAP), the Catskill Center is responsible for managing the following aspects:

        - Notice to municipality
        - Selecting properties
        - Soliciting property
        - Visiting property
        - Reviewing w/ NYCDEP, request approval to appraise
        - Appraising property
        - Making an offer and going into contract
        - Completing title research
        - Surveying the property
        - Conducting an Environmental Site Assessment (ESA)

- Debris clean-up
- Property closing

- The NYCDEP is responsible for:
  - Providing funding
  - Providing data, access to GIS systems to Catskill Center
  - Training Catskill Center staff
  - Reviewing properties before solicitation & appraisal
  - Reviewing and approve subcontracted services (e.g. survey, ESA, etc.)
  - Acquiring property
  - Conveying Conservation Easement to NY State
  - Managing property, per policies

- The Catskill Center has two full-time staff dedicated to the SAP and 2 staff partially dedicated to the program. The Catskill Center has opened an office in Tannersville to be within the Schoharie Basin.

- The 2017 FAD called for an immediate 3-year, $3 million extension of the program and an eventual $8 million expansion of the program from a single basin pilot program to a West of Hudson Watershed-wide program.

- To date, the SAP has:
  - Solicited 300 parcels
  - Appraised 37 parcels
    - The median parcel size has been 6 acres and the median value has been $40k/lot or roughly $6.6k an acre
    - The parcels have averaged 75% riparian buffer and floodplain
    - 22 offers have been accepted
    - 1 property has closed to date

- The future of SAP includes:

  - Potential addition of incentives to increase landowner participation and increase municipal opt-in of hamlet designated areas. Currently being discussed by stakeholders as part of a 2017 FAD deliverable.

  - Additional staff to increase municipal outreach and overall program efforts.

  - Conclusion of pilot phase and future expansion throughout the entire West of Hudson watershed.

Don't Drink the Water: Everything You Need to Know about Emerging Contaminants

Moderator:
Gary S. Bowitch, Esq.

Presented By:
Thomas Berkman, Esq.
Zackary D. Knaub, Esq.
Mark Maddaloni, DrPH
Judith S. Schreiber, Ph.D.

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

New York State's PFAS and Emerging Contaminants Response

Thomas S. Berkman, Esq.
Deputy Commissioner and General Counsel

October 2018

2

Nationally: Public Confidence in Water Shaken

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

3

Emerging Contaminants

- The Flint, MI water crisis in 2014 highlighted serious impacts past practices and everyday products we use can have on drinking water.
- Emerging contaminants such as perfluorinated compounds (PFCs) and 1,4 – Dioxane have recently been found to be impacting groundwater and drinking water throughout the country.
- In New York, these contaminants are impacting public water supply systems and private drinking wells in several communities including: Hoosick Falls, Petersburgh, Newburgh, and on Long Island.

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4

New York State Focus on Emerging Contaminants

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

5

New York's Response

- Recognizing this growing concern, New York took immediate action.
- In January 2016, New York became the first state to regulate PFOA as a hazardous substance followed by the regulation of PFOS in April 2016.
- DEC listed "significant threat" level sites on the Registry and identified potential sites.

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Major Sites Being Addressed by DEC:

Saint-Gobain McCaffrey Street

Consent Order commitments:

Full Remedial Investigation/Feasibility Study

Interim Remedial Measures to treat contaminated municipal water supply

Evaluation of sources for an alternative water supply

Site Remediation

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Saint-Gobain McCaffrey Street (Cont.)

State Actions

Installation of Point-of-Entry Treatment Systems (POETs) on private drinking water systems

Blood testing

Public Outreach

Nomination as Federal NPL Site

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Stewart Air National Guard Base

State Actions

Transitioned and paid for Newburgh's switch to NYC's Catskill Aqueduct for drinking water

Funded GAC system to treat contaminated Lake Washington water (Newburgh's traditional water supply)

Constructed draw-down system to prevent Lake Washington flooding

Provided bottled water and municipal water hook-ups

Installed of POETs on private drinking water systems in greater Newburgh area

Environmental sampling

Blood testing

Public Outreach

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Gabreski Air National Guard Base

State Actions

Reimbursed Suffolk County for the cost of connecting private residences to public water, including the cost of four water main extensions

Investigation to identify sources of PFOS contamination

Review and input into United State Department of Defense's limited investigations

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Taconic

Consent Order commitments:

Full Remedial Investigation/Feasibility Study

Funding treatment for Petersburgh Municipal Water System

Sampling private water wells and installation of POETs

Providing bottled water, as necessary

State Activities:

Initial testing and installation of POETs

Sampling of environmental media, including the Little Hoosick River

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New York's Response - PFC Survey

Since WQRRT inception:

- PFC Survey: surveyed **2,500** entities where contamination may be probable (e.g., airports, fire training centers, industry);
  - information is being used to identify and investigate water quality in areas where a potential for PFC contamination may exist.
- Facility Mapping/Sampling: Based on survey results, DEC and DOH identified and mapped more than **250** facilities within ½ mile of a public or private drinking water supply well. Sampled 125 sites for PFAS, so far
  - All facilities near public drinking water supplies were prioritized for immediate sampling.

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New York's Response - Litigation

State sues aqueous film-forming foam (AFFF) manufacturers in NY Supreme court:

- AFFF contains PFOS, PFOA, and related contaminants
- Causes of Action: Public nuisance, strict products liability - defective design, strict products liability - failure to warn, and restitution
- State files Notice of Claim again U.S. Department of Defense related to AFFF discharges at Stewart ANG Base, Gabreski Airport, Long Island MacArthur Airport, and Defense Fuel Support Point Verona

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New York's Response - Clean Water Infrastructure Act of 2017

A $2.5 billion investment drinking water and water quality protection across New York State.

- Includes up to $130M for mitigation/remediation of contaminated drinking water.

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What is a Contaminant under the CWIA?

A **Contaminant** is defined as an "emerging contaminant" under the Public Health Law.

Emerging Contaminants, as defined in Public Health Law § 1112, are any physical, chemical, microbiological or radiological substance which are to be defined through regulations. At a minimum 1,4 Dioxane, PFOS, and PFOA are to be included as emerging contaminants.

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ECL § 27-1203 – Mitigation and Remediation of Solid Waste Sites

The priority of this section is to mitigate and remediate solid waste sites which either cause or substantially contribute to impairment of drinking water.

What is a Solid Waste Site? As defined under 27-1201, it is a site where:

a) The department has a reasonable basis to suspect that the illegal disposal of solid waste occurred; or
b) The courts have determined that an illegal disposal of solid waste occurred; or
c) The department knows or has a reasonable basis to suspect that an inactive solid was management facility which does not have a current monitoring program is impacting of contaminating one or more drinking water supplies.

DEC is currently investigating **over 2000** solid waste sites across the state.

→ A solid waste site is ***not*** a site that is currently subject to investigation or remediation.

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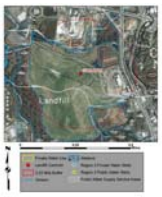
ECL § 27-1203 – Mitigation and Remediation of Solid Waste Sites (cont.)

- Goals:
  - Develop a ranking system to select solid waste sites for field investigations
    - Criteria being considered includes proximity to drinking water receptors, proximity to surface waters, type of waste received and condition of cap.
  - Create a "solid waste site mitigation and remediation priority list" based on their impact on state's drinking water supply sources, and
  - Submit a comprehensive plan designed to mitigate and remediate solid waste sites impacting drinking water quality and/or public health to the Governor and Legislature starting in July 2019 and annually thereafter.
- The Department is authorized under §27-1203(6) to "implement necessary measures to mitigate and remediate the solid waste site." The department will do so in accordance with the priority list and will seek to recover costs.
- If after appropriate testing and analysis, a site is found to pose a significant threat to the public health or the environment due to the presence of hazardous waste, it is to be referred to the inactive hazardous waste disposal site remedial program (State Superfund - ECL Article 27 Title 13)



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ECL § 27-1205 Mitigation of Contaminants in Drinking Water (Drinking Water Contamination Sites)

- Under this section, DOH must first make a threshold finding regarding public water systems before DEC begins mitigation measures at drinking water contamination sites which includes:
  1. A determination that a public water system needs to take action to reduce exposure of emerging contaminants; and
  2. A determination that the concentration of emerging contaminants constitutes and actual or potential threat to public health.
- Where contamination is present, feasible measures to mitigate must be used. These "feasible measures" have to use "available, implementable and cost effective technology."
- If a drinking water contamination site poses a significant threat to the public health or environment from a hazardous waste the site, it will be referred to the inactive hazardous waste disposal site remediation program (State Superfund – ECL Article 27 Title 13).
- When it has been determined that a public water system needs to reduce exposure to *emerging contaminants:*
  a. DEC and DOH have authority to do the necessary mitigation, remediation, and recovery of costs; or
  b. The Commissioner may order the owner and/or operator of the drinking water contamination site and/or any person responsible for such contamination to undertake all reasonable and necessary mitigation and remediation to meet satisfactory levels, triggering the hearing requirement.

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Coordinated Approach to Proactively Address "Big Picture" Water Quality Issues

♦ Governor Cuomo's creation of Water Quality Rapid Response Team (WQRRT)

♦ Legislation establishing the Drinking Water Quality Council (DWQC)

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Thank You

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NEW YORK STATE'S LEADERSHIP IN RESPONDING TO EMERGING CONTAMINANTS

OCTOBER 2018
NYS BAR ASSOCIATION
ENERGY AND ENVIRONMENTAL LAW SECTION

ZACKARY D. KNAUB
FIRST ASSISTANT COUNSEL TO THE
OFFICE OF GOVERNOR ANDREW M.
STATE CAPITOL, ALBANY, NY

GOVERNOR
CUOMO

REGULATORY BACKDROP FOR EMERGING CONTAMINANTS

- Safe Drinking Water Act of 1974 (SDWA)
  - Foundation for federal and state rules for public water systems
  - States have authority to implement SDWA as long as standards are as stringent as EPA's
  - While states have primary jurisdiction, EPA sets nationwide standards
- For contaminants known or anticipated to occur in public water systems, EPA publishes a Contaminant Candidate List (CCL).

Regulatory Backdrop - SDWA

- EPA must publish the CCL every five years and the list contains contaminants that present the greatest public health concern from exposure to drinking water.
- The CCL is used to determine if regulatory action by EPA is needed.
- Whether to regulate depends on whether: contaminant may have an adverse effect on the health of persons; is known to occur or there is substantial likelihood the contaminant will occur in public water systems with a frequency and at levels of public health concern; regulation of the contaminant presents a meaningful opportunity for health risk reductions for persons served by public water systems.

Unregulated Contaminant Monitoring

- As the CCL is used to evaluate contaminants known to exist in public water systems, the Unregulated Contaminant Monitoring Regulation (UCMR) is used to collect information about contaminants suspected of being present in drinking water.
- Monitoring data collected for large systems and a representative sample of small systems (>10,000 users).
- Data collected for 30 contaminants every 5 years; the last list (UCMR 4) was published December 2016; monitoring will occur from 2018-2020 for 30 contaminants.

EPA's Progress Under the SDWA

- Despite steps to develop and publish multiple CCL and UCMR actions, EPA has been slow to make regulatory decisions under the SDWA.
- As of 2018, only two contaminants have been selected for regulatory action.
- Under the SDWA, EPA also issues health advisory levels.
- Health advisory levels are not regulatory standards; they are levels above which exposure should be reduced.

EPA and PFAS

- 2009 - EPA has Provisional Health Advisory value for PFOA and PFOS at 400 ppt.
- 2014 – EPA publishes Health Effects Documents for PFOA and PFOS; Both of which were subject to peer-review
- January 2016 – EPA Region 2 Lowers health advisory to 100 ppt by press release
- May 2016 – EPA issues lifetime health advisory of 70 ppt.

EPA and PFAS

- In late May 2018, the EPA hosted a National Leadership Summit in Washington, D.C. to "take action" on PFOA/S and other emerging contaminants in the environment.
- In June 2018, the ATSDR released a report showing that PFOA and PFOS may endanger human health at a far lower level than EPA has previously called safe (around 10 ppt, as opposed to 70+ ppt).
- The federal government has still not established enforceable drinking water standards for PFOA, PFOS and/or 1,4-dioxane.

Patchwork Regulatory Action

- New Jersey (MCLs of 14 ppt for PFOA and 13 ppt proposed for PFOS);
- Vermont (groundwater standards of 20 ppt for PFOA/S); and
- New Hampshire (enforceable groundwater standard of 70 ppt for PFOA/S)

New York's Legal Solutions to Emerging Contaminants

- Clean Water Infrastructure Act of 2017 - invests $2.5 billion in clean ground, surface, and drinking water infrastructure projects and water quality protection across New York.
- Water Quality Rapid Response Team
- Emerging Contaminant Monitoring Act
- Household Cleaning Product Disclosure Program

Clean Water Infrastructure Act of 2017

- In April 2017, Governor Andrew M. Cuomo signed the Clean Water Infrastructure Act – a $2.5 billion investment in drinking water infrastructure, clean water infrastructure, and water quality protection across New York.
- Provides grants and loans to help local governments pay for water infrastructure capital projects, address water emergencies, and investigate and mitigate emerging contaminants.
- $1.5 billion in grants for water infrastructure improvements
- $75 million rebate program to give homeowners and small businesses an incentive to replace and upgrade aging septic systems
- $110 million dedicated for source water protection initiatives, including land acquisition

Water Quality Rapid Response Team

- Team Created in 2016 in direct response to discovery of PFAS in public water supplies.
- Team led by Departments of Environmental Conservation and Health to quickly investigate water quality contamination across the state.
- Targeted sampling of sites where PFOA and PFOS is suspected.
- Results:
  - Identified 38 systems for testing; PFOA/PFOS not detected in majority of samples and positive detections were below EPA's 70 ppt health advisory level
  - One well not used for drinking water tested above EPA health advisory level

Water Quality Aid & Response

- CWIA funding available to test groundwater and to help communities address aging infrastructure.
- System upgrades include modern filtration systems and connecting private wells to public water systems.
- Sampling of inactive landfills across the state.

NY Drinking Water Quality Council

- Established pursuant to Public Health Law § 1113
- Provides recommendations to the NY Department of Health on emerging contaminants in drinking water
  - Notification levels
  - Maximum Contaminant Levels
- Established to address some of the most technically challenging aspects of drinking water regulation.

NY Drinking Water Quality Council

- Council consists of representative of state and local government, academia, and the public.
- Membership includes:
  - Health Commissioner Zucker
  - Environmental Conservation Commissioner Seggos
  - Six other members appointed by Governor representing water purveyors, experts in health risk assessment, water quality standards development, engineering and microbiology.
  - Four members appointed by the legislature.

Other New York Actions - Firefighting Foam

- Governor's Office prioritized funding from the Environmental Protection Fund to launch collection program for firefighting foam.
- Departments of Environmental Conservation and of Homeland Security and Emergency Services have worked to collect outdated, unlabeled or mixed firefighting foam.
- As of Summer 2018, more than 25,000 gallons of contaminated foam have been collected and properly disposed.
- Litigation filed to recover costs from manufacturers of firefighting foams incurred by the State to address PFOA/PFOS impacts.

Other New York Action - Cont'd

- Blood Testing:
  - Department of Health oversaw blood sampling in Hoosick Falls and Newburgh
  - Outreach campaign in 2016 and 2017 to provide testing and educate citizenry on results. Approx. 2,900 people tested in Hoosick and more than 3,000 in Newburgh
- Fish Testing for PFCs: agencies working to collect and analyze fish near Hoosick Falls and Newburgh for emerging contaminants
- Household Cleansing Product Information Disclosure Program
  - Under the program, manufacturers of cleaning products sold in the State of New York are required to disclose the ingredients of their products on their websites and identify any ingredients that appear on authoritative lists of chemicals of concern. Includes emerging contaminant disclosure.
  - Authorized under Environmental Conservation Law Article 35 and New York Code of Rules and Regulations Part 659. Legislation advance in 2018 legislative session to expand that to personal care products.
- Planning for Alternative Water Supplies, Full Plume Containment, and other remedies.

Other New York Actions - Taking the Lead

- Full scale demonstration of treatment technology such as ultraviolet light.
- Collaboration with University of Stony Brook on treatment technology.
- $5 million grant as part of CWIA.

OTHER NEW YORK ACTION - PRESSING EPA

- Since smaller public systems are not required to test under UCMR requirements, fewer than 200 of the 9,000 public water supplies will be required to test under EPA rules.
- Governor's Rapid Response Team ensures testing of all public water systems on Long Island in response to 1,4 dioxane.
- Governor, State Agencies and legislature call on EPA to develop MCLs.

Special Thanks to Jennifer Maglienti, Assistant Counsel for Energy and the Environment for assistance in the preparation of this presentation.

NEW YORK STATE EXCELSIOR EVER UPWARD

PFAS Have Emerged - Where Do We Go From Here?

Mark Maddaloni DrPH, DABT
Cardno/ChemRisk

NY Bar Association
October 20th, 2018

Introduction

- PFOA Exposure Guideline Development - EPA/ATSDR/NJDEP
- Regulatory Update
- The Role of Biomonitoring Programs
- Potential Clinical Intervention

Exposure Guideline Development

- Toxicity Assessment

- Exposure Assessment

- Policy

Comparison of EPA and State PFAS values (ppt)

adopted from C.M. Smith PhD, Mass DEP

	PFOS	PFOA	PFNA	PFHxS	PFHpA	PFBS
USEPA Health Advisories	70 Sum of both					
CT Drinking Water Action Levels	70 Sum of all five					
VT Drinking water and groundwater standards	20 Sum of both					
VT Drinking Water Health Advisory	20 Sum of all five					
MA Office of Research and Standards Guideline for Drinking Water	70 Sum of all five					
MN Drinking Water Guidelines	27 (under review)	35		PFOS value recommended		2,000
NJ Recommended MCLs	13	14	13 (proposed)			

EPA/NJDEP/ATSDR PFOA Assessments

	RfD (ug/kg-day)	Toxic Endpoint	Dose/ Response Method	Dose Metric	Uncertainty Factor (UF)	Exposure Parameter	RSC	Drinking Water Value
EPA	0.02	Repro/dev delayed bone formation in mice	LOAEL	PK model HED	300	Lactating woman (.054 L/kg-day)	20%	70 ppt
NJDEP	0.002	Increased liver weight in mice	$BMDL_{10}$	PK model HED	*300 data base uncertainty 10	70 kg adult 2 L/day (.029 L/kg-day)	20%	14 ppt
ATSDR	0.003	Neurodevelop and skeletal effects in mice	LOAEL	PK model HED	300	N/A	N/A	N/A

EPA Hosted PFAS Meeting (May, 22-23, 2018) 4 Step Action Plan

- EPA will initiate steps to evaluate the need for a maximum contaminant level (MCL) for PFOA and PFOS.
- EPA is initiating steps to designate PFOA and PFOS as "hazardous substances" through one of the available statutory mechanisms
- EPA is currently developing groundwater cleanup recommendations for PFOA and PFOS at contaminated sites and will complete this task by fall of this year.
- EPA is taking actions with our federal and state partners to develop toxicity values for GenX and PFBS.

EPA will initiate steps to evaluate the need for a maximum contaminant level (MCL) for PFOA and PFOS.

- MCL development is a slow-moving train. Follows a detailed SDWA process
- Not a lot of movement since the May Summit
- Acting Adm. Andrew Wheeler to release PFAS Management Plan in Fall, 2018

EPA is initiating steps for designating PFOA and PFOS as "hazardous substances" through one of the available statutory mechanisms

- OLEM chaired intra-agency workgroup began statutory analysis in June
- Regular conference calls that include EPA Regional reps.
- Breadth of listing is at issue (e.g., include GenX, PFBS, PFNA, etc.)
- Exploring multiple regulatory mechanisms:
  - CWA sections 311 and 307(a)
  - CAA section 112
  - RCRA section 3001
  - TSCA section 7
  - CERCLA section 102

EPA is currently developing groundwater cleanup recommendations for PFOA and PFOS at contaminated sites

- Scheduled to be completed by the Fall, 2018
- Draft guidance currently under internal EPA review
- Existing OW Health Advisory is 70 ppt

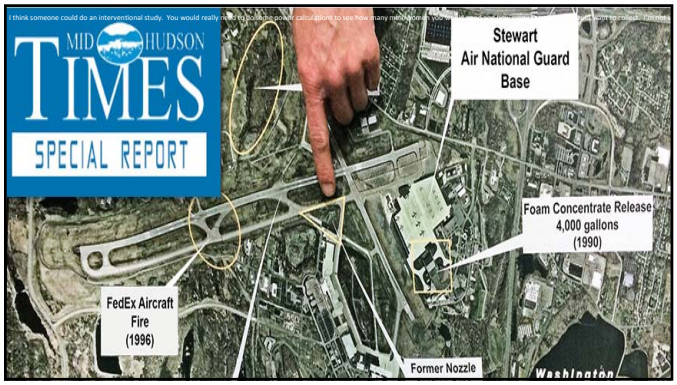
EPA is taking actions with our federal and state partners to develop toxicity values for GenX and PFBS.

- OW the lead for GenX; ORD the lead for PFBS
- Focused on oral Reference Doses (RfDs)
- No inhalation toxicity assessment (i.e., RfC)
- Cancer assessment
  - No evidence for PFBS
  - Insufficient evidence for GenX
- Both drafts had positive peer reviews

The Role of Biomonitoring Programs

Newburgh, NY – a Tale of Two Cities
Population approx. 30,000
Post-Industrial River Town 50 Miles North of NYC

Newburgh's Reservoir Contaminated with PFOS

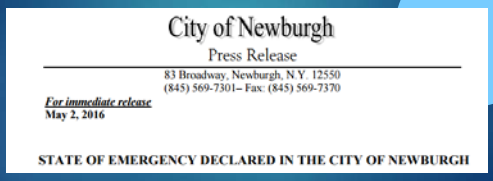


Newburgh UCMR Results

Prior to May 19th 2016, the EPA Short-Term Health Advisory for PFOS was 200 ppt

- PFOS contamination was first detected and reported to the U.S. EPA in 2014 as part of the EPA Unregulated Contaminant Monitoring Rule requiring large water supplies to test for select unregulated contaminants.
- From December 2013 to October 2014, the City collected four samples that had detections of PFOS ranging from 140 to 170 ppt and reported these results to EPA and to the public in Annual Water Quality Reports.

Newburgh PFOS Time line



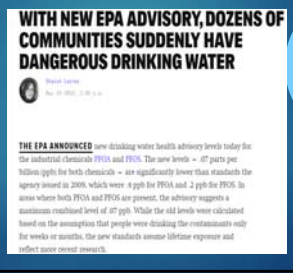
City of Newburgh

Press Release

83 Broadway, Newburgh, N.Y. 12550
(845) 569-7301– Fax: (845) 569-7370

For immediate release
May 2, 2016

STATE OF EMERGENCY DECLARED IN THE CITY OF NEWBURGH



WITH NEW EPA ADVISORY, DOZENS OF COMMUNITIES SUDDENLY HAVE DANGEROUS DRINKING WATER

THE EPA ANNOUNCED new drinking water health advisory levels today for the industrial chemicals PFOA and PFOS. The new levels – .07 parts per billion (ppb) for both chemicals – are significantly lower than standards the agency issued in 2009, which were .4 ppb for PFOA and .2 ppb for PFOS. In areas where both PFOA and PFOS are present, the advisory suggests a maximum combined level of .07 ppb. While the old levels were calculated based on the assumption that people were drinking the contaminants only for weeks or months, the new standards assume lifetime exposure and reflect more recent research.

Response to Newburgh to PFOS Contamination in Washington Lake

- Lead agency NYSDEC/NYSDOH
- Municipal water supply switched to Brown's Pond then to NYC Catskill aqueduct
- Washington Lake water level rise > pump and treat with mobile GAC
- Permanent GAC filtration system being installed - October, 2017 deadline
- NYSDOH "Catch and Release" Advisory for Washington Lake (7/24/17)
- NYSDOH PFOS blood sampling program
  - Approx 3,000 have applied for testing
  - Approx 1,500 blood samples obtained
  - Preliminary results (N = 495)

E-mail MM to City Manager, Michael Ciaravino (2/16/17)

- Thought the call went well yesterday. If I were to make an educated pharmacokinetic guesstimate of a central tendency (e.g., arithmetic mean) value for serum PFOS level in the first batch of residents tested, it would be 20 ug/liter +/- 5 ug/liter.

NEW YORK STATE OF OPPORTUNITY. Department of Health

INFORMATION SHEET March 2017

Newburgh Area PFC Biomonitoring Group-Level Results

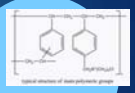
TABLE 2
PFOS and PFOA blood test results by gender and age group:
For residents currently served by City of Newburgh public water
Participants tested November 1 – January 29, 2017

	Number of participants	PFOS level in µg/L		PFOA level in µg/L	
		Geometric mean	50th percentile	Geometric mean	50th percentile
Total	495	19.3	20.2	3.3	3.3
By gender					
Females	273	18.0	18.5	3.2	3.1
Males	222	20.9	22.2	3.5	3.5
By age group					
0-17	71	8.7	8.7	2.1	2.0
18-39	92	12.4	12.9	2.3	2.4
40-59	139	19.5	19.8	3.3	3.2
60 and older	193	31.7	34.8	4.6	4.9

Interpretation of Serum PFAS Results

- Compare to background
  - General U.S population 12 and older (NHANES 2013-2014)
    - PFOA 50th percentile = 2.1 ug/l (Hoosick Falls 30X higher)
    - PFOS 50th percentile = 5.2 ug/l (Newburgh 4X higher)
- Limited clinical usefulness
  - C-8 (PFOA) medical monitoring program
    - Pregnancy-induced hypertension, kidney/testicular cancer, thyroid disease, ulcerative colitis, and **hypercholesterolemia**
- Potential utility > identify individuals for "clinical intervention"
  - PFAS glacial biological $T_{1/2}$ (PFOA = 2-4 yrs; PFOS = 4-6 yrs
  - Expedite elimination (Hoosick Falls public meeting)

Cholestyramine (CSM) to Reduce Biological Half Life of PFAS



- Anion Exchange Resin FDA Approved For Treatment Of Hyperlipidemia
- Sequesters Bile Acids Secreted Into GI Lumen - Not Absorbed
- 3M Report (1999)
  - CSM Treatment - 9.5 Fold Increase In Fecal Elimination In Rats
  - "Supports The Concept Of Using CSM In Humans To Promote Excretion Of PFOS"
- Gastrointestinal Elimination Of Perfluorinated Compounds Using Cholestyramine
  - Limited (n=8) clinical study
  - Measured fecal PFAS elimination pre and post CSM treatment
- C8 study - small subset (N = 36) of larger biomonitoring cohort (N = 54,000) incidentally maintained on CSM regimen had a dramatic reduction in serum PFOS concentration
  - Alan Ducatman, MD Re: C8, Impacted community, "Cholestyramine is doing something for sure to PFOS"
- 2019 EPA/ORD funded proof-of concept study
  - PFAS pre-treated zebrafish will be dosed with CSM
  - Measure reduction in body burden compared to control group

The End

Questions?

