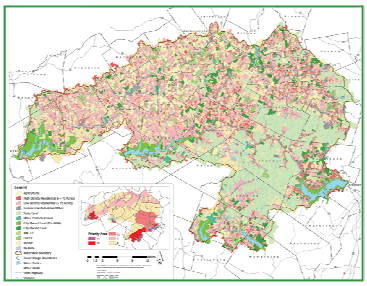

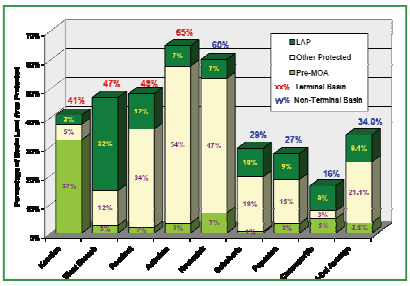

DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) THE EXTENDED NEW YORK CITY WATERSHED LAND ACQUISITION PROGRAM

CEQR No. 10DEP046U

June 1, 2010

PREPARED BY:
NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
CASWELL F. HOLLOWAY, COMMISSIONER

WITH SUPPORT FROM APPLESEED

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NYC Environmental Protection

New York City Watershed Land Acquisition Program
Draft Environmental Impact Statement
June 1, 2010

CEQR No: 10DEP046U

Lead Agency: New York City Department of Environmental Protection

Lead Agency Contact: Angela Licata
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Appleseed

Comments:

Public hearings will be scheduled to receive comments on the DEIS, anticipated to be scheduled for July 2010. The public hearing will provide an opportunity for the public to provide oral and written comments on the DEIS. The public comment period will remain open for an additional 10 days after the close of the public hearings. Notification of the public hearings will be sent to all parties receiving the Notice of Completion and will appear in regional and local newspapers at least 14 days before the hearing.

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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 through the year 2022; 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. The future program that would be covered under the new WSP is referred to herein as the "Extended LAP."

This Environmental Impact Statement (EIS) is being 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 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

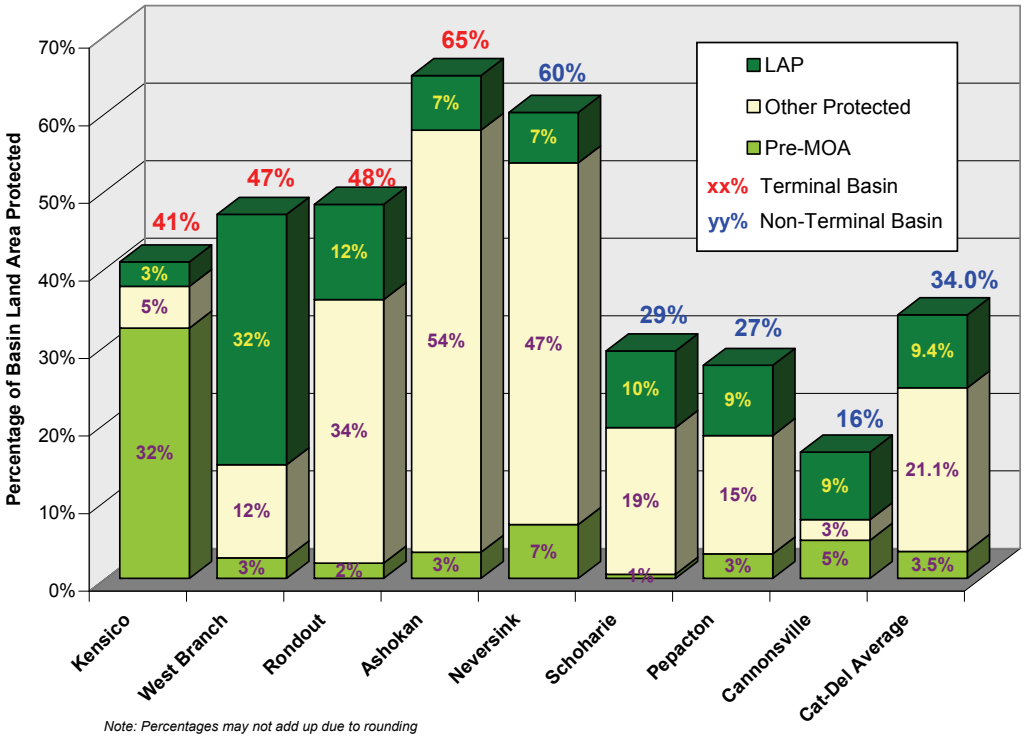
filtration through the development of a comprehensive Watershed Protection Plan for the Cat-Del System.

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



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. This Environmental Impact Statement (EIS) is being conducted in order 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 an emphasis on acquisitions in 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.

[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.

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**

EXTENDED LAND ACQUISITION PROGRAM FOR 2012-2022

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.

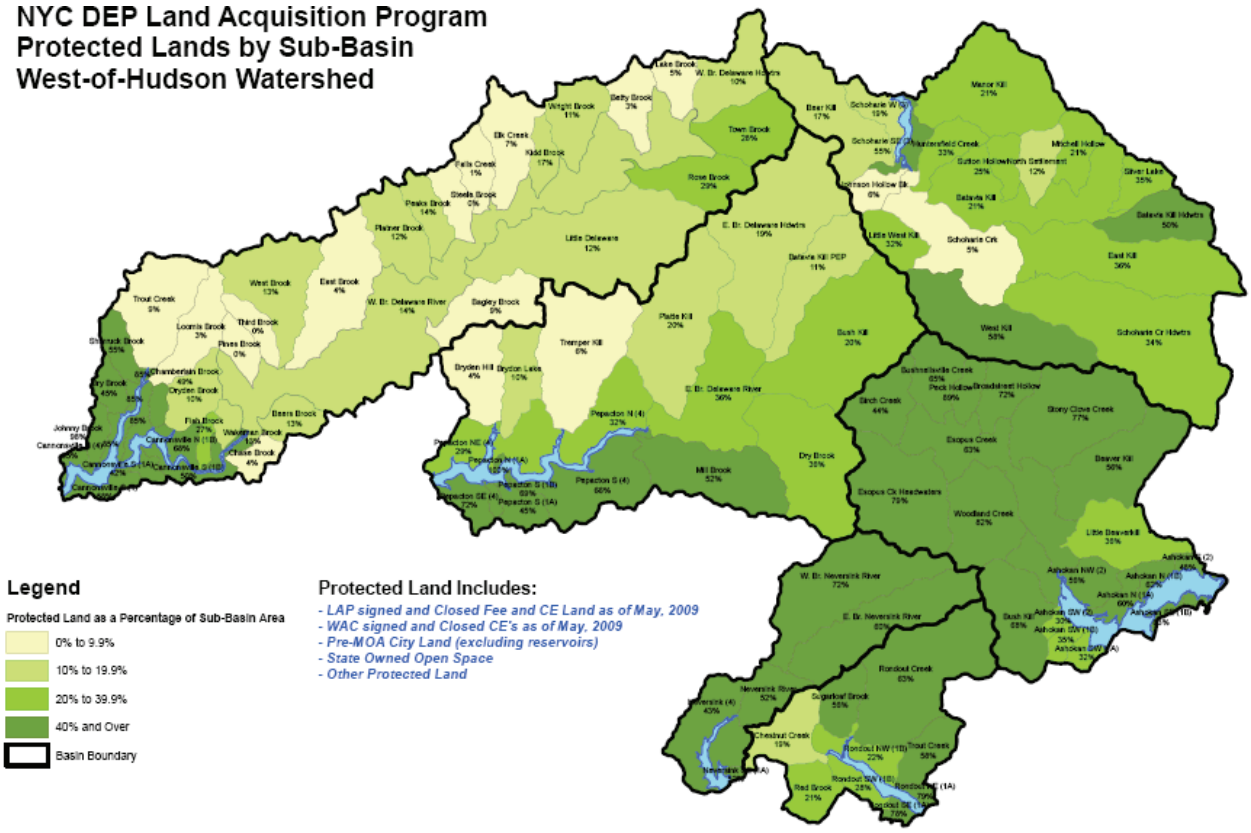
3. Contribution to Future Supply - The LAP Priority Areas emphasize travel time to distribution as a primary concern for water quality protection. The success of LAP to date in increasing protected lands in Priority Areas 1 and 2 allows additional factors going forward to prioritize future acquisitions 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 Currently Under Negotiation

As a result of ongoing negotiations between the City and watershed stakeholders, several components of the Extended LAP are under consideration. These potential changes have yet to be finalized. These components are discussed below, although it must be noted that the final form of the Water Supply Permit may include modified versions of these components or exclude some or all of them altogether. Because of this, the EIS considers a range of possible scenarios as described below.

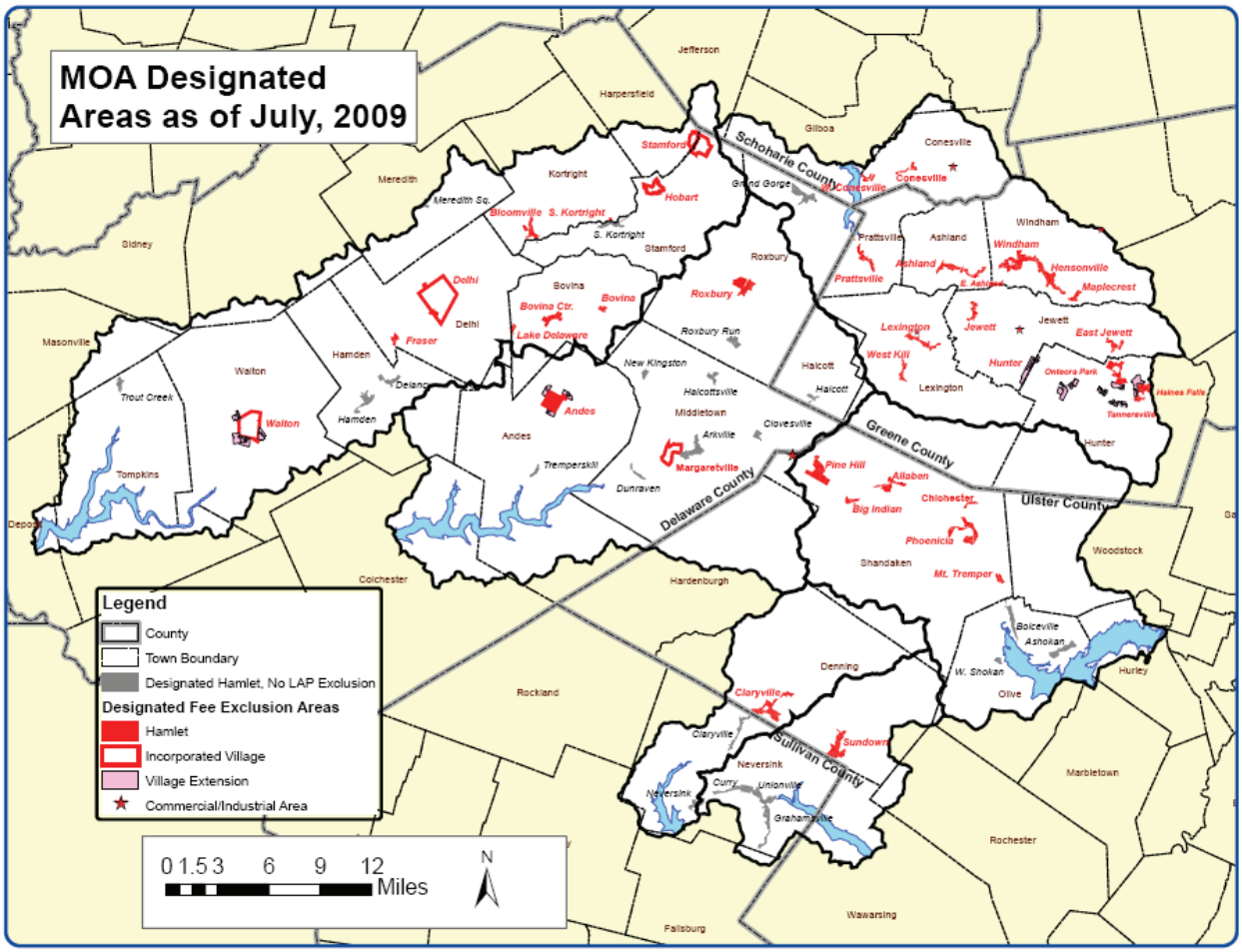
Hamlet Expansion Areas

Under the MOA, West-of-Hudson municipalities had the opportunity to identify Designated Areas, including villages, hamlets, village extension areas and industrial/commercial areas, and separately to determine, by resolution, whether to exclude the City's acquisition of property in through LAP in fee simple in these areas. The intent of the Designated Areas was to "…provide reasonable opportunities for growth in and around existing population centers." The designated hamlet areas are shown in Figure ES-3.

The City has engaged in ongoing negotiations with the Coalition of Watershed Towns (CWT), Delaware County, NYSDEC, and other stakeholders concerning proposed modifications of the 1997 Designated Areas. The ongoing negotiations have focused on the interest of some West-of-Hudson towns in expanding the geographic extent the Designated Areas beyond those delineated in 1997. The stakeholders have also discussed changes to the rules pertaining to LAP acquisition in the Designated Areas. In particular, in 2008, the CWT requested and the City tentatively agreed that each WOH town could identify additional "Expansion Areas" for future growth. The stakeholders have 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 have tentatively agreed, subject to acceptance by the regulatory agencies, that municipalities could elect to make both the current designated hamlet areas and these Expansion Areas off limits to all LAP acquisitions (including City and WAC conservation easements), not just to fee simple purchases as was previously the case.

To date, seventeen watershed towns have proposed Expansion Areas totaling about 27,500 acres (See Table ES-2). The City, together with the State, EPA, and several environmental groups have worked diligently with the CWT, the watershed counties, and individual towns to balance community concerns over opportunities for future development with water quality protection needs in determining the appropriate scope of each town's proposal. Currently the stakeholders have agreed on Expansion Areas for sixteen towns which have proposed 24,180 acres, while discussion is continuing on one town, Walton, whose current proposal is for 3,269 acres. If the hamlets are

Figure ES-3: Existing Designated Hamlets



expanded as proposed, and all of the affected municipalities elect to preclude LAP acquisition in them, approximately 16,460 acres of previously solicited lands would no longer be eligible for acquisition.

Because the expanded hamlet boundaries have been largely resolved with input from the CWT and the individual towns, they are included in the Proposed Action. However, since agreement has not been reached with the stakeholders, including NYSDEC, on the all the Extended LAP elements, there is a possibility that these expanded areas will not be part of the Extended LAP. Therefore, for purposes of the DEIS, 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

NYC DEP Land Acquisition Program

Status of Town Hamlet Expansion Area Proposals as of March 10, 2010

Status of Expansion Proposal	Town	Town Watershed Acres	Existing Designated Area	2008 Proposed Expansion Area	Previous Revised Town Proposal	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 (16 towns)	Meredith	15,395	73	105		71
	Masonville	8,311	n.a.	150		150
	Sidney	601	n.a.	219		219
	Middletown	62,244	1,734	296		296
	Lexington	51,274	362	375		375
	Roxbury	56,051	957	443		440
	Harpersfield	7,076	405	1,331		1,295
	Olive	29,252	547	3,303	2,431	1,333
	Conesville	21,590	275		4,290	1,566
	Ashland	15,987	362	4,004	1,985	1,684
	Jewett	32,087	652	4,769	2,304	2,015
	Hamden	33,517	420	4,958	2,613	2,439
	Delhi	41,343	2,346	4,450	3,422	2,759
	Hunter	43,174	3,251	4,460	3,529	2,891
	Windham	28,986	1,148	13,458	3,606	2,794
	Kortright	25,047	250	7,913	6,377	3,853
	Sub-Total		**12,782**	**50,234**		**24,180**
Town Proposal Questioned by One of more Parties (1 town)	Walton	55,991	1,503	11,194	3,887	3,269
	Sub-Total		**1,503**	**11,194**		**3,269**

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 of the date of issuance of this DEIS, the following thresholds for the Natural Features Criteria are under consideration:

The City would not acquire properties in Priority Areas 2, 3, and 4 unless as of the time of the acquisition, the property meets either one of the following conditions:

a) The property is adjacent to land owned by or under contract to be acquired by the City or owned by the State; or

b) The natural features on the property meet one or both of the following criteria under negotiation: [1]
    - At least seven percent (7%) of the property exhibits surface water features, or
    - At least fifty percent (50%) of the property exhibits slopes greater than 15 percent.

The determination of whether the 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. These modifications would remove lands from eligibility for future solicitation. This would focus acquisitions on those lands most sensitive for water quality. Table ES-3 shows the impact of the proposed hamlet Expansion Areas (PEAs) and changes to the Natural Features Criteria on the pool of solicited lands. The proposed Expansion Areas could remove about 15,000 acres from solicitation, and the proposed thresholds for Natural Features Criteria could remove another 12,600 acres.

Although the PEAs, MOAs and NFC thresholds would remove about 30,000 acres of solicited land, there would still be a very large universe, about 350,000 acres, for NYCDEP to draw from for its acquisitions in the West-of-Hudson watershed. Therefore, NYCDEP doesn't consider these new criteria to be a constraint on the total number of acres it will acquire, but rather that they will focus acquisitions on more sensitive areas.

[1] There are a few other percentages also under consideration.

Because agreement has not been reached on the Natural Features Criteria thresholds, for purposes of the DEIS, the current criteria were analyzed. This approach is conservative for purposes of the socioeconomic impact analysis because the new criteria under consideration will minimize any adverse socioeconomic effects by reducing the types of land the City can acquire. For the water quality analysis, the land acquisition program results in beneficial impacts with or without modifications to the Natural Features Criteria; the differences in beneficial effects among the different criteria will be qualitatively discussed.

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 tentatively agreed to implement a three-year Pilot Program in which the City would allocate up to Five Million Dollars ($5,000,000) of the funds currently committed to the LAP to a pilot program for acquiring Riparian Buffers in easement or fee. As currently envisioned, the City-funded Riparian Buffer Pilot Program (RBP Program) 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.

Use of Water Supply Lands

NYCDEP allows recreation, forestry, mining, and low intensity cultivation 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 public safety.

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.

Projection of Possible Future Land Acquisition By County

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-4 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-4: 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-4, 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.

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 issued on April 30, 2010, finalizing the scope of analysis for the DEIS based on comments received. Based on the Final Scope of Work, this DEIS was prepared and certified as complete. The DEIS is being circulated for public review and public hearings will be scheduled with a period for submitting written comments on the DEIS. This will be followed by preparation and circulation of the Final EIS (FEIS), which will include written responses to address public comments made on the DEIS.

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.

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 2022 – it is possible that the extension of LAP would slightly reduce the 17 percent 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*, in the year 2022, with the projected land acquisition under the proposed action, 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 2022. 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 34percent of total land area. Additional acquisitions under LAP will continue to contribute to protection of the natural environment of watershed communities. In recent discussions with NYCDEP, the Coalition of Watershed Towns (CWT) has proposed to modify LAP's "Natural Features Criteria" (NFC) as described in *Project Description*.

This change would probably not affect the total acreage to be acquired by NYCDEP through 2022 and 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 will increase the total acreage open to public recreational use by more than 40,000 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 2022.

With or without LAP, the region's agricultural sector, as noted in Part One, faces 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 between now and 2022 enhance the viability of farming in the region, including shifts to more profitable forms of agriculture, rising transportation costs, 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 21,311 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 27,500 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 49,000

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 through 2022. 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, NYCDEP is projected to 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. This represents an increase of less than 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 23.3 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 through 2022 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 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. More detailed town level assessments were conducted for towns with the highest level of potential impacts.

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-5, 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-5 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.

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 – either between now and 2022 or afterward. During the next twelve 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.

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-5) 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-5, 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-5 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-5: 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-6 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: 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%

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.

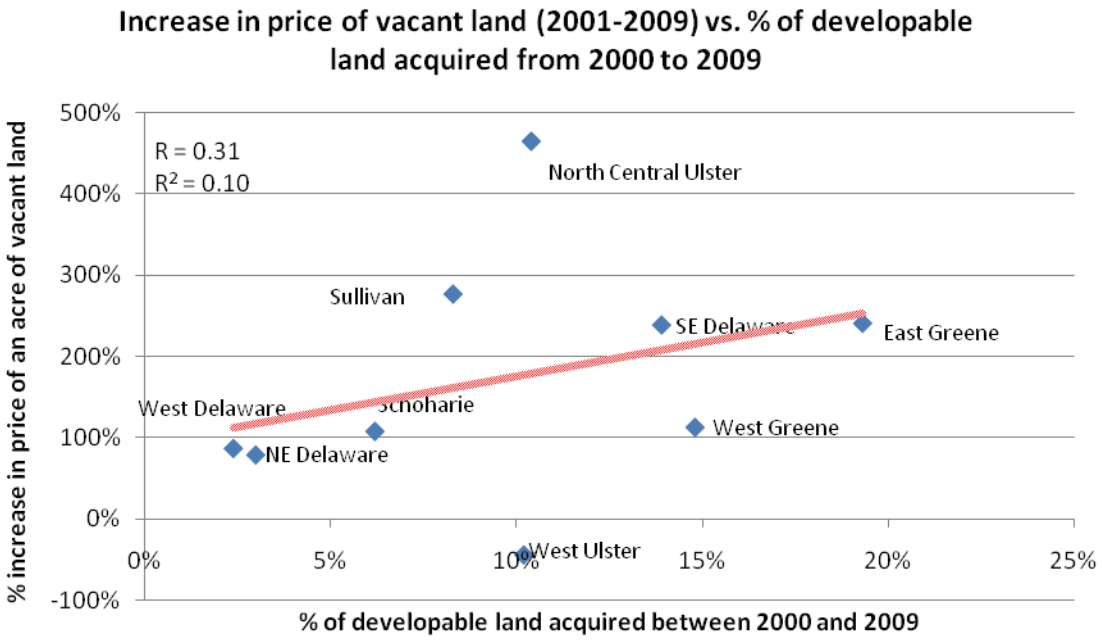
Table ES-8: Median sales price per acre on arms-length sales of vacant parcels of more than ten acres, by town group[3]

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.

[3] 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)

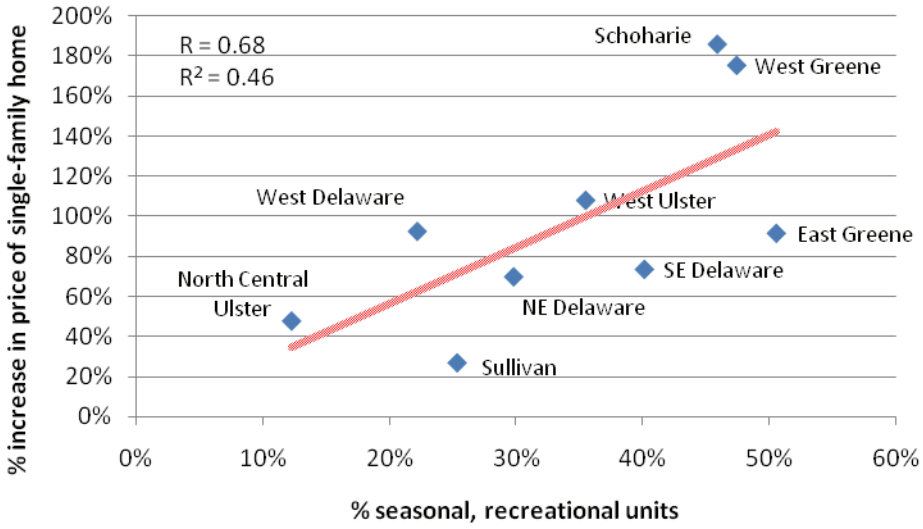
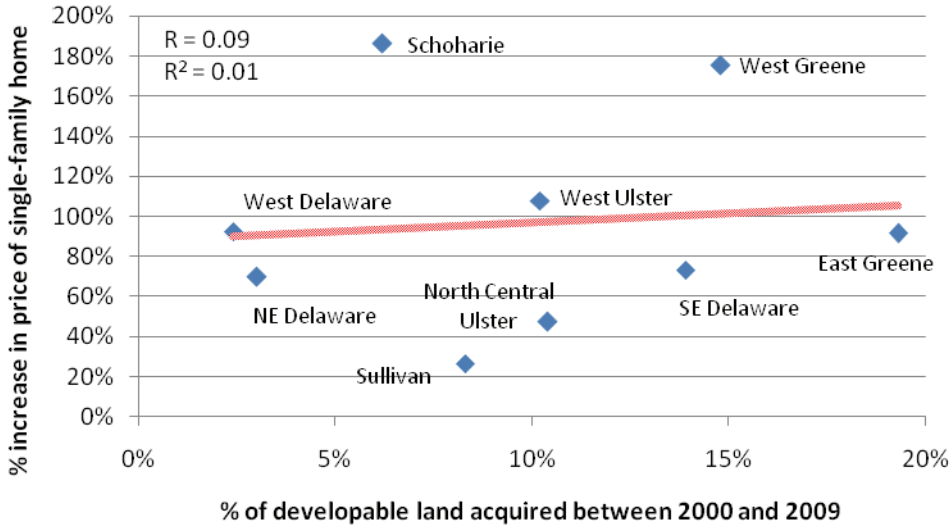


Figure ES-5: Increase in the price of single-family homes vs. LAP acquisitions as a %'ge of developable land



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 2022, 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.

Overall, 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 2022.

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		
Conesville	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.[4]

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.

[4] 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 DEP – 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.[5] 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.

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[5] 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.[6] 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.

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.[7] 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 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.

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

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

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.[8]

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

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

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.[9]

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[10]."

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 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 through 2022, 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

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

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

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;[11] 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 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.

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

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 49,000 acres. NYCDEP estimates that the expanded hamlet areas contain approximately 15,012 acres that NYCDEP had previously solicited, but would henceforth agree not to acquire should the towns elect to preclude these acquisitions.

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, NYCDEP is considering changing the 20-year limitation from date of acquisition on challenging tax assessments to a 30-year limitation subject to the successful conclusion of 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.[12]

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 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 2022 will similarly be neutral.

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

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 2022, 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 2022 and 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.

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 2022 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 2022 are likely to be substantially less than the historic pattern of activity.

Impacts on Supply of Developable Land

Between 2010 and 2022 NYCDEP currently 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.

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

Table ES-12: 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.[13] 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-12 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

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

[13] 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 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-12 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-12, 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-12, 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-12 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.

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 1,517 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 1,517 acres NYCDEP expects to acquire between 2010 and 2022 is only 17.5 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 2022 is only 17.5 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 through 2022 under the Extended LAP – which represent only 0.6 percent of all East-of-Hudson watershed land, and only 1.5 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 19 towns based on the selection criteria above. 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 tripling 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 more than 2,900 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 2,667 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 236 acres, to a total of 2,030 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 2,859 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 5,105 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 1,841 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.

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 any of the Natural Features Criteria scenarios being considered. 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 Pilot 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,[14] 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 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.

[14] New York State Open Space Plan. 2009

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 May 15, 2009 (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.[15]

[15] 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.

- 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.[16]

- 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 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.

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

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 Greater-Impact Alternative, in which the amount of land projected to be acquired under the Extended LAP in fee simple and through conservation easements is 10 percent greater than estimated in the reasonable worst case scenario evaluated for the Proposed Action; and the authorization for the program is extended through 2027;

- 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 reasonable worst-case 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.

GREATER IMPACT ALTERNATIVE

Reasonable worst case estimates of the amount of land to be acquired under the Extended LAP are provided in *Project Description* above. The analysis in this alternative assumes that NYCDEP would acquire an additional 10 percent above those reasonable worst case projections. 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 reasonable worst case scenario. Purchases of farm easements by the Watershed Agricultural Council from 2010 through 2027 are not expected to exceed the level projected as the reasonable worst case scenario – 16,000 acres.

This alternative is considered to be an extremely conservative (i.e. high impact) estimate of land to be acquired under the Extended LAP. The proposed action scenario described in *Project Description* uses very conservative assumptions to estimate the amount of land to be acquired under the Extended LAP. It is highly unlikely that, even under a 5-year renewal of the Water Supply Permit, additional land would be acquired beyond the levels analyzed under the proposed action. Nevertheless, NYCDEP is providing the following analysis that examines acquisitions of 10 percent more land.

Socioeconomic Conditions - West-of-Hudson

Impacts on Supply of Developable Land

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. 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. (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.) Overall, the Greater Impact Alternative 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 66 percent under the proposed action. Due to the very conservative nature of the analysis, which represents more than a reasonable worst case scenario, the percentage of developable land remaining in 2027 is likely to be higher.

In some towns – including Olive, Windham, Lexington, Conesville and Neversink – the estimates of developable land remaining in 2027 are significantly lower than those for 2022 that are presented in *Socioeconomic Conditions*. In most cases, however, this is primarily a result of projecting through 2027 the relatively high rates of residential development used to estimate the land required to support new development through 2022. 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.

For the region as a whole, the analysis strongly suggests that the projected level of acquisitions by NYCDEP under this Greater Impact Alternative will not significantly constrain the amount of new development in the West-of-Hudson watershed – either between now and 2027 or afterward. As with the proposed action, it would preserve sensitive natural lands, while keeping future development in hamlet and expanded areas where much of it currently occurs.

Sixteen towns met the criteria for detailed level review. All but one of these towns – Woodstock – is among the towns for which individual town-level assessments were presented above. In the remaining 17 towns, the percentage of the town's 2009 supply of developable land that would still remain in 2027 ranges from 73 to 94 percent.

In Woodstock, the Greater Impact Alternative would increase the percentage of the Town's 2009 supply that could be acquired under LAP from 12.4 percent as of 2022 to 13.7 percent as of 2027; and developable land needed to support projected residential development would increase from 7.0 percent of the 2009 supply of such land in 2022 to 10.0 percent in 2027. However, any potential for conflict between LAP acquisitions and the need for land for new development would be quite limited, since LAP acquisitions would take place entirely within the much less developed western half of the Town (that is, within the watershed), while new development is most likely to occur in the eastern (non-watershed) portion of the Town, in and near the hamlets of Woodstock, Bearsville and Zena.

In some towns, particularly those with mountainous terrain or other natural features not easily developed, or that include large areas of land already protected by New York State or New York City, or that are already highly developed, the supply of developable land may already 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. Under this alternative, there are 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.

The towns include several that are developed at low densities – including Denning, Hardenburgh, Halcott and Prattsville – where, given the projected rate of new development, the limited supply of developable land is unlikely to be a significant constraint on development between 2022 and 2027. Shandaken appears to be the only case where a very limited supply of developable land could potentially lead to a conflict between the projected level of acquisitions under the Extended LAP and the need for land to accommodate new development. However, NYCDEP and the Town have agreed on a change in the way LAP operates in Shandaken that should substantially reduce the potential for conflict. Under this agreement, LAP would no longer actively solicit individual landowners in Shandaken, but would instead only pursue properties of interest whose owners initiate negotiations with NYCDEP.

There may also be some potential for conflict in Windham – not because the supply of land is relatively limited, but because the demand for land for development has been strong during the past decade, and could be in the future. A 10 percent increase in projected acquisitions under the Extended LAP would increase somewhat the potential for conflict. In this case, any potential conflict between the Extended LAP and the need for land to accommodate future development could be alleviated by the proposed near-quadrupling of the Town's designated hamlet areas, to a total of 3,942 acres.

Other Socioeconomic Conditions, Land Use and Community Character

Beyond its impact on the supply of developable land, any incremental effect of the Greater Impact Alternative on socioeconomic conditions in West-of-Hudson watershed towns – over and

above the effects of the proposed action– are likely to be minimal. An increase of 10 percent in the acreage to be acquired under the Extended LAP would be unlikely to have a significant impact on land prices, over and above those cited for the proposed action. Relative to the very limited effects of the Extended LAP on specific industries that were cited in *Socioeconomic Conditions* above, extending the program through 2027 and increasing the acreage to be acquired by 10 percent would have at most a very minor impact. The Extended LAP would have no significant impact on local government revenues between 2010 and 2022; extending the program through 2027 and increasing the amount of land to be acquired by 10 percent would not change this result.

On the positive side, a 10 percent increase in the land to be acquired is likely to result in a commensurate increase in the areas opened for public recreational use, which could increase LAP's value as an amenity for local residents, and could potentially attract additional visitors.

Extending LAP through 2027 and increasing the land projected to be acquired by 10 percent is unlikely to have any substantial impact on the character of watershed communities, apart from additionally protecting that character. It would increase slightly the amount of protected land in watershed towns – thus helping to maintain the low-density, rural character that is typical of most of these towns, and helping to protect the natural environment that is highly valued by many residents. And as noted above, a 10 percent increase in the land to be acquired could also increase the areas open for public recreation – which is also an amenity valued by many residents.

Any potential conflict between additional acquisitions and the towns' economic development goals could be alleviated by the proposed expansion of designated hamlet areas – a topic further discussed in the last section below.

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 very limited – primarily because the amount of land projected to be acquired in the East-of-Hudson region totals only 1,517 acres, spread across four towns. The impact of increasing by 10 percent the total acreage to be acquired is small in both relative and absolute terms. Under the Greater Impact Alternative, projected acquisitions by NYCDP 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 in So*cioeconomic Conditions* for the proposed action to 8,376 – but this change is due almost entirely to the additional residential development that is projected to occur between 2022 and 2027.

Water Quality and Natural Resources, Open Space

LAP provides benefits to water quality, natural resources and open space. If NYCDEP acquires 10 percent more land than what was projected under the proposed action, more benefits may be realized in terms of protecting water quality, natural resources, and preserving open space.

Cultural Resources

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

LESSER IMPACT ALTERNATIVE

This section discusses the potential impacts of an action in which NYCDEP acquires 10 percent less land than was projected for the proposed action. 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 reasonable worst-case 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 Proposed Action's reasonable worst case 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; but as discussed in the Greater Impact Alternative analysis, 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 proposed action 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 proposed action, 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 27,449 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[17] 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.

[17] 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	2,759	7%	1,112	20%	222	818	147	369
Hamden	420	2,439	6%	834	20%	167	1,027	185	352
Harpersfield	405	1,295	5%	369	20%	74	847	152	226
Kortright	250	3,853	10%	1,779	20%	356	1,743	314	670
Masonville	0	150	0%	0	20%	0	0	0	0
Meredith	73	71	0%	60	20%	12	17	0	12
Middletown	1,734	296	0%	208	20%	42	48	0	42
Roxbury	957	440	1%	104	20%	21	342	62	83
Sidney	0	219	1%	34	20%	7	0	0	7
Ashland	362	1,684	11%	1,080	27%	292	17	0	292
Hunter	3,251	2,891	5%	1,912	27%	516	0	0	516
Jewett	652	2,015	6%	1,177	27%	318	0	0	318
Lexington	362	375	1%	375	27%	101	0	0	101
Windham	1,148	2,794	10%	1,886	27%	509	0	0	509
Conesville	275	1,566	6%	1,113	25%	278	583	105	383
Olive	547	1,333	3%	381	25%	95	0	0	95
Total	**12,782**	**24,180**		**12,424**		**3,010**	**5,442**	**965**	**3,975**
Walton	1,503	3,269	5%	2,588	20%	518	1,169	210	728

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 more than 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. Moreover, the percentage of land within Conesville's expansion area already solicited by NYCDEP – 71 percent – is among the highest in the 16 towns with proposed hamlet expansions. The acreage acquired by NYCDEP in this area could thus be substantial (278 acres) and as noted in Table ES-13, 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 369 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 acquisitions by NYCDEP totaling 167 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 (which is still under discussion with NYCDEP, the regulatory agencies and other stakeholders) totals 3,269 acres, making it one of the largest of the 16 proposed expansions. More than 79 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 700 acres within the expansion area. In *Socioeconomic Conditions*, it was projected that as of 2022 Walton would still have 82 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.

CHAPTER 1:

PROJECT DESCRIPTION

INTRODUCTION AND BACKGROUND

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 through the year 2022; 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. The future program that would be covered under the new WSP is referred to herein as the "Extended LAP."

The goal of the New York City Department of Environmental Protection (NYCDEP) 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 continue to provide high quality drinking water without filtration of the Catskill-Delaware (Cat-Del) System,[1] which provides water to over 9 million residents of the City and nearby communities in New York State. 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.

This Environmental Impact Statement (EIS) is being 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 Cat-Del System.

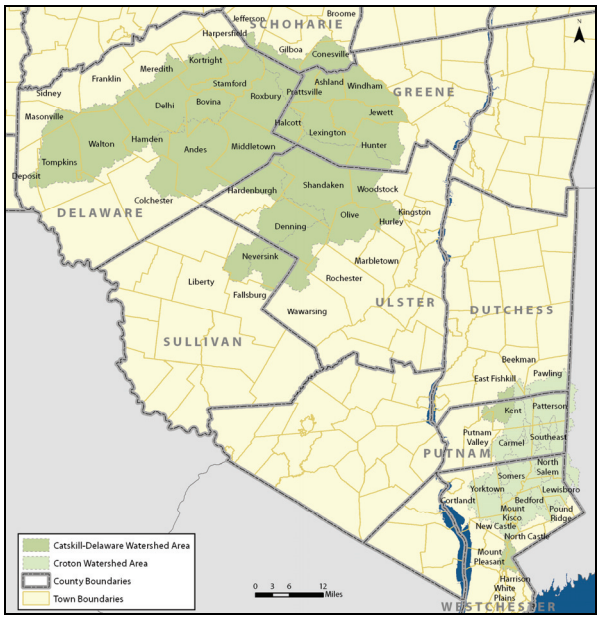
OVERVIEW OF THE NEW YORK CITY WATER SUPPLY SYSTEM

The New York City water supply system supplies drinking water to almost half the population of the State of New York—eight million people in New York City and one million people in Westchester, Putnam, Orange, and Ulster Counties—plus the millions of commuters and tourists who visit the City throughout the year. The source of this superior water is a network of 19 reservoirs and three controlled lakes in a 1,969 square mile watershed that extends 125 miles to the north and west of New York City. Overall, the system has a total storage capacity of approximately 550 billion gallons. Consumption in the year 2000 averaged 1.2 billion gallons a

[1] Although the Catskill watershed and Delaware watershed are distinct geographical features, they are functionally managed together and for regulatory purposes are considered a single integrated system.

day. The Croton system, the City's first upstate water supply, provides about 10% of the daily consumption. The other 90% comes from the Cat-Del system (see Figure 1-1).

