

**New York City Department of Environmental Protection  
Bureau of Water Supply**

**Land Acquisition Program  
2023-2033 Long-Term Land Acquisition Plan**

**May 2023**

*Prepared in accordance with Section 4.2 of the NYSDOH  
Revised 2017 Filtration Avoidance Determination*



Prepared by: DEP, Bureau of Water Supply



## Executive Summary

The Revised 2017 Filtration Avoidance Determination (FAD) requires the New York City Department of Environmental Protection (DEP) to submit a Long-Term Land Acquisition Plan covering the period 2023-2033, subject to approval by the New York State Department of Health (NYSDOH). The FAD requires this Long-Term Plan to include a consideration of the findings of the National Academies of Sciences, Engineering and Medicine (NASEM) Expert Panel review of the City's watershed protection programs, including the Land Acquisition Program (LAP), as well as public input received in response to the Expert Panel review. The FAD also requires the City to participate in several workgroups relating to the LAP. Based on the approved 2023-2033 Long-Term Plan, LAP solicitation rates for 2025 through 2027 will be determined by NYSDOH in consultation with the U.S. Environmental Protection Agency (USEPA) and the New York State Department of Environmental Protection (NYSDEC).

The LAP complements a variety of successful watershed protection programs and pollution remediation strategies funded by DEP to maintain excellent source water quality originating from the Catskill/Delaware watershed. Since 1997, the LAP has operated under an evolving set of strategies, policies, and programs with the goal of increasing the amount of land in permanent protected status through robust land acquisition and associated initiatives. Prior to 1997, the City owned approximately 34,452 acres of land in the Catskill/Delaware watershed, and New York State owned another 202,000 acres, for a total protected land base of approximately 24%. Since 1997, the LAP and its various partner programs have acquired approximately 154,000 acres of land in the Catskill/Delaware watershed. Together with lands protected by other entities such as New York State and land trusts, these acquisitions have raised the level of permanently protected land in the Catskill/Delaware watershed to almost 40% today.

For the past ten years, the LAP has operated in accordance with a 15-year Water Supply Permit (WSP) issued by NYSDEC in December 2010 and a 2012-2022 Long-Term Land Acquisition Plan that DEP developed and submitted in September 2009 pursuant to the 2007 FAD. The 2012-2022 Long-Term Plan contained several goals, methods and strategies designed to increase protected lands within specific West of Hudson (WOH) sub-basins and throughout the Catskill/Delaware watershed; develop parcel selection procedures that maximize the water quality benefits of land acquisition; and build on existing programs to promote City-owned lands as a working landscape in partnership with local communities.

This 2023-2033 Long-Term Land Acquisition Plan describes the methods and strategies that will guide the LAP and its City-funded partners over the next ten years to continue enhancing the permanent protection of sensitive watershed lands in the unfiltered Catskill/Delaware water supply. The driving goal of this Plan is to pursue compelling lands with a nexus to water quality protection, with significant consideration given to WOH watershed areas where outgoing solicitation is or may be constrained by a number of factors discussed throughout this Plan. This 2023-2033 Plan outlines specific conditions and strategies for each reservoir basin in the Catskill/Delaware watershed. This Plan acknowledges that multiple variables and uncertainties may require additional adjustments to the LAP as future milestones are achieved and future programmatic decisions are made by State and federal regulators in consultation with the City and watershed stakeholders.

For example, the current WSP expires in December 2025 and the current FAD expires in December 2027; although DEP anticipates both regulatory documents will be renewed for successor terms, the requirements set forth in each will certainly influence the future direction of the LAP and its partner programs. In addition, pursuant to existing FAD requirements, the City is either currently engaged in discussions with regulators and watershed stakeholders on myriad topics related to the LAP, or will need to engage in discussions during the near-term.

Specifically, the Revised 2017 FAD requires the City to continue funding the LAP and its partner programs, while working with regulators and watershed stakeholders, to: (a) explore issues related to the expansion of the Streamside Acquisition Program (SAP) outside of the Schoharie basin, including an evaluation of the riparian buffer rental/license pilot program proposed by Delaware County (due December 2023); (b) explore potential changes to language in the conservation easements granted to NYSDEC on LAP fee simple properties to allow for certain activities, including utilities and renewable energy infrastructure (due December 2023); (c) explore the suitability of including pre-emptive purchase rights within Watershed Agricultural Council (WAC) conservation easements (due December 2024); and (d) assess opportunities to use certain potentially developable LAP-acquired lands that have lower water quality protection value to facilitate relocation of development (ongoing; no due date).

Given the above variables and potential future outcomes and decisions, DEP anticipates that this 2023-2033 Long-Term Land Acquisition Plan will require future adjustments or amendments to potentially refine its goals, strategies or methodologies based on various factors including the outcomes from several FAD workgroups as well as other emerging issues. For example, the recent COVID-19 global pandemic was an unanticipated public health emergency that resulted in the near-shutdown of the LAP for most of 2020 and the first half of 2021. Locally, the COVID-19 pandemic also impacted the real estate market within the watershed, as numerous people moved from cities into rural areas and thus created a new dynamic within many watershed communities that traditionally hadn't experienced housing shortages and/or development pressures of such magnitude and speed.

In many ways, the LAP is still in recovery mode given the long-term nature of real estate transactions; for example, real estate purchase contracts have historically taken 12-18 months to advance and execute but more recently are taking longer due to several factors. Although DEP paused LAP solicitation for over a year during the height of COVID-19, numerous real estate projects were already in the pipeline that were subsequently impacted by Citywide budget, procurement and internal staff capacity challenges that continue to have lingering effects.

In summary, the LAP has evolved considerably since it was initially created and funded more than two decades ago, and that future adaptations will be necessary due to multiple internal and external factors and uncertainties. In collaboration with regulators and stakeholders, especially watershed communities, DEP remains committed to ensuring that the LAP continues to reflect a balanced approach to protecting the high quality of the City's unfiltered source water supply originating from the Catskill/Delaware watershed.

# 1. Introduction

The LAP is one component of the City's Long-Term Watershed Protection Strategy to avoid the costs and environmental impacts of filtering the Catskill/Delaware water supply. Land acquisition is an anti-degradation strategy whose goal is to reduce the threat of adverse water quality impacts associated with future development. Ownership of real property interests in watershed land by a water supply agency is generally deemed the most effective means of ensuring that land uses and potential contaminants can be sufficiently controlled for public health purposes. For more than 25 years, the LAP and its various partner programs have acquired such interests to approximately 154,000 acres of Catskill/Delaware watershed land. Together with lands protected by other entities such as New York State and land trusts, these acquisitions have raised the level of protected land in the Catskill/Delaware watershed from 24% in 1997 to almost 40% today.

## 1.1 Regulatory Context

The LAP grew out of the City's response to the 1986 Federal Safe Drinking Water Act Amendments and the 1989 Surface Water Treatment Rule (SWTR) promulgated by the USEPA, which required most public water utilities to either filter their water supply or meet specific "filtration avoidance" criteria. Under the SWTR, applicants for filtration avoidance 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." As such, ownership interest in watershed lands has been and remains a central component of the City's ability to successfully meet filtration avoidance criteria for the high quality Catskill/Delaware water supply.

DEP initially sought to establish a land acquisition program in the Catskill/Delaware watershed as a condition of the first FAD issued in 1993. That year, the City applied for a WSP from the NYSDEC while concurrently attempting to promulgate new Watershed Rules and Regulations. Those initial efforts met strong resistance from many WOH watershed communities who viewed the City's efforts as a threat to their future economic vitality. Over the next several years, the City engaged in extensive negotiations with federal and State regulators, local government officials, and environmental organizations that culminated in the signing of the 1997 Watershed Memorandum of Agreement (MOA). Under that landmark agreement, the City agreed to undertake a wide array of programs to protect water quality while supporting local economic development. Pursuant to the MOA, the City dedicated \$300 million for a land acquisition program to be governed by specific program parameters and acquisition procedures as detailed therein.

In January 1997, the City received a WSP issued by NYSDEC, and the first acquisition under the newly formed LAP closed in October of that year. The WSP was issued for a ten-year period through January 2007, with a five-year renewal option. A successor WSP was issued by NYSDEC in December 2010 with a 15-year term through December 2025.

Since 1997, USEPA and NYSDOH have issued the City a series of FADs that have continued to place strong emphases on land acquisition. The 2007 FAD required the City to dedicate an additional \$241 million for land acquisition, and to develop a Long-Term Land Acquisition Plan covering 2012-2022, which DEP submitted in September 2009.

The 2017 FAD, which was revised by NYSDOH in 2022, requires the City to develop a 2023-2033 Long-Term Land Acquisition Plan to be submitted in May 2023; this Plan meets that deliverable while intending to forecast a land acquisition strategy consistent with a successor WSP expected to be issued in 2025 and a successor FAD anticipated to be issued in 2027.

## 1.2 Real Estate Methods and Procedures

The LAP follows numerous methods and procedures that were determined during original program development, many of which are memorialized in the 1997 MOA and subsequent WSPs. Over the years, subsequent FADs and stakeholder agreements have led to additional requirements, programs, procedures, and policies. Together these govern how the LAP identifies and prioritizes properties, solicits landowners, appraises properties, configures real property rights to be acquired, determines public access to lands acquired in fee simple, pays property taxes, conveys conservation easements (CEs) to the State on fee simple lands held by the City, and myriad related matters. The LAP has successfully maintained an excellent record of compliance with all MOA, FAD, WSP, and other statutory or legal obligations; some of the most important parameters governing the LAP include:

- **Willing Buyer/Willing Seller.** Landowners and the City must both enter into transactions on a strictly voluntary basis. The LAP makes purchase offers to willing sellers based on appraised fair-market values, but landowners are under no obligation to sell until and unless a purchase contract is executed.
- **Fair Market Value.** The LAP commissions appraisals of real property interests at fair market value by independent New York State-certified appraisers. Purchase offers are based strictly on the results of these appraisals, and landowners have the right to submit their own commissioned appraisals that, if submitted, must be considered by the LAP's appraiser. Only under very limited circumstances, such as mortgage or tax foreclosure, can the LAP make a purchase offer and acquire land at below fair market value. The LAP model purchase contract provides for limited reimbursement to sellers of costs related to subdivisions and site cleanups.
- **Solicitation.** Parameters surrounding the LAP's obligation to diligently pursue acquisition are outlined in the MOA. Although the LAP retains flexibility to decline interest in a property upon inspection, the City is obligated to pursue acquisition in good faith once an appraisal is ordered (except in very limited circumstances, which have never been triggered to date). Since 1997, the LAP has been required to meet a series of annual or multi-year targets for solicitation of acres; this includes both "original solicitation" (a landowner is contacted for the first time to pursue acquisition of a given property) and "re-solicitation" (attempts in subsequent years to either recontact a landowner after failing to generate a positive response from the original solicitation, or after contacting the new owner of a property of interest after it has been transferred in the marketplace).
- **Real Property Rights.** The City and its LAP partners can fund the acquisition of property interests via purchase of CEs or land in fee simple. The City's preferred path is generally to acquire land via fee simple, which results in the highest level of control, allows the City to consider recreational uses, natural resource management,

and other uses on the property acquired, and makes the most efficient use of City staff in both the short and long-term. In cases where landowners are unwilling to sell their land outright in fee simple, a CE can be purchased that limits future development through the acquisition of perpetual deeded rights. Although initial acquisition costs of CEs are lower than fee simple purchases, CEs involve significantly longer negotiating timeframes, more complex legal documents and transactions, and higher long-term investments of City resources for monitoring, reviewing proposed uses, and potentially enforcing deed restrictions. Although the City acquired several relatively small CEs in the early years of the LAP, CE purchases are now generally pursued on larger and more compelling properties.

- **Property Taxes.** The City pays property taxes on all land and CEs it acquires, as well as on CEs acquired by WAC. Pursuant to the MOA, watershed towns are required to assess taxes in accordance with certain rules and the City is required under the MOA and State law to pay taxes as assessed. Since 1997, the City has paid approximately \$170 million in local property taxes on all real property interests acquired by the LAP throughout the entire watershed, including Croton; this number is approximately \$157 million for only lands acquired by the LAP in the Catskill/Delaware watershed.
- **CE Conveyance to NYSDEC.** Pursuant to the MOA, permanent protection of land is achieved not only through the City's acquisition and stewardship of real property interests, but by the conveyance of CEs to NYSDEC over lands acquired by the City in fee simple. Each CE conveyed to NYSDEC usually includes multiple properties per county. As of December 31, 2022, DEP had submitted 85 CEs on fee simple lands covering 1,112 properties (74,716 acres), of which NYSDEC has recorded 83 CEs on 1,093 properties (72,835 acres). Recently, watershed communities have expressed an interest in the City and NYSDEC amending the CE conveyed on fee simple lands to better support future community expansion objectives; these ongoing discussions are codified as a requirement of the revised 2017 FAD and represent one of several contributing uncertainties that DEP must consider in this Long-Term Plan.

### 1.3 Planning Principles

The Catskill/Delaware watershed spans just over a million acres in eight upstate counties. Identification of the most important parcels for acquisition within this vast watershed is an ongoing process based on several geographic, topographic, and real estate factors. The LAP prioritizes solicitation based on a property's location within the water supply system, followed by various site-specific characteristics and principles as embodied in the MOA.

#### Priority Areas

The basins and sub-basins comprising the Catskill/Delaware watershed are assigned the following Priority Areas, which were codified in the 1997 MOA and are depicted in Exhibit A:

- **Priority 1A:** Sub-basins within 60-day travel time to distribution located near reservoir intakes.
- **Priority 1B:** All other sub-basins within 60-day travel time to distribution.

- **Priority 2:** All remaining sub-basins in terminal reservoir basins.
- **Priority 3:** Sub-basins in non-terminal reservoir basins with water quality problems identified as of 1996.
- **Priority 4:** All other sub-basins in non-terminal reservoir basins.

The 1997 MOA originally required the LAP to solicit at least 355,050 acres in accordance with a schedule that progressively targeted higher Priority Areas first while considering the percentage of eligible lands to be solicited (ranging from 95% of eligible lands in Priority Area 1A down to 50% in Priority Area 4). In 2000, DEP issued the LAP Out-Basin Plan, which detailed a strategy for solicitation in Priority Areas 3 and 4 – regions where property selection and ranking had been much more important than Priority Areas 1 and 2 because virtually all eligible properties were to be solicited within the latter. This strategy has remained central to the LAP’s evolving process for prioritizing solicitation over time.

Pursuant to the 2007 FAD, the LAP’s 2008-2010 Solicitation Plan called for an additional 90,000 acres of new solicitation, primarily in Priority Areas 3 and 4 since Priority Areas 1 and 2 had already been almost entirely solicited, effectively raising the level of solicitation in those Priority Areas above the original MOA thresholds. Since 2010, DEP has also emphasized core LAP solicitation within certain reservoir basins based on the overall level of protection and contribution to future supply (Areas of Focus), as well as certain subbasins based on their proximity to reservoir intakes and/or lower levels of protected land (Areas of High Focus). As depicted in Exhibit B, the Areas of High Focus are primarily located in portions of the towns of Tompkins, Masonville, Walton, Colchester, Andes, Hamden, Bovina, Roxbury, Prattsville, Jewett and Lexington.

The Revised 2017 FAD currently requires the LAP to solicit or resolicit 200,000 acres during the period 2018-2024, a decrease from 350,000 acres that were originally required before the FAD was revised in 2022. As of December 31, 2022, the LAP has solicited 150,390 acres (75%) against the Revised 2017 FAD requirement (covering 2018-2024) and over 480,000 unique acres in total since 1997.

### **Natural Features Criteria**

Natural Features Criteria (NFC) establish a set of hydrologic and topographic features, of which one or more criteria must be present at specific minimum levels on a property for it to qualify for acquisition in Priority Areas 2, 3 or 4. The LAP uses a proprietary Geographic Information System (GIS) to overlay NFC onto tax parcels as part of the property evaluation process illustrated in Figure 1. Because contaminants can be transported during a rain event to a reservoir within a few days from virtually any point in the tributary system, the distance of a parcel to a reservoir, whether along a tributary or in absolute terms, is not used as the sole factor in determining its priority. Rather, NFC represent the driving force behind the LAP’s property ranking process, in particular the amount of surface water criteria. Over the last twenty years, the NFC originally defined in the MOA have been further refined by DEP based on stakeholder input and the LAP’s success in raising the proportion of protected lands in important subbasins.

- **Surface Water Criteria (SWC).** For purposes of land acquisition, SWC includes watershed lands that are (a) within 1,000 feet of a reservoir, (b) within a designated



floodplain, (c) within 300 feet from a defined watercourse, or (d) within a wetland that is mapped by NYSDEC and/or federally designated and larger than five acres. The amount of SWC on a property has always been a primary consideration for the LAP due to the potential for pollutants to enter and be transported by watercourses during rain events (when most pollutant transport occurs) and rapidly reach reservoirs regardless of distance. While the LAP has always focused on streams and stream buffers, strategies have been narrowed over time such that more projects now involve subdivisions that exclude drier areas from acquisition, thus increasing the proportion of stream buffer acquired relative to total property size and allowing less sensitive land to remain privately owned and available for future development. The level of protected lands throughout the Catskill/Delaware watershed emphasizes the importance of not just quantity but quality of lands acquired, and the location of those lands with respect to Priority Areas, subbasins, and water supply operations. This Plan recommends strategies that consider the overall status of protected lands within reservoir subbasins, the evolution and direction of program requirements, funding and other resources allocated to land acquisition, and what can be accomplished during the ten-year planning period.

- **Steep Slopes.** For purposes of land acquisition, steep slopes are defined as a gradient of 15% or more. This distinction is made for several reasons that pertain to property selection: (a) parcels with steep slopes along public roads are more expensive and therefore less likely to be intensively developed; (b) soils are likely to be thinner on steeper slopes, making septic systems more expensive to construct; (c) steep slopes shed water faster and can erode more easily, thus are more likely to transport silt and particulates downhill into watercourses when disturbed by poor forestry, roads, or construction. Although slope factors are one of the NFC considerations in ranking and deciding whether to solicit a property, the LAP generally examines slope on a site-by-site basis where other factors are not determinative.