Perfluoroalkyl substances (PFAs) including PFOA and PFOS

Risk Assessment 101

Judith Schreiber, Ph.D.
Schreiber Scientific, LLC

Major Points

- PFAs are a class of chemicals containing fluorine that are persistent in the environment and in animals and people, remaining for many years
- Adverse effects from exposure are significant at low levels as evidenced by animal and human studies. 'Acceptable levels' therefore are low.
- Proposed MCLs and advisories differ due to selection of critical studies, differences related to uncertainty factors, default assumptions and modifying factors

What are Perfluorinated Chemicals?

- A large class of chemicals called perfluorochemicals containing fluorine which include Perfluorooctanoic acid (PFOA) and Perfluorosulfonic acid (PFOS), and many variations commonly referred to as Perfluoroalkyl substances (PFAs). The majority of studies have evaluated PFOA and PFOS
- They do not occur naturally and are found in the environment as a result of manufacture, widespread industrial and consumer uses, and disposal.
- PFAs are extremely persistent, are resistant to environmental degradation, and remain in soil, water, dust, food and other sources.

Why are health authorities concerned?

- Widespread usage has resulted in the ubiquitous presence of PFAs in rivers, soil, air, house dust, food, and in drinking water from both surface and groundwater sources, generally at low levels.
- With half-lives of many years, PFAs also persist in people and are found in the blood serum of almost all US residents and populations worldwide.
- Drinking water becomes the predominant source of exposure in communities with drinking water supplies that are contaminated with PFAs.

Toxicity

- Human and animal studies have identified similar adverse effects and cancer risks
- In experimental animals, PFAs have been found to cause immune, neurobehavioral, liver, endocrine and metabolic toxicity, generally at levels well above human exposures to the general population
- However, in exposed populations ingesting contaminated drinking water, concentrations may approach levels that increase risks of adverse effects

Developmental and Early Childhood Concerns

- Prenatal exposure of mice to PFOA and other PFAs found effects including delayed mammary gland development, fewer terminal end buds, and increased liver weights in the offspring
- Evidence of effects on children include delayed mammary gland development, later age at menarche (menstruation), effects on renal function, and asthma
- Adverse effects on sperm quality in men, and endometriosis in US women have been reported, which may be related to prior exposures

Developmental and Early Childhood Concerns

- The US Environmental Protection Agency's assessment found that "exposure to PFOA and PFOS over certain levels may result in adverse effects, including developmental effects to fetuses during pregnancy or to breastfed infants"
- These effects include low birthweight, accelerated puberty, skeletal variations, liver effects, immune effects, thyroid effects, cholesterol changes, and cancer (testicular and kidney)
- The Agency for Toxic Substance and Disease Registry (part of the Centers for Disease Control) produced an 800 page Public Comment Draft which came to similar conclusions

Cancer Risks

- Toxicological studies in rodents have found increases in tumors related to exposure to PFAs
- Evidence of carcinogenic effects of these chemicals in humans are based primarily on occupational studies which found increases in kidney cancer and testicular cancer
- The USEPA Science Advisory Board, the International Agency for Research on Cancer, and the report of the C8 scientific advisory panel have identified these chemicals as likely carcinogens

Cancer Risks

- For non-occupational exposure, a study in a New Jersey community with significantly elevated PFAs in drinking water, elevated incidence of kidney and testicular cancers were identified
- New York State Department of Health community study in the Hoosick Falls area did not find increased cancer risk in a limited study. A new more comprehensive study is being conducted.

Risk Assessment

- How do health authorities develop Maximum Contaminant Levels (MCLs)?
- Why are there differing proposed MCLs and Advisories?
- Similar to legal issues, the science is not 'black or white', but shades of grey subject to interpretation
- Professional judgement in study evaluation and uncertainties

Evaluation of research studies

- Hundreds of studies have been performed to evaluate harmful effects – some show effects while others do not
- The weight of evidence shows that similar effects are seen in animals and humans
- It is clear that PFAs cause adverse effects, but there are differences in how animals and humans absorb, distribute and eliminate these chemicals

Identification of studies demonstrating effects at low levels

- Neurodevelopmental and skeletal effects in mice
- Delayed eye opening and and decreased pup weight in rats
- Developmental effects on bone growth and male puberty
- Mammary glad effects and increased liver weights
- Immunological effects in animals and people

Uncertainty Factors used in Risk Assessment

- Risk assessment for public health protection must account for not only what is known about a chemical's adverse effects, but also what is not known about differences between animals and humans, children compared to adults, differences in absorption, metabolism and excretion, and other unknowns
- How do we account for these differences and unknowns?

Uncertainty Factor for Human Variation

- Human variation
- An Uncertainty Factor of 10 (UF H) is applied to account for variation in susceptibility across the human population, and to account for the possibility that the available data may not protect individuals who are most sensitive to the effect
- We do not want people exposed to the levels that are affiliated with harm

Uncertainty Factor for Animal and Human Differences

- Uncertainty Factor for Animal and Human Differences (UF A)
- In the case of PFAs, there are substantial differences between humans and animals in how these chemicals are absorbed, distributed and metabolized. The Uncertainty Factor for animal and human differences is generally 3 or 10, determined using professional judgement
- The ramifications of these differences on the developmental effects, toxic effects and cancer risks are not well-understood

Uncertainty Factors for 'Lowest-Observed-Effect-Level' Studies

- Animal studies sometimes find effects even at the lowest dose tested
- In these situations, an Uncertainty Factor is applied to protect against effects that may have been seen at lower dose levels
- Uncertainty Factor (UF LOEL of 10 or 3) is typically applied

Uncertainty Factor for Less than Chronic Studies

- The suitability of using sub-chronic studies for risk assessment is evaluated
- When test dosing may be only several weeks or months (sub-chronic) rather than lifetime, other chronic effects may have been found if the study duration were longer.
- Uncertainty Factor (UF SC of 10)

Uncertainty Factor for Database

- Uncertainty Factor (UF data) to account for incomplete database upon which to evaluate adverse health effects
- When data are not available for a complete understanding, an Uncertainty Factor of 10 is applied
- Especially when the database does not adequately address organ systems or lifestage at doses that are lower than those that increase risk of other effects.

Why do MCLs differ among health authorities?

- Risk assessments conducted by health authorities and others have evaluated the available data, but have calculated 'acceptable' levels that differ from one another
- All are in the parts per trillion (ppt) range, acknowledging the serious effects at low levels of exposure
- Differences occur due to inconsistent application of uncertainty factors, selection of the studies used, and determination of which adverse effect is used in the risk assessment

PFASs in context with other chemicals of concern

- The range of proposed MCLs and advisories for PFAs is from 1 ppt to 70 ppt
- Let's put this in context of other environmental contaminants of concern.
- The MCL for polychlorinated biphenyls (PCBs) is 0.5 parts per billion (ppb) in drinking water, equal to 500 ppt.
- The MCL for benzene is 5 ppb, equal to 5,000 ppt
- These MCLs are far higher than even the highest MCL proposed for PFAs of 70 ppt, indicting the high degree of concern regarding exposure to these chemicals

The Bottom Line

- To protect public health and the environment, PFASs should be minimized to prevent continued exposure
- Health authorities agree that these chemicals are highly toxic, cause developmental effects, increase cancer risks, and will remain in body tissue for many years even after exposure stops
- EPA, ATSDR (CDC), as well as states with advisories have developed drinking water levels in the parts per trillion range demonstrating the seriousness of exposure to these chemicals

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Per- and Polyfluoroalkyl Substances (PFAS)
Frequently Asked Questions

What are PFAS?

PFAS are a large group of man-made chemicals that have been used since the 1950s. Use of some of these chemicals has decreased in the United States over the last 10 years. People can still be exposed to PFAS because they are still present in the environment. PFAS do not break down easily in the environment. They also build up in the bodies of exposed humans and animals. Over the last decade, interest in PFAS has grown.

How can I be exposed to PFAS?

ATSDR and our state health partners are studying exposure to PFAS at a number of sites. PFAS are found near areas where they are manufactured or used. Listed below are places where they can be found.

- Public water systems and drinking water wells, soil, and outdoor air near industrial areas with frequent PFAS use
- Indoor air in spaces that contain carpets, textiles, and other consumer products treated with PFAS to resist stains
- Surface water (lakes, ponds, etc.) and run-off from areas where aqueous (water-based) film-forming fire fighting foam (AFFF) was often used (like military or civilian airfields)
- Locally caught fish from contaminated bodies of water
- Food items sold in the marketplace

Consumer products can be source of exposures to PFAS. These products include

- Some grease-resistant paper, fast food wrappers, microwave popcorn bags, pizza boxes, and candy wrappers
- Nonstick cookware such as Teflon®[1] coated pots and pans
- Stain resistant coatings such as Scotchguard®[1] used on carpets, upholstery, and other fabrics
- Water resistant clothing such as Gore-Tex®[1]
- Cleaning products
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Paints, varnishes, and sealants

Recent efforts to stop using some PFAS in consumer products appear to have lowered exposure in the U.S. population. CDC surveys have shown that blood levels of PFAS have dropped over time. People who work with PFAS are more likely to be exposed than the general population. Workers may be exposed to PFAS by inhaling them, getting them on their skin, and swallowing them, but inhaling them is the most likely route for exposure.

How can I reduce my exposure to PFAS?

PFAS are found in people and animals all over the world. They are found in some food products and in the environment (air, water, soil, etc.). Completely stopping exposure to PFAS is unlikely. But, if you live near sources of PFAS contamination you can take steps to reduce your risk of exposure to PFAS:

- Some states have warnings about eating fish from bodies of water with high PFAS levels. Check with your state public health and environmental quality departments to learn the types and local sources of fish that are safe to eat.
- If your water contains PFAS, you can reduce exposure by using an alternative or treated water source for drinking, food preparation, cooking, brushing teeth, and any activity that might result in ingestion of water.
- It is safe to shower and bathe in PFAS-contaminated water. Neither routine showering or bathing are a significant source of exposure. Studies have shown very limited absorption of PFAS through the skin.

Agency for Toxic Substances and Disease Registry
Division of Community Health Investigations

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How can PFAS affect people's health?

Scientists are not sure about the health effects of human exposure to PFAS. Some studies in humans have shown that certain PFAS may affect the developing fetus and child, including possible changes in growth, learning, and behavior. In addition, they may decrease fertility and interfere with the body's natural hormones, increase cholesterol, affect the immune system, and even increase cancer risk.

- PFAS build up and stay in the human body and the amount goes down very slowly over time. So scientists and doctors are concerned about their effects on human health.
- Some studies show that animals given PFAS have changes in the liver, thyroid, pancreas, and hormone levels. Scientists are not sure what animal data means about human health. PFAS act differently in humans than they do in animals and may be harmful in different ways.

How can I learn more?

Contact 1-800-CDC-INFO for updated information on this topic.

Contact the Consumer Product Safety Commission at (800) 638-2772 if you have questions about the products you use in your home.

Visit the following websites for more information:

ATSDR Websites

http://www.atsdr.cdc.gov/pfc/index.html

Environmental Protection Agency

http://www2.epa.gov/chemical-research/perfluorinated-chemical-pfc-research

List of Common PFAS and Their Abbreviations

Compound	Abbreviation
Perfluorobutane sulfonate	PFBS
Perfluorohexane sulfonate	PFHxS
Perfluorooctane sulfonate	PFOS
Perfluoroheptanoic acid	PFHpA
Perfluorooctanoic acid	PFOA
Perfluorononanoic acid	PFNA
Perfluorodecanoic acid	PFDA
Perfluoroundecanoic acid	PFUnA
Perfluorododecanoic acid	PFDoA
Perfluorooctane sulfonamide	PFOSA
2-(N-Methyl-perfluorooctane sulfonamido) acetate	Me-PFOSA-AcOH
2-(N-Ethyl-perfluorooctane sulfonamido) acetate	Et-PFOSA-AcOH

Notes

[1]Use of trade names is for identification only and does not imply endorsement by the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, the Public Health Service, or the U.S. Department of Health and Human Services

Regulations, Guidance, and Advisories for Per- and Polyfluoroalkyl Substances (PFAS)

1 Introduction

Per- and polyfluoroalkyl substances (PFAS) became contaminants of emerging concern in the early 2000s. In recent years federal, state, and international authorities have established a number of health-based regulatory values and evaluation criteria. The terms 'regulatory' or 'regulation' are used in this fact sheet to refer to requirements that have gone through a formal process to be promulgated and legally enforceable as identified under local, state, federal, or international programs. The terms 'guidance' and 'advisories' apply to all other values.

ITRC has developed a series of six fact sheets to summarize the latest science and emerging technologies regarding PFAS. The purpose of this fact sheet is to:

- describe the primary state and U.S. federal programs that are being used to regulate PFAS
- summarize current regulatory and guidance values for PFAS in groundwater, drinking water, surface water/effluent, and soil (Tables 4-1 and 4-2)
- provide information (summarized in Tables 5-1 and 5-2) regarding the basis for differences between various drinking water criteria for perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS)

2 Regulation of PFAS

The scientific community is rapidly recognizing and evolving its understanding of PFAS in the environment, causing an increased pace of development of guidance values and regulations. A recent analysis of data acquired under the USEPA's Unregulated Contaminant Monitoring Rule (UCMR) program found that approximately six million residents of the United States had drinking water with concentrations of perfluorooctanoic acid (PFOA) or perfluorooctane sulfonate (PFOS), or both, above the USEPA's Lifetime Health Advisory (LHA) of 70 nanograms per liter (ng/L, equivalent to parts per trillion [ppt]) (Hu et al. 2016). Many of the public water systems with detections of PFOA or PFOS above the USEPA LHA have taken action to reduce these levels. However, most public water systems that supply fewer than 10,000 customers and private wells were not included in the third round of monitoring, or UCMR3 program, and remain untested.

Human health protection is the primary focus of the PFAS regulations, guidance, and advisories developed to date. The values for PFOS and PFOA can vary across programs, with differences due to the selection and interpretation of different key toxicity studies, choice of uncertainty factors, and approaches used for animal-to-human extrapolation. The choice of exposure assumptions, including the life stage and the percentage of exposure assumed to come from non-drinking water sources, may also differ (see Table 5-1).

In addition to values that specify health-based concentration limits, agencies have used various strategies to limit the use and release of PFAS. For example, the USEPA worked with 3M to achieve the company's voluntary phase-out and elimination of PFOS (USEPA 2000), and with the eight primary U.S. PFOA manufacturers to eliminate or reduce PFOA and many PFOA precursors by 2015 (USEPA 2017a). Buck et al. (2011) define precursors as PFAS polymers or other functional derivatives that contain a perfluoroalkyl group and "degrade in the environment to form PFOS, PFOA, and similar substances." Additionally, the Organisation for Economic Cooperation and Development OECD (2015a) has described various international policies, voluntary initiatives, biomonitoring, and environmental monitoring programs to control PFAS. More information is in the *History and Use Fact Sheet*.

3 Regulatory Programs

Authority for regulating PFAS is derived from a number of federal and state statutes, regulations, and policy initiatives. This section provides a brief overview of the major federal statutes and regulatory programs that govern PFAS, along with examples of representative state regulatory programs.

3.1 Federal PFAS Regulations

3.1.1 Toxic Substances Control Act (TSCA)

The TSCA authorizes the USEPA to require reporting, record-keeping, and testing of chemicals and chemical mixtures that may pose a risk to human health or the environment. Section 5 of TSCA allows the USEPA to issue Significant New Use Rules (SNURs) to limit the use of a chemical when it is newly identified, or a significant new use of an existing chemical is identified, before it is allowed into the marketplace (USEPA 2017a). The USEPA has applied a SNUR to PFOS in four separate actions and to 277 chemically-related PFAS (USEPA 2017i). Collectively, these SNURs placed significant restrictions on the use and import of PFAS, allowing only limited uses in select industries and for certain applications. In

addition, one of the rules required companies to report all new uses in the manufacture, import, or processing of certain PFOA-related chemicals for use in carpets or for aftermarket treatment. A recently proposed SNUR (USEPA 2015c) would designate the manufacture, import, and processing of certain PFOA and PFOA-related chemicals (long-chain perfluoroalkyl carboxylates [PFCAs]) as a significant new use. The significant new use would apply to any use that is not ongoing after December 31, 2015, and for all other long-chain PFCAs for which there is currently no ongoing use (USEPA 2015a).

3.1.2 Safe Drinking Water Act (SDWA)

The SDWA is the federal law that protects public drinking water supplies throughout the nation (USEPA 1974). Under the SDWA, the USEPA has authority to set enforceable Maximum Contaminant Levels (MCLs) for specific chemicals and require testing of public water supplies. The SDWA applies to all public water systems in the United States but does not apply to private domestic drinking water wells nor to water not being used for drinking.

USEPA has not established MCLs for any PFAS. However, in May 2016, USEPA established an LHA for PFOA and PFOS in drinking water of 70 ng/L. This LHA is applicable to PFOA and PFOS individually, or in combination, if both chemicals are present at concentrations above the reporting limit (USEPA 2016b, c). The LHA supersedes USEPA's 2009 short-term (week to months) provisional Health Advisories of 200 ng/L for PFOS and 400 ng/L for PFOA (USEPA 2009c), which were intended for use as interim guidelines while USEPA developed the LHA. The LHA for PFOA and PFOS is advisory in nature; it is not a legally enforceable federal standard and is subject to change as new information becomes available (USEPA 2016b, c).

Much of the current data available regarding PFAS in public drinking water was generated by USEPA under UCMR3 (USEPA 2017f). USEPA uses the UCMR to collect data for chemicals that are suspected to be present in drinking water but do not have health-based standards set under the SDWA. The third round of this monitoring effort, or UCMR3, included six PFAS:

- perfluorooctanesulfonic acid (PFOS)
- perfluorooctanoic acid (PFOA)
- perfluorononanoic acid (PFNA)
- perfluorohexanesulfonic acid (PFHxS)
- perfluoroheptanoic acid (PFHpA)
- perfluorobutanesulfonic acid (PFBS)

Samples were collected during a consecutive 12-month monitoring period between 2013 and 2015 from large public water systems (PWS) serving more than 10,000 people, and a limited number of smaller systems determined by USEPA to be nationally representative. Some of the six PFAS mentioned above were detected in 194 out of 4,920 PWS tested (~4%), which serve about 16.5 million people in 36 states and territories (Hu et al. 2016). However, Hu et al. (2016) note that the UCMR3 data may under-report the actual presence of low-level PFAS due to the relatively high reporting limits for EPA method 537.

Table 3-1. UCMR3 occurrence data

Exceed LHA (70 ppt)	Number of PWS	Percent of PWS
PFOS	46	0.9 %
PFOA	13	0.3 %
∑ PFOA + PFOS[1]	63	1.3 %
Note 1: PWS that exceeded the combined PFOA and PFOS health advisory (USEPA 2016d; 2017o)		

Many of the public water systems where PFOA or PFOS were detected in UCMR3 above the USEPA LHA have taken action to reduce these levels. Occurrence data produced by the UCMR program are used by the USEPA, as well as some states, to help determine which substances to consider for regulation. All of the data from the UCMR program are published in the National Contaminant Occurrence Database (NCOD) and available for download from USEPA's website (USEPA 2017f).

When the USEPA determines there may be an imminent and substantial endangerment from a contaminant that is present in or likely to enter a public water supply, under Section 1431 of the SDWA USEPA may issue Emergency Administrative Orders (EAOs) to take any action necessary to protect human health if state and local authorities have not acted (42 U.S.C. §300i). USEPA has issued at least three such EAOs to protect public and private water supply wells contaminated with PFAS (USEPA 2009d; 2014b; 2015a).

3.1.3 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

PFAS, including PFOA and PFOS, are not listed as CERCLA hazardous substances but may be addressed as CERCLA pollutants or contaminants (40 CFR 300.5). CERCLA investigations are beginning to include PFAS when supported by the conceptual site models (for example, USEPA 2017c). PFAS have been reported for 14 CERCLA sites during 5-year reviews (USEPA 2014a).

CERCLA does not contain any chemical-specific cleanup standards. However, the CERCLA statute requires, among other things, that Superfund response actions ensure protectiveness of human health and the environment, and comply with federal laws and regulations that constitute "applicable or relevant and appropriate requirements" (ARARs); the statute also provides possible ARAR waivers in limited circumstances. The lead agency (as defined in 40 CFR 300.5) identifies potential ARARs and to-be-considered values (TBCs), based in part on the timely identification of potential ARARs by states. Risk-based goals may be calculated and used to determine cleanup levels when chemical-specific ARARs are not available or are determined not to be sufficiently protective (USEPA 1997).

3.1.3.1 CERCLA Protection of Human Health

The tables in Section 4 include current state regulatory and guidance values for PFAS. These values are not automatically recognized as ARARs. In the Superfund program, USEPA Regions evaluate potential ARARs, including state standards, on a site-specific basis to determine whether a specific standard or requirement is an ARAR for response decision and implementation purposes. Determining if a state requirement is promulgated, substantive, and enforceable are some of the factors in evaluating whether a specific standard may constitute an ARAR (40 CFR 300.5; 40 CFR 300.400(g); USEPA 1988; USEPA, 1991).

Risk-based cleanup goals are calculated when chemical-specific ARARs are not available or are determined not to be protective (USEPA 1997). The USEPA's Regional Screening Level (RSLs) Generic Tables (USEPA 2017m) and the RSL online calculator (USEPA 2017l) provide screening levels and preliminary remedial goals. These goals are based on toxicity value calculations that have been selected in accordance with the USEPA's published hierarchy (USEPA 2003a). Currently, PFBS is the only PFAS listed in the RSL generic tables. For PFBS, the generic tables provide a non-cancer reference dose, screening levels for soil and tap water, and soil screening levels for the protection of groundwater. The RSL calculator supports site-specific calculations for PFBS, PFOA, and PFOS in tap water and soil. Non-cancer reference doses are provided for PFOA and PFOS. A cancer ingestion slope factor is also provided for PFOA, but screening levels are based on the non-cancer endpoint. Although less frequently used, the USEPA also provides tables and a calculator for Removal Management Levels (RMLs). In general, RMLs are not final cleanup levels, but can provide a reference when considering the need for a removal action (for example, drinking water treatment or replacement) (USEPA 2016a).

Because RSLs and RMLs are periodically updated, they should be reviewed for revisions and additions before using them. RSLs and RMLs are not ARARs, but they may be evaluated as TBCs. The USEPA has emphasized that RSLs are not cleanup standards (USEPA 2016g) and suggests that final remedial goals be derived using the RSL calculator so that site-specific information can be incorporated.

3.1.3.2 CERCLA Protection of the Environment

CERCLA requires that remedies also be protective of the environment. Risk-based cleanup goals that are protective of the environment are site-specific and depend on the identification of the protected ecological receptors.

3.1.4 Other Federal Programs

PFAS are not currently regulated under the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), nor the Clean Air Act (CAA).

3.2 State PFAS Regulations

Several states have been actively involved with addressing PFAS contamination across multiple regulatory programs. Examples of key state programs for water, soil, remediation, hazardous substances, and consumer products are described below, and information about regulatory, advisory and guidance values are discussed in Section 4 and presented in Tables 4-1 and 4-2. At the present time, no state requires monitoring of public water supplies for PFAS. The Texas Risk Reduction Program (TRRP) has derived risk-based inhalation exposure limits (RBELs) for select PFAS. These RBELs are applicable to PFAS that may volatilize from soil to air at remediation sites managed under the TRRP rule (Texas Commission on Environmental Quality [TCEQ], 2017).

3.2.1 Product Labeling and Consumer Products Laws

PFOS, PFOA, and their salts are under consideration for 'Listing' as potential Developmental Toxicants under California's Proposition 65 (Office of Environmental Health Hazard Assessment [CA OEHHA] 2016). If finalized, the listing will include labeling requirements for manufacturers, distributors, and retailers, and will prohibit companies from discharging these PFAS to sources of drinking water. Washington has required the reporting of PFOS in children's products since 2011 (Washington State 2008). Proposed rules would require reporting of PFOA in children's products starting in January 2019. Washington also tests products for chemicals to ensure manufacturers are reporting accurate information.

3.2.2 Chemical Action Plans

Washington prepares chemical action plans (CAPs) under an administrative rule that addresses persistent, bioaccumulative, and toxic (PBT) chemicals (Washington State 2006). These CAPs are used to identify, characterize, and evaluate uses and releases of specific PBTs or metals. Washington is currently preparing a PFAS CAP that is expected to be completed in 2018.

3.2.3 Designation as Hazardous Waste or Hazardous Substance

Regulations that target select PFAS as hazardous wastes or hazardous substances have been promulgated in Vermont and New York, and are under development in several other states. Vermont regulates PFOA and PFOS as hazardous wastes when present in a liquid at a concentration > 20 ppt, but allows exemptions for: (1) consumer products that were treated with PFOA and are not specialty products; (2) remediation wastes managed under an approved CAP or disposal plan; and (3) sludge from wastewater treatment facilities, residuals from drinking water supplies, or leachate from landfills when managed under an approved plan (VTDEC 2016).

In 2017, the New York State Department of Environmental Conservation (NYDEC) finalized regulations that identify PFOA, ammonium perfluorooctanoate, PFOS (the acid) and its salt, perfluorooctane sulfonate, as hazardous substances that may be found in Class B firefighting foams (NYDEC 2017). The regulations specify storage and registration requirements for Class B foams that contain at least 1% by volume of one or more of these four PFAS, and prohibit the release of one pound or more of each into the environment during use. If a release exceeds the one-pound threshold, it is considered a hazardous waste spill and must be reported; cleanup may be required under the State's Superfund or Brownfields programs (NYDEC 2017).

3.2.4 Drinking Water, Groundwater, Surface Water, Soil, and Remediation Programs

Several states have developed standards and guidance values for PFAS in drinking water and groundwater (see Section 4 tables). Many states have either adopted the USEPA LHAs for PFOA and PFOS or selected the same health-based values, choosing to use the concentrations as advisory, non-regulated levels to guide the interpretation of PFOA and PFOS detections. Other states, such as Vermont, Minnesota, and New Jersey, have developed health-based values based on their own analysis of the scientific data. Michigan is currently the only state that regulates certain PFAS in surface water, although Minnesota has established enforceable discharge limits for specific waterbodies. New Jersey has adopted an Interim Ground Water Quality Standard for PFNA, and its drinking water advisory body has recommended proposed MCLs for PFOA and PFNA. While several states have adopted enforceable groundwater standards for PFOA and PFOS, no state other than New Jersey currently has MCLs (or proposed MCLs) for PFAS.

