EXECUTIVE SUMMARY

PROJECT DESCRIPTION

INTRODUCTION

The New York City Department of Environmental Protection (NYCDEP) proposes to continue the watershed Land Acquisition Program (LAP) in the three surface water watersheds that constitute the New York City surface water supply system; the three watersheds are the Delaware, Catskill, and Croton Watersheds. With the expiration of the existing Public Water Supply Permit (WSP) in January 2012, NYCDEP submitted an application for a new 10-year WSP on January 21, 2010, in accordance with the 2007 Filtration Avoidance Determination (FAD) issued by the U.S. Environmental Protection Agency (EPA), seeking permit approval prior to January 2012 to continue LAP through the year 2022. Per agreement with NYSDEC, other regulators (NYSDOH, USEPA), West of Hudson community representatives and representatives of environmental organizations (together "West of Hudson Watershed Stakeholders") after the submittal of the WSP application, it has been agreed that the term of the successor WSP will be 15 years. The future program that would be covered under the new WSP is referred to herein as the "Extended LAP."

In addition, a companion Agreement will be signed by many of the parties to the 1997 Watershed Memorandum of Agreement (1997 MOA), reaffirming the parties' commitments under the 1997 MOA and making additional commitments with respect to the LAP and related programs going forward.

This Environmental Impact Statement (EIS) was prepared to support the application for the WSP. It is anticipated that the future WSP would continue to authorize land acquisition in the three watersheds for watershed protection purposes, with a substantially greater emphasis on acquisitions in the West of Hudson portions of the Cat-Del System.

PURPOSE AND NEED

The mission of the Land Acquisition Program (LAP) is to acquire fee simple and conservation easement interests to protect environmentally-sensitive land in the New York City (City) watershed as a part of the City's overall Watershed Protection Program. LAP is a key component of the City's efforts to increase watershed protection and avoid filtration of the Cat-Del System, which provides water to over 9 million residents of the City and nearby communities in New York State. Land acquisition is an anti-degradation strategy, which seeks to avoid potential adverse water quality impacts associated with development and other land uses.

The Extended LAP is needed to continue to support FAD requirements and to focus additional attention to basins and sub-basins with a low percentage of protected lands. LAP acquisition criteria are evolving to meet this objective.

PROGRAM TO DATE

Since its creation in the 1990s, LAP has protected, through acquisition, over 100,000 acres of land in the 1 million-acre Cat-Del System and over 2,000 acres of land in the Croton System. The land and easements acquired are to be maintained in perpetuity as undeveloped land for watershed protection. Together with lands protected by the State and other entities, these acquisitions have raised the level

of permanently protected land in the Cat-Del System from 24 percent in 1997 to 34 percent today (Figure ES-1).

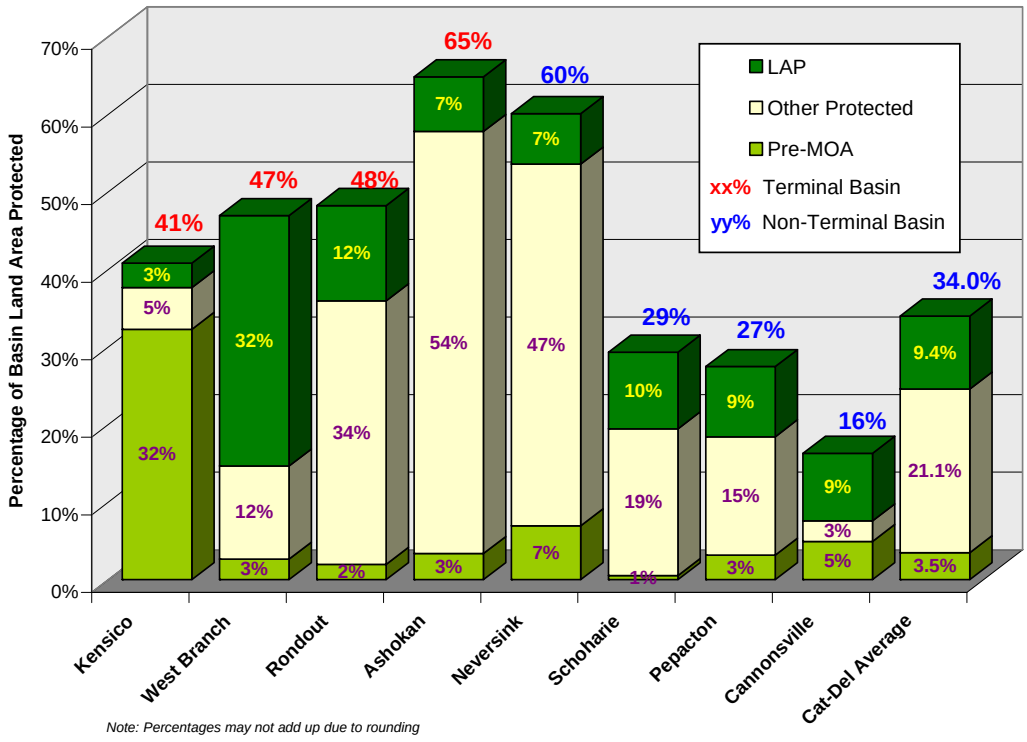
The LAP grew out of the City's response to the Federal Safe Drinking Water Act Amendments (1986) and Surface Water Treatment Rule (SWTR, 1989). As a result of an increased awareness of the threat posed by micro-organisms in unfiltered surface water systems, the SWTR required such public water supplies to either filter their supply or meet specific "filtration avoidance criteria." The City, through its Department of Environmental Protection, sought to meet those criteria and avoid filtration through the development of a comprehensive Watershed Protection Plan for the Cat-Del System.

Under the SWTR, an applicant for filtration avoidance needs to "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." Increased ownership of watershed lands is a key component of the City's ability to meet this condition. Prior to 1997, the City owned approximately 35,500 acres of land in the Cat-Del System (excluding reservoirs), and the State of New York owned another 202,000 acres, for a total protected land base of approximately 24 percent of the watershed land area. Since the early 1990s, the City has sought to increase those percentages though a robust land acquisition program.

NYCDEP initially sought to establish a land acquisition program in the Cat-Del System as a condition of the first FAD, issued by the EPA in 1993. In August 1993, the City applied for a Water Supply Permit (WSP) from the New York State Department of Environmental Conservation (NYSDEC). That application, and the City's concurrent efforts to promulgate new Watershed Rules and Regulations with the New York State Department of Health (NYSDOH), met strong resistance from municipalities in the watershed. While many residents in these upstate communities supported such land protection efforts for various reasons, many also viewed these efforts as a threat to local economic development.

Over the ensuing three and a half years, the City, Federal and State regulators, local governments and environmental organizations engaged in a variety of efforts to resolve these issues, which

Figure ES-1: Protected Land as a Percentage of Basin Land Area



Note: Percentages may not add up due to rounding

resulted in a comprehensive New York City Watershed Memorandum of Agreement (MOA) in January 1997. Under this landmark agreement, the City agreed to undertake a wide array of programs to protect water quality while also supporting local economic development. The MOA called on the City to dedicate up to $300 million for a land acquisition program in the Cat-Del System, and identified specific program parameters and acquisition procedures, as detailed below in Section II.B.

In January 1997, the City received a WSP issued by NYSDEC, and the first real estate closing under LAP occurred in October, 1997. The WSP was issued for a ten-year period (through January 2007), with a five-year renewal option (through January 2012) that was exercised. Since 1997, EPA has issued several FADs that have continued to place a strong emphasis on land acquisition. In 2007, EPA, in collaboration with DOH and NYSDEC, issued a ten-year FAD that required the City to dedicate an additional $241 million for land acquisition in the Cat-Del System. The 2007 FAD also required the City to apply for a new WSP in January 2010. As a prelude to that permit application, the FAD called for a "long-term land acquisition strategy…for the period from 2012 to 2022" to be submitted by September 30, 2009.

With the expiration of the existing WSP in January 2012, NYCDEP submitted an application for a new WSP in January 2010 with permit approval requested prior to January 2012 in order to continue LAP from January 2012 through 2022. Based on discussions with the West of Hudson Watershed Stakeholders after the submittal of the WSP application, NYSDEC agreed that the term of the successor WSP will be 15 years.. This Environmental Impact Statement (EIS) supports the application for the WSP. It is anticipated that the future WSP would continue to authorize land acquisition in the three watersheds for watershed protection purposes, with an emphasis on acquisitions in the West of Hudson portions of the Cat-Del System.

Under the MOA, the City was required to solicit at least 355,050 acres of land in the Cat-Del System, with specific acreage requirements by basin and priority area. These solicitation requirements were met by 2006 and the City agreed to conduct additional solicitation and re-solicitation on an annual basis as a result of the 2002 and 2007 FADs. The City's solicitation requirements and results in the Cat-Del System are summarized in Table ES-1.[1] For the purposes of the DEIS, July 2009 data referenced in the September 2009 Long-Term Plan, will serve as the baseline for analysis.

In addition to the lands solicited and acquired directly by the City (as shown in Table ES-1), the City funds the acquisition of conservation easements by the Watershed Agricultural Council (WAC) on agricultural land. That program (see below under "Rights Acquired") resulted in the acquisition of an additional 16,954 acres of farm easements through July, 2009, which acreage is not shown above – nor are acres of farms solicited by WAC

The identification of the most important parcels for acquisition within this vast watershed is an ongoing process based on a number of geographic, topographic, cost and real estate factors. LAP first prioritizes property for solicitation on the basis of its location within the water supply system, followed by site-specific characteristics. These principles are embodied in the Priority Area and Natural Features Criteria provisions of the MOA.

Table ES-1

Solicitation and Acquisition Status by Basin
as of July, 2009

District	Basin	MOA Solicitation Requirement	Acres Solicited	Acres Acquired (LAP Fee + CE)
EOH	Kensico	950	1,071	207
	West Branch	14,250	14,676	8,602
	EOH Sub-total	**15,200**	**15,747**	**8,809**
WOH	Ashokan	45,530	46,417	11,460
	Rondout	29,052	30,126	6,583
	Neversink	12,910	21,891	2,974
	Schoharie	68,700	95,491	19,000
	Pepacton	78,630	122,016	18,861
	Cannonsville	105,028	143,820	13,065
	WOH Sub-total	**339,850**	**459,761**	**71,943**
Cat-Del Totals		**355,050**	**475,508**	**80,752**

[1] Since virtually all eligible lands in Priority Areas (PA) 1 and 2 were solicited while only 75% of lands in Priority 3 and 50% of Priority 4 had been solicited as of 2006, almost all newly solicited lands thereafter derived from the remaining unsolicited lands in PA's 3 and 4. These two PAs are found in the Cannonsville, Pepacton, Schoharie, and Neversink Basins.

EXTENDED LAND ACQUISITION PROGRAM

Since 2008, through the City's submission of a WSP application on January 21, 2010 and DEIS on June 1, 2010, NYCDEP has been in active discussions with its regulators (NYSDEC, NYSDOH, USEPA) and West of Hudson Watershed Stakeholders to address concerns about the proposed Extended Land Acquisition Program. The parties to those negotiations have come to agreement on the core permit terms. Other related terms that the parties have agreed to will be memorialized in a separate Agreement, discussed below. Among other changes, the parties agree that the Permit term will be 15 years. This fifteen year term, analyzed in the DEIS as the Greater Impact Alternative, has been incorporated into the project as the Greater Impact Scenario in the FEIS.

The Extended LAP would continue to use the same basic real estate methods it uses today, which have resulted in the acquisition by LAP and WAC of over 96,000 acres as of July, 2009.

Areas of Focus

The Extended LAP program for the period from 2012 to 2022 will refine solicitation activity to focus more attention on certain basins and sub-basins. As described in the September 2009 Long-Term Plan, the prioritization of solicitations will be based on some combination of their location within the system as a whole, the basin or sub-basin's existing level of protection, and a basin's anticipated contribution to future water supply including:

- Non-terminal reservoir basins with less than 30 percent protected lands;
- Specific sub-basins with a relatively low percentage of protected lands; and
- Reservoir basins that are expected to provide larger contributions to future water supply.

Using this strategy, Areas of Focus have been developed to identify basins and sub-basins which warrant additional attention for solicitation based on current levels of protection, success rates, contribution to water supply, and other factors. Parcel selection would include procedures to maximize the water quality benefit of acquisitions.

Areas of Focus have been developed to identify basins and sub-basins which warrant additional attention for solicitation based on current levels of protection, success rates, contribution to water supply and other factors:

1. **Less-Protected Reservoir Basins -** The Schoharie, Pepacton and Cannonsville basins are the largest basins in the Cat-Del System, together comprising some 720,000 acres or over 70 percent of the system land area. They contain about 75 percent of the remaining solicited land. For this reason, any acquisition strategy from 2012 to 2022 would necessarily be focused on these three basins. The fact that these three non-terminal basins also contain the lowest percentage of protected lands provides further basis for this focus.

2. Critical Sub-Basins - Each reservoir basin is comprised of discrete sub-basins whose location, topography and land use patterns vary in ways that greatly influence the water quality entering and leaving each reservoir. LAP has identified several categories of sub-basins whose characteristics merit heightened focus including sub-basins near intakes and less protected sub-basins. As shown in Figure ES-2, sub-basins with less than 20 percent protected lands are primarily located in the Pepacton and Cannonsville Basins.

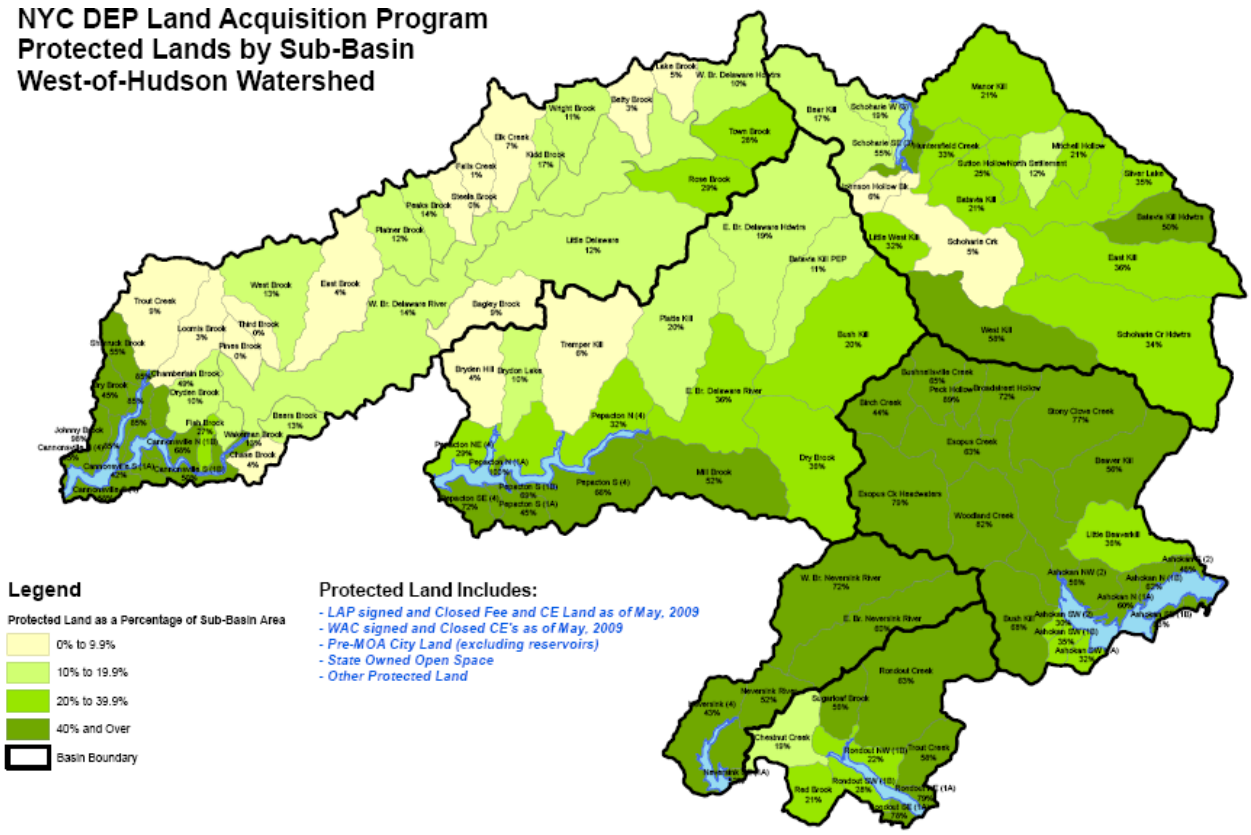
3. Contribution to Future Supply - The LAP Priority Areas emphasize travel time to distribution as a primary concern for water quality protection. The success of LAP to date in increasing protected lands in Priority Areas 1 and 2 allows additional factors going forward to prioritize future acquisitions to build on this success. One such factor is the proportion of source water originating from each reservoir basin.

Long-term planning by NYCDEP has identified several factors - including improved water quality in the Cannonsville Basin, the pending completion of the Croton Water Treatment Plant, and turbidity in the Catskill System - which may result in supply shifts that should be taken into consideration in planning LAP's solicitation strategy. The Ashokan and Pepacton basins would continue to provide the most supply, with increases projected for Rondout, Cannonsville and the Ashokan basin contributions

4. Develop strategies to promote the wise use of acquisition funds over the long-term - Acquisition costs vary tremendously within the Cat-Del system. Further, the high cost areas (Kensico, West Branch and Ashokan, in descending order) correspond in large part to the basins that now have the highest percentage of protected lands. Therefore the incremental protection value of acres acquired in the less-protected basins WOH is higher than the value of acquiring acreage in more expensive, highly protected basins. For these reasons, LAP's parcel selection strategy will more directly consider cost and levels of protection.

In practice, three of these Areas of Focus (Less-Protected Basins, Critical Sub-Basins and Contribution to Future Supply) overlap to some degree. For example, the sub-basins north of Pepacton Reservoir qualify in all three categories and therefore would be Areas of "High" Focus, while certain sub-basins in Schoharie Basin that already have a high percentage of protected land only qualify on the basis of one factor (Less-Protected Basins) and would receive less focus.

Figure ES-2: Percent Protected Lands by Sub-Basin



Other Solicitation Criteria

NYCDEP expects to continue to resolicit most of the 375,000 acres of solicited land not yet acquired. The vast majority of these solicited parcels are comprised of vacant land over 20 acres in size or residential parcels over 30 acres with slope or surface water features that merit protection for water quality protection. However some marginal parcels previously solicited would not be actively pursued, and some new lands would be solicited, according to the criteria detailed below:

1. Parcels Adjoining Previously-Acquired Land – Parcels adjoining lands acquired in fee simple should continue to be identified and solicited to support multiple program objectives, including management efficiency, increased utility for working landscape partnerships, and enhanced recreational opportunities.

2. Smaller Vacant Parcels in Proximity to Surface Water Features – Small lots, especially those in proximity to streams, merit protection. Program experience since 1997 has also shown that the management burden of smaller fee lots is relatively minimal, particularly compared with CEs. For these reasons, LAP would identify more small lots near water for solicitation, particularly in Areas of Focus. This strategy would enable LAP to maximize the water quality impact of its acquisitions.

3. Conservation Easements – In contrast to fee simple acquisitions, CEs require a significant ongoing dedication of resources for annual monitoring and occasional enforcement. Despite these long-term costs, CEs provide a unique tool to protect lands (particularly those with residences) whose owners are not interested in selling their land outright. Size, natural features,

development potential and location would be the primary programmatic criteria used to make decisions to pursue a particular CE, but other factors would continue to be considered although in ways that may vary from past practice depending on the level of protection in a given area. These factors include the size and configuration of tax parcels comprising the CE, the presence or absence of other CEs on adjoining or nearby lands, and an analysis of the landowner's stated plans for future use of the property.

Program Changes

As a result of negotiations between NYCDEP, DEC, other regulators, and West of Hudson Watershed Stakeholders, several components of the Extended LAP have been agreed upon. These components are discussed below.

Hamlet Expansion Areas

As a result of these negotiations, there has been agreement to potential modifications to the 1997 Designated Areas (see page 1-10 above). Under MOA Paragraph 68, West-of-Hudson municipalities were given the opportunity in 1997 to designate areas, including villages, hamlets, village extension areas and industrial/commercial areas, and to determine, by resolution, whether to exclude the City's acquisition under LAP of property in fee simple in these areas. The intent of these "Designated Areas" was to "…provide reasonable opportunities for growth in and around existing population centers."