## Property Ranking

The LAP employs a GIS-based ranking system that uses three equally weighted components (property size, percent SWC, and slope characteristics) to assign values to each property. A property is defined as one or more tax lots owned by the same entity; tax parcels in whole or part may be excluded from acquisition if they are not sufficiently compelling and/or if they would make the remaining property ineligible. Properties are evaluated against others within a geographic area such as basin, subbasin, or Priority Area, yielding rankings as depicted in the simplified example shown in Figure 1. Most situations are more complex, involving multiple tax lots of varying size and quality in a single ownership, developed or farmed portions, areas that are partially within half-mile zones around hamlets or outside the watershed, or land with limited legal access or road frontage. The LAP considers these characteristics along with long-term stewardship concerns when determining how much of a property should be solicited and/or how to configure properties in the event subdivision is necessary.

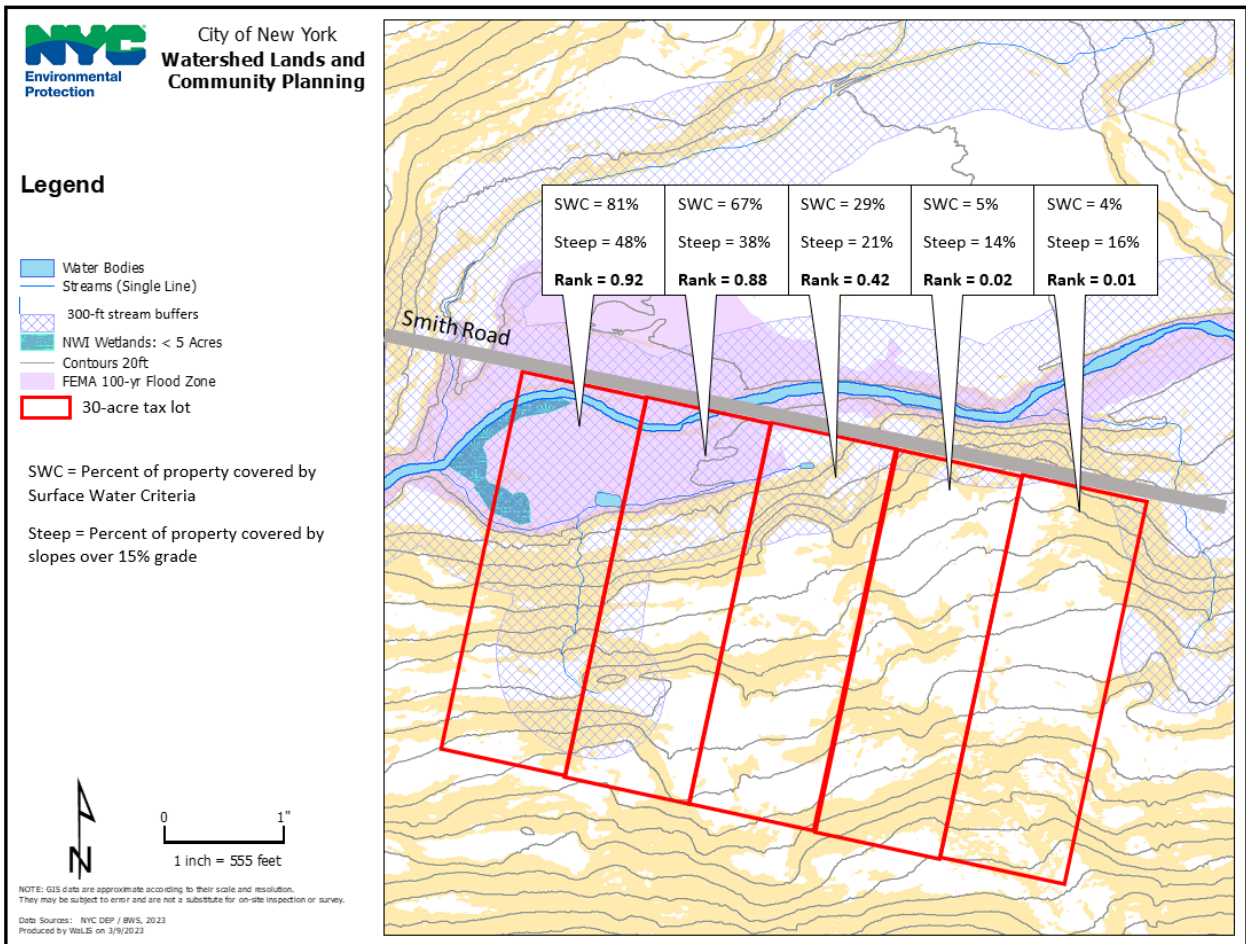


Figure 1. Hypothetical example of five properties with similar size and road frontage characteristics to illustrate how they would rank against each other in terms of surface water features and steep slopes over 15% grade. The higher the ranking, the higher the priority relative to other properties in the group examined.

## 2. Overview of Programs

As outlined in the MOA, the City’s original program to acquire CE interests and fee simple lands has come to be known as “core LAP”. While core LAP has focused mostly on fee simple acquisitions, several other willing buyer/willing seller programs implemented by partners have since been created to address particular situations, real property interests, and focus areas, thus resulting in a multi-faceted approach to land protection in the Catskill/Delaware watershed. In partnership with WAC, the City funds the purchase of CEs on agricultural and forest land. In partnership with the Catskill Center for Conservation and Development (CCCD) through the SAP, the City funds focused acquisition of streamside buffer lands and floodplains in the Schoharie basin. In partnership with communities through the New York City-Funded Flood Buy-Out Program (NYCFFBO), the City funds acquisition of high priority improved parcels that are important for local flood hazard mitigation and water quality protection objectives.

For the past ten years, the overall LAP has operated according to DEP’s 2012-2022 Long-Term Land Acquisition Plan that outlined the following goals and strategies, annotated with a short update on how each has been implemented:

1. **Increase percentage of protected land in the Catskill/Delaware watershed with emphasis on (a) non-terminal reservoir basins with less than 30% protected lands, (b) specific subbasins with low levels of protected lands, and (c) reservoir basins expected to provide larger contributions to future water supply.** Key strategic accomplishments towards this goal are summarized later in this Plan.
2. **Develop parcel selection procedures to maximize the water quality benefit of acquisitions, in part by (a) augmenting parcel ranking with new GIS stream network resulting from new LiDAR data collected in 2009 to improve accuracy, and (b) adding road frontage as part of the ranking factors.** Since 2012, core LAP has used the GIS data that was derived from the 2009 LiDAR collection (land use/land cover, hydrography, topography, and basin boundaries) to improve parcel ranking and refine criteria to support solicitation in conjunction with prioritized Areas of Focus. Properties with road frontage are examined on a case-by-case for development potential since access can be too steep or blocked by features not necessarily apparent on GIS, while some properties with road frontage are undevelopable because of SWC yet remain compelling precisely due to such features.
3. **Build on existing programs to promote City lands as a working landscape in partnership with local communities.** DEP continues to honor its commitment to expand use of City-owned lands, including support of locally driven initiatives that contribute to economic vitality. DEP has significantly expanded recreational access to newly acquired lands soon after closing, including the full range of hunting opportunities as allowed by New York State and several new types of uses such as non-motorized recreational boating on non-terminal reservoirs and a pilot electric-motor trolling program on the Cannonsville Reservoir. Streamside acquisitions also offer new opportunities for public fishing access and potential connectivity to recreational trails. In addition, the Revised 2017 FAD includes several community-driven initiatives that DEP is actively discussing with stakeholders, such as (a) exploring land swaps between the City and local communities to facilitate relocation of development out of floodplains or potentially assist with economic vitality projects, and (b) considering a proposal by Delaware County for a possible land licensing program that involves payments to landowners who retain ownership of their property while committing to certain stewardship obligations.
4. **Develop strategies to promote the wise use of acquisition funds over the long term.** In recent years, core LAP has reduced solicitation in WOH geographic areas with relatively high land values, although high-cost properties are occasionally pursued when water quality benefits are deemed compelling. During the first decade of core LAP, for example, acquisitions in the Town of Woodstock represented 54% of acres (65 contracts) in the Ashokan basin and 47% of costs, whereas acquisitions in Woodstock represented 17% of acres (eight contracts) and 14% of costs during the period 2010-2022. The reduced focus on high-cost properties in areas such as this makes sense given the higher levels of protection already achieved combined with the more expensive market. Core LAP has also concentrated on lower cost areas in less protected WOH basins.

## 2.1 WAC Farm and Forest CE Programs

In 1999, as required by the MOA, DEP began funding a program to purchase Farm CEs that is locally managed and implemented by WAC. These CEs allow, but do not require, agricultural and forestry uses. If the property is farmed, the CE requires that agricultural activities be undertaken pursuant to a Whole Farm Plan which prescribes best management practices to control agricultural pollution and allows for a diversity of agriculture-related uses. WAC Farm CEs preclude most other types of development except within a designated zone known as an Acceptable Development Area. Each WAC Farm CE defines several areas that are restricted to certain uses. Unlike CEs that are acquired by core LAP and stewarded by DEP, Farm CEs are owned and stewarded by WAC using City funding.

In 2013, pursuant to the 2007 FAD and the 2010 WSP, DEP began contracting with WAC to fund a pilot Forest CE Program, distinct from the CE program offered through core LAP. WAC Forest CEs are directed towards tracts of private land that are actively managed for forest products, and the deed includes several defined areas that are restricted to certain uses, primarily forest regeneration and harvesting. More intensive uses are prohibited except in small, defined areas. In December 2019, DEP submitted an evaluation report as a requirement of both the FAD and WSP, recommending continuation of WAC's Forest CE Program. The WSP requires the NYSDEC, in consultation with NYSDOH, to determine whether the pilot Forest CE Program shall be continued or expanded. In the absence of a formal NYSDEC determination, DEP continues to fund the WAC Forest CE Program pursuant to requirements of the Revised 2017 FAD, which also requires that DEP convene a workgroup in 2024 to explore the suitability of including pre-emptive purchase rights within WAC CEs.

## **2.2 Flood Buyout Programs**

Since 1997, the LAP has managed two flood buyout programs that have resulted in acquisition of fee simple lands either by the City or local communities, with CEs eventually to be conveyed to NYSDEC regardless of owner. Sellers receive the significant benefit of being paid the appraised value as if flood damage had not occurred.

Following flood events in 1996 and 2011, DEP partnered with several watershed towns and counties to protect sensitive lands through the Federal Emergency Management Agency (FEMA) Flood Buyout Program (FBO), combining City funds (25% of acquisition costs) with State and federal funding (75%). In support of these FEMA flood buyouts, the LAP managed landowner negotiations, contracts, and transactions.

The 2010 WSP and the Revised 2007 FAD both required the City to fund a New York City-Funded Flood Buyout Program (NYCFFBO), which became active in 2016 and is designed to operate between FEMA-designated flood events and to accept only projects advanced by communities. The NYCFFBO encourages local municipalities to accept ownership of such properties, although they may also request that the City take ownership.

## **2.3 Streamside Acquisition Program**

The 2010 WSP required the City to fund a new Riparian Buffer Acquisition Program, now called the SAP, that is managed by CCCD and focuses on purchase of streams and riparian buffers throughout the Schoharie basin as a pilot program. Development of the SAP was based

on significant input from stakeholders that resulted in a Program Development Initiative (PDI) report commissioned by the Town of Hunter and prepared by CCCD. The PDI report proposed procedures and criteria for this new acquisition program. In July 2015, DEP began contracting with CCCD to operate the pilot SAP.

Per its DEP contract, CCCD develops SAP solicitation plans and outreach strategies to engage with municipalities and landowners. CCCD began soliciting properties in 2016 with a focus on Stream Preservation Areas (SPAs), creating criteria for buffers on individual parcels located along main stems and tributaries identified in Stream Management Plans for the Schoharie basin as developed by county Soil and Water Conservation Districts in partnership with DEP's Stream Management Program (SMP). SPAs are designations within Stream Management Plans that include stream management units with intact forested buffers that are deemed high priority for protection. Units are characterized as being moderately to highly stable and functioning effectively.

In 2018, pursuant to a 2017 FAD requirement, DEP convened meetings with watershed stakeholders to explore and develop incentives that might increase landowner participation in the SAP. In March 2019, the following SAP incentives were proposed and eventually finalized and adopted for implementation in the Schoharie basin:

- Increased down payments for properties with low appraised values.
- Reimbursement for removal of debris and improvements under specific conditions.
- Reimbursement for certain subdivision costs incurred during the purchase contract.
- A \$2,000 payment, beyond the purchase price, for properties that contain 85% or greater of SWC.
- A \$3,000 payment beyond the purchase price for properties where fair market value is \$40,000 or less.
- An additional \$1,000 payment beyond the purchase price or those properties valued at \$40,000 or below that require subdivisions.

In addition to financial incentives, the SAP also includes the following non-financial incentives: (a) an Option Agreement that would allow flexibility in cases where a SAP acquisition would only make sense if the property were part of a larger assemblage; (b) potential conveyance of SAP-acquired property to third parties; and (c) sample language for local subdivision ordinances that interested towns could adopt to allow for SAP-friendly subdivisions that are currently prohibited by town laws, allowing wetter portions of parcels to become eligible for the SAP while leaving areas further from watercourses available for future development. The latter incentive would facilitate new opportunities for landowners to participate in the SAP.

Properties with qualifying streams, stream buffer, wetlands, floodplain, and/or reservoir buffer are eligible for purchase and protection under the SAP. Among such eligible parcels, the SAP's current Solicitation Strategy prioritizes (a) long stretches of continuously forested riparian buffers; (b) SPAs and other priorities identified by Stream Management Plans; and (c) priorities identified by local communities that are acceptable to the SAP.

### **3. Evolution of Programs**

During the past two decades, core LAP and partner programs have undergone significant evolution. Core LAP in particular has progressively refined its focus away from WOH population centers – including areas considered “designated hamlets” under the 1997 MOA as well as “expanded hamlets” pursuant to the 2010 WSP – and towards lands most sensitive and important for water quality protection. The MOA originally designated WOH areas within which municipalities were given the option, to be reconsidered every five years, to exclude LAP acquisition of CEs and/or land in fee simple; most communities elected to exclude LAP from both. In 2010, as part of negotiations related to a new WSP, the City and watershed stakeholders agreed to expand the original MOA hamlet designations, while the entire Town of Shandaken was excluded from outgoing LAP solicitation as codified in the 2010 WSP. According to DEP’s GIS calculations, there is a total of 64,512 WOH acres (including Shandaken) where LAP is now largely excluded. Figure 2 depicts the status of all MOA designated hamlets and expanded hamlet areas as of December 31, 2022, along with other WOH areas with LAP solicitation restrictions as further described in the next section of this Plan.

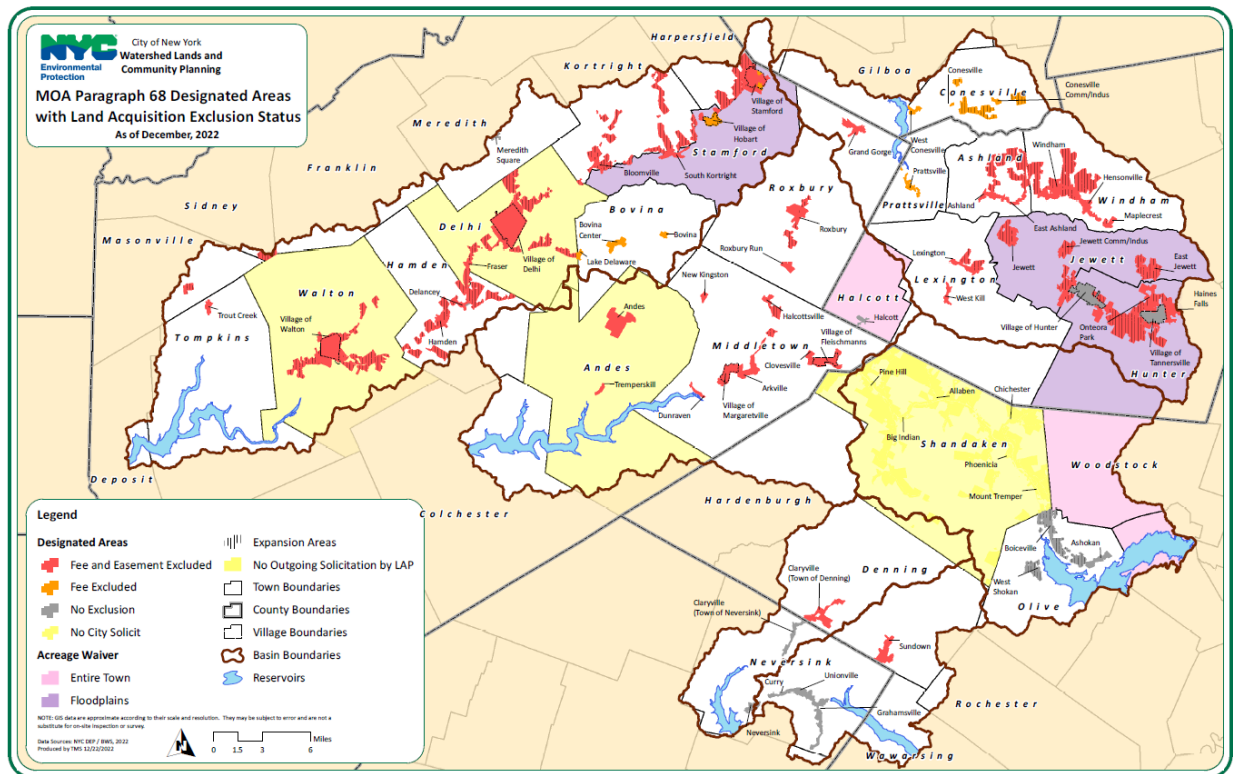


Figure 2. MOA designated hamlets, expanded hamlet areas, and other WOH watershed areas with LAP restrictions (no outgoing solicitation) as of December 31, 2022.

### 3.1 Town Level Assessments

In support of the 2010 WSP, DEP issued a Final Environmental Impact Statement (FEIS) on the “Extended New York City Watershed Land Acquisition Program”. The FEIS detailed several future scenarios for land acquisition using a conservative model (i.e., high expectations of acres to be acquired) to ensure that socioeconomic impacts on WOH communities were not underestimated, particularly in areas where LAP expected to solicit more frequently. The FEIS included projections of acreages to be acquired in 20 WOH towns that were chosen for in-depth

evaluation, along with assessments of projected impacts on the supply of developable land. Although the FEIS concluded that the total acquisitions authorized by the 2010 WSP were not expected to result in significant adverse socioeconomic impacts, neither the FEIS nor the WSP imposed limitations on the number of acres to be acquired in any given town.