Figure 1-1- Map of Catskill/Delaware and Croton Watersheds



The Catskill system consists of two reservoirs—Schoharie and Ashokan—located west of the Hudson River in Ulster, Schoharie, Delaware, and Greene Counties. Water leaves the Schoharie Reservoir via the 18-mile Shandaken Tunnel, which empties into the Esopus Creek and then travels 22 miles through the Esopus to the Ashokan Reservoir. Water leaves Ashokan Reservoir via the 75-mile-long Catskill Aqueduct, which travels to the Kensico Reservoir in Westchester County. The Catskill system provides, on average, 40% of the City's daily water supply.

The Delaware system is comprised of four reservoirs west of the Hudson River: Cannonsville, Pepacton, and Neversink in the Delaware River basin, and Rondout in the Hudson River basin. The outflow from the first three reservoirs arrives in the Rondout via three separate tunnels; water then leaves Rondout and travels to West Branch Reservoir in Putnam County via the 90-mile Rondout/West Branch Tunnel. Water from West Branch then flows through the Delaware Aqueduct to the Kensico Reservoir. The Delaware system provides 50% of the City's daily demand. Because waters from the Catskill and Delaware watershed are commingled at Kensico Reservoir, they are frequently referred to as one system: the Catskill/Delaware system.

The Croton watershed is located entirely east of the Hudson River in Westchester, Putnam, and Dutchess Counties, with a small portion in the State of Connecticut. Historically, 10 percent of the City's average daily water demand is provided by the Croton system, although in times of drought it may supply significantly more water. The City is in process of constructing a water treatment plant to filter the Croton water supply. It should be noted that the Croton Falls and Cross River Reservoirs, although located in the Croton System, can provide water to the Delaware Aqueduct during periods of drought and would thus be considered part of the Cat-Del System under those conditions and consequently part of the 2002 FAD.

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

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 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. This Environmental Impact Statement (EIS) is being conducted in order 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 an emphasis on acquisitions in 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 1-1.[2] For the purposes of the DEIS, July 2009 data referenced in the September 2009 Long-Term Plan, will serve as the baseline for analysis.

Table 1-1

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**

[2] 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.

In addition to the lands solicited and acquired directly by the City (as shown in Table 1-1), 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.

REAL ESTATE METHODS AND PROCEDURES

LAP utilizes a number of methods and procedures that were devised early in the program's development and are guided by the principles and restrictions set forth in the MOA and WSP. These methods and procedures govern the way the City contacts landowners, how appraisals are conducted, the real property rights to be acquired, provisions for public recreational access on lands acquired in fee simple, and how the City pays property taxes on property rights acquired. The City has a strong record of compliance with its MOA, FAD and WSP obligations. The key components of such compliance are as follows:

Willing Buyer / Willing Seller (MOA Paragraph 60/ 1997 WSP ¶ 5)

Landowners and the City must both enter into a proposed transaction on a strictly voluntary basis. Landowners are under no obligation to sell until and unless they sign a contract of sale.

Fair Market Value (MOA 61/ 1997 WSP ¶ 13)

Land and easements are appraised at fair market value by independent, certified NY State Appraisers commissioned by the City. Landowners have the right to present their own appraisals, made by certified appraisers, which must be considered by the City's appraiser. The City's offer, however, is the value determined by its appraisal, after consideration of any such alternate appraisal. That is, the City does not negotiate price with landowners, but rather makes an offer of the appraised amount, which the landowner is free to accept or reject. Only under very limited circumstances (mortgage or tax foreclosure, legal judgment) can the City acquire land at below fair market value.

Solicitation (MOA 60, 64, 65 and Attachment Z)

The City's obligation to diligently pursue acquisition is defined in Attachment Z of the MOA. Although the City retains the flexibility to decline to appraise a property upon inspection, the City is obligated (except in very limited circumstances and subject to regulator approval) to pursue acquisition once an appraisal is ordered. Since 1997 under the MOA (and since 2002 pursuant to the FAD), the City has been required to meet a series of annual targets for landowner solicitation and resolicitation. Hereafter, the term "solicitation" includes both "original solicitation" in which the City makes the initial outreach to pursue acquisition of a property, and "re-solicitation," in which the City makes subsequent attempts to contact the same or subsequent landowner of a given property, after being unable to make contact or reach agreement at the point of original solicitation.

Rights Acquired

Through LAP the City can acquire, or fund the acquisition of, three distinct types of property interests:

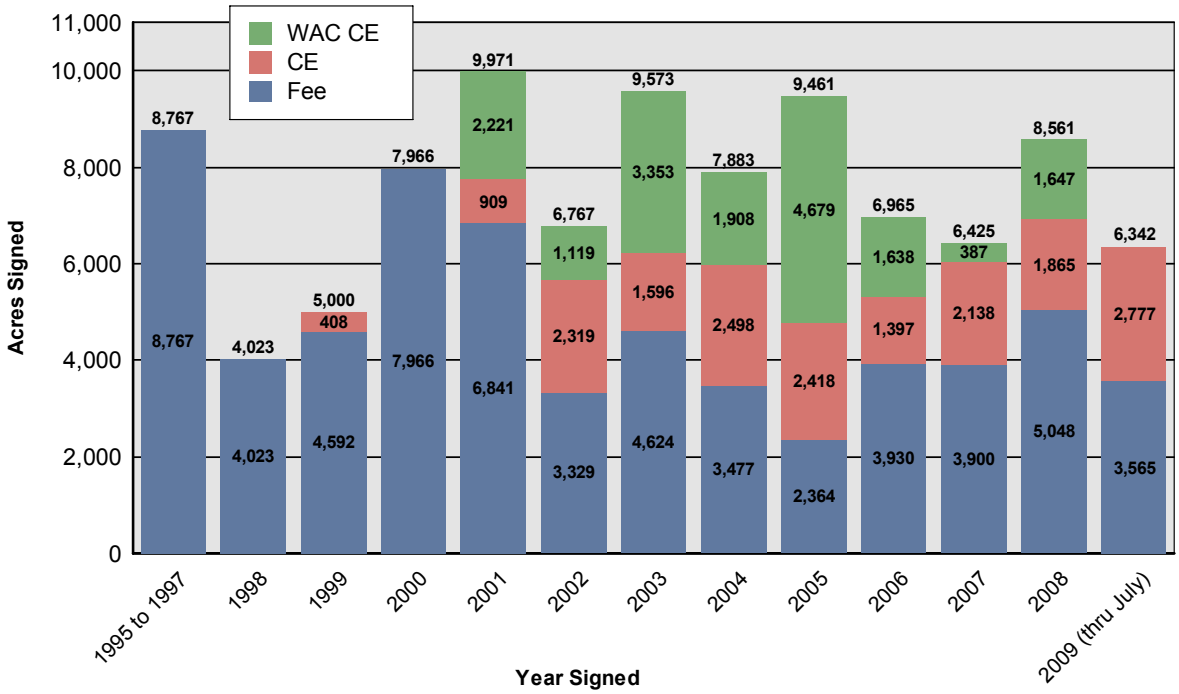
Fee Simple – The City acquires land outright. This is the City's preferred acquisition method. Fee simple acquisition results in the highest level of management, allows the City to consider recreational, natural resource management and other uses on the property acquired, and makes the most efficient use of City staff resources.

Watershed Conservation Easements – In cases where landowners want to retain ownership and exclusive use of their land, conservation easements ("CEs") allow protection through the acquisition of perpetual deeded rights. Although initial acquisition costs are lower than for fee simple purchases, CEs involve significantly higher long-term costs for monitoring and potential enforcement of deed provisions. CE purchases are pursued on larger properties whose owners are not interested in selling fee simple interest.

Watershed Agricultural Easements **–** The City also funds the acquisition of CEs on farms by the Watershed Agricultural Council (WAC). These CEs, which involve the farmer's implementation of a Whole Farm Plan that governs best management practices for agricultural uses, allow for a diversity of farm-related uses but preclude most other types of development.

A summary of acres acquired by Real Estate type and year is shown in Figure 1- 2 below.

Figure 1-2-Acres Acquired by Real Estate Type and Year



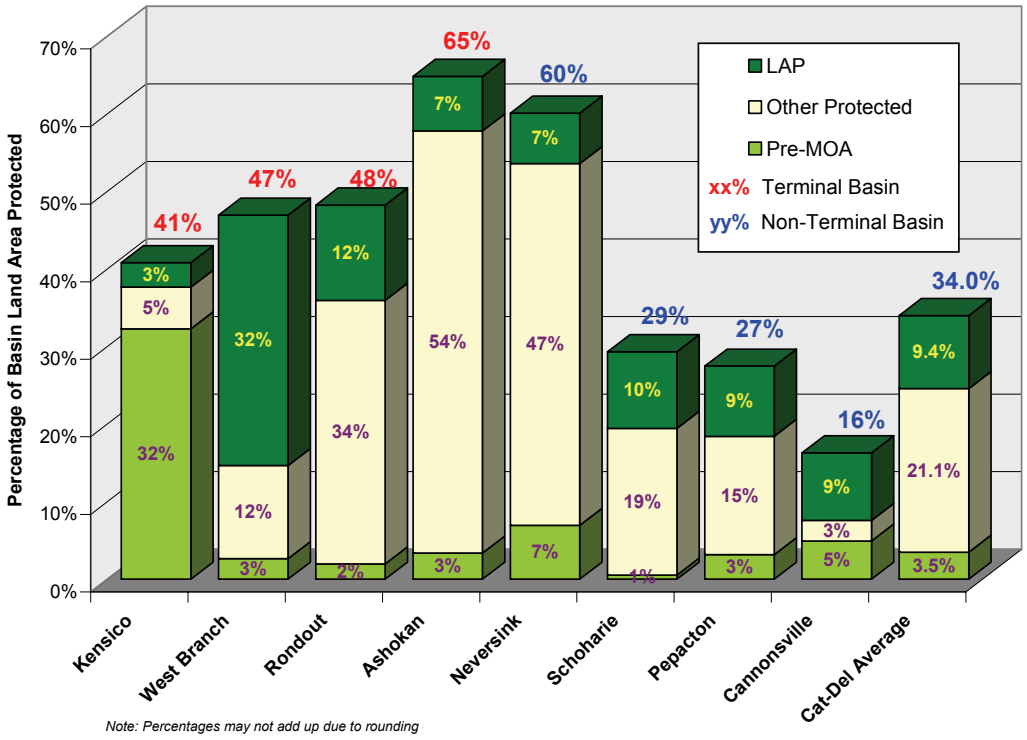
Property Taxes (MOA 79 and 80/ WSP ¶ 18-20)

The City pays property taxes on all land and CEs acquired under LAP, including any lands under watershed agricultural CEs that are not agriculturally-exempt. The City pays taxes on eased properties in proportion to the value of the easement acquired as set forth in NYS Real Property Tax Law. Under the MOA, the City has committed not to challenge tax assessments on such lands absent specified circumstances not anticipated to occur.

PLANNING PRINCIPLES

The Cat-Del watershed spans just over 1 million acres draining into nine reservoirs in eight upstate counties. Figure 1-3 shows protected land as a percentage of land area by basin.

Figure 1-3: Protected Land as a Percentage of Basin Land Area



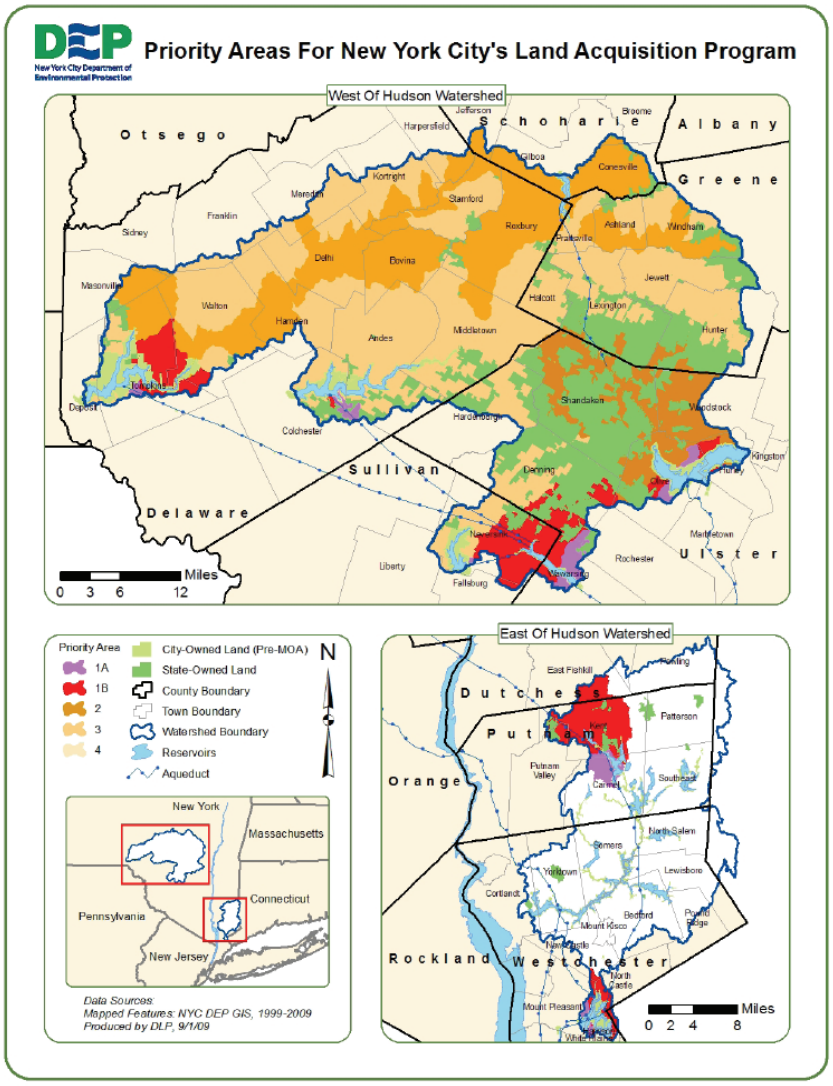
The identification of the most important parcels for acquisition within this vast watershed is an ongoing process based on a number of geographic, topographic, cost and real estate factors. LAP first prioritizes property for solicitation on the basis of its location within the water supply system, followed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

Priority Areas

The basins and sub-basins comprising the Cat-Del System were assigned to Priority Areas (as depicted in Figure 1-4) as follows:

- ***Priority 1A*** – Sub-basins within 60-day travel time to distribution located near reservoir intakes;
- ***Priority 1B*** – All other sub-basins within 60-day travel time to distribution;
- ***Priority 2*** – All remaining sub-basins in terminal reservoir basins;
- ***Priority 3*** – Sub-basins in non-terminal reservoir basins with existing water quality problems; and
- ***Priority 4*** – All other sub-basins in non-terminal reservoir basins.

Figure 1-4: Cat Del System Priority Areas



The MOA required that the City solicit at least 355,050 acres in accordance with a schedule that reflected LAP's priorities both in timing (higher priority areas were solicited first) and in percentage of eligible lands solicited (ranging from 95 percent of eligible lands in Priority 1A and 1B to 50 percent of eligible lands in Priority 4).

Following the new funding commitments contained in the 2007 FAD, the City's 2008 to 2010 Solicitation Plan called for an additional 90,000 acres of new solicitation. These additional acres were solicited primarily in Priority Areas 3 and 4 (since Priority 1 and 2 had already been almost entirely solicited), effectively raising the level of solicitation in those Priority Areas above the minimum levels specified in the MOA.

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.) LAP uses the NYCDEP Geographic Information System (GIS) to overlay these features onto digitized tax parcels as part of the parcel evaluation process.

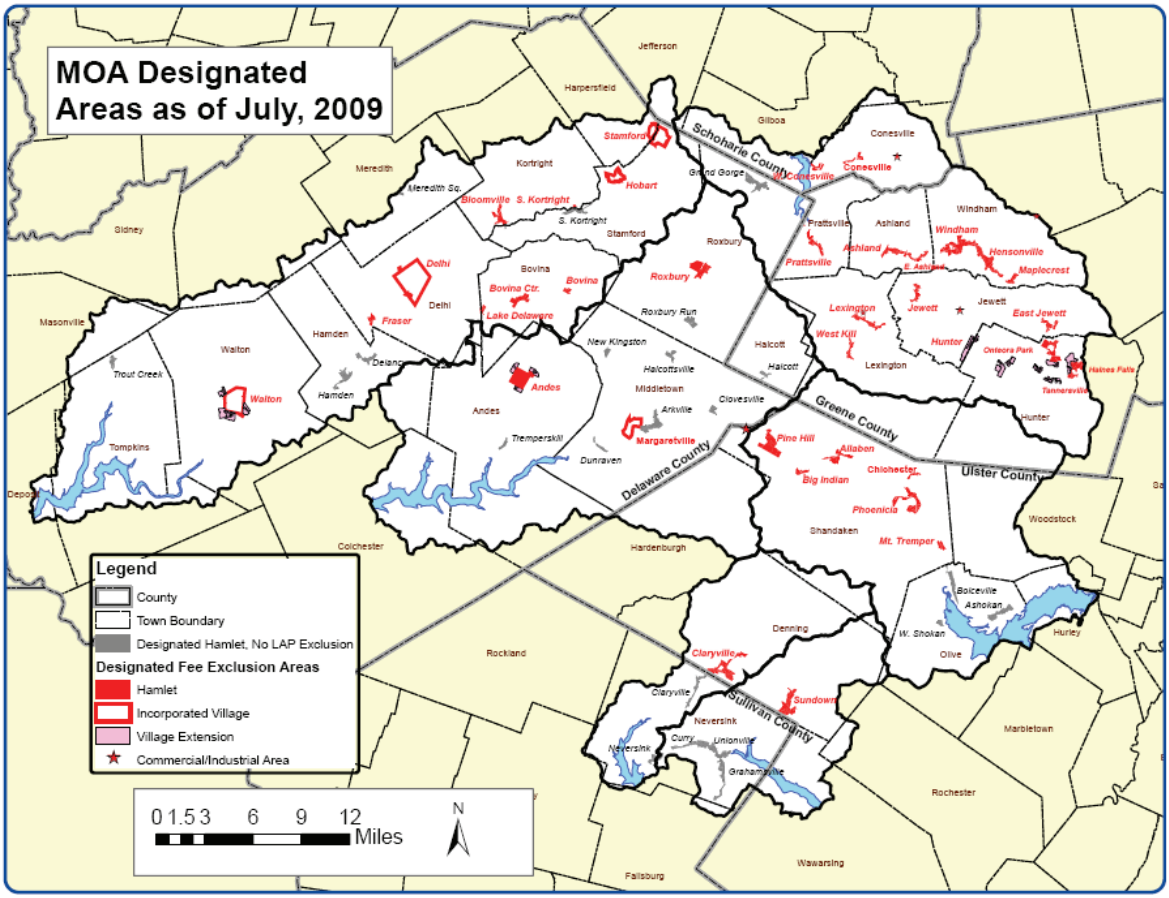
Currently Paragraph 63 of the Watershed MOA establishes criteria that parcels must meet in order to be eligible for acquisition under the LAP, including natural features criteria applicable to parcels in Priority Areas 2, 3, and 4. There are two main categories of natural features criteria.

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%).

Hamlet Designations

Under the MOA, West-of-Hudson municipalities had the opportunity to identify Designated Areas, including villages, hamlets, village extension areas and industrial/commercial areas, and separately to determine, by resolution, whether to exclude the City's acquisition of property in through LAP in fee simple in these areas. The intent of the Designated Areas was to "…provide reasonable opportunities for growth in and around existing population centers." The designated hamlet areas are shown in Figure 1-5.

Figure 1-5: Existing Designated Hamlets



Flood Buyout

The Federal Emergency Management Agency (FEMA) runs a Hazard Mitigation Grant Program (HGMP) which provides funding to state and local governments to reduce future costs associated with natural disasters. After parts of Delaware County experienced significant flooding in 1996, the County asked New York City to participate in a flood buyout program funded through HGMP. Through this program, homeowners in flood-prone areas (primarily in the Villages of Margaretville and Fleischmanns) were able to sell their houses at pre-flood values. The homes acquired were demolished and the land is to be maintained in a natural state for flood abatement. Through LAP, the City contributed to the required 25 percent local match under HGMP to pay for the land component of each acquisition, as well as associated soft costs. As a result of this program, LAP acquired 28 parcels comprising a total of 14 acres of land.

In the Extended LAP, NYCDEP would be open to participating in future flood buyout projects if requested by a county or local government.

Use of Water Supply Lands

NYCDEP allows a number of uses on LAP acquired land where consistent with water quality and public safety. Approximately 59,000 acres since 1997 have been opened up to recreational

uses such as fishing, hiking, snowshoeing, cross country skiing, bird watching, educational programs, nature study and interpretation, and hunting. In 2008, NYCDEP expanded recreational uses of West-of-Hudson (WOH) lands to include Public Access Areas (PAAs) in which no NYCDEP access permits are required. The majority of WOH lands that are not adjacent to reservoirs are being converted to PAAs and this is the default designation for newly acquired lands. Also in 2008, NYCDEP eliminated the use of the NYCDEP Hunt tag in an attempt to make it easier for the public to access NYCDEP lands. Furthermore, NYCDEP is developing a comprehensive forest inventory and management plan to address the need for proactive forest management to maintain a healthy forest ecosystem. Since 1997, NYCDEP has opened 1,722 acres City-owned land to forestry.

NYCDEP allows other low-intensity uses of its land including certain agricultural activities. The public may submit proposals and / or bids to conduct agricultural activities on City lands that have had a history of such use. For example, farmers may propose to harvest hay, plant row crops, graze livestock and tap sugar maple trees for maple sap. Proposers / bidders must agree to conduct activities in a manner consistent with water quality protection and as approved by NYCDEP. NYCDEP currently has over 30 active projects. Bluestone mining and forestry can be allowed on eased properties, subject to NYCDEP plan approval.

Most of the uses allowed on NYCDEP lands are subject to separate site specific approvals of land use plans and, in certain instances stormwater pollution prevention plan approvals and environmental review, where applicable. Recreational uses are allowed pursuant to "NYCDEP Rules for the Recreational Use of Water Supply lands and Waters" and regulations that underwent SEQRA review (Negative Declaration dated July 2008). Because these uses are not subject to further review and approval, they are reviewed in this EIS. Agricultural activities are normally undertaken as a continuation of a pre-existing agricultural use which occurred prior to NYCDEP's acquisition, whether on NYCDEP-owned land, NYCDEP-owned easements, or WAC easements. NYCDEP prepares sustainable forestry project plans for land it owns in the watershed. These plans are subject to SEQRA review before forest improvement projects are permitted. Bluestone mining is currently only allowed on conservation easements, with NYCDEP approvals of mining plans submitted by the landowner; any operation greater than an acre is subject to environmental review under SEQRA as part of obtaining a stormwater permit pursuant to NYCDEP Watershed Rules and Regulations. Smaller sites would have limited impacts. The number of such operations on NYCDEP properties or easements would be small and their location is not reasonably foreseeable. NYCDEP's requirement to review and approve mining plans does not replace any regulatory oversight required by NYS, which requirements must still be met by the owner of the eased property if thresholds exceed those in NYS regulations.

EXTENDED LAND ACQUISITION PROGRAM FOR 2012-2022

The Extended LAP would continue to use the same basic real estate methods described above, which have resulted in the acquisition by LAP and WAC of over 96,000 acres as of July, 2009[3]. 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

[3] See Table 1-1.

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.

Many local communities have consistently expressed how important recreational access, forestry and agriculture are to their local economies, which have historically been connected to these land-dependent activities. Under the MOA, the City committed to consider recreational access for lands acquired in fee simple. Since 1997, NYCDEP has expanded the use of City fee-owned lands that support local economic vitality while maintaining its obligation to protect water quality. Increased recreational access, at times in partnership with NYSDEC, has been at the forefront of these changes.

PLANNING PRINCIPLES

Areas of Focus

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:

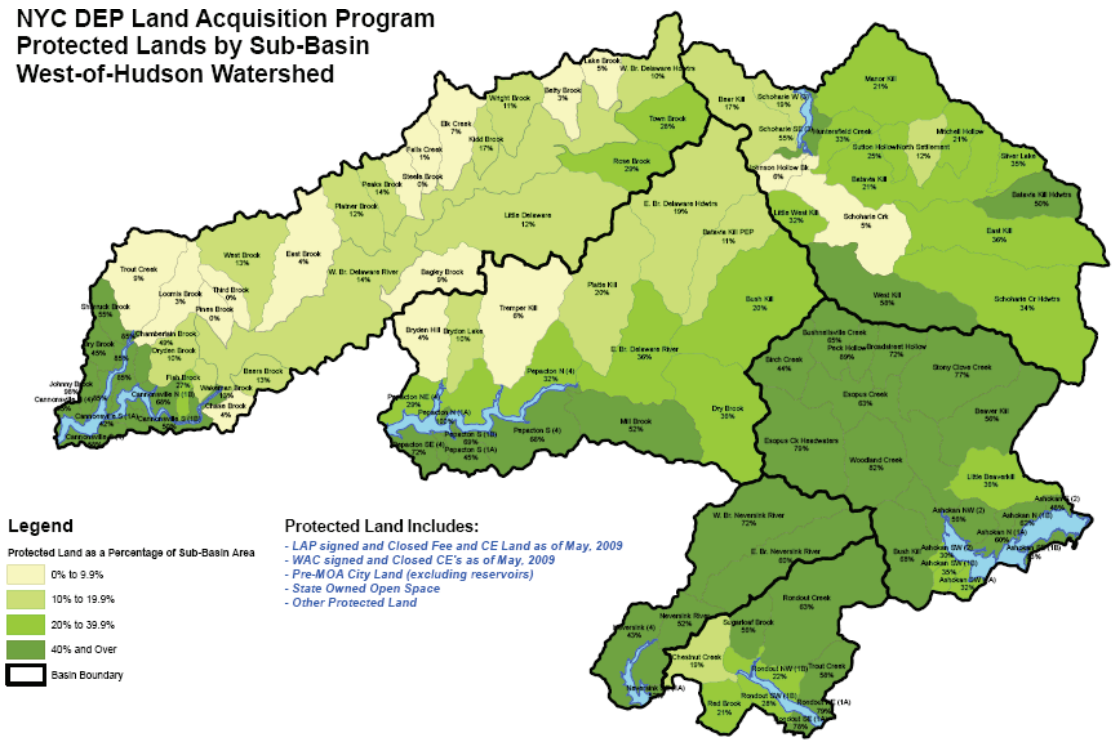
Sub-Basins Near Intake **-** Sub-basins which drain directly into a reservoir near intakes[4] are particularly sensitive because an inflow of pollutants from even a small sub-basin at these locations can have a large impact on the overall quality of water leaving the reservoir. This factor, identified by the City through study of the Malcolm

[4] *Intakes* are the point where water leaves the reservoir and enters an aqueduct for transport towards distribution.

Brook sub-basin at the Kensico Reservoir intake, was reflected in the Priority Area 1A designations for basins within 60-day travel time. LAP plans to extend this concept to specific sub-basins in Priority Areas 3 and 4.

Less-Protected Sub-Basins – While basin-wide protection levels provide a useful tool to evaluate system-wide progress, the distribution of protected lands on a sub-basin level reveals patterns masked at the basin level. As shown in Figure 1-4 Sub-basins with less than 20 percent protected lands are primarily located in the Pepacton and Cannonsville Basins. In cases where these sub-basins are also located near intakes (such as the Tremper Kill, Bryden Hill and Bryden Lake sub-basins north of the Pepacton Reservoir), protection efforts are particularly critical.

Figure 1-6 Percent Protected Lands by Sub-Basin



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.

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. The importance of these program objectives will result in the solicitation of some connecting parcels that would not otherwise merit strong consideration based solely on size or water quality criteria. The identification of these parcels will be continually updated as new acquisitions occur.

2. Smaller Vacant Parcels in Proximity to Surface Water Features – The Cat-Del System includes over 1,000 vacant parcels of between 10 and 20 acres, taken alone or in small assemblages. On one hand, many of these lots lack the steep slopes or proximity to streams associated with significant water quality impacts. However, other 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.

- ***Properties in well-protected Basins and Sub-Basins*** – In locations where protected lands already comprise a high percentage of the basin and/or sub-basin area, potential CE's between 75 and 100 acres will be evaluated to ensure that their development potential and proximity to surface water features merit proceeding with the acquisition;
- ***Properties in Areas of Focus*** **–** LAP will develop guidelines to acquire smaller CEs (under 75 acres) in less-protected basins and sub-basins, particularly where land use patterns result in a higher degree of landowner interest in CEs in comparison to fee simple acquisition. In **Areas of High Focus**, such as the sub-basins north of the Pepacton Reservoir in Andes and Colchester, smaller parcels will be more likely to be pursued than in other areas; and
- ***Compelling Properties*** – LAP will continue to pursue CEs on properties over 100 acres with significant development potential and proximity to surface water throughout the watershed.

Program Changes Currently Under Negotiation

As a result of ongoing negotiations between the City and watershed stakeholders, several components of the Extended LAP are under consideration. These potential changes have yet to be finalized. These components are discussed below, although it must be noted that the final form of the Water Supply Permit may include modified versions of these components or exclude some or all of them altogether. Because of this, the EIS considers a range of possible scenarios as described below.

Hamlet Expansion Areas

The City has engaged in ongoing negotiations with the Coalition of Watershed Towns (CWT), Delaware County, NYSDEC, and other stakeholders concerning proposed modifications of 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 ongoing negotiations have focused on the interest of some West-of-Hudson towns in expanding the geographic extent the Designated Areas beyond those delineated in 1997. The stakeholders have also discussed changes to the rules pertaining to LAP acquisition in the Designated Areas. In particular, in 2008, the CWT requested and the City tentatively agreed that each WOH town could identify additional "Expansion Areas" for future growth. The

stakeholders have 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 have tentatively agreed, subject to acceptance by the regulatory agencies, that municipalities could elect to make both the current designated hamlet areas and these Expansion Areas off limits to all LAP acquisitions (including City and WAC conservation easements), not just to fee simple purchases as was previously the case.

To date, seventeen watershed towns have proposed Expansion Areas totaling about 27,500 acres (See Table 1-2). The City, together with the State, EPA, and several environmental groups have worked diligently with the CWT, the watershed counties, and individual towns to balance community concerns over opportunities for future development with water quality protection needs in determining the appropriate scope of each town's proposal. Currently the stakeholders have agreed on Expansion Areas for sixteen towns which have proposed 24,180 acres, while discussion is continuing on one town, Walton, whose current proposal is for 3,269 acres. If the hamlets are expanded as proposed, and all of the affected municipalities elect to preclude LAP acquisition in them, approximately 16,460 acres of previously solicited lands would no longer be eligible for acquisition.

Because the expanded hamlet boundaries have been largely resolved with input from the CWT and the individual towns, they are included in the Proposed Action. However, since agreement has not been reached with the stakeholders, including NYSDEC, on the all the Extended LAP elements, there is a possibility that these expanded areas will not be part of the Extended LAP. Therefore, for purposes of the DEIS, 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. Similarly, they acknowledge the reality that historically, communities have often developed along streams, and therefore that growth within these areas may require construction within the limiting distances where impervious surfaces are generally prohibited under the Rules and Regulations for the Protection from Contamination, Degradation and Pollution of the New York City Water Supply and its Sources (Watershed Regulations). These 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). In the recent amendments to the Watershed Regulations, which became effective on April 4, 2010, NYCDEP amended the definition of "hamlet" to ensure that the expanded hamlets will qualify for this regulatory relief. To the extent that SPPPs are required under the Watershed Regulations where they would not otherwise be required under State or federal law, or to the extent that the Watershed Regulations impose more stringent requirements for SPPPs, the City pays the costs for designing, implementing, and maintaining stormwater control measures under the MOA, through the Future Stormwater Program managed by the Catskill Watershed Corp.

Table 1-2 Town Hamlet Expansion Areas

NYC DEP Land Acquisition Program

Status of Town Hamlet Expansion Area Proposals as of March 10, 2010

Status of Expansion Proposal	Town	Town Watershed Acres	Existing Designated Area	2008 Proposed Expansion Area	Previous Revised Town Proposal	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 (16 towns)	Meredith	15,395	73	105		71
	Masonville	8,311	n.a.	150		150
	Sidney	601	n.a.	219		219
	Middletown	62,244	1,734	296		296
	Lexington	51,274	362	375		375
	Roxbury	56,051	957	443		440
	Harpersfield	7,076	405	1,331		1,295
	Olive	29,252	547	3,303	2,431	1,333
	Conesville	21,590	275		4,290	1,566
	Ashland	15,987	362	4,004	1,985	1,684
	Jewett	32,087	652	4,769	2,304	2,015
	Hamden	33,517	420	4,958	2,613	2,439
	Delhi	41,343	2,346	4,450	3,422	2,759
	Hunter	43,174	3,251	4,460	3,529	2,891
	Windham	28,986	1,148	13,458	3,606	2,794
	Kortright	25,047	250	7,913	6,377	3,853
	Sub-Total		**12,782**	**50,234**		**24,180**
Town Proposal Questioned by One of more Parties (1 town)	Walton	55,991	1,503	11,194	3,887	3,269
	Sub-Total		**1,503**	**11,194**		**3,269**

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, as shown in Table 1-3. The centralized wastewater treatment facilities at these locations support the widespread local desire of hamlet revitalization. These facilities further the goals embodied in the hamlet provisions of the MOA and the expanded hamlet proposals embraced by communities and NYCDEP by encouraging clean and "green" development in population centers and reducing pressure for development and land consumption in outlying areas.

Table 1-3: Wastewater Infrastructure Funded by NYCDEP

Village/Hamlet	Town or Village/County	Type of Facility
Andes	Andes/Delaware	WWTP
Bloomville	Kortright/Delaware	Community Septic System
Bovina Center	Bovina/Delaware	Community Septic System
Fleischmanns	Fleischmanns/Delaware	WWTP
Grand Gorge	Roxbury/Delaware	Sewer Extensions
Hamden	Hamden/Delaware	Community Septic System
Roxbury	Roxbury/Delaware	Connection to City's Grand George WWTP
South Kortright	Stamford/Delaware	Community Septic System (in planning stage)
Trout Creek	Tompkins/Delaware	Community Septic System (in planning stage)
Ashland	Ashland/Greene	WWTP
Hunter	Hunter/Greene	WWTP
Lexington	Lexington/Greene	Community Septic System (in planning stage)
Prattsville	Prattsville/Greene	WWTP
Tannersville	Tannersville/Greene	Sewer Extensions
Windham	Windham/Greene	WWTP
Grahamsville	Neversink/Sullivan	Sewer Extensions
Boiceville	Olive/Ulster	WWTP

Natural Features Criteria

Another proposed change to the Extended LAP under discussion involves modifying the Natural Features Criteria, as discussed above, to define thresholds for the minimum amount of the specified natural features that must be present on a property to qualify for acquisition. As of the date of issuance of this DEIS, the following thresholds for the Natural Features Criteria are under consideration:

The City would not acquire properties in Priority Areas 2, 3, and 4 unless as of the time of the acquisition, the property meets either one of the following conditions:

a) The property is adjacent to land owned by or under contract to be acquired by the City or owned by the State; or

b) The natural features on the property meet one or both of the following criteria under negotiation: [5]
   - At least seven percent (7%) of the property exhibits surface water features, or
   - At least fifty percent (50%) of the property exhibits slopes greater than 15 percent.

The determination of whether the 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. These modifications would remove lands from eligibility for future solicitation. This would focus acquisitions on those lands most sensitive for water quality. Table 1-4 shows the impact of the proposed hamlet Expansion Areas (PEAs) and changes to the Natural Features Criteria on the pool of solicited lands, if the criteria presented above were to be adopted.

Table 1-4: 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

The proposed Expansion Areas could remove about 15,000 acres from solicitation, and the proposed thresholds for Natural Features Criteria could remove another 12,600 acres.

[5] There are a few other percentages also under consideration.

Although the PEAs, MOAs and NFC thresholds would remove about 30,000 acres of solicited land, there would still be a very large universe, about 350,000 acres, for NYCDEP to draw from for its acquisitions in the West-of-Hudson watershed. Therefore NYCDEP doesn't consider these new criteria to be a constraint on the total number of acres it will acquire, but rather that they will focus acquisitions on more sensitive areas.

Because agreement has not been reached on the Natural Features Criteria thresholds, for purposes of the DEIS, the current criteria were analyzed. This approach is conservative for purposes of the socioeconomic impact analysis because the new criteria under consideration will minimize any adverse socioeconomic effects by reducing the types of land the City can acquire. For the water quality analysis, the land acquisition program results in beneficial impacts with or without modifications to the Natural Features Criteria; the differences in beneficial effects among the different criteria will be qualitatively discussed.

Riparian Buffer Pilot Program

The City has tentatively agreed to implement a three-year Pilot Program in which the City would allocate up to Five Million Dollars ($5,000,000) of the funds currently committed to the LAP to a pilot program for acquiring Riparian Buffers in easement or fee. As currently envisioned, the City-funded Riparian Buffer Pilot Program (RBP Program) 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.

Use of Water Supply Lands

As discussed in the Program to Date section above, NYCDEP allows recreation, forestry, mining, and low intensity cultivation on NYCDEP owned lands. These are expected to continue and possibly be expanded on lands purchased under Extended LAP, subject to future approvals, as applicable and where consistent with water supply protection and public safety.

The Proposed Action for this EIS is the new Water Supply Permit that would allow for continued acquisition under the Land Acquisition Program. As discussed above under *Program to Date*, most of the uses allowed on NYCDEP lands are subject to separate site specific approvals of land use plans and/or stormwater pollution prevention plan approvals, and environmental reviews, where applicable. 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 uses are either a continuation of an existing use or are subject to future approvals and environmental review and are not reviewed in this EIS.

PROJECTION OF POSSIBLE FUTURE LAND ACQUISTION BY COUNTY

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 1-5 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 Chapter 3*, Socioeconomic Conditions*).

Table 1-5: 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 1-5, 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.