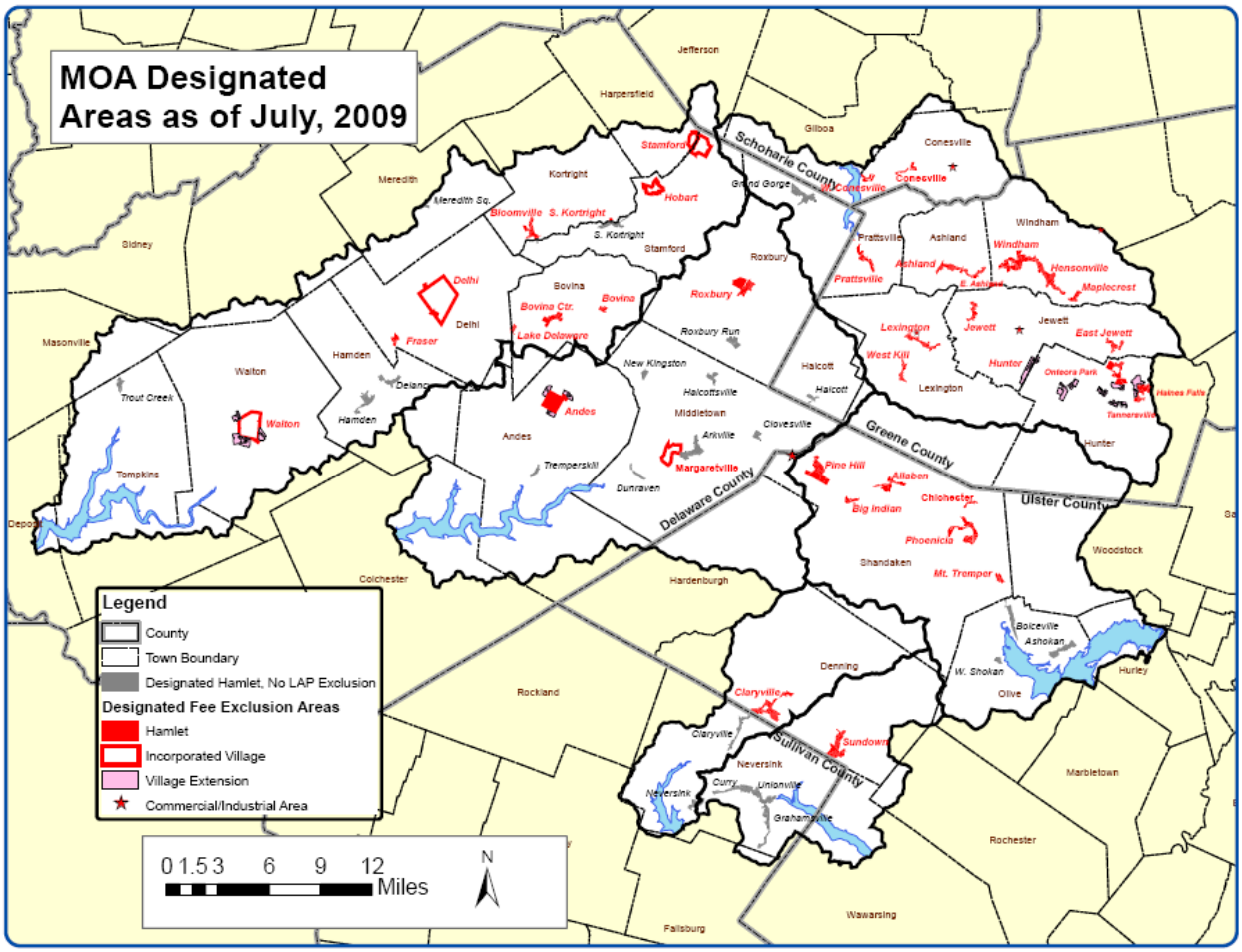
The aforementioned negotiations focused on the interest of some West-of-Hudson towns in expanding the geographic extent of the Designated Areas beyond those delineated in 1997. The West of Hudson Watershed Stakeholders also expressed an interest in changing the rules governing LAP acquisition in the Designated Areas. In particular, in 2008, the CWT requested and the City and other West of Hudson Watershed Stakeholders agreed that each WOH town could identify additional "Expansion Areas" for future growth. The West of Hudson Watershed Stakeholders agreed that such expansion areas are appropriate given the relatively small size of the MOA Designated Areas (which are already largely developed) and the increased scope of LAP. In addition, the City and the CWT agreed, that municipalities could elect to make both the current designated hamlet areas and these Expansion Areas off limits to virtually all LAP acquisitions (including Watershed Conservation Easements), not just to fee simple purchases as was previously the case[1]. (As explained below, the Riparian Buffers Program, authorizing acquisitions in fee simple and conservation easements of certain buffer properties, may be allowed in areas that are otherwise designated as off limits to the LAP.)

Seventeen watershed towns have proposed Expansion Areas[2] (See Table 1-2). The West of Hudson Watershed Stakeholders and individual counties and towns have worked diligently to balance community concerns over opportunities for future development with water quality protection needs in determining the appropriate scope of each town's proposal. The West of Hudson Watershed Stakeholders have agreed on Expansion Areas for all seventeen towns, whose proposals total 26,709 acres. If the hamlets are expanded as proposed, and all of the affected municipalities elect to preclude LAP acquisition in them, approximately 10,500 acres of previously solicited lands would no longer be eligible for acquisition.

[1] Except the Riparian Buffer Program

[2] The towns will retain the right to remove – but not add – parcels from the proposed Expanded Hamlets and to formalize the status of such parcels as in or out of the Expanded Hamlets from that point on when the towns adopt resolutions to exclude (or not exclude) acquisition.

Figure ES-3: Existing Designated Hamlets



Because the expanded hamlet boundaries have been agreed to, pending opt-in provisions by the individual towns as described in the Permit, they are included in the Proposed Action. However, since the extent and scope of LAP exclusions from hamlets will be unknown until acted upon by the towns, there is a possibility that these expanded areas will not be part of the Extended LAP. Therefore, for purposes of the EIS, a No Hamlet Expansion Alternative is also evaluated.

The hamlet designation and expansion areas would be consistent with and reinforced by a number of other existing NYCDEP watershed programs. The proposed expanded hamlets and other existing NYCDEP programs recognize the water quality benefits of encouraging development in areas where it is already concentrated -- and where there is infrastructure to support it. The Rules and Regulations for the Protection from Contamination, Degradation and Pollution of the New York City Water Supply and its Sources (Watershed Regulations) encourage growth within villages and designated hamlets by providing relief in those areas from the general prohibition against new impervious surfaces within 100 feet of watercourses and wetlands so long as the applicant seeks and obtains NYCDEP approval of a stormwater pollution prevention plan (SPPP). Similarly, NYCDEP-funded wastewater programs under the MOA, primarily intended to control wastewater threats from existing development, also support the smart growth philosophy of encouraging community growth within hamlet areas rather than the diffuse sprawl development that often occurs in the absence of

centralized environmental infrastructure. Under the New Sewage Treatment Infrastructure, Community Wastewater Management, and Sewer Extension Programs, NYCDEP has funded the construction of new wastewater infrastructure in a number of villages and hamlets.

Table ES-2 Town Hamlet Expansion Areas

Table 1-2

Final Town Hamlet Expansion Area Proposals
Accepted by the Parties November 30, 2010

Status of Expansion Proposal	Town	Town Watershed Acres	Existing Designated Area	Original 2008 Proposed Expansion Area	Current Proposal
No Expansion Proposal Made (15 towns)	Andes	65,748	1,052		
	Bovina	28,427	392		
	Colchester	18,670	n.a.		
	Denning	56,447	1,107		
	Franklin	5,888	n.a.		
	Gilboa	10,840	n.a.		
	Halcott	14,375	69		
	Hardenburgh	22,675	n.a.		
	Hurley	8,518	n.a.		
	Neversink	43,804	1,197		
	Prattsville	13,851	207		
	Stamford	31,120	1,331		
	Tompkins	45,024	109		
	Wawarsing	10,607	n.a.		
	Woodstock	22,346	n.a.		
	Sub-Total		**5,464**		
Acceptable Town-wide Proposal	Shandaken	78,875	1,561		
	Sub-Total		**1,561**		
Town Proposal Acceptable to All Parties (17 towns)	Meredith	15,395	73	105	71
	Masonville	8,311	n.a.	150	150
	Sidney	601	n.a.	218	218
	Middletown	62,244	1,734	298	298
	Lexington	51,274	362	375	375
	Roxbury	56,051	957	435	435
	Harpersfield	7,076	405	1,331	1,298
	Olive	29,252	547	3,303	1,333
	Conesville	21,590	275		1,570
	Ashland	15,987	362	4,004	1,676
	Jewett	32,087	652	4,769	2,014
	Hamden	33,517	420	4,958	2,434
	Delhi	41,343	2,346	4,450	2,556
	Windham	28,986	1,148	13,458	2,797
	Hunter	43,174	3,251	4,460	2,891
	Walton	55,991	1,503	11,194	2,929
	Kortright	25,047	250	7,913	3,664
	Sub-Total		**14,285**	**61,421**	**26,709**

Summary:		
	Existing MOA Designated Areas:	21,310
	Town Expansion Proposals Acceptable to all Parties:	26,709

Natural Features Criteria

Natural Features Criteria as defined in MOA 63, establish a set of hydrologic and topographic features, one or more of which must be present on a property in order to qualify for acquisition in Priority Areas 2, 3 or 4. (In priority areas 1A and 1B, natural features criteria are not required.) There are two main categories of natural features criteria:

1) Surface water features: Parcels must
   - be at least partially located within 1,000 feet of a reservoir, or
   - be at least partially located within the 100-year flood plain, or
   - be at least partially located within 300 feet of a watercourse, as defined in the Watershed Regulations, or
   - contain in whole or in part a federal jurisdiction wetland greater than five (5) acres or a NYSDEC mapped wetland, or
2) Slopes: Parcels must contain ground slopes greater than fifteen percent (15%).

Another proposed change to the Extended LAP under discussion involves modifying the Natural Features Criteria to define thresholds for the minimum amount of the specified natural features that must be present on a property to qualify for acquisition.

As a result of the negotiations among the West of Hudson Watershed Stakeholders, the Extended LAP will incorporate numeric thresholds to define the minimum amount of the specified natural features that must be present on a property to qualify for acquisition. The parties have agreed that properties in Priority Areas 2, 3 or 4, must meet either or both of the following thresholds:[1]

- At least seven percent (7%) of the property exhibits Surface Water Features[2], or
- At least fifty percent (50%) of the property exhibits slopes greater than 15 percent.

The determination of whether these Natural Features Criteria thresholds are met would be based on the best information available to the City at the time the City orders an appraisal. This modification would remove some lands from eligibility for future solicitation, and would focus LAP on those lands most sensitive for water quality. Table 1-4 shows the impact of the proposed hamlet Expansion Areas (PEAs) and Natural Features Criteria thresholds on the existing pool of solicited lands,

The proposed Expansion Areas could remove about 10,500 acres from solicitation (based on prior solicitations of eligible land), and the proposed thresholds for Natural Features Criteria could remove roughly another 11,950 acres.

Although the PEAs, MOAs and NFC thresholds would remove about 26,000 acres of solicited land, there would still be a very large universe, about 337,000 acres of remaining eligible land solicited, for NYCDEP to draw from for its future acquisitions in the West-of-Hudson watershed. Therefore

[1] The draft WSP provides limited exceptions from these thresholds to allow for acquisition of certain properties adjacent to lands owned by the City or State.

[2] Surface Water Features include 1,000-foot buffers around reservoirs, 300-foot buffers around watercourses, 100-year floodplains, DEC-mapped wetlands, or federal jurisdiction wetlands over 5 acres.

NYCDEP does not consider these new limitations to be a constraint on the total number of acres it will acquire, but rather that they will focus acquisitions on different and more sensitive properties within the previously solicited group.

Table ES-3: Impact of PEAs, MOA Designated Areas and Proposed NFC Thresholds on Remaining Solicited Land as of March 2010

	(a)	(b)	(c)	(d)	(e)	(f)
		Impact on Remaining Solicited Acres				
County	Remaining Solicited Acres	Proposed Expansion Areas (PEA)	MOA Designated Areas	NFC: 7% SWC / 50% Steep Slope Threshold	Totals Solicited Acres Impacted (sum of Columns b, c & d)	Remaining Acres available for solitication
Delaware	**186,725**	**4,500**	**1,423**	**8,378**	**13,104**	**173,621**
Greene	**65,323**	**6,430**	**965**	**2,612**	**10,007**	**55,316**
Schoharie	**14,306**	**1,113**	**0**	**533**	**1,646**	**12,660**
Sullivan	**19,859**	**0**	**308**	**440**	**748**	**19,111**
Ulster	**48,531**	**381**	**316**	**675**	**1,372**	**47,159**
Totals	**334,744**	**12,424**	**3,012**	**12,638**	**26,877**	**307,867**
Walton	**28,527**	**2,588**			**2,588**	**25,939**
Shandaken	**13,761**		385	15	**400**	**13,361**
Totals	**377,032**	**15,012**	**3,397**	**12,653**	**29,865**	**347,167**

Column (a)	'Remaining Solicited Acres' are LAP solicited acres not already signed or closed; Includes all Priority Areas; Does not include WAC solicitation.
Column (b)	Sub-set of Column (a) lying within accepted PEA's in each County. If only a portion of a solicited parcel lies within a PEA, only the acres within the PEA is counted.
Column (c)	Sub-set of Column (a) lying within each MOA Designated Areas in each County. Acres are counted whether or not the Town has previously elected to exclude LAP acquisitions in fee simple. If only a portion of a solicited parcel lies within an MOA designate
Column (d)	Sub-set of Column (a) in properties solicited by LAP whose NFC would fall below the 7% SWC or 50% Steep Slope threshold and also located in Priority Area 2, 3 or 4 and outside the PEA's.
(1) Delaware County	Delaware County totals exclude Walton PEA, which has not yet been accepted by the parties. Acreage that would be excluded from solicitation by the current Walton PEA proposal is presented at the bottom of the table.
(2) Ulster County	Ulster County totals exclude the Town of Shandaken PEA. In lieu of designating specific parcels for its PEA, Shandaken has requested, and the parties have tentatively agreed, that the City will not proactively solicit land in Shandaken, but may negotiate

Riparian Buffer Pilot Program

The City has agreed to implement an initial three-year Riparian Buffer Program (RBP) in which the City would allocate up to Five Million Dollars ($5,000,000) of the funds currently committed to the LAP to a program for acquiring Riparian Buffers, in easement or fee. As currently envisioned, the City-funded RBP would be implemented in conjunction with one or more Stream Management Plans developed under the City's Stream Management Program, and would be carried out in partnership with one or more local land trusts. The RBP would involve the acquisition of small parcels along streams, wetlands and other water features. Towns that exclude LAP acquisitions in designated areas may nonetheless opt to allow acquisition of riparian buffers in such areas. Since much of this land is already constrained by regulatory buffers and physical limitations on development, the RBP is not expected to have a large impact on the supply of developable land in towns where it is implemented. The amounts of land protected under the RBP are subsumed within the amounts projected under the Extended LAP for purposes of this EIS.

Forest Conservation Easement Program

The City has also agreed to implement a five-year Forest Conservation Easement Program ("FCE Program") in which the City would allocate up to six million dollars ($6,000,000) of funds currently committed to the LAP to acquisitions of easements on forested land. As currently envisioned, the City-funded FCE Program would be implemented in partnership with the Watershed Agricultural Council (WAC) in similar fashion to the Farm Easement Program that has been in operation by WAC and NYCDEP since 1999. The FCE Program would focus on properties that are (1) enrolled in WAC's Forest Management Program (for which a Forest Management Plan has been developed); (2) enrolled in NYSDEC's Forest Stewardship Program or Section 480A Forest Tax Law (for which a Forest Management Plan has been developed); or (3) important for other reasons related to water quality. The FCE will complement the land protected by NYCDEP CEs and WAC Farm Easements within the acquisitions analyzed in this EIS, and does not represent an increment for analysis. The amounts of land protected under the FCE program are subsumed within the amounts projected under the Extended LAP for purposes of this EIS.

Enhanced Land Trust Program

The City has further agreed to implement an Enhanced Land Trust Program ("ELT Program") in which one or more land trusts would (1) acquire large properties that contain improvements such as dwellings, which improvements are otherwise off limits to NYCDEP, (2) facilitate subdivision of the properties, and (3) convey the vacant portion to the City at fair market value, and the residential portion into private ownership on the open market. The ELT Program would be implemented only in those towns that elect to allow the land trust to acquire properties with dwellings (a class of properties that the MOA prevents the City from acquiring itself). As envisioned, the City will pay for most of the carrying costs incurred by the land trust(s) under this program. The amounts of land protected under the ELT program are subsumed within the amounts projected under the Extended LAP for purposes of this EIS.

Use of Water Supply Lands

NYCDEP allows recreation, forestry, mining, and low intensity agriculture on NYCDEP owned lands. These are expected to continue and possibly be expanded on land purchased under Extended LAP, subject to future applicable approvals, where consistent with water supply protection and operations and public safety. In addition to the recreational uses that have been allowed on NYCDEP owned lands, under the draft WSP, NYCDEP will allow snowmobile trails where appropriate, sponsored by qualifying organizations.

The Proposed Action for this EIS is the new Water Supply Permit that would allow for continued acquisition under the Land Acquisition Program. Most of the uses allowed on NYCDEP lands are either a continuation of an existing use or are subject to separate site specific approvals of land use plans and/or stormwater pollution prevention plan approvals and environmental review, where applicable, and are not reviewed in this EIS. Recreational uses, which are allowed pursuant to "NYCDEP Rules for the Recreational Use of Water Supply lands and Waters" underwent SEQRA review (Negative Declaration dated July 2008) and are not subject to further review and approval; therefore, they are reviewed in this EIS.

Other Permit Elements and Side Agreement

Permit Elements

As a result of negotiations among NYCDEP, NYSDEC, other regulators, and watershed stakeholders since the submittal of the DEIS, several additional refinements and a number of new components have been added to the Extended LAP WSP. Paragraph 25 of the WSP describes "Programs to Foster Cooperation and Requirement to Fund Watershed Protection and Partnership Programs." The draft WSP includes requirements that NYCDEP continue Partnership Programs with outstanding commitments from the 1997 MOA and/or continuing commitments under the 2007 FAD. It outlines NYCDEP's commitments to the following Partnership Programs, including the requirement that conditions of any subsequent FADs related to these programs become incorporated into the WSP. The impacts of these programs were included in the environmental review that supported the 2007 FAD (Negative Declaration dated September 2007), to the extent reasonably foreseeable. Environmental review of the continuation of these programs will be conducted, as applicable, to support the FAD review of 2012, subsequent FADs, and for discretionary permits and approvals required for these programs.

Side Agreement Elements

In addition to reaching agreement on a number of core terms for the WSP itself, the West of Hudson Watershed Stakeholders have reached consensus on an Agreement which both reaffirms the parties' commitments under the 1997 MOA and specifies additional commitments made in connection with the draft WSP and the extended LAP. In many instances, the Agreement will enhance or clarify provisions in the Water Supply Permit. To the extent the commitments memorialized in the Agreement simply clarify elements of the extended LAP itself, their impacts are addressed in this EIS. The commitments relating to current and potential litigation are not subject to environmental review. The Towns of Hamden and Kortright will be responsible for environmental review of the amendments to their local laws.

Projection of Possible Future Land Acquisition By County

10 Year Projection Scenario

For purposes of the EIS, projections were made of potential future acquisitions to understand potential impacts of the Extended LAP. So as not to underestimate socioeconomic or community character impacts, the projections are highly conservative for purposes of developing a reasonable worst case scenario – that is, a high estimate of acquisitions – at the town level for evaluation in this EIS. The projections use the pool of previously solicited lands as a starting point (after removing land already acquired). These acres were then multiplied by an assumed future success rate for each town. The future success rates are conservative, in that they err on the side of over-estimating acquisition. Using the county-wide historical success rate as a starting point, the town-based rates assume that future acquisition will occur at a rate higher than has been seen to date. This approach tends to account for regional differences, without being overly tied to past results, which can be greatly influenced by specific large acquisitions. The average county success rate was then increased for those towns that are in "areas of high focus" according to the Long-Term Land Acquisition Plan – that is, areas of particular significance in terms of potential impact on water quality.

Table ES-4A presents projections for future watershed land acquisitions by county. Acres of fee, conservation easement (CE) and Watershed Agricultural Council (WAC) easement land that could be acquired through 2022 were projected for each town (town level projections are presented in *Socioeconomic Conditions* below).

Table ES-4A: Reasonable Worst Case Projections of Acquisitions Under the Extended LAP

District	County	Historical Success Rate	Fee/CE Acres Acquired To-Date	Assumed Future Success Rate	Projected Future Acres	Projected Future WAC CE Acres	Total Proj. Acres LAP + WAC
WOH	Delaware	13%	31,174	20%	40,900	13,152	54,052
	Greene	20%	16,072	27%	16,760	952	17,712
	Schoharie	18%	3,351	25%	3,384	1,162	4,546
	Sullivan	14%	3,461	20%	3,963	301	4,264
	Ulster	22%	17,663	25%	15,942	433	16,375
	Sub-Total	**16%**	**71,721**	**22%**	**80,948**	**16,000**	**96,948**
EOH	Dutchess	46%	1,049	25%	307	0	307
	Putnam	63%	7,564	30%	1,210	0	1,210
	Sub-Total	**60%**	**8,614**	**33%**	**1,517**	**0**	**1,517**
	Totals	**17%**	**80,335**	**22%**	**82,465**	**16,000**	**98,465**

Note: Town-Level Projections were not conducted for Westchester County due to low anticpated volume

As shown in Table ES-4A, the projected amounts of land in the watershed, particularly in the West-of-Hudson watershed, are higher over the next 12 years than the previous 12 years. This is an unlikely scenario because the City has already solicited much of the land it will be soliciting in the future and the success rates are likely to be somewhat lower rather than higher as shown in the projections, since the remaining lands are largely owned by individuals who have declined to sell in the past. These optimistic projections are therefore highly conservative for purposes of projecting future potential impacts, particularly with respect to socioeconomic and community conditions.

No projections were made for the Croton System or Westchester County. Acquisitions in the Croton Watershed would be highly unusual and only made for a limited set of very water sensitive lands. For Kensico Reservoir watershed in Westchester County, very few parcels would be expected to be acquired. Due to the highly developed nature of the watershed, land that would be acquired would tend not to be vacant land, but more likely land that is either part of an existing recreational area (such as a golf course), office park or other use. The potential for these acquisitions are discussed qualitatively but, due to the predicted low levels of acquisition, no potential significant impacts are expected to occur.

15 Year Greater Impact Scenario

This EIS also evaluates a 15 Year Greater Impact Scenario (previously analyzed as the Greater Impact Alternative under the DEIS), As discussed above, per agreement with NYSDEC, other regulators, and West of Hudson Watershed Stakeholders, since the submittal of the WSP application, it has been agreed that the term of the permit will be 15 years. The analysis in this scenario assumes that NYCDEP would acquire an additional 10 percent above the 10 Year Projection Scenario shown in Table ES-4A. As shown on Table ES-4B, based on this approach, NYCDEP purchases in fee simple and conservation easements in the West-of-Hudson watershed between 2010 and 2027 would total 89,043, as compared with 80,948 acres through 2022 in the 10 Year Projection Scenario. Purchases of farm easements by the Watershed Agricultural Council from 2010 through 2027 are not expected to exceed 16,000 acres.

This scenario is considered to be an extremely conservative (i.e. high impact) estimate of land to be acquired under the Extended LAP. The projections in Table 1-5 use very conservative assumptions to estimate the amount of land to be acquired under the Extended LAP. It is highly unlikely that, even under a 15 year Water Supply Permit, additional land would be acquired beyond the levels

estimated in Table ES-4B. Nevertheless, NYCDEP evaluated the projections presented in Table ES-4B.