During stakeholder discussions leading up to the 2017 FAD, watershed communities identified one town (Delhi) where core LAP and WAC acquisitions had collectively exceeded the FEIS projected acres along with several other towns where acquisitions were approaching the FEIS projected acres. DEP subsequently agreed to temporarily limit core LAP's outgoing solicitations in eight towns, and in April 2017 DEP issued updated town level assessments for 21 WOH towns to further evaluate the projected effects of continued land acquisition. Since then, acquisitions have reached the FEIS projected acreage in two towns (Walton and Andes); along with Delhi, core LAP no longer outwardly solicits landowners in these towns.

When the 2017 FAD was initially issued, it established a new LAP solicitation goal of 350,000 acres for the period 2018-2024 in addition to increasing solicitation acreage credit for the SAP and NYCFFBO from two-to-one to five-to-one, up to a maximum of 20,000 acres including WAC CE Programs on a one-to-one acreage basis; as previously noted and discussed later in this Plan, these metrics have since been further revised. The 2017 FAD also required DEP to modify its 2012-2022 Long-Term Land Acquisition Plan based on the updated town level assessments and comments received from watershed stakeholders.

In April 2018, DEP submitted proposed modifications to its 2012-2022 Long-Term Land Acquisition Plan, which NYSDOH approved in March 2019. These approved modifications further adjusted several aspects of LAP's planning principles effective immediately, including refinements to the minimum NFC solicitation requirements in Priority Areas 2, 3 and 4, as well as new limits on outgoing solicitation that expanded on a previous limitation for the Town of Shandaken as required by the 2010 WSP. Specifically, the modifications approved in 2019 included the following:

1. Revise NFC limits in Priority Areas 2, 3 and 4 as follows:
  - a. Raise the minimum SWC needed for acquisition (not solicitation) from 7% to 15% for properties that do not adjoin City land.
  - b. Within a half-mile zone around the 1997 hamlet designated areas, raise the minimum SWC needed for acquisition to 30%.
  - c. If LAP (core LAP plus partner programs) has acquired either 60% of the FEIS projection since 2010 for a given town, or more than 2,000 acres since 2010 for that town, the minimum SWC for an acquisition project would be raised to 50% within the half-mile zones around the 1997 hamlet designated areas. This immediately applied to the towns of Andes, Bovina, Delhi, Kortright, Middletown, Roxbury, Walton and Windham.
2. Offer each WOH town the ability to designate up to 100 acres of new land that would be off limits to outgoing solicitation by DEP's core LAP. Within a given county, interested towns could reallocate these 100 acres. DEP's core LAP may still accept landowner-initiated contact (incoming solicitations) in these areas.

3. DEP's core LAP will cease outgoing solicitation, limiting itself to responding to incoming landowner inquiries, in towns where the FEIS projection has been reached or more than 4,000 acres have been acquired since January 1, 2010. This immediately applied to the towns of Andes, Delhi and Walton. In addition, DEP had already ceased outgoing solicitations in the Town of Shandaken since 2010, pursuant to the WSP.

The current status of LAP acquisitions with respect to FEIS town-level assessments and thresholds is presented in Exhibit C; acreages approaching limits from the April 2018 plan are listed in blue font. In Delaware County, the Town of Bovina is closest to the "no outgoing solicitation" benchmark, with only 319 acres remaining to be acquired before core LAP ceases outgoing solicitation. In Greene County, the Town of Windham is closest to that threshold, with only 77 acres remaining to be acquired before core LAP ceases outgoing solicitation.

Watershed-wide, the LAP is limited to acquiring no more than 106,712 acres since January 1, 2010, of which no more than 105,043 acres can be acquired in total for all WOH towns. Between January 1, 2010 and December 31, 2022, core LAP and partner programs have executed contracts on 52,840 acres (51,783 acres in WOH towns), leaving a conservative balance of 53,872 acres for potential acquisition watershed-wide (53,260 acres in WOH towns).

## 3.2 NASEM Recommendations

In August 2020, the NASEM Expert Panel released a report titled "Review of the New York City Watershed Protection Program" that contained over 60 conclusions and recommendations. Six of these recommendations involved the LAP, of which five directly focused on the LAP. These recommendations are summarized below along with public comments submitted by various stakeholders and steps being taken to address each recommendation. It is worth noting that in April 2021, DEP proposed several additional modifications to core LAP that were shared with watershed stakeholders in response to the NASEM recommendations; these modifications have since been incorporated and therefore reflect further enhanced selectivity of properties by the LAP overall.

1. **Increased coordination between the SMP and other Watershed Protection Programs would more effectively prioritize project locations and achieve restoration objectives.** There was a comment submitted by an environmental stakeholder suggesting that the LAP should coordinate with the SMP, WAC, and other partners and programs to identify high priority riparian corridor protection and stream buffer improvement projects on SAP-acquired lands; the comment also suggested that such coordination could take place after City acquisition but before a CE is conveyed to NYSDEC.

In response to this recommendation, DEP is actively working internally and with watershed stakeholders to improve coordination between the SAP, core LAP, and the SMP to better focus solicitation and potential acquisition. In the short term, the LAP will incorporate WOH stream feature inventories provided by the SMP through DEP's internal GIS database to inform parcel selection on a case-by case-basis. Solicitation will prioritize riparian buffers containing intact, stable forested areas that have minimal need for treatment or management. To further improve coordination, the LAP will regularly consult with the SMP on special projects



for input on whether an acquisition would enable or benefit restoration, flood hazard mitigation, riparian planting, recreation, or applied research projects.

Additionally, DEP notes that it manages land use on newly acquired fee simple properties subject to the same constraints as if the NYSDEC CE were in place, even if the CE is not yet transmitted or recorded.

- 2. The metrics of the LAP should focus on acquisition of the most valuable lands for water quality protection.** There was strong agreement among environmental stakeholders that the LAP should concentrate acquisition of lands more tightly configured around riparian buffers and other highly sensitive lands. Watershed communities expressed a view that specific metrics such as an objective ranking system should be used to eliminate any acquisition that does not directly contribute to water quality objectives. Communities also expressed a desire for a complete restructuring of the LAP, with an augmented focus on community vitality and acquisition only of lands that have little development potential. The New York State Watershed Inspector General's office emphasized the value of including lands with steep slopes regardless of proximity to streams.

The definition of "valuable" or "compelling" properties has changed over time, influenced by lessons learned, geography and evolving program rules/requirements. The LAP's metrics and planning principles are continually refined and currently focus largely on SWC, while parcel configurations increasingly carve out drier lands that are distant from watercourses, away from population centers, and potentially developable. Although NFC rules fundamentally allow the LAP to pursue properties that lack SWC if they are more than half covered by steep slopes over 15%, core LAP has generally not pursued, with few exceptions, drier properties regardless of slope. This has resulted in more configurations that require subdivisions.

In response to this recommendation and the one below, and as shared with watershed stakeholders in April 2021, DEP has further agreed that for properties in Priority Areas 2, 3 and 4, the core LAP has: (a) increased SWC from 7% to 15% for parcels under 200 acres that are outside half-mile buffers around MOA-designated hamlet areas and adjoining City-owned lands; (b) increased SWC from 15% to 20% for parcels under 200 acres that are outside half-mile buffers around MOA-designated hamlet areas and not adjoining City-owned lands; and (c) increased SWC to 30% (from 7% or 15%) for parcels over 200 acres regardless of hamlet buffers and adjacency to City-owned land. DEP retained the existing policy that these SWC modifications do not apply to the SAP, NYCCFBO or WAC CE Programs even though the acreages acquired by those programs do count towards FEIS projections. Compared to DEP's April 2018 modifications that were approved by NYSDOH, these April 2021 modifications further reduced available lands for core LAP solicitation by more than 103,600 acres or 33%. The definition of "compelling" is expected to be discussed further among watershed stakeholders in the months ahead.

- 3. The current practice of focusing on acquiring larger parcels in core LAP should be reconsidered.** There was general agreement by environmental organizations and watershed communities that DEP should increase science-based metrics to evaluate properties for acquisition, and that smaller, less developable parcels or parcels with combined community and water quality benefits should be pursued.

Defining “large” is important for establishing criteria, to ensure consistency with the recommended focus on “most valuable” land. Core LAP has defined 200 acres as the current threshold for “large”, although properties with substantial SWC can exceed that limit and still be compelling enough for acquisition of fee simple or CE. For this reason, the LAP does not specifically target larger properties, although such parcels may be pursued occasionally if deemed compelling for water quality protection. Establishing a size threshold relates not just to fee simple acquisitions but in particular to CEs. The LAP has largely avoided acquiring CEs smaller than 75 acres and has established 100 acres as a minimum guideline for most CEs because they involve significant investment of staff time and costs upfront; both factors are magnified after acquisition by the need for perpetual monitoring, enforcement, and maintenance of relationships with current and future landowners. For these reasons, core LAP continues to consider properties that are both “large” and “compelling” for acquisition of CEs.

**4. DEP should work with watershed communities to identify parcels now owned by DEP with lower protection value that offer development or relocation potential.**

While the general concept of “land swaps” was supported by some environmental organizations, no stakeholder comments specifically addressed relocation.

DEP is interested in considering specific proposals for specific properties from local communities. In fact, this recommendation was originally a requirement of the 2017 FAD and remains a requirement of the Revised 2017 FAD. Recently, DEP engaged in preliminary discussions with two communities about potential specific land swap proposals. However, DEP notes that the CE it conveys to NYSDEC on lands acquired in fee simple may present limitations for land swaps, depending on the property and its location within a specific Priority Area. The Revised 2017 FAD requires that DEP participate in a stakeholder workgroup to explore potential changes to NYSDEC CE language; those discussions are ongoing and remain one of the uncertainties that may influence this Long-Term Plan after submission.

**5. Land acquired under the Farm CE Program should be retired from intensive agricultural production.** The few comments submitted generally opposed this recommendation, based on the position that both the Farm CE and corresponding Whole Farm Plan already balance community vitality and water quality objectives. A stated goal of the WAC Farm CE Program is to support the conservation of working landscapes, which are central to the rural character of the WOH watershed.

DEP also disagrees with this recommendation, noting that Whole Farm Plans recommend best management practices that are implemented to control impacts from agricultural activities, particularly intensive uses. Further restricting agricultural uses would likely result in marginal water quality benefits while constraining the ability of eased farms to sustain their economic viability, thus conflicting with other NASEM recommendations that address the importance of community vitality as a dual goal of the MOA. It is also worth noting that the Revised 2017 FAD requires that DEP, in consultation with WAC, convene a workgroup in 2024 to explore the suitability of including pre-emptive purchase rights within WAC CEs.

**6. DEP should shift funding and emphasis to acquiring riparian lands on critical areas of tributary streams through the SAP and NYCFFBO.** Communities and environmental stakeholders expressed widespread support for both programs, although the specific direction of the SAP remains a point of disagreement. Several

stakeholders recommend wholesale expansion of the SAP throughout the WOH watershed, while some communities have proposed alternative buffer protection programs that reserve acquisitions for mostly undevelopable parcels, contingent upon community support.

One of the ongoing stakeholder workgroups is actively exploring issues related to the expansion of the SAP outside of the Schoharie basin. DEP will continue to dedicate significant resources to both the SAP and NYCFFBO and remains committed to support the continuation of both programs as part of this 2023-2033 Long-Term Plan.

Among other challenges, local subdivision processes can make it difficult to acquire those portions of streamside parcels that are most valuable to water quality, which advances the goal to leave potentially developable lands for future community expansion. In the context of the collaborative discussions during 2020-2021 that resulted in the adoption of new SAP incentives, the Coalition of Watershed Towns helped develop a model amendment for local subdivision ordinances to ease the process of subdivision design, review and approval to facilitate acquisitions targeted at riparian land.

The ongoing workgroup discussions, along with potential changes to local subdivision laws, are factors that will affect this Long-Term Plan.

## 4. Current Status of Programs

Since DEP’s publication of the 2012-2022 Long Term Land Acquisition Plan, roughly 65,000 acres have been protected by core LAP and its partners, bringing total lands protected since 1997 to nearly 154,000 acres based on closed purchase contracts (Table 1). With an additional 34,452 acres owned by the City around reservoirs, almost 190,000 acres of watershed land are currently under some form of City ownership or control, not including land protected by the State and others; this represents a tremendous change in the watershed landscape since 1997.

Table 1. Summary of all LAP projects closed as of December 31, 2022.

	Contracts (#)	Contracts (% total)	Acres (#)	Acres (% total)	Cost (\$M)	Cost (% total)
DEP Fee Simple	1,361	75.2%	96,185	62.6%	\$367.9	75.1%
DEP CEs	170	9.4%	25,933	16.9%	\$72.2	14.7%
WAC Farm CEs	157	8.7%	28,229	18.4%	\$41.5	8.5%
WAC Forest CEs	9	0.5%	2,982	1.9%	\$2.9	0.6%
SAP	26	1.4%	227	0.1%	\$1.5	0.3%
FEMA FBO	64	3.5%	74	0.1%	\$0.5	0.1%
NYCFFBO	22	1.2%	47	0.0%	\$3.5	0.7%
<b>Totals</b>	<b>1,809</b>	<b>100.0%</b>	<b>153,677</b>	<b>100.0%</b>	<b>\$489.9</b>	<b>100.0%</b>

With roughly 40% of the entire Catskill/Delaware watershed now considered protected, DEP does not anticipate that future acquisition levels will continue at the same pace or scale as historical levels. For example, when viewing the accomplishments of the LAP each year based on the execution of purchase contracts, more recent trends indicate that acquisition overall is greatly reduced, with partner programs comprising a larger proportion of deals compared to core LAP. Figure 3 depicts the number of executed contracts annually by core LAP and each partner

program, whereas Figure 4 depicts the number of acres signed to contracts annually and Figure 5 depicts the total cost of these executed contracts each year. For ease of graphical representation, Figures 4 and 5 combine the SAP, FEMA FBO and NYCFFBO into one category.

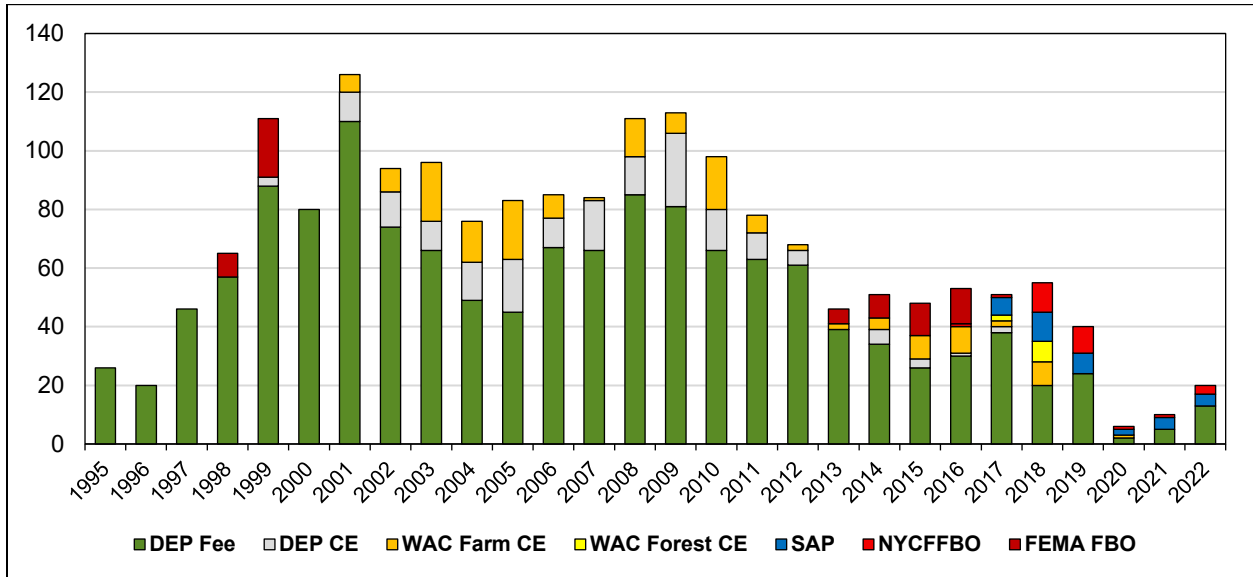


Figure 3. Number and type of all LAP contracts executed annually during 1995-2022.

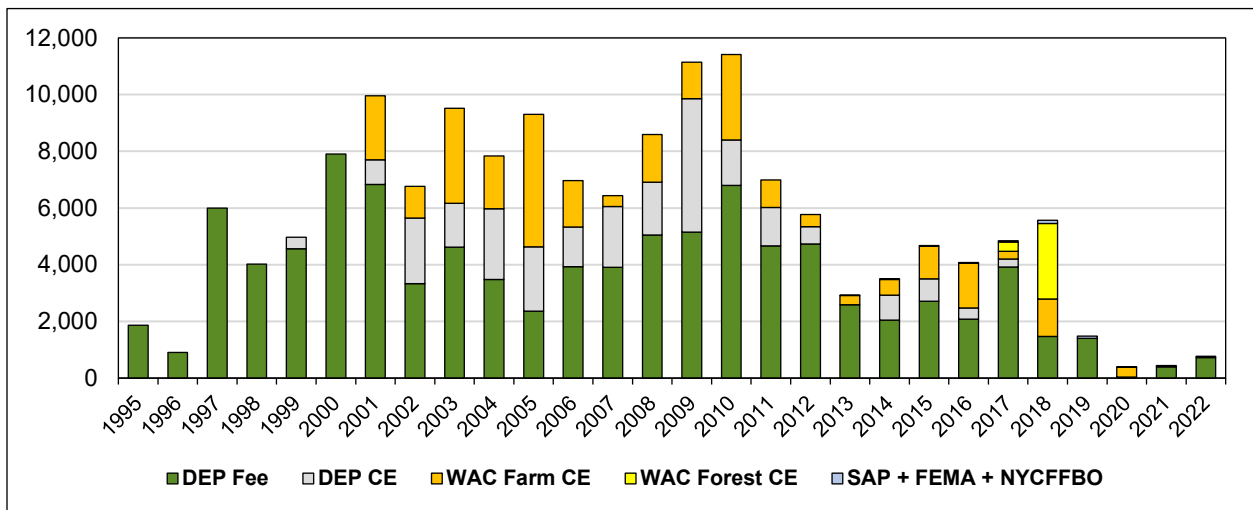


Figure 4. Number of acres signed to various LAP contracts annually during 1995-2022.