In California, when evaluating the discharge or cleanup of chemicals, the Regional Water Quality Control Boards (RWQCBs) are required to initially set the effluent limitation or cleanup standard at the background concentration of each chemical. This is done regardless of whether there is a drinking water standard or other health-based value available. For anthropogenic chemicals such as PFAS, the initial value is the analytical detection limit in water. Technical, economic, and health-based criteria are also considered (for example, CA RWQCB 2016).

Various states address the remediation of PFAS in groundwater and soil; guidance and advisory values may be used by state remediation programs to determine site-specific cleanup requirements (see Section 4 tables). Texas has developed toxicity criteria for 16 PFAS under the TRRP (TCEQ, 2017). These criteria are used to calculate risk-based soil and groundwater values and can also be used for other media such as sediment and fish tissue.

4 Available Regulations, Advisories, and Guidance

Regulatory, advisory, and guidance values have been established for PFOS, PFOA, and several other PFAS in environmental media as well as various terrestrial biota, fish, and finished products. Tables 4-1 and 4-2, provided as a separate Excel file, are intended to identify currently available U.S. and international standards and guidelines for groundwater, drinking water, surface water, and effluent or wastewater (Table 4-1), and soil (Table 4-2). The available standards list is changing rapidly. These tables are published separately so they can be updated periodically by ITRC. The fact sheet user should visit the ITRC web site (www.itrcweb.org) to access current versions of the tables.

Table 4-1 presents the available PFAS water values established by the USEPA, each pertinent state, or country (Australia, Canada and Western European countries). The specific agency or department is listed with the year it was published, the media type (groundwater, drinking water, surface water, or effluent), and whether it was published as guidance or as a promulgated rule.

Table 4-2 presents the available PFAS soil values established by the USEPA, each pertinent state, or country (Australia, Canada and Western European countries). Soil screening levels for both groundwater protection and human health are presented. The specific agency or department is listed with the year the value was published.

5 Basis of Standards and Guidance

Drinking contaminated water is a potential source of human exposure (see reviews in Lindstrom et al. 2011; NJ DWQI 2017a). As noted above, UCMR3 sampling detected PFOA or PFOS concentrations above the EPA Lifetime HA of 70 ng/L in the source water for municipal systems that supply approximately 6 million U.S. residents (Hu et al 2016). Although there are other potential sources that may lead to PFAS exposures (for example, consumer products), protection of the potable water supply is the primary driver behind most of the available state and federal regulations and guidance, due to the potential for exposure and the known or presumed toxicity of these compounds.

While numerous animal and human studies have evaluated both non-cancer and cancer health effects related to exposure to a limited number of PFAS, including PFOA and PFOS, little to no health-effects data are available for many PFAS. As a result, many of the available standards and guidance are for PFOA and PFOS. In animal studies, PFOA exposure has been associated with adverse effects on the developmental, reproductive, and immune systems and the liver (see summary of original research in USEPA 2016f). There is also evidence of both PFOA and PFOS affecting immune systems, including reduced disease resistance (National Toxicology Program [NTP] 2016) and tumors in rats (USEPA 2016e, f). These and other effects have also been found in human epidemiological studies (ATSDR 2016; C8SP 2017; USEPA 2016e, f; NTP 2016). The International Agency for Research on Cancer (IARC) concluded that PFOA is "possibly carcinogenic to humans (Group 2B)" (IARC 2016), and USEPA concluded that there is suggestive evidence of carcinogenic potential for both PFOA and PFOS in humans (USEPA 2016e, f).

Tables 5-1 and 5-2, provided as a separate Excel file, summarize the differences in the PFOA (Table 5-1) and PFOS (Table 5-2) values for drinking water in the United States, demonstrating that they are attributable to differences in the selection and interpretation of key toxicity data, choice of uncertainty factors, and the approach used for animal-to-human extrapolation. Differences in values are also due to the choice of exposure assumptions, including the life stage used, and the percentage of exposure assumed to come from non-drinking water sources. Only those agencies that have used science or policy decisions that are different from those of the USEPA LHAs are shown. The available information is increasing rapidly and these tables will be updated periodically by ITRC. The fact sheet user should visit the ITRC web site (www.itrcweb.org) to access the current version of the tables.

Some states have not yet developed values or adopted the USEPA LHA. It may be appropriate to consult with the lead regulatory authority (local or federal) to determine the appropriate values to use for site evaluation.

6 References and Acronyms

The references cited in this fact sheet, and the other ITRC PFAS fact sheets, are included in one combined list that is available on the ITRC web site. The combined acronyms list is also available on the ITRC web site.

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An Overview of Perfluoroalkyl and Polyfluoroalkyl Substances and Interim Guidance for Clinicians Responding to Patient Exposure Concerns

Interim Guidance

Revised on 6/7/2017

Introduction

The purpose of this fact sheet is to provide interim guidance to aid physicians and other clinicians with patient consultations on perfluoroalkyl and polyfluoroalkyl substances (PFAS). It highlights what PFAS are, which chemicals fall into this category of substances, identifies health effects associated with exposure to various PFAS, and suggests answers to specific patient questions about potential PFAS exposure.

Background

What are PFAS?

PFAS, sometimes known as PFCs, are synthetic chemicals that do not occur naturally in the environment. There are many different types of PFAS such as perfluorocarboxylic acids (e.g., PFOA, sometimes called C8, and PFNA) and perfluorosulfonates (e.g., PFOS and PFHxS). PFAS may be used to keep food from sticking to cookware, to make sofas and carpets resistant to stains, to make clothes and mattresses more waterproof, and to make some food packaging resistant to grease absorption, as well as use in some firefighting materials. Because PFAS help reduce friction, they are also used in a variety of other industries, including aerospace, automotive, building and construction, and electronics.

Why are PFAS a possible health concern?

According to the U.S. Environmental Protection Agency (EPA), PFAS are considered emerging contaminants. An "emerging contaminant" is a chemical or material that is characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards.

PFAS are extremely persistent in the environment and resistant to typical environmental degradation processes. The pathway for dispersion of these chemicals appears to be long-range atmospheric and oceanic currents transport. Several PFAS and their potential precursors are ubiquitous in a variety of environments. Some long-chain PFAS bioaccumulate in animals and can enter the human food chain.

PFOS and PFOA are two of the most studied PFAS. Exposure to PFOA and PFOS is widespread and global. PFOS and PFOA also persist in the human body and are eliminated slowly. Both PFOS and PFOA can be found in blood, and at much lower levels in urine, breast milk and in umbilical cord blood.

PFOS and PFOA may pose potential adverse effects for human health given their potential toxicity, mobility, and bioaccumulation potential. The likelihood of adverse effects depends on several factors such as amount and concentration of PFAS ingested as well as the time span of exposure.

Routes of Exposure and Health Effects

What are the main sources of exposure to PFAS?

For the general population, ingestion of PFAS is considered the major human exposure pathway. The major types of human exposure sources for PFAS include:

- Drinking contaminated water.
- Ingesting food contaminated with PFAS, such as certain types of fish and shellfish.
- Until recently, eating food packaged in materials containing PFAS (e.g., popcorn bags, fast food containers, and pizza boxes). Using PFAS compounds has been largely phased out of food packaging materials.
- Hand-to-mouth transfer from surfaces treated with PFAS-containing stain protectants, such as carpets, which is thought to be most significant for infants and toddlers.

- Workers in industries or activities that manufacture, manipulate or use products containing PFAS may be exposed to higher levels than the general population.

What are other low level exposure sources?

Individuals can also be exposed by breathing air that contains dust contaminated with PFAS (from soil, carpets, upholstery, clothing, etc.), or from certain fabric sprays containing this substance.

Dermal exposure is a minor exposure pathway. Dermal absorption is slow and does not result in significant absorption.

What are the potential PFAS exposure risks to fetuses and children?

Recent research evaluating possible health effects to fetuses from PFAS exposures have shown that developing fetuses can be exposed to PFAS when umbilical cord blood from their mothers crosses the placenta during pregnancy. It is important to note that different PFAS have varying levels of permeability to the placental barrier.

Newborns can be exposed to PFAS through breast milk. The level of neonatal exposure depends on the duration of breastfeeding. Older children may be exposed to PFAS through food and water, similar to adults. In addition, young children have a higher risk of exposure to PFAS from carpet cleaners and similar products, largely due to time spent lying and crawling on floors in their early years.

How long do PFAS remain in the body?

PFAS with long carbon chains have estimated half-lives ranging from 2-9 years such as:

- PFOA 2 to 4 years
- PFOS 5 to 6 years
- PFHxS 8 to 9 years

What are exposure limits for PFAS in drinking water?

The Environmental Protection Agency (EPA) has published a Lifetime Health Advisory (LTHA) recommending that the concentration of PFOA and PFOS in drinking water, either individually or combined, should not be greater than 70 parts per trillion (0.07 parts per billion). The LTHA concentrations do not represent definitive cut-offs between safe or unsafe conditions, but rather provide a margin of protection for individuals throughout their life from possible adverse health effects. EPA health advisories are non-regulatory recommendations and are not enforceable.

What are PFAS levels in the U.S. population?

Most people in the United States and in other industrialized countries have measurable amounts of PFAS in their blood.

The National Health and Nutrition Examination Survey (NHANES) is a program conducted by the Centers for Disease Control and Prevention (CDC) to assess the health and nutritional status of adults and children in the United States. NHANES (2011–2012) measured the concentration of PFAS in the blood of a representative sample of the U.S. population (12 years of age and older). The average blood levels found were as follows:

- PFOA: 2.1 parts per billion, with 95% of the general population at or below 5.7 parts per billion
- PFOS: 6.3 parts per billion, with 95% of the general population at or below 21.7 parts per billion
- PFHxS: 1.3 parts per billion, with 95% of the general population at or below 5.4 parts per billion

In the last decade, major manufacturers of PFOA and PFOS related products joined EPA in a global stewardship program to phase out production of these agents by 2015. Based on data collected from previous NHANES

cycle years, levels of PFOA and PFOS are generally decreasing in the blood of the general population as a result of this important initiative.

Health Studies

How can PFAS potentially affect human health?

Studies in humans and animals are inconsistent and inconclusive but suggest that certain PFAS may affect a variety of possible endpoints. Confirmatory research is needed.

Below are summaries of studies in animals and humans.

Animal Studies:

Adverse health effects have been demonstrated in animal studies, but these occurred at exposure levels higher than those found in most people. The main health effects observed were: enlargement and changes in the function of the liver, changes in hormone levels (e.g., reduced testosterone synthesis, potential to affect T_4 and TSH levels) and adverse developmental outcomes. Developmental and reproductive effects, including reduced birth weight, decreased gestational length, structural defects, delays in postnatal growth and development, increased neonatal mortality, and pregnancy loss have all been associated with prenatal rodent exposure to PFOS and PFOA.

Human Studies:

C8 Health Project

The C8 Health Project was a large epidemiological study conducted because drinking water in six water districts across two states near Parkersburg, West Virginia were contaminated by release of PFOA (also called C8) from the 1950s until 2002 (when the contamination was discovered). These releases migrated and contaminated the air, parts of the Ohio River, and ground water. The study included 69,030 persons $\geq$18 years of age. The C8 Science Panel analyzed study data and found probable links (as defined by litigation) between elevated PFOA blood levels and high cholesterol (hypercholesteremia), ulcerative colitis, thyroid function, testicular cancer, kidney cancer, preeclampsia, as well as elevated blood pressure during pregnancy. Residents in the area of these releases showed 500 percent higher PFOA-concentrations in blood compared to a representative U.S. population (i.e., NHANES).

Table 1: Overview of C8 and Other Human Studies

Cholesterol	Some epidemiological studies demonstrated statistically significant associations between serum PFOA and PFOS levels and total cholesterol in: - workers exposed to PFAS, and - residents of communities with high levels of PFOA in the drinking water compared to NHANES data that is representative of the U.S. population. Other studies have found no association between PFAS exposures and the total cholesterol levels.
Uric acid	Several studies have evaluated the possible association between serum PFOA and serum PFOS levels and uric acid. Significant associations were found between serum PFOA and uric acid levels at all evaluated exposure levels.
Liver effects	A number of human studies have used liver enzymes as biomarkers of possible liver effects. In occupational studies, no associations between liver enzymes and serum PFOA or PFOS levels were consistently found. A study of highly

	exposed residents demonstrated significant associations but the increase in liver enzymes was small and not considered to be biologically significant.
Cancer	The International Agency for Research on Cancer (IARC) has classified PFOA as possibly carcinogenic and EPA has concluded that both PFOA and PFOS are possibly carcinogenic to humans. Some studies have found increases in prostate, kidney, and testicular cancers in workers exposed to PFAS and people living near a PFOA facility. Findings from other studies report otherwise and most did not control for other potential factors including heavy smoking. Additional research is needed to clarify if there is an association.

Note: Additional studies have identified possible associations between ulcerative colitis, thyroid disease and pregnancy induced hypertension and higher exposure to PFAS.

What health screenings were used in the C8 study?

The C8 Medical Panel suggested health screening to evaluate the C8 study population that included blood tests for cholesterol, uric acid, thyroid hormones and liver function as well as other age or situationally appropriate screenings like blood pressure and urine protein measures. For individual patients exposed to PFAS who are not among the C8 study screening population, there are no official guidelines supporting health screening. However the tests listed above are well established in clinical medicine and may be a consideration to discuss with your patient based on the patient history, concerns and symptoms.

What are potential health effects from prenatal PFAS exposure to fetuses?

Multiple studies have reported an association between elevated maternal blood and cord blood concentrations of PFAS (primarily PFOS and PFOA) and decreased birth weight. Specifically, one meta-analysis suggests that each 1 ng/mL increase in prenatal PFOA levels is associated with up to 18.9 g reductions in birth weight (Johnson, 2014). Studies have also observed decreased birth weight with prenatal exposures to PFOS. The association between maternal PFAS level and decreased birth weight is not statistically significant across all studies. Further, the observed reduction in birth weight does not consistently equate with increased risk of a low birth weight (LBW) infant. Only one study revealed a statistically significant association between LBW risk and PFOS (Stein 2009); no studies have found a statistically significant association between LBW risk and PFOA.

Additional studies are needed to conclusively link the relationships between fetal PFAS exposure and health effects.

Patient Questions and Key Message Answers

As a clinician, you know careful listening and patient engagement is critical for ensuring quality patient care, especially when health concerns are raised. Perhaps the most difficult challenge in speaking with patients about their health concerns is addressing uncertainty. If your patient has concerns about an exposure to PFAS, you may face the challenge of helping your patient cope with the uncertainty of potential health effects from a PFAS exposure.

Based on feedback from clinicians and from individuals who have spoken to their health care provider about their PFAS exposure concerns, a set of patient questions have been identified. To assist you in speaking with your patients about their concerns, key messages and supporting facts needed to answer the anticipated patient questions are provided in the table below for your information and potential use.

Table 2: Patient Questions and Key Message

Questions Patients May Ask	Key Patient Messages	Key Message Supporting Facts
There are high levels of PFAS in my water. What should I do?	If the water you use is above the EPA health advisory level for PFOA and PFOS, you can reduce exposure by using an alternative water source for drinking, food preparation, cooking, brushing teeth or any activity that might result in ingestion of water.	Potential health effects are associated with exposure to PFAS. EPA has established a lifetime health advisory for PFOA and PFOS in drinking water. This advisory states that the concentration of PFOA and PFOS in drinking water, either individually or combined, should not be greater than 70 parts per trillion. There needs to be additional research to establish levels of health risk, but patients may want to reduce exposures below the EPA health advisory level to be on the safe side. A home water filtration system can reduce the contaminant levels in drinking water. Researchers are still clarifying how to best use home filtration for PFAS contamination. Installing a home filtration system or using a pitcher-type filter may reduce PFAS levels. However, these filters may not reduce PFAS enough to meet the EPA Lifetime Health Advisory (LTHA) level. Three factors determine how much PFAS are removed by filtration. These factors are the PFAS contaminant levels, the type of filter, and how well the filter is maintained. Manufacturers of the filtration system may be able to make recommendations to optimize removal of PFAS. This may include more sophisticated media cartridges or increasing the frequency of exchanging filter media. For bottled water questions (how it is treated and if it is safe) contact the CFSAN Information Center at

Questions Patients May Ask	Key Patient Messages	Key Message Supporting Facts
		1-888-SAFEFOOD (1-888-723-3366).
Could my health problems be caused by PFAS exposure? **(Based on the health problems the patient has, there are two possible responses to this question.)** **(a)** If the patient's health problem is in the list below, it may potentially be associated with PFAS exposure, based on limited evidence from human studies. The potential health effects include: - Thyroid function (potential to affect T_4 and TSH levels) - High cholesterol - Ulcerative colitis - Testicular cancer - Kidney cancer - Pregnancy-induced hypertension - Elevated liver enzymes - High uric acid **(b)** If the patient's health problem is not in the bulleted list above, then there is no current evidence that it is related to PFAS exposure. (However, research is ongoing and not all health outcomes have been adequately studied.)	**(a)** Although the evidence is not conclusive, your health problem could potentially be associated with exposure to PFAS. However, health effects can be caused by many different factors, and there is no way to know if PFAS exposure has caused your health problem or made it worse. **(b)** Based on what we know at this time, there is no reason to think your health problem is associated with exposure to PFAS.	For supporting facts on the listed health effects in this question **(a)**, see "**How can PFAS potentially affect human health.**" The information on potential illnesses and health effects will be briefly reviewed for each of these illnesses or health effects. This information can be found in this fact sheet on page 3 and 4. If your patient presents with health concerns that might be associated with PFAS exposure, it is appropriate to discuss the patient's concerns and perform a thorough health and exposure history and also a physical exam relative to any symptoms reported.
Are there future health problems that might occur because of PFAS exposure?	We know PFAS can cause health issues but there is no conclusive evidence that predicts PFAS exposure will result in future health problems. We can watch for symptoms related to PFAS associated health problems and investigate any that you notice, especially those that reoccur.	Studies in humans and animals are inconsistent and inconclusive but suggest that certain PFAS can cause possible health effects. Additional research is needed to better understand health risks associated with PFAS exposure.

Questions Patients May Ask	Key Patient Messages	Key Message Supporting Facts
Should I get a blood test for PFAS?	If you are concerned and choose to have your blood tested, test results will tell you how much of each PFAS is in your blood but it is unclear what the results mean in terms of possible health effects. The blood test will not provide information to pinpoint a health problem nor will it provide information for treatment. The blood test results will not predict or rule-out the development of future health problems related to a PFAS exposure.	There currently is no established PFAS blood level at which a health effect is known nor is there a level that predicts health problems. Most people in the US will have measureable amounts of PFAS in their blood. There are no health-based screening levels for specific PFAS that clinicians can compare to concentrations measured in blood samples. As a result, interpretation of measured PFAS concentrations in individuals is limited in its use. The patient may be aware of blood and urine test for PFAS being taken at other locations. These tests are used by public health officials to investigate community-wide exposure in order to understand the kinds and amounts of PFAS exposures in a community and how those exposures compare to those in other populations. Serum PFAS measurements are most helpful when they are part of a carefully designed research study.
What do my PFAS blood tests results mean?	The blood test for PFAS can only tell us the levels of specific PFAS in your body at the time you were tested. The blood tests results cannot be interpreted and used in patient care. The blood test results cannot predict or rule-out the development of future problems related to a suspected exposure.	There is currently no established PFAS blood level at which a health effect is known nor is there a level that is clearly associated with past or future health problems. The individual patient's blood concentration of PFAS can only be compared to the average background blood concentration levels for different PFAS that are nationally identified through the representative sampling of the NHANES studies conducted by CDC. A patient's PFAS concentrations can only show the patient if his or her blood levels are within range of the national norms or if the

Questions Patients May Ask	Key Patient Messages	Key Message Supporting Facts
		individual's levels are high or low compared to the national background averages.
An adult patient asks: **"Should I be tested for any of the potential health effects associated with PFAS exposure (like cholesterol and uric acid levels, or liver and thyroid function, etc.)?"**	Let's look at your health history and past lab results and discuss what steps we may want to consider moving forward. One way we can address cholesterol is through your annual physical. For others PFAS associated conditions, we need to watch for symptoms and investigate any that you notice, especially those that reoccur. If any unusual symptoms occur, we will investigate those and treat as needed. Laboratory tests will not tell us if PFAS are the cause of any of your health symptoms or abnormal lab results, but conducting these routine health screenings and watching for any related symptoms do offer us a way to better understand your current health status.	Health effects associated with PFAS are not specific and can be caused by many other factors. There are no guidelines to support laboratory testing to monitor PFAS health concerns. However, if your patient is concerned about PFAS exposure, discussing routine cholesterol screening can reassure the patient that his or her PFAS exposure concerns are being addressed. Some of the other possible health effects can be screened for based on symptoms.
A parent asks: **"Should I have my child tested for any of the potential health effects associated with PFAS exposure (like cholesterol and uric acid levels, or liver, thyroid function, etc.)?"**	The American Academy of Pediatrics has endorsed cholesterol testing for children starting at 9 years of age. Following this guidance cholesterol level testing can be done for older children. If cholesterol level measures are outside the normal range, we can discuss options for bringing cholesterol levels within the normal range for your child. For very young children, keeping well child visits is the best plan of action to monitor your child's	According to NHLBI guidelines endorsed by the American Academy of Pediatrics, all children should be screened for cholesterol levels between ages 9 and 11 years, and again between ages 17 and 21 years, even those who are not at an increased risk of high cholesterol and heart disease. Health effects associated with PFAS are not specific and can be caused by many other factors. There are no guidelines to support use of laboratory testing to monitor PFAS health concerns.

Questions Patients May Ask	Key Patient Messages	Key Message Supporting Facts
	health and watch for symptoms of illness. We can discuss any symptoms you notice, especially those that reoccur. If any unusual symptoms occur, we will investigate those and treat as needed. Laboratory tests will not tell us if PFAS are the cause of any of your child's health symptoms and are not recommended. Conducting routine well child visits and watching for any related symptoms do offer us a way to better understand your child's current health status.	However, if your patient presents with health concerns that have been associated with PFAS exposures, discussing recommended cholesterol screening, can reassure the patient's parents that their concerns are being addressed. Some of the other possible health effects can be screened for based on symptoms.
How will exposure to PFAS affect my pregnancy?	Exposure to PFAS before pregnancy has been associated with pregnancy-induced hypertension and pre-eclampsia. We will monitor your blood pressure closely, as we do for all pregnant women; however, there is no need for additional blood pressure measurements as a result of your exposure.	Health effects associated with PFAS are not specific and can be caused by many other factors. Pregnancy induced hypertension occurs in many pregnancies and the specific etiology is often unknown.
Is it safe for me to breastfeed my baby?	Breastfeeding is associated with numerous health benefits for infants and mothers. At this time, it is recommended that you as a nursing mother continue to breastfeed your baby. The science on the health effects of PFAS for mothers and babies is evolving. However, given the scientific understanding at this time, the benefits of breastfeeding your baby outweighs those of not breastfeeding.	Extensive research has documented the broad and compelling advantages of breastfeeding for infants, mothers, families, and society. Some of the many benefits include immunologic advantages, lower obesity rates, and greater cognitive development for the infant as well as a variety of health advantages for the lactating mother. Even though a number of environmental pollutants readily pass to the infant through human milk, the advantages of

Questions Patients May Ask	Key Patient Messages	Key Message Supporting Facts
		breastfeeding continue to greatly outweigh the potential risks in nearly every circumstance.
How will exposure to PFAS affect my child's immunizations? **Will I need to get my child vaccinated again?**	Although few studies have reported that PFOS and PFOA might slightly lower the immune response to some immunizations, these studies have not suggested a need to re-evaluate the normal immunization schedule. There is no recommendation for repeating any vaccinations.	A study with 656 children has reported that elevated levels of PFOA and PFOS in serum are associated with reduced humoral immune response to some routine childhood immunizations (rubella, tetanus and diphtheria) among children aged five to seven years. Studies have not suggested a need to re-evaluate the normal immunization schedule nor the use of an immunize booster for impacted children.
I have been very anxious about health risks from PFAS exposure. How can I deal with this uncertainty?	It is normal to be anxious about uncertain risks. I am here to listen to your questions and will do my best to provide honest answers. First let's identify ways to reduce ongoing exposures to PFAS so that overtime we can lower your health risks. Let's set up appointment for (X date) and we can discuss any new questions you have and check to see if there are any changes in how you feel. In the meantime, I have more information that may answer questions that you may have later about PFAS.	Listen sympathetically and explore the concerns of the patient Check for serious stress issues such as ongoing depression and treat accordingly. Review resources/references at the end of this fact sheet.

Resources

Below is a list of resources that can be helpful to clinicians. These include the Pediatric Environmental Health Specialty Units (PEHSU). The PEHSU are a national network of experts available to provide consultation and education to clinicians and communities wishing to learn more about PFAS and other hazardous substances. These units are staffed by clinicians with environmental health expertise in pediatrics, reproductive health, occupational and environmental medicine, medical toxicology, and other related areas of medicine.

Resource	Link
ATSDR: PFAS Overview Toxic Substance Portal ToxFAQs	 http://www.atsdr.cdc.gov/pfc/index.html http://www.atsdr.cdc.gov/substances/index.asp http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=1116&tid=237
CDC: PFCs	http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html
C8 Science Panel C8 Medical Panel	http://www.c8sciencepanel.org/prob_link.html http://www.c8sciencepanel.org/publications.html http://www.c-8medicalmonitoringprogram.com/ http://www.c-8medicalmonitoringprogram.com/docs/med_panel_education_doc.pdf
EPA: PFAS	https://www.epa.gov/chemical-research/research-perfluorooctanoic-acid-pfoa-and-other-perfluorinated-chemicals-pfcs
IARC	http://www.iarc.fr/
NIEHS: PFAS	https://www.niehs.nih.gov/health/materials/perflourinated_chemicals_508.pdf
NHLBI Lipid Screening in Children & Adolescents	https://www.nhlbi.nih.gov/health-pro/guidelines/current/cardiovascular-health-pediatric-guidelines/full-report-chapter-9
PEHSU	http://www.pehsu.net/
Uncertainty and Stress in the Clinical Setting	Helping Patients and Clinicians Manage Uncertainty During Clinical Care - https://publichealth.wustl.edu/helping-patients-and-clinicians-manage-uncertainty-during-clinical-care/ Navigating the Unknown: Shared Decision-Making in the Face of Uncertainty J Gen Intern Med. 2015 May; 30(5): 675–678. http://tinyurl.com/zrd587f Patient Health Questionnaire to determine if patient is suffering from depression. http://tinyurl.com/gv6h3wk Uncertainty Toolbox: Principles in the Approach to Uncertainty in the Clinical Encounter-J Gen Intern Med. 2015 May; 30(5): 675–678. http://tinyurl.com/gtlf2mk

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POLLUTION

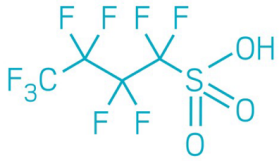
EPA gears up for controlling poly- and perfluorochemical pollution

Agency plans legal limit on four PFASs in drinking water, creating liability for PFOS and PFOA contamination

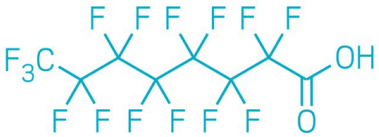
by ***Cheryl Hogue***

MAY 22, 2018 | APPEARED IN VOLUME 96, ISSUE 22

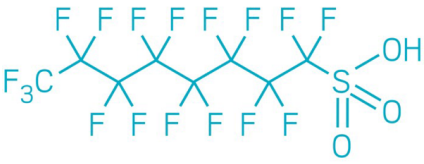
The U.S. EPA is moving on several fronts to control four poly- and perfluorinated alkyl compounds (PFASs) that contaminate or threaten to taint drinking water in at least 20 states across the nation. Some of these efforts will to take years to complete.