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 issued on April 30, 2010, finalizing the scope of analysis for the DEIS based on comments received. Based on the Final Scope of Work, this DEIS was prepared and certified as complete. The DEIS is being circulated for public review and public hearings will be scheduled with a period for submitting written comments on the DEIS. This will be followed by preparation and circulation of the Final EIS (FEIS), which will include written responses to address public comments made on the DEIS.

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.

CHAPTER 2:

LAND USE AND COMMUNITY CHARACTER

INTRODUCTION

This chapter of the Draft EIS assesses the impact of the proposed action on land use in the Cat-Del watershed region, and on the character of communities in this region. It includes:

- A description of existing conditions in the West-of-Hudson watershed region;
- A discussion of trends likely to shape land use and community character in the region between 2010 and 2022 in the absence of the proposed action; and
- An examination of the potential impact of additional acquisitions under the Land Acquisition Program on land use and on the character of communities west of the Hudson.

The chapter then discusses existing conditions, the future without the proposed action, and the potential impact of additional acquisitions on land use and community character in the East-of-Hudson region.

WEST-OF-HUDSON

EXISTING CONDITIONS

The West-of-Hudson Cat-Del watershed is an area of more than 1 million acres, covering all or part of 41 towns in five New York State counties. Patterns of land use and development vary across the watershed. Table 2-1 and Figure 2-1 summarize the land uses in the watershed portion of each county.[1]

For the watershed as a whole, the single largest land use category shown in the table is protected lands – lands owned primarily by New York State (primarily in the Catskill Preserve) and New York City and to a lesser extent by private conservation groups. These properties account for approximately 34percent of all land in the 1.013 million-acre watershed, ranging from 20 percent in Delaware County to 60 percent in Ulster County.

The second largest category is residential land, with about 314,300 acres – about 31 percent of all land in the watershed. The third largest category is private vacant land – about 23 percent of the watershed lands. Agriculture makes up about 7 percent of watershed lands, while commercial businesses comprise about 2 percent of watershed lands.

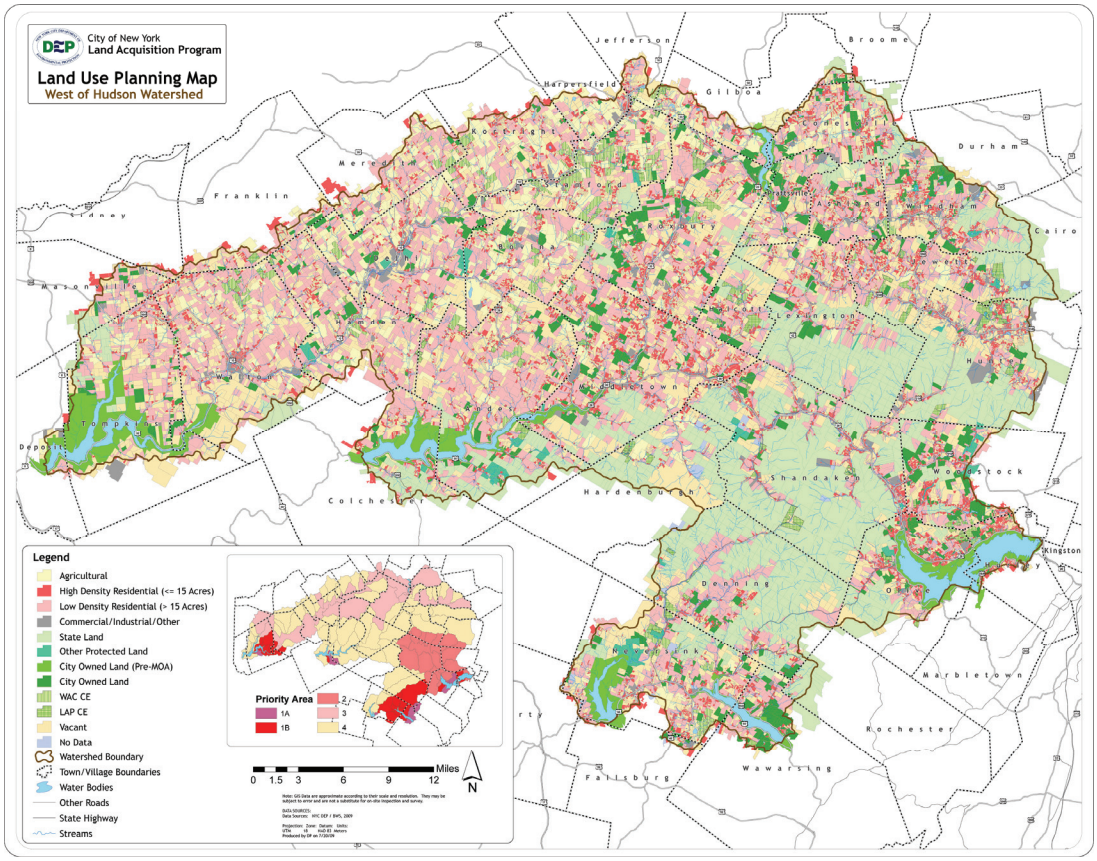
[1] The data in Table 2-1 are based on a land use categorization by NYCDEP using tax parcel property use codes obtained from the New York State Office of Real Property Services (NYSORPS). The acreage in each class excludes all land outside the boundary of the watershed. The total for the acres in the columns entitled Agriculture, Residential, Commercial/Industrial/Community, Total Protected Land, and Private Vacant does not equal the Acres in Watershed column because this excludes parcels for which land use data is not known (less than one percent of the total) and the tax parcel polygons do not include the acreage in road rights-of-way.

Table 2-1: Land Uses Within the Watershed

	Delaware	Greene	Schoharie	Sullivan	Ulster	TOTAL
Total acres in the county	925,440	414,720	398,080	620,800	720,640	3,079,680
Land acres in the watershed	492,487	199,701	34,613	42,919	221,465	991,185
Agriculture acres	61,178	4,552	5,389	1,489	2,205	74,812
% of the watershed	12%	2%	15%	3%	1%	7%
Residential acres	190,111	54,730	12,198	12,459	44,787	314,285
% of the watershed	38%	27%	34%	28%	19%	31%
Com./ind.l/community acres	8,421	4,728	590	406	2,091	16,236
% of the watershed	2%	2%	2%	1%	1%	2%
Protected acres	96,592	81,912	6,797	15,079	133,179	333,558
% of the watershed	20%	41%	20%	35%	60%	34%
Vacant land acres	130,246	50,357	9,562	11,931	34,922	237,019
% of the watershed	26%	25%	27%	26%	15%	23%
Unclassified land acres	5,938	3,423	77	1,555	4,281	15,274
% of the watershed	2%	2%	1%	3%	2%	2%

Source: NYC DEP and ORPS, 2009

Figure 2-1: Map of land uses in the West of Hudson Watershed



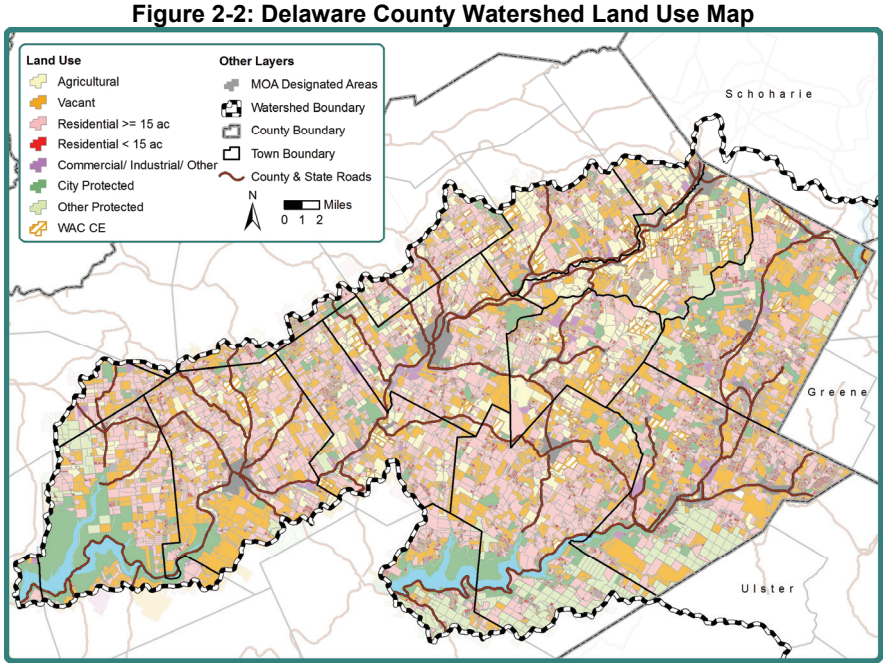
Land can also be classified according to its physical characteristics. According to data compiled by NYCDEP, in 2001 about 81 percent of all watershed land in the West-of-Hudson area was forest-covered. Moreover, research published in 2008 by the SUNY College of Environmental Science and Forestry and the Yale School of Forestry and Environmental Studies found that in recent decades the total acreage of forest land has increased in the West-of-Hudson watershed area, primarily as a result of the reforestation of land previously classified as agricultural. Between 1975 and 2002, total forested acreage in this area increased by 11 percent. Conversely, there was a 34 percent decline in the amount of land in active agricultural use, and a 33 percent increase in developed land.[1]

Delaware County

The existing land uses for the watershed portion of Delaware County are shown below in Figure 2-2. As shown in Table 2-1, 12 percent of the watershed portion of the county consists of agricultural lands, by far the highest number of acres of any of the watershed counties. Residential uses comprise 38 percent of the county's total area within the watershed, while only two percent of watershed areas within the county are allocated for commercial/industrial use. Twenty-one percent of the watershed area in the county is comprised of protected lands.

While Delaware County is largely rural, the character of its communities varies. Especially in the northern and western part of the county, agriculture remains a significant part of the local economy and local community life. Much of the resident population, and most civic and commercial activity, is concentrated in and around the County's villages and hamlets – most notably in and around the Village of Delhi, the county seat and the location of the SUNY-Delhi campus. Several towns have significant second-home populations, including Andes, Bovina, Stamford and Roxbury. Figure 2-2: Delaware County Watershed Land Use Map

Figure 2-2: Delaware County Watershed Land Use Map



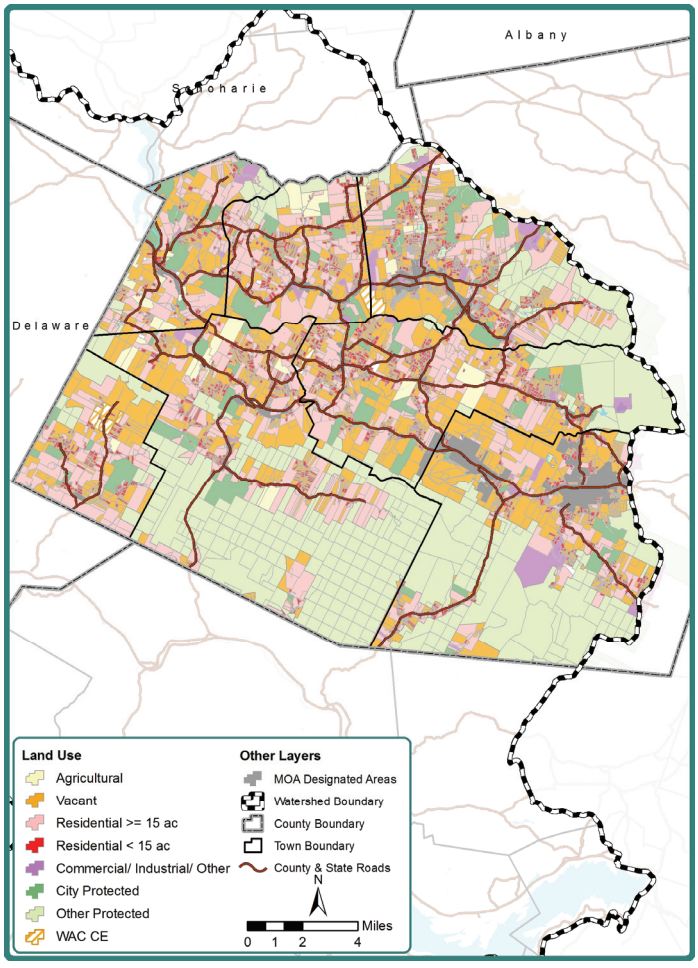
[1] Myrna Hall, Rene Germain, Mary Tyrrell and Neil Sarpor, *Predicting Future Water Quality from Land Use Change Projections in the Catskill-Delaware Watersheds*, SUNY College of Environmental Science and Forestry/Yale School of Forestry and Environmental Studies, December 2008 p.5.

Greene County

The existing land uses for the watershed portion of Greene County are shown in Figure 2-3. As shown in Table 2-1, Agriculture accounts for two percent of the area of the county within the watershed, and residential areas comprise 27 percent of the county areas within the watershed. Only two percent of watershed areas are allocated for commercial/industrial use. Forty-one percent of the watershed area in the county is comprised of protected lands.

The Greene County towns that are entirely (or, in the case of Hunter, mostly) within the boundaries of the watershed are collectively referred to as the "mountaintop towns," reflecting their location in the Catskill mountain area and their relatively high elevation. The economy of the eastern mountaintop towns – Hunter, Windham, Ashland and Jewett – is based primarily on recreational activity, and in particular on major ski centers located in Windham and Hunter. These towns include several substantial villages and hamlets, including Hunter, Tannersville, Windham, Hensonville and Jewett. The western towns – Prattsville, Lexington and Halcott – are more rural, and less densely populated, with relatively little commercial activity. The mountaintop towns have the greatest concentration of second homes in the watershed, accounting for roughly half of all dwelling units.

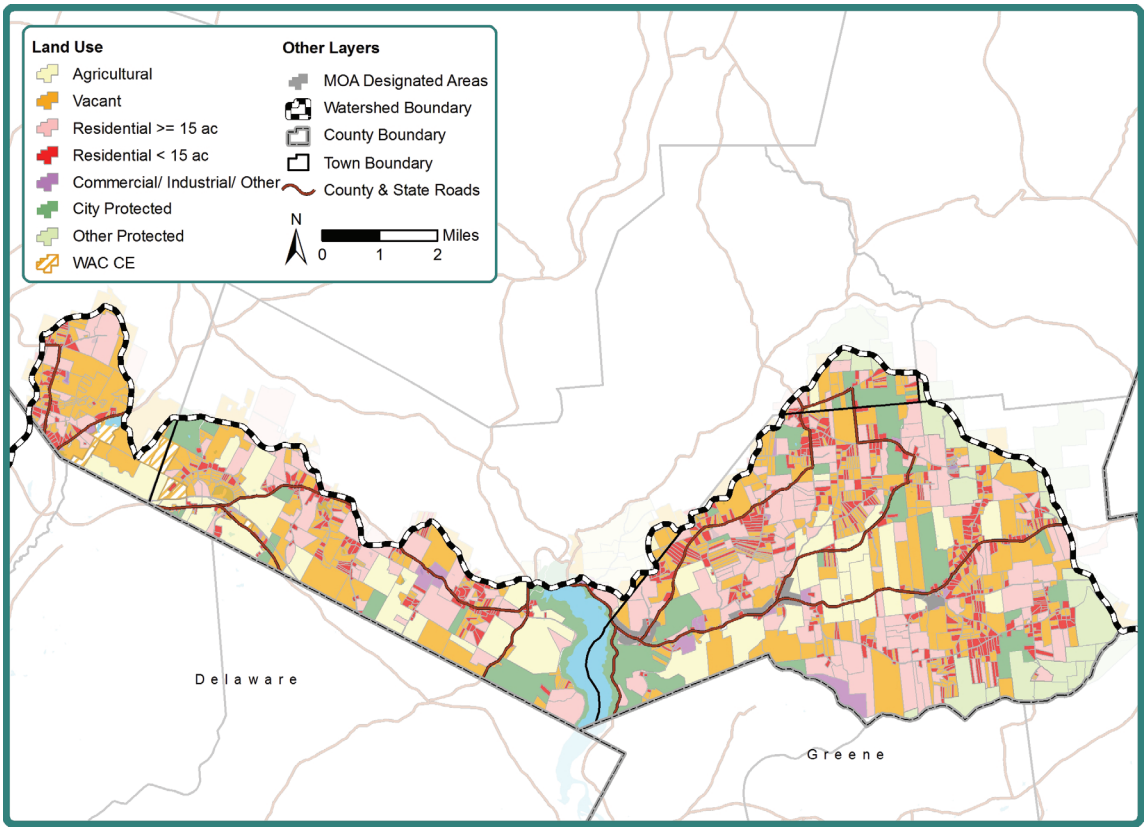
Figure 2-3: Greene County Watershed Land Use Map



Schoharie County

The existing land uses for the watershed portion of Schoharie County are shown in Figure 2-4. As shown in Table 2-1, 15 percent of the watershed portion of the county's watershed land is in

Figure 2-4: Schoharie County Watershed Land Use Map



agricultural use, while residential uses comprise 34 percent. Twenty-one percent of all watershed land in Schoharie County consists of protected land, including land owned by the State or the City, or by private non-profit conservation groups, or covered by some type of conservation easement. Only two percent of all watershed land within the county is used for commercial/industrial and community purposes.

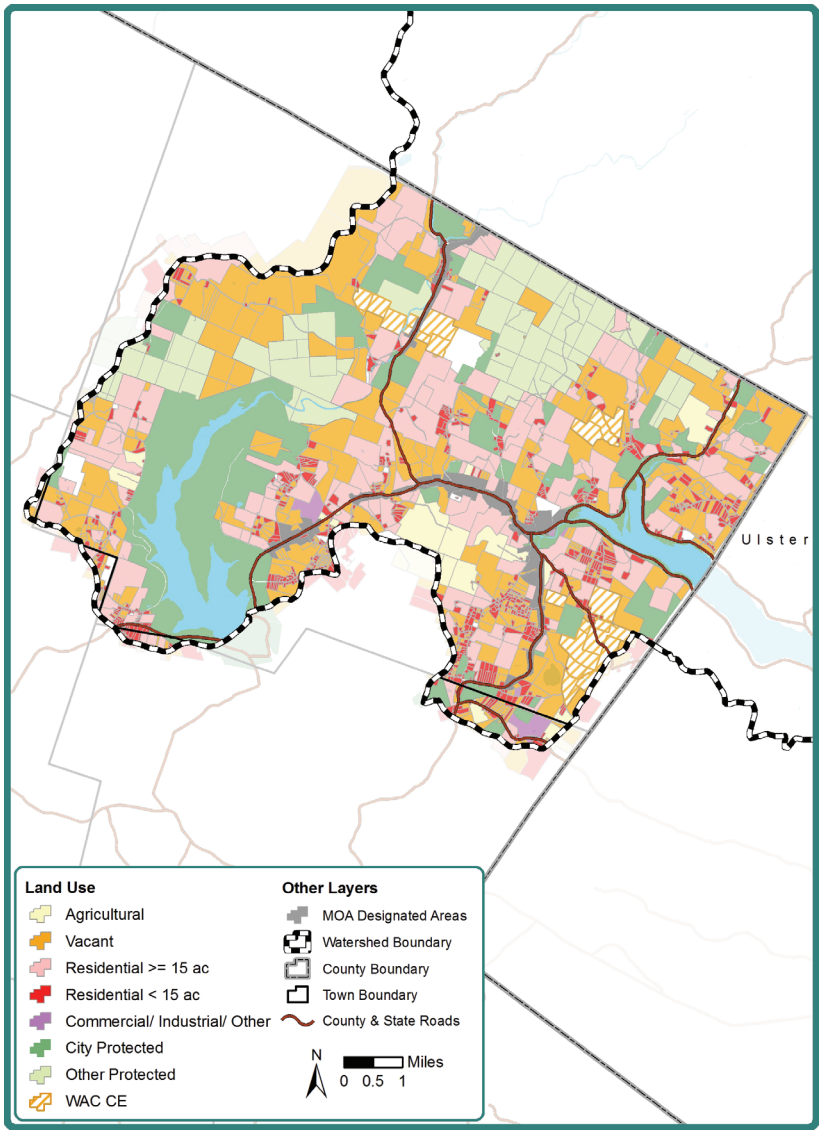
The Schoharie County watershed towns – Conesville, Gilboa and Jefferson -- are largely rural in nature. Agriculture – including both large and small farms, niche agricultural enterprises – still accounts for a significant part of the local economy. Other natural resource-based enterprises, including timber production and other forest-based businesses, are also significant. The area's natural beauty has also made it attractive to second-home owners; 46 percent of all housing units in the watershed towns – and 54 percent in Conesville – are classified as being for seasonal or recreational use.

Sullivan County

Existing land uses for the watershed portion of Sullivan County are shown in Figure 2-5. As Table 2-1 shows, 3 percent of the watershed portion of the county consists of agricultural land, while residential uses account for 28 percent. Only one percent of watershed areas within the county are used for commercial/industrial purposes. Thirty-eight percent of the watershed area in the county is comprised of protected lands.

The watershed portion of the County consists primarily of the Town of Neversink, along with small portions of Liberty and Fallsburg. Neversink has been among the fastest-growing communities in the region in recent years, although in remains a rural community. Development in Neversink is concentrated primarily along Routes 42 and 55, and in and around the hamlet of Grahamsville.

Figure 2-5: Sullivan County Watershed Land Use Map

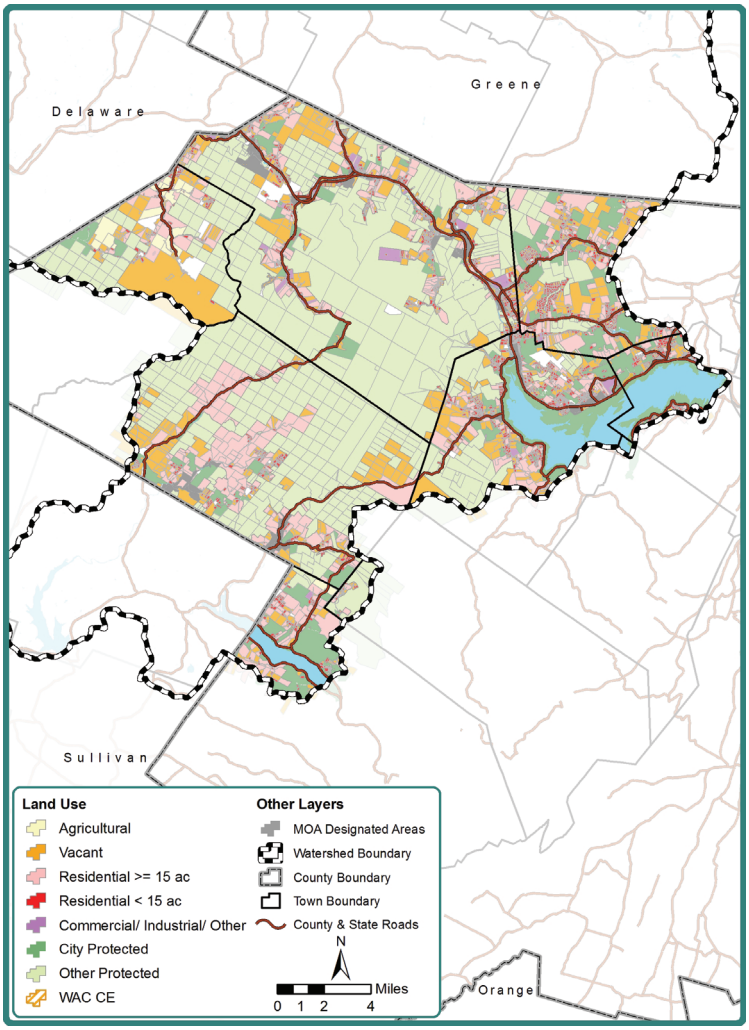


Ulster County

The existing land uses for the watershed portion of Ulster County are shown in Figure 2-6. As Table 2-1 shows, one percent of all watershed land the county is in agricultural use, while residential uses comprise 19 percent. Only one percent of watershed land within the county is used for commercial/industrial or community purposes. Sixty-two percent, the highest of any watershed county is comprised of protected lands, including significant portions of the Catskill Forest Preserve owned by New York State.

The watershed towns of Ulster County are diverse. They include two towns – Woodstock and Wawarsing – with relatively large populations; but in both cases the towns' major population centers are located outside the boundaries of the watershed. In Olive and Shandaken, population and business activity tend to be concentrated in a network of relatively small, older hamlets that stretch along Route 28. In the western part of the county, Shandaken, Denning and Hardenburgh are characterized by small, slow-growing populations, mountainous terrain, and economies built on outdoor recreation.

Figure 2-6: Ulster County Watershed Land Use Map



Parcelization

Parcelization – the division of larger tracts of land into smaller parcels – has been a trend in the watershed for some time. Between 1996 and 2007, the total number of parcels rose from 45,403 to 47,085 – an increase of 3.7 percent over 11 years. Table 2-2 shows the seven West-of-Hudson towns with the greatest percentage increases in parcels and the seven with the lowest in percentage increase in parcels.

Table 2-2: Seven WOH towns with greatest percentage increases in parcels, seven WOH towns with lowest percentage increase in parcels
(includes only areas within each town that are within the watershed)

Seven towns with greatest increase in parcels				Seven towns with lowest increase in parcels			
Town	Parcels in 1996	New parcels, 1996-2007	% change, 1996-2007	Town	Parcels in 1996	New parcels, 1996-2007	% change, 1996-2007
Deposit	21	5	23.8%	Colchester	455	(3)	-0.7%
Gilboa	387	91	23.5%	Denning	730	5	0.7%
Jefferson	142	26	18.3%	Jewett	1,878	15	0.8%
Conesville	1,086	76	7.0%	Woodstock	1,204	10	0.8%
Franklin	189	13	6.9%	Middletown	3,998	45	1.1%
Stamford	1,694	116	6.8%	Tompkins	920	11	1.2%
Masonville	212	14	6.6%	Hurley	524	10	1.9%

Source: NYC DEP

Parcelization may sometimes be a leading indicator for residential development – although land that is subdivided may then remain undeveloped for some time. It should be noted, however, that not all parcelization reflects an intent to develop. It might also, for example, involve an owner selling 40 acres of a 50-acre tract to a neighboring farmer, or to NYCDEP, or to a non-profit land trust.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Without the proposed action, several trends that have shaped land use in the West-of-Hudson watershed during the past ten to twenty years are likely to continue. The amount of land devoted to residential uses is likely to increase, as a result of new residential development. If the pace of development in watershed towns matches the pace at which new housing was developed from the 1990's through 2008 (and assuming that the number of acres per unit remains constant) an estimated 30,000 acres of land would be needed to accommodate such development.

The increase in the amount of land in residential use within the boundaries of the watershed is likely, however, to be significantly smaller than the preceding estimate might imply – for several reasons:

- The pace of residential development during the next several years is likely to be slower than the pace of development during the past decade. Projecting residential development through 2022 based on trends during the past decade may thus overstate the amount of land that will

be consumed by residential development. See Chapter 3, *Socioeconomics Conditions*, for population projections.

- Some of the new development will occur on lots created through subdivision of larger, low-density residential parcels. In other cases, new housing may simply replace older structures that will be demolished. Both these types of development can result in an increase in housing stock without increasing the total amount of land in residential use. (See discussion on parcelization, above).
- Based both on existing development patterns and trends during the past decades, we can expect that only a portion of new residential development that occurs in the West-of-Hudson watershed towns will be within the boundaries of the watershed.

Between 1992 and 2008, according to the National Agricultural Statistics Service, the total amount of farmland in the five West-of-Hudson counties declined by 19.4 percent – an average annual decline of about 1.3 percent. If the total amount of land in agricultural use within the watershed were to decline at this rate through 2022, agricultural uses would decline from about 9 to about 7.5 percent of all watershed lands – a shift of about 15,300 acres from agricultural to other uses.

Without the proposed action, other changes in land use would (with several potential exceptions at the town level) be relatively small. Growth in total acreage used for other commercial, industrial and community purposes would be very small given that these uses only represent 2% of watershed land. Without the proposed action, there would likely be no significant growth in the amount of State, City or privately-protected land in the watershed region.

A variety of available sources were examined to identify future community character goals and characteristics of the communities valued by local residents. These include town and village comprehensive plans, surveys of local residents, generic environmental impact studies, and other local planning documents (see Table 2-3 for a complete list of sources reviewed).

Chapter 4 provides detailed community character assessments for towns most affected by the proposed action. Town and village plans, surveys of residents and other documents highlight certain features, characteristics, values and concerns that are common to many West-of-Hudson watershed communities. These include:

- The predominantly rural character of most watershed communities, and a desire on the part of residents and community leaders to maintain that character;
- A high-quality natural environment, and a commitment to protecting it;
- The availability of opportunities for a diverse array of outdoor recreational activities;
- A strong interest in preserving agriculture and other "working landscapes;"
- A strong interest in supporting (and, where necessary, revitalizing) hamlets and village centers, which in many towns are the principal centers of population and commerce – the places where much of the town's history is centered – and in some cases, the places that offer the best prospects for new growth and development that is compatible with the towns' interest in maintaining their rural character, natural beauty and agricultural base; and
- Recognition of the need to provide for an aging population, especially in terms of the availability of housing, health care and other services suited to the needs of older residents.

There are shared concerns across many watershed communities about the need to expand the range of economic opportunities available in the region – in particular, opportunities that would allow

residents of the region to raise their incomes, and that would help the region retain and attract young adult workers and families.

Table 2-3: Planning and Other Documents Reviewed

Town Plans Reviewed	Town of Bovina, *Comprehensive Plan* , 2002
	Town of Conesville, *Comprehensive Plan* , August 2007
	Town of Denning, *Comprehensive Plan* , October 2007
	Town of Gilboa, *Comprehensive Plan* , March 2004
	Town of Halcott, *Comprehensive Plan* , December 2003
	Town of Hunter, *Comprehensive Plan* , 2000
	Town of Jewett, *Comprehensive Plan* , July 2007
	Town of Roxbury, *Comprehensive Plan*
	Town of Shandaken, *Comprehensive Plan* , July 2005
	Town of Walton, *Comprehensive Plan* , 2006
	Town of Woodstock, *Comprehensive Plan* , 2003
Other town documents	Town of Lexington, *Draft Generic EIS,* August 2003
	Town of Prattsville, *Draft Park Master Plan* , 2008
	Town of Windham, *Draft Generic EIS* , May 2009
Village plans reviewed"	Village of Fleischmanns, *Comprehensive Plan* , draft, October 2009
	Village of Margaretville, *Comprehensive Land Use and Action Plan* , 2008
	Village of Stamford, *Comprehensive Plan* , April 2007
Other documents	Delaware County, *The New York City Watershed Economic Impact Assessment Report,* May 2009
	Delaware County Action Plan for Watershed Protection and Economic Vitality , May 2002
	AEL Associates, *Concern About the New York City Land Acquisition Program in Delaware County Communities: Summary of the 2009 Telephone Survey Results* , September 2009
	Greene County, *Comprehensive Economic Development Plan* , July 2007
	Greene County Soil & Water Conservation District, *Mountaintop Community Recreation, Cultural Resources and Scenic Quality Strategy* , January 2009
	Mountain Cloves Scenic Byway Steering Committee, *Mountain Cloves Scenic Byway: Proposed Corridor Management Plan* , October 2008
	Sullivan County, *Second Home Owner Study* , October 2008
	Ulster, Orange and Dutchess Counties, *Tri-County Regional Housing Needs Assessment,* April 2009
	Ulster County, *Open Space Plan* , December 2007
	Ulster County, *Ulster Tomorrow: A Sustainable Economic Development Plan for Ulster County,* July 2008
Other Sources	Andes Chamber of Commerce
	Andes.com
	Alliance for Bovina
	Hunter Chamber of Commerce
	Catskill Center for Conservation and Development
	Central Catskills Collaborative
	Town websites

FUTURE CONDITIONS WITH THE PROPOSED ACTION

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 2022 – it is possible that the extension of LAP would slightly reduce the 17 percent 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 Chapter 3, *Socioeconomic Impacts*, in the year 2022, with the projected land acquisition under the proposed action, 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 as discussed in "Future Conditions without the Proposed Action" above. For a more detailed assessment of community character under the proposed action, see the assessments of the most affected towns provided in Chapter 4.

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 2022. 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 34percent of total land area. Additional acquisitions under LAP will continue to contribute to protection of the natural environment of watershed communities. In recent discussions with NYCDEP, the Coalition of Watershed Towns (CWT) has proposed to modify LAP's "Natural Features Criteria" (NFC) as described in *Chapter 1 Project Description*.

This change would probably not affect the total acreage to be acquired by NYCDEP through 2022, and 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 will increase the total acreage open to public recreational use by more than 40,000 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 (as discussed in Chapter 3), 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 2022.

With or without LAP, the region's agricultural sector, as noted in Part One, faces 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 between now and 2022 enhance the viability of farming in the region, including shifts to more profitable forms of agriculture, rising transportation costs, 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 21,311 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 Chapter 1, seventeen towns have proposed expansion of the areas, totaling about 27,500 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 49,000 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 through 2022. 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 Chapter 3, *Socioeconomic Conditions*, there are not expected to be significant direct or indirect displacement effects. In addition, the town level assessments provided in Chapter 4 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

EXISTING CONDITIONS

The East-of-Hudson watershed region differs from the West-of-Hudson region in several important respects. As shown in Table 2-4, the East-of-Hudson watershed encompasses a total of 234,171 acres, covering portions of twenty towns and one city in three New York State counties. (The watershed also includes a small portion of the State of Connecticut, which is not covered by the Land Acquisition Program and is not included in this analysis.) The East-of-Hudson area is thus less than one-quarter the size of the West-of-Hudson watershed region. Moreover, the East-of-Hudson region is much more densely developed; the overall character of most areas within the region is suburban rather than rural.

The East-of-Hudson watersheds primarily serve the Croton System, feeding into the terminal New Croton Reservoir in the towns of Yorktown and Cortlandt (Westchester County). However three reservoirs East-of-Hudson function as part of the Cat-Del System, due to connections with aqueducts en route from West-of-Hudson to New York City: West Branch and Boyd's Corner Reservoirs in Putnam County, and Kensico Reservoir in Westchester County. These three Cat-Del reservoirs have been the focus of LAP in the East-of-Hudson region. While LAP has acquired land in the Croton System basins, the vast majority of past (and future) acquisition activity East-of-Hudson is expected to be in the three Cat-Del basins. This analysis will consider existing conditions throughout the East-of-Hudson region, while the impact assessment will focus on the areas where acquisitions are expected to occur.

As shown in Table 2-4, residential uses account for about 34 percent of all land in the East-of-Hudson watershed, and State, City or privately-protected land for 23 percent. Commercial, industrial and community uses account for 6.4 percent of all land (as compared with only 1.6 percent in the West-of-Hudson watershed), while agricultural uses account for only 2.8 percent.

Table 2-4: Land Uses in the East-of-Hudson Watershed

County	Total acres	Acres in the watershed	Agriculture		Residential		Commercial/ industrial/ community		Total protected lands		Private vacant	
			Acres	% of WS	Acres	% of WS	Acres	% of WS	Acres	% of WS	Acres	% of WS
Dutchess	85,396	20,491	3,003	15%	9,016	44%	473	2%	1,374	7%	5,823	28%
Putnam	124,244	92,377	1,116	1%	30,612	33%	7,562	8%	22,995	25%	22,655	25%
Westchester	223,881	121,303	2,524	2%	40,881	34%	7,020	6%	28,568	24%	12,797	11%
EOH Total	**433,521**	**234,171**	**6,643**	**3%**	**80,509**	**34%**	**15,055**	**6%**	**52,937**	23%	**41,276**	18%

Figure 2-7 highlights the distribution of land uses in the watershed portions of Dutchess and Putnam counties. (The Westchester portion of the watershed is not shown because, as noted in Chapter 1, NYCDEP does not expect to acquire any additional land in Westchester County under the Land Acquisition Program between 2010 and 2022.)

Residential uses account for 44 percent of all land in the watershed portion of Dutchess County, and privately-owned vacant land for 28 percent. Compared with other parts of the East-of-Hudson watershed, Dutchess County also includes a relatively large amount of land still in agricultural use – about 3,000 acres, or 15 percent of the total area of the watershed portion of the County. Relatively little watershed land in Dutchess County, in contrast, is devoted to commercial, industrial and community uses.