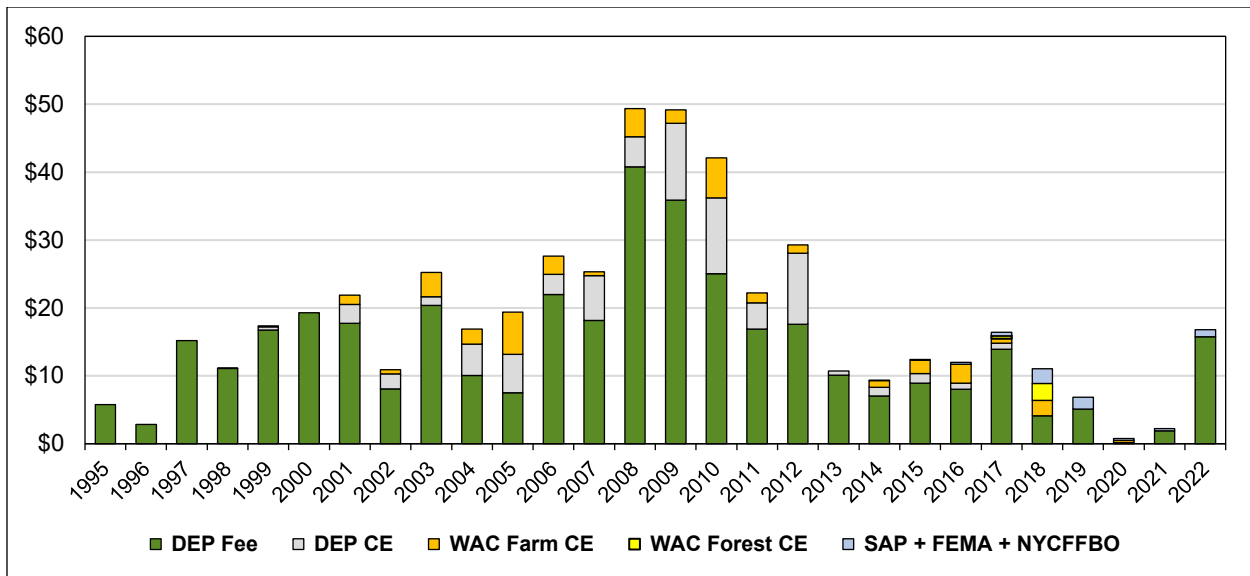


Figure 5. Total cost (in millions) of LAP contracts executed annually during 1995-2022.

As shown in Figures 6 and 7 and Exhibit D, the increases in protected lands since 1997 are meaningful not only at the watershed scale, but also for various basins, subbasins, and Priority Areas. For example, the Schoharie and Pepacton basins, both of which were protected at 20% or less in 1997 (pre-MOA), are now both over 34% protected. Since 2009, as guided by the 2012-2022 Long-Term Plan, DEP has reduced from twelve to three the number of Cannonsville subbasins with protection levels below 10%, while increasing three Pepacton subbasins with protection levels at 10% or less to levels well above that. The three least-protected Rondout subbasins, previously at 19%, 21% and 22%, are now at 23%, 24.4% and 30.7% respectively.

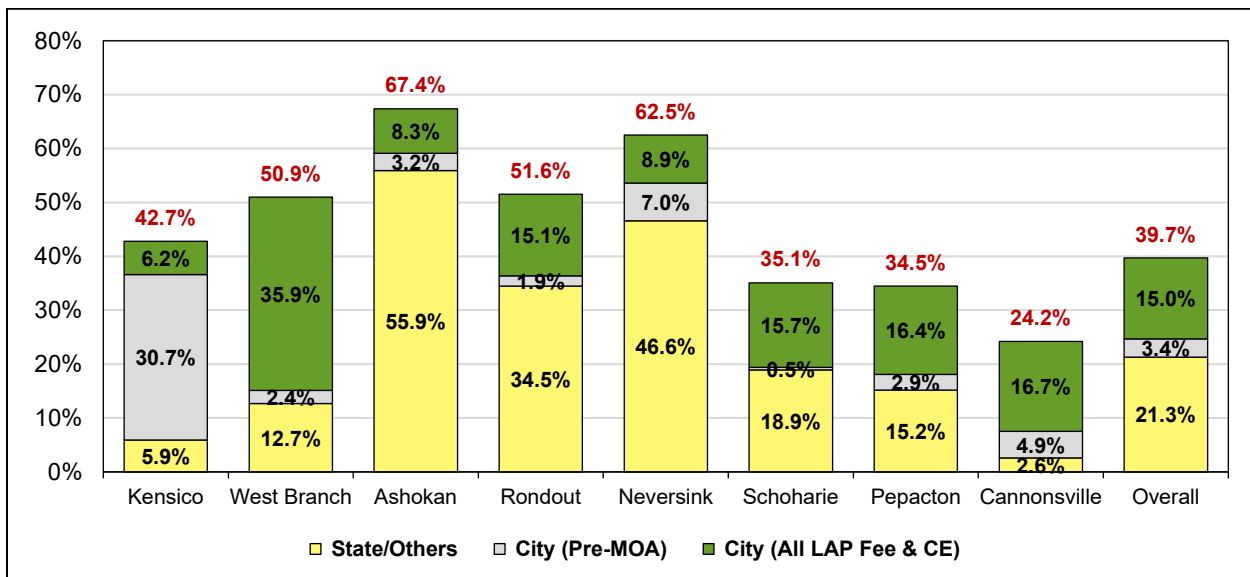


Figure 6. Protected lands by reservoir basin as a percentage of basin land area<sup>1</sup>.

<sup>1</sup> Small reductions in certain protected land categories compared to those shown in DEP’s 2012-2022 Long Term Land Acquisition Plan are the result of newer GIS data updated (1) as of 8/5/2013, when basin and reservoir acreage figures were revised following incorporation of new LIDAR data, and (2) as of 1/3/2018 following revised spillway elevation data (maximum reservoir levels are used to calculate the amount of land in each basin).

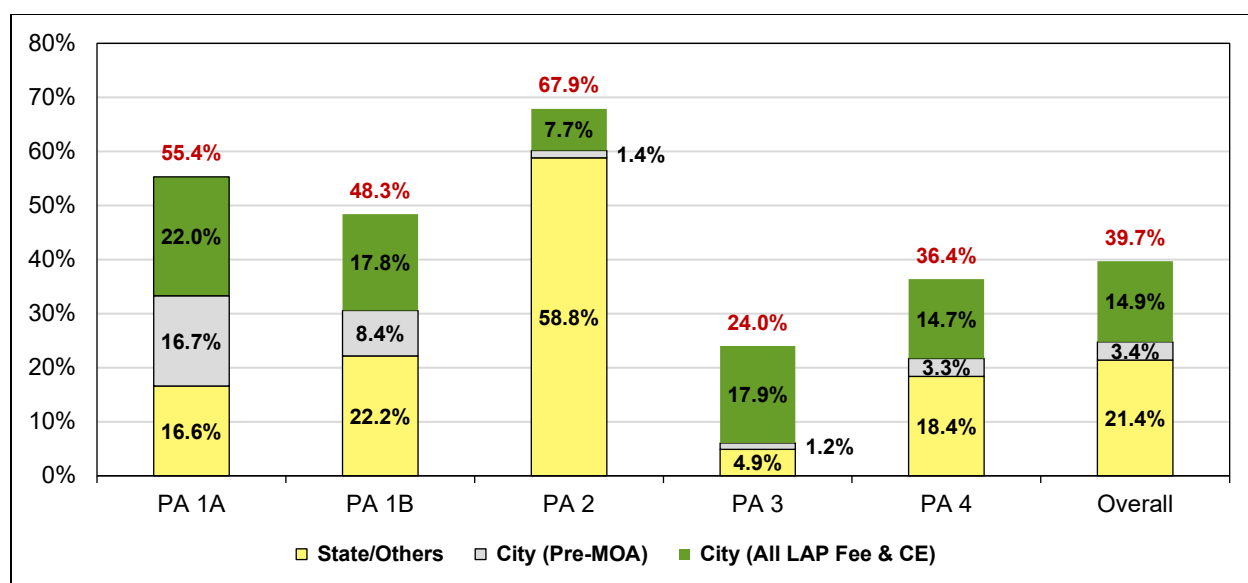


Figure 7. Protected lands by Priority Area (PA) and various ownership categories.

The NASEM Expert Panel confirmed that the LAP has substantially contributed to the City’s overall watershed protection efforts. While acquiring an undevelopable cliff or wetland may do little to protect water against future pollutant impacts, it is similarly true that acquisition of a flat, developable property that is distant from a watercourse may have only marginal connections to water quality. In seeking to allocate funding and other resources necessary to acquire land effectively, the LAP has continually refined the metrics used to analyze the land it acquires and the quality of properties that remain eligible for solicitation.

In response to the NASEM recommendations, and as codified in the Revised 2017 FAD, DEP now reports on enhanced LAP metrics that better illustrate water quality protection values; these enhanced metrics include acres protected by riparian buffers, floodplains, wetlands and forest land; miles of streambank protected; and average SWC for fee simple and CE parcels acquired through core LAP and the SAP.

Table 2 depicts that for the total acres protected by core LAP acquisition of fee simple or CE since 1997, over 28% is SWC and 60% is steeply sloped (more than 15% grade). With the exception of streams, all percentages represent average surface area coverage of that feature for lands acquired. Since streams are linear measurements rather than surface area, the percentages in Table 2 are relative to total length of streams in watershed.

Table 2. Summary of NFC for all LAP transactions closed as of December 31, 2022, based on GIS data<sup>1</sup>.

	Total Acres	SWC Acres	SWC (%)	Slope <sup>2</sup> Acres	Slope (%)	Flood-plain <sup>3</sup> Acres	Flood-plain (%)	Stream Miles	Streams (%)
DEP Fee Simple	96,943	27,638	28.5%	58,514	60.4%	2,034	2.1%	379	9.9%
DEP CEs	26,158	7,350	28.1%	16,699	63.8%	532	2.0%	103	2.7%
WAC Farm CEs	28,217	8,287	29.4%	15,142	53.7%	1,358	4.8%	119	3.1%
WAC Forest CEs	2,944	462	15.7%	2,216	75.3%	42	1.4%	6	0.1%
SAP	240	184	76.5%	109	45.5%	35	14.7%	4	0.1%
FEMA FBO	71	65	91.5%	16	22.0%	60	84.0%	1	0.0%
NYCFBO	49	48	98.5%	19	38.2%	37	75.7%	2	0.0%
<b>Totals</b>	<b>154,622</b>	<b>44,035</b>	<b>28.5%</b>	<b>92,715</b>	<b>60.0%</b>	<b>4,098</b>	<b>2.7%</b>	<b>663</b>	<b>16.0%</b>

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<sup>1</sup> Since data used to assess NFC are based on GIS data analyses rather than tax lot or survey data, acreages may differ slightly from other analyses presented in this report, including Table 1.

<sup>2</sup> Slope refers to all grades equal to or greater than 15% (steep slopes).

<sup>3</sup> Floodplain is treated as a subset of SWC.

For the entire Catskill/Delaware watershed, a total of 405,641 acres (39.7% of all lands) are now under some form of permanent protection by the City, other government agency, or land trust ownership. This includes 36% of stream length and stream buffers, 73% of wetlands and deepwater habitats, 65% of floodplains, and 44% of forest cover. Presented below are acquisition updates (closed transactions) for each LAP real estate category as of December 31, 2022, inclusive of West Branch, Boyd Corners and Kensico basins.

#### **4.1 Fee Simple (core LAP only)**

Lands acquired outright by the City total 96,186 acres, representing 63% of acres acquired across all programs, 75% of all purchase contracts, and 75% of fair market value costs. On average, 28% of fee simple acquisition lands are in SWC, 60% are slopes 15% or greater, and 2% are floodplains. A total of 379 linear miles of streams have been acquired in fee simple, accounting for nearly 10% of all mapped watercourses in the Catskill/Delaware watershed.

#### **4.2 DEP Conservation Easements (core LAP only)**

The City has directly acquired CEs covering a total 25,933 acres, representing 17% of acres acquired across all programs, 9% of all purchase contracts, and 15% of fair market value costs. A total of 103 linear miles of streams have been protected through core LAP CEs, accounting for 2.7% of all mapped watercourses in the Catskill/Delaware watershed.

#### **4.3 WAC Conservation Easements**

WAC has acquired 157 Farm CEs totaling 28,229 acres, representing 18.4% of acres acquired across all programs, 8.7% of all purchase contracts, and 8.5% of fair market value costs. A total of 119 linear miles of streams have been protected via WAC Farm CEs, accounting for 3.1% of all mapped watercourses in the Catskill/Delaware watershed.

WAC has acquired nine Forest CEs totaling 2,982 acres representing 1.9% of acres acquired across all programs, 0.5% of purchase contracts, and 0.6% of fair market value costs. A total of six linear miles of streams have been protected via WAC Forest CEs, accounting for 0.1% of all mapped watercourses in the Catskill/Delaware watershed.

#### **4.3 Streamside Acquisition Program**

The SAP has closed on 26 contracts protecting a total of 227 acres of sensitive streamside buffer land, representing 0.2% of acres acquired across all programs, 1.4% of all purchase contracts, and 0.3% of fair market value costs. More than four linear miles of streams have been protected through the SAP, accounting for 0.1% of all mapped watercourses in the Catskill/Delaware watershed. When considering these statistics, it is important to recognize that the SAP, along with the NYCFFBO, is one of the most recent additions to the LAP's portfolio of partner programs and therefore only reflects a short period of activity; unlike the NYCFFBO,

however, the SAP only operates within a single reservoir basin, which disproportionately impacts program success relative to the more established components of the LAP.

Overall, the SAP has solicited 5,752 acres since program inception, ordered and received 74 appraisals (including updates for time) on 69 properties, and signed 33 purchase contracts totaling 273 acres. On average, SWC covers 78% of SAP-acquired properties, an extremely high percentage that is only exceeded by the FEMA FBO and the NYCFFBO.

#### **4.4 Flood Buyout Programs**

Lands acquired in fee simple by both the City and watershed municipalities through the two FEMA FBOs total 74 acres, representing 0.05% of acres acquired across all programs, 3.5% of all purchase contracts, and 0.1% of fair market value costs. The average SWC for these projects, which are comprised of 64 purchase contracts, is 91.5%.

Lands acquired in fee simple by both the City and watershed municipalities through the NYCFFBO total 47 acres representing 0.03% of acres acquired across all programs, 1.2% of all purchase contracts, and 0.7% of fair market value costs. The average SWC for these projects, which are comprised of 22 purchase contracts, is 98.5%.

#### **4.5 Water Supply Operations**

In the 2012-2022 Long-Term Land Acquisition Plan, DEP reported on two metrics that offer a prism through which to consider the relative importance of land protection between basins. These metrics involve analyses of how water is drawn from the various reservoirs for actual use by consumers. A basin's relative contribution to the overall supply is paired with its level of protected land to yield weighted protection values. To understand why this is important, consider a basin that is already highly protected but contributes relatively little to the overall water supply; barring other factors, this would likely result in a land acquisition strategy that reduced emphasis on that basin. These analyses can even be useful in comparing entirely different watersheds relative to protected status of water supplies.

There are two measures of water supply that are useful in weighting the importance of protected land within basins: Diverted Water (Tables 3 and 4), which represents the volume of reservoir water directed into aqueducts for delivery to downstream reservoirs or consumers, and Supply (Tables 5 and 6), which is the relative contribution of a given reservoir to the overall delivery of water to consumers. Diversion-weighted levels of protected land emphasize terminal basins because those acres protect water entering a given reservoir as well as waters received from upstream reservoirs. Supply-weighted levels of protected land emphasize the importance of basins in terms of their overall contribution to water at the tap.



Table 3. Diversion-weighted basin land protection levels averaged over 1992-2008.

System	Basin	Percent Protected Land	Average Annual Diversions 1992-2008 (mg)	Percent Total Diversions	Cumulative Diversion-Weighted Average
Delaware	Cannonsville	16.3%	52,629	3.7%	0.6%
	Pepacton	27.5%	116,631	8.1%	2.2%
	Neversink	60.1%	44,447	3.1%	1.9%
	Rondout	48.2%	261,629	18.2%	8.8%
	West Branch	46.9%	281,744	19.6%	9.2%
Catskill	Schoharie	29.3%	67,734	4.7%	1.4%
	Ashokan	64.8%	174,758	12.1%	7.9%
	Kensico	40.8%	439,029	30.5%	12.5%
<b>Totals</b>		<b>34.0%</b>	<b>1,438,602</b>	<b>100.0%</b>	<b>44.5%</b>

Table 4. Diversion-weighted basin land protection levels averaged over 2009-2022.

System	Basin	Percent Protected Land	Average Annual Diversions 2009-2022 (mg)	Percent Total Diversions	Cumulative Diversion-Weighted Average
Delaware	Cannonsville	24.2%	52,568	4.2%	1.0%
	Pepacton	34.5%	109,997	8.9%	3.1%
	Neversink	61.5%	28,499	2.3%	1.4%
	Rondout	51.6%	239,217	19.3%	10.0%
	West Branch	50.9%	246,952	19.9%	10.1%
Catskill	Schoharie	35.2%	38,576	3.1%	1.1%
	Ashokan	67.5%	137,548	11.1%	7.5%
	Kensico	42.7%	387,234	31.2%	13.3%
<b>Totals</b>		<b>39.7%</b>	<b>1,240,591</b>	<b>100.0%</b>	<b>47.5%</b>

Table 5. Supply-weighted basin land protection levels averaged over 1992-2008.