Perfluorobutane sulfonic acid



Perfluorooctanoic acid



Perfluorooctanesulfonic acid

Agency Administrator Scott Pruitt announced a four-pronged plan to address PFASs on May 22 at a meeting with representatives of states and tribes, other federal agencies, and industry groups, along with congressional aides and a sprinkling of environmental and community activists. No academic scientists, who have done much work on identifying PFAS contamination and the toxicity of these substances, were present at the meeting.

In a first step, EPA will evaluate the need to set a legally enforceable drinking water limit for two substances formerly widely used but no longer manufactured in the U.S., perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), Pruitt said. These two substances, which are each linked to health problems, contaminate drinking water **across the U.S**. EPA in 2016 established a nonbinding **advisory level of 70 ppt** for the compounds, individually or combined. PFOA and PFOS pollution stems from decades of industrial activity, including chemical manufacturing and the disposal of waste tainted with the substances. It is also found near military sites **where fire-fighting foams** containing these chemicals have been and continue to be used.

In a second action, Pruitt said EPA will propose designating PFOA and PFOS pollution as hazardous waste. This would establish liability for companies responsible for PFOA and PFOS pollution to clean it up, a boon for state regulators struggling to get remediation efforts underway. In a related third step, EPA is developing recommendations for cleaning up these two compounds

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at contaminated sites, guidance that Pruitt said will be completed this autumn. Both actions will help address concerns of state regulators who, through the Environmental Council of the States, **say** the current situation leaves EPA and states lacking clear authority to order investigations or cleanup of PFAS pollution.

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In a fourth move, EPA is working with states and other federal agencies to establish human health toxicity values for two fluorochemicals that in the last decade or so replaced PFOA and PFOS, respectively: hexafluoropropylene oxide dimer acid (HFPO-DA), which is formed through hydrolysis of Chemours's GenX fluoroether surfactant; and perfluorobutanesulfonic acid, which is a **3M product**.

At the meeting, Carel Vandermeyden, director of engineering for **a North Carolina water utility** that is contending with **a river water supply tainted with HFPO-DA** and other fluorochemicals, said ratepayers so far are stuck with the bill for removing PFAS from drinking water.

The largest trade association for the U.S. chemical industry, the American Chemistry Council, endorsed the use of best available science to determine an appropriate maximum contaminant level in drinking water for PFOS, PFOA, and other so-called legacy PFASs that are no longer made or used domestically. At the meeting, Jessica Bowman, ACC senior director of global fluorochemistry, also expressed support for a possible EPA move that Pruitt did not mention—a regulation to prohibit imports of productions containing legacy PFASs.

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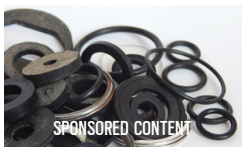

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H2Oh No? Emergin Contaminants and Expanding Toxic Torts

Moderator:
Daniel M. Krainin, Esq.

Presented By:
Jeanette Bayoumi, Esq.
James A. Pardo, Esq.
Matthew J. Sinkman, Esq.


H2OH NO!
EMERGING CONTAMINANTS AND EXPANDING TOXIC TORTS PANEL
JEANETTE BAYOUMI
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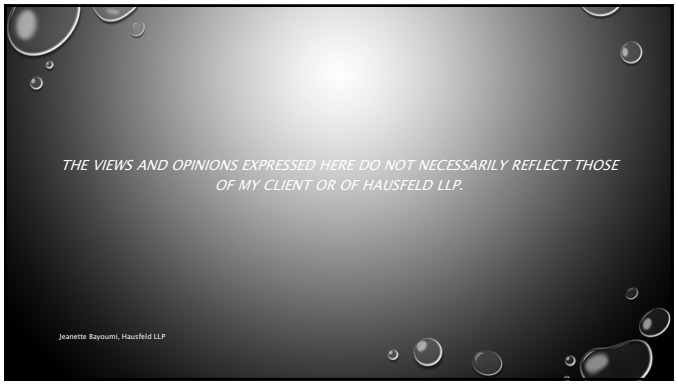
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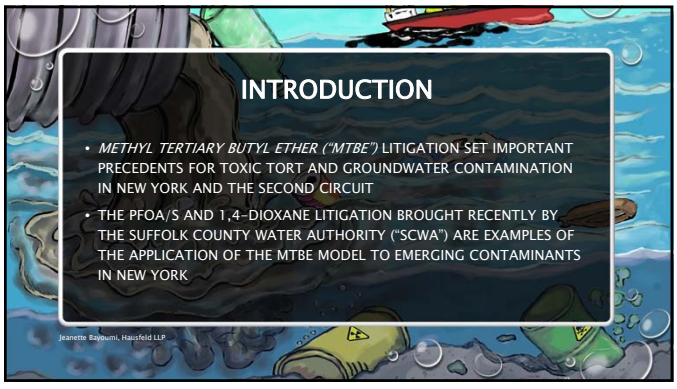

INTRODUCTION
• *METHYL TERTIARY BUTYL ETHER ("MTBE")* LITIGATION SET IMPORTANT PRECEDENTS FOR TOXIC TORT AND GROUNDWATER CONTAMINATION IN NEW YORK AND THE SECOND CIRCUIT
• THE PFOA/S AND 1,4-DIOXANE LITIGATION BROUGHT RECENTLY BY THE SUFFOLK COUNTY WATER AUTHORITY ("SCWA") ARE EXAMPLES OF THE APPLICATION OF THE MTBE MODEL TO EMERGING CONTAMINANTS IN NEW YORK
Jeanette Bayoumi, Hausfeld LLP

LITIGATION: OVERVIEW OF NEW YORK *MTBE* CASE

- MTBE IS A GASOLINE ADDITIVE USED BY EXXON AND OTHER COMPANIES (BETWEEN THE 1980S AND EARLY 2000S)
- WIDESPREAD SPILLAGE AND LEAKAGE FROM GASOLINE STORED IN UNDERGROUND TANKS CONTAMINATED GROUNDWATER
- CITY OF NEW YORK SOUGHT TO RECOVER FROM EXXON FOR HARM CAUSED BY GASOLINE CONTAINING MTBE CONTAMINATION OF STATION SIX WELLS (LOCATED IN QUEENS)

Jeanette Bayoumi, Hausfeld LLP

LITIGATION: CAUSATION

- CITY ALLEGED THREE THEORIES OF CAUSATION:
  1. DIRECT SPILLER
  2. MANUFACTURER, REFINER, SUPPLIER, OR SELLER
  3. CONTRIBUTOR

Jeanette Bayoumi, Hausfeld LLP

LITIGATION: MANUFACTURER LIABILITY AS TRADITIONAL "SUBSTANTIAL FACTOR" CAUSATION

- EXXON, AS A MANUFACTURER/SUPPLIER OF GASOLINE CONTAINING MTBE "*WAS A **SUBSTANTIAL FACTOR** IN CAUSING THE CITY'S INJURY.*'" *MTBE, 725 F.3D 65, 88 (2D CIR. 2013).*
- *SUBSTANTIAL FACTOR MEANS "**MORE LIKELY THAN NOT** THAT [THE DEFENDANT] PLAYED A SUBSTANTIAL ROLE IN BRINGING ABOUT THE [PLAINTIFF'S] INJURY."* MTBE, *725 F.3D AT 116.*
- CITY SUFFICIENTLY PRESENTED THREE PIECES OF EVIDENCE ESTABLISHING THAT EACH DEFENDANT WAS A SUBSTANTIAL FACTOR IN CAUSING THE INJURY:
  1. PRESENCE
  2. MARKET PARTICIPATION
  3. KNOWLEDGE

Jeanette Bayoumi, Hausfeld LLP

LITIGATION: ALTERNATIVE THEORIES OF LIABILITY– MARKET SHARE

- MARKET SHARE LIABILITY:
  - UNDER NEW YORK LAW, MARKET SHARE LIABILITY IS APPLICABLE WHEN:
    - PRODUCT IS FUNGIBLE
    - PLAINTIFF CANNOT IDENTIFY WHICH DEFENDANT PROXIMATELY CAUSED HER HARM
    - DEFENDANTS ARE MANUFACTURERS THAT TOGETHER CONTROL A SUBSTANTIAL SHARE OF THE MARKET FOR THE PRODUCT IN QUESTION – *SEE MTBE*, 379 F. SUPP. 2D 348, 425 (S.D.N.Y. 2005).
  - AN "EXCEPTION TO THE GENERAL RULE THAT A PLAINTIFF MUST PROVE THAT DEFENDANT'S CONDUCT WAS THE CAUSE-IN-FACT OF PLAINTIFF'S INJURY." *MTBE*, 739 F. SUPP. 2D AT 598.

LITIGATION: ALTERNATIVE THEORIES OF LIABILITY– COMMINGLED PRODUCT

- COMMINGLED PRODUCT THEORY:
  - USED TO PREVENT FORECLOSING MTBE PLAINTIFFS FROM SEEKING RELIEF WHERE A SPECIFIC MANUFACTURER DEFENDANT COULD NOT BE IDENTIFIED. *SEE MTBE*, 379 F. SUPP. 2D AT 377.
  - DISTINGUISHED FROM INSTANCES IN WHICH MARKET SHARE LIABILITY HAS BEEN APPLIED BECAUSE:
    1. "THE GASEOUS OR LIQUID BLENDED PRODUCT IS A NEW COMMODITY CREATED BY COMMINGLING THE PRODUCTS OF VARIOUS SUPPLIERS" WHERE "THE PRODUCT OF EACH SUPPLIER IS *KNOWN* TO BE PRESENT"— "[W]HAT IS *NOT KNOWN* IS WHAT PERCENTAGE OF EACH SUPPLIER'S GOODS IS PRESENT IN THE BLENDED PRODUCT THAT CAUSED THE HARM" AND
    2. "THE HARM CAUSED BY THIS COMMINGLED PRODUCT NEED NOT HAVE A LONG LATENCY PERIOD PRIOR TO THE DISCOVERY OF THE HARM." *MTBE*, 379 F. SUPP. 2D AT 379.
  - DEFENDANTS ARE SEVERALLY LIABLE. *SEE MTBE*, 379 F. SUPP. 2D AT 378.

LITIGATION: CAUSATION TAKE AWAY POINTS

- THERE ARE MULTIPLE AVENUES FOR A PLAINTIFF TO PROVE CAUSATION WITHIN THE WATER CONTAMINATION CONTEXT
- "MORE LIKELY THAN NOT" THRESHOLD
- EVEN IF PLAINTIFF CANNOT IDENTIFY SPECIFIC MANUFACTURER OF PRECISE CONTAMINANT LOCATED IN PLAINTIFF'S WELL/GROUNDWATER, AN ALTERNATIVE THEORY OF CAUSATION APPLICABLE

LITIGATION: DEFINING "INJURY"

- MCL SERVES AS A "GUIDEPOST" BUT "DOES NOT DEFINE WHETHER AN INJURY HAS OCCURRED." *MTBE*, 725 F.3D AT 105.
- WATER PROVIDER MAY TAKE REMEDIAL MEASURES TO CLEAN WATER AT A LEVEL LOWER THAN THE MCL AND RECOVER
- WHETHER A REASONABLE WATER PROVIDER WOULD TREAT WATER TO REDUCE LEVELS OR MINIMIZE EFFECTS OF THE CONTAMINANT

Jeanette Bayoumi, Hausfeld LLP

SCWA 1,4-DIOXANE AND PFOA/S LITIGATION

- SCWA IS A MUNICIPAL ENTITY RESPONSIBLE FOR PROVIDING POTABLE WATER TO APPROXIMATELY 1.2 MILLION RESIDENTS OF SUFFOLK COUNTY
- PURPOSE OF 1,4-DIOXANE AND PFOA/S LITIGATION IS TO RECOVER COSTS NECESSARY TO PROTECT THE PUBLIC AND RESTORE DAMAGED DRINKING WATER SUPPLY WELLS
- *SEE SCWA V. THE 3M COMPANY, ET AL.*, CASE NO. 17-CV-06892 (E.D.N.Y.); *SCWA V. THE DOW CHEMICAL CO., ET AL.*, CASE NO. 17-CV-06980 (E.D.N.Y.).

Jeanette Bayoumi, Hausfeld LLP

THE ROLE OF NEW YORK STATE AND SETTING AN MCL:

- NEW YORK LAW LIMITS THE CONCENTRATION OF CONTAMINANTS IN DRINKING WATER. *SEE* N.Y. COMP. CODES R. & REGS. TIT. 10 §§ 5-1.12, 5-1.71.
- NO MAXIMUM CONTAMINANT LEVEL ("MCL") CURRENTLY EXISTS IN NEW YORK FOR 1,4-DIOXANE
- IN 2016, NEW YORK BECAME THE FIRST STATE TO REGULATE PFOA AS A HAZARDOUS SUBSTANCE AND REGULATES THE CONTAMINANT AT AN ADVISORY LEVEL OF 50 PPB
- THE EPA HAS SET GUIDANCE (HEALTH ADVISORIES OR REFERENCE CONCENTRATIONS) FOR BOTH PFOA AND 1,4-DIOXANE OF 70 PPT (0.07 PPB) AND 350 PPT (0.35 PPB), RESPECTIVELY

Jeanette Bayoumi, Hausfeld LLP


1,4 DIOXANE:
THE CONTAMINANT
• SYNTHETIC INDUSTRIAL CHEMICAL
• USED IN INDUSTRIAL SETTINGS AS A SOLVENT AND STABILIZER
• COMMONLY USED AS A STABILIZER FOR CHLORINATED SOLVENTS LIKE METHYL CHLOROFORM, AKA 1-1-1 TRICHLORETHANE ("TCA")
• ALSO GENERATED AS A BY-PRODUCT OF THE PRODUCTION OF ETHOXYLATED SURFACTANTS, OCCURRING AS AN IMPURITY IN CONSUMER PRODUCTS LIKE SOAPS, DETERGENTS, COSMETICS, SHAMPOOS, AND OTHERS
Jeanette Bayoumi, Hausfeld LLP


1,4-DIOXANE:
HEALTH EFFECTS
• EPA: "LIKELY TO BE CARCINOGENIC TO HUMANS"
• NAUSEA, DROWSINESS, HEADACHES, EYE, NOSE, AND THROAT IRRITATION
• LIVER AND KIDNEY TOXICITY
Jeanette Bayoumi, Hausfeld LLP


1,4-DIOXANE:
MECHANISM OF CONTAMINATION
• USERS OF TCA DISPOSED OF WASTE SOLVENTS BY POURING THEM ONTO THE GROUND OR TRENCHES FOR EVAPORATION OR BURNING
• ALSO ENTERED WASTEWATER STREAM THROUGH HOME AND COMMERCIAL USE OF DETERGENTS, DISHWASHING SOAPS, SHAMPOOS, AND OTHER PRODUCTS—LEAKAGE FROM SEWER LINES AND SEPTIC SYSTEMS
Jeanette Bayoumi, Hausfeld LLP

PFOA/S: THE CONTAMINANT

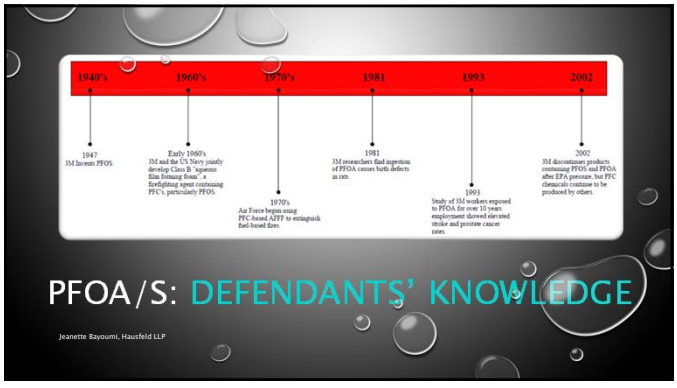
- POLY- AND PERFLUROALKYL SUBSTANCES ("PFAS COMPOUNDS") USED FOR DECADES TO PRODUCE HOUSEHOLD PRODUCTS THAT ARE HEAT RESISTANT, STAIN RESISTANT, LONG LASTING, AND WATER AND OIL REPELLANT
- PFOA AND PFOS ARE THE MOST TOXIC MANMADE CHEMICALS OF THE PFAS FAMILY
- UNIQUE CHARACTERISTICS: MOBILE AND PERSISTENT

Jeanette Bayoumi, Hausfeld LLP

PFOA/S: HEALTH EFFECTS

- Carcinogens connected to a variety of illnesses such as testicular and kidney cancer
- Dangerous for pregnant women
- Increased liver enzymes
- Thyroid disease
- Elevated cholestorol

Jeanette Bayoumi, Hausfeld LLP



PFOA/S: DEFENDANTS' KNOWLEDGE

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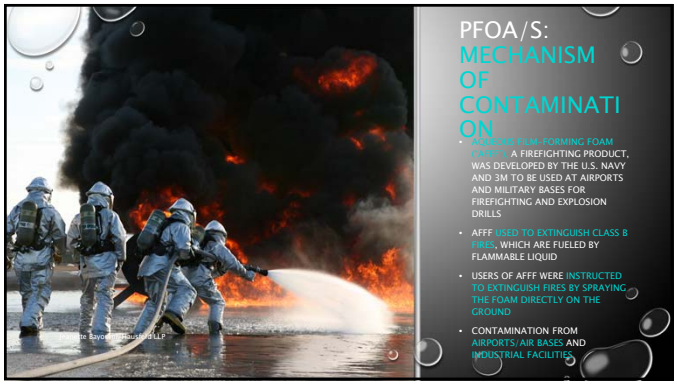
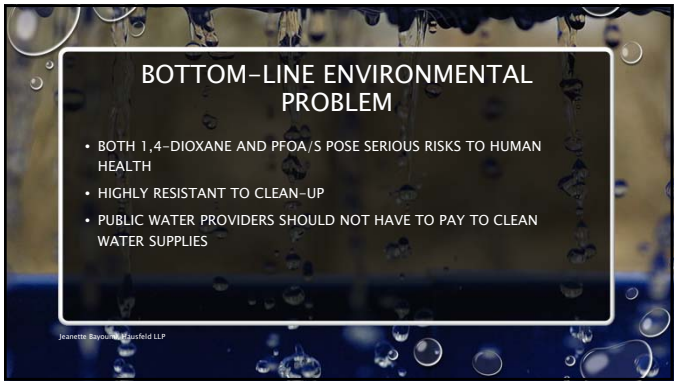
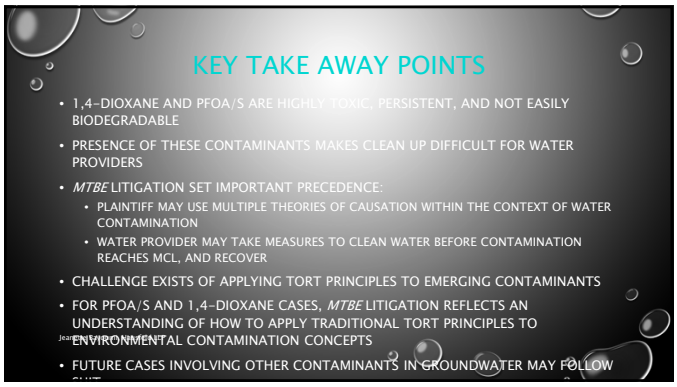

PFOA/S:
MECHANISM OF CONTAMINATION
• AQUEOUS FILM-FORMING FOAM (AFFF): A FIREFIGHTING PRODUCT, WAS DEVELOPED BY THE U.S. NAVY AND 3M TO BE USED AT AIRPORTS AND MILITARY BASES FOR FIREFIGHTING AND EXPLOSION DRILLS
• AFFF USED TO EXTINGUISH CLASS B FIRES, WHICH ARE FUELED BY FLAMMABLE LIQUID
• USERS OF AFFF WERE INSTRUCTED TO EXTINGUISH FIRES BY SPRAYING THE FOAM DIRECTLY ON THE GROUND
• CONTAMINATION FROM AIRPORTS/AIR BASES AND INDUSTRIAL FACILITIES
Jeanette Bayoud Pfausfeld LLP


BOTTOM-LINE ENVIRONMENTAL PROBLEM
• BOTH 1,4-DIOXANE AND PFOA/S POSE SERIOUS RISKS TO HUMAN HEALTH
• HIGHLY RESISTANT TO CLEAN-UP
• PUBLIC WATER PROVIDERS SHOULD NOT HAVE TO PAY TO CLEAN WATER SUPPLIES
Jeanette Bayoud Pfausfeld LLP


KEY TAKE AWAY POINTS
• 1,4-DIOXANE AND PFOA/S ARE HIGHLY TOXIC, PERSISTENT, AND NOT EASILY BIODEGRADABLE
• PRESENCE OF THESE CONTAMINANTS MAKES CLEAN UP DIFFICULT FOR WATER PROVIDERS
• *MTBE* LITIGATION SET IMPORTANT PRECEDENCE:
• PLAINTIFF MAY USE MULTIPLE THEORIES OF CAUSATION WITHIN THE CONTEXT OF WATER CONTAMINATION
• WATER PROVIDER MAY TAKE MEASURES TO CLEAN WATER BEFORE CONTAMINATION REACHES MCL, AND RECOVER
• CHALLENGE EXISTS OF APPLYING TORT PRINCIPLES TO EMERGING CONTAMINANTS
• FOR PFOA/S AND 1,4-DIOXANE CASES, *MTBE* LITIGATION REFLECTS AN UNDERSTANDING OF HOW TO APPLY TRADITIONAL TORT PRINCIPLES TO ENVIRONMENTAL CONTAMINATION CONCEPTS
• FUTURE CASES INVOLVING OTHER CONTAMINANTS IN GROUNDWATER MAY FOLLOW SUIT
Jeanette Bayoud Pfausfeld LLP

Sea Change: How MTBE Has Changed the Toxic Tort Game

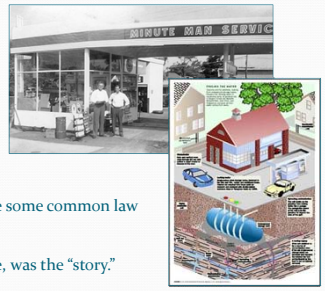
"Emerging Contaminants & Expanding Toxic Torts"

NYSBA Environmental & Energy Law Section
October 21, 2018

James A. Pardo
McDermott Will & Emery, LLP

How it Began: MTBE and Some Very Creative Trial Lawyers

- Individual stations.
- Discrete impacts.
- Targets were "spillers," usually station owner or operator and often small "mom and pop" businesses.
- Navigation Law, maybe some common law (negligence) claim.
- The station, the release, was the "story."



How it Began: MTBE and Some Very Creative Trial Lawyers

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE: METHYL TERTIARY BUTYL ETHER ("MTBE") PRODUCTS LIABILITY LITIGATION

This document relates to:

City of Riverside v. Atlantic Richfield Co., et al., 04 Civ. 4969

Quincy Community Services District v. Atlantic Richfield Co., et al., 04 Civ. 4970

People of the State of California, et al. v. Atlantic Richfield Co., et al. 04 Civ. 4972

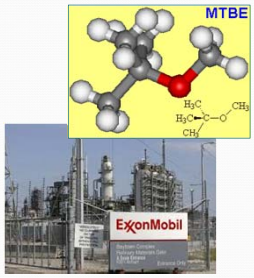
USDC SDNY
DOCUMENT
ELECTRONICALLY FILED
DOC #:
DATE FILED: 7/30/08

AMENDED OPINION AND ORDER

Master File No. 1:00-1898
MDL 1358 (SAS)
M21-88

How it Began: MTBE and Some Very Creative Trial Lawyers

- "Product Liability" changed everything
- Focus now on composition of gasoline itself.
- Gasoline as defective product.
- Station, tank, spill not really relevant.
- Whole new class of defendants: manufacturers.



How it Began: MTBE and Some Very Creative Trial Lawyers

- Defective Design.
- Failure to warn.
- Civil Conspiracy

Still "environmental" cases because alleged leaks impacted groundwater …

But

- What did you know?
- Who did you tell?
- How did you decide?

Targeting manufacturers who had nothing to do with the stations, the tanks or the releases.

Where Are We?

<u>2001-2003</u>

Private well owners

Class denied; nominal $$.

<u>2004-2010</u>

Public water providers

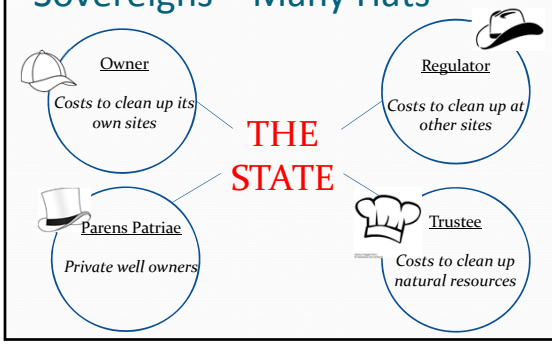
Over $500M in settlements and verdicts.

<u>2010- Present</u>

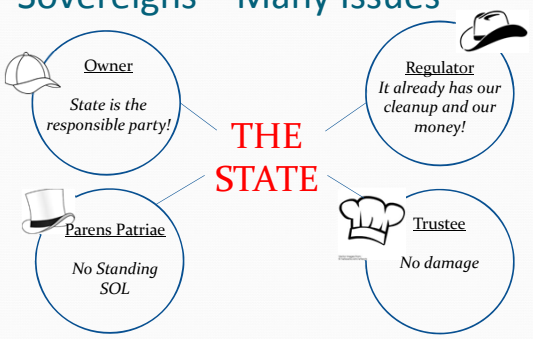
State sovereigns

Natural Resource Damages (the rest of the water).

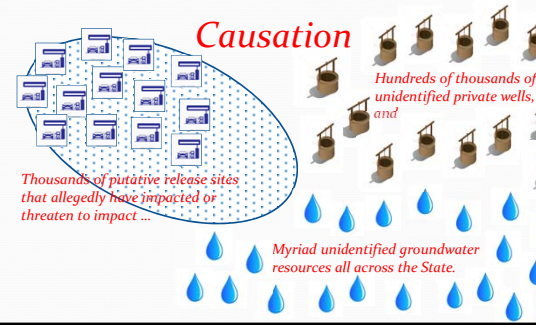
Sovereigns – Many Hats



Sovereigns – Many Issues



The Elephant in the Room?