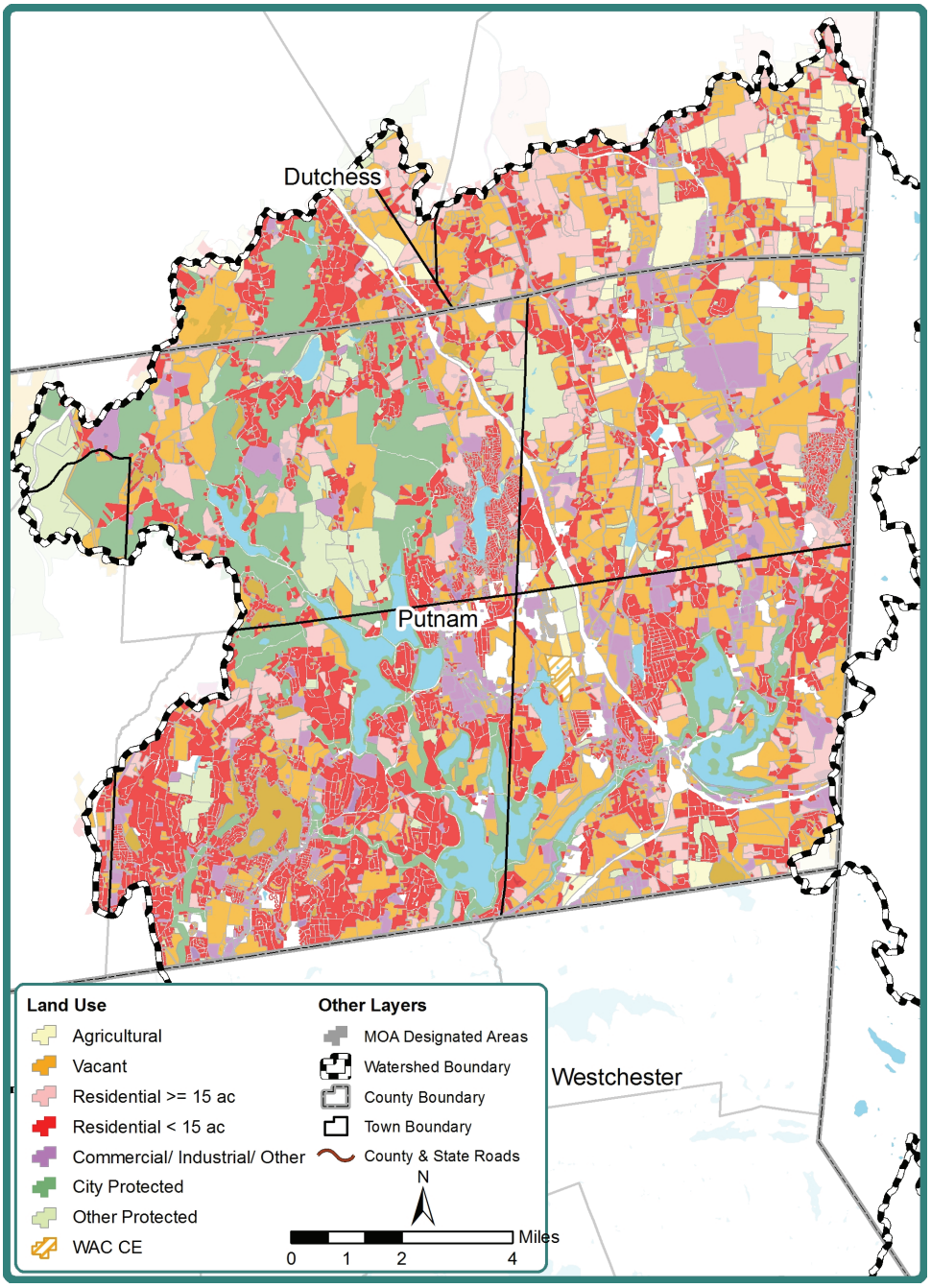
Residential uses account for one-third of all land in the watershed portion of Putnam County, and protected lands and privately-owned vacant land each account for 25 percent. Only a small portion of the County's watershed land (1.2 percent) is agricultural, while 8.2 percent is used for commercial, industrial or community purposes.

The character of the East-of-Hudson communities in which NYCDEP expects to acquire land between 2010 and 2012 varies considerably.

- ***East Fishkill*** - For the past twenty years, East Fishkill has been one of the fastest-growing towns in the greater New York metropolitan area. However, only 16 percent of the town's total area is within the watershed; and most of East Fishkill's growth has been outside the watershed portion of the town. The watershed portion of the town is relatively rugged; the town's comprehensive plan estimates that more than half of all land in this area has slopes of 25 percent or more. The watershed portion of the town includes a mix of residential and agricultural uses and protected land; there is relatively little commercial development in this part of the town.

- ***Kent*** - Although it has experienced substantial growth in recent decades, with an increase in population of about 10 percent between 1990 and 2008, Kent is still a primarily rural community, 84 percent of which is within the watershed. Most of Kent's population (and most of its commercial activity) is concentrated on the eastern side of the town, especially in and around the hamlet of Lake Carmel. The rest of the town consists primarily of low-density residential areas, with clusters of higher-density development near the lakes that dot the area. About 43 percent of the watershed portion of the town consists of City, State or privately-protected land.

Figure 2-7: Dutchess and Putnam Counties Watershed Land Use Map



- ***Carmel*** – The Town of Carmel is the largest in Putnam County (measured by population), and has for the past two decades been among the region's fastest-growing; between 1990 and 2008 its population grew by 21 percent. The town's principal population centers – and centers of business activity – are the hamlets of Mahopac and Carmel. While the overall character of the town is suburban, there are substantial areas outside the two major hamlets that are still rural, with much lower population densities and lower levels of development.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Since the 1980's, the principal factors affecting land use in East-of-Hudson watershed towns have been residential and (to a lesser extent) commercial development. Development in both sectors is likely to continue during the next twelve years.

If the pace of residential development experienced since the 1990's were to continue through 2022, approximately 6,800 additional units would be developed in the watershed towns of Dutchess and Putnam counties between 2010 and 2022. Based on the median parcel size per unit of new development in each of the towns since 2000, this would imply that more than 5,600 acres would be converted to residential use. In reality, the consumption of additional land for residential development is likely to be significantly less than 5,600 acres, for several reasons:

- Since the mid-2000's, new residential development in the watershed towns of Dutchess and Putnam has declined sharply. While housing construction is likely to recover within the next few years, it is unlikely to return to the levels seen earlier in this decade. The estimate of 6,800 units is thus probably significantly overstated.
- Some new housing will be built on lots created through the subdivision of large, low-density residential parcels – increasing density but not increasing the amount of land devoted to residential use.
- In several towns, local planning and zoning policies now encourage higher-density, cluster-style development will reduce consumption of land for residential development.
- After two decades of vibrant growth, several towns are now giving greater priority to preservation of open space; this emphasis could constrain new development.

Finally, a significant portion of the total new development likely to occur between 2010 and 2022 – in Dutchess County, probably most of the new development – will occur outside the watershed portion of the towns.

Additional commercial development is likely between 2010 and 2022 – but it is likely to be concentrated primarily in areas that already serve as the towns' commercial centers – such as Carmel in Putnam County and Hopewell Junction in Dutchess County.

Overall, the next twelve years are thus likely to see some new development – although at a slower pace than during the early to mid-2000's – but relatively little change in overall land use patterns or the character of watershed communities.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Between 2010 and 2022, NYCDEP is projected to 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. This represents an increase of less than 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 23.3 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.

CHAPTER 3:

SOCIOECONOMIC CONDITIONS

INTRODUCTION

This chapter of the Draft EIS addresses the impact of extending the Land Acquisition Program through 2022 on socioeconomic conditions in the watershed regions. The assessment covers several types of potential socioeconomic impact, including the Program's potential impact on:

- The supply of land available for future development, and on whether this supply is expected to sufficiently accommodate projected growth;
- The price of land and the affordability of housing;
- Selected industries or activities that are particularly dependent on the availability of land;
- Other commercial activity; and
- Local government revenues.

Chapter 3 first addresses the Extended LAP's impact on socioeconomic conditions in the West-of-Hudson watershed region. It provides an overview of the methodology used in analyzing socioeconomic impact; describes current socioeconomic conditions in the region; describes future conditions without the proposed action; and assesses the impact of the proposed action in the arenas outlined above.

An assessment of the Program's potential impact on socioeconomic conditions in the East-of-Hudson watershed region follows. While the analytical framework is broadly the same as that used in assessing the Program's impact west of the Hudson, our findings are presented in less detail, due primarily to the much smaller scale of projected acquisitions in the East-of-Hudson region.

WEST-OF-HUDSON

MethodologyThis section describes the approach used in assessing the potential impact of the proposed action on the supply of developable land in the West-of-Hudson watershed towns, on land prices and the affordability of housing, on selected industries and commercial activity within the towns, and on local government revenues. Because it addresses some of the most critical issues regarding LAP's future potential impact, we begin with a detailed discussion of the methodology used in assessing the Program's impact on the supply of developable land.

The socioeconomic analysis is based on a "reasonable worst case scenario" developed for EIS purposes so that socioeconomic impacts are not underestimated.

Estimating the Potential Impact of LAP on the Amount of Developable Land Through 2022

This section describes in detail the process used to estimate the impact of LAP through 2022 on the supply of developable land in watershed towns. First, seven towns in which less than 5 percent of the town's total area lies within the boundaries of the watershed were screened out. An evaluation was conducted to ensure that there is not a disproportionate concentration of developable land in the watershed portion of these towns. As shown in Table 3-1, which highlights the characteristics of the watershed portion of these seven towns, this is not the case: in each of these portions of the towns, there are either low density uses, little potential for new development, or very little land projected to be acquired under LAP.

Table 3-1: Towns with less than 5 percent of the town's total area lies within the watershed

Town	Total acres	Acres in watershed	% in watershed	Land Uses in Watershed	Acres acquired by LAP, 1997-2009	Est. acres to be acquired by LAP, 2010-2022
Sidney	32,280	601	1.90%	Almost all low-density residential and private vacant land; No agricultural or commercial uses	0	21
Broome	30,805	41	0.10%	30 acres of state-owned land; a few high-density residential parcels	0	0
Fallsburg	50,609	1,002	2.00%	About 39% is state-owned, pre-MOA City-owned or LAP-acquired land; the rest is a diverse mix of vacant and low-density residential land (about 33%) and high-density residential or commercial uses (29 %)	251	84
Liberty	51,629	238	0.50%	About 49% vacant and low-density residential land; about 18% high-density residential; no data on 33%	0	9
Kingston	4,709	6	0.10%	A mix of residential and commercial uses	0	0
Marbletown	35,197	256	0.70%	Almost entirely reservoir or pre-MOA City-owned land	0	0
Rochester	57,098	1,996	3.50%	87% is state-owned land; the remainder mostly vacant or low-density residential; no commercial or agricultural uses	17	64

After screening out these seven towns, a four-step process was used to estimate the impact of the LAP program on the remaining 34 West-of-Hudson towns through 2022. These four steps are:

Step 1: Determine available developable land as of 2009;
Step 2: Project housing demand through 2022;
Step 3: Project LAP acquisitions through 2022; and

Step 4: Estimate remaining developable land in 2022 after housing demand and LAP.

Step 1. Determine available developable land in each town as of 2009

To determine the amount of available developable land in the towns as of 2009, data from the New York State Office of Real Property Services (ORPS) and NYCDEP's geographic information system (GIS) were used to identify privately-owned vacant and low-density residential land in each town that could be developable. For purposes of this analysis, developable land includes all privately-owned vacant and low-density residential land (defined as residential parcels of 15 or more acres, reduced by 5 acres per parcel to account for the existing residence on each parcel).

The GIS was used to exclude acreage from this pool of land which has features that are typically unsuitable for development:

- 100-foot buffer on streams and waterbodies,
- 300-foot buffer on reservoirs 100-year 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,; and
- slow infiltrating soils (NRCS Hydrological Soil Group D)[1]

In addition to considering vacant and low-density residential-coded parcels in the pool of available developable land, an alternate calculation was developed that included agricultural land as well. The purpose of this alternate calculation and the method in which it was used are described in more detail in step 4 below.

Step 2. Estimating demand for land for residential development from 2010 through 2022

The second step in our analysis was to estimate trends in residential development in West-of-Hudson watershed towns for the period from 2010 through 2022. To estimate future growth, recent trends were evaluated. Three types of data were reviewed:

- Building permits issued for new housing units in watershed towns between 1997 and 2008;[2]
- U.S. Census data on numbers of housing units by town in 1990 and 2000, and an estimate of housing units for 2008;[3] and
- Data from the ORPS on the date the residence on each residential parcel was built (so-called "year-built" data), focusing in particular on those built between 2001 and 2009.[4]

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[1] The Ulster County Soils data appear to be flawed and were not used for the Ulster County developable land analysis. Due to the overlap between this soil class and the other criteria used in defining developable land, particularly the steepness of slopes in these Ulster towns, it is not expected that this significantly affected the analysis.

[2] Source: U.S. Census Bureau

[3] Sources: U.S. Census Bureau provided data for 1990 and 2000; DemographicsNow provided data for 2008.

[4] Source: New York State Office of Real Property Services (ORPS)

Data from all three sources were compared to estimate new units per year for the time periods associated with each data set. It should be noted that all three data sources have limitations. For some watershed towns, year-built data are not available. Neither year-built data nor data on building permits allow us to distinguish between new units built on previously undeveloped land and those built on land previously occupied by older residences; nor do they take account of structures that have been demolished but not replaced. They may thus overstate the total amount of land consumed by new residential construction. Data on the total number of units in the town avoid this problem – they allow tracing of net changes in the towns' housing stock. As noted above, however, the data for 2008 are estimates; more precise counts will be available only when 2010 census data are released.

For purposes of developing a "reasonable worst case scenario," for the EIS, the analysis used whichever of the new-units-per-year estimates derived from the three data sets was highest to project the total number of new residential units that might be developed in each town between 2010 and 2022. (In towns where year-built data were not available, the higher of the two other estimates was used,) This represents a conservative approach, in that it may for the reasons cited above result in an overstatement of the rate of expected new residential development, and of the amount of land needed for this purpose.

Beyond using the highest of the three "units per year" values, basing the estimate of land required for residential development on the rate of development during the past two decades also makes the analysis more conservative. The demand for housing that drives residential development in the West-of-Hudson region is fueled partly by population growth and partly by the market for second homes. Population growth in the region, however, is likely to be considerably slower through 2022 than it has been in the past decade. Demand for second homes is also likely to be constrained – by a slow recovery from the recession that began in 2008, and by more conservative mortgage lending practices. For the next several years, demand in this sector appears unlikely to return to the levels seen earlier in this decade. (The impact of these factors is discussed in greater detail below; see the discussion of "Future Conditions without the Project," p. 3-36.)

To estimate the number of acres consumed by each future residential unit developed, data obtained from ORPS was used to determine the median residential lot size in each town for residential lots larger than one acre[1]. The proportion of *developable* land to be consumed by each projected future residential parcel was estimated based on the percentage of existing high-density residential land (smaller than 15-acre lots) that is developable within the watershed portion of each town.[2] Because smaller, higher-density lots typically include a higher percentage of developable land, this approach is more conservative than using the average developable percentage for all residential land – that is, it yields a higher estimate of the developable acreage needed to support new residential development.

To estimate the total developable acreage required to support residential development in each town through 2022, we multiplied:

- The total number of housing units projected per year, by
- The number of acres per unit, by
- The percentage of those acres that are considered to be developable, by,
- 12 years.

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[1] Lots under one acre were excluded since they typically represent older residential development in historic town centers and are thus not reflective of the predicted size of future development.

[2] Source: NYC DEP data based on ORPS and other sources.

Note that demand for commercial and industrial land consumption was not projected. Such land represents less than 2 percent of watershed lands and; and NYCDEP generally does not acquire properties used for commercial or industrial purposes. Moreover, a significant portion of the region's commercial activity is concentrated in hamlet areas, where NYCDEP generally does not acquire land. These uses are discussed in the document under Impacts on Industries and Businesses.

Step 3. Estimate future purchases of developable land by NYCDEP under the Land Acquisition Program

Acres of fee, conservation easement (CE) and Watershed Agricultural Council (WAC) easement land that could be acquired through 2022 were projected for each town. Fee and CE acquisitions were projected using the acres of remaining solicited land by town[1], combined with an assumed future success rate by town. The future success rate, by town, was determined using the Program's county-wide historical success rate as a starting point. This county level 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. To develop a reasonable worst-case scenario, the overall success rate was forecast to be higher than previous success rates so that the total amount of land acquired would conservatively be estimated as higher in the next 12 years than in the past 12 years. This result is not expected to occur; the estimate is used as an outer bound for EIS purposes.

To estimate how much of the land projected to be acquired by NYCDEP in each town would be developable, two alternative measures were used and the higher selected for each town:

- The percentage of fee and CE land acquired under LAP between 1997 and 2009 that is defined as developable;[2] and
- The percentage of all remaining privately-owned vacant and low-density residential land defined as developable as of 2009.

For each town, we then estimated the total number of *developable* acres that NYCDEP is likely to acquire through 2022 by multiplying NYCDEP's projected fee and CE acquisitions by the higher of these two percentages.

Step 4. Estimate remaining developable land in 2022 after accounting for LAP acquisitions and housing development

Lastly, we projected the amount of developable land remaining in each town in 2022 after 12 years of residential development and LAP acquisitions. We subtracted from the developable acres available in each town as of 2009 (Step 1) the developable acres projected for housing development through 2022 (Step 2) and the developable acres projected for LAP activity through 2022 (Step 3).

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[1] There may be some land in watershed towns that is eligible for acquisition in fee simple or through conservation easements, and could thus potentially be solicited, but has not yet been solicited. Properties that have already been solicited represent by far the greatest part of all remaining land that would be eligible for acquisition under the Extended LAP, although there may be some land that is eligible that has not been solicited. Already-solicited land thus represents a reasonable proxy for land that could potentially be acquired in the future.

[2] Source: NYC DEP land acquisition database.

Based on these results, we calculated the percent of the 2009 level of developable land in the town that is projected to be available for development as of 2022.

Assumptions on Agricultural Land

As noted in Step 1, the definition of "available developable land" included only privately-owned vacant land and low-density residential land (that is, residential parcels of 15 acres or larger). An alternative analysis was also performed in which agricultural land was included in addition to privately-owned vacant and low-density residential land. Since the first approach excluded agricultural land from the definition of available developable land, WAC agricultural easements were also excluded from the estimates of the land to be acquired by LAP through 2022 (Step 3 above). In the alternative analysis, WAC easements were included in our estimates of future acquisitions.

As might be expected, these two approaches yield somewhat different results in terms of the percentage of the current supply of developable land that still remains in 2022. In most towns, excluding agricultural land from the supply of developable land results in a lower percentage of developable land remaining in 2022. In a few cases, however – where NYCDEP expects a relatively high percentage of all agricultural land to be covered by WAC easements – including agricultural land yields a lower percentage of developable land remaining in 2022. For each town, we applied whichever method produced the lower estimate of developable land remaining in 2022.

Assessing Impacts on Land Prices and the Affordability of Housing

Evaluation of the potential impact of the proposed action on the price of land and (indirectly) on the price of housing and affordability included:

- Analysis of data obtained from the ORPS on arms-length sales of privately-owned vacant land in watershed towns, for the period 2001-2009, to determine trends in the price of land;
- Comparison of price trends in watershed towns with prices in nearby non-watershed towns;
- Exploring the potential relationship between the rate at which land prices have risen in various areas within the watershed region, and the extent of LAP acquisitions in those areas;
- Analysis of the scale of NYCDEP's acquisitions relative to the overall size of the of the market for watershed land (in terms of both numbers of transactions and total acreage, and of how this relationship varies within the watershed and over time);
- Exploring the implications of any potential impacts on land prices for socioeconomic conditions in the region;
- Analysis of data from the ORPS on sales of single-family homes in watershed towns between 2001 and 2009;
- Review of data on median family income and poverty levels, and analysis of changes in the percentage of median family income needed to finance the purchase of a median-priced home in various areas within the watershed; and comparison of these trends with those in non-watershed towns;
- Exploring the potential relationship between the rate at which home prices have risen in various areas within the watershed region, and the extent of LAP acquisitions in those areas;
- Review of data on locations of affordable housing and other factors affecting the affordability of housing in the watershed region; and
- Interviews with representatives of affordable housing organizations in the region.

Estimating Impacts on Industries and Businesses

The EIS evaluates the potential impact of the proposed action on several industries and types of activity that could be affected either positively or negatively by LAP. The evaluation focuses primarily on several land-based industries and activities that could be particularly affected by further acquisitions of watershed land under LAP, including agriculture, mining, forestry and outdoor recreation. The program's potential impact on commercial activity more broadly is also considered.

For each sector, available data were reviewed on numbers of businesses, employment, and economic productivity and overall trends. An assessment is provided of how much land related to these types of businesses LAP has acquired in the past and the extent to which related uses are allowed on LAP and WAC lands. Based on this information, the impacts of future LAP acquisitions were assessed. Sources of data used in the analysis are listed below in Table 3-2.

Table 3-2: Sources of data used in the analysis of industry impacts

Agriculture
U.S. Census of Agriculture
National Agricultural Statistics Service
U.S. Department of Commerce, Bureau of Economic Analysis – data on farm employment and income
NYS Department of Agriculture and Markets
Land use data on agricultural land use based on ORPS
Mining
NYSDEC database on mining operations in the region
NYSDEC report on bluestone mining
NYSDOL data on employment, U.S. Census Bureau data on self-employment in mining
Forestry
U.S. Forest Service
NYSDOL
U.S. Census Bureau.
Other Commercial Businesses
NYSDOL regional, county and ZIP-code level data on employment in the region
Land use data on commercial/industrial/institutional land use based on ORPS
Data from Claritas on business establishments within the region, where they are located and how many people they employ

In addition to these sources, interviews were conducted with economic development stakeholders throughout the region including county planning and economic development officials, and representatives of Chambers of Commerce, Catskill Watershed Corporation, Watershed Agricultural Council, Delaware County Planning Department, Delaware County Economic Development, Ulster County Development Corporation, Delaware County Opportunities, Western Catskills Community

Revitalization Council, Community Action of Greene County, and Rural Ulster Preservation Corporation.

The assessment of the Program's potential impact on these sectors focuses largely on its *direct* impact: to what extent is acquisition of additional land under LAP likely to result in a cessation of existing productive activity on the land to be acquired, or to preclude the otherwise likely development of new productive activity on that land? It is also possible that additional acquisition of land under LAP could have indirect impacts. If, for example, the analysis showed that additional acquisitions were likely to result directly in a substantial reduction in farming within the region, it would be important to consider the indirect effects of such a change – for example, a similar decline in businesses (such as feed stores) that support the agricultural sector. However, because the analysis showed that the acquisition of additional land under LAP would have little direct impact, the analysis of indirect impacts was not needed or undertaken.

Impact on local government revenues

This chapter of the DEIS also explores the program's potential impact on local government revenues. Data sources used in this analysis included information on school taxes and general real property taxes (including town, county and special district taxes) paid by NYCDEP on LAP-acquired properties; and data from the New York State Comptroller's Office on local government, school district, and fire district revenues.

EXISTING CONDITIONS

Population

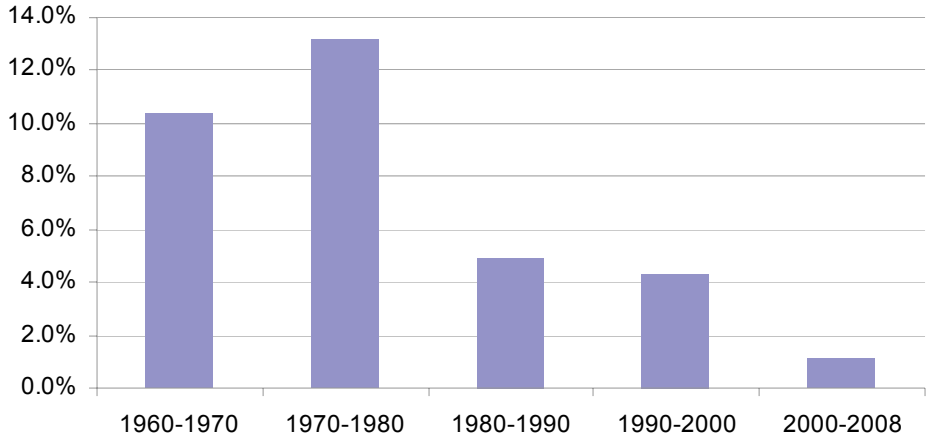
In 2008, the combined population of the 41 West-of-Hudson watershed towns[1] is estimated at 122,006[2]. As Table 3-3 shows, the combined population of West-of-Hudson towns grew substantially during the 1960's and 1970's; but growth has slowed in each decade since 1980. The combined population of the towns grew by 13.18 percent in the 1970's, 4.93 percent in the 1980's, and 4.28 percent in the 1990's – but by just an estimated 1.16 percent between 2000 and 2008.

Table 3-3: Population of Watershed Towns, Grouped by County, 1960-2008

Geography	1960	1970	1980	1990	2000	2008	% Change, 1990-2000	% Change, 2000-2008
Delaware Watershed Towns	38,372	39,497	41,356	41,403	41,832	40,279	1.0%	-3.7%
Greene Watershed Towns	5,879	5,357	7,017	7,332	7,791	8,145	6.3%	4.5%
Schoharie Watershed Towns	2,692	2,734	3,628	4,016	4,173	4,055	3.9%	-2.8%
Sullivan Watershed Towns	16,989	19,343	22,581	24,221	25,419	26,607	4.9%	4.7%
Ulster Watershed Towns	27,163	33,826	39,705	45,034	48,011	49,618	6.6%	3.3%
Total, WOH Watershed Towns	**93,055**	**102,727**	**116,267**	**122,006**	**127,226**	**128,704**	**4.3%**	**1.2%**

Source: U.S. Census (1960-2000), DemographicsNow (2008)

Figure 3-1: Growth Rate by Decade for West-of-Hudson Watershed Towns, 1960 – 2008



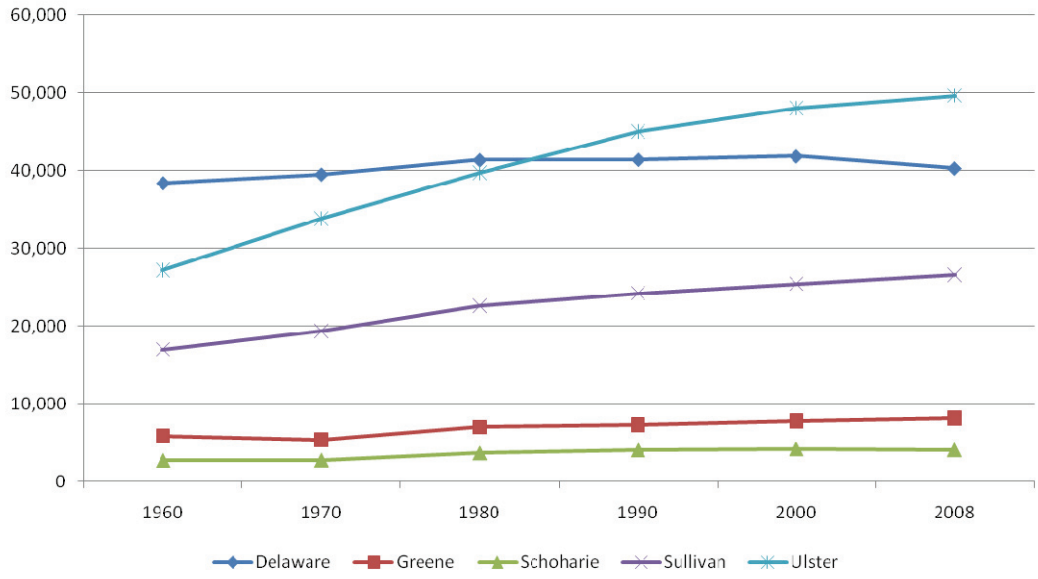
Source: U.S. Census (1960-2000), DemographicsNow (2008)

[1] Town population data shown in Tables 1 to 3 are for the entire town, including the non-watershed portions. As the term is used here, "population" includes people whose primary residence is in the watershed towns. It generally does not include second-home owners, but does include institutional populations (such as nursing home or adult home residents); and may also include some temporary residents such as college students.

[2] DemographicsNow, a service of SRC, LLC, provides annual estimates for many of the demographic and economic indicators included in the decennial census and the Census Bureau's annual American Communities Survey (ACS). Demographics Now and ACS estimates are generally consistent; ACS, however, does not provide data for smaller municipalities, such as the West-of-Hudson watershed towns.

As Figure 3-1 and Figure 3-2 show, patterns of growth in the watershed towns vary from county to county. Ulster, Greene and Sullivan County towns have seen continued growth; but towns in two counties that had recorded modest growth between 1990 and 2000 – Delaware and Schoharie – are estimated to have lost population since 2000.

Figure 3-2: West-of-Hudson Watershed Town population trends, 1960-2008



Source: U.S. Census (1960-2000), DemographicsNow (2008)

Not all residents of the five counties' watershed towns live within the boundaries of the watershed; in fact, most do not. Of the 41 towns, 12 are wholly within the watershed – so by definition all of their residents live within the watershed. The portion of the remaining 29 towns' land area that lies within the watershed ranges from less than 1 percent in Broome to 98.6 percent in Walton. Based on point data from ORPS on the location of residential parcels within these towns, we can estimate the share of each town's population living within or outside the watershed.

Table 3-4 shows the total number of people residing within the boundaries of the West-of-Hudson watershed in 2008 was estimated by this method to be 49,134. Slightly more than half lived in Delaware County – 21 percent in Ulster – and 20 percent in Greene County.

Table 3-4: Population of the watershed portion of watershed towns, by county, 1990-2008

County	1990	2000	2008	% Change, 1990-2000	% Change, 2000-2008
Delaware	25,137	25,679	24,998	2.2%	-2.7%
Greene	9,024	9,407	9,764	4.3%	3.8%
Schoharie	1,083	1,134	1,110	4.7%	-2.1%
Sullivan	2,287	2,735	3,002	19.6%	9.8%
Ulster	9,356	9,872	10,260	5.5%	3.9%
WOH Total	**46,887**	**48,827**	**49,134**	**4.1%**	**0.6%**

As with the five counties, variations in population and population growth are also evident at the town level. Table 3-5 lists the seven largest and seven smallest towns, measured by population, among the 34 towns in which at least 5 percent of the town's total land area lies within the watershed[1]. They range from Wawarsing, with an estimated population of 13,320 in 2008, to Halcott, with an estimated population of 203.

Table 3-5: Seven smallest and seven largest towns in the watershed (> 5% in WS), by population, 1990-2008

Seven smallest towns						
Town	County	1990	2000	2008	% Change, 1990-2000	% Change, 2000-2008
Halcott	Greene	193	193	203	0.0%	5.2%
Hardenburgh	Ulster	200	208	211	4.0%	1.4%
Denning	Ulster	495	516	524	4.2%	1.6%
Bovina	Delaware	550	664	633	20.7%	-4.7%
Prattsville	Greene	774	665	712	-14.1%	7.1%
Conesville	Schoharie	684	726	714	6.1%	-1.7%
Ashland	Greene	803	752	827	-6.4%	10.0%

Seven largest towns						
Town	County	1990	2000	2008	% Change, 1990-2000	% Change, 2000-2008
Neversink	Sullivan	2,951	3,909	4,117	32.5%	5.3%
Delhi	Delaware	5,015	4,547	4,465	-9.3%	-1.8%
Olive	Ulster	4,087	4,757	4,861	16.4%	2.2%
Walton	Delaware	5,953	5,472	5,332	-8.1%	-2.6%
Woodstock	Ulster	6,290	6,346	6,402	0.9%	0.9%
Hurley	Ulster	6,741	6,754	6,854	0.2%	1.5%
Wawarsing	Ulster	12,347	13,320	13,552	7.9%	1.7%

Source: US Census and DemographicsNow

Watershed towns also vary in terms of population growth or decline. As shown in Table 3-6, among towns whose land area is at least 5 percent within the watershed, population changes ranged from a 10 percent increase in Ashland and Neversink between 2000 and 2008, to a loss of 4.7 percent in Bovina.

Table 3-6: Seven towns with lowest and seven towns (> 5% in WS) with highest rate of growth, 1990-2008

Seven towns with lowest growth rate						
Town	County	1990	2000	2008	% Change, 1990-2000	% Change, 2000-2008
Bovina	Delaware	550	664	633	20.7%	-4.7%
Meredith	Delaware	1,513	1,588	1,519	5.0%	-4.3%
Middletown	Delaware	3,406	4,051	3,881	18.9%	-4.2%
Jefferson	Schoharie	1,190	1,285	1,241	8.0%	-3.4%
Hamden	Delaware	1,144	1,280	1,237	11.9%	-3.4%
Roxbury	Delaware	2,388	2,509	2,434	5.1%	-3.0%
Gilboa	Schoharie	1,207	1,215	1,185	0.7%	-2.5%

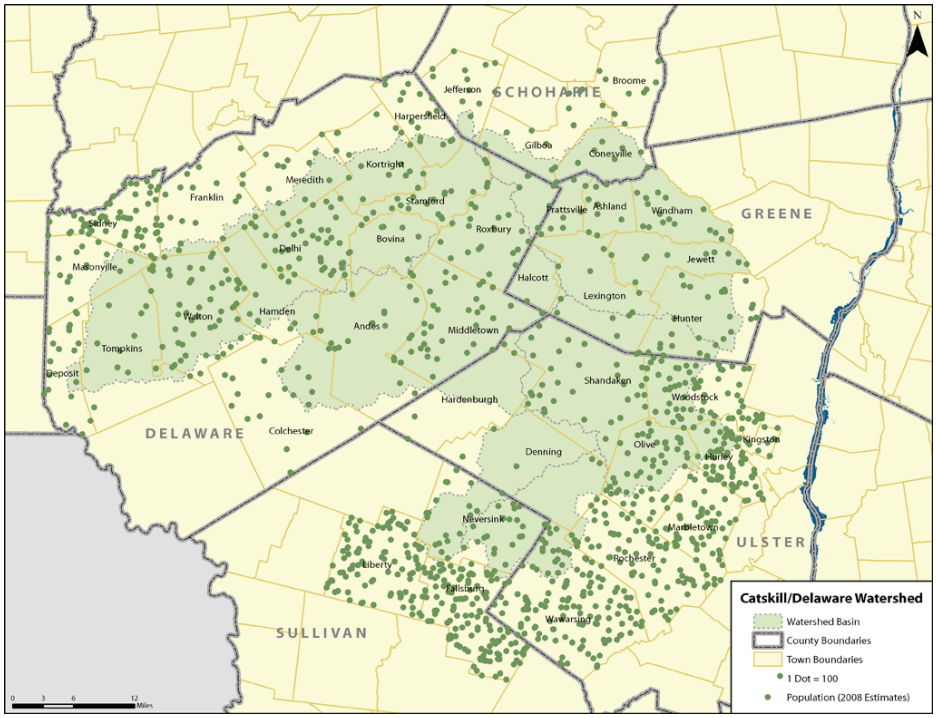
Seven towns with highest growth rate						
Town	County	1990	2000	2008	% Change, 1990-2000	% Change, 2000-2008
Halcott	Greene	193	193	203	0.0%	5.2%
Lexington	Greene	831	830	874	-0.1%	5.3%
Windham	Greene	1,682	1,660	1,755	-1.3%	5.7%
Shandaken	Ulster	3,047	3,235	3,427	6.2%	5.9%
Prattsville	Greene	774	665	712	-14.1%	7.1%
Ashland	Greene	803	752	827	-6.4%	10.0%
Neversink	Sullivan	2,951	3,553	3,909	20.4%	10.0%

Source: US Census and DemographicsNow

[1] The town population data presented in Table 3-5 is for the entire town, including portions outside the watershed.

Figure 3-3 shows, there is also considerable variation in population density within the region, ranging from 225.1 persons per square mile in Hurley in 2008 to 2.6 persons per square mile in Hardenburgh.

Figure 3-3: Population density map, West-of-Hudson



Very slow or no population growth – and in some towns, a decline in population – can have a variety of consequences for communities. It can undermine a community's ability to sustain essential public services and local institutions, as well as the retail and consumer service businesses that also help to sustain community life.

Age

As in New York State and the nation as a whole, the population of the watershed region has been aging. Between 1990 and 2008, the median age among all residents of West-of-Hudson watershed towns rose from 40.7 to 42.6. During the same period, the median age in New York State rose from 33.8 to 38. As with population, however, there is considerable variation among watershed towns in terms of the concentration of older residents. Table 3-7 lists the 7 highest-ranking and 7 lowest-ranking towns, measured by the percentage of all residents who are 65 or older.

Table 3-7: Seven lowest-ranking and seven highest-ranking towns (> 5% in WS), by percentage of residents 65+, 2008

Seven towns with lowest proportion of residents 65+			Seven towns with highest proportion of residents 65+		
Town	County	%	Town	County	%
Neversink	Sullivan	12.1%	Halcott	Greene	21.0%
Wawarsing	Ulster	13.0%	Lexington	Greene	21.0%
Olive	Ulster	14.4%	Andes	Delaware	21.7%
Meredith	Delaware	14.6%	Bovina	Delaware	22.3%
Masonville	Delaware	15.3%	Colchester	Delaware	23.5%
Jefferson	Schoharie	16.1%	Middletown	Delaware	24.7%
Hunter	Greene	16.2%	Harpersfield	Delaware	25.6%

Source: DemographicsNow

The aging of West-of-Hudson watershed communities has implications for the region's future, in terms of:

- Slower economic growth;
- Transitional challenges for small businesses and family farms;
- Changes in housing needs;
- Increased turnover in property ownership; and
- Sensitivity to increases in property taxes.

Employment

About 56.3 percent of all residents of West-of-Hudson watershed towns age 16 and older were employed in 2008. As Table 3-8 shows, the number of 16-and-older residents of the West-of-Hudson watershed towns who were employed declined slightly between 1990 and 2000 – from 55.4 to 54.4 percent – and then rose to 56.3 percent in 2008.

Table 3-8: Resident employment in West-of-Hudson watershed towns, grouped by county, 1990-2008

	1990		2000		2008			
County	Employed	% Employed, 16+	Employed	% Employed, 16+	Employed	% Employed, 16+	% Change in Resident Employment, 1990-2000	% Change in Resident Employment, 2000-2008
Delaware	17,684	54.8%	18,091	53.9%	18,101	53.9%	2.3%	0.1%
Greene	3,100	53.3%	3,318	54.2%	3,600	53.8%	7.0%	8.5%
Schoharie	1,669	52.7%	1,769	52.5%	1,788	52.4%	6.0%	1.1%
Sullivan	9,789	51.6%	9,619	48.3%	11,550	54.1%	-1.7%	20.1%
Ulster	20,826	58.4%	22,338	58.1%	24,750	60.2%	7.3%	10.8%
WOH Total	**53,068**	**55.4%**	**55,135**	**54.4%**	**59,789**	**56.3%**	**3.9%**	**8.4%**

Source: DemographicsNow

To some extent, relatively low employment ratios in the West-of-Hudson watershed towns reflect the larger proportion of their population that is over 65. But it may also reflect more limited

availability of employment opportunities in mostly-rural communities, as discussed below in the section on the economy of the watershed region.

It should be noted that the 2008 data cited above do not take into account the full impact of the recession that began in 2008. The number of unemployed residents in watershed towns has probably increased since 2008. County-level data from the New York State Department of Labor (Table 3-9) indicate that between July 2008 and July 2009, the number of employed residents of the five West-of-Hudson counties fell by 5,200 – a decline of 2.8 percent.