Table ES-4B: 15 Year Greater Impact Scenario Projections of Acquisitions Under the Extended LAP

District	County	Historical Success Rate	Fee/CE Acres Acquired Thru July, 2009	Assumed Future Success Rate	Projected Future Acres	Projected Future WAC CE Acres	Total Proj. Acres LAP + WAC
WOH	Delaware	13%	31,290	20%	44,990	13,152	58,142
	Greene	20%	16,108	27%	18,436	962	19,398
	Schoharie	18%	3,385	25%	3,722	1,162	4,884
	Sullivan	14%	3,471	20%	4,359	301	4,660
	Ulster	22%	17,690	26%	17,536	433	17,969
	Sub-Total	16%	71,943	22%	89,043	16,000	105,043
EOH	Dutchess	46%	1,049	25%	338	0	338
	Putnam	63%	7,553	30%	1,331	0	1,331
	Sub-Total	60%	8,602	33%	1,669	0	1,669
	Totals	17%	80,545	22%	90,712	16,000	106,712

EIS PROCESS

This DEIS has been prepared to assist decision-makers by providing a full disclosure of the environmental consequences of the proposed action. The DEIS conforms with the State Environmental Quality Review Act (SEQRA) and its implementing regulations (6 NYCRR Part 617) in accordance with Article 8 of the Environmental Conservation Law and the City Environmental Quality Review (CEQR) Executive Order 91 of 1977 (as amended).

As the first step in the environmental review process, a Draft Scope of Work was issued on February 16, 2010. Public meetings to obtain oral testimony on the Draft Scope were held in Hunter and Delhi, New York on March 23, and March 24, 2010 respectively. The period for submitting written comments remained open until April 5, 2010. A Final Scope of Work was issued on April 30, 2010, finalizing the scope of analysis for the DEIS based on comments received. Based on the Final Scope of Work, a DEIS was prepared and certified as complete on June 1, 2010. The DEIS was circulated for public review. Three joint NYSDEC and NYCDEP public hearings were held to obtain oral testimony on the DEIS and Water Supply Permit Application. These hearings were held on July 12, 2010 at SUNY Delhi, in Delhi, NY, on July 13, 2010, at Hunter Elementary School in Hunter, NY and on July 14, 2010, and at Tri-Valley High School in Grahamsville, NY. The period for submitting written comments remained open until November 22, 2010.

This Final EIS (FEIS) includes written responses to address public comments made on the DEIS (See Chapter 12).

PERMITS AND APPROVALS

NYCDEP has applied to NYSDEC for a Water Supply Permit which will authorize the continuation of the LAP beyond the January 2012 expiration of the 1997 WSP. In addition, NYCDEP consults regularly with NYSDOH, USEPA, and NYSDEC concerning its continued implementation of the requirements for the LAP as set forth in the 2007 Filtration Avoidance Determination. NYCDEP and the West of Hudson Watershed Stakeholders will also enter into a side Agreement reaffirming

their commitments under the 1997 MOA and clarifying and expanding upon certain provisions of the WSP.

LAND USE AND COMMUNITY CHARACTER

WEST-OF-HUDSON

Land Use

Under the Extended LAP, NYCDEP would acquire undeveloped land, which would remain undeveloped and therefore the current land uses for these lands would remain largely unchanged. One of the planning elements of LAP is that it seeks to acquire more ecologically-sensitive lands, thereby keeping future development in areas where it is largely occurring. The program could somewhat reduce the amount of parcelization that is occurring and the potential for sprawl development.

Because extension of the LAP would include continuation of the WAC agricultural easement program – with easements being potentially acquired on an estimated 16,000 additional acres of farmland through 2027 – it is possible that the extension of LAP would slightly reduce the decline in farmland acreage expected to occur without the proposed action.

LAP would not be purchasing land in existing designated hamlet areas or within the boundaries of proposed hamlet expansions not only where towns opt to exclude these acquisitions, but also because parcels in these areas tend to be smaller and less desirable for LAP acquisition. Since most commercial development would be expected within these areas, commercial land uses are not expected to be substantially affected by the proposed action, and the existing land use patterns in these areas would continue. As documented in *Socioeconomic Conditions*, , with the projected land acquisition under the Extended LAP, there would be ample area remaining to accommodate future growth in the watershed towns.

Community Character

Community character can be affected by changes in visual character, socioeconomic conditions, traffic and noise, among other impacts. No new structures would be constructed and no traffic or noise impacts would occur as a result of the proposed Extended LAP. The primary focus of this community character analysis is therefore potential impacts from changes in socioeconomic impacts.

The sections below discuss each of the major goals found in local planning documents. For a more detailed assessment of community character under the proposed action, see the assessments of the most affected towns provided in *Town Level Assessments.*

Maintaining rural character

Most of the land that NYCDEP has acquired to date under LAP consists of relatively large parcels of vacant or low-density residential land in outlying areas of watershed towns. As of July 2009, the average size of parcels acquired in fee simple in the West-of-Hudson region was 72 acres, and the average size of those on which the NYCDEP had purchased conservation easements was 156 acres. This pattern is likely to continue. Through the preservation of these relatively large parcels, LAP will contribute to maintaining the rural character of the communities in which it is buying land.

Protecting the natural environment

Acquisitions under LAP also contribute to protection of the natural environment of watershed communities. About two-thirds of the land acquired by NYCDEP is of a type, or is in locations, that help define the character of the natural environment – such as steep slopes, land along streams and

other waterbodies, and wetlands; and 89 percent of the land acquired to date in the West-of-Hudson region in fee or through conservation easements is forested. Through 2009, acquisitions by NYCDEP have increased the percentage of protected land in the West-of-Hudson watershed from 24 to 34 percent of total land area. Additional acquisitions under LAP will continue to contribute to protection of the natural environment of watershed communities. As a result of negotiations between NYCDEP and watershed stakeholders, the new WSP would modify LAP's "Natural Features Criteria" (NFC) as described in *Chapter 1 Project Description*.

These changes are not expected to affect the total acreage to be acquired by NYCDEP under the Extended LAP, but would correspondingly increase somewhat the amount of land acquired with features that help define the character of the natural environment in watershed communities.

The benefits that watershed communities realize from protecting the region's natural environment are not limited to its esthetic value. Protected land also benefits these communities by providing a variety of "ecosystem services" – for example, by helping to protect local drinking water supplies, both surface water and aquifers. Ensuring water quality is identified as a priority in many town and village comprehensive plans.

Outdoor recreation

The opportunities for outdoor recreation in watershed towns are an important characteristic of these communities – prized by full-time residents, second-home owners and visitors. Through its Land Acquisition Program, NYCDEP helps make land available for a variety of public recreational uses. As of the fall of 2009, NYCDEP had opened for recreational use 64 percent of the West-of-Hudson land acquired under LAP in fee simple – a total of 34,684 acres. If we apply the same percentage to the additional acreage NYCDEP expects to acquire in fee simple under LAP, we can estimate that NYCDEP could increase the total acreage open to public recreational use by more than 44,000 acres. In reality, the addition to lands available for recreational use is likely to be greater, as the trend in recent years has been for NYCDEP to increase the percentage of its land that is open to the public.

Many West-of-Hudson watershed communities already have extensive opportunities for outdoor recreation – especially those in Greene and Ulster counties that include large amounts of New York State-owned Forest Preserve land. Increasing the supply of land available for recreational uses through the acquisition of additional land by NYCDEP at a minimum reinforces what is already for many residents an important characteristic of these communities. At the same time, communities that have historically had less protected land – including many in northern and western portions of Delaware County – may benefit disproportionately from the opening of City-acquired land for public recreational uses.

Preserving agriculture

To date, the Watershed Agricultural Council has acquired agricultural easements on more than 17,000 acres of farmland. As of December 2009, about 97 percent of the area covered by these easements was still in active agricultural use. On a smaller scale, NYCDEP also contributes to the preservation of agriculture in the region by making selected lands purchased in fee simple available for agricultural use. These programs help maintain a "working landscape" in many of the region's communities. Extension of the Land Acquisition Program should contribute to the preservation of agricultural uses in the watershed by making possible the purchase of additional WAC agricultural easements – expected by NYCDEP to total up to 16,000 additional acres through 2027.

With or without LAP, the region's agricultural sectorfaces serious challenges. While they are a useful tool for preserving farmland, agricultural easements are not by themselves an answer to such challenges. There are, however, several factors that could during the life of the WSP enhance the viability of farming in the region. These factors could includeshifts to more profitable forms of

agriculture, rising transportation costs (which increase the competitiveness of farms that are located relatively close to major metropolitan markets), increased consumer demand for locally grown food, and growing demand for biofuels. Used in combination with other strategies that take advantage of these trends, WAC easements could help preserve agricultural land in West-of-Hudson watershed communities.

Preserving and revitalizing hamlets

Pursuant to the 1997 MOA, as noted previously, 23 towns have MOA Designated Areas, covering a total of 21,310 acres, within which towns and villages can elect to preclude NYCDEP from acquiring land in fee simple. This element of the LAP helps to reinforce historic centers of development and avoid purchase of lands designated for commercial use vital to the existing community character.

As discussed in *Project Description*, seventeen towns have proposed expansion of the areas, totaling about 26,873 acres, in which towns may preclude NYCDEP from purchasing land. The proposed hamlet-area expansions would increase the land area covered by these designations to almost 48,000 acres. NYCDEP estimates that the expanded hamlet areas contain approximately 15,000 acres that NYCDEP had previously solicited, but would henceforth agree not to acquire. The expansion of designated hamlet areas is not likely to change the total acreage to be acquired under the Extended LAP. But it will to some extent affect *where* NYCDEP acquires land. By exempting the expanded hamlet areas from any further acquisitions under LAP, while acquiring additional land in outlying areas, NYCDEP will in effect be supporting efforts in several towns to maintain or restore the economic vitality of hamlets and village centers.

Meeting the needs of older residents

The population of the West-of-Hudson watershed region is aging. The Cornell Program on Applied Demographics projects that by 2020, 19.9 percent of the population of the five West-of-Hudson counties will be age 65 or older. The increasing concentration of older residents is especially evident in Delaware County, where 28.8 percent of all residents in 2020 are expected to be age 65 or older.

The aging of the region's population will have an effect on development patterns, as towns seek to encourage development of housing and services for older residents in hamlets and village centers. This could lead to greater density of new development – and thus to a reduction in the total volume land required to support new residential development.

The aging of resident owners could also have an impact on the Land Acquisition Program. Owners' interest in selling all or part of their land could increase – whether to meet retirement needs, because of lack of interest on the part of their families in keeping the property, or for other reasons. The result could be an increase in the rate of acceptance of NYCDEP's solicitations of land owners.

The proposed action could benefit older residents of West-of-Hudson communities in several ways:

- By taking advantage of the opportunity to sell a portion of their land to (or grant an easement to) NYCDEP, some older owners would be able to obtain money that would allow them to remain in (and in some cases invest in) their homes, while leaving the character of the land they sell largely undisturbed;

- At the same time, expansion of designated hamlet areas would help ensure that land remains available for development of senior housing within hamlets and village centers.

Conclusions

The Extended LAP would reinforce community goals of preserving natural features and rural character, and enhancing opportunities for outdoor recreation. The designated hamlets and their potential future extension would contribute to reinforcing and preserving hamlet centers. It would preserve sensitive water resources, while keeping future development in hamlets and expanded areas where much of it currently occurs. The program would not conflict with goals of meeting needs of older residents. As discussed in S*ocioeconomic Impacts*, there are not expected to be significant direct or indirect displacement effects. In addition, the town level assessments did not identify potential significant land use or community character impacts. Therefore the proposed action is not expected to result in potentially significant adverse impacts on land use or community character.

EAST-OF-HUDSON

Between 2010 and 2022, the Draft EIS projected that NYCDEP would acquire a total of 1,517 acres in four East-of-Hudson watershed towns (East Fishkill, Kent, Putnam Valley and Carmel) either through purchase in fee simple or through conservation easements. Under the 15 Year Greater Impact Scenario, NYCDEP projects that it could acquire 1,669 acres in the East-of-Hudson watershed through 2027. This represents an increase of about 3 percent in the total acreage of protected land within the boundaries of the East-of-Hudson watershed. Putting it another way – as a percentage of all land within the watershed, protected land in these four towns would increase from 22.6 to 23.9 percent. The acquired land would likely include a mix of privately-owned vacant land, the undeveloped portions of parcels now classified as low-density residential (that is, parcels of more than 15 acres) and possibly land formerly used for agricultural purposes.

While the new Water Supply Permit will cover the Croton System, it is not expected that NYCDEP would purchase any considerable amount of land. Any purchase would be a unique situation, most likely a parcel that had unusual water supply attributes. It is therefore not possible to estimate future land acquisitions in the Croton System. Due to the small amount of land that would be purchased, it is not expected that the program would significantly affect patterns of land use or the character of communities in the Croton System towns.

Overall, the small scale of projected acquisitions in the East-of-Hudson watershed under the Extended LAP means that the program is unlikely to have any significant impact on land use patterns in the region. Moreover, to the extent that the program helps to preserve what is seen in several towns as a limited supply of open space, and encourages concentration of new development in already-developed portions of the towns, it will be fully consistent with local efforts to maintain the character of the community.

SOCIOECONOMIC CONDITIONS

WEST-OF-HUDSON

This section discusses potential impacts of additional land acquisition under the Extended LAP on socioeconomic conditions in West-of-Hudson watershed towns. The assessment examines potential impacts on:

- Supply of developable land
- Land prices, housing prices and affordability

— Industries and businesses
— Local government revenues

Impacts on Supply of Developable Land

This section discusses LAP's projected potential impact through 2022 (10 Year Projection Scenario) and 2027 (15 Year greater Impact Scenario) on the supply of developable land in watershed towns, and the implications of this impact on towns' growth potential.

After removing towns with less than 5 percent of their area within the watershed, a four-step process was undertaken to estimate the impact of NYCDEP's LAP program on developable land at the town level through 2022 and 2027 for the 10 Year Projection and 15 Year Greater Impact Scenario respectively. More detailed town level assessments were conducted for towns with the highest level of potential impacts.

10 Year Projection Scenario

This scenario uses a four-step process to project remaining developable land through 2022:

Step 1: Determine available developable land as of 2009
Step 2: Project housing demand through 2022
Step 3: Project LAP acquisitions through 2022 and the portion of those lands that are developable
Step 4: Estimate remaining developable land in 2022 after housing demand and LAP acquisitions

Reasonable worst case estimates of land to be acquired under the Extended LAP are provided in *Project Description*. The projections account for the future "areas of high focus" according to the Long-Term Land Acquisition Plan and represent a reasonable worst case scenario since the total amount of land to be acquired is projected to be greater in the next twelve years than in the previous twelve, although, this is not in fact expected to be the case. Based on this approach, NYCDEP projected purchases in fee simple and conservation easements in the West-of-Hudson watershed between 2010 and 2022 are projected to total 80,948 acres, as compared with 71,721 through 2009. Purchases of farm easements by the Watershed Agricultural Council from 2010 through 2022 will total 16,000 acres.

The town-by-town results of this analysis presented in Table ES-5A, suggest that after accounting for LAP acquisition and projected residential development through 2022, all 34 towns will have sufficient land available to accommodate additional residential development well beyond 2022.As Table ES-5A shows, for the 34 towns collectively, land to be acquired by LAP between 2010 and 2022 represents about 11 percent of 2009's available developable land; and new residential development over that time period is estimated to consume another 6 percent. Overall, approximately 84 percent of 2009's available developable land would still remain in 2022. Each town would have at least 65 percent of its 2009 supply of developable land remaining in 2022. Since the analysis is very conservative, representing a reasonable worst case scenario, the percentage of developable land remaining in 2022 is likely to be higher.

Comparing the columns "Developable Land Needed for Housing through 2022" and "Developable Land Left in 2022,"(last white column to first yellow column in Table ES-5A) demonstrates that should housing demand continue beyond 2022 at the pace projected through 2022, there is ample land available in each town for many years to come.

Towns that met either of two criteria were selected for further review:

- Those in which LAP is projected to acquire 20 percent or more of the town's 2009 supply of developable land; and
- Those in which 10 percent or more of the town's 2009 supply of developable land is projected to be consumed by residential development and LAP is projected to acquire greater than 5 percent of the town's 2009 supply of developable land.

As shown in Table ES-5A, 14 towns (those with bold text in the LAP contribution or housing contribution columns) meet these criteria. These towns – along with five others selected for reasons of geographic balance – are shaded in yellow in Table ES-5A and are assessed in more detail in *Town Level Assessments.* In the remaining 15 towns (those not shaded in yellow), the percentage of the town's 2009 supply of developable land still remaining in 2022 ranges from 80 to 95 percent.

Table ES-5A: Remaining developable acreage in 2022, by town, after projected LAP activity and development

County	Town	Available developable acres, 2009	Projected developable land acquired through 2022	Developable land needed for housing through 2022	Developable land left in 2022	% of 2009 developable land left in 2022	LAP contribution	Housing contribution	% of town area developable, 2009	% of town area developable, 2022
Ulster	Denning	4,187	1,359	71	2,757	65.9%	**32.5%**	1.6%	6.4%	4.2%
Greene	Lexington	3,475	871	314	2,290	65.9%	**25.1%**	9.0%	6.8%	4.5%
Greene	Prattsville	2,773	820	100	1,853	66.8%	**29.5%**	3.6%	20.1%	13.4%
Ulster	Hardenburgh	2,692	636	166	1,891	70.2%	**23.6%**	6.0%	5.2%	3.7%
Greene	Ashland	3,351	698	260	2,393	71.4%	**20.8%**	7.8%	21.0%	15.0%
Ulster	Olive	5,684	871	748	4,065	71.5%	15.3%	**12.8%**	15.1%	10.8%
Greene	Halcott	1,668	389	79	1,199	71.9%	**23.3%**	4.8%	11.6%	8.3%
Delaware	Stamford	4,939	1,187	199	3,554	72.0%	**24.0%**	4.0%	15.9%	11.4%
Schoharie	Conesville	5,525	955	560	4,009	72.6%	17.3%	**10.1%**	21.9%	15.9%
Sullivan	Neversink	12,797	1,976	1,501	9,319	72.8%	15.4%	**11.7%**	24.1%	17.6%
Delaware	Andes	7,221	1,472	486	5,262	72.9%	**20.4%**	6.7%	10.3%	7.5%
Greene	Windham	5,272	880	540	3,853	73.1%	16.7%	**10.2%**	18.2%	13.3%
Ulster	Shandaken	1,444	185	186	1,073	74.3%	12.8%	**11.9%**	1.8%	1.4%
Greene	Jewett	6,292	1,052	511	4,729	75.2%	16.7%	8.1%	19.6%	14.7%
Delaware	Hamden	6,146	724	701	4,721	76.8%	11.8%	**11.4%**	16.0%	12.3%
Delaware	Middletown	7,455	1,191	513	5,751	77.1%	16.0%	6.9%	12.0%	9.3%
Greene	Hunter	6,722	1,166	348	5,207	77.5%	17.3%	5.2%	11.6%	9.0%
Delaware	Delhi	5,851	990	264	4,596	78.6%	16.9%	4.5%	14.2%	11.1%
Delaware	Bovina	3,726	711	68	2,948	79.1%	19.1%	1.8%	13.1%	10.4%
Delaware	Roxbury	5,927	951	216	4,760	80.3%	16.1%	3.6%	10.6%	8.5%
Ulster	Woodstock	6,759	839	479	5,441	80.5%	12.4%	7.0%	15.6%	12.6%
Delaware	Walton	8,845	1,268	329	7,249	81.9%	14.3%	3.7%	14.2%	11.6%
Delaware	Tompkins	10,947	1,215	572	9,161	83.7%	11.1%	5.2%	17.4%	14.6%
Delaware	Kortright	8,370	630	406	7,334	87.6%	7.5%	4.9%	20.9%	18.3%
Ulster	Hurley	5,003	134	410	4,460	89.1%	2.7%	8.0%	25.9%	23.0%
Delaware	Meredith	13,063	824	469	11,769	90.1%	6.3%	3.6%	35.0%	31.5%
Schoharie	Jefferson	8,722	208	639	7,874	90.3%	2.4%	7.3%	31.4%	28.4%
Schoharie	Gilboa	10,583	714	251	9,619	90.9%	6.7%	2.4%	28.2%	25.6%
Delaware	Masonville	10,890	417	447	10,027	92.1%	3.8%	4.1%	31.2%	28.7%
Ulster	Wawarsing	23,610	958	802	21,850	92.5%	4.1%	3.2%	28.0%	25.9%
Delaware	Deposit	4,052	24	230	3,798	93.7%	0.6%	5.7%	14.5%	13.6%
Delaware	Colchester	9,406	234	296	8,875	94.4%	2.5%	3.1%	10.7%	10.1%
Delaware	Harpersfield	9,959	311	200	9,448	94.9%	3.1%	2.0%	36.8%	34.9%
Delaware	Franklin	19,006	381	520	18,104	95.3%	2.0%	2.7%	36.4%	34.7%
	TOTAL	**252,361**	**27,241**	**13,883**	**211,238**	**83.7%**	**10.8%**	**5.5%**	**16.6%**	**13.9%**

In some towns, particularly those with very mountainous terrain or other natural features not suitable for development, or that include large areas already protected by New York City, or that are already highly developed, available developable land may be limited. An additional analysis was therefore performed to evaluate the percent of a town's total land area that is developable and the effects of land acquisition on that supply of developable land.

Table ES-6A lists six towns where the supply of developable land in 2009 is estimated to be less than 10 percent of the town's total land area, or less than 3,000 acres. All six are already included among the 19 towns subjected to further review under the criteria discussed above. The implications of the Extended LAP's impact on these towns' limited supply of developable land in the context of future growth demand in these towns are addressed in the individual *Town-Level Assessments*.

Table ES-6 A: Towns with less than 10 percent (or less than 3,000 acres of) developable land available in 2009

County	Town	Total town land	Available developable acres, 2009	Developable land left in 2022	% of town area developable, 2009	% of town area developable, 2022
Ulster	Shandaken	78,875	1,444	1,073	1.8%	1.4%
Ulster	Hardenburgh	51,756	2,692	1,891	5.2%	3.7%
Ulster	Denning	65,430	4,187	2,757	6.4%	4.2%
Greene	Lexington	51,274	3,475	2,290	6.8%	4.5%
Greene	Halcott	14,375	1,598	1,199	11.1%	8.3%
Greene	Prattsville	13,786	2,773	1,853	20.1%	13.4%

15 Year Greater Impact Scenario

This scenario discusses the potential impacts of the Extended LAP over 15 years, in which NYCDEP acquires 10 percent more land than projected through 2022, This scenario was originally part of the "Greater Impact Alternative" under the DEIS. The analysis for this scenario is considered to be an extremely conservative (i.e. high impact) estimate of land to be acquired under the Extended LAP. The 10 year projections described in Chapter 1 use very conservative assumptions to estimate the amount of land to be acquired under the Extended LAP. It is highly unlikely that, even under a 15 Year Permit, the Water Supply Permit, additional land would be acquired beyond the levels analyzed projected through 2022. Nevertheless, NYCDEP is providing a 15 year analysis that examines acquisitions of 10 percent more land.