System	Basin	Percent Protected Land	Average Annual Contribution to Supply 1992-2008 (mg)	Percent Total Supply	Cumulative Supply-Weighted Average
Delaware	Cannonsville	16.3%	52,629	11.9%	1.9%
	Pepacton	27.5%	116,631	26.3%	7.2%
	Neversink	60.1%	44,447	10.0%	6.0%
	Rondout	48.2%	43,480	9.8%	4.7%
	West Branch	46.9%	19,770	4.5%	2.1%
Catskill	Schoharie	29.3%	67,734	15.3%	4.5%
	Ashokan	64.8%	92,298	20.8%	13.5%
	Kensico	40.8%	6,876	1.5%	0.6%
<b>Totals</b>		<b>34.0%</b>	<b>443,866</b>	<b>100.0%</b>	<b>40.5%</b>

Table 6. Supply-weighted basin land protection averaged over 2009-2022.

System	Basin	Percent Protected Land	Average Annual Contribution to Supply 2009-2022 (mg)	Percent Total Supply	Cumulative Supply-Weighted Average
Delaware	Cannonsville	24.2%	52,568	13.6%	3.3%
	Pepacton	34.5%	109,997	28.5%	9.8%
	Neversink	61.5%	28,499	7.3%	4.5%
	Rondout	51.6%	45,380	11.7%	6.0%
	West Branch	50.9%	10,507	2.5%	1.3%
Catskill	Schoharie	35.2%	38,576	9.9%	3.5%
	Ashokan	67.5%	98,972	25.5%	17.2%
	Kensico	42.7%	4,194	1.1%	0.5%
<b>Totals</b>		<b>39.7%</b>	<b>388,693</b>	<b>100%</b>	<b>46.1%</b>

The data presented in Tables 3-6 cover two decades of reservoir operations and yield several observations and conclusions. First, steady or increased proportional use of waters from the Cannonsville, Pepacton, Rondout and Ashokan reservoirs over the last decade have offset decreases from the Neversink and Schoharie reservoirs. Second, the terminal basins of Kensico, West Branch and Rondout continue to represent roughly 60% of the entire Catskill/Delaware watershed in terms of volume, and together account for over 30% of cumulative diversion-average protection levels watershed-wide. Third, basin protection levels for the watershed overall are measurably higher when viewed through the perspective of how water is actually used (through Diversion and Supply) compared to a straightforward percentage-of-land basis. While this water supply information may not be significant enough alone to drive future land acquisition strategies, it does influence which basins might be emphasized to maximize source water protection goals.

## 5. Land Use and Demographics

As reported by the NASEM Expert Panel, changes in WOH land cover and land uses from conversion of forest and farmland to developed areas during 2001-2016 appear to have been minimal: one-tenth the average change for New York State. Census data covering 2010-2020 indicate that populations throughout the watershed declined roughly 2% (5% WOH and 1% EOH, including Croton). Those trends may have been reversed by the significant migration out of New York City since COVID-19 began in early 2020. DEP anticipates a continuing active real estate market in the future, with inventories down and prices up significantly. However, supply chain slowdowns, limited availability of contractors, and rapid increases in interest rates during 2022-2023 may result in stalled building activities in some areas.

A May 2023 report by [Hudson Valley Pattern for Progress](#) covering the period 2019-2020 shows a net loss of 4,845 residents for a nine-county area that includes six watershed counties. This report attributes the drop in part due to the attractiveness of lower property taxes in neighboring states. Per the most recent U.S. census data covering the period 2010-2019, populations were found to decrease in virtually all watershed counties, from as little as 1.2% (Dutchess) to as much as 7.8% (Delaware); only Westchester County increased (by 1.8%).

Subsequent estimates for the period April 2020 to July 2021, which overlaps with the pandemic when there was significant migration out of cities into rural areas. These numbers suggest a trend in exactly the opposite direction: virtually all watershed counties were projected to show an increase in population ranging from 0.3% (Putnam) to 1.5% (Sullivan), with the exception of Westchester (decreasing by 0.5%). DEP's regulatory approval of septic systems for WOH residential properties more than doubled in recent years, from 67 in 2017 to over 130 in 2021 and 2022. Septic approvals for EOH (which includes the Croton System) dropped from a high of 82 in 2017 to a low of 48 in 2019, rising to 62 in 2022. These apparent fluctuations in population and development data and the constantly changing micro- and macro-economic forces that influence demographics and real estate make it difficult to discern patterns that would have a meaningful impact on land acquisition strategies in the watershed.

According to [real estate sales datasets](#) for towns in the Hudson Valley that are available quarterly from several listing services, the median sales price of single-family homes in Ulster and Greene counties rose steeply starting in early 2020 and peaked later that year. As of early 2023, prices are lower than the start of the three-year term despite inventories being close to the lowest levels of this period. According to [One Key MLS reports](#), median sale prices for residential properties in Putnam County as of April 2023 are roughly the same as April 2021, having peaked about 20% higher in between. In Sullivan County, the average price for residential properties has risen roughly 28% during that same period, while a 20% rise was seen in Ulster County. A drop of 5% was seen in Westchester County after reaching significantly higher peaks during the period. Unfortunately, trends from these reports are difficult to translate into patterns that are helpful to the LAP since data are not specifically tailored to watershed boundaries nor do they offer significant information on vacant land (properties of interest to the LAP). In addition, it appears that since COVID-19 began in 2020, myriad market forces – including upstate migration of New York City residents, climate change impacts on ski resorts, and rising interest rates – have created a continually changing constellation of factors that complicate future strategies. The LAP has not previously used broad economic or real estate indicators to decide whether to enter a given real estate market or wait on the sidelines; this Plan continues that approach.

## **6. Long-Term Goals and Strategies**

With roughly 40% of the Catskill/Delaware watershed under some form of protected status (Figure 8), the portfolio of properties that remain available and of interest to the LAP is quite different than it was 25 years ago. This alone is an important factor when developing land acquisition strategies for the next decade. The additional 6% of protected lands accomplished since 2009 represents almost 40% of all acquisitions since 1997. As such, DEP does not expect substantial growth in protected acres during the next ten years as future acquisitions will likely involve more complex transactions in fewer towns due to FEIS benchmarks being reached, thus yielding smaller properties with higher percentages of SWC. Although 53,214 acres remain available for acquisition before the watershed-wide FEIS limit is reached, it seems unlikely this threshold will be attained during the period covered by this Plan.

The two most important constraints and therefore drivers of solicitation activities over the next decade are (1) the growing list of towns where town-level FEIS thresholds have been reached, after which core LAP's direct outreach to landowners must cease and only incoming

calls from landowners can be pursued, and (2) the growing list of WOH subbasins that are highly protected and which therefore can be avoided in favor of less protected subbasins.

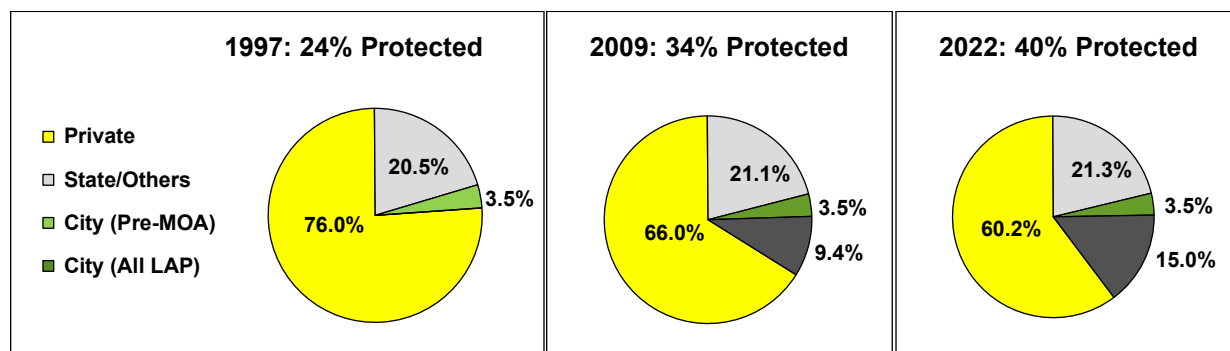


Figure 8. Progression of protected lands in the Catskill/Delaware watershed since 1997.

The MOA provides the structure and timing of original solicitation efforts, including the schedule and process through which lands are designated as formally solicited. Once a property is initially solicited, the LAP follows a policy that sets forth the frequency of resolicitation time intervals based on prior landowner responses as summarized in Table 7.

Table 7. Minimum resolicitation intervals for core LAP.

Focus Level	No Response	Not Interested	Offer Refused
High Focus Areas and Priority Areas 1A/1B	2 Years	2 Years	1 Year
Focus Areas – Subbasins < 20% Protected	2 Years	2 Years	2 Years
Focus Areas – Subbasins > 20% Protected	3 Years	4 Years	4 Years
No Specific Focus Area	No regular schedule (case-by-case)		

Numerous rules and policies constrain where core LAP can solicit and/or pursue acquisitions. The most significant constraints are shown in Exhibit E, which depicts WOH subbasins and their protected status with an overlay of (1) High Focus Areas, (2) Priority Areas 1A and 1B, (3) all designated hamlets, and (4) towns that are off-limits (or nearly so) for outgoing solicitation due to FEIS projections being reached or nearly reached per Exhibit C. Exhibit E depicts WOH watershed towns in which core LAP is now precluded from outgoing solicitation (shaded dark gray); towns which are within several hundred acres of the FEIS projections are shaded lighter gray. Subbasins that are at least 60% protected are also shaded, signifying areas where core LAP does not anticipate pursuing broad solicitation in the future. Exhibits C and E are therefore considered the principal guiding framework for the next decade of LAP activities.

Since town boundaries play an important role in terms of where core LAP anticipates soliciting in the future, the goal for core LAP over the next ten years will be to focus on compelling properties in less protected subbasins located in towns where FEIS projections have not been reached. Consistent with current practice, LAP partner programs will not be constrained by FEIS projections, which will require close coordination. For core LAP, the primary constraint will be the amount of compelling eligible lands that remain for solicitation in a given town. With these factors in mind, DEP proposes the following basin-specific strategies that can be adjusted over time based on acquisition progress or evolving conditions and requirements relating to

stakeholder discussions and a successor WSP or FAD. Additional potential adjustments may derive from ongoing discussions with the workgroup considering SAP expansion.

## 6.1 Ashokan Basin

As a terminal basin with a high contribution to the water supply, Ashokan (Figure 9) is among the highest priorities for water quality protection; the entire basin is designated Priority Areas 1A, 1B or 2. However, with over two-thirds of land in the basin owned by New York State or the City, Ashokan also has the highest level of protected status of any basin in the entire watershed. Since 1997, the LAP has increased this protected land status from 59% to 67% (Figure 6); the basin’s high priority for water quality therefore does not translate into high priority for continued land acquisition. Nonetheless, since several Ashokan subbasins are still considered under-protected, the LAP expects to pursue the following strategies:

1. Use the remaining acres under the FEIS projection in the Town of Olive (974 acres available) to raise protection levels in the three subbasins southwest of the reservoir that are in Priority Areas 1A and 1B.
2. Use some of the remaining FEIS acres in the Town of Woodstock (2,179 acres available) to boost protection of lands in the Little Beaverkill subbasin, but limit solicitation to properties laden with SWC that are not subject to high values due mainly to superior views.
3. Avoid significant outgoing solicitation throughout the remainder of the basin, while pursuing landowner calls involving compelling properties.
4. Continue to pursue NYCFFBO projects when proposed by municipalities.

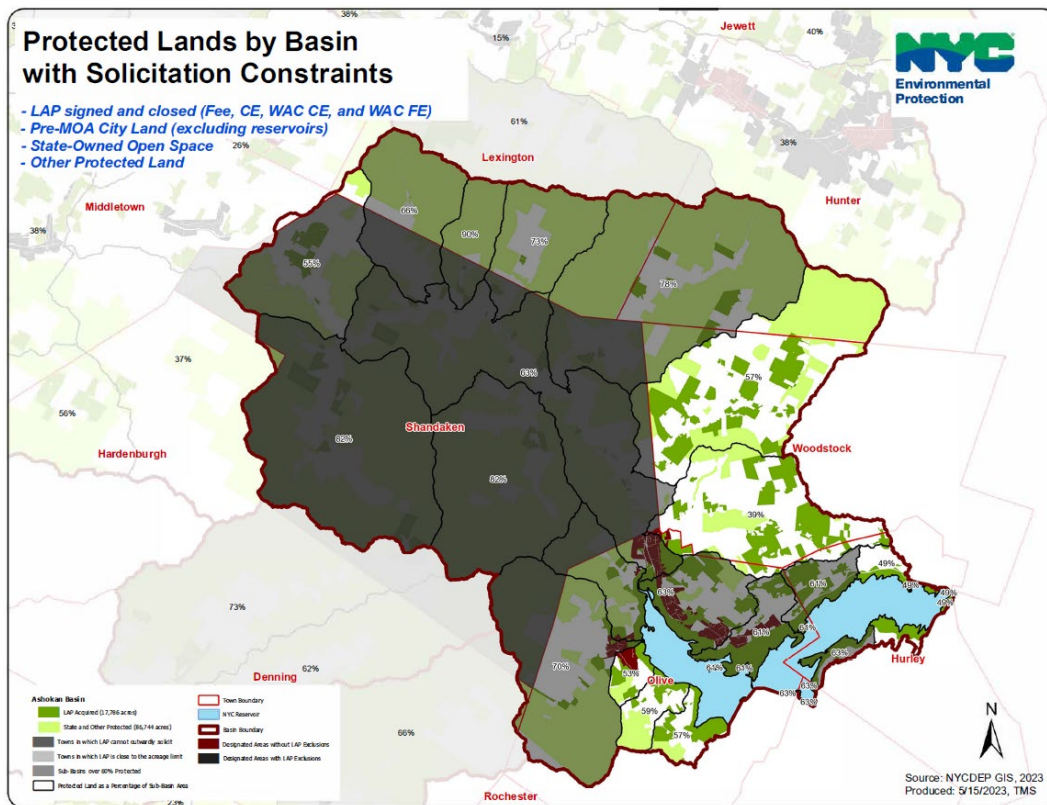


Figure 9. Ashokan basin solicitation constraints based on town and subbasin boundaries.

## 6.2 Cannonsville Basin

Comprising over 286,000 acres, the Cannonsville basin (Figure 10) represents more than 28% of the Catskill/Delaware watershed. Cannonsville is the most recently built reservoir, as well as the least proportionally protected: roughly 7.5% of the basin was protected as of 1997, whereas today that figure is 24.2%. Since acquisition levels in the towns of Walton and Delhi have already reached FEIS thresholds, core LAP can no longer solicit there, and Bovina is within a few hundred acres of its threshold. Future acquisitions in those towns will be limited to incoming calls from landowners, flood buyout projects, and WAC CEs, the latter of which will represent the only meaningful contributions to increased proportion of protected land although there is also the possibility that a future version of the SAP might eventually be available in this basin.

For the term of this Plan, core LAP expects to use remaining FEIS acreage to emphasize solicitation efforts in the following areas of the Cannonsville basin:

1. High Priority and High Focus subbasins in Tompkins and Masonville; and
2. Under-protected subbasins in towns which include all areas of Franklin, Meredith, Harpersfield, Kortright, Hamden and Jefferson that are within watershed boundaries (considerable portions of all these towns are outside the watershed).

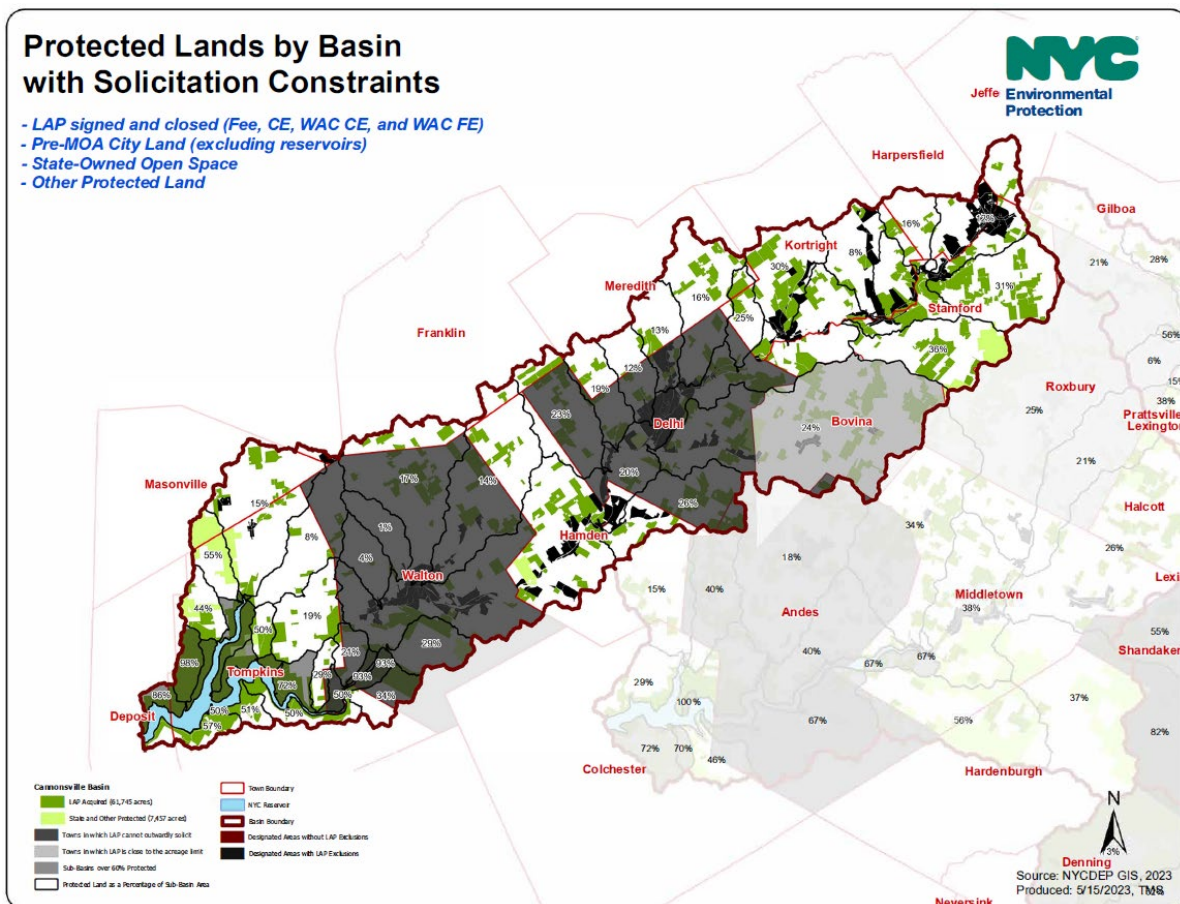


Figure 10. Cannonsville basin solicitation constraints based on town and subbasin boundaries.