Table 3-9: Resident employment change by county, July 2008 – July 2009

	Payroll Employment			Unemployment Rate	
County	Jul-08	Jul-09	% Change	Jul-08	Jul-09
Delaware	22,500	21,200	-5.8%	5.8%	8.5%
Greene	23,900	23,000	-3.8%	5.7%	8.3%
Schoharie	15,200	14,700	-3.3%	6.2%	8.5%
Sullivan	35,700	34,800	-2.5%	5.9%	7.9%
Ulster	86,800	85,200	-1.8%	5.7%	8.1%

Source: NYS Department of Labor

Income

DemographicsNow estimates that the median household income in West-of-Hudson watershed towns in 2008 was $45,135 – about 84.6 percent of the median household income for New York State. Adjusting for inflation, median household income declined by 1.6 percent between 2000 and 2008, after increasing by 2.4 percent between 1990 and 2000.

Table 3-10 highlights differences in median income for the watershed towns in each of the five counties, and the percentage change in median household income (adjusted for inflation) between 1990 and 2008. Ulster County had the highest median income in 2008 – nearly 98 percent of New York State's median income – and Delaware County the lowest – less than 76 percent of the statewide median income. Median household incomes in 2008 in nearby non-watershed counties were comparable to those shown below – for example, $41,885 in Otsego County, and $52,354 in Columbia County.

Table 3-10: Average of median incomes for West-of-Hudson watershed towns, by county, 1990, 2000 and 2008 (2008 $)

County	1990	2000	2008	% Change, 1990-2000	% Change, 2000-2008
Delaware	$39,980	$41,143	$40,367	2.9%	-1.9%
Greene	$39,826	$42,774	$41,771	7.4%	-2.3%
Schoharie	$38,599	$42,795	$42,123	10.9%	-1.6%
Sullivan	$44,814	$42,994	$42,275	-4.1%	-1.7%
Ulster	$51,924	$53,664	$52,231	3.4%	-2.7%
New York State	$54,408	$54,565	$53,376	0.3%	-2.2%
WOH	**$44,793**	**$45,864**	**$45,135**	**2.4%**	**-1.6%**

Source: DemographicsNow

Table 3-11 shows, median incomes are higher in Ulster County watershed towns than in other watershed towns. At the town level, incomes ranged from $36,659 in Halcott and Lexington to $62,677 in Hurley. Of the 34 West-of-Hudson towns in which at least 5 percent of the town's total area is within the watershed, all but four had median household incomes below the statewide median in 2008.

Table 3-11: Seven lowest- and seven highest-income towns (> 5% in WS), 2008

Seven towns with lowest median household incomes			Seven towns with highest median household incomes		
Town	County	2008	Town	County	2008
Halcott	Greene	$36,654	Meredith	Delaware	$46,632
Lexington	Greene	$36,654	Jewett	Greene	$50,097
Deposit	Delaware	$36,978	Bovina	Delaware	$50,943
Prattsville	Greene	$37,460	Neversink	Sullivan	$54,855
Walton	Delaware	$37,552	Olive	Ulster	$55,202
Middletown	Delaware	$38,598	Woodstock	Ulster	$60,000
Broome	Schoharie	$39,267	Hurley	Ulster	$62,677

Source: DemographicsNow

Although the median income for the five-county region is less than 85 percent of the median for the state as a whole, poverty rates are comparable. As Table 3-12 shows, for the period 2006-2008, the poverty rate for the five counties combined averaged 12.5 percent, as compared to 13.8 percent for New York State. The percent of the population living in households with income below the federally-defined poverty level ($17,170 for a family of three in 2007) ranged from 9.9 percent in Greene County to 15.8 percent in Sullivan County. As shown in the table, poverty rates for nearby non-watershed counties generally fall within the same range.

Table 3-12: Percent of Population Living Below the Poverty Level, 2006 – 2008

	% Below Poverty Rate
Delaware	14.3%
Greene	9.9%
Schoharie	10.5%
Sullivan	15.8%
Ulster	11.7%
WOH Counties	*12.5%*
Columbia	10.3%
Otsego	14.4%
New York State	*13.8%*

Source: American Community Survey 2006 – 2008

Poverty rates are not available at the town level after 2000. We can, however, get a rough sense of the concentration of low-income households from more recent estimates of the percentage of all

households in each town with incomes of less than $20,000. As Table 3-13 shows, the number of such households ranged from 10.9 percent of all households in Hurley to 28.4 percent in Lexington.

Table 3-13: Seven highest- and lowest-percentages of households earning below $20,000 (Towns >5% WS)

Seven towns with the highest percentages of households earning below $20,000		
Town	**County**	**2009**
Hunter	Greene	24.1%
Middletown	Delaware	24.1%
Wawarsing	Ulster	25.3%
Walton	Delaware	26.6%
Deposit	Delaware	26.9%
Halcott	Greene	28.2%
Lexington	Greene	28.4%

Seven towns with the lowest percentages of households earning below $20,000		
Town	**County**	**2009**
Hurley	Ulster	10.9%
Bovina	Delaware	11.2%
Neversink	Sullivan	12.5%
Prattsville	Greene	12.5%
Olive	Ulster	13.4%
Woodstock	Ulster	15.6%
Franklin	Delaware	16.2%

Relatively low incomes – and in particular, incomes that are both relatively low and declining in real terms – can have serious implications for communities, including:

- Declining living standards;
- Fewer people who can afford homeownership, especially in times of rising real estate values;
- Increased pressure on property-owners to sell or subdivide land; and
- Reduced ability of local governments to support needed public services.

Residential Development

DemographicsNow estimates that in 2008 there were 79,414 housing units in the watershed towns west of the Hudson (including those located in the portions of watershed towns that are outside the watershed). The total number of housing units grew by 7 percent between 1990 and 2000, and by 4.8 percent between 2000 and 2008. As shown in Table 3-14, growth in the number of housing units was slower in the watershed towns of Delaware and Ulster counties between 2000 and 2008 than it had been in the 1990s. In the three Schoharie County watershed towns, the number of housing units grew rapidly during the 1990s, but was relatively unchanged afterward. In contrast, after very little growth in the 1990s, the supply of housing in Greene County's watershed towns grew by 6.5 percent – and the three Sullivan County watershed towns continued the strong growth recorded in the 1990s.

Table 3-14: Total housing units in watershed town, grouped by county, 1990-2008

	Total housing units			% Change,	% Change,
Geography	**1990**	**2000**	**2008**	**1990-2000**	**2000-2008**
Delaware County	23,836	24,963	25,379	4.7%	1.7%
Greene County	8,005	8,019	8,544	0.2%	6.5%
Schoharie County	2,841	3,440	3,406	21.1%	-1.0%
Sullivan County	12,846	13,971	15,351	8.8%	9.9%
Ulster County	23,248	25,370	26,734	9.1%	5.4%
West-of-Hudson	**70,776**	**75,763**	**79,414**	**7.0%**	**4.8%**

Source: DemographicsNow

Patterns of residential development vary within the watershed region, partly reflecting the variations in population density described earlier. Table 3-15 lists the watershed towns with the largest and smallest numbers of dwelling units in 2008, according to estimates from DemographicsNow. These two lists (presented for the entire town, including portions outside the watershed) reflect both the density of housing in the town and geographic size of the town. For example, the seven smallest towns include two with a large area and very few housing units (Denning and Hardenburgh) and three that have a small area (Halcott, Prattsville and Ashland). Wawarsing, in contrast, is the largest watershed town in terms of total area, but it is largely outside the watershed.

Table 3-15: Seven towns with the smallest and seven towns with largest number of dwelling units (> 5% in WS), 2008

Seven towns with smallest number of housing units			Seven towns with largest number of housing units		
Town	County	Total housing units	Town	County	Total housing units
Halcott	Greene	225	Shandaken	Ulster	2,915
Hardenburgh	Ulster	237	Hunter	Greene	2,947
Prattsville	Greene	444	Middletown	Delaware	3,031
Bovina	Delaware	526	Walton	Delaware	3,050
Denning	Ulster	537	Hurley	Ulster	3,093
Ashland	Greene	675	Woodstock	Ulster	4,000
Conesville	Schoharie	733	Wawarsing	Ulster	6,131

Source: DemographicsNow

Watershed towns also vary by rate of growth in the supply of housing.

Table 3-16 lists the towns with the highest and lowest percentage increases in the total supply of housing between 2000 and 2008.

Changes in the supply of housing are not purely a function of growth in resident population. In the West-of-Hudson area, second homes account for a significant part of the region's overall housing stock. In 2000, according to the U.S. Bureau of the Census, more than 19,000 units in the West-of-Hudson area – 26 percent of the watershed towns' total housing stock – were classified as being for "seasonal, recreational or occasional use."

Table 3-16: Seven towns with the smallest and seven towns with the largest percentage increase in the number of dwelling units (> 5% in WS), 2000-2008

Seven towns with smallest % increase in number of dwelling units					Seven towns with largest % increase in number of dwelling units				
Town	County	Total housing units, 2000	Total housing units, 2008	% Change, 2000-2008	Town	County	Total housing units, 2000	Total housing units, 2008	% Change, 2000-2008
Jefferson	Schoharie	904	891	-1.4%	Shandaken	Ulster	2,710	2,915	7.6%
Gilboa	Schoharie	992	985	-0.7%	Lexington	Greene	933	1,004	7.6%
Conesville	Schoharie	733	733	0.0%	Windham	Greene	2,002	2,155	7.6%
Delhi	Delaware	1,818	1,822	0.2%	Halcott	Greene	209	225	7.7%
Middletown	Delaware	3,013	3,031	0.6%	Prattsville	Greene	406	444	9.4%
Bovina	Delaware	521	526	1.0%	Ashland	Greene	603	675	11.9%
Meredith	Delaware	816	826	1.2%	Neversink	Sullivan	1,960	2,249	14.7%

Source: DemographicsNow

Table 3-17 highlights the distribution of housing units in various parts of the region across four categories – owner-occupied, renter-occupied, seasonally vacant and other vacant – in 2000. Similar data are not available for 2008. However, the fact that the number of housing units in watershed towns is estimated to have grown by 4.8 percent between 2000 and 2008, while the towns' resident population grew by 1.2 percent, could indicate that the number of seasonal and recreational units has grown since 2000.

Table 3-17: Total housing units, owner-occupied, renter-occupied, seasonally vacant, and other vacant units, 2000

	Total housing units	Owner-occupied units	Renter-occupied units	Seasonally vacant units	% Seasonally vacant of total	Other vacant units
Delaware Watershed Towns	24,963	12,652	4,096	6,474	26%	1,740
Greene Watershed Towns	8,019	2,374	841	4,005	50%	799
Schoharie Watershed Towns	3,440	1,492	217	1,566	46%	165
Sullivan Watershed Towns	13,971	5,514	3,304	3,580	26%	1,573
Ulster Watershed Towns	25,370	14,342	4,751	4,157	16%	2,121
Total, WOH Watershed Towns	**75,763**	**36,374**	**13,209**	**19,782**	**26%**	**6,398**

Source: DemographicsNow

There are some towns west of the Hudson where seasonally vacant units represent a particularly large share of the total housing stock.

Table 3-18 lists the seven towns that in 2000 had the highest percentages of seasonally vacant units, relative to the total supply of housing.

Table 3-18: Top seven towns (> 5% in WS), seasonally vacant units

Town	County	Total housing units	For seasonal, recreational or occasional use	% seasonal/rec /occ of total
Windham	Greene	2,002	1,123	56%
Conesville	Schoharie	733	399	54%
Halcott	Greene	209	113	54%
Lexington	Greene	933	504	54%
Jewett	Greene	1,026	539	53%
Andes	Delaware	1,326	648	49%
Hunter	Greene	2,840	1,353	48%

Source: DemographicsNow

Large concentrations of second homes can have both positive and negative impacts on local communities. They can be a source of business and job opportunities in construction; and may help support higher levels of retail and consumer services than full-time residents could support on their own. They generate property tax revenues, without adding commensurately to local school district costs (although second homes do not necessarily entail lower levels of spending on other local public services, such as road maintenance and fire protection).

Strong demand for second homes can increase the price of existing homes – which can benefit current homeowners, but also make it more difficult for other local residents who are seeking to buy a home.

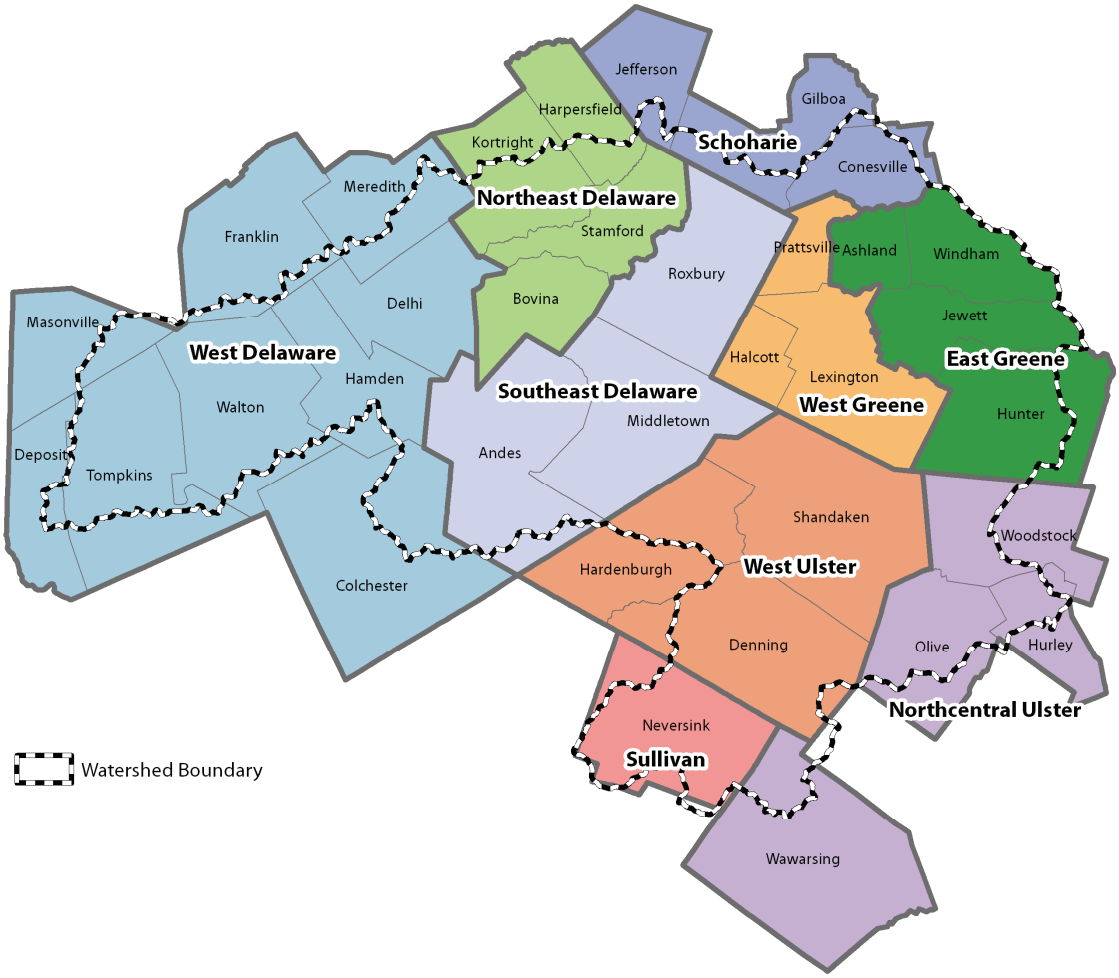
Housing Prices

As in many other parts of the U.S. and New York State, housing prices rose sharply in watershed towns in the early and mid 2000's, giving rise to widespread concern about the continued ability of local residents to afford homes in the region. To assess the impact of this trend – and to highlight differences within the watershed region – the 34 towns in which at least five percent of the town's total area is within the watershed were grouped into eight sub-county areas, based on both geographic proximity and market characteristics.

- Schoharie County – including Conesville, Gilboa and Jefferson;
- Greene County Mountaintop East – including Windham, Ashland, Jewett and Hunter;
- Greene County Mountaintop West – including Lexington, Prattsville and Halcott;
- North Central Ulster County – including Woodstock, Hurley, Olive and Wawarsing;
- West Ulster County – including Shandaken, Denning and Hardenburgh;
- Sullivan County – including Neversink;
- Southeast Delaware County – including Andes, Middletown and Roxbury;
- Northeast Delaware County – including Harpersfield, Kortright, Stamford and Bovina; and
- West Delaware County – including Colchester, Deposit, Delhi, Franklin, Hamden, Masonville, Meredith, Tompkins and Walton.

The town groups are shown in Figure 3-4.

Figure 3-4: Map of town groups inside the watershed

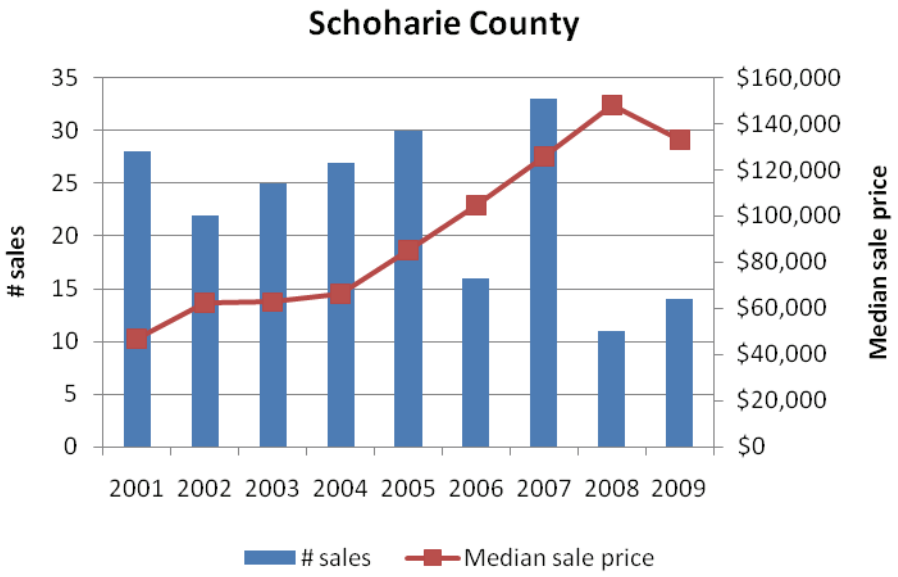


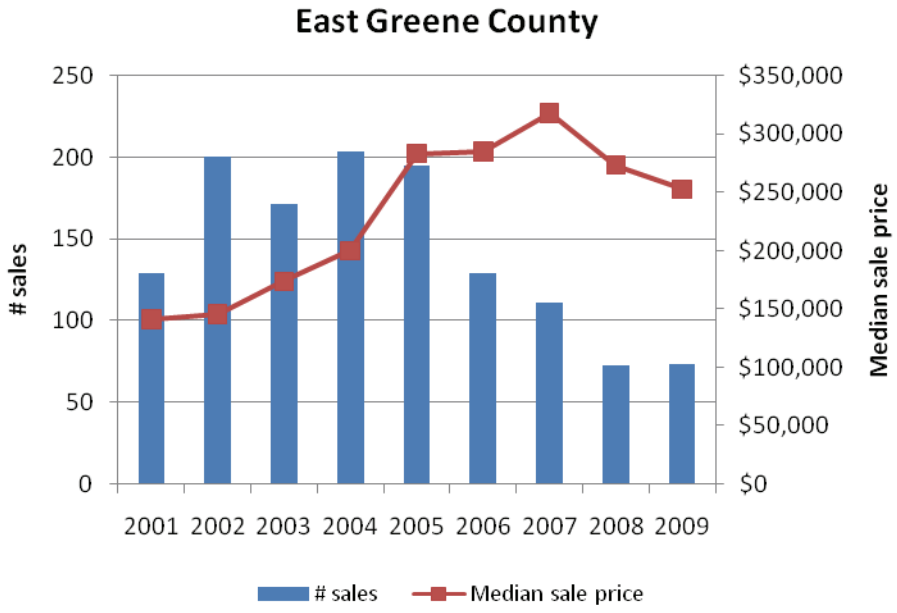
Using data obtained from the New York State Office of Real Property Services on arms-length sales of single-family homes on lots of five acres or less, we calculated for each of these areas the percentage increase in home prices in each of these eight areas between 2001 and 2009. The results are summarized below in **Table 3-19** and displayed graphically for each area in **Figure 3-5**. As the Table shows, the cumulative increase in the price of single-family homes during this period ranged from 27 percent in Sullivan County (Neversink) to 186 percent in the Schoharie County.

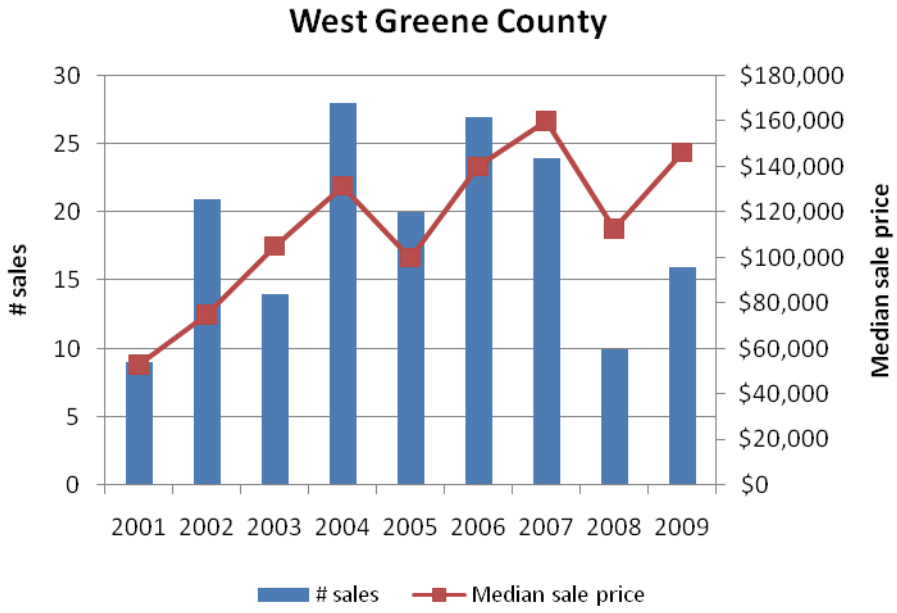
Table 3-19: Median sale prices of single-family homes on lots of five acres or less, 2001-2009

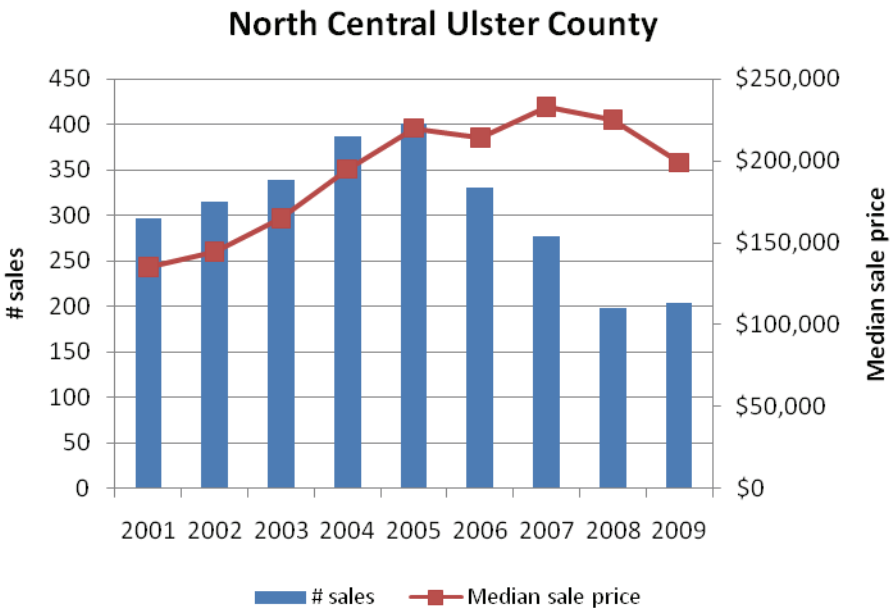
Town Groups	Median sale price 2001	2009	% Change, 2001-2009
Inside watershed			
Schoharie County	$46,500	$133,000	186%
Greene County Mountaintop West	$53,000	$146,000	175%
Western Ulster County	$88,500	$184,000	108%
Western Delaware County	$52,000	$100,000	92%
Greene County Mountaintop East	$110,000	$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%

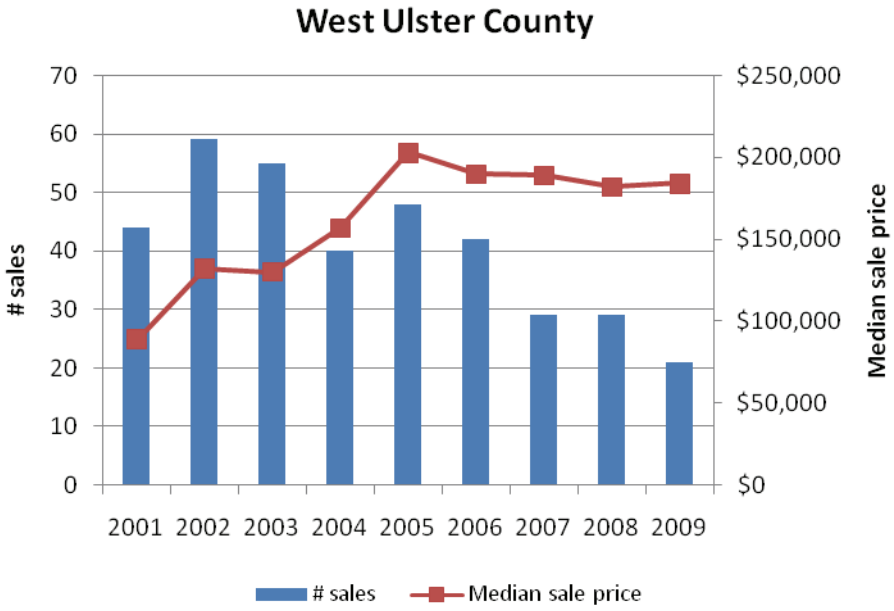
Figure 3-5: Median sale price and number of sales of single-family homes on lots of five acres or less, by town group, 2001-2009

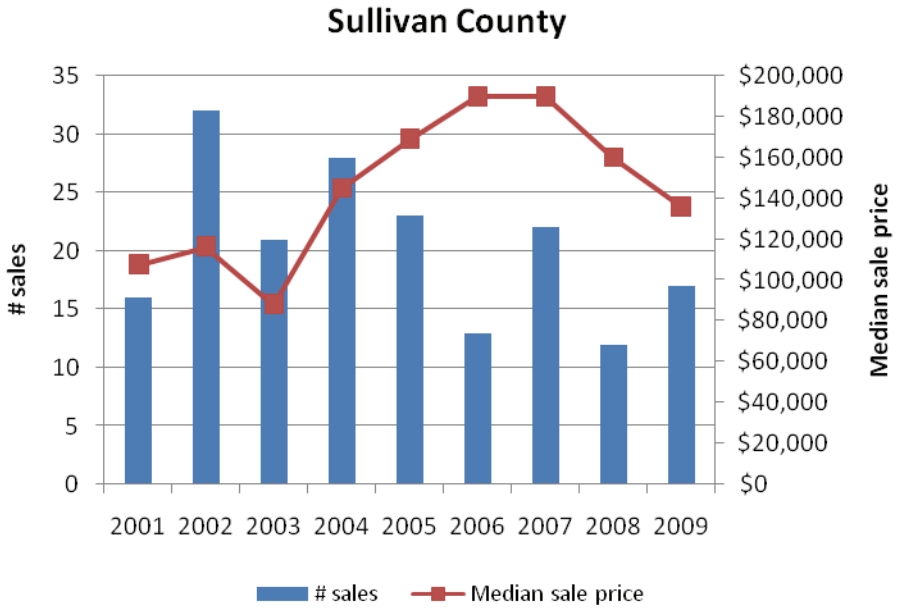


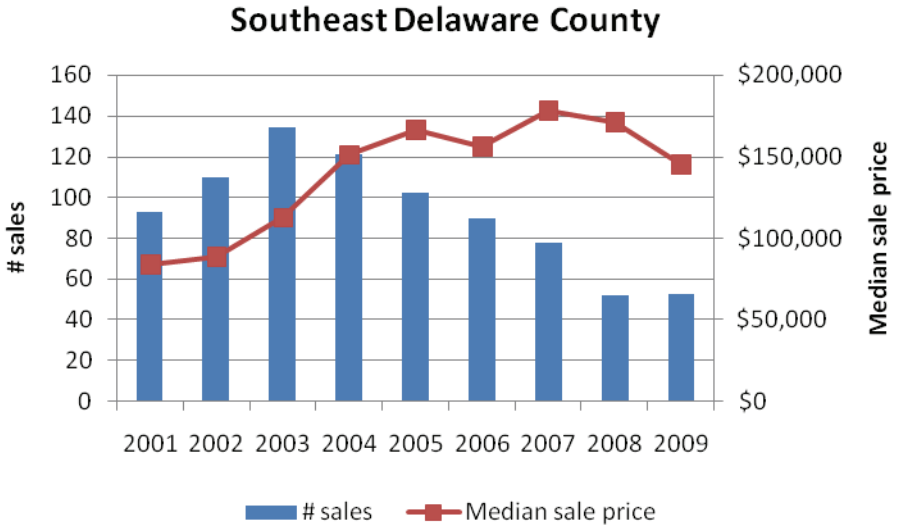

East Greene County
250
200
150
100
50
0
sales
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
Median sale price
2001 2002 2003 2004 2005 2006 2007 2008 2009
sales
Median sale price

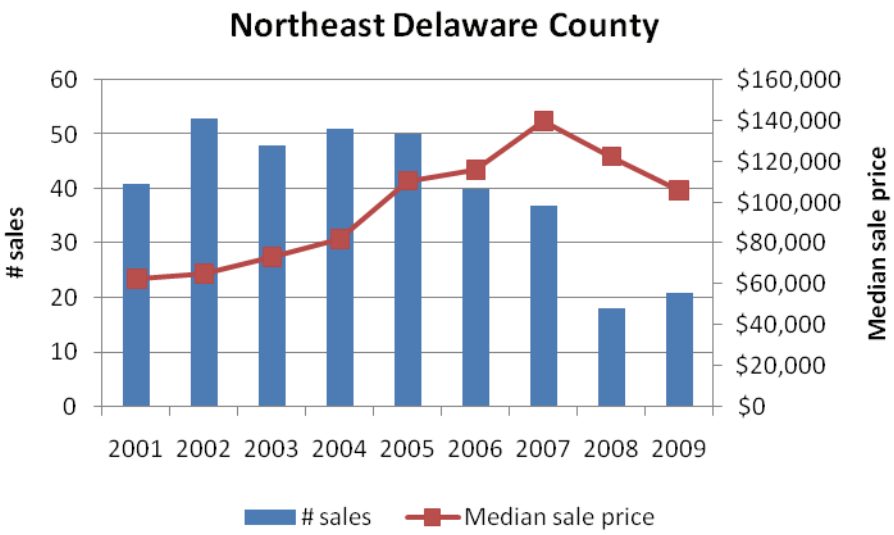

West Greene County
30
25
20
15
10
5
0
sales
$180,000
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
Median sale price
2001 2002 2003 2004 2005 2006 2007 2008 2009
sales
Median sale price

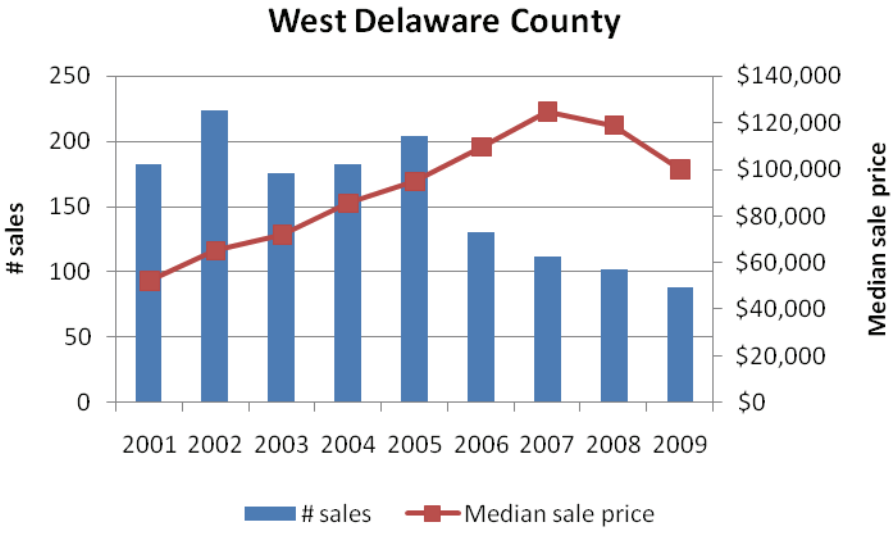

North Central Ulster County
450
400
350
300
250
200
150
100
50
0
sales
$250,000
$200,000
$150,000
$100,000
$50,000
$0
Median sale price
2001 2002 2003 2004 2005 2006 2007 2008 2009
sales
Median sale price


West Ulster County
70
60
50
40
30
20
10
0
sales
$250,000
$200,000
$150,000
$100,000
$50,000
$0
Median sale price
2001 2002 2003 2004 2005 2006 2007 2008 2009
sales
Median sale price


Sullivan County
35
30
25
20
15
10
5
0
sales
$200,000
$180,000
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
Median sale price
2001 2002 2003 2004 2005 2006 2007 2008 2009
sales
Median sale price


Southeast Delaware County
160
140
120
100
80
60
40
20
0
sales
$200,000
$150,000
$100,000
$50,000
$0
Median sale price
2001 2002 2003 2004 2005 2006 2007 2008 2009
sales
Median sale price





As they have elsewhere, price increases in the West-of-Hudson watershed region have affected the affordability of housing for local residents. To gauge the impact of price increases on affordability, we calculated the annual carrying cost for a mortgage on a median-priced home – assuming a 20 percent down payment and a 30-year, fixed-rate mortgage at 6 percent. We then calculated the resulting annual mortgage payments as a percentage of the median family income for each county. The results are shown below in Table 3-20. Since incomes rose much more slowly than housing prices, the percentage of countywide median family income needed to cover annual mortgage payments rose in all eight sub-county areas; but the rate of increase – and the results – varied considerably across the region. For example:

- The percentage of countywide median family income needed to finance the purchase of a median-priced home in eastern mountaintop towns in Greene County rose from 14.4 to 22.4

percent; in both absolute and relative terms, this area has the region's most expensive housing.

- In the Schoharie County watershed towns, the percentage of countywide median family income needed to finance a median-priced single family home more than doubled between 2001 and 2009; nevertheless, annual mortgage payments for the median-priced home in 2009 equaled only 12.7 percent of median family income.
- In Neversink, the increase in percentage of countywide median family income needed to purchase a median-priced home fell slightly – from 14.2 to 12.9 percent.
- Northwestern Delaware County had the region's least expensive housing – both in absolute terms and as a percentage of the County's median family income.

Table 3-20: Percent of median family income required to cover annual mortgage payments

	Median Family Income		Annual Mortgage Payment		Percent of Income	
Sub-region	*2001*	*2006-08*	*2001*	*2009*	*2001*	*2009*
Schoharie	$43,118	$60,187	$2,676	$7,655	6.2%	12.7%
East Greene	$43,854	$54,103	$6,331	$12,116	14.4%	22.4%
West Greene	$43,854	$54,103	$3,051	$8,403	7.0%	15.5%
North Central Ulster	$51,708	$69,477	$7,770	$11,454	15.0%	16.5%
West Ulster	$51,708	$69,477	$5,094	$10,590	9.9%	15.2%
Sullivan	$43,458	$56,209	$6,187	$7,828	14.2%	13.9%
Southeast Delaware	$39,695	$51,396	$4,317	$7,482	10.9%	14.6%
Northeast Delaware	$39,695	$51,396	$3,597	$6,101	9.1%	11.9%
West Delaware	$39,695	$51,396	$2,993	$5,756	7.5%	11.2%

Mortgage carrying costs are of course not the only factor in the cost of homeownership – fuel, insurance and real property tax costs also have an effect. But the data presented in Table 3-20 provide a good measure of how the cost of homes vary within the watershed region, and how they have varied over time, in relation to income.

For those who cannot afford to purchase (or otherwise do not wish to own) a home, the problem of affordability is heightened in some parts of the region by the relative scarcity of rental housing. In 2008, rental units accounted for 17.4 percent of all housing in the watershed towns. As Table 3-21 shows, rental housing ranges from a high of 21.3 percent of all units in North Central Ulster to a low of 6.4 percent in Schoharie County watershed towns. Region-wide, rental housing accounted for fewer than 10 percent of all housing units in 11 of the 34 towns in which land within the watershed accounted for at least 5 percent of the town's total area.

Table 3-21: Percentage of rental units by town group, 2008

Sub-region	Total housing units	Renter-occupied units	% Renter-occupied units
Schoharie	2,609	168	6.4%
West Greene	1,673	134	8.0%
Southeast Delaware	6,493	700	10.8%
Sullivan	2,249	246	10.9%
East Greene	6,871	760	11.1%
West Ulster	3,689	524	14.2%
Northeast Delaware	3,759	539	14.3%
West Delaware	12,098	2,100	17.4%
North Central Ulster	15,670	3,345	21.3%

In some watershed towns – especially those that are more rural in character – mobile homes play an important part in meeting the need for affordable housing. As Table 3-22 shows, mobile homes as a percentage of all housing units range from none in Woodstock to 29 percent in Halcott.