This scenario uses the same four-step process as described above to project remaining developable land but here to 2027 instead of 2022:

The town-by-town results of this analysis are presented in Table ES 5-B. (The towns are ranked in reverse order of the percentage of the town's 2009 supply of developable land remaining in 2027.) The analysis concludes that all 34 towns have sufficient land available to accommodate both the projected acquisitions under LAP through 2027, and the projected rate of residential development beyond 2027.

As Table ES- 5B shows, for the 34 towns collectively, land to be acquired by LAP between 2010 and 2027 represents about 11.7 percent of 2009's available developable land; and new residential development over that time period is estimated to consume 7.9 percent.

Overall, the 15 Year Greater Impact Scenario is projected to result in approximately 80.4 percent of 2009's available developable land would still remain in 2027, as compared with 83.7 percent under

the proposed action. Each town would have at least 60 percent of its 2009 supply of developable land remaining in 2027, as compared with a minimum of 65 percent under the proposed action. As discussed above, due to the very conservative nature of the analysis, , the percentage of developable land remaining in 2027 is likely to be higher than projected for this EIS.

For the 34 towns collectively, the additional acreage projected to be acquired through 2027 represents about 1 percent of the towns' collective supply of developable land, while new residential development between 2022 and 2027 accounts for about 2.5 percent.

Table ES-5 B: Remaining developable acreage in 2027, by town, after Extended LAP activity and development through 2027. (Cells with bold and yellow show where criteria for more detailed town level assessment was met or exceeded.)

County	Town	Available developable acres, 2009	Projected developable land acquired through 2027	Developable land needed for housing through 2027	Developable land left in 2027	% of 2009 developable land left in 2027	LAP contribution	Housing contribution
Greene	Lexington	3,475	958	445	2,072	60%	**27.6%**	**12.8%**
Ulster	Denning	4,187	1,495	97	2,595	62%	**35.7%**	2.3%
Greene	Prattsville	2,773	901	142	1,730	62%	**32.5%**	5.1%
Ulster	Olive	5,684	958	1,060	3,666	64%	16.9%	**18.6%**
Ulster	Hardenburgh	2,692	699	235	1,758	65%	**26.0%**	8.7%
Greene	Ashland	3,351	768	369	2,215	66%	**22.9%**	**11.0%**
Sullivan	Neversink	12,797	2,017	2,127	8,510	67%	16.9%	**16.6%**
Schoharie	Conesville	5,525	1,051	793	3,681	67%	19.0%	**14.4%**
Greene	Windham	5,272	968	765	3,539	67%	18.4%	**14.5%**
Greene	Halcott	1,668	428	112	1,127	68%	**25.7%**	6.7%
Ulster	Shandaken	1,444	203	264	977	68%	14.1%	**18.3%**
Delaware	Andes	7,221	1,619	689	4,912	68%	**22.4%**	9.5%
Delaware	Stamford	4,939	552	281	3,421	69%	**25.0%**	5.7%
Greene	Jewett	6,292	1,158	723	4,411	70%	18.4%	**11.5%**
Delaware	Hamden	6,146	797	993	4,356	71%	13.0%	**16.2%**
Delaware	Middletown	7,455	1,310	727	5,419	73%	17.6%	9.7%
Greene	Hunter	6,722	1,283	494	4,945	74%	19.1%	7.3%
Delaware	Delhi	5,851	1,090	375	4,387	75%	18.6%	6.4%
Ulster	Woodstock	6,759	923	679	5,157	76%	13.7%	**10.0%**
Delaware	Bovina	3,726	782	96	2,849	76%	**21.0%**	2.6%
Delaware	Roxbury	5,927	1,047	306	4,574	77%	17.7%	5.2%
Delaware	Walton	8,845	1,395	466	6,985	79%	15.8%	5.3%
Delaware	Tompkins	10,947	1,336	810	8,801	80%	12.2%	7.4%
Delaware	Kortright	8,370	693	575	7,102	85%	8.3%	6.9%
Ulster	Hurley	5,003	147	580	4,276	85%	2.9%	**11.6%**
Schoharie	Jefferson	8,722	229	906	7,587	87%	2.6%	**10.4%**
Delaware	Meredith	13,063	907	665	11,491	88%	6.9%	5.1%
Schoharie	Gilboa	10,583	785	355	9,443	89%	7.4%	3.4%
Delaware	Masonville	10,890	458	633	9,799	90%	4.2%	5.8%
Ulster	Wawarsing	23,610	1,054	1,136	21,420	91%	4.5%	4.8%
Delaware	Deposit	4,052	26	326	3,700	91%	0.6%	8.0%
Delaware	Colchester	9,406	258	419	8,728	93%	2.7%	4.5%
Delaware	Harpersfield	9,959	342	283	9,334	94%	3.4%	2.8%
Delaware	Franklin	19,006	420	737	17,849	94%	2.2%	3.9%
	TOTAL	**252,361**	**29,055**	**19,664**	**202,816**	**80%**	**11.7%**	**7.9%**

As shown in Table ES-5B, 16 towns (those with bold text in the LAP contribution or housing contribution columns) meet the criteria discussed above for detailed town level analysis. All but one of these towns is among the towns for which individual town level assesseents were identified under the 10 Year Projection Scenario. In the remaining 17 towns (those not shaded in yellow), the percentage of the town's 2009 supply of developable land still remaining in 2027 ranges from 73 to 94 percent.

In some towns, particularly those with very mountainous terrain or other natural features not suitable for development, or that include large areas already protected by New York City, or that are already highly developed, available developable land may be limited. An additional analysis was therefore performed to evaluate the percent of a town's total land area that is developable and the effects of land acquisition on that supply of developable land.

Table ES-6B lists six towns where the supply of developable land in 2009 is estimated to be less than 10 percent of the town's total land area, or less than 3,000 acres. These towns are discussed further in the individual Town level assessments.

Table ES-6B: Towns with less than 10 percent or fewer than 3,000 acres of developable town area land remaining in 2009 under Greater Impact Scenario

County	Town	Total town land	Available developable acres, 2009	Developable land left in 2027	% of town area developable, 2009	% of town area developable, 2027
Ulster	Shandaken	78,875	1,444	977	1.8%	1.2%
Ulster	Hardenburgh	51,756	2,692	1,758	5.2%	3.4%
Ulster	Denning	65,430	4,187	2,595	6.4%	4.0%
Greene	Lexington	51,274	3,475	2,072	6.8%	4.0%
Greene	Halcott	14,375	1,598	1,127	11.1%	7.8%
Greene	Prattsville	13,786	2,773	1,730	20.1%	12.5%

For the region as a whole, this analysis strongly suggests that the projected level of acquisitions by NYCDEP will not significantly constrain new development in the West-of-Hudson watershed between now and 2027 or afterward. During the next seventeen years, West-of-Hudson watershed communities will confront a variety of obstacles to economic growth and development – but for the region as a whole, the availability of developable land does not appear to be one of them.

Impacts on Land Prices, Housing Prices, and Affordability

Determining the impact of LAP on land and housing prices is difficult. Multiple factors affect the price of land in the watershed – broader real estate market trends, local demographic trends, proximity to the Thruway, etc, and determinations of causality are extremely difficult. This section examines the extent to which LAP acquisitions have and could in the future continue to influence land prices, housing prices and affordability.

Impact on land prices

Since 1997, NYCDEP's Land Acquisition Program has accounted for a significant portion land transfers in many watershed towns. As Table ES-7 shows, the Program's share of all purchases of vacant land over 10 acres, whether measured by number of transactions or total acreage, has varied significantly over time. As the end of the real estate boom of the early and mid-2000's, and the onset of the recession led to a decline in private purchases of land, NYCDEP's share of all purchases has risen. NYCDEP's share of all transactions has also varied geographically; in 2008 and 2009, for example LAP acquisitions accounted for 92 percent of all land purchases in the Greene County mountaintop towns, but only 19 percent in north central Ulster County and 22 percent in northeastern and western Delaware County.

Table ES-7: LAP transactions as a percent of all transactions of vacant and low-density residential and agricultural land greater than 10 acres, West of Hudson watershed towns, 2001-2009

	Land Acqusition Program		Other land sales		LAP / Total land sales	
Year	Transactions	Acres	Transactions	Acres	Transactions	Acres
2001	93	9,267	457	22,212	17%	29%
2002	77	6,212	597	26,927	11%	19%
2003	81	9,081	569	23,830	12%	28%
2004	64	7,647	548	22,272	10%	26%
2005	78	9,394	546	22,152	13%	30%
2006	73	6,760	396	14,518	16%	32%
2007	76	6,198	362	15,593	17%	28%
2008	96	8,329	267	11,898	26%	41%
2009	55	6,079	172	6,475	24%	48%

Given the scale of NYCDEP's participation in the market for land, it would be reasonable to expect NYCDEP to have some impact on prices – and in particular, to expect that LAP acquisitions, by increasing demand for watershed land, would cause land prices to rise. However, the data on NYCDEP's impact on prices are ambiguous.

As Table ES-8 shows, the median sale price per acre on arms-length sales of vacant parcels of more than ten acres rose substantially between 2001 and 2009 in most of the nine watershed town groups. When price trends in these groups are, however, compared with trends in the six non-watershed town groups, it is clear that sharp increases in land prices were common outside as well as inside the watershed; and in some cases prices rose more rapidly outside than inside the watershed.

- The median sale price in Blenheim, Broome and Summit, for example, rose faster than the median for watershed towns in Schoharie County.
- The increase in the median price for Cairo, Durham and Greeneville was greater than the increase in the median for Greene County's western mountaintop towns, but less than the increase in the eastern mountaintop towns.
- The median price per acre rose faster in southern Otsego County than in northeastern and western Delaware County – but not as fast as the median price increased in southeastern Delaware County.

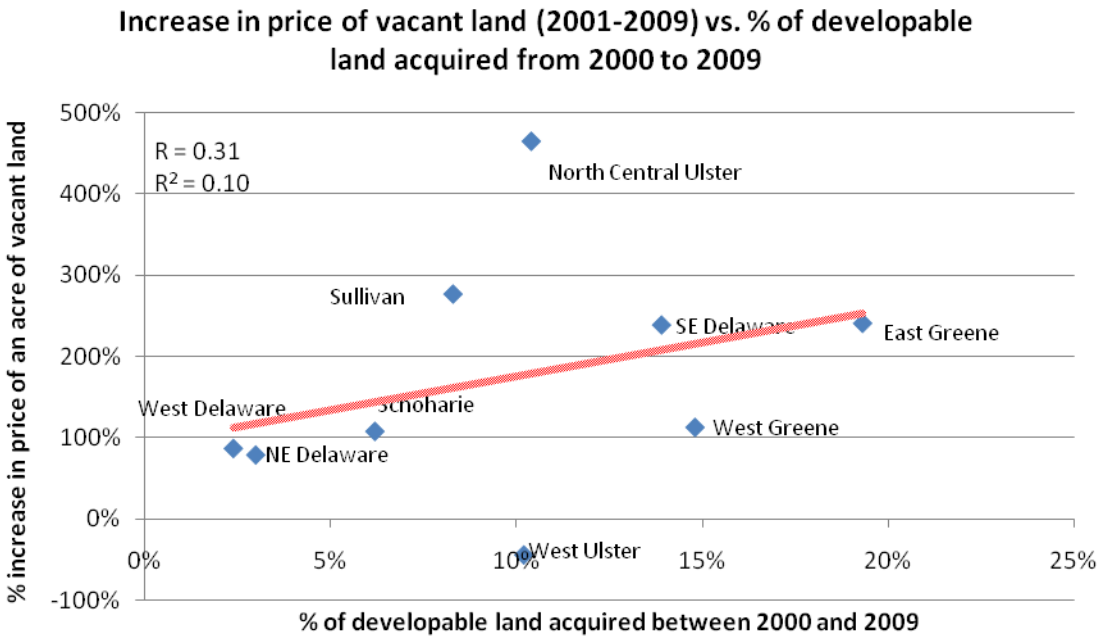
Table ES-8: Median sales price per acre on arms-length sales of vacant parcels of more than ten acres, by town group[6]

Town Groups	Median price per acre 2001	2009	% Change, 2001-2009
Inside watershed			
Northeastern Delaware County	$1,304	$2,330	79%
Southeastern Delaware County	$1,441	$4,884	239%
Western Delaware County	$1,036	$1,942	87%
Greene County Mountaintop East	$2,094	$7,143	241%
Greene County Mountaintop West	$2,044	$4,345	113%
Schoharie County	$1,203	$2,500	108%
Sullivan County	$2,110	$7,963	277%
North Central Ulster County	$1,196	$6,765	466%
Western Ulster County	$7,437	$4,186	-44%
Outside watershed			
Columbia County	$3,452	$9,615	179%
Greene County	$1,168	$3,835	228%
Otsego County	$664	$1,664	150%
Schoharie County	$783	$1,703	117%
Sullivan County	$1,250	$6,519	422%
Ulster County	$2,642	$6,519	147%

Changes in land prices in watershed towns can be analyzed not only in relation to price changes outside the watershed, but also in terms of how the rate of price escalation varies within the watershed. If LAP purchases were a contributing factor in the rise in land prices, it would be reasonable to expect prices to rise faster in areas where NYCDEP has acquired the most land. Figure ES-3 shows the percentage increase in median price per acre in each of the nine watershed town groups, along with the percentage of developable land in each town group that had been acquired by NYCDEP through mid-2009.

[6] The price trend for some groups – including Western Ulster County – is based on a limited number of transactions involving vacant land of more than 10 acres.

Figure ES-3: Percent increase in the median price of vacant land (2001-09) compared with the percent of developable land acquired from 2000 to 2009, by town group



The graph suggests that between 2001 and 2009 there was a weak correlation of 0.31 (r-squared = 0.10) between LAP acquisitions and land price increases.

Several conclusions might be drawn from the data presented above.

- The price of land rose sharply in most parts of the West-of-Hudson watershed region between 2001 and 2009 – but the data do not suggest that land prices rose more rapidly in watershed towns than in nearby non-watershed towns;
- Within the West-of-Hudson watershed, there is only a weak correlation between the rate at which the price of vacant land increased and the extent of acquisitions under LAP;
- When prices are high, some people will be more inclined to respond positively to an offer to buy their land.
- As the market has cooled, acquisitions by NYCDEP under LAP have come to represent a significantly larger part of the market for large tracts of undeveloped land. The Program's impact on the market may be greater when private demand is weak and prices are falling than it was during the boom.

Through the mid-2000's, LAP may thus have been a contributing factor in the escalation of land prices in some parts of the watershed – although its contribution to the rise in land prices was limited by NYCDEP's policy, pursuant to the 1997 MOA, of paying only "fair market value" as

determined by independent appraisals. But it was clearly not the only – or even the leading – factor in this pattern of price increases.

While LAP may have some impact on the price of larger tracts of land, it does not appear to have had a significant impact on the price of smaller parcels (those of less than 10 acres). Purchases of small parcels account for less than 1 percent of the land acquired in the west-of-Hudson under LAP; and purchases by NYCDEP account for less than 1 percent of all sales of small parcels.

Impact on housing prices and affordability

Increases in the cost of housing, have been a matter of continuing concern in many parts of the watershed. It does not appear, however, that the acquisition of watershed land under LAP has been a significant contributing factor in the rise in home prices. Price increases such as those seen in West-of-Hudson watershed towns have been seen elsewhere as well. Table ES-9 shows increases in home prices in watershed and non-watershed towns between 2001 and 2009.

While none of these out-of-watershed areas matched the percentage increase recorded in the western Greene County mountaintop towns or in the watershed towns of Schoharie County, they are comparable to or greater than those in other parts of the watershed. For example:

- The increase in median home prices in southeastern Columbia County (Ancram, Copake, Gallatin and Tagkhanic) between 2001 and 2009, matched the increase during the same period in the eastern mountaintop towns of Greene County – and median sales prices in the two areas in were similar.
- Prices increases in southern Otsego County towns (Maryland, Milford, Otego and Unadilla) were roughly comparable to those in Delaware County.
- Prices rose faster in Liberty and Fallsburg than in Neversink.

Table ES-9: Change in median sales price of single-family homes inside and outside the watershed, 2001-2009

Town Groups	Median sale price 2001	2009	% Change, 2001-2009
Inside watershed			
Schoharie County	$46,500	$133,000	186%
Greene County Mountaintop West	$53,000	$146,000	175%
Western Ulster County	$88,500	$184,000	108%
Western Delaware County	$52,000	$100,000	92%
Greene County Mountaintop East	$110,000	$210,500	91%
Southeastern Delaware County	$75,000	$130,000	73%
Northeastern Delaware County	$62,500	$106,000	70%
North Central Ulster County	$135,000	$199,000	47%
Sullivan County	$107,500	$136,000	27%
Outside watershed			
Ulster County	$106,000	$217,250	105%
Columbia County	$116,500	$222,500	91%
Sullivan County	$72,000	$133,500	85%
Schoharie County	$62,900	$114,000	81%
Greene County	$87,500	$152,375	74%
Otsego County	$60,000	$100,000	67%

There appears to be little correlation between home price trends in various market areas and the extent of acquisitions under LAP (a correlation of 0.09, r-squared = 0.01). As shown in the following graphs (Figures ES-4 and ES-5), there appears to be a much stronger correlation between home price increases and the percentage of second homes in an area (a correlation of 0.68, r-squared = 0.46).

Figure ES-4: Increase in price of single-family homes (2001-2009) vs. share of seasonal recreational units (2000)

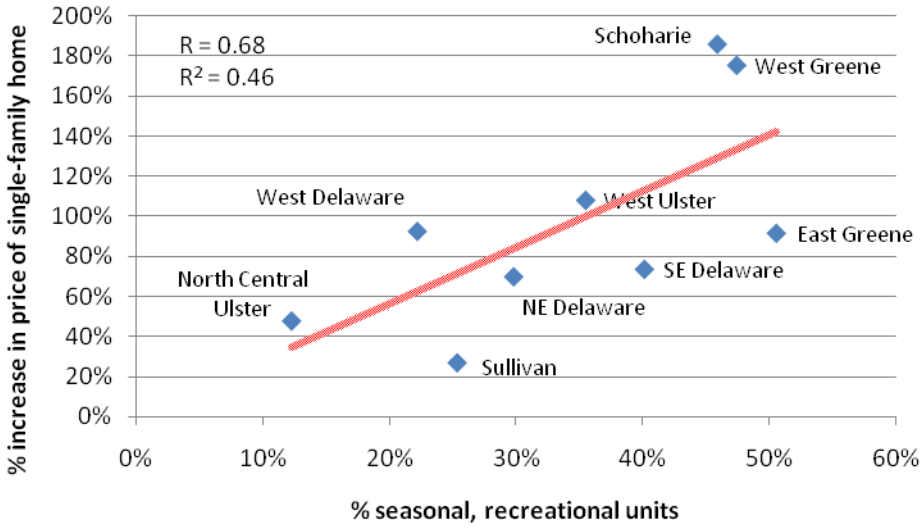
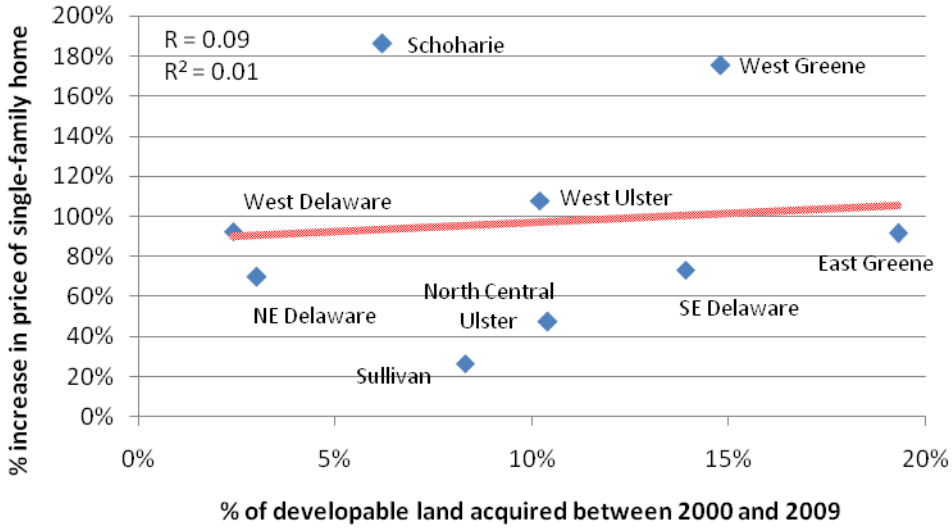


Figure ES-5: Increase in the price of single-family homes vs. LAP acquisitions as a %'ge of developable land



For lower-income households in the West-of-Hudson watershed, affordability is generally not a question of homeownership; instead it is in part a matter of the availability and affordability of rental housing. The existing supply of affordable rental housing in watershed towns (including housing for older residents) is concentrated in or in the immediate vicinity of hamlets and village centers; and it is highly likely that any future development of affordable rental housing will similarly occur in these areas. To the extent that existing hamlet designations – and the proposed expansion of designated hamlet areas, described below – preclude any future LAP acquisitions in these areas, they ensure that LAP will not in the future have significant adverse impact on the availability or cost of affordable rental housing.

The future impact of LAP on prices, affordability, and socioeconomic conditions

Future real estate market conditions are too uncertain to project with any specificity either the future course of real estate prices in the West-of-Hudson watershed through 2027, or how further acquisitions of watershed land by NYCDEP will affect those prices. Several general points are nevertheless worth noting.

As long as private demand for larger tracts of undeveloped land remains weak, LAP may play a stabilizing role in this segment of the market – maintaining prices at levels somewhat higher than sellers would be able to obtain in absence of the program. Even more significant than LAP's impact on prices may be its impact on the liquidity of the market for undeveloped land. LAP in effect assures owners of NYCDEP-sought properties that even in a weak market they may have a willing buyer at fair market value (as fair market value is defined by NYCDEP, based on independent appraisals).