### 6.3 Kensico Basin

Kensico (Figure 11) is the terminal basin closest to Hillview Reservoir and the reservoir serves as final storage for water received from other Catskill/Delaware reservoirs before entering the City’s distribution system; it is therefore a crucially important basin. Kensico is also proportionally the most intensively developed basin, and by far the most expensive in terms of land values. As seen in Figure 6, 43% of the Kensico basin has been protected, including 6% (405 acres) acquired or in contract by core LAP since 1997 at a total cost of \$62.7 million.

Of the roughly 3,550 acres in Kensico that remain in private ownership, the vast majority is already developed with homes, businesses, roads, impervious surfaces, and other intensive uses. Core LAP is tracking only a few dozen properties in the Kensico basin, but very few are deemed compelling after weighing the marginal benefit of one acre that could cost over \$1 million. With a highly developable 49-acre vacant tract (approved for 43 building lots) now in purchase contract and expected to close in 2024, there are few remaining properties with reasonable cost-benefit ratios. Nonetheless, given the importance of Kensico as a terminal basin and its contribution to Diversions (Tables 3-4), DEP will undertake a detailed study of all properties that are currently tracked, with emphasis on the upper subbasin which has the lowest level of protection (23%), to confirm eligibility, estimate values, and determine interest level. If any compelling properties remain based on a cost-benefit analysis, core LAP will solicit them.

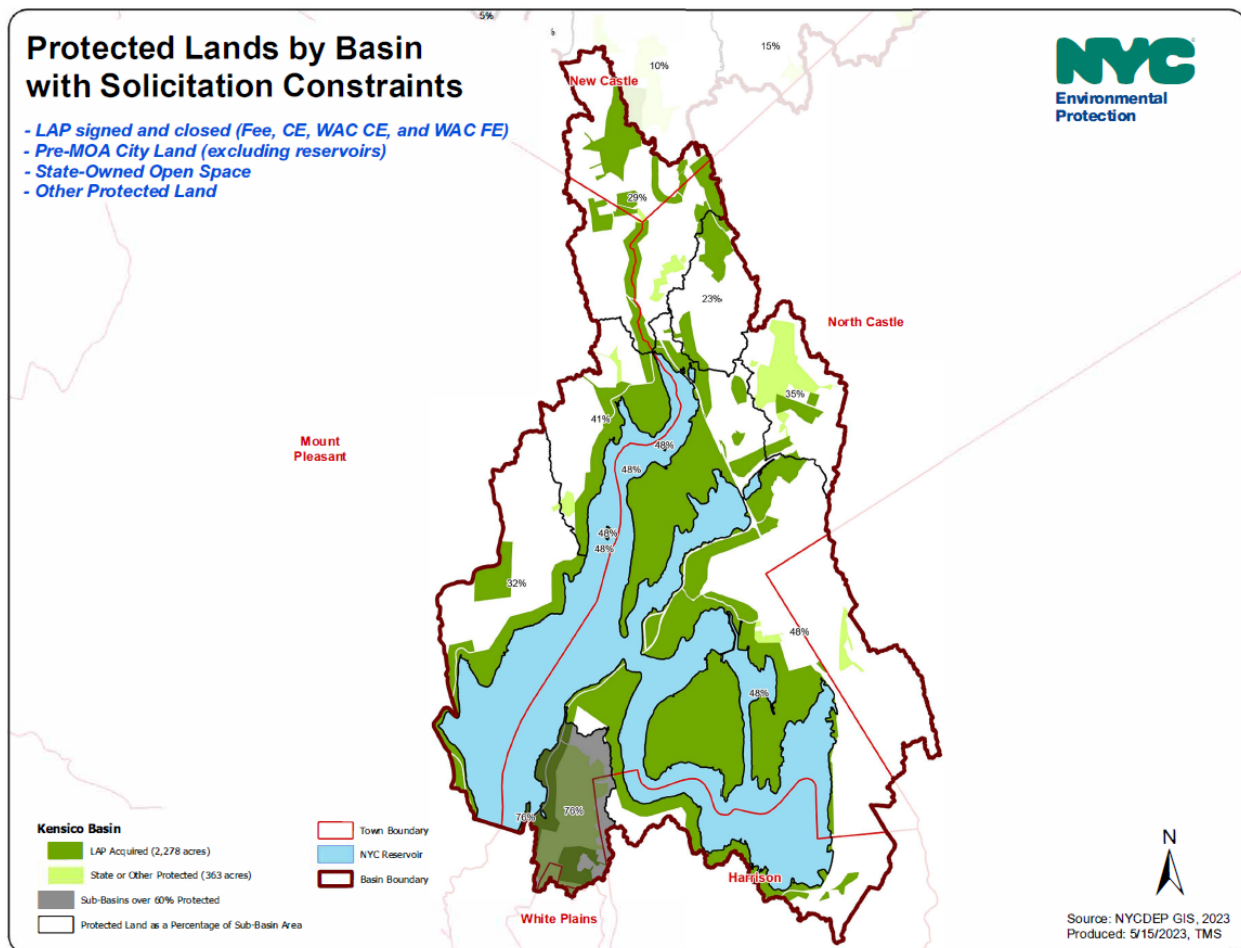


Figure 11. Kensico basin solicitation constraints based on town and subbasin boundaries.

## 6.4 Neversink Basin

With 62% of its land in State or City ownership, the Neversink basin (Figure 12) is second only to the Ashokan basin in terms of percent protected. All six Neversink subbasins are now protected at levels between 50% and 73%, with more than half of all streams (by length) flowing through protected lands. During the last decade, Neversink contributed the least (2.3%) of all basins in terms of Diversions (Table 4) and only modestly (7.3%) to overall Supply (Table 6); this decreased use of Neversink waters – and increase of Pepacton to compensate – is likely to continue. The two main towns in this basin, Denning and Neversink, have substantial acreage remaining (4,336 and 3,282, respectively) before reaching the FEIS acreage threshold, so solicitation in these towns will largely be directed toward the Rondout basin which contains several subbasins that are High Priority, High Focus, and less protected (in the 20-30% range).

Given higher priorities elsewhere, core LAP will solicit only opportunistically in the Neversink basin for the next few years, including responding to incoming calls. This will allow core LAP to focus attention on other basins, projects and programs that have greater needs. If time and resources allow, with remaining acreage available in Denning and Neversink after acquisitions in Rondout have advanced further, core LAP will solicit properties in Neversink, particularly in the Neversink River subbasin and Neversink Reservoir subbasin (both 50% protected) while avoiding the highly protected West Branch Neversink River subbasin (73%) and East Branch Neversink River subbasin (62%).

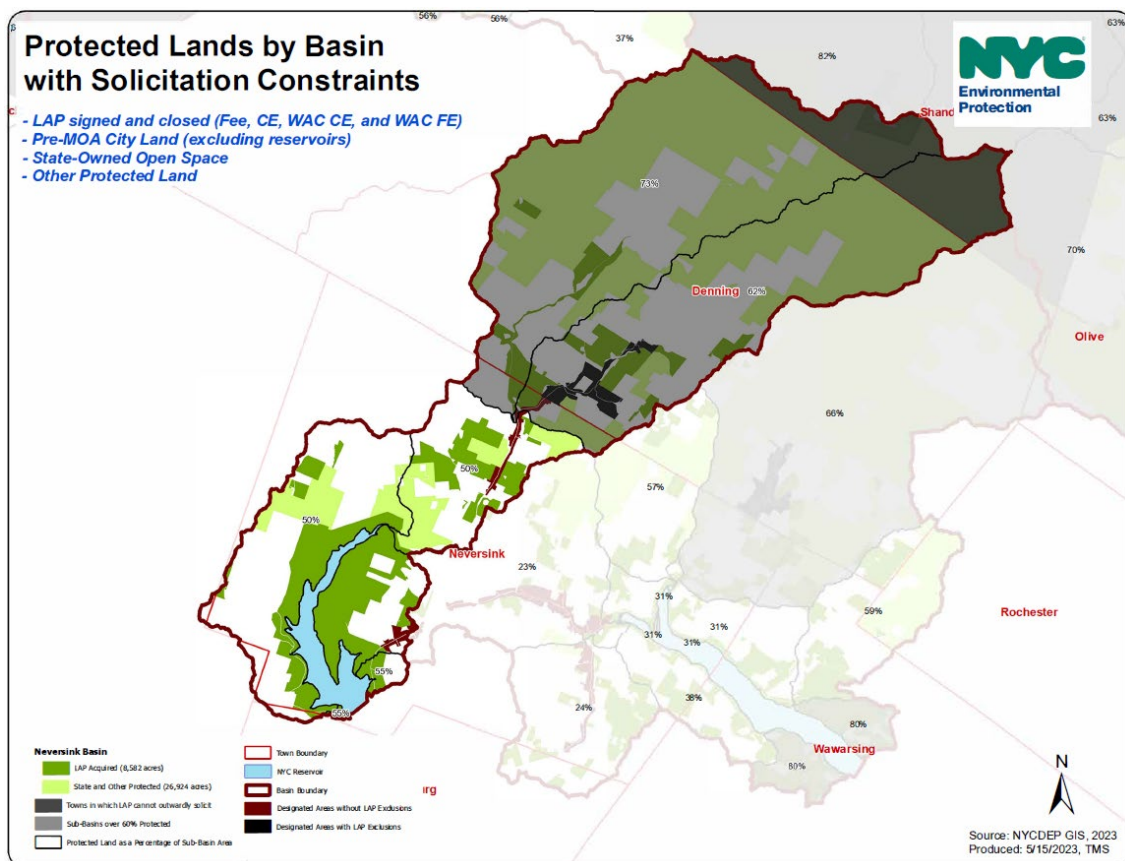


Figure 12. Neversink basin solicitation constraints based on town and subbasin boundaries.



## 6.5 Pepacton Basin

The Pepacton basin (Figure 13) is over 231,000 acres in size, representing almost 23% of the Catskill/Delaware watershed. Although total water volume contributed by Pepacton to both Diversion and Supply (Tables 3-6) have decreased in the last decade, the overall proportion of both with respect to the total water supply has increased. Overall land protection levels in this basin have almost doubled from 18% in 1997 to 34% today. Exhibit E illustrates that three Pepacton subbasins are considered High Focus Areas, but two are almost entirely within the Town of Andes where core LAP can no longer outwardly solicit. The remaining High Focus Area, the Terry Clove subbasin, is under-protected at 15% and overlaps with the towns of Hamden (1,613 acres remaining) and Colchester (3,490 acres remaining). These areas will be a significant, though not exclusive, focus of solicitation in this basin. Other areas will include the Bushkill (26% protected, mainly spanning the towns of Halcott and Middletown) and Batavia Kill (21%, Roxbury and Middletown) subbasins, although the latter will be contained in scope due to 849 remaining acres in Roxbury before the FEIS projection is reached.

One example of the complexities DEP faces when allocating a dwindling number of acres through the solicitation process in a given town is Bovina, with only 319 acres remaining for acquisition before meeting the FEIS projection. The southern tip of Bovina (roughly 2,500 acres) extends into the Tremper Kill subbasin, which is High Focus and only 18% protected. In this subbasin, 174 acres have already been protected by core LAP and WAC; the remainder includes approximately 2,000 acres in three properties that are eligible, compelling, and previously solicited (two were appraised by core LAP and the purchase offers rejected). Solicitations in Bovina will therefore focus on the Tremper Kill subbasin. Depending on success with this small group of landowners, outgoing solicitation will also be spread to compelling properties in the remainder of Bovina which is in the Little Delaware River subbasin of the Cannonsville basin.

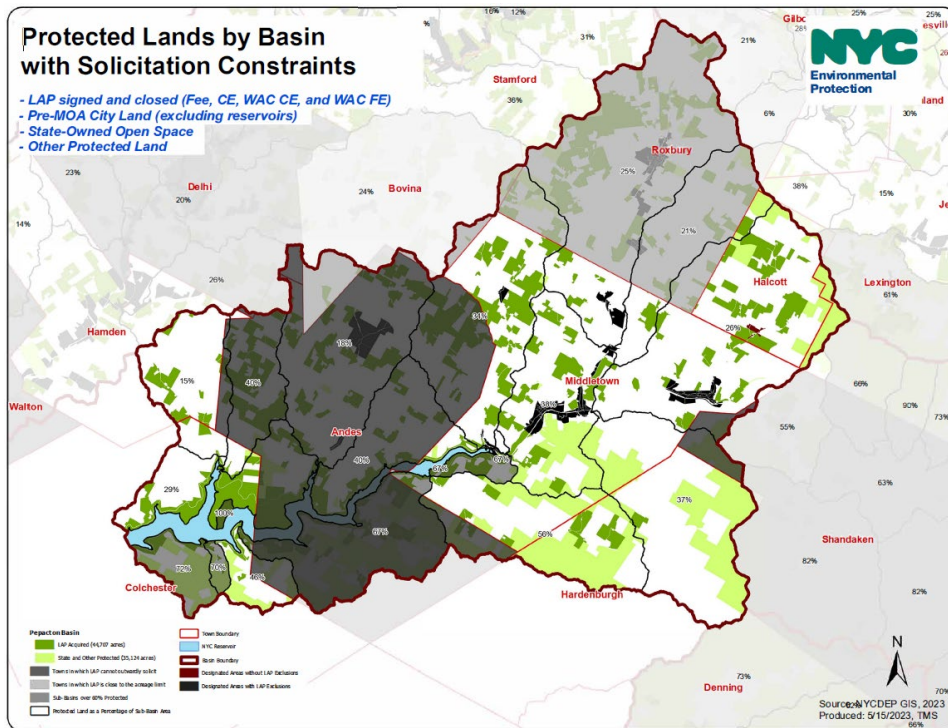


Figure 13. Pepacton basin solicitation constraints based on town and subbasin boundaries.

## 6.6 Rondout Basin

As the only WOH basin that is completely within 60-day travel time and entirely comprised of Priority Areas 1A and 1B, and because of its contribution to Diversion and Supply (Tables 3-6), Rondout is one of the most important Catskill/Delaware basins (Figure 14). As of 1997, a thin margin of City-owned land encircling the reservoir and high levels of State protected lands within the Rondout Creek subbasin resulted in an overall protected level of 35% for the entire Rondout basin; the remaining eight subbasins were all less protected. Red Brook was 2% and is now 26%; the subbasins known as Rondout Reservoir NE and SE were both less than 3% and are now approximately 18%. The entirety of Priority Area 1B was roughly 25% protected, but today is 64% protected.

Despite raising overall protection levels from 35% to 52% since 1997, DEP anticipates future LAP activity in the towns of Neversink, Wawarsing and Denning which have remaining FEIS acreage that are relatively high at 3,282 acres, 3,514 acres and 4,336 acres, respectively. There is substantial room to solicit broadly and potentially raise the protected levels of several important subbasins such as Chestnut Creek (currently 23%), Red Brook (24%), and Rondout Reservoir NW (31%).

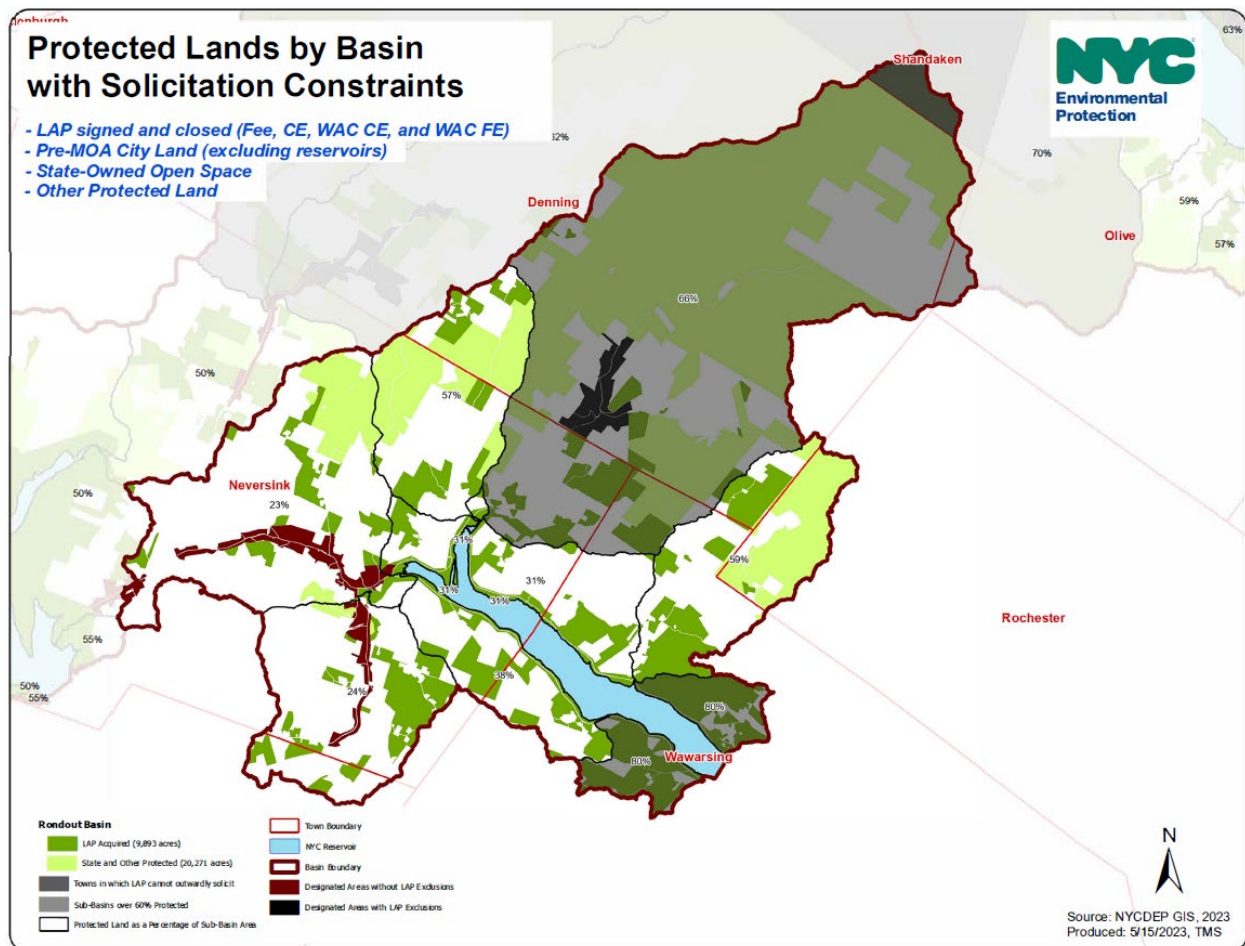


Figure 14. Rondout basin solicitation constraints based on town and subbasin boundaries.