Table 3-22: Seven towns with lowest and highest % of mobile homes (> 5% in WS), 2000

Seven towns with lowest % of mobile homes of total housing units

County	Town	Group	Total housing units	Mobile homes	% Mobile homes of total
Ulster	Woodstock	North Central Ulster	4,000	0	0%
Greene	Windham	East Greene	2,155	63	3%
Greene	Hunter	East Greene	2,947	106	4%
Ulster	Olive	North Central Ulster	2,446	129	5%
Greene	Jewett	East Greene	1,094	70	6%
Ulster	Hurley	North Central Ulster	3,093	241	8%
Ulster	Shandaken	West Ulster	2,915	239	8%

Seven towns with highest % of mobile homes of total housing units

County	Town	Group	Total housing units	Mobile homes	% Mobile homes of total
Greene	Prattsville	West Greene	444	87	20%
Delaware	Tompkins	West Delaware	816	164	20%
Delaware	Franklin	West Delaware	964	206	21%
Delaware	Masonville	West Delaware	772	167	22%
Delaware	Kortright	Northeast Delaware	1,024	222	22%
Delaware	Colchester	West Delaware	1,669	363	22%
Greene	Halcott	West Greene	225	66	29%

The Economy of the Watershed Region

Assessing the impact of further acquisitions under the Extended LAP requires an understanding of the regional economic context within which the program operates. This part of Chapter 3:

- Briefly discusses trends in employment and industry mix in the watershed region; and
- Discusses current conditions and recent trends in several industries that are particularly dependent on land resources.

Employment growth, 1997-2008

As Table 3-23 shows, all five West-of-Hudson watershed counties experienced significant growth between 1997 and 2007 in county-wide payroll employment. In all but Greene County, payroll employment declined in 2008, as the recession began to take its toll.

Table 3-23: Total Industries Payroll Employment, 1997 – 2008

County	1997 Average Annual Employment	2007 Average Annual Employment	2008 Average Annual Employment	Change 1997 - 2007	% Change 1997 - 2007	Change 2007 - 2008	% Change 2007 - 2008
Delaware	15,953	17,211	16,634	1,258	7.9%	(577)	-3.4%
Greene	12,355	14,571	14,649	2,216	17.9%	78	0.5%
Schoharie	8,259	9,160	8,949	901	10.9%	(211)	-2.3%
Sullivan	23,321	25,950	25,869	2,629	11.3%	(81)	-0.3%
Ulster	55,278	62,246	60,382	6,968	12.6%	(1,864)	-3.0%
WOH Counties	*115,166*	*129,138*	*126,483*	*13,972*	*12.1%*	*(2,655)*	*-2.1%*
NYS	*7,902,044*	*8,550,093*	*8,596,391*	*648,049*	*8.2%*	*46,298*	*0.5%*

Source: New York State Department of Labor

Similar data are not available at the town level; but ZIP code-level data can provide a rough sense of changes in employment in a comparable area. Between 1997 and 2007, according to the New York State Department of Labor, private payroll employment grew from 34,108 to 35,624 – an increase of 4.4 percent – in 73 ZIP codes that roughly correspond to the West-of-Hudson watershed towns. This increase was not distributed evenly across the region, however; private payroll employment declined between 1997 and 2007 in 31 of the 73 West-of-Hudson ZIP codes.

Figure 3-6 highlights gains and losses in private payroll employment by ZIP code. While a number of West-of-Hudson communities suffered significant job losses between 1997 and 2007, it is worth noting that NYSDOL data also show relatively strong job growth in several small communities throughout the West-of-Hudson area. Table 3-24 highlights ZIP-code-level increases in private payroll employment in several West-of-Hudson communities, as reported by NYSDOL. These data should be interpreted cautiously because ZIP-code-level employment numbers in small communities can be affected by NYSDOL's disclosure rules and by company reporting practices. However, they highlight that some watershed communities have done better than others in terms of job growth.

Figure 3-6: Map of job gains and losses, West-of-Hudson

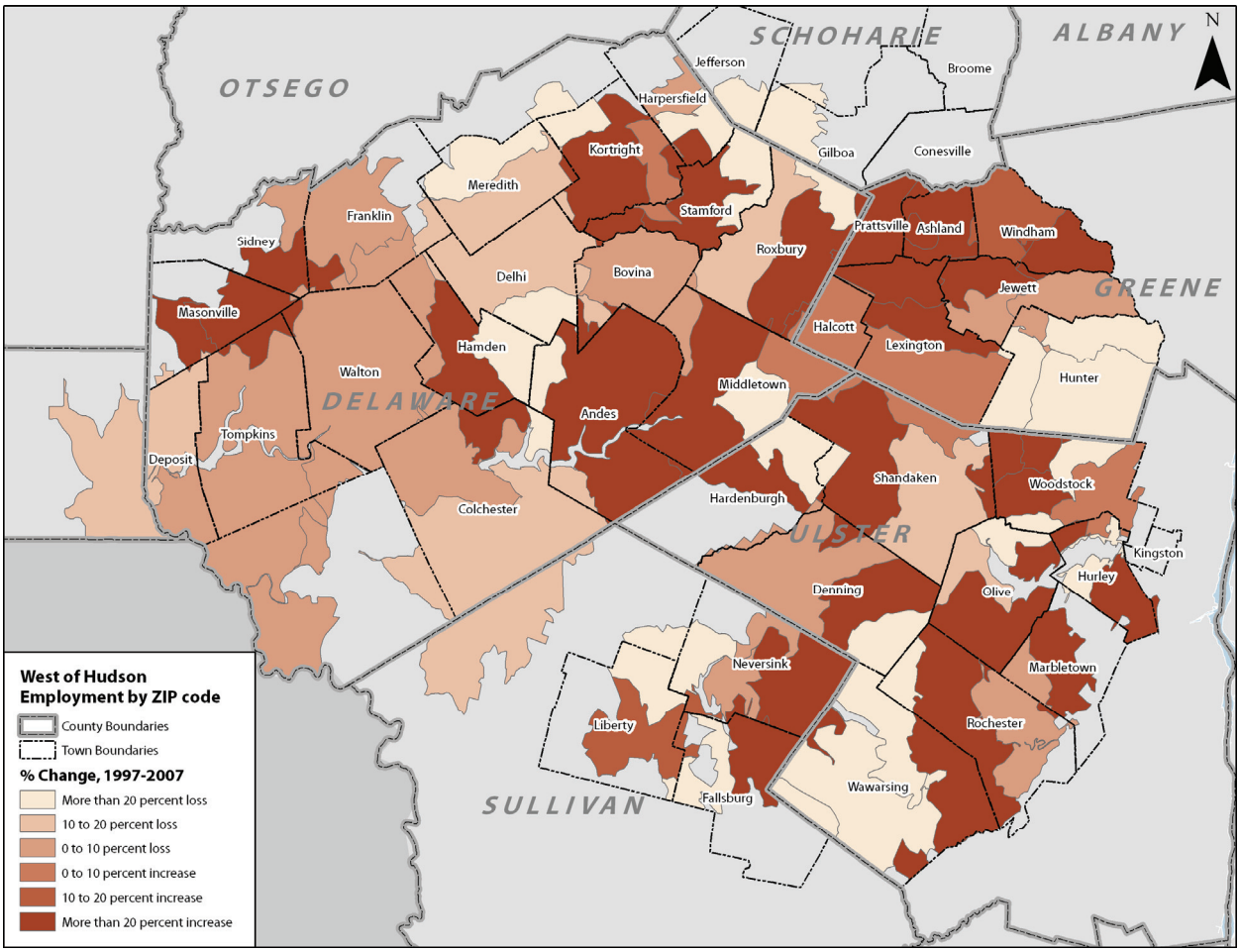


Table 3-24: Private payroll employment, 1997-2007

ZIP/Community	1997 Average Annual Employment	2007 Average Annual Employment	Change 1997-2007	% Change 1997-2007
12443 HURLEY	165	418	253	153.0%
12455 MARGARETVILLE	525	640	115	21.8%
12481 SHOKAN	94	271	177	188.1%
12496 WINDHAM	571	661	89	15.6%
12498 WOODSTOCK	1,279	1,335	57	4.5%
13731 ANDES	64	96	32	49.7%
13788 HOBART	240	843	604	252.1%

Source: New York State Department of Labor

Industry mix

As Table 3-25 shows, as of 2008 there are some notable similarities and differences in industry mix across the five counties. In all five, government accounts for an unusually large share of total employment. (In New York State as a whole, government accounted for 16.8 percent of all payroll employment in 2008.) Relatively few, in contrast, are employed in financial, information and business services. Delaware County has by far the largest concentration of manufacturing jobs; Sullivan County has the highest concentration in health care and social assistance; and Greene and Ulster counties the largest concentrations of jobs in tourism-related industries.

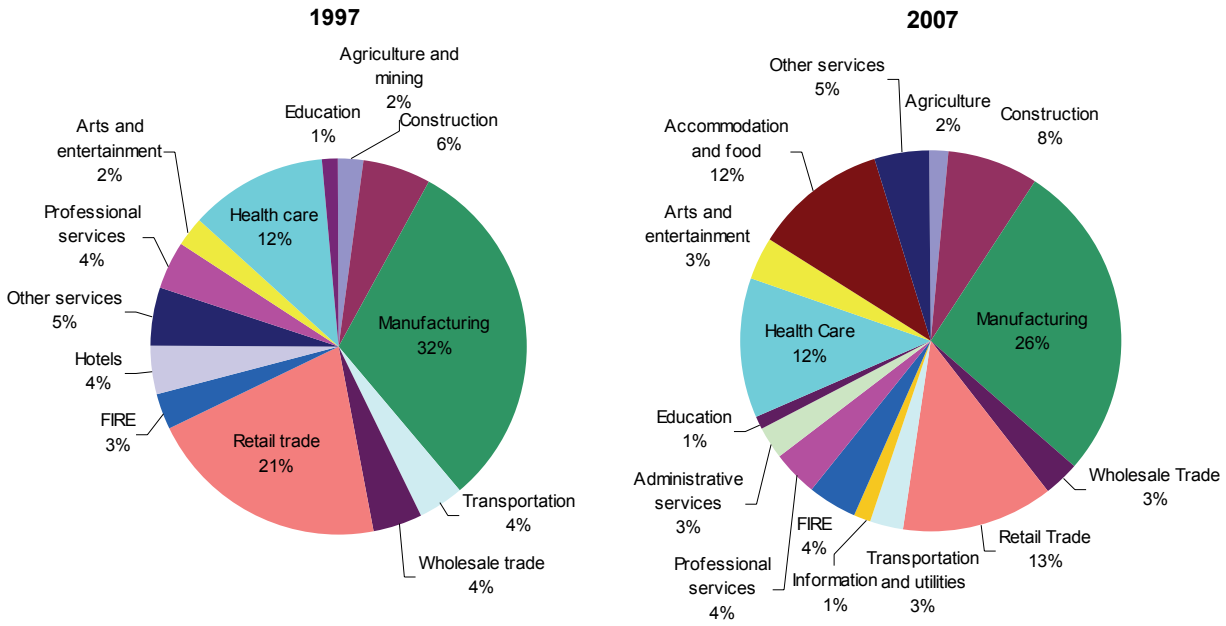
Table 3-25: Average annual county employment by industry, 2008

	Delaware		Greene		Schoharie		Sullivan		Ulster	
Industry Title	*Employment*	*% of total*	*Employment*	*% of total*	*Employment*	*% of total*	*Employment*	*% of total*	*Employment*	*% of total*
Total	*16,634*		*14,649*		*8,949*		*25,869*		*60,382*	
Government	4,492	27.0%	4,404	30.1%	2,930	32.7%	6,403	24.8%	14,335	23.7%
Ag & natural resources	232	1.4%	99	0.7%	173	1.9%	416	1.6%	1,028	1.7%
Construction	536	3.2%	773	5.3%	431	4.8%	1,080	4.2%	2,482	4.1%
Manufacturing	4,323	26.0%	1,098	7.5%	286	3.2%	1,318	5.1%	4,026	6.7%
Retail trade	1,785	10.7%	2,213	15.1%	1,177	13.2%	3,237	12.5%	9,283	15.4%
Finance, information & business services	1,107	6.7%	1,107	7.6%	761	8.5%	2,879	11.1%	7,704	12.8%
Education, health & social assistance	1,896	11.4%	1,250	8.5%	1,127	12.6%	5,187	20.1%	9,319	15.4%
Leisure activities	1,095	6.6%	2,363	16.1%	712	8.0%	2,820	10.9%	7,014	11.6%
Other	1,001	6.0%	1,293	8.8%	563	6.3%	2,430	9.4%	4,985	8.3%

Source: New York State Department of Labor

As noted above, payroll employment data are not available at the town level. But using ZIP-code level data, we can calculate industry mix – and how it has changed since 2007 – in the same set of ZIP codes used in Figure 3-6. Figure 3-7 shows industry mix in the West-of-Hudson area in 1997 and 2007. In 2007, the manufacturing sector – primarily concentrated in Delaware County – accounted for 27 percent of all private payroll employment in the West-of-Hudson ZIP codes; the principal tourism-related industries (hotels, restaurants, the arts and recreation) for 14 percent; retailing for 13 percent; and health care for 12 percent. Together these four sectors accounted for two-thirds of all private payroll employment in the region.

Figure 3-7: Average annual employment, West-of-Hudson



Source: New York State Department of Labor

Because of a change in the way employment and other industry data are classified by NYSDOL, the mix of industries in the watershed region in 2007 cannot be compared directly to the mix of industries ten years earlier – but there are enough similarities in industry definitions to allow us to draw some comparisons. Several broad trends are evident:

- Employment in manufacturing held relatively steady in the West-of-Hudson ZIP codes (especially when we take into account that some jobs included in the manufacturing sector in 1997 are counted as information-sector jobs in the 2007 data).
- Construction industry employment rose by 42 percent between 1997 and 2007 in the West-of-Hudson ZIP codes.
- Employment in finance, insurance and real estate increased by about 40 percent between 1997 and 2007.
- Employment in retailing, restaurants, hotels and recreation – all relatively low-wage sectors – grew by 6.7 percent in the West-of-Hudson ZIP codes.
- Employment in health and social services rose by 2.7 percent.

During 2008, the recession of 2008-09 began to affect business and employment in the watershed region. In the West-of-Hudson watershed ZIP codes, average annual private payroll employment fell by 2.8 percent – a loss of 987 jobs. Losses were concentrated in manufacturing, construction, and administrative support services. The decline in private payroll employment in the West-of-Hudson watershed area in 2008 effectively erased nearly two-thirds of the modest gains of the preceding ten years.

Agricultural uses account for a significant share of all land use in the watershed region; and for many watershed residents, agriculture is an important part of what defines the character of their communities. Nevertheless, it represents a relatively small part of overall economic activity in the watershed region[1].

As in many other parts of New York State, the amount of land used for agriculture has been declining in the watershed region for several decades. Between 1978 and 2008 (as Figure 3-8 shows), total farm acreage in the five West-of-Hudson watershed counties declined by 40 percent. Similarly, as shown in Table 3-26 between 1997 and 2007, farm employment in the five counties (including both farm proprietors and their employees) fell by 41 percent.

Figure 3-8: West-of-Hudson Farmland Acres, 1978 – 2008

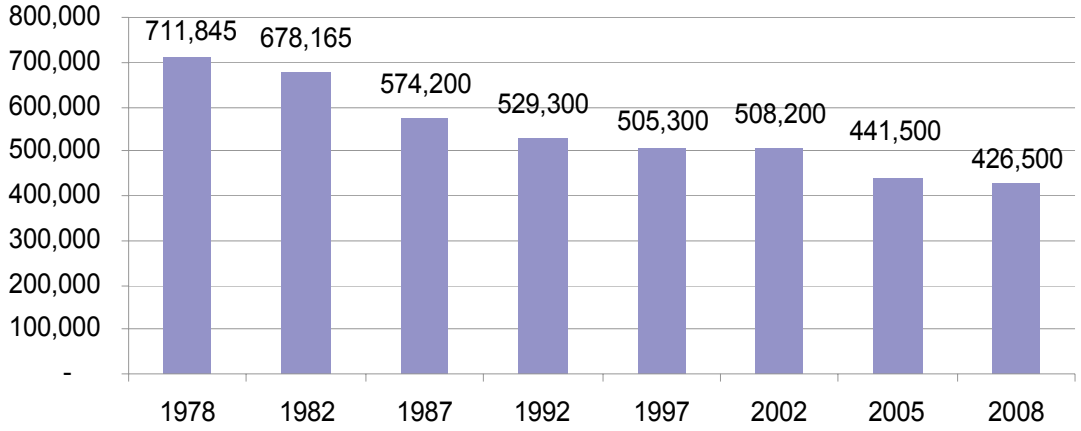


Table 3-26: Farm Employment by County, 1997 - 2007

Geography	1977	1987	1997	2007	% Change 1977 - 2007
West-of-Hudson	*9,713*	*8,305*	*6,597*	*5,730*	-41.0%
Delaware	3,420	2,691	2,125	1,860	-45.6%
Greene	799	782	636	560	-29.9%
Schoharie	1,954	1,663	1,440	1,270	-35.0%
Sullivan	1,504	1,200	860	756	-49.7%
Ulster	2,036	1,969	1,536	1,284	-36.9%

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Table 3-27 highlights several measures of agricultural activity in the five counties, and how they have changed between 1997 and 2007, based on data from the U.S. Census of Agriculture. Between

[1] The data in Tables 3-27 through 3-29, and in Figure 3-7 represent agricultural activity in the entire county, including watershed and non-watershed portions.

1997 and 2002, the number of farms in the five West-of-Hudson watershed counties rose from 2,199 to 2,622, and then declined to 2,377 in 2007. For the entire ten-year period from 1997 to 2007, the number of farms increased by 8.1 percent. Similarly, the total acreage devoted to farming rose from 470,266 in 1997 to 509,202 in 2002, and then fell to 431,038 in 2007. For the ten-year period, total

Table 3-27: Census of Agriculture data, by county and West-of-Hudson, 1997-2007

	Delaware	Greene	Schoharie	Sullivan	Ulster	WOH
Number of farms						
1997	717	244	518	311	409	2,199
2002	788	342	579	381	532	2,622
2007	742	286	525	323	501	2,377
% Change, 1997-2007	3.5%	17.2%	1.4%	3.9%	22.5%	8.1%
Land in farms (acres)						
1997	183,667	48,770	110,773	58,067	68,989	470,266
2002	191,537	57,898	112,735	63,614	83,418	509,202
2007	165,572	44,328	95,490	50,443	75,205	431,038
% Change, 1997-2007	-9.9%	-9.1%	-13.8%	-13.1%	9.0%	-8.3%
Average size of farm (acres)						
1997	256	200	214	187	169	214
2002	243	169	195	167	157	194
2007	222	155	182	156	150	181
% Change, 1997-2007	-13.3%	-22.5%	-15.0%	-16.6%	-11.2%	-15.2%
Market value of products sold - Inflation adjusted 2008 $ (000s)						
1997	$ 59,859	$ 12,068	$ 36,313	$ 31,788	$ 58,745	$ 198,772
2002	$ 60,461	$ 17,204	$ 32,288	$ 45,182	$ 41,188	$ 196,323
2007	$ 57,271	$ 17,005	$ 36,510	$ 43,742	$ 68,126	$ 222,654
% Change, 1997-2007	-4.3%	40.9%	0.5%	37.6%	16.0%	12.01%
Average per farm sales - Inflation adjusted 2008 $						
1997	$ 70,588	$ 41,326	$ 60,521	$ 82,996	$ 117,491	$ 74,584
2002	$ 76,727	$ 50,304	$ 55,765	$ 118,589	$ 77,422	$ 75,761
2007	$ 76,669	$ 59,458	$ 69,543	$ 135,425	$ 135,981	$ 95,415
% Change, 1997-2007	8.6%	43.9%	14.9%	63.2%	15.7%	27.9%
Government payments - Inflation adjusted 2008 $ (000s)						
1997	$ 410	$ 137	$ 385	$ 251	$ 337	$ 1,520
2002	$ 2,368	$ 376	$ 1,951	$ 664	$ 930	$ 6,289
2007	$ 1,295	$ 234	$ 619	$ 252	$ 295	$ 2,695
% Change, 1997-2007	215.5%	70.8%	60.8%	0.6%	-12.4%	77.33%
Average per farm receiving payments - Inflation adjusted 2008 $						
1997	$ 2,632	$ 1,922	$ 3,013	$ 3,342	$ 5,517	$ 3,285
2002	$ 10,670	$ 5,703	$ 11,897	$ 8,739	$ 13,668	$ 10,135
2007	$ 5,160	$ 3,714	$ 4,516	$ 3,879	$ 5,364	$ 4,527
% Change, 1997-2007	96.0%	93.2%	49.9%	16.1%	-2.8%	37.8%
Number of farms with sales of $250K or more						
1997	36	7	24	19	38	124
2002	54	11	27	18	33	143
2007	64	9	31	20	52	176
% Change, 1997-2007	77.8%	28.6%	29.2%	5.3%	36.8%	41.9%
Net income from operations - Inflation adjusted 2008 $ (000s)						
1997	$ 11,155	$ (272)	$ 3,735	$ 3,722	$ 11,972	$ 30,312
2002	$ 8,234	$ 620	$ 5,985	$ 5,985	$ 941	$ 21,765
2007	$ 13,642	$ 2,721	$ 7,882	$ 2,853	$ 14,846	$ 41,944
% Change, 1997-2007	22.3%	1099.3%	111.1%	-23.4%	24.0%	38.37%
Average net income per farm - Inflation adjusted 2008 $						
1997	$ 15,536	$ (1,099)	$ 7,182	$ 11,856	$ 29,058	$ 12,507
2002	$ 10,436	$ 1,818	$ 10,390	$ 38,472	$ 1,769	$ 12,577
2007	$ 18,262	$ 9,515	$ 15,013	$ 8,832	$ 29,633	$ 16,251
% Change, 1997-2007	17.5%	966.0%	109.0%	-25.5%	2.0%	29.9%
% Operators by principal occupation, farming						
1997	59.69%	46.72%	60.04%	62.38%	57.21%	58.3%
2002	63.07%	56.14%	57.51%	63.78%	64.10%	61.3%
2007	58.89%	50.70%	57.71%	50.77%	57.09%	56.2%

Source: U.S. Department of Agriculture, Census of Agriculture

farm acreage in the eight counties shrank by 8.3 percent. As a result, average farm size fell from 214 acres to 181 acres.

Measured by revenues, the great majority of these 2,377 farms are very small enterprises. In 2007, only 176 farms in the five counties sold more than $250,000 in farm products. Combined sales of farm products in 2007 by all farms in the five counties totaled $222.7 million – an average of about $94,000 per farm. Between 1997 and 2007, the total value of farm products sold by farms in the five counties increased by about 12 percent in real terms. The increased value of products sold, combined with an 8.3 percent reduction in total acreage being farmed, suggests that the remaining farmland is being used more productively. The data show considerable variation across the five counties in sales per acre of farm land – from $872 in Ulster to $368 in Schoharie and $333 in Delaware.

County-level data from the U.S. Bureau of Economic Analysis shown in Table 3-28 provide some insight into the place of agriculture in the economy of the watershed counties. In 2007, farm employment – including both self-employed farm operators and wage or salary workers employed in farming – accounted for 1.8 percent of total employment in the five counties, and 1 percent of total earnings. Farm employment ranged from less than 1 percent of all employment in Ulster County to 5.2 percent of all employment in Schoharie; and farm earnings from less than 0.4 percent of total earnings in Ulster to 2.3 percent in Delaware and Schoharie.[1]

Given the low revenues and low net earnings per farm cited in the Census of Agriculture data, it is not surprising that for many farm operators, farming is not their primary occupation. In 2007, about 44 percent of all farm operators in the five counties said that farming was not their primary occupation.

During the next 10 to 15 years, the relatively low earnings of farm operators will continue to represent a serious challenge for those communities interested in maintaining their agricultural base. Weak farm earnings, and a continuing decline in acreage being farmed, could increase pressure for sale of farmland. The fact that so many farmers in the region rely on other jobs as their primary source of income may to some extent provide a buffer against this pressure – but it also means that the stability of agriculture in the region depends to some extent on the availability and quality of jobs in other industries.

It should be noted, however, that this challenge is by no means limited to the watershed region. Indeed, by some measures agriculture has performed better in the watershed region than in neighboring counties. In Orange, Otsego and Columbia counties, for example, total farm acreage fell by an average of 12.6 percent between 1997 and 2007; and sales of farm products, adjusted for inflation, fell by 23.9 percent.

[1] The farm employment data presented in Table 3-28 differ from those used in Figure 3-6 in two respects – they are county-wide numbers (rather than being limited to ZIP codes that roughly coincide with watershed boundaries); and they include self-employed farm operators, rather than just wage-earning or salaried farm employees.

Table 3-28: Farming as a percentage of employment and earnings, 2007, by county and West-of-Hudson

Geography	Farm Earnings ($000s)	Farm Earnings % of Total	Farm Employment	Farm Employment % of Total
West-of-Hudson	122,426	1.4%	*5,730*	*2.4%*
Delaware	45,855	3.7%	1,860	4.9%
Greene	13,604	1.5%	560	2.1%
Schoharie	20,931	3.8%	1,270	7.7%
Sullivan	23,716	1.4%	756	1.6%
Ulster	18,320	0.4%	1,284	1.2%

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Mining

Mining has long been part of the economy of the West-of-Hudson watershed, especially in Delaware County. In 2008, according to the New York State Department of Labor, there were 36 mining and quarrying businesses employing 401 people in wage-and-salary jobs in the West-of-Hudson counties (including areas outside the watershed), with average earnings of just over $45,000 per year. In addition, the Census Bureau reports that in 2007 there were 170 self-employed workers in mining and quarrying in the West-of-Hudson watershed counties, with average revenues of about $36,000 each.

Data published by the New York State Department of Environmental Conservation indicate that as of the end of 2009, there were 75 active mines in the 41 West-of-Hudson watershed towns, occupying a total of approximately 735 acres. They included 41 mines producing sand and gravel, 31 producing bluestone and 3 producing clay.

Table 3-29: Number of mines and acreage, by type of mine and county

	Bluestone		Clay		Sand and gravel		Total	
	# of mines	*Acres*	*# of mines*	*Acres*	*# of mines*	*Acres*	*# of mines*	*Acres*
Delaware	30	199	1	4	22	287	53	490
Greene	1	40	-	-	6	51	7	90
Schoharie	-	-	-	-	8	83	8	83
Sullivan	-	-	-	-	2	11	2	11
Ulster	-	-	2	12	3	48	5	60
Total	**31**	**239**	**3**	**16**	**41**	**480**	**75**	**735**

Bluestone mining has been particularly significant in Delaware County – not only because of this industry segment's concentration in the county, but also because bluestone is for Delaware County an "export" commodity, sold widely outside the county. Bluestone mines are required to have either a permit from the New York State Department of Environmental Conservation or, for new operations, a temporary "exploratory authorization." In 2008, according to DEC, there were 64 bluestone mines in the state with active DEC permits, of which 35 were located in Delaware County;

and 13 operating with exploratory authorizations, of which 7 were located in Delaware County.[1] Most of these operations are small, employing from 1 to 4 people.

In addition to mines that operate under NYSDEC permits and exploratory authorizations, there are some small bluestone operations that fall below the threshold at which a permit is required – defined by the State Mined Land Reclamation Act as any mining operation that extracts at least 1,000 tons of material (including overburden) for at least twelve consecutive months. These small operations are not included in the data on mining sites presented in Table 3-29; but they probably represent a significant portion of self-employment in mining in the region.

During the building boom earlier in this decade, demand for bluestone was strong, driven not only by traditional uses such as sidewalks and plazas, but also by its increased use for other purposes such as countertops. Although there has been some decline in demand since the onset of the recession, the New York State Bluestone Association reports that demand has held up relatively well.

The acreage occupied by sand and gravel mining operations in watershed towns, as shown in Table 3-29, is double that occupied by bluestone mines. Sand and gravel mining sites – including several that are owned by town governments – are largely used for road work and other heavy construction. While these operations generally serve local markets and do not have the economic value of bluestone, they provide a needed commodity and help local communities avoid the cost of importing sand and gravel.

Forestry and logging

Forestry and logging have long been part of the West-of-Hudson watershed economy – although the scale of these operations is somewhat smaller than that of the mining business, and independent operators play a larger role. In 2008, the State Department of Labor reports that there were 25 forestry and logging businesses in the five West-of-Hudson counties, employing a total of 60 wage-and-salary workers, with average annual earnings of $24,766. In 2007, according to the Census Bureau, there were also 236 self-employed logging and forestry workers in the five counties, with total annual receipts averaging about $57,000.

About 81 percent of the land area of the West-of-Hudson watershed – a total of about 823,500 acres – is covered by forest. State-owned protected land, on which logging is prohibited, accounts for nearly one-quarter of this total. The land acquired by NYCDEP in fee simple in the West-of-Hudson watershed 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.

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, or 75 percent of the combined area of the five counties.

[1] New York State Department of Environmental Conservation, *Report to the Governor and the Legislature Regarding Bluestone Mining in New York State*, March 15, 2008. Most of New York's bluestone mines outside Delaware County are located in Broome County.

Outdoor recreation

Outdoor recreation is an important segment of the watershed region's economy. Opportunities for outdoor recreation attract both second-home owners and visitors to the region – and for many full-time residents, they are a major part of what makes the region an attractive place to live. Ski centers in Hunter, Windham and at Belleayre are among the region's largest employers. Many other small and mid-sized businesses provide goods and services related to outdoor recreation – ski shops, rental and servicing of boats and canoes, snowmobile sales and servicing, and many others. Moreover, people who come to the region to take advantage of its recreational opportunities also support a wide range of other businesses, including hotels, restaurants and retailers.

Data published by the New York State Department of Labor (Table 3-30) highlight the role of tourism-related industries in the economy of five West-of-Hudson counties. Employment in these industries in 2008 ranged from 2.6 percent of total payroll employment in Delaware County to 10.9 percent in Greene County.

The "location quotients" presented in the table are a measure of the degree to which these industries are concentrated in each county. A location quotient of 1.0 means that these industries share of total employment is the same in a given county as it is for the U.S. as a whole. An "LQ" of less than 1.0 means that these industries account for a lower percentage of employment than they do at the national level; an LQ of more than 1.0 means a higher percentage. As the table shows, location quotients for the travel-and-tourism sector range from a relatively low 0.66 in Delaware County to a very high 2.77 in Greene County. (By way of comparison, the travel-and-tourism location quotient for New York State as a whole is 0.86.)

Table 3-30: Travel and Tourism Employment by County, 2008 ($ millions)

	Travel & Tourism		Travel & Tourism as % of Area Jobs & Wages		Location
	Employment	*Wages*	*Employment*	*Wages*	**Quotient**
Delaware	430	$ 6.4	2.6%	1.1%	0.66
Greene	1,600	$ 60.6	10.9%	6.1%	2.77
Schoharie	320	$ 4.6	3.6%	1.6%	0.99
Sullivan	1,770	$ 37.2	6.8%	4.2%	1.69
Ulster	3,760	$ 84.9	6.2%	3.9%	1.45
New York State	*363,200*	*$ 13,459.8*	*4.2%*	*2.6%*	*0.86*

Source: New York State Department of Labor, Quarterly Census of Employment and Wages

As noted previously, recreational businesses, hotels and restaurants (a somewhat broader definition of visitor-related industries than that used in the DOL analysis cited above) together accounted in 2007 for about 15 percent of all private payroll employment in West-of-Hudson watershed ZIP codes (as shown in Figure 3-7) – more than 5,300 jobs. Moreover, employment in these three industries plus retailing grew by about 6.7 percent between 1997 and 2007. This sector was thus one of the region's leading sources of new jobs during this period.

It is important to note, however, that much of the employment in this sector of the region's economy consists of relatively low-paid, seasonal or part-time jobs. Table 3-31 shows average annual earnings per employee in the relevant industries.

Table 3-31: Average annual wages in selected industries, by county, 2008

	Hotel	Restaurant	Retailing	Recreation
Delaware	$16,192	$11,115	$27,183	$15,945
Greene	$14,175	$12,600	$24.851	$19,873
Schoharie	$16,409	$11,455	$23,901	$15,088
Sullivan	$21,841	$12,828	$24,675	$23,019
Ulster	$22,705	$13,532	$25,606	$21,960

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

In the absence of the proposed action, socioeconomic conditions in the West-of-Hudson watershed towns during the period 2010 through 2022 are likely to be similar to those of the past few years – with some notable differences.

Population growth is likely to be considerably slower through 2022 than it has been in the past decade. Between 2000 and 2010, county-level projections published by Cornell University's Program on Applied Demographics estimate that the population of the five west-of-Hudson counties, taken together, will grow by 2.44 percent. Between 2010 and 2020, growth is projected to slow to 1.11 percent – and between 2020 and 2025, the population of the five-county area is expected to decline by 0.24 percent. The projections produced by the Program on Applied Demographics are shown in Table 3-32.

Table 3-32: Population change and projections through 2025, by county

County	2000	2005	2010	2020	2025
Delaware	48,055	46,842	45,939	42,995	40,980
Greene	48,195	48,946	49,718	51,029	51,388
Schoharie	31,582	31,933	31,670	30,678	29,864
Sullivan	73,966	75,539	77,020	79,322	79,845
Ulster	177,749	181,423	184,479	189,107	190,123
TOTAL	**381,547**	**386,688**	**390,836**	**395,151**	**394,225**

Source: Cornell University Program on Applied Demographics

The demand for housing that drives residential development in the West-of-Hudson region is fueled partly by population growth, and partly by the market for second homes. Demand for second homes appears unlikely to return in the near future to the levels seen earlier in this decade. In the near term, demand is likely to be constrained by a slow recovery from the recession of 2008-09, and by more conservative mortgage lending practices. Longer-term, demographic trends may limit demand.

Several sources cite the 45-to-64 age group as being the heart of the market for second homes. As the baby boom generation matured, the number of New York metropolitan area residents in this age bracket grew rapidly after 1990, contributing to the surge in demand in this segment of the region's housing market. After about 2015, however, the number of New York metro area residents in this age bracket will flatten out and then start to decline. There will still be a market for second homes –

but the growth in demand seen in this part of the market during the past two decades is unlikely to be repeated. These trends are summarized in Table 3-33.

Table 3-33: Population projections for residents age 45-to-64, New York metropolitan area

	1990	2000	2005	2015	2025		% Change 1990-2000	% Change 1990-2005	% Change 1990-2025	% Change 2005-2015	% Change 2005-2025	%Change 2015-2025
New York County	309,545	347,487	378,854	408,896	400,725		12.26%	22.39%	29.46%	7.93%	5.77%	-2.00%
Kings County	419,020	508,714	552,915	606,092	602,619		21.41%	31.95%	43.82%	9.62%	8.99%	-0.57%
Queens County	401,892	484,676	531,155	631,523	657,065		20.60%	32.16%	63.49%	18.90%	23.70%	4.04%
Richmond County	74,992	103,914	121,833	147,791	153,619		38.57%	62.46%	104.85%	21.31%	26.09%	3.94%
Bronx County	213,122	251,048	275,140	323,883	331,826		17.80%	29.10%	55.70%	17.72%	20.60%	2.45%
Nassau County	295,437	320,944	359,504	391,738	350,618		8.63%	21.69%	18.68%	8.97%	-2.47%	-10.50%
Rockland County	60,918	69,711	74,411	81,604	78,983		14.43%	22.15%	29.65%	9.67%	6.14%	-3.21%
Westchester County	192,534	216,678	243,039	277,376	265,785		12.54%	26.23%	38.05%	14.13%	9.36%	-4.18%
TOTAL	1,967,460	2,303,172	2,536,851	2,868,903	2,841,240		17.06%	28.94%	44.41%	13.09%	12.00%	-0.96%

To the extent that demand for residential development is driven in part by population growth, the estimates of land required to support new development may be overstated. The estimates of land required to support residential development in watershed towns between 2010 and 2022 that are used in our analysis of the impact of the proposed action effectively assume that both of these elements of demand (resident population growth and second-home buyers) will be sustained through 2022 at the levels that prevailed during the past decade. The resulting estimates are summarized below in Table 3-34.[1]

[1] Based on the highest estimates of the US Census, building permit and Office of Real Property data between 1990 and 2008). See Methodology section above for details on how these estimates were derived.

Table 3-34: Annual housing unit development through 2022

County	Town	Annual rate of development (units/year)	Total housing units, 2010-2022	Total acres	Total developable acres
Delaware	Andes	12	145	1,707	486
Delaware	Bovina	2	22	187	68
Delaware	Colchester	13	151	861	296
Delaware	Delhi	10	118	743	264
Delaware	Deposit	9	108	562	230
Delaware	Franklin	8	97	805	520
Delaware	Hamden	13	159	1,682	701
Delaware	Harpersfield	4	45	293	200
Delaware	Kortright	9	102	785	406
Delaware	Masonville	5	63	519	447
Delaware	Meredith	4	48	557	469
Delaware	Middletown	21	249	1,446	513
Delaware	Roxbury	8	96	518	216
Delaware	Stamford	7	87	459	199
Delaware	Tompkins	10	120	1,392	572
Delaware	Walton	12	141	862	329
SUBTOTAL Delaware County			**1,751**	**13,379**	**5,916**
Greene	Ashland	7	88	449	260
Greene	Halcott	2	24	206	79
Greene	Hunter	25	305	609	348
Greene	Jewett	13	157	818	511
Greene	Lexington	9	110	682	314
Greene	Prattsville	4	47	247	100
Greene	Windham	37	444	888	540
SUBTOTAL Greene County			**1,175**	**3,900**	**2,154**
Schoharie	Conesville	12	143	899	560
Schoharie	Gilboa	7	87	463	251
Schoharie	Jefferson	9	111	1,096	639
SUBTOTAL Schoharie County			**341**	**2,457**	**1,450**
Sullivan	Neversink	38	461	2,027	1,501
SUBTOTAL Sullivan County			**461**	**2,027**	**1,501**
Ulster	Denning	3	36	241	71
Ulster	Hardenburgh	3	36	540	166
Ulster	Hurley	16	190	551	410
Ulster	Olive	23	271	1,194	748
Ulster	Shandaken	18	217	650	186
Ulster	Wawarsing	48	581	1,163	802
Ulster	Woodstock	17	201	785	479
SUBTOTAL Ulster County			**1,533**	**5,124**	**2,862**
GRAND TOTAL West-of-Hudson			**5,260**	**26,888**	**13,883**

While it is appropriate to use these historically-based estimates of residential development for purposes of constructing a "reasonable worst-case scenario" regarding the impact of the proposed action, it is important to recognize that they may significantly overstate the scale of new residential development that is likely to occur in the West-of-Hudson watershed towns, with or without the proposed action.