The Elephant in the Room

Q. How do you prove any of this against a product manufacturer?

A. "Alternative Causation and Liability"

- Statewide statistical extrapolation.
- Show manufacturer's bad conduct in creating product.
- Show detections at a few select sites and wells; extrapolate to the rest of state; divide damages by market share.
- Never have to prove that Defendant X actually caused specific release, impact, damage.

So Where is this Going?

1. "Product Liability" is Plan A.
   - Do not need to spill, release or be a "responsible party" to face liability for environmental harm.
2. Alternative Liability is Plan A+:
   - Traditional causation deemed too difficult in mass tort cases.
   - Incentivizes enormous, unwieldy cases.
   - Plaintiff will try this until courts shut it down.

So Where is this Going?

3. Regulatory Standards Do Not Matter.
   - "Closure letters," sub-MCL detections mean nothing in NRD context.
   - Are States, public water providers really ready to live with this standard?
4. Technology is expanding what counts as actionable "contamination."
   - We are down to parts per *trillion*.

So Where is this Going?

5. States Will Not Wait.
   - Playbook was written with MTBE.
   - E.g., PFOAs.

What Will Defendants Do?

1. Challenge Product Liability.
   - These should not be product liability cases.
   - Products were not defective *as products*.
     - E.g., MTBE worked exactly as designed and intended.
     - E.g., PFOAs worked exactly as designed and intended.
2. Challenge Alternative Liability.
   - Universally rejected until *New Hampshire*.
   - Myriad Constitutional and factual issues.

What Will Defendants Do?

3. Make Plaintiffs Play By Their Own (New) Rules.
   - States, public water providers say one thing in the courtroom, something completely different outside.
     - The water they serve is either potable or it is not.
     - If not: public water providers are liable, too.
4. Make Plaintiffs Use Their Recoveries As Promised.
   - Say they need the money to locate, treat, remediate contamination.
   - But use it for playground equipment, pension payments, raises, everything *except* contamination.

What Will Defendants Do?

- SCWA got over $80M for MTBE.
- Of 140 settling plaintiffs, *none* spent their "windfall" to address MTBE.

- Those days are over.
  - Defendants will seek Trusts.

5. "Here Are the Keys. Good Luck."
   - Defendants *are* already remediating; we *are* already funding.
   - If Plaintiff wins, it takes the responsibility.
     - Alternative is pure double-dipping.

CENTRAL ANALYTICAL LABORATORY

Report No. 6967

Date August 4, 1978

Subject: IRDC 137-092: FC-95/Monkey

Requestor: J.E. Long Dept. Name Toxicology Proj. No. 9172110004

Request No. A69507 Dated 8/3/78

Report:

Reference 137-087 by IRDC was a 90 day subacute Rhesus monkey toxicity study of FC-95. Incorrect (too high) feeding levels were used and all animals died within the first few days. The feeding levels were lowered and the study started again as 137-092. The serum and livers were each individually submitted for analysis. Each group contained 4 monkeys, 2 male and 2 female as follows:

Group	Dosage Level	Survival
I	0	4/4
II	0.5 mg/kg/day	4/4
III	1.5 mg/kg/day	4/4
IV	4.5 mg/kg/day	0/4

SERUM ANALYSIS

Monkey	Dosage Level	FC-95 in Serum (ppm)①
Blank on Method	-	2
7355M	0	40
7358M	0	20
7368F	0	15
7463M	0.5 mg/kg/day	150
7466F	"	150
7462M	1.5 mg/kg/day	250
7500F	"	275

① Our newly developed pyrolysis method was used. Precision is estimated to be ±10 - 25%.

Exhibit 1181
State of Minnesota v. 3M Co., Court File No. 27-CV-10-28862

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF ALBANY

STATE OF NEW YORK,	:	**Index No.**
Plaintiff,	:	**SUMMONS**
- against -	:	
3M COMPANY, TYCO FIRE PRODUCTS LP, CHEMGUARD, INC., BUCKEYE FIRE EQUIPMENT COMPANY, NATIONAL FOAM, INC., and KIDDE-FENWAL, INC.,	:	
Defendants.	:	

TO: 3M COMPANY
TYCO FIRE PRODUCTS LP
CHEMGUARD, INC.
BUCKEYE FIRE EQUIPMENT COMPANY
NATIONAL FOAM, INC.
KIDDE-FENWAL, INC.

YOU ARE HEREBY SUMMONED to answer the attached complaint in this action and to serve a copy of your answer on the plaintiff's attorney within twenty (20) days after the service of this summons, exclusive of the day of service (or within thirty (30) days after service is complete if this summons is not personally delivered to you within the State of New York). In case of your failure to appear or answer, judgment will be taken against you by default for the relief demanded in the complaint.

Pursuant to CPLR 503, the venue for this action is Albany County, because plaintiff resides in Albany County.

Dated: Albany, New York
June 19, 2018

BARBARA D. UNDERWOOD
Attorney General of the State of New York
Attorney for Plaintiff

By: /s/ Matthew J. Sinkman
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SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF ALBANY

STATE OF NEW YORK,	:	**Index No.**
Plaintiff,	:	**COMPLAINT**
- against -	:	
3M COMPANY, TYCO FIRE PRODUCTS LP, CHEMGUARD, INC., BUCKEYE FIRE EQUIPMENT COMPANY, NATIONAL FOAM, INC., and KIDDE-FENWAL, INC.,	:	
Defendants.	:	

Plaintiff State of New York (the "State"), by its attorney Barbara D. Underwood, Attorney General of the State of New York, as and for its complaint against 3M Company, Tyco Fire Products LP, Chemguard, Inc., Buckeye Fire Equipment Company, National Foam, Inc., and Kidde-Fenwal, Inc. (collectively, "defendants"), alleges as follows:

NATURE OF THIS ACTION

1. This action arises from threats to public health and contamination of the environment caused by toxic substances in defendants' products.

2. Defendants designed, manufactured, marketed, and sold aqueous film-forming foam and related products ("AFFF") that were discharged into the environment at or from sites throughout New York.

3. AFFF is a product that has been used to extinguish fires involving fuel or other flammable liquids, including aviation fires and fires in aircraft hangars extinguished with automatic fire suppression systems; to train firefighters; and to test firefighting equipment. Defendants' AFFF products contained the chemical compounds perfluorooctanoic acid/ perfluorooctanoate ("PFOA"), perfluorooctane sulfonic acid/perfluorooctane sulfonate

("PFOS"), and/or chemical compounds that degrade into PFOA and/or PFOS (collectively, "PFOA/S"). Human exposure to PFOA is associated with an increased risk of kidney and testicular cancer, ulcerative colitis, and other conditions. Human exposure to PFOA and PFOS is associated with an increased risk of immune system effects, changes in liver enzymes and thyroid hormones, low birthweight, and other adverse health conditions.

4. The State brings this action to recover (1) damages consisting of costs incurred and to be incurred by the State in investigating, monitoring, remediating, and otherwise responding to injuries and/or threats to public health and the environment caused by defendants' AFFF products; and (2) damages arising from harm to the State's natural resources.

PARTIES

5. The State, as a body politic and sovereign entity, brings this action as *parens patriae* and representative of all residents and citizens of the State, as trustee and guardian of the State's natural resources, and on its own behalf in its sovereign and proprietary capacities.

6. On information and belief, defendants' AFFF products containing PFOA/S were discharged into the environment at or from Stewart Air National Guard Base and Stewart International Airport in Newburgh and New Windsor, New York; Francis S. Gabreski Airport in Southampton, New York; the former Plattsburgh Air Force Base in Plattsburgh, New York; and the former Griffiss Air Force Base in Rome, New York (collectively, the "sites").

7. Defendant 3M Company ("3M") is a corporation organized under the laws of Delaware. On information and belief, 3M designed, manufactured, marketed, and sold AFFF products containing PFOA/S that were discharged into the environment at or from the sites addressed in this complaint.

8. Defendant Tyco Fire Products LP ("Tyco") is a limited partnership organized under the laws of Delaware. On information and belief, Tyco manufactures the Ansul brand of products and is the successor-in-interest to the corporation formerly known as The Ansul Company, a corporation organized under the laws of Wisconsin (The Ansul Company, with Tyco, "Tyco/Ansul"). On information and belief, Tyco/Ansul and/or its predecessors designed, manufactured, marketed, and sold AFFF products containing PFOA/S that were discharged into the environment at or from the sites addressed in this complaint.

9. Defendant Chemguard, Inc. ("Chemguard") is a corporation organized under the laws of Texas. On information and belief, Chemguard designed, manufactured, marketed, and sold AFFF products containing PFOA/S that were discharged into the environment at or from the sites addressed in this complaint.

10. Defendant Buckeye Fire Equipment Company is a corporation organized under the laws of Ohio. On information and belief, Buckeye Fire Equipment Company designed, manufactured, marketed, and sold AFFF products containing PFOA/S that were discharged into the environment at or from the sites addressed in this complaint.

11. Defendant National Foam, Inc. ("National Foam") is a corporation organized under the laws of Delaware. On information and belief, National Foam manufactures the Angus brand of products and is the successor-in-interest to Angus Fire Armour Corporation, a corporation also organized under the laws of Delaware (National Foam, together with Angus Fire Armour Corporation, "National Foam/Angus"). On information and belief, National Foam/Angus and/or its predecessors designed, manufactured, marketed, and sold AFFF products containing PFOA/S that were discharged into the environment at or from the sites addressed in this complaint.

12. Kidde-Fenwal, Inc. is a corporation organized under the laws of Delaware. On information and belief, Kidde-Fenwal, Inc. is the successor-in-interest to Kidde Fire Fighting Inc. (f/k/a Chubb National Foam, Inc. f/k/a National Foam System Inc), a corporation organized under the laws of Pennsylvania. On information and belief, Kidde-Fenwal, Inc. and/or its predecessors designed, manufactured, marketed, and sold AFFF products containing PFOA/S that were discharged into the environment at or from the sites addressed in this complaint.

NEW YORK'S UNIQUE ROLE IN PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT

A. The State is *Parens Patriae*, Trustee of New York's Natural Resources, and Owner of New York's Fish and Other Wildlife

13. The State is *parens patriae* and representative of all residents and citizens of New York and trustee and guardian of New York's natural resources.

14. The State owns fish and other wildlife in New York "for the use and enjoyment of the people of the state, and the state has a responsibility to preserve, protect and conserve such terrestrial and aquatic resources." Environmental Conservation Law ("ECL") § 15-0103(8).

15. It is the policy of the State to "maintain reasonable standards of purity of the waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of fish and wild life . . . and to that end require the use of all known available and reasonable methods to prevent and control the pollution of the waters of the state of New York." *Id.* § 17-0101.

16. The State's Department of Environmental Conservation ("DEC") and Department of Health ("DOH") protect public health and the environment, including drinking water, surface water, groundwater, land, and wildlife by implementing and enforcing New York and federal statutes and regulations. *See, e.g.*, Public Health Law § 201(1)(l) (regulating the sanitary aspects

of water supplies, sewage disposal, and water pollution); ECL Art. 17 (protecting surface water and groundwater from water pollution); 6 New York Codes, Rules & Regulations Part 360 (protecting land, surface water, and groundwater from disposal of solid waste); ECL § 27-0913 (regulating the storage, transportation, treatment, or disposal of hazardous waste); ECL § 27-1313 (providing remedial programs for inactive hazardous waste disposal sites); ECL Art. 11 (protecting the State's fish and wildlife).

B. The Law of Public Nuisance

17. A public nuisance is a condition that offends, interferes with, or causes damage to the public in the exercise of rights common to all, in a manner such as to interfere with use by the public of a public place or endanger or injure the property, health, safety, or comfort of a considerable number of persons.

18. Injuries and/or threats to drinking water sources, public health, and the environment constitute public nuisances.

19. A public nuisance is an offense against the State, and the State has standing to abate and/or prosecute public nuisances.

20. Persons who cause or contribute to the creation or maintenance of a public nuisance are strictly, jointly, and severally liable for its abatement and for all costs, damages, and expenses arising from the public nuisance.

FACTUAL ALLEGATIONS

A. PFOA, PFOS, and the Threats They Pose to Public Health and the Environment

21. Poly- and per-fluoroalkyl substances are chemical compounds containing fluorine and carbon atoms. These substances have been used for decades in the manufacture of, among

other things, household and commercial products that resist heat, stains, oil, and water. These substances are not naturally occurring and must be manufactured.

22. The two most widely studied types of these substances are PFOA and PFOS, which each contain eight carbon atoms.

23. PFOA and PFOS have unique properties that cause them to be: (i) mobile and persistent, meaning that they readily spread into the environment where they break down very slowly; (ii) bioaccumulative and biomagnifying, meaning that they tend to accumulate in organisms and up the food chain; and (iii) toxic, meaning that they pose serious health risks to humans and animals. Because PFOA and PFOS have these three properties, they pose significant threats to public health and the environment.

24. Mobility and persistence in the environment. PFOA and PFOS easily dissolve in water, and thus they are mobile and readily spread in the environment. PFOA and PFOS also readily contaminate soils and leach from the soil into groundwater, where they can travel significant distances.

25. PFOA and PFOS are characterized by the presence of multiple carbon-fluorine bonds, which are exceptionally strong and stable. As a result, PFOA and PFOS are thermally, chemically, and biologically stable and they resist degradation due to light, water, and biological processes.

26. Bioaccumulation and biomagnification in the environment. Bioaccumulation occurs when an organism absorbs a substance at a rate faster than the rate at which the substance is lost by metabolism and excretion. Biomagnification occurs when the concentration of a substance in the tissues of organisms increases as the substance travels up the food chain.

27. PFOA and PFOS bioaccumulate/biomagnify in numerous ways. First, they are relatively stable once ingested, so that they bioaccumulate in individual organisms for significant periods of time. Because of this stability, any newly ingested PFOA and PFOS will be added to any PFOA and PFOS already present. In humans, PFOA and PFOS remain in the body for years.

28. Second, in humans and other mammals, PFOA and PFOS can bioaccumulate by crossing the placenta from mother to fetus and by passing to infants through breast milk.

29. Third, they biomagnify up the food chain, such as when humans eat fish that have ingested PFOA or PFOS.

30. Toxic effects in humans and animals. Exposure to PFOA and PFOS can be toxic and may pose serious health risks to humans and to animals. Human health effects associated with PFOA exposure include kidney and testicular cancer, thyroid disease, high cholesterol, ulcerative colitis, liver damage, and pregnancy-induced hypertension (also known as preeclampsia). Human health effects associated with PFOS exposure include immune system effects, changes in liver enzymes and thyroid hormones, low birthweight, high uric acid, and high cholesterol. In laboratory testing on animals, PFOA and PFOS have caused the growth of tumors, changed hormone levels, and affected the function of the liver, thyroid, pancreas, and immune system.

B. Defendants' Development of AFFF Products Containing PFOA/S

31. In the 1940s, 3M began using a process called electrochemical fluorination to create carbon-fluorine bonds, which are key components of PFOA and PFOS. 3M soon discovered that these types of substances have strong surfactant properties, meaning that they reduce the surface tension between a liquid and another liquid or solid. This reduced surface

tension enabled 3M to develop a myriad of products that resist heat, stains, oil, and water. These products included older forms of Scotchgard, which contained PFOS and when applied to fabric, furniture, and carpets protected against liquids and stains.

32. Building on these earlier experiments, in the early 1960s 3M began developing firefighting foams containing PFOS to suppress flammable liquid fires, which cannot be effectively extinguished with water alone.

33. AFFF does not have the same problems that water alone does in extinguishing flammable liquid fires. AFFF concentrate containing PFOA/S forms a foam when it is mixed with water and ejected from a nozzle. That foam is then sprayed so that it coats the fire, blocking the supply of oxygen feeding the fire and creating a cooling effect and evaporation barrier to extinguish the vapors on fire. A film also forms to smother the fire after the foam has dissipated.

34. 3M sold AFFF products containing PFOA/S to the United States Department of Defense ("DOD") and others from approximately 1964 through at least 2000.

35. The other defendants and/or their predecessors also sold AFFF products to DOD, using a telomerization process to manufacture AFFF products containing PFOA/S.

C. Defendants' Knowledge of the Threats to Public Health and the Environment Posed by PFOA and PFOS

36. On information and belief, by at least the 1970s 3M knew or should have known that PFOA and PFOS are mobile and persistent, bioaccumulative and biomagnifying, and toxic.

37. Upon information and belief, 3M concealed from the public and government agencies its knowledge of the risk of harm posed by PFOA/S.

38. In 1975, 3M concluded that PFOS was present in the blood of the general population. Since PFOA/S is not naturally occurring, this finding should have alerted 3M to the

possibility that their products were a source of this PFOS. The finding also should have alerted 3M to the possibility that PFOS might be mobile, persistent, bioaccumulative, and biomagnifying, as those characteristics could explain the absorption of PFOS in blood from 3M's products. In 1976, 3M found PFOA in the blood of its workers. This finding should have alerted 3M to the same issues raised by the findings regarding PFOS in the prior year.

39. A 1978 study by 3M showed that PFOA reduced the survival rate of fathead minnow fish eggs.

40. Other studies by 3M in 1978 showed that PFOS and PFOA are toxic to rats, and that PFOS is toxic to monkeys. In one study in 1978, all monkeys died within the first few days of being given food contaminated with PFOS.

41. Studies by 3M after the 1970s also showed adverse effects from exposure to PFOA/S.

42. In a 1983 study, for example, 3M found that PFOS caused the growth of cancerous tumors in rats.

43. A study proposal by 3M in 1983 stated that the resistance to degradation of PFOA and PFOS made them "potential candidates for environmental regulations, including further testing requirements under laws such as the Toxic Substances Control Act." 3M Environmental Laboratory (EE & PC), Fate of Fluorochemicals – Phase II, at p.6 (E. A. Reiner, ed. May 20, 1983).

44. A 1997 material safety data sheet ("MSDS") for a non-AFFF product made by 3M listed its only ingredients as water, PFOA, and other per-fluoroalkyl substances and warned that the product includes "a chemical which can cause cancer." The MSDS cited "1983 and

1993 studies conducted jointly by 3M and DuPont" as support for this statement. On information and belief, 3M's MSDSs for AFFF did not provide similar warnings.

45. Federal law requires chemical manufacturers and distributors to immediately notify the United States Environmental Protection Agency ("EPA") if they have information that "reasonably supports the conclusion that such substance or mixture presents a substantial risk of injury to health or the environment." *See* Toxic Substances Control Act ("TSCA") § 8(e), 15 U.S.C. § 2607(e).

46. 3M did not comply with its duty under TSCA, and in April 2006 it agreed to pay EPA a penalty of more than $1.5 million for its failure to disclose studies regarding PFOA/S and other per-fluoroalkyl substances dating back decades, among other things.

47. On information and belief, all defendants knew or should have known that in its intended and/or common use, AFFF containing PFOA/S would very likely injure and/or threaten public health and the environment. On information and belief, this knowledge was accessible to all defendants. For example, in 1970 a well-established firefighting trade association was alerted to the toxic effects on fish of a chemical compound related to PFOS. On information and belief, at least the following defendants are and/or were members of this trade association: 3M, Tyco/Ansul, Chemguard, and National Foam/Angus.

48. Additionally, on information and belief, all defendants knew or should have known that their AFFF products and the PFOA/S the products contained easily dissolve in water, because the products were designed to be mixed with water; are mobile, because the products were designed to quickly form a thin film; resist degradation, because that is the nature of the products' chemical composition, and on information and belief the products had long shelf-lives; and tend to bioaccumulate, because studies regarding the presence of substances with carbon-

fluorine bonds in the blood of the general population were publicly available beginning in at least 1976.

D. Evolving Understanding of the Levels of Acceptably Safe Exposure to PFOA/S

49. As discussed above, neither 3M nor, on information and belief, the other defendants, complied with their obligations to notify EPA about the "substantial risk of injury to health or the environment" posed by their AFFF products containing PFOA/S. *See* TSCA § 8(e).

50. In or around 1998, EPA began investigating the safety of PFOA/S after some limited disclosures by 3M and others.

51. Beginning in 2009, EPA issued health advisories about the levels of exposure to PFOA and PFOS in drinking water that it believed were protective of public health. As described on EPA's website, "health advisories are non-enforceable and non-regulatory and provide technical information to states[,] agencies and other health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination." *Drinking Water Health Advisories for PFOA and PFOS*, *What's A Health Advisory?*, *available at* https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos (last visited June 5, 2018).

52. The recommendations in EPA's health advisories evolved as EPA learned more about PFOA and PFOS. New York followed these changing advisories in implementing its own approach to investigating contamination from PFOA/S.

53. On January 8, 2009 EPA issued Provisional Health Advisories for PFOA and PFOS, advising that "action should be taken to reduce exposure" to drinking water containing levels of PFOA and PFOS exceeding 400 parts per trillion ("ppt") and 200 ppt, respectively. *See* Provisional Health Advisories for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate

(PFOS), *available at https://www.epa.gov/sites/production/files/2015-09/documents/pfoa-pfos-provisional.pdf*, at p.1, n.1 (last visited June 5, 2018).

54. In January 2016, DEC issued a rule designating one form of PFOA a "hazardous substance" under New York law. That designation enabled the State to use monies in the State Superfund program to respond to contamination from PFOA. As DEC and DOH continued to evaluate the scientific data, they determined that PFOS also met the definition of a hazardous substance under New York law. In April 2016, DEC issued a second rule designating both PFOA and PFOS as hazardous substances.

55. On or around May 19, 2016, the EPA issued updated Drinking Water Health Advisories for PFOA and PFOS, recommending that drinking water concentrations for PFOA and PFOS, either singly or combined, should not exceed 70 ppt. *See* Lifetime Health Advisories and Health Effects Support Documents for PFOA and PFOS, 81 Fed. Reg. 33,250-51 (May 25, 2016).

E. The Use of Defendants' AFFF Products Containing PFOA/S in New York

56. Defendants' AFFF products containing PFOA/S have been used for decades throughout New York at military air bases, civilian airports, firefighting training centers, and other facilities.

57. The Air National Guard ("National Guard") and United States Air Force ("Air Force"), both entities within DOD, stored AFFF products containing PFOA/S and used and discharged them at the sites.

58. On information and belief, defendants manufactured and sold AFFF products containing PFOA/S that were used and discharged at these sites.

59. Defendants' AFFF products containing PFOA/S were included in DOD's Qualified Products List and/or Qualified Products Database, a list of products approved for purchase and use by DOD.

60. Sampling results of surface water, groundwater, soil, and/or fish at or near these sites demonstrate the presence of elevated concentrations of PFOA/S, which were components in defendants' AFFF products.

61. On information and belief, defendants did not provide adequate warnings regarding the public health and environmental hazards associated with their AFFF products containing PFOA/S. Nor did defendants provide adequate instructions about how to avoid or mitigate such hazards.

62. The normal, intended, and foreseeable manner of storage and use of defendants' AFFF products resulted in the discharge of PFOA/S into the environment.

F. The State's Response

63. DEC and DOH have worked and continue to work together to investigate and respond to potential harms from PFOA/S contamination around the State as appropriate. Among other things, if DEC or DOH identifies a potential site of concern, they may visit the site and determine whether public or private drinking water sources, groundwater, wildlife, or other resources should be sampled. If warranted by sampling results and other considerations, DEC may provide water treatment systems for public or private drinking sources. Consumers may be provided bottled water or connected to uncontaminated drinking water sources. DOH and/or DEC also communicates with members of affected communities through public notices, public hearings, and door-to-door home visits when appropriate. DOH also may offer blood sampling for people living in affected communities.

Stewart Air National Guard Base and Stewart International Airport in Newburgh and New Windsor, New York

64. Stewart Air National Guard Base ("Stewart Air Base") is located in the Towns of Newburgh and New Windsor, New York and is adjacent to Stewart International Airport ("Stewart Airport"), a civilian airport that is located in the same two towns. The National Guard operates at Stewart Air Base and also provides firefighting services and conducts firefighting training exercises at Stewart Airport. Lake Washington, which is the primary drinking water supply for the City of Newburgh, is located approximately one mile to the southeast of Stewart Air Base and Stewart Airport.

65. AFFF containing PFOA/S was stored and used at Stewart Air Base and Stewart Airport beginning as early as the 1980s. During firefighting and firefighting training exercises, National Guard personnel sprayed AFFF containing PFOA/S directly on or near the ground, caused it to be disposed of in drains, and spilled it or otherwise caused it to discharge into the environment. Additional discharges may have occurred in connection with automatic fire suppression systems, storage and handling of AFFF, or otherwise. These activities resulted in discharges of PFOA/S from defendants' AFFF products at Stewart Air Base and Stewart Airport into Lake Washington and surrounding areas.

66. On information and belief, AFFF products containing PFOA/S manufactured by each defendant were discharged into the environment at or from Stewart Air Base and/or Stewart Airport. As mentioned above, defendants' AFFF products were listed on DOD's Qualified Products List and/or Qualified Products Database, enabling their distribution to both sites. The National Guard has acknowledged that it used 3M and Tyco/Ansul AFFF at Stewart Air Base. Additional evidence developed in the State's investigation shows that AFFF products

manufactured by 3M, Tyco/Ansul, and Chemguard were used, spilled, and/or stored at Stewart Airport.

67. Sampling of surface water, groundwater, soil, fish, and other media at or near Stewart Air Base and Stewart Airport shows contamination by PFOA/S, substances that were components in defendants' AFFF products.

68. In May 2016, DEC determined that Stewart Air Base was a source of significant contamination from PFOA/S in Lake Washington and surrounding areas. DEC based this determination on its analysis of sampling results of surface water within runoff that flows from Stewart Air Base to Recreation Pond; Silver Stream, which runs from Recreation Pond to Lake Washington; Lake Washington; and surrounding areas. DEC found, among other things:

- Concentrations of PFOA and PFOS combined in the runoff from Stewart Air Base to Recreation Pond as high as 6,080 ppt;
- Concentrations of PFOA and PFOS combined in Silver Stream as high as 335 ppt; and
- Concentrations of PFOA and PFOS combined in Lake Washington as high as 282 ppt.

69. Subsequent investigations showed similar results. Among other things:

- Sampling in June 2016 at Stewart Air Base showed concentrations of PFOA and PFOS combined as high as 8,470 ppt in surface water and 3,640 ppt in groundwater; and
- Sampling in August through October 2016 at Stewart Air Base showed concentrations of PFOA and PFOS combined as high as 3,890 ppt in groundwater.

70. Sampling in June and July 2016 at Stewart Airport also showed concentrations of PFOA and PFOS combined as high as 940 ppt in groundwater, 306 ppt in surface water, and 1.85 parts per million ("ppm") in soil.

71. In August 2016, DEC determined that contamination at Stewart Air Base poses a significant threat to public health or the environment and therefore designated it a "Class 2" site on the New York State Registry of Inactive Hazardous Waste Disposal Sites (the "Superfund Registry").