## 6.7 Schoharie Basin

As depicted in Figures 6 and 8, protection of the Schoharie basin has increased by 16% since 1997 and now stands at 35% overall. While this represents substantial advancement for protection in a basin that is over 200,000 acres in size, or roughly a fifth of the entire watershed, several subbasins are still considered under-protected, including Johnson Hollow Brook (6%), Schoharie Creek (15%), Bear Kill (21%), Manor Kill (25%), Schoharie Reservoir West (28%), and the Sutton Hollow and North Settlement subbasins (both 26%). With emphasis on the first two, which are the Schoharie basin’s only High Focus Areas, core LAP will emphasize work in these subbasins during the next ten years while coordinating with the SAP overall. Examples of solicitation strategies in the Schoharie basin (Figure 17) include the following:

1. In the Town of Roxbury, which currently has 849 acres remaining under FEIS projections, future core LAP solicitation will focus on the Johnson Hollow Brook subbasin, which is 6% protected and a High Focus Area; that subbasin is small, so remaining solicitation in Roxbury will be distributed between the Bear Kill subbasin (21%) in Schoharie and the Batavia Kill subbasin (21%) in the Pepacton basin.
2. In the three towns of Prattville, Lexington and Jewett, where the remaining FEIS acreage is 1,123 acres, 1,861 acres and 1,246 acres, respectively, core LAP will focus solicitation primarily, though not exclusively, in the Schoharie Creek subbasin (High Focus Area, 15% protected).
3. Core LAP will also focus on the remaining Conesville acreage in the Manor Kill subbasin (25% protected), the Sutton Hollow subbasin (26%) in Ashland, and the North Settlement subbasin (26%) in Ashland and Windham.
4. Core LAP will continue to support the SAP and strive to improve its coordination with the SMP and local partners to further refine future solicitation strategies.

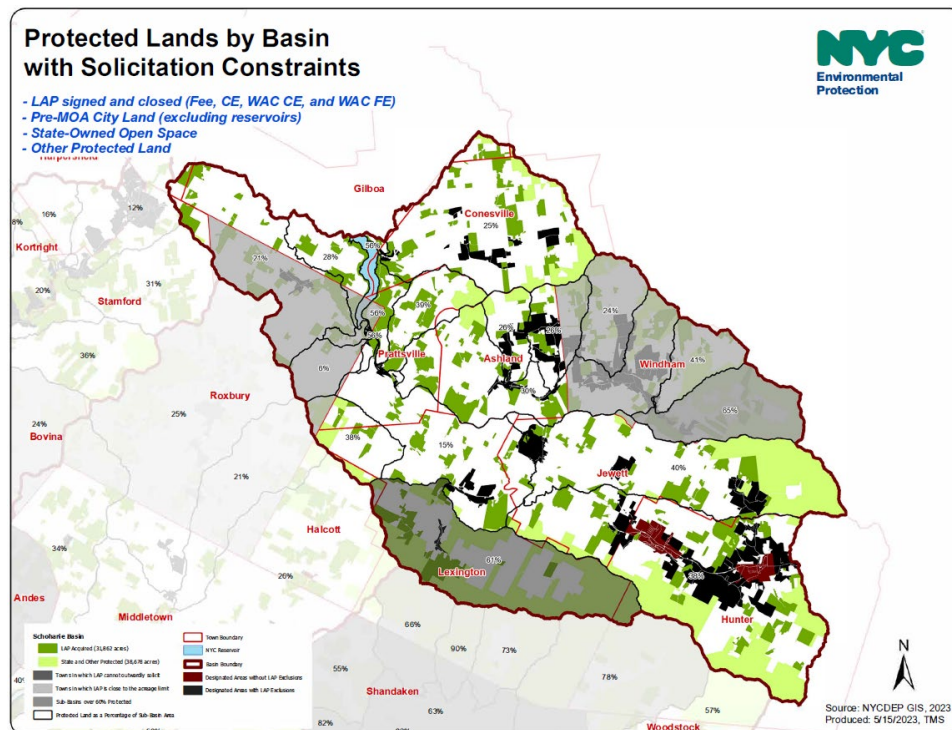


Figure 17. Schoharie basin solicitation constraints based on town and subbasin boundaries.

## 6.8 West Branch/Boyd Corners Basin

Based on strong landowner responses to solicitation over the years, and as reflected in Figure 6, this basin has experienced by far the most significant proportional advance in protected status, with more than a third of the basin (9,209 acres) protected since 1997. A total of 51% of the basin land area is now controlled by the City or other entities, which includes 32.6 miles of streams (56% of total) and 52.3% of SWC. All subbasins in West Branch/Boyd Corners are at least 40% protected with the exception of Black Pond (Priority Area 1B) to the northwest, which stands at 25%. Land in this basin is relatively expensive; acquisitions to date total \$88 million (averaging close to \$10,000 per acre), or 17.1% of total LAP expenditures to date. Although not as costly as Kensico, the marginal cost-benefit of a single small building lot in West Branch/Boyd Corners is not often compelling, given that hundreds are already developed, which is why larger tracts with subdivision potential generally make more sense to pursue. Nonetheless there may be small building lots located in particularly sensitive areas or in useful locations that could be pursued under the right circumstances.

Based on the above, the LAP's solicitation strategy for West Branch/Boyd Corners basin (Figure 18) will be to focus on properties with the following characteristics:

1. Relatively large, developable properties that contain high SWC.
2. Lands that offer connectivity between already protected properties.
3. Properties within the subbasin known as West Branch Reservoir West (38% protected, all Priority Area 1A).
4. Properties in the Black Pond subbasin (the least protected area as well as the most northerly, where costs of vacant land can be lower) with at least modest levels of SWC.

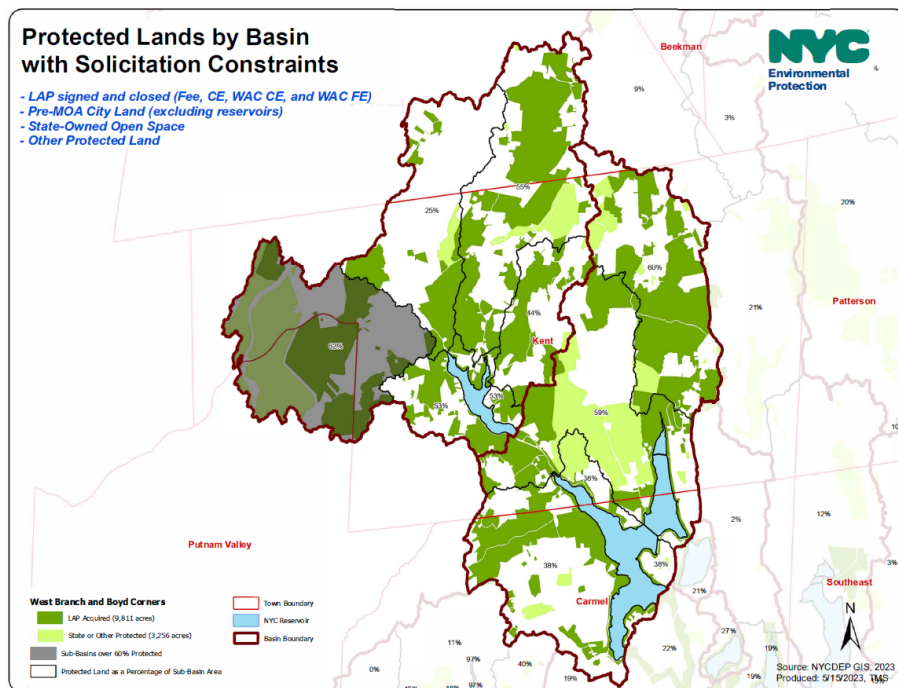


Figure 18. West Branch/Boyd Corners solicitation constraints based on town and subbasin boundaries.

## 6.9 Additional Strategies

DEP anticipates that at least 137,000 acres will be solicited by all acquisition programs over the life of this 2023-2033 Long-Term Plan, with acreage to be front-loaded in early years and tailing off in later years as shown in Table 7 and Figure 19. DEP is not proposing annual solicitation goals but will instead measure and report progress annually against the overall ten-year projection; this allows flexibility, adaptation, and coordination between programs. DEP estimates that approximately 87,000 acres will be solicited through core LAP over the next decade, with the remainder attributed to partner programs. For purposes of this Plan, and without knowing what the successor WSP or FAD may require, DEP is estimating acreage credit for all partner programs on a one-to-one basis, which reflects a refinement compared to previous FAD acreage credits. DEP anticipates further refining this proposed schedule through future two-year solicitation strategies consistent with current and previous FAD requirements.

Although solicitation strategies based on town boundaries, subbasins, Priority Areas and High Focus Areas comprise the core of this 2023-2033 Long-Term Plan, numerous factors will influence how and where landowner outreach is actually conducted. These include: (a) the LAP's policy for recontacting landowners based on time intervals since a prior response; (b) the amount of progress made in advancing protection levels in a given subbasin or Priority Area and (c) changing status of a given town as it nears or reaches its projected FEIS acreage threshold.

Table 7. Proposed solicitation schedule for core LAP and partner programs during 2023-2033

	2023	2024	2025	2026	2027	2028	2029	2030	2031 to 2033	Total
Core LAP	20,000	16,000	12,000	10,000	8,000	8,000	8,000	5,000	?	87,000
WAC CEs	12,000	10,000	6,000	5,000	5,000	5,000	2,000	1,000	?	46,000
SAP	300	300	500	800	800	500	500	300	?	4,000
NYCFFBO	5	5	5	5	5	5	5	5	?	40
<b>Totals</b>	<b>32,305</b>	<b>26,305</b>	<b>18,505</b>	<b>15,805</b>	<b>13,805</b>	<b>13,505</b>	<b>10,505</b>	<b>6,305</b>	<b>?</b>	<b>137,040</b>

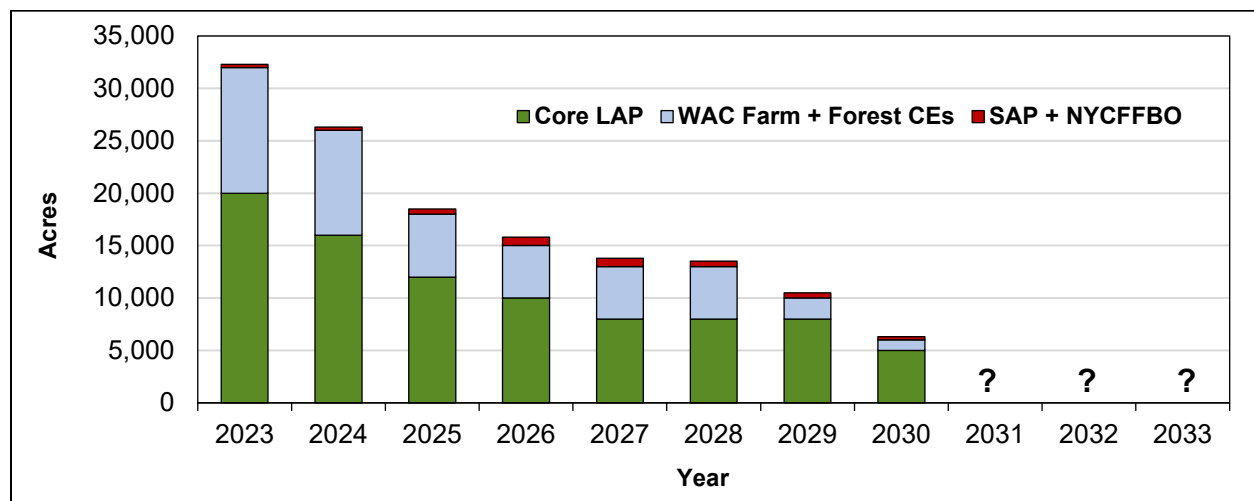


Figure 19. Proposed LAP solicitation schedule totaling 137,040 acres during 2023-2033.

As part of this 2023-2033 Long-Term Plan, DEP anticipates that core LAP will continue to closely coordinate with the SMP, SAP and WAC to ensure that respective program priorities are aligned, especially if the SAP expands to other watershed basins. However, since core LAP solicitation will increasingly be limited in greater numbers of towns as FEIS acreage benchmarks are approached, core LAP may not always be able to support the goals of the SMP in all geographic areas. Coordination between the SMP and SAP will continue to be a priority of this Plan. Further refinement of the SAP's solicitation strategies, as reflected in Table 7, is currently under discussion with a stakeholder workgroup as convened per the Revised 2017 FAD.

## **6.10 Potential Considerations**

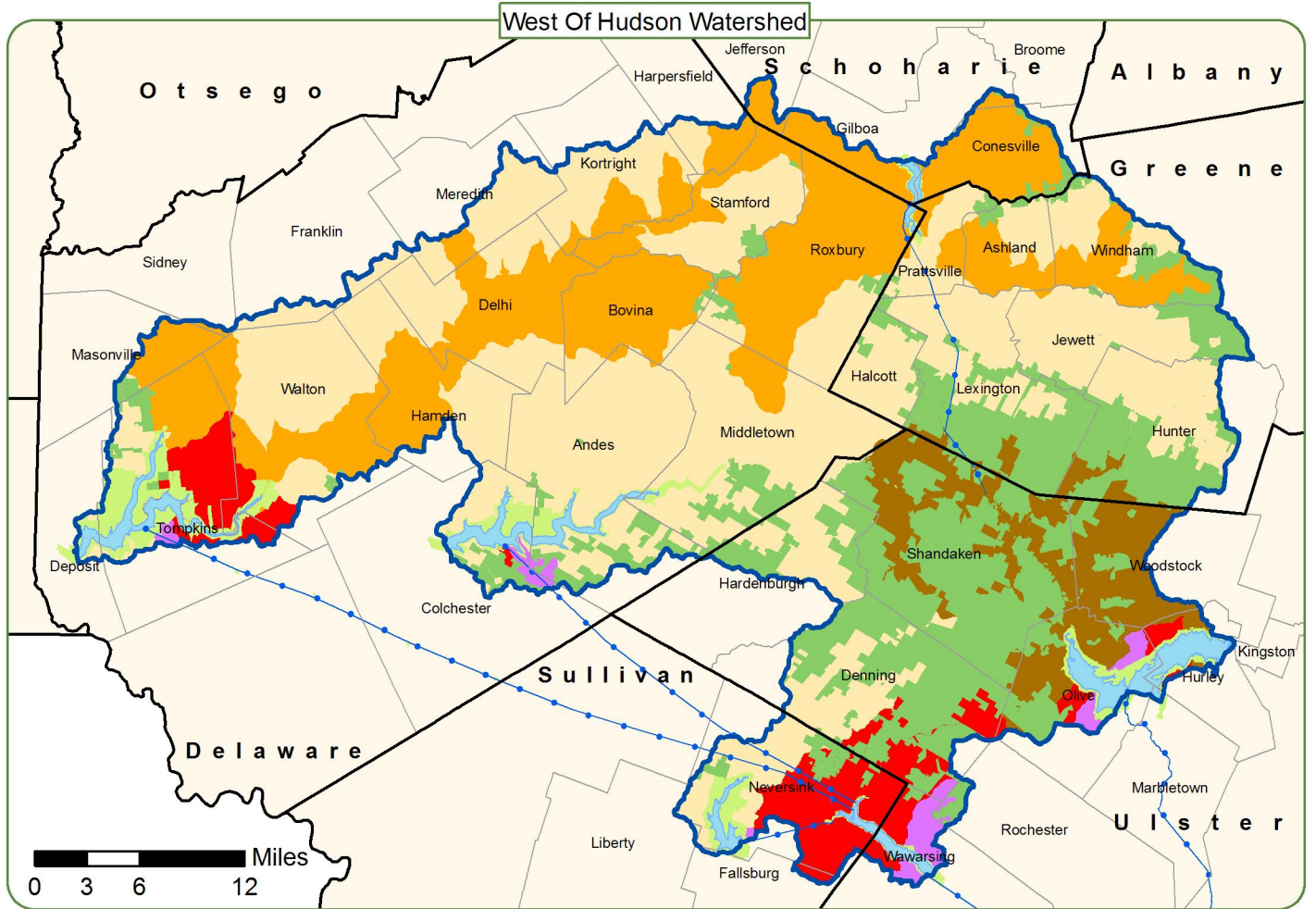
Projected solicitation activity for the final years of this Plan are difficult to anticipate due to future uncertainties and factors, including: (1) accomplishments during the early years of the 2023-2033 time period; (2) the nature of relevant requirements set forth in the expected 2025 WSP and 2027 FAD; (3) the impacts of continued climate change and the possibility for major flood events; (4) ongoing stakeholder discussions; and (5) macroeconomic and societal forces that cannot be accurately forecast. For these reasons, DEP does not propose detailed solicitation planning for the final years of this Plan. After a successor WSP and FAD are presumably issued and following several years of Plan implementation, it is likely that revisions to this Plan will be needed to address work during the remaining period. Some examples of potential future issues to consider are described below.

- Development of a plan to solicit properties specific to Special Condition 9b of the 2010 WSP, which allows for acquisition of properties smaller than 25 acres that abut lands owned by the City or State but which fail to meet NFC requirements. Such acquisitions must be intended to enhance access for stewardship or land management needs, recreational uses and/or proposed public trails or trailheads; reduce inholdings; or build connectivity between protected areas. At this time, only one property (14 acres) that meets this WSP requirement has been signed to contract. Pursuant to the 2010 WSP, total lands acquired under this framework cannot exceed 300 acres in a county or 1,500 acres WOH-wide. DEP anticipates that planning for this WSP requirement will involve consultation with watershed stakeholders.
- A review of the intersection between core LAP and SAP projects to ensure both programs are optimized in terms of project criteria and characteristics.