To the extent that LAP helps to maintain the price of undeveloped land, and maintains the liquidity of the market, it may have several effects on socioeconomic conditions in the watershed:

- LAP may increase slightly the overall cost of new development in the watershed, by increasing marginally the prices that developers pay for larger tracts of land. It does not appear, however – given the declines in median price per acre in the past few years – that LAP's impact on land prices is great enough to have a significant impact on the financial feasibility of new development;

- As noted below in the discussion of the program's impact on agriculture, LAP may make it easier and more attractive for owners of agricultural land to sell. LAP may thus accelerate somewhat the shift of watershed land out of agricultural use. But in the long run, as discussed in detail under agriculture below, it is unlikely to have any real impact on the level of agricultural activity or agricultural land use in the region. Owners who are choosing to stop farming their land – and who are then in some cases choosing to sell all or part of it – are generally responding to a much broader range of economic and other factors, not simply to opportunity that the Land Acquisition Program represents;

- Through the fall of 2009, NYCDEP had paid a total of $53.1 million to landowners with primary addresses in the West-of-Hudson watershed from whom NYCDEP had purchased fee interests or conservation easements in the West-of-Hudson watershed. These payments to resident land-owners represented 34 percent of all payments to owners of West-of-Hudson watershed land under the Land Acquisition Program.

Pursuant to the MOA, NYCDEP adheres to a policy of paying "fair market value" for land acquired under LAP. Consequently, it can be argued that NYCDEP's purchases of fee interests in themselves provide no real net benefit to owners, since they presumably would have been able to sell to another buyer at a similar price. In periods when demand for watershed land weakens, however, LAP may as noted above benefit prospective sellers of attractive, eligible land by in effect guaranteeing the liquidity of the market. Especially for owners who need – for whatever reason – to sell their property, NYCDEP's role as a "willing buyer" can be of real value – even if a sale to NYCDEP brings no more than fair market value; and

- Payments by NYCDEP and WAC for conservation and agricultural easements also provide a benefit to some West-of Hudson landowners. In the absence of the NYCDEP and WAC easement programs, these owners probably would not have the opportunity to sell this type of limited interest, while retaining fee ownership, and enjoying continued (although restricted) use of their land.

While NYCDEP's purchases of land thus appear to have *some* impact on land prices – especially as it continues to buy land at a time when demand from other potential buyers has declined – the analysis of home prices shows no significant impact of NYCDEP's land purchases on the price of single-family homes. Other factors – including broader trends in the housing market, and the popularity of some areas within the watershed as second-home or retirement locations – appear to have had a greater impact on home prices.

Moreover, because LAP is restricted from acquiring land in designated hamlet areas – and because designated hamlet areas may be substantially expanded – LAP is unlikely to have any adverse impact on the future development or cost of affordable rental housing.

It is difficult to project real estate market conditions in the West-of-Hudson region through 2022; projecting through 2027 is correspondingly more uncertain. But using the best available information and reasonable projections, there is little evidence to suggest that the Extended LAP's impact on real estate prices would substantially affect socioeconomic conditions in the watershed region through 2027.

Impacts on Industries and Businesses

The assessment of LAP's potential impact on industries in the watershed region focuses primarily on the program's direct impact on selected land-based industries.

Agriculture

Through July 2009, NYCDEP reports that it had secured in fee simple at least 45 parcels of watershed land at least some portion of which, in the recent past prior to acquisition by NYCDEP, had been actively used as farmland. These 45 parcels together totaled 5,497 acres, of which actively-used agricultural land totaled 1,135 acres. A summary of these acquisitions by town appears in Table ES-10.

Table ES-10: NYCDEP acquisitions of agricultural land in fee simple through 2009

County/Town	Total acres acquired	Active agricultural acres acquired
Schoharie County		
svilleCone	434	70
Greene County		
Ashland	255	18
Lexington	336	13
Prattsville	993	146
Halcott	448	47
Windham	45	29
Jewett	40	21
SUBTOTAL	**2,117**	**274**
Delaware County		
Bovina	35	4
Delhi	566	136
Franklin	57	23
Hamden	414	118
Harpersfield	33	8
Kortright	284	84
Masonville	156	46
Meredith	257	56
Middletown	274	23
Roxbury	638	137
Stamford	232	156
SUBTOTAL	**2,946**	**791**
TOTAL	**5,497**	**1,135**

NYCDEP's information on how lands were used in the years preceding acquisition by LAP is incomplete. It is thus possible that the total acreage in active farm use prior to acquisition was somewhat greater than the 1,135 acres cited above. In order to provide some margin for error (and to be conservative), it is assumed for purposes of this analysis that the land in which NYCDEP had acquired fee interest in the West-of-Hudson watershed as of July 2009 includes approximately 1,500 acres that in the recent past prior to acquisition had been actively used for some form of agricultural production.

Acquisition of farmland by NYCDEP does not necessarily mean an end to agricultural production. NYCDEP currently has 23 five-year permits in place allowing farm operators in the watershed to use NYCDEP-owned land for agricultural production. These 23 permits cover a total of 661 acres – of which 21 permits, covering 653 acres, are on properties in the West-of-Hudson region. Specific agricultural uses under these permits include production of hay, alfalfa, corn, grapes, blueberries and other crops, and use as pasture land. About 80 percent of all land on which NYCDEP has issued farm permits is located in Delaware County.[7]

Some local officials have noted that the benefits farm operators can realize from use of NYCDEP land under a five-year permit are limited; and in particular, that such land is not an asset against which operators can borrow. While this is correct, it should also be noted that farming leased land is a common practice in rural communities, both in New York and elsewhere.

Based on the data presented above, it is estimated that under LAP, NYCDEP has acquired fee title to approximately 850 acres of land in the West-of-Hudson watershed that at some time in the recent past prior to acquisition had been actively-used farm land, but is not now being used for agricultural production.

In no case does the cessation of agricultural activity appear to be a direct *result* of NYCDEP's purchase of farmland. Nevertheless, in order to explore further the potential impact of NYCDEP's acquisitions of farmland in fee simple, what the impact would have been if acquisitions of 850 acres in fee simple by NYCDEP had in fact resulted in the cessation of farming was also considered.

Using data from the U.S. Census of Agriculture and the Commerce Department's Bureau of Economic Analysis, it was then estimated for each county an average ratio of farm employment (both farm proprietors and wage-and-salary workers) to acres of active farmland. In 2007, the West-of-Hudson watershed counties averaged 0.0133 jobs per acre of farm land – or about 1 farm job for every 75 acres of farm land – and $242.65 in farm income per acre.

Applying these ratios to our estimate of 850 acres of formerly-agricultural land acquired by NYCDEP that is not now being actively used, it is estimated that acquisition of farm land by NYCDEP through July 2009 – if it had in fact caused the cessation of agricultural use – would have resulted in the loss of 11 jobs in agriculture, and approximately $206,250 in farm income.

[7] Activities conducted under NYCDEP permits do not necessarily have an economic impact equal to that of the agricultural activities for which the land was previously used. Land that once supported a herd of dairy cattle, for example, might now be used only for production of hay. But this is not necessarily a result of acquisition by NYCDEP – it is more a result of economic conditions. Dairy farming may have a much greater economic impact than cutting hay – but it may not be financially sustainable.

As noted above, no cases were identified in which the cessation of agricultural use was a direct result of acquisition by NYCDEP. But even if that had been the case, the preceding calculation suggests that its impact on employment and income in the watershed region would have been quite limited.

Judging fully the direct impact of the Land Acquisition Program on agriculture requires taking into account not only the impact of fee acquisitions, but also the acquisition of agricultural easements through NYCDEP's partnership with the Watershed Agricultural Council. As shown in Table ES-11, as of July 2009 WAC had acquired 90 agricultural easements covering 16,954 acres in the West-of-Hudson watershed.

It is difficult to assess the impact of these easements on the level of agricultural activity in the region. Nationwide studies suggest that agricultural easements have been an effective tool for keeping land in agricultural use and protecting open space.[8] Data on the results of the WAC program to date seem to be consistent with this finding; of nearly 17,000 acres on which WAC has acquired easements since 2001, all but 579 acres – 3.4 percent of the total acreage under easement – was still being farmed as of December 2009. However, the attrition rate is higher for farms on which easements were acquired in the program's earlier years.

What impact agricultural easement programs will have in the long run on the economic viability of farming and the overall health of local agricultural economies remains at this point an open question, both at the national level and in the watershed region. But in the near term, the WAC program appears to be achieving the goal of keeping land in agricultural use.

It is not possible at this point to say with any certainty how much of the roughly 17,000 acres on which WAC has acquired easements represents land that in the absence of a WAC easement would no longer be in agricultural use. But even if the percentage of land under easement that meets this criterion is relatively small, it would still represent a positive contribution to the preservation of agricultural uses in the watershed.

To the extent that it helps keep land in agricultural use, the WAC easement program has no adverse impact on the agricultural district program. Acquisition of land by NYCDEP in fee simple could theoretically have an adverse impact on the viability of agricultural districts in the watershed, if it were to result in the cessation of active farm use of significant amounts of land within such districts; and NYCDEP is required to notify the State Department of Agriculture and Markets whenever it is purchasing land within an agricultural district. But as noted above, there are relatively few cases in which NYCDEP has acquired in fee simple land that had been in active agricultural use prior to acquisition. Moreover, to the extent that they forestall conversion of farm land to non-farm uses, acquisitions by NYCDEP in fee simple can in fact support the goals of the State program. It thus appears unlikely that further acquisitions by NYCDEP under LAP would have any adverse impact on the viability of agricultural districts.

Based on the preceding analysis, it is estimated that – even in the worst case – the Land Acquisition Program is likely to have little or no direct impact on agricultural production in the West-of-Hudson watershed region.

[8] Alvin Sokolow, *A National View of Agricultural Easement Programs: Measuring Success in Protecting Farmland*, American Farmland Trust, December 2006.

Table ES-11: West-of-Hudson WAC easements, by town

County/Town	WAC Acres
Delaware County	
Andes	1,212
Bovina	1,436
Delhi	862
Hamden	901
Kortright	1,663
Meredith	553
Middletown	733
Roxbury	616
Stamford	4,849
Tompkins	84
Walton	1,267
SUBTOTAL	**14,176**
Greene County	
Ashland	178
Halcott	389
Jewett	105
Windham	226
SUBTOTAL	**898**
Schoharie County	
Gilboa	143
Jefferson	275
SUBTOTAL	**418**
Sullivan County	
Neversink	1,462
TOTAL	**16,954**

Agriculture in Delaware County

Of the counties with large portions of their land in the watershed, agriculture plays a greater role in the economic life of Delaware County. Below we therefore explore in some greater detail LAP's possible impact on agriculture in Delaware County.

Several important factors have shaped the context within which NYCDEP has been acquiring land in Delaware County. Perhaps the most important of these is a long-term (and continuing) decline in the amount of land within the county that is used for agricultural purposes. This is by no means a recent trend; total farm acreage in Delaware County, according to the USDA, has declined by about 75 percent since 1940.[9] Between 1978 and 2008 total farmland acreage dropped by 47.5 percent – from 312,095 to 163,800. Between 1997 and 2008, total farm acreage in Delaware County fell by 33,600 acres – a decline of 17 percent. The decline in farm acreage in this period was actually somewhat slower during this period than in the preceding ten years

It is important to note, however, that the number of people employed in agriculture, the percentage of all income that is derived from farming and the total acreage of farm land are not the only measures of agriculture's significance to the regional economy. Although relatively small in overall terms, agriculture is still one of the region's leading "export" industries – that is, an industry that sells its products outside the region and brings revenue into the region. Investments in farm land, facilities and equipment are significant. Moreover, several other types of business in the region, such as vendors of farm supplies and equipment and dairy processing plants are dependent on its agricultural base.

As ES-10 above shows, the total volume of former farmland acquired by NYCDEP in Delaware County between 1997 and 2009 that had been actively farmed at some point preceding acquisition was 791 acres; and as noted above, about 530 acres of the land acquired in fee simple was in October 2009 once again in active agricultural use under permits issued by NYCDEP.

The past decade has been a particularly difficult time for dairy farmers, due to the volatility of both milk prices and the cost of inputs such as feed and fuel. After peaking at more than $21 per hundred pounds early in 2008, the average price paid to farmers for milk and milk products fell below $11.50 in the spring of 2009.[10] Since mid 2009, prices have rebounded somewhat, reaching $16.00 again in the spring of 2010; but even at this level it is still difficult for many farmers to make ends meet. According to USDA estimates, production costs for New York State dairy farmers in 2009 averaged $25.27 per hundred pounds.

Given the volatility of – and the difficulty of making money in – dairy farming, it is not surprising that a substantial number of owners are choosing instead to sell their land, whether to NYCDEP or to other buyers.

The Watershed Agricultural Council has acquired agricultural easements on a total of 14,176 acres in Delaware County – about 84 percent of the total acreage in the West-of-Hudson region on which WAC has to date acquired easements, and about 9 percent of the county's farm land. Since the beginning of the program, WAC has paid more than $16.1 million to 68 owners of

[9] New York Agricultural Statistics Service, "Delaware County Farm Statistics," April 2009

[10] New York State Department of Agriculture and Markets, *New York State Dairy Statistics, 2008*, Table 22.

farms in Delaware County for these easements (an average of more than $230,000 per transaction).

It is difficult to measure directly the impact of WAC easements on the overall health of the county's agricultural sector. Nevertheless, it seems reasonable to assume that for many of the participating farmer-owners, proceeds from the sale of easements provide at least a short-term improvement to their financial position; and that for some, funding from the sale of easements provides resources that help them continue farming their land.

An overall assessment of LAP's impact on agriculture in Delaware County needs to take into account a number of factors:

- The decline in farmland in Delaware County long preceded LAP;
- the total volume of farmland has been declining in non-watershed counties as well;
- NYCDEP's acquisitions of previously-active farmland in fee simple involve only about 2.4 percent of the total volume of land removed from agricultural use since 1997; and
- Farm land acquired by NYCDEP in fee simple can be returned to active agricultural use through the issuance of permits.

In light of these factors, LAP does not appear to have in any significant way contributed to the decline of agriculture in Delaware County. Nor does it appear that Delaware County's agricultural economy would be significantly larger or more prosperous than it is today if NYCDEP had not for the past twelve years been acquiring land and easements in the watershed.

Mining

As of October 2009, NYCDEP had acquired five parcels of watershed land that had previously included bluestone mining operations, which had been terminated prior to sale. While acquisition by NYCDEP does not appear to have directly caused the cessation of these operations, we can (as we did with agricultural land) analyze what the impact would have been if it had been attributable to LAP. Reflecting the existing mix of solo operators and somewhat larger multi-employee businesses, we assume for purposes of this analysis that these operations averaged 2.8 employees each, for a total of 14 jobs lost when mining operations were suspended, and a loss of approximately $592,000 in annual earnings.

Even if cessation of these five operations were attributable to LAP, however, it does not necessarily translate into a loss for the region as a whole. When demand is at least stable (or increasing), production might be increased at other locations within the region, offsetting the loss of production on lands acquired by NYCDEP. We cannot say with any certainty whether this shift in fact occurred in specific cases – but it is worth noting that between 2000 and 2006, wage-and-salary employment in mining increased in the watershed counties by 47 percent. Overall, mining in the region does not appear to have been adversely affected by any loss of specific sites associated with acquisition of land by NYCDEP.

Over time, the level of bluestone production in the region is driven primarily by demand. The supply of stone, and the availability of mining sites, does not appear to be a significant

constraint. According to a former president of the Bluestone Association, there is no danger of the region running out of bluestone.[11]

As of December 2009, NYCDEP had acquired only one former sand and gravel site in the West-of-Hudson region. The five-acre site was part of a 31-acre parcel sold to NYCDEP by the Town of Andes; and it had been largely exhausted prior to its acquisition by NYCDEP. We thus conclude that NYCDEP's acquisitions of watershed land have had no substantial impact on this segment of the mining industry.

Any mining or logging (discussed below) activity displaced from land acquired by NYCDEP is more likely to relocate to other sites than to disappear altogether; but it is possible that some businesses and some jobs could be lost in the process. Moreover, not all jobs are equal – the earnings of those employed in mining are significantly higher, and in forestry somewhat higher, than the wages paid in retail, restaurant, lodging and other jobs that might be associated with the projected increase in recreational use of land acquired by NYCDEP. In either case, however, the numbers of jobs that could potentially be gained or lost are small.

Moreover, any potential adverse impacts on the region's bluestone industry could in the future be alleviated by NYCDEP's willingness to permit extraction of bluestone, under appropriate conditions, on lands acquired by NYCDEP in fee simple or on which it holds a conservation easement.[12]

Natural Gas Drilling

NYSDEC is currently completing a supplemental generic environmental impact statement for natural gas drilling using high-volume horizontal drilling in the Marcellus Shale formation. The Marcellus Shale underlies the entire West of Hudson Watershed; in April 2010, however NYSDEC announced that "that due to the unique issues related to the protection of New York City and Syracuse drinking water supplies, these watersheds will be excluded from the pending generic environmental review process for natural gas drilling using high-volume horizontal drilling in the Marcellus shale formation." Applications to drill in the New York City watersheds will require "a case-by-case environmental review process" "to address continuation of the FAD[13]."

Currently there are no pending applications for horizontal drilling located in the New York City Watershed. Chesapeake Energy, the largest lease holder in the Marcellus Shale, made a commitment to not drill in the NYC watershed. Any drilling in the watershed would go through significant reviews and must demonstrate that it would pose no threat to water quality and the Filtration Avoidance determination. NYC would not pursue natural gas development on the lands it owns, or allow landowners on lands we hold in easement to develop gas, except to the extent required by state law through "compulsory integration."

Accordingly, at this time, the extent and location of natural gas drilling in the watershed, and the associated economic impacts, are not reasonably foreseeable. Based on the remaining supply of

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[11] Oneonta Daily Star, April 28, 2008.

[12] See, for example, New York City DEP, *A Landowners Guide for Commercial Bluestone Mining Practices on a DEP Conservation Easement*, January 2010.

[13] NYSDEC's April 23, 2010 press release, http://www.dec.ny.gov/press/64699.html

land and the conservative nature of the analysis conducted in this EIS, it is not expected that the Extended LAP would itself constrain natural gas drilling in the West-of-Hudson watershed, although not enough is known at this time. Any natural gas drilling proposed would be subject to further environmental review.

Forestry and logging

About 81 percent of the land area of the West-of-Hudson watershed – a total of about 823,500 acres – is covered by forest. The land acquired by NYCDEP in fee simple includes approximately 47,885 acres of forest land – about 5.8 percent of all forest land in the watershed. NYCDEP conservation easements and WAC agricultural easements covered an additional 25,417 acres of forest land – about 3.1 percent of all forest land in the watershed. Beyond the boundaries of the watershed, much of the land area of the five West-of-Hudson counties is also forested – a total of 2.36 million acres of forest land purchased by NYCDEP thus accounts for about 2.0 percent of the total forested area of the five counties.

There is currently a total of about 450,000 acres of privately-owned forest land within the watershed, and hundreds of thousands of additional acres elsewhere in the five counties, which is likely to be sufficient to sustain the level of production and employment implicit in the NYSDOL and Census numbers cited above. Even if the amount of forest land acquired under LAP doubles between 2010 and 2022, the total would still represent only a small portion of all privately-owned forest land in the five counties.

In addition to logging, NYCDEP also permits tapping of maple trees on NYCDEP-owned land. While comprehensive data are not available regarding maple production on LAP-acquired land prior to acquisition, it appears that most of the taps permitted by NYCDEP as of October 2009 represent a continuation of production that preceded acquisition by NYCDEP. Acquisitions under LAP thus do not appear to have had any substantial impact on maple-tapping.

Recreation and Tourism

Under the Extended LAP, NYCDEP would continue to open up lands acquired for public access and increase recreational uses, where consistent with public safety and water quality. As noted in *Open Space and Recreation*, 64 percent of the land acquired in fee simple under LAP is now open for recreational uses. NYCDEP anticipates that a similar or greater percentage of lands acquired in the Extended LAP would likely be opened up to recreation.

Preserving open space and opening up areas for recreation provide a number of socioeconomic benefits. A wide range of research over the past decade has highlighted the importance of opportunities for active outdoor recreation as one of the factors shaping young adults' decisions on where to live and work;[14] and surveys of West-of-Hudson watershed residents conducted in the context of town planning efforts highlight the value that current residents place on access to recreational opportunities – including casual walking and hiking, boating, hunting, fishing, snowmobiling and other outdoor pursuits.

Expanding opportunities for active outdoor recreation can also strengthen the economy of watershed communities by attracting both short-term visitors and second-home buyers, building on what is already one of the region's greatest strengths. Recreation and other tourism-related businesses, including hotels and restaurants, accounted for approximately 13 percent of all

[14] For example, see Richard Florida, *Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*.

employment in the watershed region in 2008. Some visitors, of course, are drawn to the region by forms of recreation not available on NYCDEP-owned lands, such as downhill skiing. But others come to enjoy the broader range of recreational activities available in the region, such as those cited above – including activities that are increasingly available on NYCDEP-owned land.

In 2005, about 36,500 people who lived outside the watershed counties held permits for public recreational use of NYCDEP's watershed properties. Since about 90 percent of all NYCDEP properties open for recreational use are located west of the Hudson, it was assumed that the West-of-Hudson watershed region draws a similar percentage of non-local visitor traffic – about 32,850 people.

Using data from several national sources on spending by anglers, hunters and other participants in outdoor recreational activities, it can be estimated that these visitors spent approximately $9.0 million in the West-of-Hudson watershed region in 2005. Some of this spending, of course – especially that which might be associated with fishing and boating – is attributable to reservoirs and other properties that were owned by the City prior to the beginning of the Land Acquisition Program. Assuming that newly-opened land accounts for one-third of all local spending by non-local recreational users of NYCDEP land, it is estimated (using the IMPLAN input-output modeling system) that in 2005 this $3.0 million in visitor spending directly supported 45 full-time-equivalent (FTE) jobs in the West-of-Hudson region – in retailing, restaurants, motels and other local businesses.

Not all of the employment associated with increased recreational use of NYCDEP-owned land should be considered "net new" employment. Just as some mining or logging jobs might be shifted from properties acquired by NYCDEP to other locations within the region, increased recreational use of NYCDEP-owned land by non-local visitors might represent (at least in part) a shift of visitor traffic from other recreational venues in the region.

A review of studies of the costs and benefits of open space protection conducted by the Office of the State Comptroller in the report, *Economic Benefits of Open Space Preservation* (March 2010) found that:

- Open space supports industries that generate billions of dollars in economic activity annually;
- Open space protection can be financially beneficial to local governments by reducing costs for public infrastructure and programs, lessening the need for property tax increases;
- Open space preservation can support regional economic growth; and
- Well-planned open space protection measures need not conflict with meeting other vital needs, such as economic development, municipal fiscal health and affordable housing.