72. In July 2017, DOH issued a "catch and release" advisory so that people would not consume fish contaminated with PFOA/S taken from several water bodies in the area, including Recreation Pond, Silver Stream, Lake Washington, Lockwood Basin/Masterson Park Pond, Moodna Creek, Beaver Dam Lake, and a stream that runs from Stewart State Forest to Beaver Dam Lake.

73. The State has incurred substantial costs in connection with investigating and protecting the public from PFOA/S contamination from Stewart Air Base and Stewart Airport.

74. The New York State Department of Transportation ("DOT") is an agency of the State and fee owner of real property located at Stewart Air Base and Stewart Airport. Defendants' AFFF products contaminated DOT's real property, including the underlying soils and other environmental media. DEC and DOT have incurred costs in connection with sampling and related activities in the area.

75. In May 2016, the State began providing the City of Newburgh with drinking water from sources other than the contaminated water in Lake Washington. The State first helped Newburgh obtain drinking water from Brown's Pond, a nearby reservoir. Beginning in June 2016, the State provided Newburgh with water from New York City's Catskill Aqueduct.

76. As a result of not using the water in Lake Washington, its water level rose and threatened the "high hazard" dam impounding that water. *See* 6 New York Codes, Rules & Regulations § 673.5(b) (defining a high hazard dam as one where a dam failure may result in loss

of human life or substantial economic loss, among other things). DEC therefore lowered the water level of Lake Washington.

77. In September 2016, the State began designing and constructing a granular activated carbon filtration system to remove PFOA/S from water Newburgh obtains from Lake Washington for its drinking water supply.

78. The State also provided bottled water and installed point-of-entry treatment systems in homes in the Towns of Newburgh and New Windsor, and agreed to reimburse those towns for the costs of connecting their residents to municipal water supplies.

79. In November 2016, DOH began sampling and monitoring the blood of residents in the Newburgh area for PFOA/S.

80. The State has incurred other costs in connection with PFOA/S contamination in the Newburgh area. In total, as of April 2018, the State had spent in excess of $37,000,000 responding to PFOA/S contamination in and around Newburgh, and it expects to spend substantial additional funds in connection with this effort.

Francis S. Gabreski Airport in Southampton, New York

81. The Francis S. Gabreski Airport ("Gabreski Airport") is located in Southampton, New York and is owned by Suffolk County. Gabreski Airport functions as a civilian airport and serves as a base for the National Guard, which conducts firefighting training exercises and provides firefighting services at the Airport.

82. AFFF products containing PFOA/S were stored and used at Gabreski Airport beginning in at least the 1980s. During firefighting and firefighting training exercises, National Guard personnel sprayed AFFF containing PFOA/S directly on or near the ground, caused it to be disposed of in drains, and spilled it or otherwise caused it to discharge into the environment.

Additional discharges may have occurred in connection with automatic fire suppression systems, storage and handling of AFFF, or otherwise. These activities resulted in discharges of PFOA/S from defendants' AFFF products at Gabreski Airport into public and private drinking water sources in the area.

83. On information and belief, AFFF products containing PFOA/S manufactured by each defendant were discharged into the environment at or from Gabreski Airport. As mentioned above, defendants' AFFF products were listed on DOD's Qualified Products List and/or Qualified Products Database, enabling their distribution to this site. The National Guard has acknowledged that it used "3M, Ansul, and non-spec AFFF" at this site.

84. Sampling of groundwater and soil at or near Gabreski Airport shows contamination by PFOA/S, substances that were components in defendants' AFFF products.

85. In July 2016, DEC sampled groundwater and soil at Gabreski Airport and determined that it is the primary source of PFOA/S contamination in the affected areas. DEC found, among other things:

- Concentrations of PFOA and PFOS combined in groundwater as high as 65,830 ppt; and
- Concentrations of PFOS in soil as high as 1.61 ppm.

86. In August 2016, DEC designated Gabreski Air National Guard Base as a Class 2 site on the Superfund Registry.

87. The State has incurred substantial costs in connection with its investigation of this PFOA/S contamination.

88. Additionally, in or around October 2016, DEC agreed to reimburse Suffolk County Water Authority up to $2,000,000 for its costs in responding to PFOA/S contamination in or around Gabreski Airport.

89. Suffolk County Water Authority's costs arise from, among other things, extending water mains to provide municipal water to users of contaminated private water sources.

90. As of March 2018, the State had incurred in excess of $1,800,000 in connection with investigating PFOA/S contamination at Gabreski Airport and in reimbursing Suffolk County Water Authority for its response actions. The State expects to spend substantial additional funds in connection with this effort.

Plattsburgh Air Force Base in Plattsburgh, New York

91. The former Plattsburgh Air Force Base ("Plattsburgh Air Base") is located in Plattsburgh, New York and is owned by Clinton County. Plattsburgh Air Base closed in 1995 and now functions as a civilian airport known as Plattsburgh International Airport.

92. AFFF products containing PFOA/S were stored and used at Plattsburgh Air Base beginning in the 1970s through at least the 1980s. During firefighting and firefighting training exercises, Air Force and/or National Guard personnel sprayed AFFF containing PFOA/S directly on or near the ground, caused it to be disposed of in drains, and spilled it or otherwise caused it to discharge into the environment. Additional discharges may have occurred in connection with storage and handling of AFFF, or otherwise. These activities resulted in discharges of PFOA/S from defendants' AFFF products at Plattsburgh Air Base into nearby private drinking water sources in the area.

93. On information and belief, AFFF products containing PFOA/S manufactured by each defendant were discharged into the environment at or from Plattsburgh Air Base. As mentioned above, defendants' AFFF products were listed on DOD's Qualified Products List and/or Qualified Products Database, enabling their distribution to this site. Additional evidence

developed in the State's investigation shows that AFFF products manufactured by Tyco/Ansul and Chemguard were and/or are stored and/or used at Plattsburgh International Airport.

94. Sampling of groundwater, surface water, and soil at or near Plattsburgh Air Base shows contamination by PFOA/S, substances that were components in defendants' AFFF products.

95. As reflected in the Air Force's April 2017 Draft Site Inspection Report for Plattsburgh Air Base ("Plattsburgh Draft Report"), PFOA/S contamination is present in groundwater, surface water, and soil at or around this site. Among other things, sampling conducted in connection with the Plattsburgh Draft Report showed:

- Concentrations of PFOA and PFOS combined in groundwater as high as 1,045,000 ppt;
- Concentrations of PFOA and PFOS combined in surface water as high as 2,279 ppt; and
- Concentrations of PFOS in soil as high as 3.5 ppm.

96. Additionally, the Air Force found exceedances of PFOS in private wells near Plattsburgh Air Base.

97. To date, DOD has reimbursed the State for the costs of its investigation of PFOA/S contamination at and/or around Plattsburgh Air Base. However, the State has costs in excess of $4,000 that it has not yet submitted to DOD for reimbursement, plus the costs of sampling fish for PFOA/S that will not be submitted to DOD for reimbursement. The State also expects to incur additional costs for its continuing investigation and/or remediation efforts that may not be reimbursed by DOD. Additionally, if the State's continuing investigation reveals that the State's natural resources have been injured, any resulting damages may not be reimbursed by DOD.

Griffiss Air Force Base in Rome, New York

98. The former Griffiss Air Force Base ("Griffiss Air Base") is located in Rome, New York and is owned by Oneida County. Griffiss Air Base closed in 1995 and now functions as a civilian airport known as Griffiss International Airport.

99. AFFF products containing PFOA/S were stored and used at Griffiss Air Base and/or Griffiss International Airport beginning in the 1970s through at least the 1990s. During firefighting and firefighting training exercises, Air Force and/or National Guard personnel sprayed AFFF containing PFOA/S directly on or near the ground, caused it to be disposed of in drains, and spilled it or otherwise caused it to discharge into the environment. Additional discharges may have occurred in connection with automatic fire suppression systems, storage and handling of AFFF, or otherwise. These activities resulted in discharges of PFOA/S from defendants' AFFF products at Griffiss Air Base and into creeks that flow through it.

100. On information and belief, AFFF products containing PFOA/S manufactured by each defendant were discharged into the environment at or from Griffiss Air Base and/or Griffiss International Airport. As mentioned above, defendants' AFFF products were listed on DOD's Qualified Products List and/or Qualified Products Database, enabling their distribution to this site. Additional evidence developed in the State's investigation shows that AFFF products manufactured by Chemguard were and/or are stored and/or used at Griffiss International Airport.

101. Sampling of groundwater, surface water, and soil at or near Griffiss Air Base shows contamination by PFOA/S, substances that were components in defendants' AFFF products.

102. As reflected in the Air Force's April 2017 Draft Site Inspection Report for Griffiss Air Force Base ("Griffiss Draft Report"), PFOA/S contamination is present in

groundwater, surface water, and soil at or around this site. Among other things, sampling conducted in connection with the Griffiss Draft Report showed:

- Concentrations of PFOA and PFOS combined in groundwater as high as 61,233 ppt;
- Concentrations of PFOA and PFOS combined in surface water as high as 1,029 ppt; and
- Concentrations of PFOS in soil as high as 1.6 ppm.

103. To date, DOD has reimbursed the State for the costs of its investigation of PFOA/S contamination at and/or around Griffiss Air Base. However, the State has costs in excess of $3,000 that it has not yet submitted to DOD for reimbursement. The State also expects to incur additional costs for its continuing investigation and/or remediation efforts that may not be reimbursed by DOD. Additionally, if future investigation reveals that the State's natural resources have been injured, any resulting damages may not be reimbursed by DOD.

Potential PFOA/S Contamination at Other Sites

104. As the State continues its investigation, it may discover other sites that will require remediation due to contamination with PFOA/S from AFFF. The State may also discover that natural resources have been damaged due such contamination.

105. Defendants should be required to fund the State's investigation of and remedial efforts related to contamination from other sites or to perform those activities themselves. Defendants should also be required to compensate the State for any injury to, destruction of, or loss of the State's natural resources.

FIRST CAUSE OF ACTION
Public Nuisance

106. The State incorporates by reference the allegations contained in paragraphs 1 through 105 as if fully set forth herein.

107. The storage and use of AFFF containing PFOA/S at the sites has threatened and/or injured drinking water, public health, the environment, property, and the State's natural resources, thus causing a public nuisance.

108. Defendants participated in the creation and/or maintenance of this public nuisance through, among other things, their marketing and sale of AFFF products with defective designs and without providing adequate product instructions or warnings about the risks to drinking water, public health, the environment, property, and natural resources posed by the PFOA/S in their products.

109. Defendants are strictly, jointly, and severally liable to the State for all resulting damages, including the costs incurred and to be incurred in responding to the threats and/or injuries to drinking water, public health, the environment, property, and the State's natural resources from PFOA/S contamination; damages for the public's lost use of the State's natural resources; the costs of assessing the injury to, destruction of, or loss of those natural resources, including the costs of experts to assess the damage; and property damage.

110. The State is entitled to an injunction requiring defendants to abate the public nuisance.

111. On information and belief, defendants knew or should have known that their products would result in a public nuisance. On information and belief, defendants' conduct involved actual malice or wanton, willful, and reckless disregard for the health, safety, property,

and rights of others. The Court should award the State punitive damages in an amount sufficient to deter and punish such conduct.

SECOND CAUSE OF ACTION
Strict Products Liability for Defective Design

112. The State incorporates by reference the allegations contained in paragraphs 1 through 105 as if fully set forth herein.

113. Defendants have strict duties not to market products with defective designs, that is, products that are not reasonably safe when stored and used in a foreseeable manner.

114. Defendants breached these duties by marketing AFFF products containing PFOA/S.

115. AFFF products containing PFOA/S are not reasonably safe because the substantial likelihood of harm to drinking water, public health, the environment, property, and natural resources from their storage and use outweighs their utility. On information and belief, AFFF products containing PFOA/S are not reasonably safe because it is feasible to design them in a safer manner: without PFOA/S or with additional features or procedures to eliminate or minimize the likelihood of harm from PFOA/S.

116. As a proximate result of defendants' marketing of defectively designed AFFF products containing PFOA/S, these products were purchased or otherwise acquired by DOD or others and stored and used at the sites in a foreseeable manner, resulting in threats and/or injuries to drinking water, public health, the environment, property, and the State's natural resources.

117. Defendants are strictly, jointly, and severally liable to the State for all resulting damages, including the costs incurred and to be incurred in responding to the threats and/or injuries to drinking water, public health, the environment, property, and the State's natural resources from PFOA/S contamination; damages for the public's lost use of the State's natural

resources; the costs of assessing the injury to, destruction of, or loss of those natural resources, including the costs of experts to assess the damage; and property damage.

118. On information and belief, defendants knew or should have known that their products would result in substantial threats and/or injuries to the State. On information and belief, defendants' conduct involved actual malice or wanton, willful, and reckless disregard for the health, safety, property, and rights of others. The Court should award the State punitive damages in an amount sufficient to deter and punish such conduct.

THIRD CAUSE OF ACTION
Strict Products Liability for Failure to Warn

119. The State incorporates by reference the allegations contained in paragraphs 1 through 105 as if fully set forth herein.

120. Defendants have strict duties not to manufacture, sell, and distribute products without adequate warnings about latent dangers resulting from the foreseeable manner of storage and use of their products of which they knew or should have known.

121. On information and belief, defendants breached these duties by failing to warn about latent dangers to drinking water, public health, the environment, and property from storing and using AFFF containing PFOA/S, because defendants knew or should have known that such dangers would result from the foreseeable manner of storage and use of this product. On information and belief, defendants failed to warn about the existence and nature of the latent dangers, the magnitude of those dangers, and how to prevent or minimize those dangers.

122. As a proximate result of defendants' marketing of AFFF containing PFOA/S without adequate warnings about latent dangers, these products were purchased or otherwise acquired by DOD or others and stored and used at the sites in a foreseeable manner, resulting in

avoidable threats and/or injuries to drinking water, public health, the environment, property, and the State's natural resources.

123. Defendants are strictly, jointly, and severally liable to the State for all resulting damages, including the costs incurred and to be incurred in responding to the threats and/or injuries to drinking water, public health, the environment, property, and the State's natural resources from PFOA/S contamination; damages for the public's lost use of the State's natural resources; the costs of assessing the injury to, destruction of, or loss of those natural resources, including the costs of experts to assess the damage; and property damage.

124. On information and belief, defendants knew or should have known that their products would result in substantial threats and/or injuries to the State. On information and belief, defendants' conduct involved actual malice or wanton, willful, and reckless disregard for the health, safety, property, and rights of others. The Court should award the State punitive damages in an amount sufficient to deter and punish such conduct.

FOURTH CAUSE OF ACTION
Restitution

125. The State incorporates by reference the allegations contained in paragraphs 1 through 105 as if fully set forth herein.

126. The storage and use of AFFF containing PFOA/S at the sites has threatened and/or injured drinking water, public health, the environment, property, and the State's natural resources.

127. Defendants caused these threats and/or injuries.

128. Defendants had and have duties to abate these threats and/or injuries.

129. Defendants have failed to fulfill their duties.

130. The State has discharged the duties of defendants to abate these threats and/or injuries, and absent complete injunctive relief, the State will continue to discharge those duties.

131. By discharging the duties of defendants to abate these threats and/or injuries, the State has conferred a benefit upon defendants, and absent restitution, defendants are unjustly enriched.

132. Defendants are jointly and severally liable to the State for the reasonable value of the benefit conferred upon them by the State.

PRAYER FOR RELIEF

WHEREFORE, the State requests judgment in its favor and against defendants as follows:

a. Holding and declaring all defendants to be strictly and/or jointly and severally liable to the State on the claims set forth above, and awarding the State damages consisting of its costs incurred and to be incurred in responding to the contamination caused by defendants' products; damages for injury to, destruction of, and loss of the State's natural resources and the recreational and other services those natural resources provide, including the costs of assessing such damages and the costs of experts needed to make such an assessment; and property damage, in an amount not less than $38,807,000;

b. Ordering injunctive and equitable relief in the form of a monetary fund for the State's reasonably expected future response costs as set forth above; and/or requiring defendants to perform investigative and remedial work in response to the threats and/or injuries they have caused; plus damages for injury to, destruction of, and loss of the State's natural resources;

c. Awarding punitive damages in an amount to be determined at trial; and

d. Awarding such other and further relief the Court deems just, equitable, and proper.

Dated: Albany, New York
June 19, 2018

BARBARA D. UNDERWOOD
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STATE OF MINNESOTA
COUNTY OF HENNEPIN

DISTRICT COURT
FOURTH JUDICIAL DISTRICT

State of Minnesota, by its Attorney General, Lori Swanson, its Commissioner of Pollution Control, John Linc Stine, and its Commissioner of Natural Resources, Tom Landwehr,

Plaintiff,

vs.

3M Company,

Defendant.

Case Type: Other Civil
Judge Kevin S. Burke
Court File No. 27-CV-10-28862

MEMORANDUM IN SUPPORT OF PLAINTIFF STATE OF MINNESOTA'S MOTION TO AMEND COMPLAINT

INTRODUCTION

The State should be permitted to seek punitive damages from 3M because it has established at least a prima facie case that 3M acted with deliberate disregard for the high risk of injury to the citizens and wildlife of Minnesota when it dumped PFC-containing wastes into the Minnesota environment. *See* Minn. Stat. § 549.20, subd. 1(a); *id.* § 549.191 (authorizing punitive damages "upon clear and convincing evidence that the acts of the defendant show deliberate disregard for the rights or safety of others").[1]

3M dumped massive quantities of PFC-containing industrial waste at four disposal sites in the East Metro area for over 40 years, beginning in the 1950s. 3M dumped these wastes largely in unlined pits and trenches, despite the fact that 3M fully understood—by no later than

[1] This action is brought by the State by its Attorney General and the Commissioners of the Department of Natural Resources and Pollution Control Agency pursuant to Minn. Stat. § 115B.04 in the name of the State as "trustee of the air, water and wildlife." *See* Minn. Stat. § 115B.17, subd. 7. This action is not an action for personal injury, and the State is not required to establish harm to a particular individual.

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the early 1960s—that its disposal practices were certain to pollute groundwater in the East Metro area.

3M has also been aware for many decades that the PFCs it dumped into the Minnesota environment posed a substantial risk to human health and the environment. Very early studies showed that PFCs accumulate in the human body and are "toxic," and 3M studies from the 1970s concluded that PFCs were "even more toxic" than previously believed. 3M also knew by the 1970s that its PFCs were widely present in the blood of the general U.S. population.

But 3M concealed this critical fact from government regulators and the scientific community for decades. In order to protect its hundreds of millions of dollars in annual revenue from PFCs, 3M misled scientists seeking to determine the source of PFCs in peoples' blood. 3M likewise went to great lengths to distort the broader scientific community's understanding of the serious health effects posed by PFCs, funding friendly research (to which many strings were attached) while simultaneously paying money to ensure that less favorable research would be suppressed. And 3M for decades failed to report important (and legally required) information regarding the adverse health effects of PFCs to the EPA—a failure for which it was eventually required by EPA to pay a large fine. 3M's conduct was so egregious that, in 1999, a 3M PFC scientist and whistleblower (Dr. Richard Purdy) resigned in protest, copying the EPA on a letter explaining that he could "no longer participate" in a 3M process that put "markets, legal defensibility and image over environmental safety."

At around that same time, what 3M had privately known for decades, *i.e.*, that its PFCs were widely present in the blood of the U.S. population, finally became public. As a result of this fact and the work of the 3M whistleblower, EPA began investigating PFCs in 1998. Shortly thereafter, under pressure from EPA, 3M announced that it was "voluntarily" phasing out

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production of its PFCs. By this time, however, 3M had reaped billions of dollars in profits from a business it had long known was causing serious harm to the environment and risk to human health.

By disposing of its PFC-laden waste in a manner that 3M knew would contaminate the groundwater, and by concealing the risks that PFCs pose to human health and the environment for decades, 3M clearly acted with deliberate disregard for the health and well-being of East Metro area residents and the Minnesota natural environment. As a result of 3M's actions, Minnesota's natural resources have been contaminated. 3M's decades-long course of contamination with deliberate disregard for the risks to the environment and people of Minnesota harmed wildlife and humans. Expert analysis found elevated levels of cancers and premature births among East Metro area residents. The State should therefore be granted leave to amend its complaint pursuant to Minn. R. Civ. P. 15.01 and Minn. Stat. § 549.191 to seek punitive damages from 3M.

BACKGROUND

3M produced PFCs in Minnesota for approximately 50 years. 3M began research into the chemicals in the late 1940s and began commercial production of PFCs in Minnesota in the early 1950s. 3M used PFCs to manufacture consumer, commercial, and industrial products, including stain repellents such as Scotchgard, fire retardants, and other products. The PFCs that 3M produced in Minnesota include perfluorooctanoic acid ("PFOA"), perfluorooctane sulfonate ("PFOS"), perfluorobutanoic acid ("PFBA"), and perfluorobutanesulfonic acid ("PFBS").

During the period in which 3M manufactured PFCs in Minnesota, it also disposed of PFC-containing waste and discharged PFC-containing wastewater into the surrounding environment. 3M's disposal and discharge of PFCs centered on four sites:

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- 3M's manufacturing facility in Cottage Grove, Minnesota (the "Cottage Grove" site), where 3M disposed of PFC-containing wastes, largely in unlined disposal areas, throughout most of the time it manufactured PFCs in Minnesota, and from which 3M disposed of PFCs directly into the Mississippi River;

- a disposal site located in the City of Oakdale, Minnesota (the "Oakdale" site), where 3M disposed of PFC-containing wastes from 1956 to 1960;

- a disposal site located on the border of the cities of Cottage Grove and Woodbury, Minnesota (the "Woodbury" site), which 3M used to dispose of PFC-containing wastes in unlined trenches from 1960 to 1966; and

- the Washington County Landfill, located in the City of Lake Elmo, Minnesota (the "WCLF"), to which 3M sent PFC-containing wastes from at least 1971 to 1974.

February 1986 Final Remedial Investigation Rep. for Cottage Grove (3MA00364082, at -4094-100) (Ex. 1); July 28, 1980 3M Letter to Metropolitan Council (3MA00456729, at -6729) (Ex. 2); December 1965 Engineering Rep. (3MA00456411, at -6416) (Ex. 3); June 26, 1967 3M Letter (3MA00286355, at -6355) (Ex. 4); December 8, 1980 Points to Describe 3M Involvement with Three Sites in Oakdale (3MA01248573, -8573) (Ex. 5); 2003 Off-Site Waste Disposal Locations (3MA01243198, at -3198) (Ex. 6).

Over time, PFCs that 3M disposed of at the four sites have migrated—and continue to migrate—through the soil and into four underlying drinking water aquifers. As a result of these long-standing and continuing releases, PFCs have been detected in groundwater beneath and down-gradient from each of the four 3M disposal sites. Because of 3M, over 150 square miles of the East Metro area are now contaminated with PFCs, and the pollution is expected to endure for decades to come. Karls Dep. Tr. at 122:10-18 (Ex. 7).

3M also released—and continues to release—PFCs into the Mississippi River and nearby lakes. 3M has released PFCs into the Mississippi River directly from outfalls at the Cottage Grove Site and indirectly, through the flow of contaminated groundwater, resulting in harm to fish and other wildlife in the East Metro area. *See* Ronald Kendall Expert Rep. at 12-13, 16-18

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(Ex. 8). 3M's releases of waste water from its PFC manufacturing process into the Mississippi River alone totaled over 100,000 gallons per year. Santoro Dep. Tr. at 41:20-42:7 (Ex. 9).

As discussed further below, 3M has known for decades that (1) groundwater in the East Metro area would be contaminated by its dumping of PFC-laden industrial waste, and (2) PFCs accumulate in the human body, are toxic, and have the potential to cause serious harm to human health. Nevertheless, 3M continued to manufacture PFCs and dispose of PFC-containing waste—reaping billions of dollars in profits—until EPA forced 3M to phase out the production of PFCs in the early 2000s.

I. 3M Possessed An Early Understanding Of The Characteristics And Risks Of PFCs.

3M knew from early on that PFCs posed a significant risk to people, wildlife, and the environment.

A. 3M Knew That PFCs Persisted In The Environment And Accumulated In Living Organisms.

By the early 1960s, 3M understood that PFCs are stable and persist in the environment and that they do not degrade. *See, e.g.*, 3M Brand Fluorochemical Surfactants, June 15, 1963 (3MA01201629, at -1635) (Ex. 10) (listing chemical, thermal, and biological stability as "[t]he main features which distinguish these materials"); U.S. Patent No. 2,519,983, August 22, 1950, at 4:33-39 (Ex. 11) (noting the "[h]igh degree of thermal stability and chemical inertness" of PFCs).

As early as 1963, 3M identified the stability of PFCs as a distinguishing feature of these products. *See* 3M Brand Fluorochemical Surfactants, June 15, 1963 (3MA01201629, at -1635) (Ex. 10) ("Some are completely resistant to biological attack."); *see also* Woodard Dep. Tr. at 132:22-134:8 (Ex. 12) (3M expert agreeing that "3M was aware of PFCs' resistance to degradation at the time of disposal"). A 1978 study by 3M on PFOS and PFOA confirmed that

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"these chemicals are likely to persist in the environment for extended periods unaltered by microbial catabolism." *See* July 19, 1978 3M Technical Report Summary (3MA10054929, at -4930) (Ex. 13).

3M also understood as early as the mid-1950s that PFCs accumulate in humans and animals. In 1956, a study at Stanford University used PFCs manufactured by 3M to conclude that PFCs bind to proteins in human blood. *See* Nordby et al., *Perfluorooctanoic Acid Interactions with Human Serum Albumin*, J. BIOL. CHEM., at 399 (1956) (Ex. 14). Further research into the accumulation of PFCs by the Children's Hospital Research Foundation using 3M's PFCs concluded that certain types of PFCs collected in the liver, where the compounds remained for life. Clark et al., *Perfluorocarbons Having a Short Dwell Time in the Liver*, SCIENCE, at 680 (1973) (Ex. 15). 3M studies from the 1970s confirmed the accumulation of PFCs in living organisms and the extent to which the accumulation occurred. *See* Purdy Dep. Tr. at 41:11-47:10 (Ex. 16); August 16, 1978 3M Technical Report Summary (3MA00326803, at -6820) (Ex. 17); May 22, 1979 3M Technical Report Summary (3MA01409559, at -9559) (Ex. 18); May 16, 1978 3M Central Analytical Laboratory Report (3M_MN02343997, at -4000, -4001) (Ex. 19).