Information on planned or proposed developments that have been reviewed or are under review by NYCDEP (for compliance with stormwater planning requirements, or pursuant to SEQRA, or for other purposes) suggests that new development in the region during the next several years is likely to be limited. Moreover, as shown in Table 3-35, much of the planned new development is concentrated in a relatively small number of towns; the Town of Windham alone accounts for more than half the units shown.

Table 3-35: Planned or proposed residential units in the West-of-Hudson watershed, March, 2010

County	Town	Approved	Not Yet Approved
Greene	Windham	409	102
Ulster	Shandaken	259	-
Delaware	Middletown	21	-
Greene	Jewett	13	-
Delaware	Bovina	8	-
Delaware	Andes	8	1
Greene	Hunter	8	53
Total West-of-Hudson		**726**	**103**

Source: NYCDEP project review files

Beyond trends in population and residential development, several other trends seen in the past few years are likely to continue:

- The population of the West-of-Hudson watershed region, as noted previously, has been aging – and this trend will continue. While the total population of the five counties is expected to decline slightly, the Cornell Program in Applied Demographics expects the number of residents age 65 and older to increase by more than 40 percent. As a result, the percentage of the population of the five counties age 65 and older is expected to rise from 15.8 percent to 22.2 percent by 2025. The Cornell population projections are shown in Table 3-36;

Table 3-36: Projected population 65 and older, as a percent of the total population

	2010	2015	2020	2025
Delaware County	22.4%	25.5%	28.9%	32.3%
Greene County	15.8%	17.3%	19.1%	21.4%
Schoharie County	16.2%	18.2%	20.7%	23.4%
Sullivan County	15.3%	17.2%	19.4%	21.7%
Ulster County	14.3%	16.1%	18.1%	20.2%
TOTAL WEST OF HUDSON	15.8%	17.7%	19.9%	22.2%

- Consistent with broader regional trends, agriculture in the West-of-Hudson watershed region is likely to continue its long-term decline – whether measured by total farmland acreage, by employment or by agriculture's share of the region's overall economy;
- Especially as the broader regional economy begins to recover, the watershed region could during the next several years see some continued growth in outdoor recreation and related tourist-based industries; and
- With the possible exception of several towns where development pressures are still strong, land and housing prices are unlikely to return during the next several years to the levels reached in the mid-2000's.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

This section discusses potential impacts of additional land acquisition through 2022 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 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 (see *Methodology* section above for details on the evaluation methods). More detailed town level assessments were conducted for towns with the highest level of potential impacts.

Step 1: Determine available developable land as of 2009
Step 2: Project housing demand through 2022 *(see Future Conditions Without the Proposed Action)*
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 Chapter 1, *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 amount of *developable* land acquired was estimated using the methods described in the *Methodology* section above.

The town-by-town results of this analysis are presented in Table 3-37. (The towns are ranked in reverse order of the percentage of the town's 2009 supply of developable land projected to be remaining in 2022.) The analysis suggests 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 3-37 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: As discussed above in this section and in more detail in the methodology section, the analysis is very conservative, representing a reasonable worst case scenario, and the percentage of developable land remaining in 2022 is likely to be higher.

Table 3-37: 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%**

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 – either between now and 2022 or afterward. During the next twelve 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.

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 3-37) 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.

Using the data presented in Table 3-37, 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 3-37, 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 3-37 and are assessed in more detail in Chapter 4*, 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.

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.

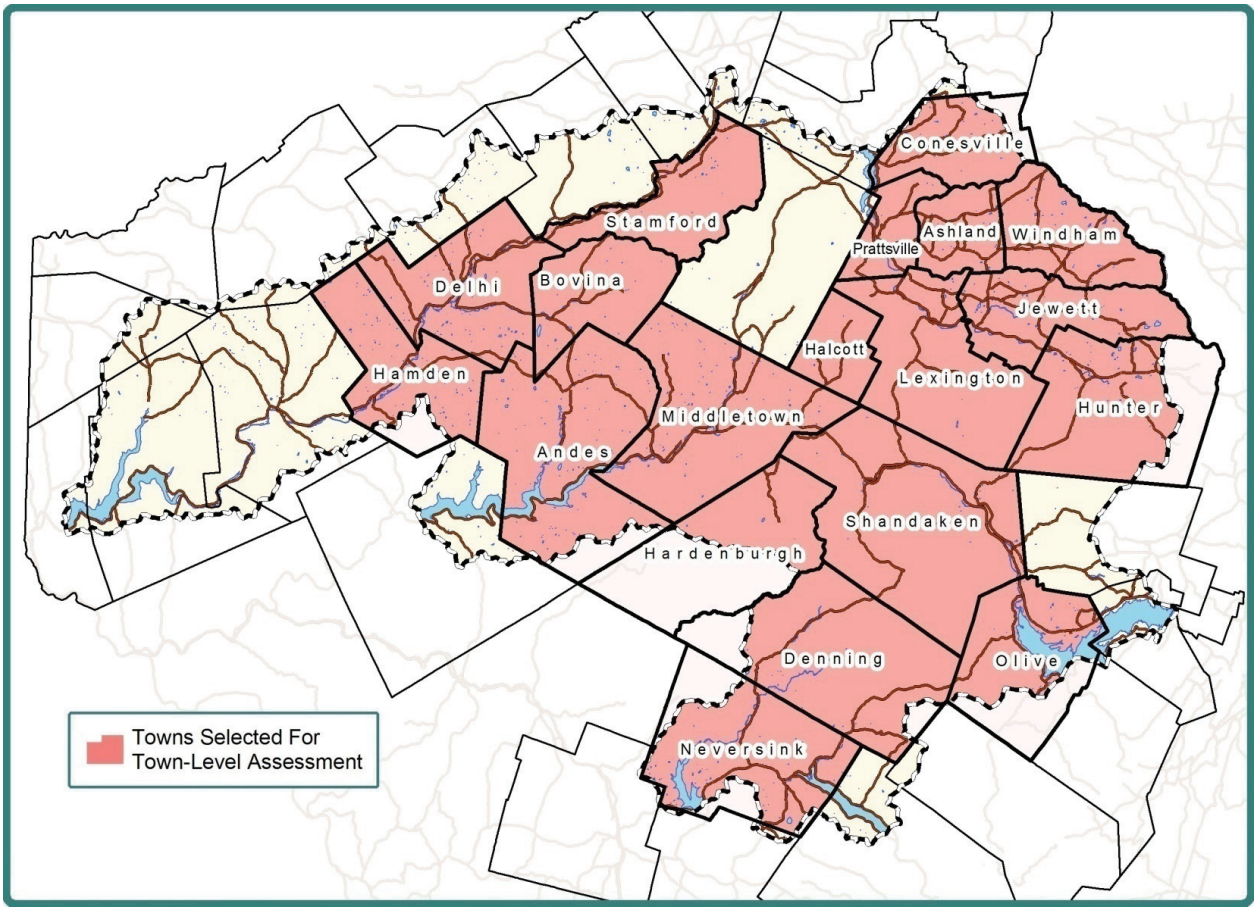
Table 3-38 lists six towns where the supply of developable land in 2009 is estimated to be less than 10 percent of the town's total land area, or less than 3,000 acres. All six are already included among the 19 towns subjected to further review under the criteria discussed above. The implications of the Extended LAP's impact on these towns' limited supply of developable land in the context of future growth demand in these towns will be addressed in the individual town-level assessments presented Chapter 4.

Table 3-38: 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%

As noted above, detailed assessments for 19 towns are found in Chapter 4, *Town Level Assessments.* The towns selected are shown in Figure 3-9.

Figure 3-9: Towns Selected for Town-Level Assessment



A summary of the results of the analysis is provided below for each of these towns.

- ***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 tripling 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 more than 2,900 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 2,667 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.

- ***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 236 acres, to a total of 2,030 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 2,859 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 5,105 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 1,841 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.

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 3-39 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 3-39: 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.

To trace changes in the price of land in watershed towns, data from ORPS on arms-length sales of vacant land of more than ten acres (excluding purchases by NYCDEP under LAP) were analyzed for each of the nine groups of West-of-Hudson watershed towns defined earlier in this chapter and shown on Figure 3-4 The same data were also analyzed for six groups of towns that are either wholly outside the watershed (or that in several cases have less than four percent of their total area within the watershed). The six town groups are:

- Southern Columbia County (Ancram, Copake, Gallatin and Tagkhanic)
- Three towns in Schoharie County (Blenheim, Broome and Summit)
- Three Greene County towns (Cairo, Durham and Greeneville)
- Four Ulster County towns (Marbletown, Rochester, Saugerties and Ulster)
- Two towns in Sullivan County (Fallsburg and Liberty)
- Southern Otsego County(Maryland, Milford, Otego and Unadilla)

These town groups are shown below in Figure 3-10.

Figure 3-10: Map of town groups outside the watershed

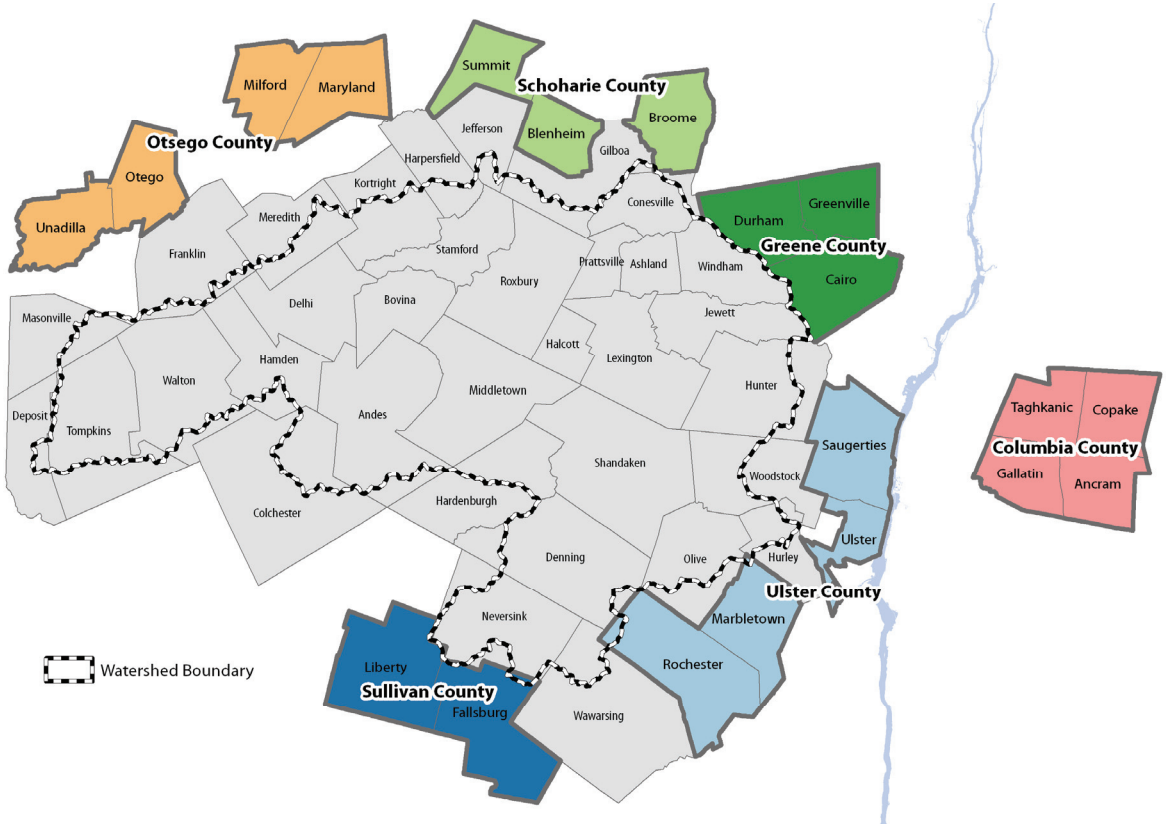


Table 3-40 shows, the median sale price per acre on arms-length sales of vacant parcels of more than ten acres rose substantially between 2001 and 2009 in most of the nine watershed town groups. When price trends in these groups are, however, compared with trends in the six non-watershed town groups, 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. .

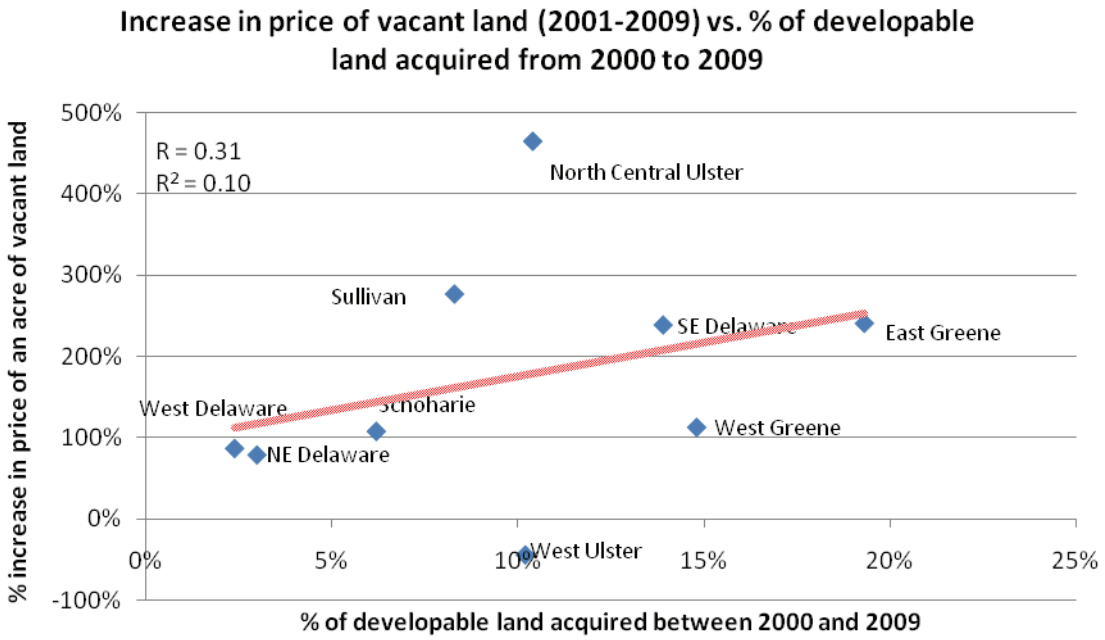
Table 3-40: Median sales price per acre on arms-length sales of vacant parcels of more than ten acres, by town group[1]

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 3-11 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.

[1] 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 3-11: 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.

During the past few years, however – as private demand for watershed land has declined and LAP has come to account for a larger percentage of all land sales – the program's impact on land prices may have changed. Just as they have outside the watershed, median prices of vacant land in watershed towns have declined since peaking in 2006-2007. However – because of the scale of its purchases and its willingness to pay fair market value for eligible watershed land – LAP may now have the effect of keeping the price of undeveloped land from falling as rapidly as it might have fallen in the absence of LAP. The impact of this effect on future socioeconomic conditions within the watershed will be discussed below, following the discussion of LAP's impact on the prices and affordability of housing.

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, as described in the section on existing conditions, 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 3-41 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 3-41: 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 Figure 3-12 and Figure 3-13, 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 3-12: Increase in price of single-family homes (2001-2009) vs. share of seasonal recreational units (2000)

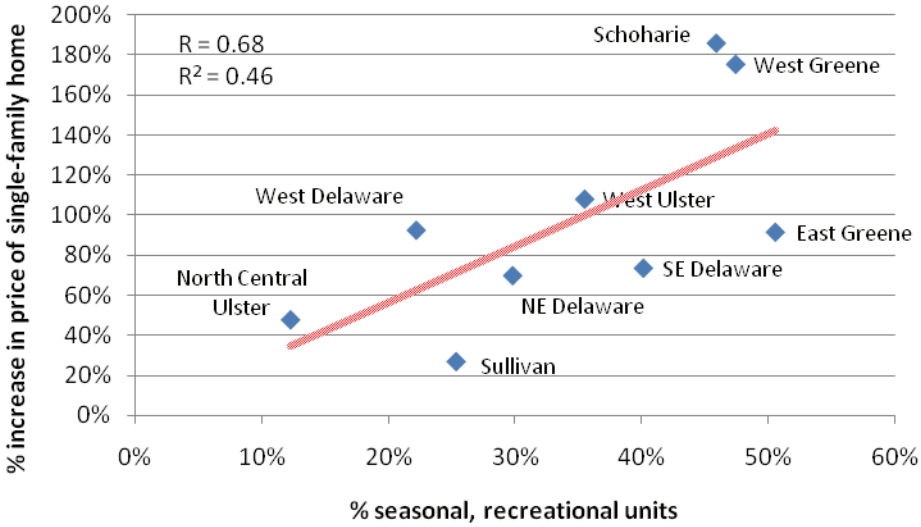
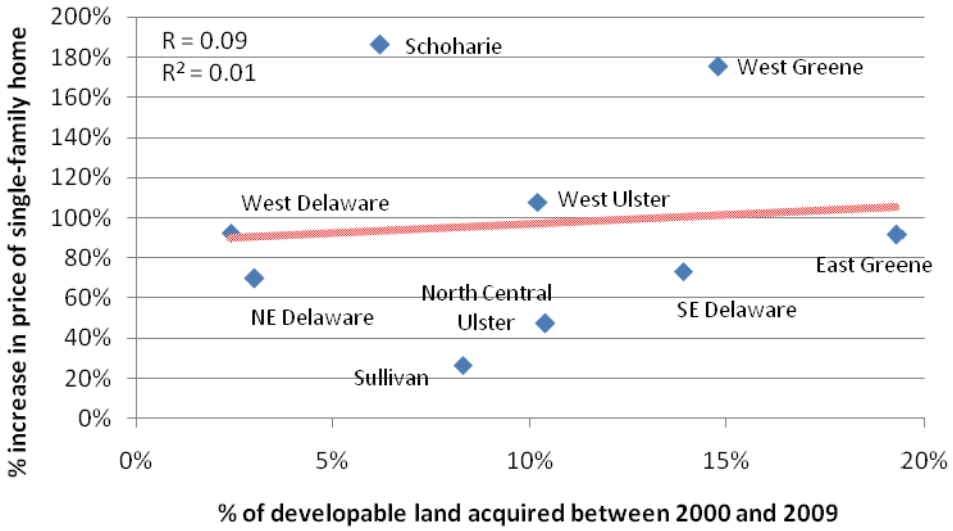


Figure 3-13: Increase in the price of single-family homes vs. LAP acquisitions as a %'ge of developable land



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 2022, 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.

Overall, 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 2022.

Impacts on Industries and Businesses

As explained above in the section on methodology, 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 3-42.

Table 3-42: NYCDEP acquisitions of agricultural land in fee simple through 2009

County/Town	Total acres acquired	Active agricultural acres acquired
Schoharie County		
Conesville	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. Table 3-43 lists the number of permits and total acreage by county and town. As the table shows, about 80 percent of all land on which NYCDEP has issued farm permits is located in Delaware County.[1]

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.

[1] 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 DEP – 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.

Table 3-43: Agricultural permits and acres, by town

County/Town	Permits	Acres
Greene County		
Ashland	1	28
Prattsville	1	67
Windham	1	27
SUBTOTAL	**3**	**122**
Delaware County		
Delhi	1	50
Franklin	1	74
Hamden	1	15
Harpersfield	1	7
Kortright	1	24
Masonville	1	58
Middletown	3	36
Roxbury	6	124
Stamford	3	143
SUBTOTAL	**18**	**531**
Westchester County		
Yorktown	2	8
TOTAL	**23**	**661**

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, as shown below in Table 3-44, 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.

Table 3-44: Agricultural land, employment, income by county, 2007

	Delaware	Greene	Schoharie	Sullivan	Ulster	WOH
Farmland (acres)	165,572	44,328	95,490	50,443	75,205	431,038
Farm employment	1,860	560	1,270	756	1,284	5,730
farm income ($000s)	$ 39,175	$ 11,622	$ 17,882	$ 20,261	$ 15,651	$ 104,591
Jobs per acre	0.01	0.01	0.01	0.01	0.02	0.01
Income per acre	$ 236.60	$ 262.18	$ 187.27	$ 401.66	$ 208.11	$ 242.65

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.

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 3-46, 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.[1] 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, as shown below in Table 3-45, the attrition rate is higher for farms on which easements were acquired in the program's earlier years.

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

Table 3-45: Percent of acres with WAC easements still in active agricultural use by year of acquisition

Year of Acquisition	% Active Acres
2001	75%
2002	98%
2003	70%
2004	100%
2005	93%
2006	100%
2007	100%
2008	100%
2009	99%
Total	**96%**

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.

Table 3-46: 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**

The purposes of the WAC agricultural easement program are broadly consistent with those of New York State's agricultural district program. Article 25AA of the Agriculture and Markets Law authorizes creation of agricultural districts, the purpose of which is to encourage continued use of farmland for agricultural production, by providing landowners with real property tax incentives and protection against a variety of actions that might adversely affect farm use; such actions could include local laws or rules restricting agricultural use, public-agency land acquisitions or capital projects that might adversely affect farming, and private nuisance suits. Districts are created through the initiative of local land-owners, subject to initial county review, certification by the State Department of Agriculture and Markets, and final approval by the county; and are subject to periodic recertification by the State. As of 2007, there were 289 agricultural districts in 53 New York State counties, covering about 8.5 million acres and $70 million annually in property tax abatements.

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.

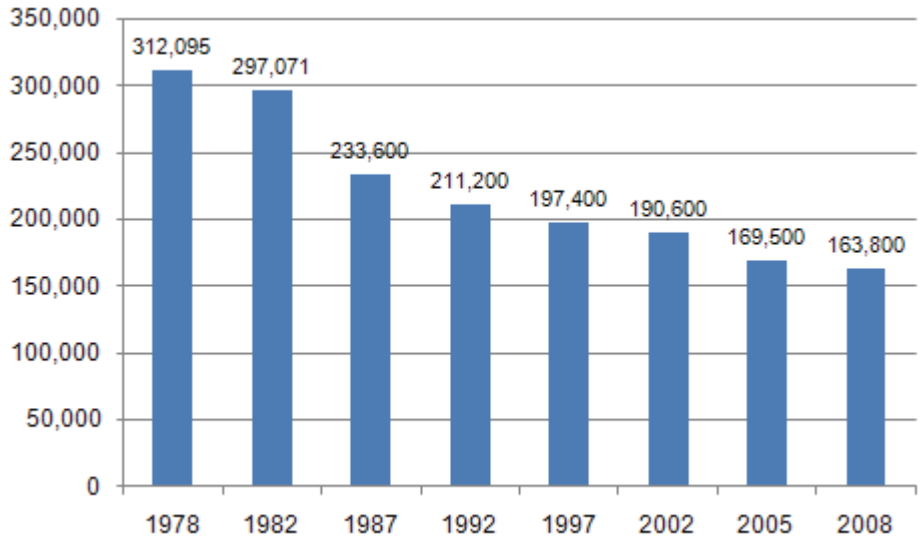
Agriculture in Delaware County

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.[1] As Figure 3-14 shows, between 1978 and 2008 total farmland acreage dropped by 47.5 percent – from 312,095 to 163,800.

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

Figure 3-14: Farmland in Delaware County (acres), 1978-2008



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.

As Table 3-42 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.

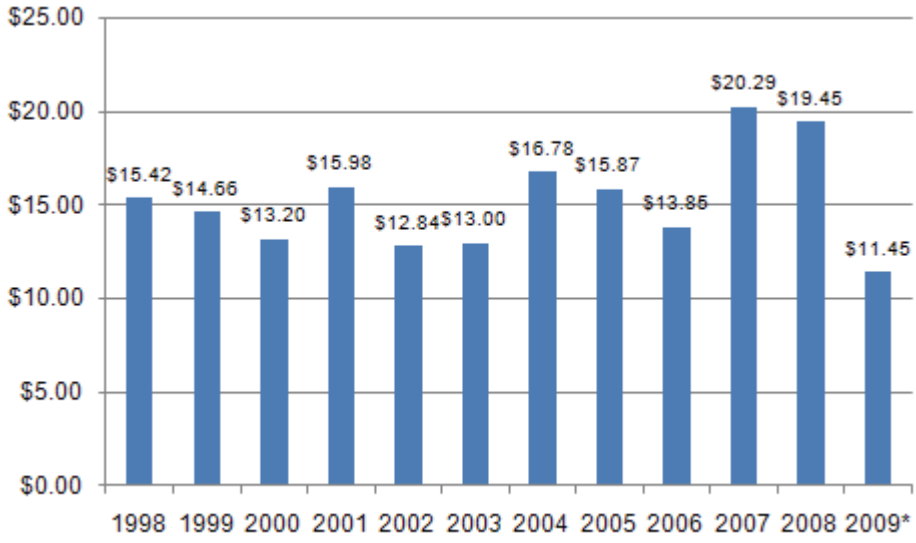
It should also be noted that as of 2007, dairy farming accounted for 62 percent of all agricultural sales in the county. Like the broader agricultural sector, dairy farming in Delaware County has been declining for some time; between 1978 and 2008, milk production in the county declined by 55 percent.

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.[1] 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. Annual average milk prices paid to farmers in New York State are shown in Figure 3-15.

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.

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

Figure 3-15: Milk prices paid to farmers in New York State (annual average)



**First half of 2009*

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 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.

As noted above in our discussion of LAP's impact on the price of land, LAP may act to stabilize the price of large tracts of watershed land. To the extent that this keeps the price of land somewhat higher than it might otherwise be – and perhaps even more important, to the extent that LAP ensures that owners can find a "willing buyer" at fair market value – LAP may in fact make it easier and more attractive for some farmers in Delaware County to sell their land than it would be in the program's absence.

The fact that LAP provides an outlet for owners who want to sell does not, however, mean that the program is somehow *causing* the decline of agriculture in Delaware County, or elsewhere in the region. The program expands the options available to owners for whom agricultural uses no longer makes sense economically, or who for other reasons choose not to continue farming.

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;
- As shown above in the discussion of existing conditions 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.[1]

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.

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

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.[1]

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[2]."

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 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 through 2022, although not enough is known at this time. Any natural gas drilling proposed would be subject to further environmental review.

Forestry and logging

As noted in the section on existing conditions, 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

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

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

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.

Because of the more episodic nature of timber harvesting, it is difficult to say definitively how much of this activity had been occurring on land acquired by NYCDEP prior to its acquisition. Some landowners may have periodically harvested timber; and there is strong anecdotal evidence suggesting that it is fairly common for owners to generate some extra income by cutting timber prior to selling or subdividing their property.[1]

As of 2009, there was relatively little timber harvesting on land owned by NYCDEP. Loggers operating under permits issued by the Department currently harvest timber from NYCDEP land. However, by far the greatest part of this activity in fiscal year 2009 occurred on land that had already been City-owned prior to 1997; only about 2 percent of the Department's timber harvesting projects took place on land acquired under LAP. This may result in part from the fact that some owners cut timber prior to selling their land.

The fact that timber is generally not being harvested on land acquired under LAP does not necessarily result in a decline in timber production throughout the region. 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. As of October 2009, NYCDEP had issued permits for tapping a total of 1,840 trees on watershed land acquired under LAP, of which 1,790 were located west of the Hudson – including 1,500 in Roxbury. According to the New York State Maple Producers Association, maple syrup yields in New York in 2009 averaged about 0.24 gallons per tap; and prices in 2008 (the last year for which data are available) averaged $42.40 per gallon. Based on these data, we estimate that maple-tapping on West-of-Hudson land acquired by NYCDEP under LAP generated about $18,215 in 2009.

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 Chapter 6, *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.

[1] Hall, Tyrrell and Sarpor, op. cit. p. 20.

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;[1] 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 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.

As noted in the section on existing conditions, industries that serve outdoor recreational visitors to the region are primarily low-wage industries, including, recreation, hotels, restaurants and retailing. Increased employment associated with increased visitor traffic would for the most part be concentrated in these industries.

The relatively low wages paid in new jobs associated with recreation use of lands acquired by NYCDEP could be viewed as having a negative impact if the Land Acquisition Program effectively involved a trade-off between loss of higher-paying jobs in other industries and an increase in lower-paying, visitor-based employment. But as discussed in this Chapter, there is no evidence that NYCDEP's acquisition of watershed land has in fact resulted in a loss of higher-paying jobs. While growth in recreation-based industries may not meet the region's need for higher-wage jobs, it can nevertheless be valuable – especially in those towns that are seeking to develop more diversified, year-round forms of tourism.

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

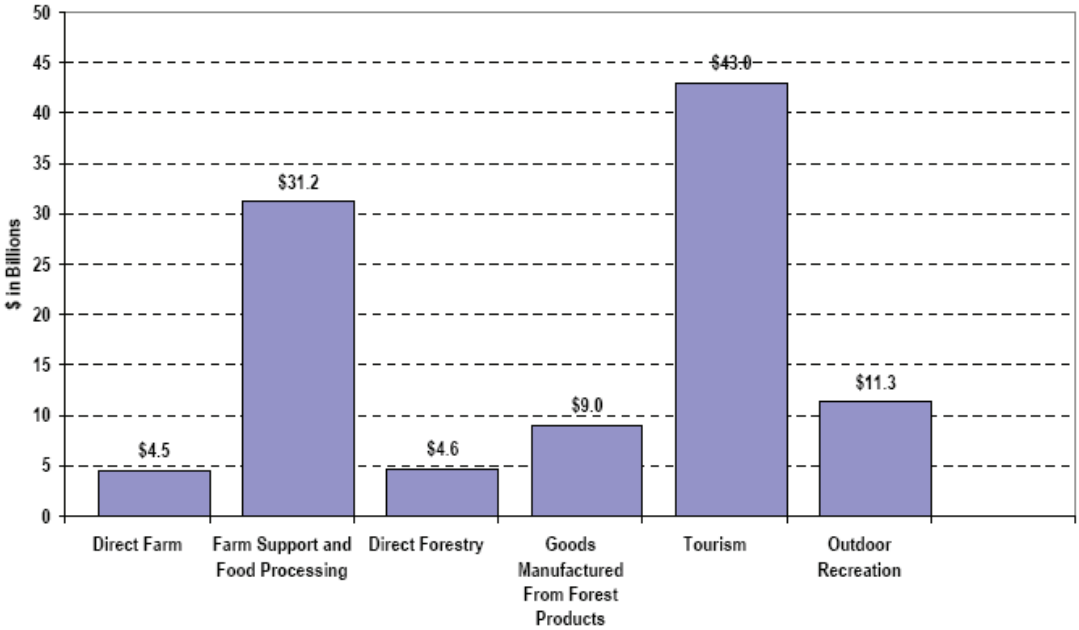
Not all of the employment associated with increased recreational use of NYCDEP-owned land should be considered "net new" employment. Just as some mining or logging jobs might be shifted from properties acquired by NYCDEP to other locations within the region, increased recreational use of NYCDEP-owned 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). Figure 3-16 shows the contribution of these sectors to the New York State economy.

Figure 3-16: Contribution of industries reliant on open space to New York State economy



Source: Office of the State Comptroller.

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. Under this provision of the MOA, 23 towns designated a total of 21,311 acres in village centers and hamlets and along commercial corridors for exclusion from the Land Acquisition Program. These towns (and the designated acreage in each) are listed below in Table 3-47. 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.

In the context of recent discussions among NYCDEP, watershed towns, regulatory agencies and other parties, NYCDEP has tentatively agreed to a proposed expansion of the areas in which NYCDEP will not solicit or purchase property, primarily in the vicinity of the areas designated as hamlets or village extensions in 1997. Seventeen towns have proposed specific additions to these areas.

As shown in Table 3-47, the proposed hamlet-area expansions would increase the land area covered by these designations to almost 49,000 acres. NYCDEP estimates that the expanded hamlet areas contain approximately 15,012 acres that NYCDEP had previously solicited, but would henceforth agree not to acquire.

Table 3-47: Number of acres in existing designated hamlet areas, and proposed hamlet expansions, by town

County/Town	Existing Designated Hamlet Area, Acres	Proposed Expansion, Acres	Total area, acres
Delaware County			
Andes	1,052	0	1,052
Bovina	392	0	392
Delhi	2,346	2,759	5,105
Hamden	420	2,439	2,859
Harpersfield	405	1,295	1,700
Kortright	250	3,853	4,103
Meredith	73	71	144
Middletown	1,734	296	2,030
Roxbury	957	440	1,397
Stamford	1,331	0	1,331
Tompkins	109	0	109
Walton	1,503	3,269	4,772
SUBTOTAL	**10,572**	**14,422**	**24,994**
Greene County			
Ashland	362	1,684	2,046
Halcott	69	0	69
Hunter	3,251	2,891	6,142
Jewett	652	2,015	2,667
Lexington	362	375	737
Prattsville	207	0	207
Windham	1,148	2,794	3,942
SUBTOTAL	**6,051**	**9,759**	**15,810**
Schoharie County			
Conesville	275	1,566	1,841
Ulster County			
Denning	1,107	0	1,107
Olive	547	1,333	1,880
SUBTOTAL	**1,654**	**1,333**	**2,987**
Sullivan County			
Neversink	1,197	0	1,197
Shandaken	1,561	0	1,561
SUBTOTAL	**2,758**	**0**	**2,758**
TOTAL	**21,310**	**27,080**	**48,390**

The role that expanded hamlet areas can play in protecting both existing and potential future commercial activity in watershed towns is reflected in the degree to which existing business activity and employment is concentrated within these areas. Using business and employment data obtained from Claritas[1], the locations of all establishments employing more than 20 people were mapped against the boundaries of the proposed expanded hamlet areas. These areas – representing less than 5 percent of the land area of the watershed – account for approximately 58 percent of all employment in establishments in the watershed ZIP Codes with more than 20 employees.

Overall, it appears that acquisition of watershed land through the LAP program has at most had a negligible direct impact on any other commercial activity that might previously have been conducted on the acquired properties.

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.

Because it will be focused primarily on purchases of vacant land, and the undeveloped portions of larger, low-density residential parcels, LAP is unlikely to have any adverse impacts on home-based businesses, which in the region's more rural communities often account for a significant portion of all commercial activity. In fact, by allowing owners to capitalize on the value of their land by selling (or granting an easement on) some portion of it to NYCDEP, LAP could be a source of capital for such businesses.

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.

[1] Claritas is a for-profit provider of demographic, economic and business information.

Moreover, NYCDEP is considering changing the 20-year limitation from date of acquisition on challenging tax assessments to a 30-year limitation subject to the successful conclusion of 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. They are shown in Table 3-48)

Table 3-48: General and School taxes paid on LAP properties, 2008

County	General taxes paid by DEP	School taxes paid by DEP	Village taxes paid by DEP	Total taxes paid by DEP
Delaware County	$ 378,877	$ 469,448	$ 2,512	$ 850,836
Greene County	94,922	142,726	-	237,648
Schoharie County	59,521	63,254	-	122,776
Sullivan County	19,540	33,575	-	53,115
Ulster County	267,806	449,079	-	716,886
Total West-of-Hudson	**$ 820,667**	**$ 1,158,083**	**$ 2,512**	**$ 1,981,261**

As Table 3-49 and Table 3-50 show, 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.

Table 3-49: NYCDEP tax payments as a percent of county and town property tax and total revenue, 2008

County	Property taxes paid by DEP	Total county and town property taxes	Total county and town revenue	DEP payments as a percent of county & town property taxes	DEP payments as a percent of all county & town revenue
Delaware County	$ 378,877	$ 38,168,571	$ 126,573,708	0.99%	0.30%
Greene County	$ 94,922	$ 32,868,517	$ 115,706,674	0.29%	0.08%
Schoharie County	$ 59,521	$ 17,248,772	$ 60,512,882	0.35%	0.10%
Sullivan County	$ 19,540	$ 42,926,193	$ 188,735,604	0.05%	0.01%
Ulster County	$ 267,806	$ 91,840,914	$ 376,302,289	0.29%	0.07%
Total West-of-Hudson	**$ 820,667**	**$ 223,052,967**	**$ 867,831,157**	**0.37%**	**0.09%**

Table 3-50: NYCDEP payments as a percent of school district property tax and total revenues, 2008

County	School taxes paid by DEP	Total school district property tax revenue	Total school district revenue	DEP payments as a precent of school district property taxes	DEP payments as a percent of all school district revenue
Total WOH School Districts	$ 1,158,083	$ 155,755,028	$ 335,421,071	0.74%	0.35%

Because no development can take place on properties acquired (or on which easements are acquired) by NYCDEP, local taxing jurisdictions would no longer be able to realize the potential for increased real property tax revenues that might be associated with such development. It does not appear that acquisition of developable land by NYCDEP has created any significant constraint on the supply of land available for development. In some cases, the Land Acquisition Program may have indirectly affected the specific *location* of development within West-of-Hudson watershed towns – but it does not appear to have directly affected the overall *level* of development. Acquisition of watershed land under LAP does not appear to have had any substantial direct impact on local taxes due.

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.[1]

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 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.

In a few cases, the Land Acquisition Program has directly increased local tax revenues. This occurs in those cases where NYCDEP acquires in fee simple from a tax-exempt owner property that had been used for a tax-exempt purpose; or acquires a conservation easement on a property in which the tax-exempt owner retains a fee interest. In these cases, land or easements become fully taxable at the point of acquisition by NYCDEP.

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

Finally, it is worth noting that NYCDEP is a reliable taxpayer. Especially in periods of economic distress, when some local property-owners may find it difficult to pay their real property taxes on a timely basis, NYCDEP ownership provides a relatively stable source of revenue.

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 2022 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 2022, 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 2022 and 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.

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 2022 on socioeconomic conditions in East-of-Hudson watershed towns.

METHODOLOGY

The approach used in assessing the program's potential impact in the East-of-Hudson region is in concept similar to that used in assessing its impact west of the Hudson. It encompasses the program's potential impact on the supply of developable land in the affected towns; on the price of land and housing; on employment and business activity; and on local government revenues.

However, the discussion of potential East-of-Hudson impacts presented below is less detailed than the preceding discussion of potential impacts in the West-of-Hudson region. This is so for several reasons.