Furthermore, the report links open space preservation with the health of particular industries (i.e., agriculture, farming, tourism and recreation).

On balance, the impact of visitor spending associated with increased recreational use of land acquired by NYCDEP is probably somewhere between neutral and very slightly positive. Rather than increased visitor spending, the greatest economic benefit of expanded public access to City-owned land is likely to be the value that local full- and part-time residents derive from recreational use of these properties (see Chapter 6, Open Space and Recreation).

Other Businesses

In addition to natural-resource-based industries, acquisition of watershed land by NYCDEP could potentially have a direct impact on other types of commercial activity as well.

The amount of watershed land currently devoted to commercial, industrial and community uses is relatively small – a total of 16,236 acres, or 1.6 percent of all watershed land. While NYCDEP is not precluded under the terms of the MOA from acquiring commercial or industrial land in the West-of-Hudson watershed, to date there have been very few cases in which NYCDEP has acquired property under LAP that was previously used commercially. In 2009, NYCDEP contracted to acquire a 328-acre property in Windham that had previously been operated as a private campground, with 45 camp sites. The Department has acquired only one other undeveloped property in the West-of-Hudson region that was formally zoned for commercial use – a 3-acre site in the Town of Olive.

The Land Acquisition Program's apparently limited direct impact on commercial and industrial uses in West-of-Hudson watershed towns in part reflects a provision of the 1997 MOA under which NYCDEP has agreed not to acquire land in hamlet areas designated by the West-of-Hudson watershed towns. In the towns that chose to use this option, designation of hamlet areas helped to exempt existing commercial centers from acquisition of property by NYCDEP. In general, parcels in these areas tend to be smaller than those typically purchased under LAP.

The 21,310 acres of designated hamlet areas include approximately 2,719 acres of land currently used for commercial, industrial and community purposes – about 16 percent of all such land within the watershed. The designated hamlet areas also include 6,018 acres of privately-owned vacant land.

The proposed hamlet-area expansions would increase the land area covered by these designations to almost 48,000 acres. NYCDEP estimates that the expanded hamlet areas contain approximately 10,500 acres that NYCDEP had previously solicited, but would henceforth agree not to acquire should the towns elect to preclude these acquisitions. Moreover, in some cases where towns choose not to exclude LAP acquisitions from hamlets or village centers, LAP may not seek to acquire additional land because parcels in hamlets and village centers tend to be smaller and less desirable for LAP acquisition.

Expansion of designated hamlet areas will help ensure that LAP continues to not have a negative impact on commercial activity in watershed towns by precluding any further acquisition of land by NYCDEP in the areas most suited to commercial development and the creation of new businesses. This is further supported by numerous NYCDEP programs that limit the impact of the Watershed Rules and Regulations in hamlet areas and investments in infrastructure including wastewater treatment plants, community septics, and sewers in hamlet areas.

Impacts on Local Government Revenues

Acquisition of watershed land by NYCDEP could also have a direct effect the region's economy through its impact on county, municipal and school district tax revenues. Based on the analyses conducted above for impacts on developable land and on industries and businesses, there would not be significant displacement effects due to the Extended LAP. Further, the Extended LAP is unlikely to constrain the overall level of development in watershed towns. Therefore, the potential for new local tax revenues from new development should not be reduced under the Extended LAP.

It is important to note that the Memorandum of Agreement was designed to minimize any potential adverse impact on local tax revenues that might result from acquisition of land by NYCDEP.

- NYCDEP-owned land and easements are fully taxable; therefore, acquisition of real property interests by NYCDEP does not result directly in any loss of real property tax revenues.
- Under the MOA, New York City cannot challenge local assessments of the value any property purchased through LAP for a period of 20 years following acquisition. Thus assessments on properties acquired in 1997, will not be subject to challenge until 2017; and assessments on properties acquired in 2009 will not be subject to challenge until 2029.

Moreover, there will now be a 30-year limitation from date of acquisition on challenging tax assessments (increased from a 20-year limitation under the negotiations).

In accord with the provisions spelled out in the MOA, NYCDEP in fiscal year 2009 paid a total of $5,963,538 million in county, town, village and school taxes on land acquired through LAP – including $2,457,411 paid to counties, towns, villages and school districts West-of-Hudson.

In order to put these payments in context, taxes paid by NYCDEP on LAP-acquired land and easements were calculated as a percentage of the total revenues of the affected jurisdictions. (Because that latest data from the State Comptroller's Office on local government revenues are for 2008, we used NYCDEP's payments in 2008 for this comparison.) Despite the fact NYCDEP pays full taxes pursuant to State law and the MOA, real property taxes paid on LAP-acquired land represent only a small percentage of the general property tax revenues – and an even smaller percentage of the total revenues of West-of-Hudson watershed counties and towns. The same is true with the region's school districts.

Moreover, not all types of new development have a positive impact on local finances. Research in communities in New York and elsewhere has shown that privately-owned open land consistently generates more for local government in real property tax revenues than it costs in public services. In the watershed, NYCDEP is taxed as if it were a private owner; and land owned by NYCDEP generates minimal demand for local government services. Second home development may produce a net fiscal benefit for local governments; but other single-family residential development sometimes costs more in terms of demand for schools and other services than in generates in new revenues.[15]

Of course, at a time when local government finances under severe stress – not only in the region, but throughout New York State and the U.S. – local governments and school districts – must be concerned about even very small portions of the local tax base. However, there is no evidence that acquisition of watershed land under LAP has in itself had any adverse impact on local revenues – or that it would in the future.

In addition to LAP's impact on general municipal governments and school districts, some local representatives have expressed concern about the program's potential impacts on the financial viability of fire districts. Although they represent only a small part of total local finances, these districts provide a vitally important public service. Moreover – to a far greater extent than

[15] Farmland Information Center, "Fact Sheet: Cost of Community Services Studies," August, 2004.

general local governments or school districts – they are almost totally dependent on property taxes. If LAP did in fact have any adverse impact on local property tax revenues, fire districts could thus be affected disproportionately. The data cited above suggest, however, that LAP does not have any significant adverse impact on local property tax revenues.

The program's direct impact on local government revenues is generally neutral. Because existing laws and provisions of the MOA governing the payment of real property taxes by the City are not expected to change, we expect that the impact of further acquisitions through 2027 will similarly be neutral.

Conclusion

Overall, the projected acquisitions in the West-of-Hudson watershed under the Extended LAP will have only a limited impact on socioeconomic conditions. Even using very conservative assumptions about the amount of land to be acquired under the Extended LAP and the pace new residential development through 2027, for the West-of-Hudson region as a whole the supply of developable land would be more than adequate to support the projected level of development through 2027and many years beyond. Modifications to LAP that are included in the proposed action – most notably, the proposed expansion of designated hamlet areas – would minimize any conflicts with development in the hamlet areas.

Based on an analysis of trends in land prices in the West-of-Hudson region between 2001 and 2009, LAP does not appear to have been a significant driver of the escalation in the price of vacant land that occurred in the region during the boom years. (The pattern of price increases in watershed towns is broadly consistent with increases that occurred in towns outside the watershed.) As demand for land has weakened, the Program may have had the effect of keeping vacant land prices from falling as much as they might have fallen in the Program's absence. While LAP may have a limited impact on the price of larger tracts of vacant land in outlying areas, it appears to have had no impact at all on the price of housing in the West-of-Hudson region.

LAP similarly appears to have had no significant effect on land-based industries such as farming, mining and forestry; and to have had a slightly positive impact on outdoor recreation. And because other commercial and industrial activity accounts for less than 2 percent of all land use in the West-of-Hudson region – and because it tends to be concentrated in or near the existing hamlets – no significant impact on other forms of commercial activity is expected. Finally, the Extended LAP would have no significant impact on local government or school district financing in the West-of-Hudson watershed region.

Any incremental effect of the 15 Year Greater Impact Scenario on socioeconomic conditions in West-of-Hudson watershed towns beyond the 10 Year Projection Scenario is likely to be minimal.

Based on the analysis provided in this report, the Extended LAP is not expected to result in potential significant levels of direct or indirect displacement or in other potential significant adverse socioeconomic conditions in the West-of-Hudson watershed.

EAST- OF- HUDSON

This section of Chapter 3 addresses the potential impact of additional acquisitions under the Extended LAP between 2010 and 2027 on socioeconomic conditions in East-of-Hudson

watershed towns. In the portion of the Catskill-Delaware watershed that lies east of the Hudson, areas of focus for the Land Acquisition Program (as outlined in NYCDEP's September 2009 Long-term Land Acquisition Plan) and the total acreage to be acquired between 2010 and 2027 are likely to be substantially less than the historic pattern of activity.

Impacts on Supply of Developable Land

Under the Extended LAP NYCDEP expects to acquire additional land primarily in only four of the eight towns – East Fishkill, Kent, Carmel and Putnam Valley. Although land could be purchased in other towns, for example around the Kensico Reservoir, the supply of land is very limited and the cost is very high. Any land purchased would represent a very small portion of the affected town and would likely be land that is currently used for another purpose (rather than vacant land). Therefore, no potential significant adverse socioeconomic impacts would be expected to occur.

10 Year Projection Scenario

Using the same approach used previously to gauge LAP's impact on the supply of developable land west of the Hudson, Table ES-12A shows the projected impact of the Land Acquisition Program on the supply of developable land in the four towns through 2022. As the table shows, the program's impact varies widely across the four towns.

Table ES-12A: Impact of LAP on East-of-Hudson Catskill-Delaware towns through 2022

County	Town	Total Town Land	Available developable acres, 2009	Projected developable land acquired through 2022	Developable land needed for housing through 2022	Developable land left in 2022	% of 2009 developable land left in 2022	LAP contribution	Housing contribution	% of town area developable, 2009	% of town area developable, 2022
Putnam	Carmel	24,029	1,520	81	842	597	39%	5%	**55%**	6.3%	2.5%
Dutchess	East Fishkill	36,799	4,192	118	1,516	2,558	61%	3%	**36%**	11.4%	7.0%
Putnam	Kent	26,959	2,096	329	180	1,588	76%	16%	9%	7.8%	5.9%
Putnam	Putnam Valley	27,464	5,560	10	569	4,981	90%	0%	**10%**	20.2%	18.1%
	TOTAL	**115,250**	**13,368**	**537**	**3,107**	**9,724**	**73%**	**4%**	**23%**	**12%**	**8%**

In Putnam Valley, LAP's potential impact is limited by the fact that only 8 percent of the Town's total area is within the watershed. Moreover, the number of acres that LAP expects to acquire in Putnam Valley between 2010 and 2022 is relatively small – 34 acres, of which about 10 acres are characterized as developable.[16] This represents less than 0.2 percent of the Town's supply of developable land as of 2009. In East Fishkill, Carmel and Kent, the amount of land projected to be acquired by LAP through 2022 is more substantial. It should be noted that the estimates of developable land available in each town as of 2009 and developable land remaining in 2022 that are presented in Table ES-12A are conservative in several respects and remaining land available will likely be higher.

The potential impact of additional acquisitions in East Fishkill, Carmel and Kent on the supply of developable land is discussed below.

East Fishkill

[16] For purposes of this analysis developable land does not have any of the following characteristics: a 100-foot buffer on streams and waterbodies, a 300-foot buffer on reservoirs and reservoir stems, DEC-mapped wetlands with a 100-foot buffer, federal jurisdiction wetlands with no buffer, FEMA 100-year floodplains, slopes of greater than 15 percent, or land with slow infiltrating soils (NRCS Hydrological Soil Group D); land with any one or more of these characteristic in considered undevelopable.

The potential impact of future acquisitions on socioeconomic conditions in East Fishkill is shaped by several factors:

- The relatively small portion of the Town that lies within the watershed;
- The extent to which the area within the watershed differs from the rest of the Town; and
- The pace of residential development within the Town.

Only 16 percent of East Fishkill's total area lies within the watershed. Moreover, the 5,832-acre watershed area – located in the southeastern part of the Town – differs from the rest of the East Fishkill in several respects. Elevations are higher, and the terrain is more rugged – according to the Town's 2002 comprehensive plan, about 50 percent of the total land area of this portion of the Town consists of land with slopes of more than 25 percent.

East Fishkill's housing stock has grown rapidly in the past two decades – from 7,265 in 1990 to an estimated 9,570 in 2008, an increase of nearly 32 percent. For the period 1997 through 2008 (according to data provided by the Census Bureau) new residential building permits issued in East Fishkill averaged 168 units per year.

Table ES-12A suggests that if growth were to continue at that pace, new residential development between 2010 and 2022 would consume about 36 percent of the Town's supply of developable land (as of 2009). However, using the average rate of new development between 1997 and 2008 as a basis for projecting future growth may overstate the likely rate of development in East Fishkill. Issuance of new residential building permits declined sharply in the east-of-Hudson towns as the housing boom came to an end.

In contrast to the relatively high rate of consumption of developable land for new housing projected in Table ES-12A, the developable portion of land projected to be acquired under LAP represents only 3 percent of the Town's supply of developable land as of 2009.

Carmel

Carmel lies almost entirely within the watershed; watershed land accounts for 93 percent of the Town's total land area. It is the most developed of the four towns highlighted in Table ES-12A, and has the smallest amount of developable land still available as of 2009. As a result of the relatively high rate of development projected in Carmel – 100 units per year between 2010 and 2022 – the analysis indicates that only 39 percent of the town's 2009 supply of developable land would still remain in 2022. However, LAP's contribution to the removal of developable land is modest. The amount of developable land projected to be acquired by NYCDEP is 81 acres, and represents only 5 percent of the town's 2009 supply of such land.

Several factors are likely to alleviate any such conflicts between LAP acquisitions and residential development. As noted above, projections based on past rates of new construction may overstate the rate of development through 2022; the likelihood that future LAP acquisitions would occur in outlying parts of the town; and the town's desire to preserve open space.

Kent

As Table ES-12A shows, the acreage projected to be acquired by LAP is greater in Kent than in other East-of-Hudson towns – both in absolute terms and as a percentage of the Town's total supply of developable land. Through 2022, projected acquisitions under LAP would take 16 percent of the Town's 2009 supply of developable land.

However, the rate of new residential development is projected to be significantly lower in Kent than in the other towns where LAP will be acquiring land – an estimated 28 units per year in Kent, as compared to 168 per year in East Fishkill, and 100 in Kent. New residential development between 2010 and 2022 is projected to consume about 9 percent of Kent's 2009 supply of developable land. As of 2022, the Town would still have about 1,588 acres of developable low-density residential and vacant land – about 76 percent of the supply of such land in 2009.

15 Year Greater Impact Scenario

As shown below in Table ES-12B, the impact of increasing by 10 percent the total acreage to be acquired is small in both relative and absolute terms.

Table ES-12 B: 15 Year Greater Impact Scenario on East-of-Hudson towns

County	Town	Available developable acres, 2009	Projected developable land acquired through 2027	Developable land needed for housing through 2027	Developable land left in 2027	% of 2009 developable land left in 2027	LAP contribution	Housing contribution	% of town area developable, 2009	% of town area developable, 2027
Dutchess	East Fishkill	4,192	129	2,148	1,914	45.7%	3.1%	51.2%	11.4%	5.2%
Putnam	Carmel	1,520	89	1,192	238	15.7%	5.8%	78.5%	6.3%	1.0%
Putnam	Kent	2,096	362	254	1,480	70.6%	17.3%	12.1%	7.8%	5.5%
Putnam	Putnam Valley	5,560	11	806	4,743	85.3%	0.2%	14.5%	20.2%	17.3%
	TOTAL	**13,368**	**591**	**4,401**	**8,376**	**62.7%**	**4.4%**	**32.9%**	**11.4%**	**7.1%**

Under the 15 Year Greater Impact Scenario, projected acquisitions by NYCDEP would increase from 1,517 acres to 1,669. Under this alternative, the percentage of developable land remaining in 2027 declines from the 9,724 acres estimated under the 10 year permit scenario to 8,376 – but this change is due almost entirely to the additional residential development that is projected to occur between 2022 and 2027.

Impact on land prices, housing and affordability

In contrast to the acreage to be acquired under LAP west of the Hudson, which represents approximately 9.8 percent of all West-of-Hudson watershed land, the 1,669 acres projected to be acquired east of the Hudson represent only 0.6 percent of East-of-Hudson watershed land. Especially in the context of a regional real estate market that has consistently been one of the strongest in the greater New York metropolitan area in recent decades, LAP will clearly be in the position of a "price taker" in the East-of-Hudson towns – its level of engagement in the market will simply be too small to have a significant impact on either land prices or housing costs.

Impact on business and commercial activity

The impact of projected future acquisitions on major industries and on commercial development in the East-of-Hudson watershed towns is likely to be limited. As noted above, acquisition of land and easements under LAP has since 1997 proven to be fully compatible with strong growth in both Putnam County and southern Dutchess County. Between 1997 and 2009, LAP acquired more land in Putnam County (measured as a percentage of the county's total land area) than in any other county east or west of the Hudson – and Putnam recorded by far the strongest employment growth of any of the eight watershed counties.

Moreover, the potential for any adverse impact on the future economic vitality of the East-of-Hudson watershed towns is limited by the decline in the level of acquisition activity projected by

NYCDEP. The 1,669 acres NYCDEP expects to acquire between 2010 and 2027 is less than 20 percent of the acreage acquired between 1997 and 2009.

The potential for conflict is also limited by the fact that land-based industries – particularly agriculture and natural resources – are a relatively small part of the region's economy. Outdoor recreation plays a more significant role – but the impact of projected acquisitions by NYCDEP on outdoor recreation will if anything be positive.

Finally, the 1997 MOA strictly limits acquisition by NYCDEP of land zoned for commercial or industrial use. This further limits the potential for conflict between acquisition of additional land under LAP and the towns' economic vitality.

Impact on local government revenues

Acquisition of watershed land by NYCDEP could also have a direct effect the region's economy through its impact on county, municipal and school district tax revenues. Based on the analyses conducted above for impacts on developable land, there would not be significant displacement effects due to the Extended LAP. Further, the Extended LAP is unlikely to constrain the overall level of development in watershed towns. Therefore, the potential for new local tax revenues from new development should not be reduced under the Extended LAP.

As noted in the discussion of LAP's potential impact on local government revenues west of the Hudson, land and easements acquired by New York City are fully taxable. Acquisition of land by NYCDEP thus has no direct affect on local property tax revenues. Moreover, although NYCDEP pays full taxes on property interests it has acquired, it is important to recognize that properties acquired under LAP represent only a very small portion of the total assessed value – and generate a very small portion of the revenues of – the affected local taxing jurisdictions. In 2008:

- The $874,579 in general property taxes paid by NYCDEP on LAP-acquired properties east of the Hudson represented less than 0.1 percent of the combined real property tax revenues of the affected counties and towns; and
- The $2,213,916 in school taxes paid by NYCDEP on LAP-acquired properties represented only 0.28 percent of the combined real property tax revenues of the affected school districts.

Given that the acreage projected to be acquired under LAP between 2010 and 2027 is less than 20 percent of the acreage acquired in the eight east-of-Hudson Catskill Delaware watershed towns, tax revenues generated by the newly-acquired property are likely to represent an even smaller fraction of 1 percent of the revenues of the affected jurisdictions' real property tax revenues.

Given the very small portion of taxable value that any newly-acquired property will represent, the fact that these properties remain fully taxable, and the lack of any significant impact on new development, it is extremely unlikely that future acquisitions in the East-of-Hudson towns could have any substantial impact on local government or school district revenues.

Conclusion

Overall, the projected acquisitions in the East-of-Hudson portion of the Catskill-Delaware watershed under the Extended LAP – which represent only 0.7 percent of all East-of-Hudson

watershed land, and only 1.6 percent of the watershed land that NYCDEP is projected to acquire during that period, on both sides of the Hudson – would have only a very limited impact on the supply of developable land, in watershed towns, and generally would not affect land or housing prices, growth rates, business conditions or local government revenues. Based on the analysis provided in this report, the Extended LAP is not expected to result in potential significant levels of direct or indirect displacement or other potential significant adverse socioeconomic conditions in the East-of-Hudson watershed.

TOWN LEVEL ASSESSMENTS

As noted above, detailed assessments were conducted for 20 towns based on the selection criteria described above.

Extending the term of the WSP from 10 to 15 years and increasing the land projected to be acquired in the West-of-Hudson region by 10 percent has only a marginal impact on which towns meet the two screening criteria. Only one additional town – Woodstock – met the criteria for detailed town level analysis under the 15 Year Greater Impact Scenario as compared to the 10 Year Projection Scenario.

For all towns but Woodstock, the town level assessments provided below are based on the 10 Year Projection Scenario. However, based on a review of the longer time period and the larger number of acres to be acquired under the 15 Year Greater Impact Scenario within the 20 towns, the Extended LAP would not result in any significant impacts.

Both the projected levels of LAP acquisitions and the projected levels of residential development used in all of the town-level assessments represent a "reasonable worst case" scenario. Therefore, on the basis of the analyses described in the EIS, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in the 20 towns assessed in this chapter under both the 10 Year Projection Scenario and the 15 Year Greater Impact Scenario.

The assessments are summarized below.

- ***Denning*** is a very low-density rural community, with an estimated population of 524 in 2008, and one of the highest percentages of excising protected land (mostly State-owned) among watershed towns. Through 2022, NYCDEP is projected to acquire 32 percent of the Town's remaining developable land. But because the projected rate of new development is low, only two percent of the current supply of developable land is projected to be needed to support new residential development through 2022. Thus, the Town would have 66 percent of its 2009 developable land remaining in 2022. Denning's comprehensive plan shows a strong local preference for maintaining its current character, and limiting development. The Town has a 1,107-acre designated hamlet area, which it has not sought to expand.

- ***Olive*** (population 4,750) has seen significant growth in its resident population since 1990. As a result, while NYCDEP is projected to acquire a much lower percentage of the Town's remaining developable land than in Denning – 15 percent – the amount of land projected to be needed to support new development through 2022 is much greater – 13 percent of Olive's current supply of such land. However, most new development has been concentrated along Routes 28 and 28A, while NYCDEP is most likely to be acquiring land outside of these areas. Moreover, the Town has proposed and NYCDEP is comfortable with more than doubling Olive's existing designated hamlet area, which will ensure that substantial acreage

will be available to support new commercial and residential development. The Town is projected to have 72 percent of its 2009 developable land remaining in 2022. Finally, our projection of the amount of land needed for new residential development may be conservative – development in Olive has been slower in this decade than it was in the 1990's.