As early as 1976, 3M began monitoring the blood of its employees for PFCs because the company was "concerned" about "health" effects of PFCs. *See* Santoro Dep. Tr. at 110:14-18 (Ex. 9); August 31, 1984 3M Internal Correspondence (3M_MN03269963, at -9963) (Ex. 20) (showing that 3M viewed with "serious concern" that organic fluorine levels in 3M employees were not decreasing and, in some instances, were increasing). These worker tests further confirmed that PFCs bioaccumulate. *See* October 19, 1977 3M Interoffice Correspondence (3M_MN00000479, at -0481) (Ex. 21). The early blood samples of 3M employees showed high

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levels of PFCs in the workers' blood. *See id.* ("Some Chemolite personnel show organic fluorine compounds at 1,000 times normal [levels]."). 3M's testing of employee blood samples also concluded that PFCs remained in human blood for long periods of time. *See* August 1, 1978 3M Central Analytical Laboratory Report (3MA00967481, at -7481) (Ex. 22); August 31, 1984 3M Internal Correspondence (3M_MN03269963, at -9963) (Ex. 20); June 20, 1978 Report on Blood Levels of RF/F In Selected Employees (3M_MN01692291, at -2292) (Ex. 130).

B. 3M Understood That PFCs Had The Potential To Harm Human Health And The Environment.

3M knew from the scientific literature and its own studies that PFCs were potentially toxic to humans and the environment. Published research on PFCs from the early 1960s established that PFCs exhibited toxic effects on living organisms. A study published in 1961, for example, found that PFCs induced a range of toxic effects, including anesthesia, depression, inhibition of enzymes, metabolic effects, and effects on blood pressure and the sympathetic nervous system. *See* Saunders, *The Physiological Action of Organic Compounds Containing Fluorine*, Advances in Fluorine Chemistry, at 183 (1961) (Ex. 23). Several other publications from the 1960s expanded on the adverse effects of PFCs in living organisms. *See, e.g.*, Hamilton, *The Organic Fluorochemicals Industry*, ADVANCES IN FLUORINE CHEMISTRY, at 117 (1963) (Ex. 24); Hodge et al., *Biological Effects of Organic Fluorides*, FLUORINE CHEMISTRY, at 1 (1963) (Ex. 25); Taylor et al., *Structural Aspects of Monofluoro-Steroids*, ADVANCES IN FLUORINE CHEMISTRY, at 113 (1965) (Ex. 26).

3M's own toxicity research began in 1950 and confirmed the toxic risks posed by PFCs. Throughout the 1950s, 3M's own animal studies consistently concluded that PFCs are "toxic." *See, e.g.*, January 10, 1950 3M Study (3MA02497530, at -7530) (Ex. 27) (acute toxicity study of PFBA in mice); 1954 3M Studies (3MA01828941, at -8941-42) (Ex. 28) (studies on toxic effects

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of PFOS in rats and PFOA in mice). Additional studies undertaken by 3M in the 1970s demonstrated that PFCs were even "more toxic than was previously believed." April 12, 1978, Meeting Minutes—Fluorochemicals Technical Review Committee (3MA10066974, at -6975) (Ex. 29) (emphasis added); *see also* March 20, 1979 Review of Final Reports and Summary (3MA00593073, at -3073) (Ex. 30) (PFOS "certainly more toxic than anticipated"); August 4, 1978 3M Central Analytical Laboratory Report (3M_MN02343995, at -3995-96) (Ex. 31) (toxicity study of PFOS in monkeys); June 5, 1992 Product Toxicity Summary Sheet (3M_MN02252650, at -2650) (Ex. 32) (acute toxicity study of PFOS in rats). As early as 1979, a 3M scientist recognized that PFCs posed a cancer risk because they are "known to persist for a long time in the body and thereby give long-term chronic exposure." July 6, 1979, 3M Interoffice Correspondence on Fluorochemical Chronic Toxicity (3MA00593079, at -3079) (Ex. 33) ("I believe it is paramount to begin now an assessment of the potential (if any) of long-term (carcinogenic) effects for these compounds [*i.e.*, fluorochemicals]."). It is therefore unsurprising that, by the 1970s, 3M had already become "concerned about exposure to fluorochemicals" in the general population. Butenhoff Dep. Tr. at 59:23-60:4 (Ex. 34).

3M also understood the toxic effects of PFCs on the environment and aquatic life by this time. A technical journal in the 1970s observed after conducting tests on a 3M product containing PFCs that the product was "highly derogatory to marine life and the entire test program had to be abandoned to avoid severe local stream pollution." June 15, 1970 Letter from Chemical Concentrates Corporation (3M_MN02267863, at -7863) (Ex. 35). Studies conducted by 3M confirmed the environmental harm resulting from PFCs. Studies from the 1970s, for example, confirmed PFOS's toxicity on various aquatic wildlife, including bluegill sunfish, water flea and scud, mummichog, grass shrimp, fiddler crab, algae, and Atlantic oysters. *See*

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Acute Toxicity to Fish (3M_MN00436402, at -6402-03) (Ex. 36); Acute Toxicity to Aquatic Invertebrates (3M_MN01656831, at -6831-32) (Ex. 37); Acute Toxicity to Invertebrates (3M_MN00437323, at 7323-7324) (Ex. 38); Algicidal Activity (3M_MN00436466, at -6466-68) (Ex. 39); Aquatic Toxicity to Aquatic Invertebrates (3M_MN00437343, at -7343-44) (Ex. 40).

3M conducted additional studies on the environmental effects of PFCs throughout the late 1970s and 1980s, further confirming the harmful impact of PFCs in the environment. *See, e.g.*, February 7, 1979 3M Technical Report Summary (3M_MN00000151, at -0162) (Ex. 41); March 15, 1979 3M Technical Report Summary (3M_MN00000745, at -0754) (Ex. 42); March 23, 1979 3M Technical Report Summary (3MA01410327, at -0338) (Ex. 43). After reviewing 3M's studies on the environmental toxicity of PFCs, 3M scientists concluded in 1983 that concerns about PFCs "give rise to legitimate questions about the persistence, accumulation potential, and ecotoxicity of fluorochemicals in the environment." May 20, 1983 Fate of Fluorochemicals - Phase II (3MA10065465, at -5476) (Ex. 44).

C. 3M Attempted To "Command the Science" To Suppress Scientific Research Into The Harmful Effects of PFCs.

3M's understanding of the potential risks associated with PFCs spurred 3M to engage in a campaign to distort scientific research concerning PFCs and to suppress research into the potential harms associated with PFCs. 3M recognized that if the public and governmental regulators became aware of the risks associated with PFCs, 3M would be forced to halt its manufacturing of PFCs and PFC-derived products—resulting in the loss of hundreds of millions of dollars in annual revenue to 3M. *See, e.g.*, Palensky Dep. Tr. at 31:3-32:7 (Ex. 45) (indicating that 3M's eventual phase-out of certain PFCs cost 3M more than $480 million in annual revenue).

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The potential loss of 3M's massive profits from PFCs drove 3M to engage in a campaign to influence the science relating to PFCs. Internal 3M documents revealed 3M's true goal: conducting scientific "research" that it could use to mount "[d]efensive [b]arriers to [l]itigation." Toxicological Research Program in Perfluorinated Chemistries (3M_MN03589087, at -9088) (Ex. 46); *see also* Zobel Dep. Tr. at 206:21-207:19 (Ex. 47) (discussing 3M's processes for ensuring that scientific papers do not include "information that would appear to be contrary to 3M's business interests"); November 23, 1999 Email (3MA00467427, at -7427) (Ex. 48) (referring to 3M's "[s]cientific [p]ublication [s]trategy," which was designed to "establish the safety of our product and processes"); Howell Dep. Tr. at 184:7-185:20 (Ex. 49) (explaining that 3M "stewarded information about fluorochemicals" in order to "protect the business, protect the investment that they had made in those factories and so that they could get a return on their investment").

A key priority of an internal 3M committee—referred to as the FC Core Team—was to "[c]ommand the science" concerning "exposure, analytical, fate, effects, human health and ecological" risks posed by PFCs. *See* 3M FC Core Team 2004 - 2005 Project / Process Priorities (3M_MN00838661, at -8661) (Ex. 50). As part of this effort, 3M provided "[s]elective funding of outside research through 3M 'grant' money." November 11, 2003 3M Memorandum re: FC Core Team Meeting (3M_MN04778452, at -8452) (Ex. 51). In exchange for providing this grant money to friendly researchers, 3M obtained the right to review and edit draft scientific papers regarding PFCs, January 28, 2008 Email from 3M Employee (3M_MN02295793, at -5793) (Ex. 131), and sought control over when and whether the results of scientific studies were published at all. *See* Reed Dep. Tr. at 196:9-198:19 (Ex. 52); *see also* September 9, 2000 Email from Dave Sanders (3MA00198538, at -8539) (Ex. 53) (discussing 3M's desire to delay publication of a

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scientific article relating to PFCs and expressing the hope that because the "work [wa]s done under contract to 3M," it would "only [be] publishable if and when we [3M] agree"); August 31, 1999, EHS&R Minutes (3MA00927118, at -7119) (Ex. 54) ("All publications will be reviewed by the Core Team and [3M executive] L. Wendling for approval" prior to publication); November 23, 1999 Email re: Scientific Publication Strategy (3MA00467427, at -7427) (Ex. 48) ("The FC Issues Core team will review external publication or presentation proposals.").

A significant aspect of 3M's campaign to influence independent scientific research involved 3M's relationship with Professor John Giesy. 3M provided millions of dollars in grants to Professor Giesy, who—while presenting himself publicly as an independent expert—privately characterized himself as part of the 3M "team." *See* Giesy Dep. Tr. at 151:7-9 (Ex. 55). Professor Giesy worked on behalf of 3M to "buy favors" from scientists in the field, *see* Cost-Benefit Analyses (3MA02513752, at -3758) (Ex. 56), for the purpose of entering into a "quid pro quo" with the scientists. *See* Giesy Dep. Tr. at 216:4 (Ex. 55). Through his position as an editor of academic journals, Professor Giesy reviewed "about half of the papers published in the area" of PFC ecotoxicology and billed 3M for his time reviewing the articles. March 26, 2008 Email from Giesy to 3M Employee (3M_MN00110700, at -0700) (Ex. 57) (Giesy stating that since he "had been set up as [an] academic expert[], about half of the papers published in the area in any given year came to me (continue to come to me) for review"). In performing reviews of these articles, Professor Giesy explained that he was always careful to ensure that there was "no paper trail to 3M." *Id.* (emphasis added) ("In time sheets, I always listed these reviews as literature searches so that there was no paper trail to 3M").

Professor Giesy routinely forwarded confidential manuscripts on PFCs to 3M, *see, e.g.*, December 11, 2006 Email from John Giesy to 3M Employees (3MA01461356, at -1356) (Ex.

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58), and bragged about rejecting at least one article that included negative information on the harmful effects of PFCs on humans. *See* July 19, 2007 Email from John Giesy to 3M Employees (3MA02516746, at -6746) (Ex. 59); *see also* February 12, 2006 Email from John Giesy to 3M Employee (3MA01320043, at -0043) (Ex. 60). As Professor Giesy explained, his goal was to "keep 'bad' papers [regarding PFCs] out of the literature" because "in litigation situations" those articles "can be a large obstacle to refute." *See* March 25, 2008 Email from Giesy to 3M Employee (3M_MN05334328, at -4329) (Ex. 61).

Despite spending most of his career as a professor at public universities, Professor Giesy has a net worth of approximately $20 million. *See* Giesy Dep. Tr. at 123:7-22 (Ex. 55). This massive wealth results at least in part from his long-term involvement with 3M for the purpose of suppressing independent scientific research on PFCs. *See id.*

D. Recent Scientific Developments Confirm That PFCs Are Harmful To Human Health And The Environment.

Although 3M's efforts delayed the broader scientific community's understanding of the risks posed by PFCs, scientists are now coming to understand what 3M has long known: that PFCs pose a serious threat to human health and the environment.

Independent studies have now established a link between exposure to PFCs and kidney and testicular cancer, ulcerative colitis, thyroid disease, heart disease, pregnancy-induced hypertension, and diminished immune system responses to standard vaccines among children. These links were established by a panel of epidemiologists, known as the C8 Panel, convened as a result of the settlement of a lawsuit against DuPont related to its releases of PFOA in Ohio and West Virginia. This science panel collected data from 69,000 residents and evaluated the links between PFOA and adverse health effects—including a significantly increased risk of certain cancers. *See* Frisbee et al., *The C8 Health Project: Design, Methods, and Participants*, Envtl.

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Health Perspectives, Vol. 117, No. 12, December 2009 (Ex. 62); Philippe Grandjean Expert Rep. at 37 (Ex. 129).

In 2016, the National Toxicology Program of the United States Department of Health and Human Services ("NTP") and the International Agency for Research on Cancer ("IARC") both released extensive analyses of the expanding body of research regarding the adverse effects of PFCs. The NTP concluded that both PFOA and PFOS are "presumed to be an immune hazard to humans" based on a "consistent pattern of findings" of adverse immune effects in human (epidemiology) studies and "high confidence" that PFOA and PFOS exposure was associated with suppression of immune responses in animal (toxicology) studies. *See* Nat'l Toxicology Program, NTP Monograph: Immunotoxicity Associated with Exposure to Perfluorooctanoic Acid or Perfluorooctane Sulfonate (Sept. 2016), at 1, 17, 19 (Ex. 63). And the IARC concluded that there is "evidence" of "the carcinogenicity of . . . PFOA" in humans and in experimental animals, meaning that "[a] positive association has been observed between exposure to the agent and cancer for which a causal interpretation is . . . credible." *See* Int'l Agency for Research on Cancer, IARC Monographs: Some Chemicals Used as Solvents and in Polymer Manufacture (2016), at 27, 97 (Ex. 64).

Also in 2016, EPA released a Drinking Water Health Advisory for PFOA and for PFOS, finding that animal studies of PFOA report numerous adverse effects, including developmental effects such as impacts to "survival, body weight changes, reduced ossification, delays in eye opening, altered puberty, and retarded mammary gland development" as well as "liver toxicity," "kidney toxicity," "immune effects," and "cancer," and that human epidemiology studies report associations between PFOA and "high cholesterol, increased liver enzymes, decreased vaccination response, thyroid disorders, pregnancy-induced hypertension and preeclampsia, and

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cancer (testicular and kidney)." *See* U.S. Envtl. Prot. Agency, Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA) (May 2016), at 9 (Ex. 65). For PFOS, the EPA found that animal studies reported developmental effects, such as "decreased body weight, survival, and increased serum glucose levels and insulin resistance in adult offspring," as well as reproductive effects, "liver toxicity," "developmental neurotoxicity," "immune effects," and "cancer (thyroid and liver)." U.S. Envtl. Prot. Agency, Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS) (May 2016), at 10 (Ex. 66). The EPA concluded that the "developing fetus" is "particularly sensitive" to both "PFOA-induced toxicity" and "PFOS-induced toxicity." *See id.*; U.S. Envtl. Prot. Agency, Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA) (May 2016), at 9 (Ex. 65).

In and after 2002, the Minnesota Department of Health set regulatory limits in drinking water for four PFCs present in the East Metro Area: PFOA, PFOS, PFBS and PFBA. Based on the latest science regarding the adverse health effects of the most studied PFCs—PFOA and PFOS—MDH recently announced still more stringent limits. *See* June 7, 2017, Minn. Dep't of Health, Notice of Health Risk Advisory for Perfluorochemicals, at 2 (Ex. 67). The drinking water in numerous private and municipal wells in the East Metro Area exceed these new limits (either individually or in the aggregate), *id.*, meaning that thousands of Minnesotans have for decades been drinking water containing PFCs in amounts that MDH has concluded may be harmful to human health.

II. 3M'S Disposal Of PFCs Resulted In PFCs Entering The Groundwater And Environment.

During a more-than 30-year period beginning in 1951, 3M disposed of PFCs in a manner that 3M knew would almost certainly result in PFCs contaminating the environment, and in particular the groundwater.

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A. 3M Knew By The Early 1960s That Its Waste Disposal Practices Were Polluting The Minnesota Environment.

3M understood from at least the early 1960s that the PFC-containing industrial waste it disposed of in the East Metro area would enter the groundwater and pollute the drinking water supply.

Published scientific studies from as early as the 1950s demonstrated that pollutants in industrial waste landfills would enter the groundwater below disposal sites. *See* California State Water Pollution Control Board (hereinafter "SWPCB") 1952 (Ex. 68); SWPCB 1953 (Ex. 69); SWPCB 1961 (Ex. 70). Internal 3M documents from the early 1960s confirm that 3M understood that groundwater near waste disposal sites would be contaminated. For example, an internal 3M memo from 1960 recognized that pollutants from industrial wastes dumped at the Woodbury disposal site "will eventually reach the water table and pollute domestic wells." July 13, 1960 Geology Dep't Rep. #60-10 (3M_MN00000135, at -0136) (Ex. 71) (emphasis added) (summarizing a geological investigation of the site performed by 3M prior to its disposal of wastes at the Woodbury disposal site); *see also* July 28, 1960 Field Letter of John A. Brown and R.C. Collins (3M_MN00000231, at -0232) (Ex. 72) (noting that 3M managers were "again warned of the problems of polluting the underground water" (emphasis in original)); July 22, 1969 Supplementary Engineering Report of Sludge Disposal at Chemolite (3MA00456474, at -6475) (Ex. 73) (noting that "[o]rganic contaminants from the sludge may leach into the ground water at the present dumping site").

3M dumped the vast majority of its waste in unlined pits, and there was no barrier to prevent PFCs from entering the surrounding groundwater. *See, e.g.*, December 5, 1963, Internal Correspondence re: Investigation of Woodbury Dump Site (3MA00335790, at -5790) (Ex. 74) (internal 3M memo explaining that it was "not clearly stated to [government] officials" touring

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the Woodbury disposal site that "unlined trenches had been used in this area"); March 22, 1978 Interoffice Correspondence (3MA0028220, at -8221) (Ex. 75) (indicating that "ash and sludge" could be disposed of "without clay lining [or] leachate collection and treatment"); Kirk Brown Expert Rep. at 15-16 (Ex. 76). In limited areas, 3M used concrete or bentonite liners, but internal 3M documents from as early as 1963 acknowledged that the liners were "ineffective." July 26, 1963 3M Interoffice Correspondence (3M_MN00048258, at -8258) (Ex. 77) ("[T]he trench used for flowing wet waste had been lined with bentonite in October 1962" but "[i]t appears to the writer that this seal is ineffective."); *see also* December 13, 1961 3M Geology Dep't Rep. No. 61-22 (3MA00335895, at -5896) (Ex. 78) ("A 10% bentonite mixture will create a relatively impermeable seal although it probably will not be 100% effective.").

3M learned from testing conducted in the early 1960s that the groundwater underneath its disposal sites had in fact been contaminated. *See* Kirk Brown Expert Rep. at 29-31 (Ex. 76). For example, by the spring of 1962, 3M knew that chemicals disposed of at the Woodbury disposal site had "reached 75 [feet] below ground"—which was the level of the underlying groundwater at the time—"within about one year of operation." May 14, 1962 3M Interoffice Correspondence (3M_MN00000220, at -0220) (Ex. 79); *see also* July 30, 1963 Interoffice Correspondence (3M_MN00000142, at -0142) (Ex. 80) (acknowledging that "the present waste trenches" at the Woodbury disposal site "are not properly sealed"). 3M's investigation of contamination at the Woodbury disposal site ultimately concluded that "the waste disposal problem has reached the point where some immediate action should be taken." May 14, 1962 3M Interoffice Correspondence (3M_MN00000220, at -0221) (Ex. 79).

Yet no such action was taken. Instead, 3M merely developed a plan to "delay[]" the "ground water pollution" for "a number of years" by dumping its waste at a slightly higher

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elevation. July 30, 1963 Interoffice Correspondence (3M_MN00000142, at -0142) (Ex. 80). It was not until 1966—nearly four years later—that 3M stopped using the Woodbury disposal site *See* June 26, 1967 3M Letter (3MA00286355, at -6355) (Ex. 4).

Similarly, 3M learned that the groundwater beneath the Cottage Grove disposal site was contaminated in November 1960. *See, e.g.*, November 3, 1960 3M Chemolite Monthly Water Rep. (3M_MN00052163, at -2163) (Ex. 81); *see also* December 1, 1961 3M Interoffice Correspondence (3MA00456329, at -6329) (Ex. 82) ("[T]he pond does not remove any BOD and its leakage is a contributing factor to the contamination of the Chemolite well water."); April 1962 (3MA00456330, at -6331) (Ex. 83) ("Evidence… indicated that the present waste pond has contaminated a nearby water supply well …. We are convinced that contamination will gradually spread to other wells if no corrective measure is taken soon." (emphasis added)). Yet 3M continued to dispose of PFC-containing wastes at its Cottage Grove facility until 1974, and again from 1978 until 1980. *See* Charles Andrews Expert Rep. at 34 (Ex. 84).

B. 3M's Improper Disposal Of PFC-Laden Manufacturing Wastes Caused Substantial Damage To Minnesota's Natural Environment.

3M's improper disposal of PFCs and PFC-containing wastes at its four disposal sites has caused widespread harm to Minnesota's natural environment and to the health of East Metra area residents.

PFCs disposed of by 3M at the four sites migrated (and continue to migrate) into the groundwater beneath the sites. *See id.* at 3-4. After entering the groundwater, 3M's PFCs migrate to the water table. *See id.* at 65, 72. It is clear that 3M's improper disposals are the source of the widespread groundwater contamination now present in the East Metro Area: 3M's own expert, Dr. Franklin Woodard, agrees that "[t]he distribution of PFOA, PFOS and PFBA in groundwater downgradient and downstream of the 3M disposal sites indicates that the primary

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source of these compounds in groundwater is related to leaching of materials placed in the 3M onsite and offsite disposal areas." Woodard Dep. Tr. at 210:16-211:7 (Ex. 12); *see also* June 1, 2001, Draft—Phase Out Timeline (3M_MN 05367921, at -7921) (Ex. 85) (acknowledging that 3M's manufacture of a PFOS precursor "may have accounted for much of the PFOS in the environment and the general population").

The volume of waste 3M disposed of at each site was enormous. For example, 3M disposed roughly 400,000 gallons of waste solvents and 6 million gallons of "wet scrap" (which included some PFC-containing wastes) at the Woodbury disposal site. Charles Andrews Expert Rep. at 45, 50 (Ex. 84). In one of the multiple disposal sites at Cottage Grove site, 3M disposed of 2.5 tons per day of waste sludge in the early 1970s, some of which contained PFCs. *Id.* at 36. At another portion of the Cottage Grove site, 3M disposed of 2,000 cubic yards per month of PFC-containing incinerator ash and sludge in 1978. *Id.* at 38. Oakdale received "all wastes" generated by 3M's Cottage Grove plant "from 1956 until the fall of 1959." December 8, 1980 Points to Describe 3M Involvement with Three Sites in Oakdale (3MA01248573, at -8573) (Ex. 5). That would have consisted of roughly 20 55-gallon drums per month of PFC-containing acidic tars, hundreds of thousands of pounds of PFC-containing fractionation bottoms per year, thousands of tons of PFC-containing process wastes and byproducts per year, and thousands of cubic yards of PFC-containing sludge per year. Charles Andrews Expert Rep. at 19, 21, 23-26 (Ex. 84); *see also* Woodard Dep. Tr. at 178:1-190:21 (Ex. 12) (3M expert agreeing with the State's estimates of the quantity and PFC content of the wastes disposed of by 3M at the four disposal sites).

As a result of 3M's manufacture and disposal of PFCs, increased concentrations of PFCs have been found in groundwater in the East Metro Area. *See* Robert Karls Expert Rep. at 38-39

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(Ex. 86). The contamination of groundwater is of particular concern because it is the primary source of drinking water for individuals residing in the East Metro Area. *See id.* at 19. Because PFCs are persistent in the environment and resistant to biodegradation, they are expected to be present throughout wide swaths of the East Metro Area until 2050 and beyond. *See id.* at 38.

As a result of this drinking water contamination, East Metro area residents for decades had—and continue to have—high levels of PFCs in their blood. In 2008 (the first time that testing was performed), East Metro area residents were found to have average levels of PFCs in their blood up to almost four times higher than those of the general U.S. population. *See* Jamie DeWitt Expert Rep. at 17-18 (Ex. 87) (3M's PFCs are so widespread and bioaccumulative that virtually every person and animal in the world has some PFCs in their blood.) While levels have decreased somewhat since 2008, the blood of East Metro area residents continues to this day to have PFC concentrations significantly higher than the national average. *See* Minn. Dep't of Health, East Metro PFC3 Biomonitoring Project – December 2015 Rep. to the Community, at 1 (Dec. 29, 2015), http://www.health.state.mn.us/divs/hpcd/tracking/biomonitoring/projects/PFC3CommunityReport.pdf (Ex. 88).

Dr. David Sunding,[2] an expert for the State, conducted a statistical regression analysis of fertility, birth rates, and cancer incidences in the East Metro area. His analysis concluded that the high levels of PFCs found in the East Metro Area—levels that were presumably present for many decades before testing began—adversely affected the health of people living in the area.

[2] Dr. Sunding is a Professor in the College of Natural Resources at UC Berkeley and is the founding director of the Berkeley Water Center. He received his Ph.D. in Agricultural & Resource Economics from UCLA in 1986. Dr. Sunding has testified before Congress on matters relating to environmental and resource economics, and he has served on expert panels convened by the National Academy of Sciences and the EPA's advisory board. Dr. Sunding's research focuses on environmental externalities from economic activities.

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In particular, Dr. Sunding has concluded that the fertility and birth outcome rates among women living in the areas affected by PFC contamination is lower than other unaffected communities. Dr. Sunding's analysis of babies born in Oakdale prior to 2006—when there were particularly high levels of PFCs in the municipal water supply—found that low birth weight and premature births were statistically significantly more likely in Oakdale than unaffected communities. *See* David Sunding Expert Rep. at ¶¶ 62-64 (Ex. 89). Dr. Sunding's analysis also reveals that women in Oakdale had lower fertility rates than women living in unaffected communities. *See id.* at ¶¶ 69-70.

Dr. Sunding found further evidence of the harmful effects of PFCs on humans in publicly-available cancer incidence data from the Minnesota Department of Health. *See id.* at ¶ 73. Dr. Sunding found statistically significant increases in certain cancers associated with PFCs in the East Metro area. *See id.* at ¶ 14. In particular, after controlling for demographic factors, Dr. Sunding found evidence of statistically significant higher rates of breast, bladder, kidney, and prostate cancers in Washington County, along with increased levels of leukemia and non-Hodgkin lymphoma, in comparison to the rest of Minnesota. *See id.* at ¶¶ 76-80 & Figures 6-7. In addition, based on a review of death certificates, Dr. Sunding found that children in Oakdale were 171% more likely to have a diagnosis of cancer than children who died in unaffected areas of the State. *See id.* at ¶¶ 91-92.