## **7. Conclusion**

Significant future events may impact this 2023-2033 Long-Term Land Acquisition Plan, and there are several inflection points over the next few years that will likely impact core LAP, SAP, WAC CE Programs and the NYCFFBO. The current WSP expires in 2025 and the current FAD will expire in 2027, and exact terms of either cannot be forecast at this time; both successor documents will likely contain new requirements or parameters which may influence aspects of this Plan. DEP therefore anticipates that revisions to this Plan will be warranted at some point during the next ten years, taking into account the requirements of a successor WSP and FAD, as well as the contemporary status of acquisitions, remaining LAP funds, the outcome of ongoing stakeholder discussions, future market forces, and other salient issues.

# Exhibit A. Catskill/Delaware Watershed Priority Areas



**Priority Area**

- 1A
- 1B
- 2
- 3
- 4

**City-Owned Land (Pre-MOA)**

**State-Owned Land**

**County Boundary**

**Town Boundary**

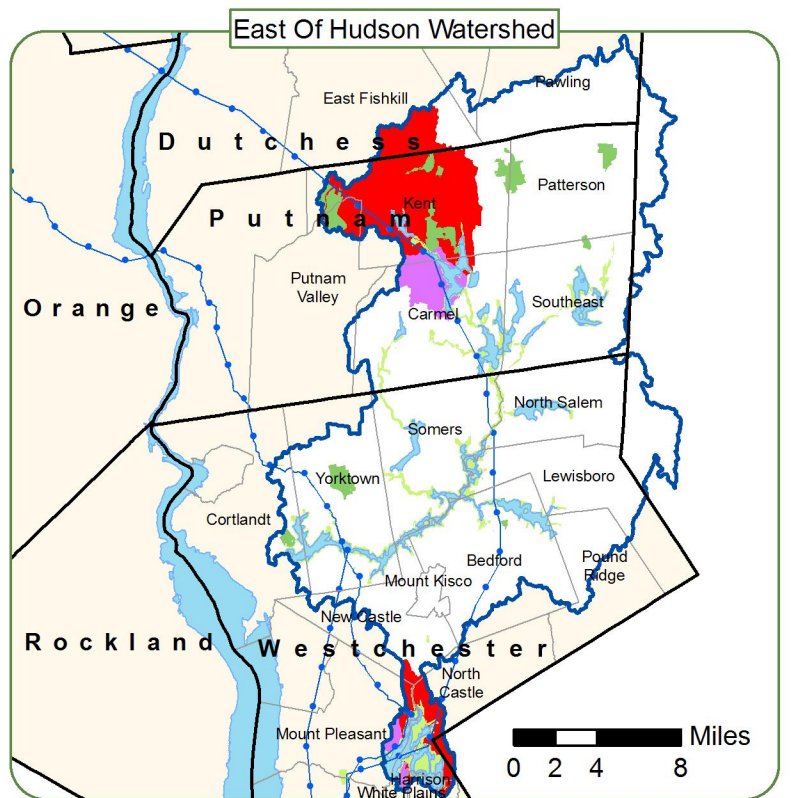
**Watershed Boundary**

**Reservoirs**

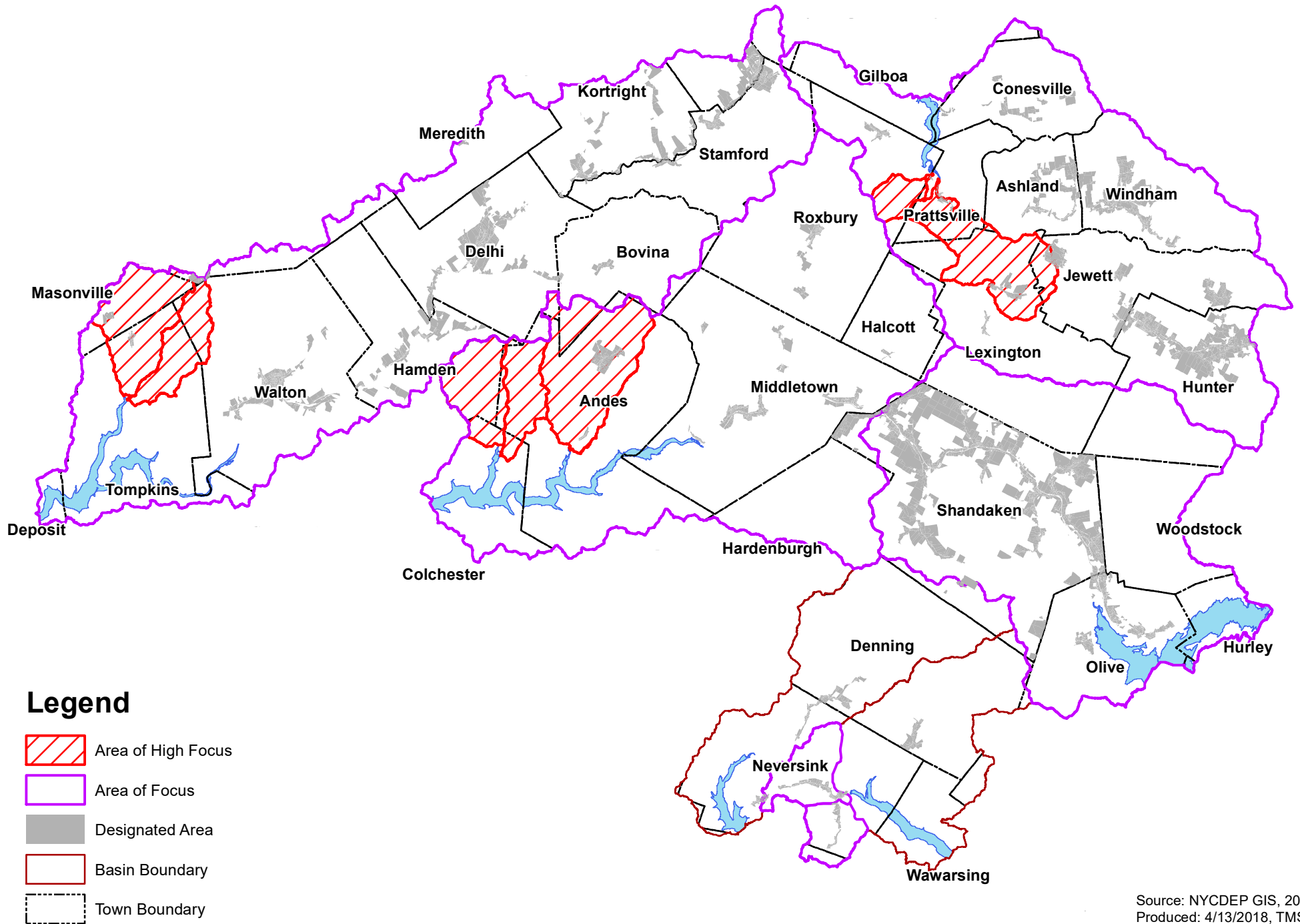
**Aqueduct**

**N**

**Data Sources:**  
 Mapped Features: NYC DEP GIS, 1999-2009  
 Produced by DLP, 9/1/09



# Exhibit B. West of Hudson Watershed Areas of Focus and Areas of High Focus





## Exhibit C. Acres Acquired in West of Hudson Watershed Towns since January 1, 2010 depicting FEIS Projections and LAP Solicitation Thresholds as of December 31, 2022.

= No outgoing solicitation and >50% SWC required within half-mile of Designated Hamlets

= >50% SWC required within half-mile of Designated Hamlets

### Delaware County

<u>Town</u>	<u>City Acres</u>	<u>WAC Acres</u>	<u>Total Acquired</u>	<u>EIS Proj. thru 2022</u>	<u>% of EIS Proj.</u>	<u>Acres to No Out-Going Sol</u>	<u>Acres to 1/2 mile = 50%</u>	<u>Acres Exceeded</u>	<u>60% of Cap or 2k Max</u>
Andes	5,835	2,029	7,865	7,690	102%			175	4,614
Walton	2,936	2,036	4,971					0	2,000
Delhi	3,173	1,397	4,570	3,951	116%			619	2,371
Middletown	2,380	839	3,218	4,983	65%	1,765		0	2,990
Roxbury	2,665	487	3,151			849		0	2,000
Bovina	2,063	402	2,466	2,785	89%	319		0	1,671
Kortright	986	1,401	2,387			1,613		0	2,000
Stamford	1,365	886	2,251	4,539	50%	2,288	473	0	2,723
Hamden	934	1,093	2,027	3,640	56%	1,613	157	0	2,184
Meredith	835	436	1,271			2,729	729	0	2,000
Tompkins	521	177	699			3,301	1,301	0	2,000
Colchester	400	110	510			3,490	1,490	0	2,000
Franklin	286	182	469			3,531	1,531	0	2,000
Masonville	332	0	332			3,668	1,668	0	2,000
Harpersfield	20	184	204			3,796	1,796	0	2,000

### Greene County

<u>Town</u>	<u>City Acres</u>	<u>WAC Acres</u>	<u>Total Acquired</u>	<u>EIS Proj. thru 2022</u>	<u>% of EIS Proj.</u>	<u>Acres to No Out-Going Sol</u>	<u>Acres to 1/2 mile = 50%</u>	<u>Acres Exceeded</u>	<u>60% of Cap or 2k Max</u>
Windham	1,631	499	2,130	2,207	97%	77		0	1,324
Lexington	1,755	155	1,911	3,771	51%	1,861	352	0	2,263
Jewett	1,548	0	1,548	2,794	55%	1,246	128	0	1,676
Hunter	1,325	0	1,325	2,726	49%	1,401	310	0	1,636
Prattsville	1,223	0	1,223	2,346	52%	1,123	185	0	1,408
Ashland	974	0	974	1,948	50%	974	195	0	1,169
Halcott	558	61	619	1,571	39%	952	324	0	943

## Exhibit C. Acres Acquired in West of Hudson Watershed Towns since January 1, 2010 depicting FEIS Projections and LAP Solicitation Thresholds as of December 31, 2022.

= No outgoing solicitation and >50% SWC required within half-mile of Designated Hamlets

= >50% SWC required within half-mile of Designated Hamlets

### Schoharie County

<u>Town</u>	<u>City Acres</u>	<u>WAC Acres</u>	<u>Total Acquired</u>	<u>EIS Proj. thru 2022</u>	<u>% of EIS Proj.</u>	<u>Acres to No Out-Going Sol</u>	<u>Acres to 1/2 mile = 50%</u>	<u>Acres Exceeded</u>	<u>60% of Cap or 2k Max</u>
Conesville	420	405	825	2,400	34%	1,575	615	0	1,440
Gilboa	409	0	409			3,591	1,591	0	2,000
Jefferson	85	0	85			3,915	1,915	0	2,000

### Sullivan County

<u>Town</u>	<u>City Acres</u>	<u>WAC Acres</u>	<u>Total Acquired</u>	<u>EIS Proj. thru 2022</u>	<u>% of EIS Proj.</u>	<u>Acres to No Out-Going Sol</u>	<u>Acres to 1/2 mile = 50%</u>	<u>Acres Exceeded</u>	
Neversink	1,190	0	1,190	4,472	27%	3,282	1,493	0	2,683

### Ulster County

<u>Town</u>	<u>City Acres</u>	<u>WAC Acres</u>	<u>Total Acquired</u>	<u>EIS Proj. thru 2022</u>	<u>% of EIS Proj.</u>	<u>Acres to No Out-Going Sol</u>	<u>Acres to 1/2 mile = 50%</u>	<u>Acres Exceeded</u>	
Olive	925	0	925	1,899	49%	974	214	0	1,139
Denning	710	0	710	5,046	14%	4,336	2,318	0	3,028
Wawarsing	486	0	486			3,514	1,514	0	2,000
Shandaken	474	0	474	1,450	33%		396	0	870
Woodstock	414	0	414	2,593	16%	2,179	1,142	0	1,556
Hardenburgh	84	164	249	3,641	7%	3,392	1,936	0	2,185

### Putnam County

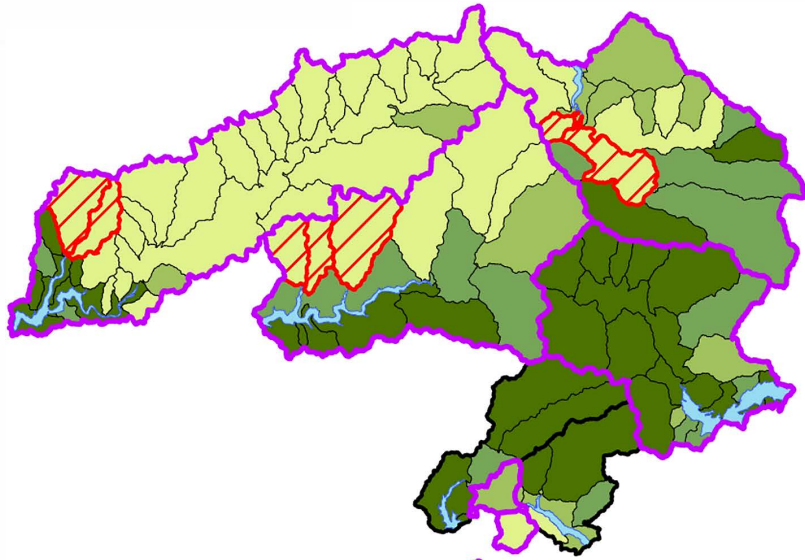
<u>Town</u>	<u>City Acres</u>	<u>WAC Acres</u>	<u>Total Acquired</u>	<u>EIS Proj. thru 2022</u>	<u>% of EIS Proj.</u>	<u>Acres to No Out-Going Sol</u>	<u>Acres to 1/2 mile = 50%</u>	<u>Acres Exceeded</u>	
Kent	716	0	716			3,284	1,284	0	2,000
Carmel	170	0	170			3,831	1,831	0	2,000

### Westchester County

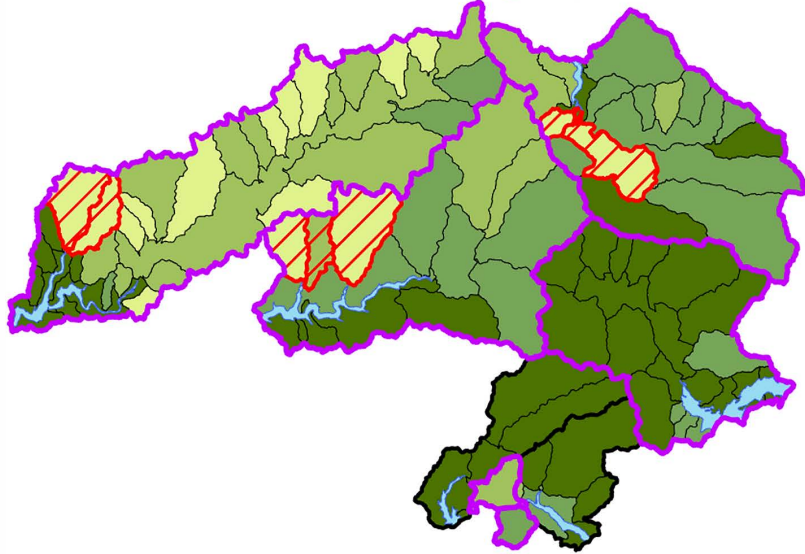
<u>Town</u>	<u>City Acres</u>	<u>WAC Acres</u>	<u>Total Acquired</u>	<u>EIS Proj. thru 2022</u>	<u>% of EIS Proj.</u>	<u>Acres to No Out-Going Sol</u>	<u>Acres to 1/2 mile = 50%</u>	<u>Acres Exceeded</u>	
North Castle	109	0	109			3,891	1,891	0	2,000
Mt. Pleasant	49	0	49			3,951	1,951	0	2,000
New Castle	12	0	12			3,988	1,988	0	2,000

# Exhibit D. Time Series Depicting Percentage of Protected Lands\* in West of Hudson Subbasins.

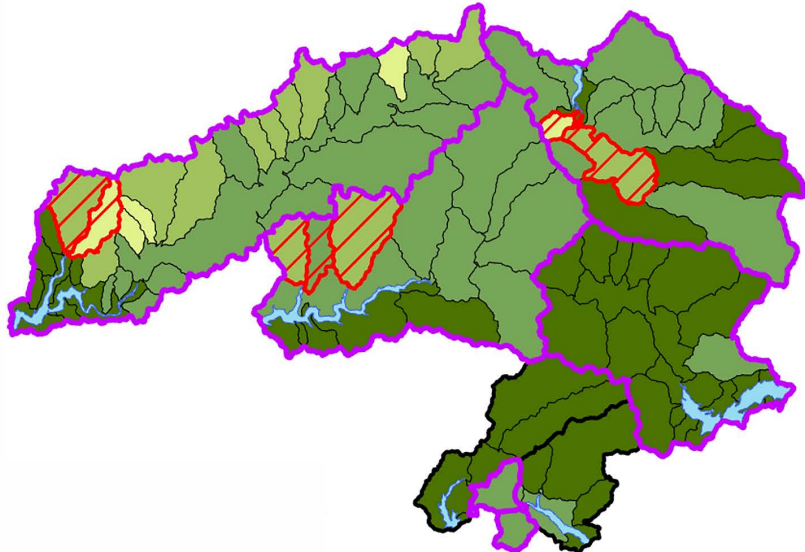
1997\*\*





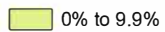
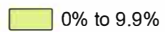
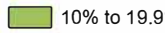
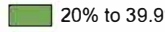
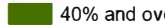
2009



2022



**Legend**

- |   |                    |  |
|---|--------------------|--|
|  | Area of High Focus | <b>Protected Land as a Percentage of Sub-Basin Area</b>  |
|  | Area of Focus      |  0% to 9.9%   |
|  | Basin Boundary     |  10% to 19.9% |
|   |                    |  20% to 39.9% |
|   |                    |  40% and over |

\* Protected lands include core LAP (fee and CEs), WAC CEs, pre MOA City lands, State lands, and other protected lands.

\*\* State and other protected land includes some land acquired after 1997 however the City does not track that information.

# Exhibit E. Percent Protected Lands\* by West of Hudson Subbasin with Solicitation Constraints.

\* Protected lands include core LAP (fee and CEs), WAC CEs, pre-MOA City lands, State lands, and other protected lands.