- ***Shandaken*** (population 3,400) has the highest percentage of existing protected land (72 percent) of any watershed town. That feature, along with its mountainous terrain, leaves the Town with relatively little available developable land. As in Olive, NYCDEP's projected acquisitions represent a relatively low percentage of the Town's developable land (13 percent), but the share of developable land projected to be needed to support the projected rate of residential development through 2022 is relatively high (12 percent). Nevertheless, the Town would have 74 percent of its 2009 developable land remaining in 2022. Recognizing the extent to which Shandaken is already protected, NYCDEP and the Town have proposed that in the future NYCDEP will not actively solicit individual land-owners, but will instead respond only to owner-initiated inquiries. NYCDEP is comfortable with that proposal.

- ***Hardenburgh*** (population 211) is a very low-density rural town – with just 2.6 persons per square mile, it has the lowest population density of any watershed town. As in Denning, the share of the Town's developable land projected as being acquired by NYCDEP is relatively high (24 percent); but the amount of land project to be needed to support continued slow growth is small – only about six percent of the current supply of developable land. Thus, the town would have 70 percent of its 2009 developable land remaining in 2022.

- ***Windham*** (population 1,755) has been one of the West-of-Hudson watershed's fastest-growing towns since 2000. The Town's economy is built primarily on skiing and other leisure activity. The Town has a large second-home sector; in 2000, 56 percent of its housing units were for seasonal or recreational use – the highest percentage of any watershed town. With NYCDEP projected to acquire 17 percent of the Town's developable land and 10 percent projected to be needed to support projected residential development, some competition for land might be expected. The Town would have 73 percent of its 2009 developable land remaining in 2022. However, a closer look at where development is occurring shows that it has been clustered in and around the existing hamlets and around Windham Mountain. Expansion of the designated hamlet area by roughly 2,800 acres – as proposed by the Town and accepted by NYCDEP – would provide ample room for additional development in these same high-growth areas through 2022 and beyond. Moreover, by using a 2-acre minimum in our calculation of land needed to support future development, we may be overstating the amount of land that will be required. The actual median parcel size for new units built since 2000 has been only 1.3 acres.

- ***Hunter***'s economy, like Windham's, is built primarily on skiing and other recreational activity. It has a somewhat larger resident population (2,750), and a large second-home sector (48 percent of all housing units in 2000 were for seasonal or recreational use); but the Town has grown at a much slower rate in recent years. NYCDEP is projected to acquire 17 percent of the Town's current supply of developable land; and five percent would be required to support the projected rate of new residential development through 2022. Thus, the Town would have 77 percent of its 2009 developable land remaining in 2022. With more than 3,200 acres designated, Hunter already has the largest designated hamlet area among

watershed towns. Under the Town's proposal, which NYCDEP has accepted, this area will be nearly doubled, to more than 6,100 acres. This agreement would allow further development in and around the villages of Hunter and Tannersville, where development has historically occurred, while focusing NYCDEP's acquisitions on outlying areas.

- ***Ashland*** (population 827) has seen strong population growth in recent years, combined with somewhat faster housing growth. Like most of Greene County's other "mountaintop towns," the Town has a strong second home sector: about 42 percent of all housing units in 2000 were for seasonal or recreational use. Much of the Town's recent development has occurred along Route 10, or on the eastern side of the Town (bordering Windham). NYCDEP is projected to acquire 21 percent of the Town's current supply of developable land; and eight percent would be required to support the projected rate of new residential development through 2022. Thus, the Town would have 71 percent of its 2009 developable land remaining in 2022. As in Windham and Hunter, a proposed major expansion of Ashland's designated hamlet areas – from 362 to more than 2,000 acres – would alleviate potential for conflict between NYCDEP's projected acquisitions and the need for land to support further development.

- ***Jewett*** (population 1,015) is a low-density, primarily rural town located between Windham and Hunter. Jewett has a relatively large second-home population – 53 percent of all housing units in 2000 were for seasonal or recreational use. Through 2022, NYCDEP is projected to acquire 17 percent of the Town's current supply of developable land; and eight percent would be required to support the projected rate of new residential development. Thus, the Town would have 75 percent of its 2009 developable land remaining in 2022. As elsewhere, a proposed expansion of designated hamlet areas from 652 to 2,666 acres would alleviate potential conflict between continued development and the projected acquisition of additional land by NYCDEP.

- ***Lexington*** (population 874) is another low-density, primarily rural town with a relatively large second-home population – 54 percent of all housing units in 2000 were for seasonal or recreational use. Through 2022, NYCDEP is projected to acquire 25 percent of the Town's current supply of developable land; and nine percent would be required to support the projected rate of new residential development. Thus, the Town would have 66 percent of its 2009 developable land remaining in 2022. The Town has proposed, and NYCDEP supports, expansion of designated hamlet areas from 362 to 737 acres.

- ***Halcott*** is an almost exclusively rural community, with the smallest area and population (203) of any watershed town. The Town has very little commercial activity (mostly home-based businesses); but it has a substantial second-home sector – 42 percent of all housing units in 2000 were for seasonal or recreational use. Through 2022, NYCDEP is projected to acquire 23 percent of Halcott's current supply of developable land, while five percent is projected to be required to support the level of residential development projected for the same period. Thus, the town would have 72 percent of its 2009 developable land remaining in 2022. The Town's comprehensive plan highlights a strong local preference for maintaining its rural character, natural beauty and support for outdoor recreation – and notes strong resident opposition to any large-scale commercial or industrial development. Like Denning, Halcott has not sought to expand its 69-acre designated hamlet area.

- ***Prattsville*** (population 712) is also a primarily rural town. The Town's population declined in the 1990's; it has rebounded somewhat since 2000, but remains below the 1990 level. The second-home market is smaller than those in other mountaintop towns – 29 percent of all units are seasonal or recreational. The Town's business base consists almost entirely of retail and service businesses supporting the local population. Through 2022, NYCDEP is projected to acquire 30 percent of Prattsville's current supply of developable land. New residential development, however, is projected to average only four units per year, and to consume only four percent of the Town's developable land. Thus, the Town would have 67 percent of its 2009 developable land remaining in 2022. The Town has a 207-acre hamlet area, which it has chosen not to expand.

- Among watershed towns, ***Stamford*** (population 1,954) is notable for the diversity of its economy. It includes one of the region's largest concentrations of agriculture, outdoor recreation and the arts in and around the Village of Stamford, a substantial second-home sector, and manufacturing and book retailing in the Village of Hobart. As of July 2009, WAC has acquired easements on 4,849 acres of farmland in Stamford – by far the most in any watershed town. Through 2022, NYCDEP is projected to acquire 24 percent of the Town's current supply of developable land. About two-thirds of this total is expected to be developable farmland placed under WAC easements, allowing for continued farm use; only one-third would be land directly acquired by NYCDEP in fee simple or as conservation easements. With a relatively low rate of new residential development — only four percent of the current supply of developable land is projected to be required for new development through 2022. Thus, the Town would have 72 percent of its 2009 developable land remaining in 2022. Designated hamlet areas in Stamford currently total 1,333 acres. The Town has not proposed to expand them. Local officials have raised concerns about the impact of past WAC acquisitions on the availability of land for development in and around the Villages of Stamford and Hobart and the hamlet of South Kortright. In recognition of these concerns, NYCDEP – in its negotiations with regulators and local officials – supports the exclusion of WAC easements from designated hamlet areas as part of the Extended LAP. If agreed upon by all parties to the negotiations, this would leave remaining land potentially available for growth within the designated areas, while allowing WAC's projected acquisition of farm easements elsewhere in the Town. Commercial development has been focused within the two villages, where LAP is precluded, and it is expected that opportunities for redevelopment and new commercial development will continue to be available in the Villages of Hobart and Stamford. New residential development can be expected to continue to be accommodated in the outlying portions of the Town.

- ***Middletown*** is a primarily rural community (population 3,881) with a mixed economy that has experienced moderate growth in recent years. Most commercial activity is concentrated in the Villages of Margaretville and Fleischmanns and the hamlet of Arkville along Route 28, and near in the northern part of the town, near Roxbury. About 36 percent of all housing units are for seasonal or recreational use. NYCDEP is projected to acquire 16 percent of Middletown's current supply of developable land through 2022. An additional seven percent of the current supply would be required to support the projected rate of new residential development – about 21 new units per year – through 2022. Thus, the Town would have 77 percent of its 2009 developable land remaining in 2022. Middletown currently has a total of 1,734 acres in designated hamlet areas. The Town has proposed to expand the designated areas by 229 acres, to a total of 2,032 acres. NYCDEP has accepted the Town's proposal.

- ***Andes*** is a primarily rural, low-density community with a roughly stable resident population of 1,336. In 2000, 49 percent of all housing units were seasonal or recreational; and it appears that there has been continued growth in this sector since 2000. Commercial activity is concentrated in the hamlet (and former Village) of Andes – which, relative to its size, has seen substantial new business development since 2000. NYCDEP is projected to acquire 20 percent of the current supply of developable land through 2022; and about seven percent will be required to support projected new residential development through 2022. Thus, the Town would have 74 percent of its 2009 developable land remaining in 2022. Andes has a designated hamlet area of 1,047 acres, which the Town has chosen not to expand.

- ***Bovina***, with an estimated population of 633 in 2008, is a low-density, primarily rural town with a substantial second-home population – 40 percent of all housing units in 2000 were for seasonal or recreational use. Through 2022, NYCDEP is projected to acquire about 19 percent of the Town's current supply of developable land. However, residential growth in the town has been slow. Only about two percent of the Town's developable land would be required to support the projected rate of new residential development through 2022. Thus, the Town would have 79 percent of its 2009 developable land remaining in 2022.

- ***Hamden*** is a rural town (population 1,237) in the geographic center of Delaware County. Most businesses are clustered along Route 10, while low-density residential uses are scattered throughout the town. The southeastern part of the Town (about 13 percent of its total land area) lies outside the watershed. Acquisitions of developable land by NYCDEP are projected to total 12 percent of the Town's total supply of developable land as of 2009, while land required for new residential development during the same period is projected at 11 percent of the current supply. Thus, the Town would have 77 percent of its 2009 developable land remaining in 2022. In 1997, the Town designated hamlet areas totaling 420 acres. NYCDEP and the Town have proposed a significant expansion of the designated areas to a total of 2,854 acres, which NYCDEP has agreed is appropriate. Both the existing and proposed hamlet areas are primarily along Route 10, where development typically occurs.

- ***Delhi*** (population 4,547) is a low-density, primarily rural town. More than half the Town's population is concentrated in the Village of Delhi – the county seat for Delaware County, the site of the SUNY-Delhi campus, and a commercial center for Delhi and several other towns. Through 2022, NYCDEP is projected to acquire 17 percent of the Town's current supply of developable land; and five percent would be required to support the projected rate of new residential development. Thus, the Town would have 79 percent of its 2009 developable land remaining in 2022. The Town has proposed an expansion of designated hamlet areas from 2,346 to 4,902 acres, alleviating potential conflict between continued development and the projected acquisition of additional land by NYCDEP.

- ***Conesville*** is a low-density rural community (population 714) in Schoharie County with a diverse agricultural sector, but relatively few commercial uses. About 54 percent of the Town's housing units are seasonal or recreational; the Town saw strong growth in this sector in the 1990s, but the trend has slowed since then. The Town's comprehensive plan calls for preserving its rural character, natural beauty and remaining agricultural activity; and specifically urges greater use of WAC easements to preserve farmland. Acquisitions by NYCDEP through 2022 are projected to total 17 percent of the Town's total supply of developable land as of 2009. About one-quarter of new acquisitions are expected to be WAC easements. Land required for new residential development during the same period is

projected at 10 percent of the current supply of developable land; however, because this projected growth rate is based in part on strong growth in the 1990s, this projection may be overstated. Given the conservative projection, the Town would have 73 percent of its 2009 developable land remaining in 2022. The Town has proposed that designated hamlet areas be increased from 275 to 1,845 acres – shifting NYCDEP acquisitions away from areas that are likely to be most suited for new development. NYCDEP has accepted this proposal.

- With its resident population growing by about one-third since 1990, ***Neversink*** (population 3,909 in 2008) has been one of the fastest-growing watershed towns. Development is concentrated along Route 55, and around the hamlet of Grahamsville. NYCDEP's acquisitions through 2022 are projected at 15 percent of the current supply of developable land. At the projected rate of growth, new residential development would be projected to require 12 percent the current supply of developable land. Use of 1990-2008 data on growth in housing units may, however, overstate the likely pace of future development in Neversink; building permit data suggest that growth has been significantly slower in the past decade than it was in the 1990's. Given the conservative projection, the Town would have 73 percent of its 2009 developable land remaining in 2022. The Town currently has designated hamlet areas of 1,197 acres, which it has proposed not to expand.

  Woodstock (population 6,346) has the second-largest population among the towns in the West-of-Hudson watershed region (after Wawarsing). However, most of the resident population is concentrated in the Town's eastern half, which lies outside the watershed. About one-third of all residents live in the hamlet of Woodstock, which is also the Town's main center of commercial activity. Under the 15 Year Greater Impact Scenario, NYCDEP is projected to acquire 2,593 acres in fee simple and conservation easements in Woodstock between 2010 and 2027. While substantial, this estimate is barely half the total of 5,120 acres that were acquired by LAP in Woodstock through June 2009. Woodstock is expected to have one of the highest rates of residential development among the West-of-Hudson towns, with 289 additional units being projected by 2027 (an average of 17 new units per year). Nevertheless, any potential for conflict between the Extended LAP and the need for land to support new development is limited by the fact that any new NYCDEP acquisitions would occur in the western half of the Town, while any new development is likely to be concentrated in the eastern half. Under this scenario, 76 percent of the Town's 2009 supply of eligible land would still be available in 2027.

WATER QUALITY AND NATURAL RESOURCES

The Extended LAP is intended to provide long-term benefits to the water quality of the City's water supply system through the preservation of sensitive lands proximate to water resources. Land acquisition is an anti-degradation strategy, which can preclude adverse water quality impacts associated with development and other land uses.

As expressed in the 2007 FAD, "Land acquisition is one of the most effective, and therefore, important mechanisms to permanently protect the City's Catskill/Delaware watershed. The Land Acquisition and Stewardship Program [now LAP], which is described in detail in the New York City Watershed MOA, seeks to prevent future degradation of water quality by acquiring sensitive lands and by managing the uses on these lands."

Land Acquisition is an anti-degradation strategy that ensures protection by precluding land use changes on undeveloped land. Development, including the associated land disturbances and impervious surfaces, has the potential to introduce increased levels of pollutants, including pathogens, nutrients and turbidity, into watercourses. This is particularly important during storm events when pollutant levels are elevated and the rapid movement of water reduces the effectiveness of natural cleansing processes. Once the landscape is disturbed for development, the probability that pollutants could reach the drinking water supply is directly related to several factors including proximity to surface water features and topography. The water quality effects of the City's acquisitions of sensitive lands accrue over time, as future development would occur at locations with less potential to adversely impact water quality rather than on the land protected by LAP.

The Extended LAP has a number of elements targeted at maximizing these water quality benefits as discussed below.

PRIORITIZATION

The LAP first prioritizes property for solicitation on the basis of its location within the water supply system, followed by site-specific characteristics so as to maximize the water quality benefit of lands acquired. The proposed Extended LAP seeks to increase the percentage of protected lands in the Cat-Del System as a whole, with a particular emphasis on:

- Non-terminal reservoir basins with less than 30 percent protected lands;
- Specific sub-basins with a relatively low percentage of protected lands; and
- Reservoir basins that are expected to provide larger contributions to future water supply.

Ensuring protection of lands with water quality sensitive features is proposed to be accomplished through the targeted purchase of lands based on Natural Features Criteria, including wetlands, floodplains, and lands within 300 feet of streams, ponds or lakes or within 1,000 feet of reservoirs and lands with moderate to steep slopes.

NATURAL FEATURES

The Extended LAP provides beneficial water quality impacts; therefore the proposed action would result in beneficial water quality impacts under the proposed Natural Features Criteria. Even though some land may be eliminated from potential future solicitation, the land that is purchased will, under any regime involving Natural Features thresholds, be land that is more water quality sensitive and therefore provides more protection of water resources. Nor would this revision be expected to decrease the number of acres eventually acquired; rather, a similar number of acres would be acquired from a slightly smaller pool of solicited land.

STREAM BUFFERS

In addition, through a Riparian Buffer Program, the City would further protect the watershed by purchasing land within riparian buffers that may not be eligible for, or where the owners may not be interested in, LAP's existing fee simple or conservation easement programs. The proposed City-funded Riparian Buffer Pilot Program being considered would be implemented in conjunction with

one or more Stream Management Plans developed under the City's Stream Management Program, and would be carried out in partnership with one or more local land trusts.

CONCLUSIONS

LAP was established for the sole purpose of protecting the City's drinking water quality. Water quality in the NYC reservoirs is very high and the Extended LAP would support maintaining that quality in the future. The goals of LAP are consistent with the federal Surface Water Treatment Rule (SWTR, 1989), New York State Department of Health regulations (10 NYCRR Part 5-1.30(c)(7)(I), and the Filtration Avoidance Criteria under the SWTR. The LAP provides for water quality protection through anti-degradation and smart growth principles.

The Extended LAP is expected to result in the protection of a substantial amount of land rich in natural features such as water resources, wildlife habitat, natural vegetation, wetlands and forested land. The preservation of these lands and water resources, particularly given that many of these areas would continue to provide substantial contiguous natural corridors, would provide a direct benefit to water quality and natural resources by keeping these lands protected from the impacts of development. The LAP places a high priority on acquiring wetlands and lands adjacent to watercourses, and its efforts are expected to result in the protection of many regulated and non-regulated freshwater wetlands, floodplains, riparian areas, and other environmentally sensitive water resources. LAP would protect lands in their natural state, thus preserving potential habitat of species that may utilize those lands, and ensure water quality, thereby protecting aquatic systems.

Most lands purchased under LAP are forested and that would be expected to continue under the Extended LAP. The Extended LAP could help reduce fragmentation, the breaking up of large parcels of forest into smaller pieces, by protecting more continuous adjoining parcels of forested land. Increasing parcelization and conversion to non-forest land has been documented in the Cat-Del watershed. The Extended LAP is likely to protect lands adjacent to existing protected areas such as State Forest Preserve lands. Because forests act as filters, the removal of forested land near watercourses could impact water quality. Fragmentation further reduces the beneficial effects of forests on water quality. The Extended LAP would seek to preserve the forest cover in lands it acquires, which would help to protect water quality and natural habitats.

Protecting forested lands provides ancillary benefits. As stated in the NYS Open Space Plan,[17] forested areas remove carbon dioxide from the atmosphere, thereby mitigating the threat of global warming; and reduce the consumption of nonrenewable fossil fuels for residential and commercial cooling and heating, and trap pollutants in the atmosphere. The current and Extended LAP programs are expected to support, rather than reduce, the removal of carbon dioxide from the air.

The Extended LAP would limit the potential future amount of impervious surface cover in water quality sensitive areas, leaving less sensitive lands and areas that have already been disturbed available for future growth. The Natural Features Criteria, Riparian Buffer Program, and

[17] New York State Open Space Plan. 2009

expanded hamlet areas under the Extended LAP (See *Project Description*) would further support these development patterns. Concentrating future development around hamlet areas where much of it historically and currently occurs is consistent with the principles of smart growth and associated benefits on water quality and the environment. While development in hamlet areas could result in some localized water quality impacts, these impacts would be combined with greater protection of natural areas with high ecological value and by ensuring that development occurs in a sustainable manner in these higher density areas, under the Watershed Rules and Regulations. Smart growth promotes coordination between development and conservation plans. The proposed Extended LAP is consistent with these outlined principles, with numerous Comprehensive Plans prepared by towns, and should have a net benefit to water quality while minimizing impacts to future growth.

Therefore, the proposed Extended LAP is anticipated to have beneficial impacts to water quality and natural resources and no potential for significant, adverse impacts are expected to occur.

OPEN SPACE AND RECREATION

WEST-OF-HUDSON

Through the Extended LAP, NYCDEP would preserve additional open space in the watershed region as well as associated scenic vistas and natural resources. With respect to active open space and recreational use, NYCDEP would continue under the Extended LAP to open up lands acquired for public access and increase recreational uses, where consistent with public safety and water quality. About 64 percent of the land acquired in fee simple under LAP is now open for recreational uses. NYCDEP anticipates that a similar or greater percentage of lands acquired in the Extended LAP would likely be opened up to recreation in the future.

Recreational use of City lands is governed by the "NYCDEP Rules for the Recreational Use of Water Supply Lands and Waters" with the latest version dated November 29, 2010 (Recreational Use Rules). There are several types of recreation allowed on NYCDEP lands and the type allowed is largely a function of where the land is located. NYCDEP allows fishing from shore, fishing from boats, casual walking and hiking, boating, cross country skiing, small and big game hunting, and trapping (on PAAs).

Under the Recreational Use Rules, some LAP lands are designated for 'entry by permit.' That is, recreation users must have a valid NYCDEP Access Permit. Here, lands may be designated for one or more uses (i.e. hiking only, hunting and hiking) depending on several factors. Those who want to keep a boat on any of the NYCDEP the reservoirs for fishing, a valid NYCDEP Boat Tag is also required. Additionally, the Recreational Use Rules have a designation for Public Access Areas (PAAs) in which hiking, hunting, fishing and trapping are allowed without the need for a NYCDEP Access Permit. The majority of WOH lands now acquired are open as PAAs. NYCDEP is also in the process of converting many "entry by permit" or "no trespassing" properties into PAAs. In 2010, NYCDEP is opening a bow-hunting only property along the southern shore of the Ashokan Reservoir. This is a narrow strip of land that does not lend itself to gun-hunting. In 2009, NYCDEP also began the Cannonsville Reservoir Boating Pilot Program in which non-motorized vessels (kayaks, canoes, etc.) are allowed, and users do not have to be fishing. Approximately half of the reservoir was open for this project in 2009. During 2010, NYCDEP expanded the pilot area to include the western portion of the reservoir.

NYCDEP has also issued revocable land use permits to entities such as municipalities and non-profit groups for uses such as snowmobile trails and ball fields in special situations.

Increasing the acreage that is open for public recreational use would benefit the region's communities in several ways.