The high levels of PFCs in the East Metro area have also harmed Minnesota wildlife. Studies in birds have found that exposure to PFOS results in immunological, morphological, and neurological effects. *See* Ronald Kendall Expert Rep. at 28 (Ex. 8). For example, Dr. Kendall's studies on tree swallows (which are often used as a "sentinel species" to study the effect of environmental contamination on avian species generally), have shown PFC accumulation and

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that the PFCs have altered the DNA of the birds. *See id.* at 32-33. Dr. Kendall's studies have also indicated that accumulated PFCs in Great Blue Heron have resulted in significant levels of PFCs in their eggs and in liver toxicity. *See id.* at 35. Dr. Kendall has also found that exposure to high levels of PFCs has also likely resulted in the accumulation of PFCs in mammals, such as mink and otter. The bioaccumulation of PFCs in mink and otter produces immunotoxicity and other adverse effects. *See id.* at 44. The high levels of PFCs in the East Metro area have also negatively affected fish and other aquatic wildlife. Dr. Kendall found strong evidence, for example, that PFC bioaccumulation in certain mussel species that reside in the Mississippi River has caused oxidative stress, resulting in DNA damage to the mussels. *See id.* at 51-53.

III. 3M Covered-Up The Adverse Effects Of PFCs.

3M actively concealed from State and federal government regulators, the scientific community, and the general public the significant risks posed by PFCs. 3M understood by the mid-1970s that PFCs accumulate in people's blood. *See, e.g.*, August 26, 1977 3M Chronology - Fluorochemicals in Blood (3MA10035028, at -5028) (Ex. 90). 3M also possessed evidence of the risks that PFCs posed to humans and the environment from the internal studies that it conducted. *See supra* II.B; *see also* Kirk Brown Expert Rep. at 19-22 (Ex. 76). Despite 3M's knowledge of these significant risks, 3M employed a wide variety of tactics to suppress information about the considerable risks associated with PFCs for several decades.

A. 3M's Attempt To Misdirect Scientific Researchers

3M's cover-up of the risks posed by PFCs included concealing 3M's early knowledge that PFCs were broadly present in human blood—the very fact that, once publicly disclosed, forced 3M to abandon its highly lucrative PFC businesses.

3M has publicly claimed that it phased out the production of PFCs after it first learned that these chemicals were widely present in the blood of humans. *See* May 24, 2000 Email

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(3MA00243796, at -3796) (Ex. 91). Several 3M scientists have acknowledged that this discovery was "alarming" and led to 3M's decision to exit the PFC business. *See* Sanders Dep. Tr. at 63:6-65:19, 69:2-5 (Ex. 92); Reed Dep. Tr. at 45:19-46:10 (Ex. 52). According to 3M, the discovery was not made until 1997. *See, e.g.*, May 24, 2000 Email (3MA00243796, at -3796) (Ex. 91); Draft - EPA Proposed Meeting (3MA10071231, at -1231) (Ex. 125); Wendling Dep. Tr. at 56:5-17, 57:4-10 (Ex. 94). In fact, however, internal 3M documents show that 3M knew that its PFCs were present in the blood of human beings since at least the 1970s. *See, e.g.*, August 26, 1977 3M Chronology - Fluorochemicals in Blood (3MA10035028, at -5028) (Ex. 90); August 20, 1975 3M Interoffice Correspondence (3MA10034962, at -4963) (Ex. 95); Wendling Dep. Tr. at 134:20-135:11 (Ex. 94); 1998 Board of Directors Presentations (3MA10081840, at -1842) (Ex. 132).

3M, moreover, took steps to conceal the presence of its PFCs in human blood and misled the scientific community regarding this fact. *See, e.g.*, August 20, 1975 3M Interoffice Correspondence (3MA10034962, at -4963) (Ex. 95); August 20, 1975 Interoffice Correspondence (3M_MN00000293, at -0293) (Ex. 133). For example, two academic researchers—Dr. William Guy and Dr. Donald Taves—contacted 3M in 1975 regarding their finding of organic fluorine in blood from blood banks around the country and their belief that 3M's Scotchgard product may have been the source. *See id.* 3M responded to these researchers by "plead[ing] ignorance," *see id.*, and advising the scientists "not to speculate" about whether Scotchgard was the source of the PFCs. August 26, 1977 3M Chronology - Fluorochemicals in Blood (3MA10035028, at -5028) (Ex. 90). By 1977, however, 3M itself had confirmed that one of its PFCs—PFOS—was the "major OF [organic fluorine] compound" found in human blood nationwide. 3M Timeline (3MA10039277, at -9277) (Ex. 96). Rather than reveal this critical

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fact to the scientific community, however, "3M lawyers" sought to prevent the "true identity (PFOS) of the OF compound" from being released. *Id.* As a result of this concealment, scientific knowledge regarding the "alarming" presence of PFCs in human blood was delayed by two decades—decades during which 3M reaped billions of dollars in revenue from the manufacture and sale of PFCs while 3M knowingly harmed Minnesota's natural resources.

B. 3M's Concealment Of Information From Regulators

3M also concealed critical information about PFCs from government regulators.

Under federal law, chemical manufacturers are required to immediately notify EPA of information that reasonably supports the conclusion that one of their products presents a substantial risk of injury to health or the environment. *See* 15 U.S.C. § 2607(e) (hereinafter, "TSCA § 8(e)"). 3M, however, withheld from EPA numerous scientific studies relating to the adverse health effects of PFCs—including studies from as early as the 1970s—until after 2000. August 21, 2000 3M Letter to EPA (3MA01220047, at -0048-51) (Ex. 126) (listing 30 PFC-related studies that were first submitted to EPA pursuant to TSCA 8(e) in 2000); August 21, 2000 3M Letter to EPA (3MA01220040, at -0040, -0043) (Ex. 127) (identifying over 30 "potential violations" of EPA's "substantial risk" reporting requirements relating to PFCs). Ultimately, EPA required 3M to pay $1.5 million in penalties for TSCA § 8(e) violations. U.S. Envtl. Prot. Agency, 3M Company Settlement, available at https://www.epa.gov/enforcement/3m-company-settlement (Ex. 136); October 9, 2001 Letter (3M_MN00053722, at -3724) (Ex. 97); Reed Dep. Tr. at 96:5-98:17 (Ex. 52).

In March 1999, a 3M scientist and whistleblower, Dr. Richard Purdy, became so concerned with 3M's failure to inform EPA about the environmental risks of PFCs that he copied the EPA on his resignation letter from 3M. March 28, 1999 Resignation Letter (hereinafter "Resignation Letter") (3MA00480715, at -0715-16) (Ex. 98). In that letter, Dr. Purdy explained

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that he was resigning due to his "profound disappointment in 3M's handling of the environmental risks associated with the manufacture and use of perfluorinated sulfonates (PFOS)." *Id.* at -0715. As Dr. Purdy explained,

> 3M continues to make and sell these chemicals, though the company knows of an ecological risk assessment . . . that indicates there is a better than 100% probability that perfluorooctansulfonate is biomagnifying in the food chain and harming sea mammals.
>
> …
>
> I have worked to the best of my ability within the system to see that the right actions are taken on behalf of the environment. At almost every step, I have been assured that action will be taken—yet I see slow or no results. I am told the company is concerned, but their actions speak to different concerns than mine. I can no longer participate in the process that 3M has established for the management of PFOS and precursors. <u>For me it is unethical to be concerned with markets, legal defensibility and image over environmental safety</u>.

Id. at -0716 (emphasis added); *see also id.* at -0715 (noting that "[f]or more than twenty years 3M's ecotoxicologists have urged the company to allow testing to perform an ecological risk assessment on PFOS and similar chemicals" but that 3M had been "hesitan[t]" to do so); March 29, 1999 Email Containing Statement from Purdy (3MA01373218, at -3219) (Ex. 99) ("For 20 years [3M] has been stalling the collection of data needed for evaluating the environmental impact of fluorochemicals. PFOS is the most onerous pollutant since PCB and you want to avoid collecting data that indicates that it is probably worse. I am outrage[d].").

Among other things, Dr. Purdy's resignation letter highlighted several troubling failures on the part of 3M to comply with its TSCA § 8(e) "substantial risk" reporting obligations. First, Dr. Purdy's letter noted that he had prepared a "risk assessment on PFOS that indicated a greater than 100% probability of harm to sea mammals." Resignation Letter, at -0715 (Ex. 98). Although Dr. Purdy informed 3M that his risk assessment showed that PFOS "constitutes a

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significant risk that should be reported to EPA under TSCA 8e," 3M ultimately "decided not to submit [the report] to EPA over [Purdy's] objection." Purdy Dep. Tr. at 125:8-127:13, 151:2-5 (Ex. 16).

Second, Dr. Purdy pointed out that a TSCA § 8(e) report filed by 3M regarding PFOS in the blood of eaglets was materially incomplete. As Dr. Purdy explained in his letter (on which he copied several EPA officials):

> Just before that submission we found PFOS in the blood of eaglets--eaglets still young enough that their only food consisted of fish caught in remote lakes by their parents. This finding indicates a widespread environmental contamination and food chain transfer and probable bioaccumulation and bio-magnification. This is a very significant finding that the 8e reporting rule was created to collect. 3M chose to report simply that PFOS had been found in the blood of animals, which is true but omits the most significant information.

Resignation Letter, at -0715-16 (Ex. 98) (emphasis added).

Notably, it was only after 3M's hand was forced by Dr. Purdy that 3M complied with its reporting obligations to EPA. Thus, on May 26, 1999—just weeks after EPA received a copy of Dr. Purdy's resignation letter—3M executive Charles Reich "supplement[ed]" 3M's prior submission to include precisely the information that Dr. Purdy informed EPA had been improperly omitted from 3M's original submission. May 26, 1999 3M Letter to EPA (3M_MN01329658, at -9658) (Ex. 100). Just one year earlier, the same 3M executive had overruled a recommendation by a committee of 3M scientists to report to EPA 3M's finding of PFCs in the blood "of non-occupationally exposed populations at parts per billion (ppb) levels." March 20, 1998, TSCA Section 8(e) Decision (3MA10064459, at -4459) (Ex. 101).

C. 3M's Continued Attempts To Suppress Information About PFCs

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In addition to 3M's failure to disclose information to regulators, 3M engaged in a widespread campaign to conceal the risks posed by PFCs from the public—a campaign that continues to this day.

Misuse of Attorney-Client Privilege. As part of its effort to conceal information, 3M improperly instructed its employees to stamp virtually all documents related to PFCs as attorney-client privileged, regardless of whether the privilege truly applied to such documents. For instance, a senior 3M scientist testified that it was "very common" for 3M's Environmental Laboratory to mark PFC-related materials as attorney-client privileged. Reagen Dep. Tr. at 123:9-22 (Ex. 102); *see also, e.g.*, Wendling Dep. Tr. at 55:14-19 (Ex. 94) ("I believe at the time most documents relating to the [PFC] issue were marked attorney/client privileged."); Sanders Dep. Tr. at 186:5-13 (Ex. 92) ("[A]lmost everything was—whether it involved attorneys or not, was stamped attorney-client privilege."); Purdy Dep. Tr. at 137:10-138:8 (Ex. 16); Zobel Dep. Tr. at 222:4-11 (Ex. 47); Olsen Dep. Tr. at 51:2-23 (Ex. 103); Renner Dep. Tr. at 117:18-118:2 (Ex. 104). Both Dr. Purdy and Dr. Zobel, 3M's Medical Director, provided public, on the record comments to Minnesota Public Radio stating that they were directed to use an attorney-client privilege stamp on "anything we wrote down" relating to PFCs. Minnesota Public Radio, Toxic Traces, February 2005 (3MA01169469, at -9484) (Ex. 105).

Document Destruction. 3M's campaign to conceal information about the risks associated with PFCs extended to destroying documents related to PFCs. For example, 3M's Senior Vice President Charles Kiester, testified that any "pencil notes" that would be kept during meetings of 3M oversight committees relating to "FC" issues were "discarded . . . right away." Kiester Dep. Tr. at 130:1-131:15 (Ex. 106). Likewise, Jerry Walker, who was in charge of the 3M division that was responsible for manufacturing PFCs in 2000, testified that he was directed by 3M

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officials to place talking points relating to the phase out "in a secure receptacle" for disposal. Walker Dep. Tr. at 31:24-32:3; 208:12-209:12 (Ex. 107). In addition, a 3M laboratory notebook entry from September 2, 1998, contains a list of instructions relating to "document retention," one of which is "clean out computer of all electronic data" relating to PFCs. 3M Technical Notebook (3M_MN04758351 at -8398) (Ex. 108) (emphasis added).

3M also instructed its employees not to create paper trails regarding PFC issues. For example, as Dr. Purdy explained at the time of his resignation in 1999, "3M told those of us working on the fluorochemical project not to write down our thoughts or have email discussions on issues because of how our speculations could be viewed in a legal discovery process." *See* Resignation Letter, at -0716 (Ex. 98).

Building Demolition. 3M manufactured PFCs at its Cottage Grove plant in a location referred to as Building 15. This building was known by 3M employees to be highly contaminated:

> A The only thing I was aware of is that we -- that the building was -- we didn't enter the building while I was -- during my time there. We just -- we just -- I don't recall that we -- you could just walk into Building 15 like you could other buildings.
>
> Q So you were -- the -- when you say you didn't enter it -- so you were -- was there a policy that you didn't enter the building? Or was it -- do you recall?
>
> A I just -- I don't specifically recall other than I -- just general knowledge that we just didn't go into Building 15.
>
> Q And why was that?
>
> A I think it was because of the -- the PFC materials that were present in the building.

Thornton Dep. Tr. at 82:25-83:16, 85:8-12 (Ex. 109). 3M went so far as to demolish Building 15 after it stopped manufacturing PFCs. *See, e.g.*, Hohenstein Dep. Tr. at 165:21-166:1 (Ex. 110).

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Press Strategy. 3M has also engaged in a decades-long campaign to control information in the press regarding PFCs and their harmful effects. For example, 3M maintains a list of ostensibly "independent third party experts" to whom it refers reporters with inquiries regarding PFCs. *See* May 24, 1999, 3M FC Issue Communications Plan (3M_MN04732222, at -2242) (Ex.111); November 16, 1998 3M Internal Correspondence (3M_MN02980584, at -0608) (Ex. 134). In reality, however, these "experts" are not independent at all. Rather, the experts are carefully vetted by 3M, and are required to sign "confidentiality and consulting agreements" with 3M. 3M FC Issue Communications Plans at -2245 (Ex. 111). These agreements, among other things, provided that the experts will receive payment from 3M for their service as "independent" experts. *Id.*; Palensky Dep. Tr. at 116:20-117:6 (Ex. 45); 3M Consulting Services Agreement (3M_MN00255852, at -5856) (Ex. 93).

Misleading Customers. 3M's lack of candor regarding its PFCs also extended to its communications with customers. For example, an internal 3M document from 1988 reveals a concern that 3M was "perpetuating the myth" that its PFCs are biodegradable to both customers and regulators when 3M knew that was not the case. December 30, 1988, 3M Internal Correspondence re: FC-129 Biodegradability (3MA10035965, at -5965) (Ex. 112) ("If 3M wants to continue to sell and use fluorochemical surfactants …, I believe that 3M has to accurately describe the environmental properties of these chemicals"); *see also* June 3, 1988 Letter from 3M Customer (3M_MN01315290, at -5292) (Ex. 135). Despite these early warnings, 3M did not take any steps to dispel the myth that PFCs biodegrade. *See* 1989 3M Brand Technical Information AFFF, FC-783 (3M_MN02369894, at -9895) (Ex. 113). In addition, as Dr. Purdy explained, "3M waited too long to tell customers about the widespread dispersal of PFOS in people and the environment." Resignation Letter, at -0716 (Ex. 98).

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IV. EPA Pressure Forced 3M To Phase-Out Production Of PFCs.

3M continued its strategy of valuing the company's profits over risks to the health of Minnesota's citizens and environment for decades. In 2000, 3M announced that it was "voluntarily" phasing out the production of certain PFCs. Far from being "voluntary," however, 3M only announced the phase-out after EPA began investigating the chemicals and 3M faced the real prospect of a government ban.

Leading up to 3M's phase-out of PFCs, 3M and EPA were in communication about the risks posed by PFCs. *See, e.g.*, April 11, 2000 Email from EPA to 3M (3M_MN02345422, at -5422-23) (Ex. 128) (describing April 10 phone call between 3M and EPA); April 20, 2000 Letter from 3M to EPA (3MA00517725) (Ex. 115); April 21, 2000 Letter from 3M to EPA (3MA10056065, at -6065) (Ex. 116); April 27, 2000 Letter to EPA (3M_MN02457023, at -7023) (Ex. 117) (referring to April 28, 2000 meeting with EPA); 3M Submission to EPA (3MA01657924, at -7924) (Ex. 118); May 3, 2000 Letter from 3M to EPA (3MA00254228, at -4228) (Ex. 119); May 4, 2000 Letter from 3M to EPA (3M_MN02457062, at -7062) (Ex. 120); May 5, 2000 Email from EPA to 3M (3MA10056263, at -6263) (Ex. 121). The threat of enforcement by EPA spurred many of 3M's decisions related to PFCs leading up to the phase-out. *See, e.g.*, December 1998 FC Toxicity/Safety Testing Presentation re: PFOS & N-EtFOSE (3MA10054016, at -4019) (Ex. 114) ("EPA plans to issue TSCA rule mandating [Screening Information Data Set] testing [of PFOS and N-EtFOSE] if chemical companies fail to do testing voluntarily."). 3M also became aware of the extent of EPA's concerns about the health and environmental risks posed by 3M's production of PFCs. *See, e.g.*, April 10, 2000 Notes from Charlie Auer Telephone Call (3MA00470824, at -0824-25) (Ex. 122) (describing phone call with EPA on April 10, 2000, in which a "concerning" health study was raised as well as TSCA § 4(f), which authorizes EPA to severely limit access to chemicals, including by banning the chemical

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or certain of its applications); Notes from May 8, 2000 Sussman Meeting (3MA00469749, at -9750) (Ex. 123) (describing telephone call in which 3M was advised that PFC situation "appears to meet the requirements of [TSCA] 4(f)," suggesting that EPA might ban the substances); 3M's Big Cleanup: Why it decided to pull the plug on its best-selling stain repellant, Businessweek Online, June 5, 2000 (3MA00745707, at -5711) (Ex. 124) ("'They could see the writing on the wall,' argues the senior EPA official. 'They could see we were going to continue our assessment of this and it would get more detailed and at the end of the day we would make some kind of decision.'").

In short, 3M only ceased manufacturing PFCs because its hand was forced by EPA after 3M's decades-long concealment campaign finally began to unravel.

LEGAL STANDARD

Minnesota law authorizes punitive damages "upon clear and convincing evidence that the acts of the defendant show deliberate disregard for the rights or safety of others." Minn. Stat. § 549.20, subd. 1(a); *id.* § 549.191. Plaintiffs are prohibited from asserting punitive damages claims in complaints—punitive damages may be asserted only by an amended complaint. *Id.* A court "shall grant the moving party permission to amend the pleadings to claim punitive damages" if prima facie evidence supports the moving party's motion. *Id.*[3]

To amend its pleadings, a party must "establish a prima facie case by clear and convincing evidence" that reasonably allows the conclusion that the defendant deliberately

[3] Motions to amend complaints to add punitive damages claims are typically filed after the close of discovery. *See, e.g., Allen v. Fidelity Fin. Servs.*, Civ. No. 98-1725, 1999 WL 33912315, at *1 n.1 (D. Minn. Sept. 9, 1999) (Analysis for punitive damages claim under Minnesota law "is very fact-intensive and is best accomplished at or shortly after the close of all discovery."). Resolving such motions prior to the close of discovery invites inefficiency because a denial "does not finally foreclose the claim for punitive damages, since discovery may lead to evidence sufficient to justify a renewed motion." *McKenzie v. N. States Power Co.*, 440 N.W.2d 183, 185 (Minn. Ct. App. 1989).

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disregarded the rights or safety of others. *Leiendecker v. Asian Women United of Minn.*, 895 N.W.2d 623, 637 (Minn. 2017) (internal quotation marks omitted). "[I]f the court finds prima facie evidence supports the claim for punitive damages, it shall grant leave to amend." *McKenzie v. N. States Power Co*., 440 N.W.2d 183, 184 (Minn. Ct. App. 1989) (internal quotations omitted). To establish that prima facie evidence supports such a claim, a party is not required "to actually prove its claim by clear and convincing evidence to the district court." *Leiendecker*, 895 N.W.2d at 637. Instead, the court evaluates the evidence, "mak[ing] no credibility findings" and without "consider[ing] any challenge, by cross-examination or otherwise, to the Plaintiff's proof." *Ulrich v. City of Crosby*, 848 F. Supp. 861, 867 (D. Minn. 1994).

The "deliberate disregard" standard is met if in the jury could find that the defendant:

> has knowledge of facts or intentionally disregards facts that create a high probability of injury to the rights or safety of others and: (1) deliberately proceeds to act in conscious or intentional disregard of the high degree of probability of injury to the rights or safety of others; or (2) deliberately proceeds to act with indifference to the high probability of injury to the rights or safety of others.

Minn. Stat. § 549.20, subd. 1(b). The defendant's conduct, not the resulting damage, is the touchstone of the jury's assessment. *See Jensen v. Walsh*, 623 N.W.2d 247, 251 (Minn. 2001) ("The purposes of punitive damages are to punish the perpetrator, to deter repeat behavior and to deter others from engaging in similar behavior…. It is therefore appropriate, in determining whether punitive damages should be allowed, to focus on the wrongdoer's conduct rather than to focus on the type of damage that results from the conduct.").

Minnesota allows punitive damages awards in cases where there is no personal injury, *id.*, and previous environmental tort litigations in other jurisdictions have resulted in the award of punitive damages. *See, e.g., Exxon Shipping Co. v. Baker*, 554 U.S. 471, 515 (2008) (punitive

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damages awarded in lawsuit against oil company following oil spill); *Johansen v. Combustion Eng'g, Inc.*, 170 F.3d 1320, 1340 (11th Cir. 1999), *cert. denied*, 528 U.S. 931 (1999) (punitive damages awarded in nuisance and trespass claims against owner of former mine site from which acidic water had escaped); *In re the Exxon Valdez*, 296 F. Supp. 2d 1071, 1110 (D. Alaska 2004), *vacated on other grounds*, 490 F.3d 1066 (9th Cir. 2008); *E.T. Holdings, Inc. v. Amoco Oil Co.*, No. C95-1034, 1998 WL 34113907, at *16 (N.D. Iowa Dec. 27, 1998) (punitive damages awarded after gasoline from defendant's station leaked into soil and groundwater); *City of Modesto Redevelopment Agency v. Dow Chem. Co.*, Nos. 999345, 996443, 2006 WL 2346275, at *4 (Cal. Super. Ct. Aug. 1, 2006) (punitive damages awarded after defendant's chemicals contaminated groundwater and soil).

ARGUMENT

I. The State Should Be Permitted To Ask The Jury For An Award Of Punitive Damages.

Clear and convincing evidence establishes that 3M deliberately disregarded the high probability of injury to Minnesota's natural resources—and the resulting risk to East Metro residents, fish and wildlife—by knowingly polluting the groundwater and surface waters of the East Metro area with its PFC-laden wastes. The State should therefore be permitted to seek punitive damages from 3M.

During virtually the entire period that 3M disposed of massive quantities of industrial waste in the East Metro area, it knew that those wastes contained large quantities of PFCs and that those PFCs were highly persistent in the environment. *See supra* I.A., II.B. 3M likewise knew from the outset that its use of unlined pits and trenches to dispose of its PFC-containing waste would inexorably lead to pollution of the groundwater underneath and down-gradient from

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its disposal sites. *See supra* II.A. Yet 3M made no effort to prevent this pollution from occurring. *See supra* II.A.

3M has also known for decades that its PFCs accumulate in the blood and organs of humans and wildlife. *See supra* III.A. Even more troublingly, 3M has long known that PFCs were "toxic," and as it conducted additional studies, it learned that they were "even more toxic" than previously believed. *See supra* I.B. By as early as the 1970s, 3M was so concerned about the risks of PFCs—including their potential to cause cancer—that it began monitoring the blood of its workers. *See supra* I.A. Today, there is an emerging scientific consensus that 3M's PFCs are linked to serious health effects, including cancers, immune effects, and birth effects. *See supra* I.D.

Rather than cease manufacturing PFCs or improve its waste disposal practices, 3M did everything in its power to conceal the pernicious effects of PFCs on human health and the environment from regulators and scientists. For example, 3M evaded its "substantial risk" reporting obligations under TSCA § 8(e) by failing for decades to disclose critical studies involving PFCs—a tactic that led to a substantial penalty from EPA after it was revealed. *See supra* III.B. 3M likewise went to great length to "command the science" regarding PFCs: funding and thereby controlling friendly research while suppressing studies it didn't like ("without any paper trail to 3M," of course), "buy[ing] favors" from scientists, and paying supposedly independent scientists to speak on 3M's behalf—all for the avowed purpose of "protect[ing] the [PFC] business" and erecting a "defensive barrier to litigation." *See supra* I.C. And, when those tactics failed, 3M went so far as to destroy—or improperly mark as attorney-client privileged—documents that revealed the true dangers associated with PFCs. *See supra* III.C.

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Perhaps most troublingly, 3M concealed for over two decades the fact that its PFCs were widely present in the blood of the general U.S. population—the very fact that, once revealed, led to 3M's belated and forced withdrawal from the PFC business. Indeed, 3M went so far as to mislead independent researchers who were investigating possible links between elevated fluorine levels in blood and 3M's products, even while confirming internally that a 3M product was the source of those elevated levels. *See supra* III.A.

During the many decades that 3M manufactured PFCs and disposed of PFC-containing waste in the East Metro area, it made billions of dollars from its PFC business. *See supra* I.C. But experts have found that during those same decades, both wildlife and people in the East Metro area were harmed. Indeed, Dr. Sunding has concluded that East Metro area residents who for decades drank water containing high levels of PFCs suffered (among other things) from increased risks of cancers and premature births. *See supra* II.B. Although concealed from regulators and the public, these harms were foreseeable to 3M.

In short, the record contains clear and convincing evidence that 3M, in its pursuit of profit, deliberately disregarded the substantial risk of injury to the people and environment of Minnesota from its continued manufacture of PFCs and its improper disposal of PFC-containing wastes. A Minnesota jury should therefore be given the opportunity to award the State punitive damages.

CONCLUSION

The Court should allow the State to amend its complaint to assert punitive damages for the State's claims for negligence, trespass, and nuisance.

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Respectfully submitted,

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MINN. STAT § 549.211
ACKNOWLEDGMENT

The party on whose behalf the attached document is served acknowledges through the undersigned counsel that sanctions may be imposed pursuant to Minn. Stat § 549.211 (2010).

DATED: November 17, 2017

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CERTIFICATE OF COMPLIANCE WITH
MINN. GENERAL RULE OF PRACTICE 115.10

In accordance with Minn. General Rule of Practice 115.10, Plaintiff State of Minnesota hereby certifies that counsel for Plaintiff State of Minnesota conferred orally and in writing with counsel for Defendant 3M Company in an attempt to resolve the dispute without the need for Court action.

DATED: November 17, 2017

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