- Recreational uses are highly valued by residents of watershed communities. In a survey of Delaware County residents conducted in 2009, access to both land and waterways for hiking, fishing and other recreational uses was rated as being either "very important" or "important" by a large majority of respondents; and hunting was rated similarly by a somewhat smaller majority.[18]

- A wide range of research over the past decade has highlighted the importance of opportunities for active outdoor recreation as one of the factors shaping young adults' decisions on where to live and work.[19]

- Expanding opportunities for active outdoor recreation can also strengthen the economy of watershed communities by attracting both short-term visitors and second-home buyers, building on what is already one of the region's greatest strengths. Recreation and other tourism-related businesses, including hotels and restaurants, accounted for approximately 13 percent of all employment in the watershed region in 2008.

In addition to its value as an amenity for full- and part-time residents, the opening of land acquired under the Extended LAP for recreational use can also benefit the region by attracting visitors from outside the West-of-Hudson watershed region. In 2005, according to data provided by NYCDEP, about 36,500 people who lived outside the watershed counties held permits for public recreational use of NYCDEP's watershed properties. Since about 90 percent of all NYCDEP properties open for recreational use are located west of the Hudson, it was assumed that the West-of-Hudson watershed region draws a similar percentage of non-local visitor traffic – about 32,850 people. While these visitors provide business and jobs for the watershed, the greatest benefit of expanded public access to City-owned land is likely to be the value that local full- and part-time residents derive from recreational use of these properties.

The Extended LAP is consistent with the 2009 New York State Open Space Conservation Plan and with the land conservation priorities recommended by the Regional Advisory committees. The solicitation and prioritization strategies to be employed by the Extended LAP both coincide with and provide further support to the priorities in the State Plan. As a practical matter, this means that some of the properties identified by the State may be acquired by the City. In addition, the City will likely acquire additional properties that either adjoin State priority sites (providing increase recreational opportunities and possibly enhancing access to State lands) or

[18] AEL Associates, *Concern about the New York City Land Acquisition Program in Delaware County Communities: Summary of the 2009 Telephone Survey Results,* September 2, 2009, page 22.

[19] For example, see Richard Florida, *Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*.

otherwise enhance recreational opportunities in the watershed region to compliment the State's goals.

Preservation of open space through the Extended LAP would also be consistent with the ecological and social benefits of land protection outlined in the Open Space Plan:

- Freshwater and tidal wetlands filter and process polluted water.
- Forested areas remove carbon dioxide from the atmosphere, thereby mitigating the threat of global warming; trees and parks in urban settings reduce noise, lower temperatures in the summer, reduce the consumption of nonrenewable fossil fuels for residential and commercial cooling and heating, and trap pollutants in the atmosphere.
- Forests are a primary source of clean water; the Adirondacks and Catskills are the sources of several of the state's major river systems.
- The Catskills also contain much of New York City's reservoirs critical to the needs of millions of New Yorkers.

In conclusion, the Extended LAP in the West-of-Hudson watershed is expected to benefit open space and recreation in the watershed. Therefore, it is not anticipated that the proposed action would have a significant adverse impact on open space and recreation.

EAST-OF-HUDSON

Although the Extended LAP East–of- Hudson is not expected to substantially change the amount of protected open space in the watershed, any land purchased would preserve open space in a largely developed area and its associated scenic vistas and natural resources. With respect to active open space and recreational use, NYCDEP would continue under the Extended LAP to open lands acquired for public access and increase recreational uses, where consistent with public safety and water quality. In conclusion, the Extended LAP in the East-of-Hudson watershed is expected to benefit open space and recreation in the watershed. Therefore, it is not anticipated that the proposed action would have a significant or adverse impact on open space and recreation.

CULTURAL RESOURCES

The Extended LAP would not generally result in any construction activity that would disturb historic or archeological resources in the watershed. The Extended LAP has the potential to result in a benefit to historic and archaeological resources on acquired sites by ensuring that these sites would not be disturbed. In some cases, lands under consideration for acquisition may contain historic structures. As part of the Community Review Process mandated by the MOA, local Town or Village governments would advise the City whether they wish any structures on property to be removed. For acquired property determined to require demolition or alteration of any structure, NYCDEP determines if the structure is subject to State and local regulations regarding historic resources. If the structure is of historical significance, the City adheres to all applicable historic preservation laws and rules and regulations. Therefore, the Extended LAP is not expected to result in the potential for significant adverse impacts on historic or archaeological resources.

OTHER IMPACT CATEGORIES

The following impact categories were reviewed to determine whether there was a potential for significant impacts from the Extended LAP: visual character, community facilities, traffic, air, noise, and hazardous materials. It was determined that there are no potential impacts and no additional analysis is warranted. The support for this determination is discussed below under each impact category.

MITIGATION AND UNAVOIDABLE IMPACTS

Based on the assessments conducted in this EIS, the Extended LAP would not result in potential significant adverse impacts. Therefore, no mitigation is being proposed and there are no unavoidable impacts.

IRREVERSIBLE&IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed Extended LAP would not require the construction of any new facilities. Natural resources including water resources and habitats would be preserved. Resources that would be used for the program would be for purchases of land and operation and maintenance purposes including the human effort required to plan and implement the program. These resources are considered irretrievably and irreversibly committed. No potential significant irreversible and irretrievable resources impacts are expected.

ALTERNATIVES

This EIS assesses the impact of four alternatives to the Extended LAP (the proposed action as described in *Project Description*). It examines the potential impact of alternatives to the proposed action on land use, socioeconomic conditions, community character and other conditions in the watershed. The following alternatives are evaluated:

- The "No Action" alternative; since LAP is a requirement of the FAD, this alternative assumes that New York City's water supply would be filtered.

- A Lesser-Impact Alternative; in which the amount of land to be acquired under the Extended LAP in fee simple and through conservation easements is 10 percent less than estimated in the 10 Year Projection Scenario evaluated for the Proposed Action; and

- A No Hamlet Expansion Alternative in which the amount of land to be acquired is the same as under the Extended LAP in fee simple and through conservation easements, but the proposed hamlet expansions discussed in *Project Description* are eliminated. The original hamlet areas designated pursuant to the MOA would remain in place – but they

would not be expanded. Other aspects of the program would remain the same as analyzed under the Proposed Action.

Each of these alternatives is examined below.

NO ACTION ALTERNATIVE

The No Action Alternative presents environmental conditions that would exist if the proposed action were not implemented. The assessment of the No Action Alternative is required for all Environmental Impact Statements (EISs).

The No Action Alternative would put the City in violation of the 2007 Filtration Avoidance Determination (FAD) issued by USEPA, which requires the City to pursue the Land Acquisition Program. If the City does not comply with the 2007 FAD, NYSDOH could require that the Catskill/Delaware System be filtered. Filtration of the Catskill/Delaware System would require the siting, design, construction, and operation of a drinking water filtration plant and could result in potential environmental impacts to the local community where the facility is sited and considerable costs to water and sewer ratepayers.

LESSER IMPACT ALTERNATIVE

This section discusses the potential impacts of an action in which NYCDEP acquires 10 percent less land than was projected for under the 10 Year Projection Scenario. Based on this approach, NYCDEP acquisitions in fee simple and conservation easements in the West-of-Hudson watershed between 2010 and 2022 would total 72,853 acres, as compared with 80,948 acres through 2022 in the 10 Year Projection Scenario. Purchases of farm easements by the Watershed Agricultural Council from 2010 through 2022 would total 14,400 acres, as compared to 16,000 acres through 2022 in the 10 Year Projection Scenario.

Socioeconomic Conditions - West-of-Hudson

Impacts on Supply of Developable Land

The analysis suggests that all 34 towns have sufficient land available to accommodate both the projected acquisitions under LAP, and the projected rate of residential development through 2022. For the 34 towns collectively, land to be acquired by LAP between 2010 and 2022 represents about 9.7 percent of 2009's available developable land; and new residential development over that time period is estimated to consume 5.5 percent. (It was estimated that under the proposed action, the land to be acquired by LAP between 2010 and 2022 would represent 10.8. percent of the 34 towns' 2009 supply of developable land, and that new residential development during the same period would consume 5.5 percent.) For the 34 towns as a whole, approximately 84.8 percent of 2009's available developable land would still remain in 2022, as compared with 83.7 percent under the reasonable worst-case scenario. Each town would have at least 68 percent of its 2009 supply of developable land remaining in 2022, as compared with a minimum of 66 percent under the reasonable worst-case scenario. Due to the very conservative nature of the analysis, the percentage of developable land remaining in 2022 is likely to be higher.

For the region as a whole, the impact of the Lesser Impact Alternative on the availability of land for development would not differ materially from the impact of the proposed action. In neither case would the projected level of acquisition significantly constrain new development in the West-of-Hudson watershed between 2010 and 2022.

Other Socioeconomic Conditions, Land Use and Community Character

A 10 percent decrease in the acreage projected to be acquired under the Extended LAP would have very little effect on the program's impact on socioeconomic conditions, land use patterns or the character of communities in the watershed. Such a reduction could marginally reduce the potential for conflicts in a few towns between the Extended LAP and the need for land for future development – but the effect would not be substantial. There could be a marginal reduction in the potential for displacement of mining or timber harvesting as a result of acquisition of land by NYCDEP; the potential for such displacement does not appear to be significant in any case. A 10 percent reduction in the acreage to be acquired could also result in a commensurate reduction in the areas that could be opened by NYCDEP for public recreational use. A 10 percent reduction would be unlikely to affect hamlet areas and village centers in the watershed towns, since the reduction in land to be acquired would generally take place outside these areas.

Socioeconomic Conditions - East-of-Hudson

The impact of the proposed action on land use, community character and socioeconomic conditions in the East-of-Hudson region would be quite limited – primarily because the amount of land projected to be acquired in the East-of-Hudson region under the 10 Year Projection Scenario totals only 1,517 acres, spread across four towns. Under the Lesser Impact Alternative, the land to be acquired in the East-of-Hudson watershed region would decline by 10 percent, to 1,365 acres of which developable land would total 484 acres. There would be slightly less potential for conflict between the Extended LAP and the need for land to accommodate new development than in there would be under the proposed action – but in either case, the impact would be negligible.

Water Quality and Natural Resources, Open Space

LAP provides benefits to water quality, natural resources and open space. If NYCDEP acquires 10 percent less land than the 10 Year Projection Scenario, these benefits may be reduced, but the action would still provide benefits.

Cultural Resources

Under the Lesser Impact Alternative, the same protocol would be applied with respect to protecting and preserving historical and archaeological resources.

NO EXPANSION OF DESIGNATED HAMLET AREAS

Socioeconomic Conditions

The final alternative to be considered is one in which there would be no expansion of designated hamlet areas. The hamlet areas originally designated by watershed towns pursuant to the 1997 MOA would remain in place and LAP activity would not occur in these areas to the extent these

towns have precluded acquisitions. This alternative is being considered because the negotiations over the Extended LAP with stakeholders are ongoing and the hamlet expansions are under discussion, although NYCDEP has agreed and remains committed to including the expanded hamlet areas. For this alternatives analysis, it is assumed that the total amount of land to be acquired by NYCDEP in fee simple or through conservation easements or by WAC would remain as described in *Project Description*. Without the expanded hamlets, however, this alternative assumes that some of the land acquired would be in the areas proposed for hamlet expansions.

Because the MOA did not provide for designation of hamlet areas east of the Hudson, the proposed action does not include expansion of hamlet areas in East-of-Hudson towns. The No Hamlet Expansion Alternative would thus not affect the analysis of the East-of-Hudson region and is not considered here.

As discussed in *Project Description* above, the proposed expansion areas (including a proposed expansion in the Town of Walton to which the parties have not yet agreed) cover a total of about 26,700 acres. Among the 16 towns in which hamlet expansions have been proposed, the impact of not expanding the designated hamlet areas is likely to vary from town to town, based on a number of factors:

- The scale of LAP acquisitions in the town through 2022, and their projected impact on the town's supply of developable land;
- The pace and location of new development in the town, the acreage required to support it, and its projected impact on the supply of developable land;
- The extent to which any major development planned for the towns are known to be located within the proposed expansion areas;
- The size of the proposed expansion areas, relative to the overall size of the town;
- The acreage within the proposed expansion areas already solicited by LAP; and
- LAP's projected "success rate."

Broadly speaking, eliminating the proposed hamlet expansions would not necessarily alter the total amount of land to be acquired within the 16 affected towns – but it would affect where the acquired land is located, and the potential for conflict between projected LAP acquisitions and requirements for land to support projected future development.

Table ES-13:

- Highlights the size of each proposed expansion area relative both the existing MOA designated hamlet areas, and to the size of the town as a whole;
- Identifies the amount of land within each expansion area already solicited by NYCDEP or potentially available for WAC easements; and

- Projects the acreage that NYCDEP and WAC might acquire[20] in what would have been each town's proposed expansion areas.

This calculation suggests that under the No Hamlet Expansion Alternative, 3,975 acres could be acquired in fee, CEs or WAC within the proposed expansion areas of the 15 towns where the parties have reached agreement on the proposed hamlet expansions, and potentially more than 700 additional acres in the area Walton has proposed to add to its 1997 designated areas.

In some towns, as Table ES-13 shows, the proposed expansion area (PEA) as a proportion of the Town's total area is variable. In some towns, the number of acres that the Extended LAP could potentially acquire in what had been the proposed expansion areas for this and other reasons would be relatively small. In others, the proposed expansion areas represent a much larger share of the Town's total area – as much as 11 percent in Ashland – and the number of acres that the Extended LAP could acquire in these areas could also be larger –in Windham, Hunter and Walton, potentially more than 500 acres.

[20] Based on NYCDEP's projected "success rate," based on past experience, that it could potentially acquire through 2022; and an assumption that, for the West-of-Hudson watershed as a whole, WAC will succeed in acquiring easements on about 18 percent of all potentially eligible farm land.

Table ES-13: Solicited acres and projected fee and CE acquisitions in proposed expansion areas

Town	MOA designated acres	Proposed expansion acres	PEA as % of total town acres	Solicited acres in PEA	Success rate	Projected fee and CE acquisitions in PEA	Acres in MOA PEA Available for WAC CE	Projected WAC CE in PEA/MOA	Total DEP and WAC Acres Projected
Delhi	2,346	2,556	6%	891	20%	178	818	147	325
Hamden	420	2,434	6%	776	20%	155	1,027	185	340
Harpersfield	405	1,298	5%	370	20%	74	847	152	226
Kortright	250	3,664	9%	1,372	20%	274	1,743	314	588
Masonville	0	150	0%	0	20%	0	0	n.a.	0
Meredith	73	71	0%	60	20%	12	17	n.a.	12
Middletown	1,734	298	0%	208	20%	42	48	n.a.	42
Roxbury	957	435	1%	104	20%	21	342	62	83
Sidney	0	218	1%	34	20%	7	0	n.a.	7
Walton	1,503	2,929	5%	889	20%	178	1,169	210	388
Ashland	362	1,676	10%	997	27%	269	17	n.a.	269
Hunter	3,251	2,891	5%	1,744	27%	471	0	n.a.	471
Jewett	652	2,014	6%	556	27%	150	0	n.a.	150
Lexington	362	375	1%	375	27%	101	0	n.a.	101
Windham	1,148	2,797	10%	1,429	27%	386	0	n.a.	386
Conesville	275	1,570	6%	449	25%	112	583	105	217
Olive	547	1,333	3%	243	25%	61	0	n.a.	61
Total	**14,285**	**26,709**		**10,497**		**2,491**	**6,611**	**1,175**	**3,666**

Taking into account the factors outlined above, there appear to be seven towns where elimination of the proposed hamlet expansions could have the greatest impact. The potential impact of the No Hamlet Expansion Alternative in each of these towns is discussed below.

Windham

Since development pressures have been stronger in Windham in recent years than in any other West-of-Hudson town, the demand for land within the proposed expansion areas during the next decade could potentially be strong. Much of Windham's recent development has tended to occur on small parcels in the proposed expansion area. If a significant portion of the land in the proposed expansion area were to be acquired under the Extended LAP, the result in some cases could be to shift new development away from the edge of the Town's core hamlets, and toward outlying areas in Windham. Other projects that might be feasible only in or near the Town's principal hamlets ranging from higher density housing to resort-related development could potentially not occur at all.

Hunter

The expansion of Hunter's designated areas would provide space to accommodate growth on the outskirts of the Villages of Hunter and Tannersville, and along a portion of Route 23A. More than *two*-thirds of the land in the expansion areas has already been solicited by NYCDEP. As in Windham, acquisition of any significant portion of the proposed expansion areas through the Extended LAP could result in some development projects shifting toward outlying areas of the Town – or in some projects that need a relatively close-in location not being undertaken at all.

Ashland

The impact of the No Hamlet Expansion Alternative could be particularly significant in Ashland, for several reasons. The proposed expansion areas represent a significant portion of the Town's total area; and about 60 percent of the land within the expansion areas has already been solicited by NYCDEP. The town has been one of the fastest-growing in the watershed during the past decade; acquisition of portions of the proposed expansion areas under the Extended LAP could, as in Hunter and Windham, shift some of the anticipated development to outlying areas.

Jewett

While somewhat less vulnerable than the three towns cited above, Jewett could also be affected by the elimination of the proposed hamlet expansion. The percentage of the Town's total area that would be included within the proposed expansion area is lower than in Windham or Ashland; and the percentage of land within the expansion area already solicited by NYCDEP is also lower. Thus, while the No Hamlet Expansion Alternative might result in some shifting of development from the expansion areas to outlying areas of the Town, such shifts would likely be less extensive in Jewett than in Windham, Hunter or Ashland.

Conesville

Because the hamlet areas originally designated by the Town are relatively small – totaling only 275 acres – expansion may be particularly important for providing room for further development in Conesville. The percentage of land within Conesville's expansion area already solicited by NYCDEP is 29 percent. The acreage which might be acquired by NYCDEP in this area (112 acres) and WAC easements could add another 105 acres to this total

Delhi

Delhi's proposed hamlet expansion is among the largest – both in acres and as a percentage of the Town's total area. The percentage of land within the area already solicited by NYCDEP is relatively low (40 percent). Nevertheless, the acreage that could potentially be acquired either in fee simple or through NYCDEP and WAC easements is substantial – a total of 325 acres, as shown in Table ES-13. Because there is relatively little land available for development within the Village of Delhi – Delaware County's largest village, the County seat, and the principal center of civic and commercial activity for much of the County – ensuring the availability of land for development beyond the originally-designated hamlet area may be important to the Town's future. It could be particularly important, for example, for the development of a supply of rental housing that is adequate to meet the needs of both SUNY students and full-time residents, and to the development of housing that is affordable for county, municipal, SUNY and other public employees.

Hamden

Past WAC easements in Hamden have removed land from potential development in and near the Town's existing designated hamlet areas. Under the No Hamlet Expansion Alternative, this problem could be aggravated by the potential acquisition of WAC easements on 185 additional acres, and additional 155 acres acquired by NYCDEP totaling 340 acres, within what would have been Hamden's proposed hamlet expansion area.

Harpersfield

Because the amount of land already solicited by NYCDEP in Harpersfield's proposed expansion area is relatively small, projected acquisitions in fee simple or through NYCDEP conservation within this area total only 74 acres. However, WAC easements could add 152 acres to this total, increasing the potential for conflict between future acquisitions the need for land to accommodate new development.

Kortright

The land projected to be acquired in fee simple or through conservation easements in Kortright under the Extended LAP includes only 5 percent of the Town's estimated supply of developable land as of 2009. At first glance, it might thus appear that the town does not need a major expansion of its designated hamlet area in order to ensure the availability of land to support future development. However, because of the remote location of the northern parts of Kortright, the southern portion of the Town may offer the best prospects for future development. It thus may be particularly important for Kortright to ensure the availability of land in the south, rather than shifting development into more remote areas.

Walton

Walton's proposed hamlet expansion totals 2,929 acres, making it one of the largest of the 16 proposed expansions. Roughly 30 percent of the land that would be covered by the proposed expansion has already been solicited by NYCDEP. Elimination of the proposed hamlet expansion could thus result in NYCDEP and WAC acquisition of more than 889 acres within the expansion area. In Chapter 3 it was projected that as of 2027 Walton would still have 79 percent of its 2009 supply of developable land remaining, after taking into account projected LAP acquisitions and projected residential development. While in the aggregate the Town's supply of developable land may be adequate, it is important to note that commercial and industrial activity in the town are heavily concentrated in and around the Village of Walton. Ensuring the availability of land in this area may thus be important to future development of the Town's economy.

Other Socioeconomic Conditions, Land Use and Community Character

Overall, elimination of the proposed hamlet expansions could have several negative effects on land use, socioeconomic conditions and community character in watershed towns. It could result in new development "leapfrogging" the proposed expansion areas, and shifting to locations further away from the existing hamlets and village centers. Because development in outlying locations is likely to be at lower densities, eliminating the proposed hamlet expansion could result in greater consumption of land for any given level of development. It could also increase the distance that residents need to travel for shopping and basic services with associated increased traffic, air and noise generation. The potential for development to leapfrog to outlying areas could reduce somewhat the Extended LAP's contribution to preserving the low density, rural character and high-quality natural environment that many residents of watershed towns wish to preserve.

Eliminating the proposed expansion would not support the ongoing efforts toward economic and community revitalization in the region's hamlets and village centers – a priority for many West-of-Hudson watershed towns. In some cases, acquisition of land or easements in these areas by NYCDEP or WAC could result in certain types of development (that which requires relatively close-to-town locations) not occurring at all. Examples of such development could include housing for older residents – other affordable housing – and higher-density residential development around ski centers. Any extensive acquisition of land or easements in these areas by either NYCDEP or WAC could also have the effect of precluding the expansion of existing commercial or industrial businesses – or the development and growth of new businesses – within the affected areas.

Implementation of the Extended LAP without the proposed hamlet expansions could thus potentially lead to a conflict within the hamlet expansion areas between the projected level of acquisitions under the Extended LAP and community character and economic development goals including the need for land to support affordable and higher density housing and commercial businesses which typically would occur in these areas as well as maintaining rural character and natural resources in outlying areas.

Water Quality and Natural Resources, Open Space

As discussed in *Water Quality and Natural Resources,* concentrating growth in designated areas is a principle of smart growth and a means of reducing sprawl and growth of impervious cover in sensitive areas of the watershed. Land Acquisition under the No Hamlet Alternative would still provide water quality benefits and open space benefits; however, development may occur in areas that are more sensitive to water quality, and the benefits of the Extended LAP may not be as fully realized.

Cultural Resources

Under the No Hamlet Expansion Alternative, the same protocol would be applied with respect to protecting and preserving historical and archaeological resources.