- As of March 2010, NYCDEP expects that from 2010 through 2022, it will be acquiring additional land primarily in only four towns – East Fishkill, Kent, Carmel and Putnam Valley. If land is acquired in other towns, it would be an atypical situation, most likely involving a unique piece of property;

- Between 2010 and 2022, NYCDEP currently expects to acquire a total 1,517 acres in the four towns, of which we estimate that 538 will be developable – representing only a small portion (4 percent) of the four towns' total supply of developable land as of 2009; and

- By many measures – population growth, income, education, and job growth – economic conditions in the East-of-Hudson region are more favorable than those in the West-of-Hudson region; these towns may therefore be less susceptible to any possible adverse impacts from purchases of additional land by NYCDEP.

In addition, while the new Water Supply Permit will cover the Croton System, due to the high cost of land and highly built environment in that system and other factors, it is not expected that NYCDEP would purchase any appreciable amount of land. Any purchase would be a unique situation, most likely a parcel that had unusual location or water quality protection 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 result in potential significant adverse socioeconomic impacts in the Croton System towns.

Below we describe existing socioeconomic conditions in the nine East-of-Hudson towns that lie partially within the East-of-Hudson watershed; describe NYCDEP's acquisitions to date in these towns; and assess the impact of future acquisitions in these towns.

EXISTING CONDITIONS

Population and age distribution

In 2008, the population of the eight East-of-Hudson towns and one city that lie partially within the Catskill-Delaware watershed totaled 244,044 – an increase of five percent since 2000. If we exclude White Plains – of which only 22 acres, or 0.3 percent of the city's area, lie within the watershed – the combined population of the eight other towns in 2008 was estimated to be 187,010 – an increase of four percent since 2000.[1] The population in the eight East-of-Hudson watershed towns from 1990 to 2008 is shown in Table 3-51.

Table 3-51: Population of eight East-of-Hudson watershed towns in the Catskill-Delaware watershed

Town	1990	2000	2008	% change 1990-2000	% change 2000-2008
East Fishkill	22,101	25,589	29,003	16%	13%
Carmel	28,816	33,006	34,843	15%	6%
Kent	13,183	14,009	14,523	6%	4%
Putnam Valley	9,094	10,686	11,456	18%	7%
Harrison	23,308	24,154	23,356	4%	-3%
Mount Pleasant	40,590	43,221	44,287	6%	2%
New Castle	16,648	17,491	17,444	5%	0%
North Castle	10,061	10,849	12,098	8%	12%
TOTAL	**163,801**	**179,005**	**187,010**	**9%**	**4%**

The population of the eight East-of-Hudson towns is generally comparable in age to that of New York State – but somewhat younger than that of the West-of-Hudson watershed towns. In 2008, the median age in the eight towns ranged from 38.3 in Mount Pleasant to 41.8 in North Castle and New Castle. The percentage of the population age 65 and older ranged from 9.5 percent in East Fishkill to 14.8 percent in Harrison.

Employment and income

In all of the East-of-Hudson towns, the percentage of all residents age 16 and over who are employed is relatively high, ranging in 2008 from 58.5 in Harrison to 69.2 percent in Carmel and Kent. Conversely, unemployment rates in these towns were relatively low in 2008, ranging from 2.7 percent in North Castle and New Castle to 5.4 percent in Putnam Valley. Unemployment rates for the towns are shown in Table 3-52.

(As a result of the recession, unemployment rates are no doubt somewhat higher now than they were in 2008. In the last quarter of 2009, for example, the unemployment rate for Putnam County averaged 6.7 percent.)

[1] Unless otherwise noted, the data in Tables 3-51 through 3-59 are presented for each town or county in its entirety, not for the portion of each town or county that lies within the Cat-Del watershed.

Table 3-52: Employment in East-of-Hudson Catskill-Delaware towns (2008)

Town	Population 16+	In Labor Force	Employed	Unemployed	% Employed, 16+	Unemployment Rate, 16+
East Fishkill	22,487	16,156	15,550	584	69.2%	3.6%
Carmel	27,774	19,419	18,528	718	66.7%	3.7%
Kent	11,655	8,382	8,064	317	69.2%	3.8%
Putnam Valley	9,145	6,374	6,026	343	65.9%	5.4%
Harrison	18,417	11,278	10,779	499	58.5%	4.4%
Mount Pleasant	34,665	21,189	20,298	890	58.6%	4.2%
New Castle	12,756	8,786	8,552	233	67.0%	2.7%
North Castle	9,112	6,146	5,977	168	65.6%	2.7%
TOTAL	**146,011**	**97,730**	**93,774**	**3,752**	**64.2%**	**3.8%**

Median household incomes in the East-of-Hudson watershed towns are significantly higher than the median for New York State ($53,376 in 2008). Table 3-53 shows the median household income for each of the eight towns in 2008, as well as inflation-adjusted income growth between 2000 and 2008.

Table 3-53: Median household income in East-of-Hudson Catskill-Delaware towns (2008 dollars)

Town	1990	2000	2008	% change 1990-2000	% change 2000-2008
East Fishkill	$ 89,560	$ 98,175	$ 99,610	9.6%	1.5%
Carmel	$ 95,422	$ 96,365	$ 97,364	1.0%	1.0%
Kent	$ 84,516	$ 91,176	$ 91,846	7.9%	0.7%
Putnam Valley	$ 87,270	$ 91,219	$ 91,997	4.5%	0.9%
Harrison	$ 93,072	$ 100,072	$ 101,632	7.5%	1.6%
Mount Pleasant	$ 95,313	$ 101,429	$ 103,085	6.4%	1.6%
New Castle	$ 173,215	$ 204,096	$ 216,806	17.8%	6.2%
North Castle	$ 132,308	$ 148,800	$ 150,329	12.5%	1.0%
New York State	**$ 54,408**	**$ 54,565**	**$ 53,376**	0.3%	-2.2%

Conversely, poverty rates in the East-of-Hudson region are relatively low. While current data on the percentage of all residents with incomes below the poverty level are not available at the town level, the Census Bureau provides estimates at the county level for 2006-2008. The county level poverty rates are shown in Table 3-54.

Table 3-54: People living under the poverty level, by county, 2006-2008

County	% people with income below poverty level
Dutchess	8.1%
Putnam	6.3%
Westchester	7.5%
New York State	*13.8%*

Residential development

DemographicsNow estimates that in 2008 there were 64,017 housing units in the eight Catskill-Delaware watershed towns east of the Hudson. The total number of housing units in these towns grew by 9 percent between 1990 and 2000, and by 4 percent between 2000 and 2008. As Table 3-55 shows, growth was particularly strong in the watershed towns of Putnam and Dutchess counties.

Table 3-55: Housing units, 1990-2008

Town	1990	2000	2008	% change, 1990-2000	% change, 2000-2008
Dutchess County					
East Fishkill	7,265	8,495	9,570	17%	13%
Putnam County					
Carmel	10,152	11,283	11,955	11%	6%
Kent	5,073	5,353	5,569	6%	4%
Putnam Valley	3,986	4,253	4,555	7%	7%
Total	**19,211**	**20,889**	**22,079**	**9%**	**6%**
Westchester County					
Harrison	7,931	8,624	8,315	9%	-4%
Mount Pleasant	13,228	14,002	14,240	6%	2%
New Castle	5,545	5,825	5,853	5%	0%
North Castle	3,529	3,706	4,160	5%	12%
Total	**30,233**	**32,157**	**32,568**	**6%**	**1%**
EOH Total	**56,709**	**61,541**	**64,217**	**9%**	**4%**

As in other parts of New York State and the U.S., housing prices have increased significantly in the East-of-Hudson towns during the past decade. Table 3-56 shows how median sale price of single-family homes has risen in the eight towns since 2001.

Table 3-56: Median sale price of single-family homes, 2001-2009

	Median sale price		% Change,
Town	2001	2009	2001-2009
East Fishkill	$265,000	$385,000	45%
Carmel	$255,000	$360,000	41%
Kent	$187,000	$255,000	36%
Putnam Valley	$208,500	$335,500	61%

The economy of the East-of-Hudson region

Between 1997 and 2007, payroll employment in the three East-of-Hudson watershed counties rose by a robust 12.1 percent. In Putnam County, payroll employment rose by a particularly strong 33.5 percent. With the beginning of the recession in 2008, the region began to lose jobs – but average annual employment declined by only 0.5 percent. Payroll employment by county is shown in Table 3-57.

Table 3-57: Total Industries Payroll Employment, 1997 – 2008

County	1997 Average Annual Employment	2007 Average Annual Employment	2008 Average Annual Employment	Change 1997 - 2007	% Change 1997 - 2007	Change 2007 - 2008	% Change 2007 - 2008
Dutchess	102,894	116,551	115,006	13,657	13.3%	(1,545)	-1.3%
Putnam	19,399	25,900	25,213	6,501	33.5%	(687)	-2.7%
Westchester	380,082	420,597	420,107	40,515	10.7%	(490)	-0.1%
EOH Counties	*502,375*	*563,048*	*560,326*	*60,673*	*12.1%*	*(2,722)*	*-0.5%*
NYS	*7,902,044*	*8,550,093*	*8,596,391*	*648,049*	*8.2%*	*46,298*	*0.5%*

Source: New York State Department of Labor

Communities in Putnam and southern Dutchess County that were affected by the Land Acquisition Program participated in this growth. In the Hopewell Junction ZIP code area, for example, private payroll employment rose by 5.7 percent between 1997 and 2007 – a gain of 521 jobs. In the Carmel and Mahopac ZIP codes, payroll employment during the same period grew by 23 percent – a gain of 1,695 jobs. (Both areas have since seen some decline in employment.) In Westchester, inconsistencies between town and ZIP Code boundaries make ZIP Code-level data less useful for tracing changes in employment at the local level. Employment by ZIP Code is shown in Table 3-58.

Table 3-58: Employment by watershed area ZIP code, 1997 and 2007, East-of-Hudson ZIP watershed

Zip Code	Place Name	1997 Average Annual Employment	2007 Average Annual Employment	2008 Average Annual Employment	Change 1997-2007	% Change 1997 - 2007
Putnam		*7,514*	*9,209*	*9,166*	*1,695*	*23%*
10512	Carmel	4,980	5,738	5,663	758	15.2%
10541	Mahopac	2,535	3,472	3,503	937	37.0%
Dutchess						
12533	Hopewell Junction	9,125	9,646	9,091	521	5.7%
Total		**16,639**	**18,855**	**18,257**	**2,216**	**13.3%**

FUTURE WITHOUT THE PROPOSED ACTION

Socioeconomic conditions in the East-of-Hudson Catskill-Delaware watershed towns during the period 2010 through 2022 are likely to be similar to those of the past few years – with some notable differences.

The population of the eight towns is likely to keep growing through 2022, although at a somewhat slower pace than in the preceding decades. Population projections are generally not available at the town level. However, as shown below in Table 3-59, the Cornell University Program in Applied Demographics projects that between 2010 and 2025, the population of Dutchess County will increase by 9 percent; the population of Putnam County by more than 10 percent, and the population of Westchester County by nearly 4.8 percent.

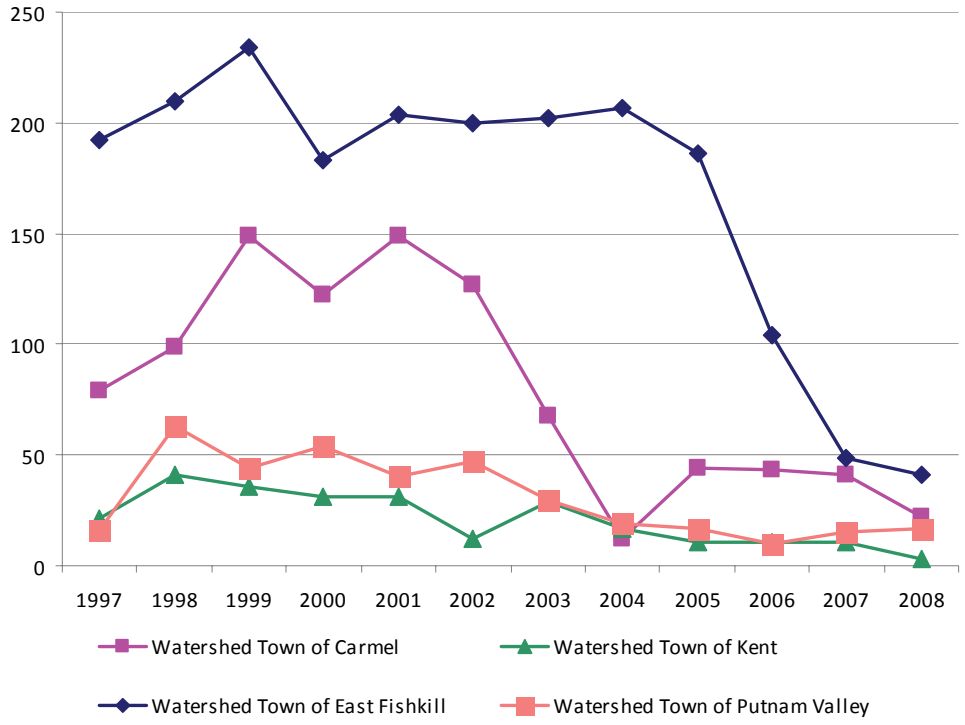
Table 3-59: Projected population growth, 2000-2025

County	2000	2010	2015	2020	2025	% Change 2000 to 2025	% Change 2010 to 2025
Dutchess County	280,150	301,396	310,896	320,154	328,519	17.27%	9.00%
Putnam County	95,745	103,186	106,826	110,354	113,576	18.62%	10.07%
Westchester County	923,459	964,914	980,555	996,357	1,011,179	9.50%	4.79%

Source: Cornell University, Program on Applied Demographics, 2010

The pace of residential development will also be significantly slower between 2010 and 2022 than in the preceding decades. Figure 3-17 traces the number of new units authorized under building permits issued in several East-of-Hudson towns between 1997 and 2008. As the graph shows, the number of new units dropped sharply after the middle of the decade, reflecting the end of the housing bubble and the beginning of the recession. While housing and mortgage markets will eventually recover, residential construction is likely to remain depressed for at least the next few years – and is unlikely to return at any time during the next twelve years to the levels reached during the early 2000's.

Figure 3-17: Number of residential units in building permits issued, 1997-2008



The economy of the East-of-Hudson watershed region has consistently been among the strongest regional economies in New York State during the past several decades, and this pattern is likely to continue. In 2009, an employment forecast prepared for the New York Metropolitan Transportation Council projected that between 2010 and 2025, employment in the Dutchess, Putnam and Westchester counties would grow by 17 percent – an increase of 135,000 jobs. The population forecast is shown in Table 3-60.

Table 3-60: Projected employment growth, East-of-Hudson counties, 2010-2035

County	2010	2015	2020	2025	2030	2035	% Change 2010 - 2020	% Change 2010 - 2025
Dutchess	159.5	171.2	182.0	193.2	203.2	213.5	14.1%	21.1%
Putnam	40.7	43.1	45.3	47.2	48.8	50.3	11.3%	16.0%
Westchester	588.3	620.9	650.3	683.3	712.7	743.0	10.5%	16.1%
EOH Counties	**788.5**	**835.2**	**877.6**	**923.7**	**964.7**	**1,006.8**	**11.3%**	**17.1%**

Source: New York Metropolitan Transportation Council

FUTURE WITH THE PROPOSED ACTION

In the West-of-Hudson region, NYCDEP expects that the overall scale of solicitation under the Land Acquisition Program during the next twelve years, and the mix of acquisitions in fee simple and conservation easements will generally be similar to or, in some areas of high focus, greater than what they have been during the past twelve years. In the portion of the Catskill-Delaware watershed that lies east of the Hudson, in contrast, 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 2022 are likely to be substantially less than the historic pattern of activity.

For information purposes, and to provide some context for the assessment of future impacts that follows – Table 3-61 provides some data on land and easements acquired through June 2009 in the eight East-of-Hudson towns.

Table 3-61: LAP activity to date in the eight EOH Catskill-Delaware towns[1]

	Total town acres	% of town acres in watershed	Acres acquired in fee by LAP	Acres acquired in CE by LAP	Acres of WAC farm easements	Total acres acquired by LAP through 6/09
East Fishkill	36,799	16%	1,049	0	0	1,049
Kent	27,358	84%	5,299	628	0	5,927
Carmel	26,077	93%	860	0	0	860
Putnam Valley	26,464	8%	774	0	0	774
Harrison	11,104	7%	0	0	0	0
Mount Pleasant	20,981	10%	25	0	0	25
New Castle	15,024	65%	21	110	0	131
North Castle	16,712	29%	88	0	0	88

As noted above, between 2010 and 2022 NYCDEP currently 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.

Table 3-62 presents some basic data on the projected level of acquisitions in each of the four primary towns.

[1]The data include acquisitions in both the Catskill-Delaware and Croton watershed areas.

Table 3-62: Projected LAP activity in East-of-Hudson Catskill-Delaware watershed towns through 2022

County	Town	Project LAP acquisitions through 2022 (acres)	Est. developable land acquired (acres)
Dutchess	East Fishkill	307 acres	118 acres
Putnam	Carmel	189 acres	81 acres
Putnam	Kent	987 acres	329 acres
Putnam	Putnam Valley	34 acres	10 acres
TOTAL		**1,517 acres**	**538 acres**

Using the same approach used previously to gauge LAP's impact on the supply of developable land west of the Hudson, Table 3-63 shows the projected impact of the Land Acquisition Program on the supply of developable land in the four towns. As the table shows, the program's impact varies widely across the four towns.

Table 3-63: 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.[1] 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. However, due to the lesser focus on East of Hudson in the Extended LAP, the projected rate of LAP acquisitions and the projected rate of development do not meet the threshold for more detailed town-level analysis as described in the assessment of socioeconomic impact west of the Hudson – projected LAP acquisition of at least 20 percent of the town's 2009 supply of

[1] 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.

developable land, or projected consumption of at least 10 percent of 2009 developable land by new residential development, combined with LAP acquisition of greater than 5 percent.

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 3-63 are conservative in several respects.

- Our definition of developable land excludes several categories of land that could in fact support future development, including currently-undeveloped portions of residential parcels of less than 15 acres; commercial and industrial land; and agricultural land.
- The estimates of the amount of developable land required to support new residential development assume that the average annual rate of new housing construction that the four towns experienced from the late 1990's through 2008 will be sustained through 2022. Given a sharp decline in new development during the past few years – as shown above in the discussion of "future conditions without the proposed action" –and the prospect of a slow recovery, this seems unlikely.

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

East Fishkill

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.

As shown in Table 3-63, 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 3-63 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. As Figure 3-17 shows, 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 3-63, 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 3-63, 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 3-62 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.

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 1,517 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 1,517 acres NYCDEP expects to acquire between 2010 and 2022 is only 17.5 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 2022 is only 17.5 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.

Finally, because the acquisition of 1,517 acres between 2010 and 2022 is not expected to constrain to any significant extent the pace of new development in the East-of-Hudson towns, it is unlikely to affect the towns' potential to generate new revenues through development.

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 through 2022under the Extended LAP – which represent only 0.6 percent of all East-of-Hudson watershed land, and only 1.5 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.

CHAPTER 4:

TOWN LEVEL ASSESSMENTS

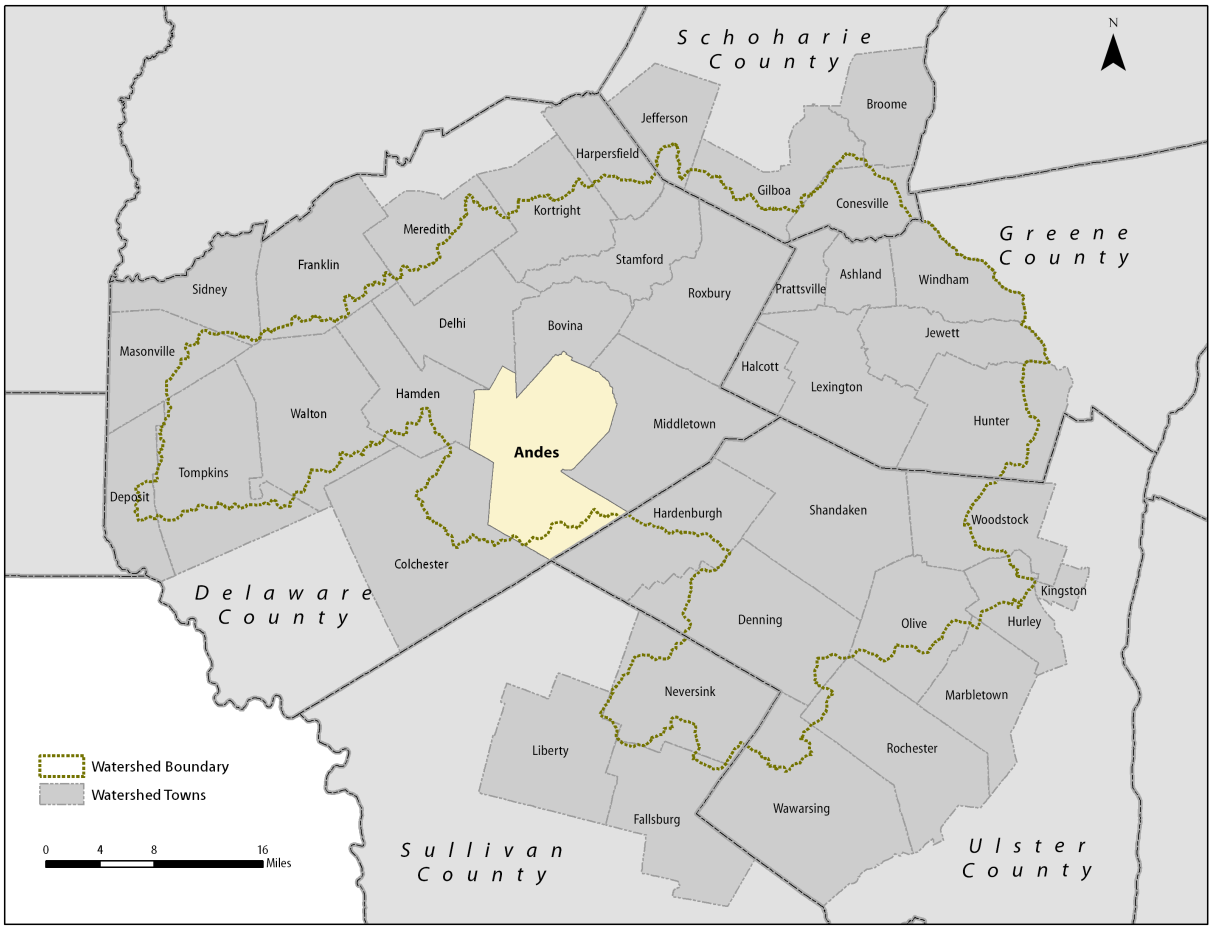
DELAWARE COUNTY

TOWN OF ANDES

EXISTING CONDITIONS

The Town of Andes, located in southeastern Delaware County, is a primarily rural, low-density community. The Town's resident population grew by about 5 percent in the 1990s, but has been roughly stable since 2000; in 2008, it was estimated at 1,336.

Figure 4-1: Map of Andes in relation to the watershed



Town of Andes – Quick Facts	
Land area:	72,003 acres
Percent of town land area within the watershed:	91%
Percent of land protected	25%
Population (estimated), 2008:	1,336
Median age (estimated), 2008	48.8
Median household income (estimated), 2008	$44,093

As shown in Table 4-1 and Figure 4-2, more than one-third of the Town's total area consists of low-density residential land. Protected areas (including buffer lands around the Pepacton Reservoir) and privately-owned vacant land each account for about one-quarter of the total.

Development since 1990 (as shown by the parcels highlighted in black in Figure 4-2), has occurred throughout the Town. Based on data from the Office of Real Property Services, it is estimated that between 2000 and 2009, 58 new residential units were developed in Andes.

Andes has a substantial second-home population. About 49 percent of all housing units in 2000 were for seasonal or recreational use. This sector appears to have grown somewhat since 2000, with a 4 percent increase in the number of housing units in the town, despite the fact that the resident population has not grown.

Commercial activity is concentrated in the hamlet of Andes – formerly an incorporated village, which several years ago chose to "unincorporate." Relative to its size, the hamlet of Andes has seen substantial new business development since 2000, with a hotel, new restaurants and galleries.

Table 4-1: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural[1]	4,789	7%	0	0%	4,789	7%
High-Density Residential	3,939	6%	181	3%	4,121	6%
Low-Density Residential	23,205	35%	1,423	23%	24,627	34%
Commercial/Other	180	0%	0	0%	180	0%
State/Other Protected	8,937	14%	3,489	56%	12,426	17%
City Protected	8,018	9%	N/A	N/A	5,922	8%
Vacant	15,592	24%	1,359	22%	16,951	24%
Total	**65,748**		**6,255**		**72,003**	

The Andes Chamber of Commerce characterizes the Town as offering:

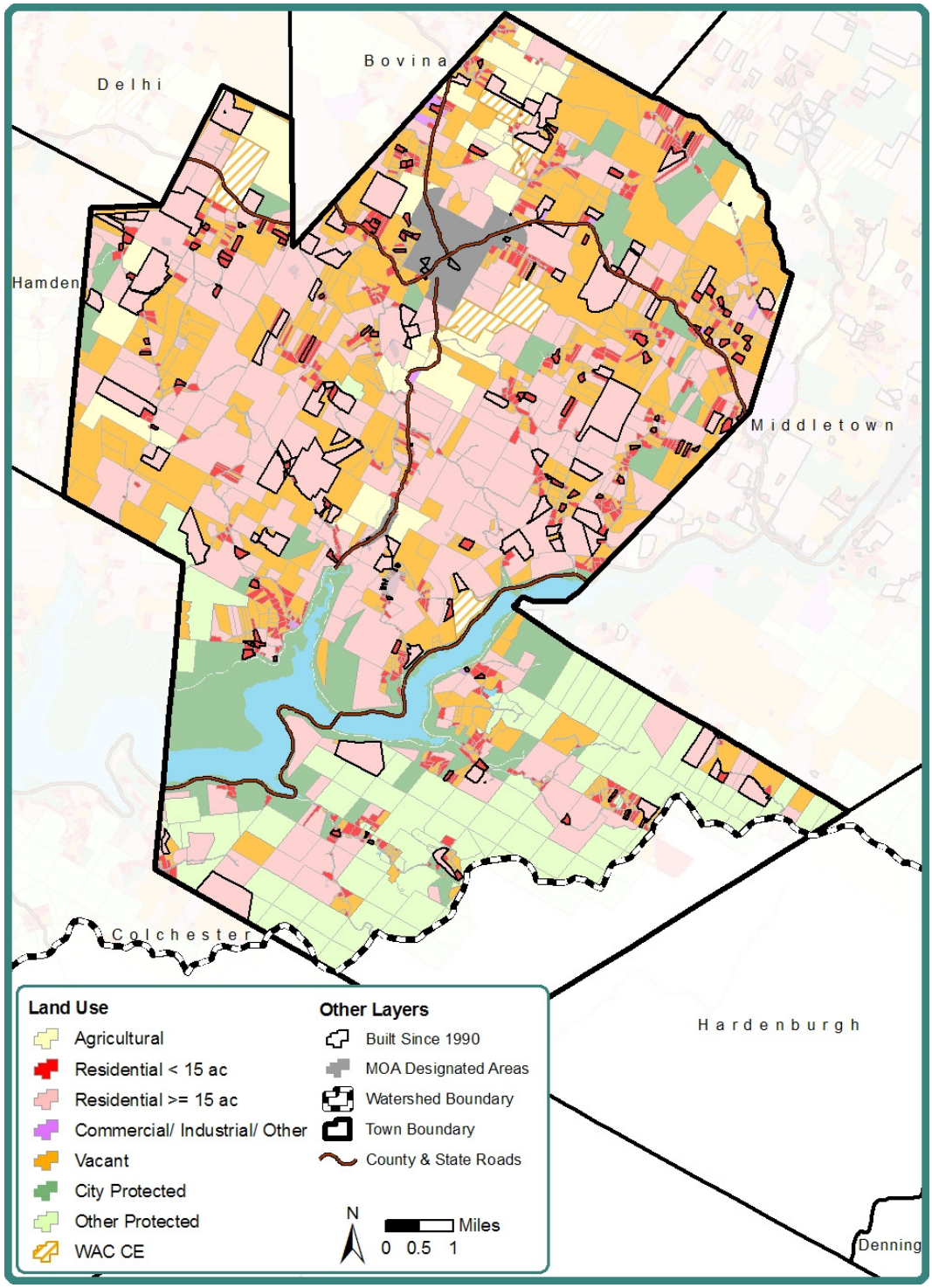
> *….quiet charm and a peaceful haven for a day, a season or a lifetime. Historic sites, quaint shops, fine restaurants and abundant outdoor recreational opportunities are here to help our visitors and residents unwind and experience authentic small town American life.*
>
> *We are as proud of our history as we are of our present, with a great public school, wonderful restaurants, wireless access throughout Main Street, family-run farms, small service businesses and great community spirit.*

The Chamber also notes other strengths that are attracting visitors and residents:

> *Telecommuting, quality of life, strong second home markets and tourism, along with plenty of cultural and recreational activities…*

[1] The agricultural category includes WAC conservation easements.

Figure 4-2: Map of Andes showing land use and protected land within the Watershed



A local website, Andes.com, notes that the Town still retains strong ties to its agricultural roots.

> *Though the number of dairy farms in Andes has shrunk to only a few, you can still see Holstein cows grazing on our picturesque hills, surrounded by rolling corn and hay fields, with horses, beef cattle, goats, sheep, alpaca and llamas….The sustainable local agriculture movement featuring organic vegetables, meadow raised meats and farmers' markets is drawing enthusiastic young people to this new incarnation of agriculture.*
>
> *"Small is beautiful" could be the motto for so much of Andes: no industrial farms, no chain stores, no clogged roads; in many ways, life as it used to be.*

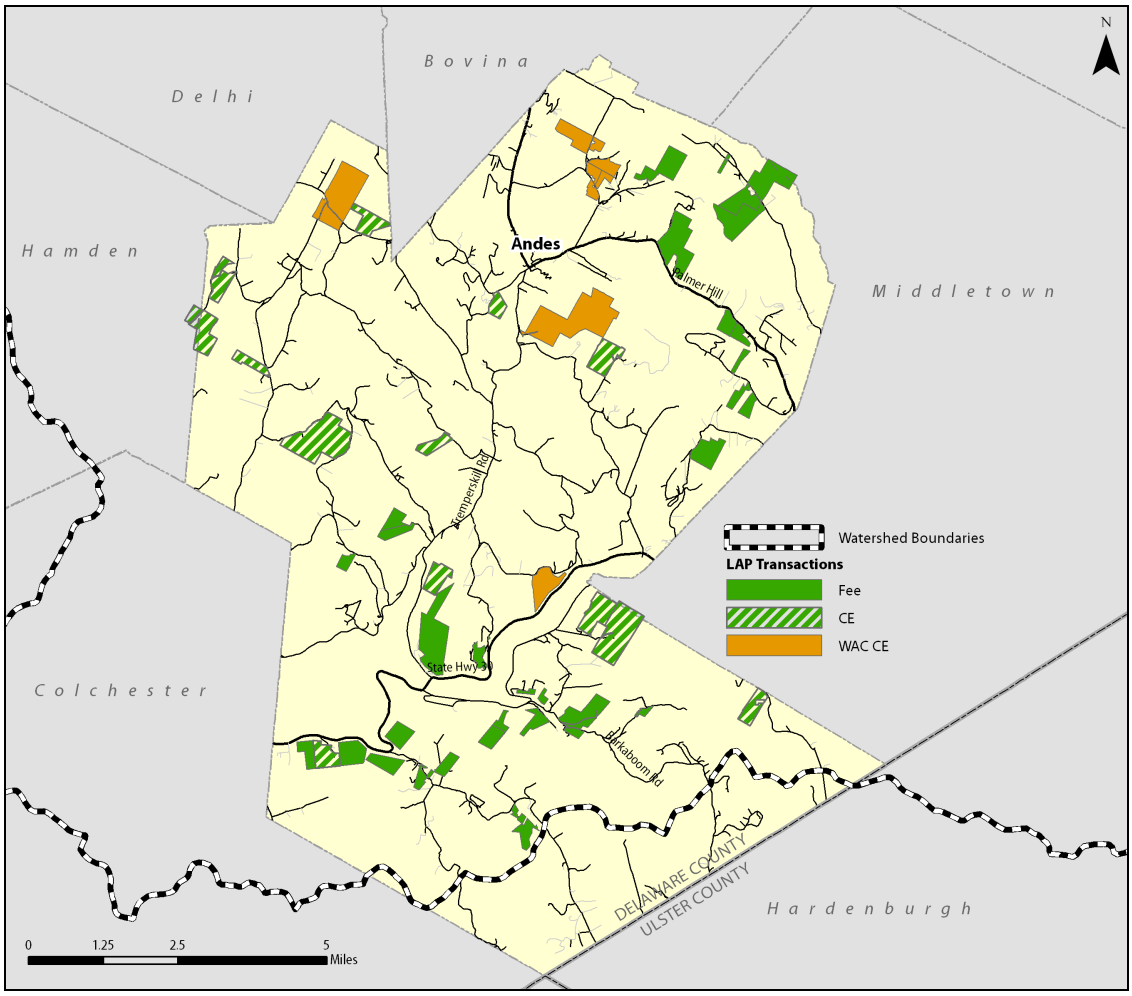
Previous LAP Activity

Through June 2009, 5,346 acres had been acquired in Andes under the Land Acquisition Program – about 7.4 percent of the Town's total land area. Figure 4-3 shows the location of LAP properties in Andes, by type of acquisition.

Table 4-2: Acquisitions in the Town of Andes through July 2009

Type of acquisition	Acres
Fee simple	2,434
Conservation easements	1,701
WAC agricultural easements	1,212
Total acquired	**5,346**

Figure 4-3: Map of LAP properties in Andes, by type of acquisition



As of July 2009, approximately 1,212 acres of agricultural land in Andes were covered by WAC easements. As of October 2009, NYCDEP's purchases of land in fee simple in Andes did not include any land that had been actively used for agricultural purposes immediately prior to acquisition; nor had any permits for agricultural use of NYCDEP land been requested.

As of the fall of 2009, NYCDEP had opened a total of 1,864 acres of land acquired under LAP in Andes for a variety of recreational uses – about 77 percent of the land that LAP has acquired in fee simple in Andes. Opening NYCDEP-owned land for public use expands the resources for outdoor recreation that are available in the Town – a factor in its attractiveness for both residents and visitors.

Pursuant to the 1997 MOA, Andes designated a hamlet area totaling 1,052 acres, covering the Town's commercial center and the area that had previously fallen within the Village of Andes, within which NYCDEP cannot acquire land in fee simple. This has helped ensure the availability of space for development of new businesses within the hamlet.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022 as discussed in Chapter 3, the resident population of Delaware County is expected decline slightly. At the same time, the demand for second homes in the County may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development has nevertheless been estimated based on the rate of development during the past two decades. If the pace of new development in Andes (as measured by new residential units) remains the same as it was between 1990 and 2008 (about 12 new units per year), it can be estimated that the land required to support new development through 2022 would total approximately 1,707 acres. This would include 486 acres of land characterized as developable[2] – about 7 percent of the Town's supply of developable land.

Between 2010 and 2022, Andes is also likely to see a continued decline in land used for agricultural purposes, although there is some potential for growth of smaller-scale, specialized agricultural enterprises. As shown during the past decade – although to some extent interrupted by the recession – there may be some potential for further commercial revitalization in the hamlet of Andes.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

NYCDEP's Long-term Land Acquisition Plan identifies the sub-basins north of the Pepacton Reservoir, including the Town of Andes, as an "area of high focus." In part as a result of its focus on this area, NYCDEP projects that through 2022, the Extended LAP could acquire 6,904 additional acres in Andes either in fee simple or through conservation easements – the largest number of acres projected to be acquired in any of the watershed towns. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions are projected to include approximately 1,472 acres of developable land – 20 percent of the Town's supply of developable vacant and low-density residential land in 2009. NYCDEP further estimates that WAC could during the same period purchase easements on 786 acres of agricultural land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Andes would still be left with approximately 73 percent of the Town's current stock of developable non-agricultural land.

[2] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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 Group D).

Table 4-3: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		7,221 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	6,904 acres	
Developable vacant or low-density residential land acquired		1,472 acres
Residential Development, 2010-2022		
Projected housing units built	143 units	
Land needed for housing	1,707 acres	
Developable portion of land needed for housing		486 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		5,262 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		73 percent

As noted in Chapter 3, this estimate of LAP's impact on the Town's supply of developable land needs also to take into account that as of 2009, Andes' supply of such land is relatively limited. As defined here, developable land represented about 10.3 percent of the Town's total land area in 2009; and by 2022 this percentage is projected to decline to 7.5 percent. It is important to note, however, that the estimates of developable land cited in Table 4-3 are in several respects conservative – especially in that the definition of developable land used here includes no agricultural land. Moreover, basing projected residential development on the rate of development in Andes between 1990 and 2008 may overstate the amount of land that would be required to support residential development. Overall, the Town's supply of developable land appears to be sufficient to accommodate both additional LAP acquisitions and the projected level of new development through 2022.

Additional acquisitions through 2022 can also be assessed in terms of their potential impact on the character of the community. Overall, the Land Acquisition Program could help to reinforce many of the Town's key assets, by protecting the environment and preserving farmland. Moreover, assuming that the percentage of newly-acquired land opened to public recreational use is similar to what it has been through 2009, it is estimated that through 2022 more than 3,100 acres of land acquired in fee simple could be made available by NYCDEP for public recreational use. These lands could provide a significant amenity for both full-time and part-time residents, and a resource for further development of visitor-based activity.

WAC's acquisition of additional easements could also help preserve the Town's remaining agricultural uses, and could also encourage the continued development of new agricultural uses.

Moreover, because of the Town has already designated a 1,052-acre hamlet area, further acquisitions by NYCDEP are unlikely to have any adverse impact on the ongoing revitalization of the hamlet of Andes. (The Town did not seek to expand its designated hamlet area.)

CONCLUSIONS

Although the number of acres that could be acquired under the Extended LAP is projected to be higher in Andes than in any other West-of-Hudson watershed town, the amount of developable land remaining in the Town would be more than adequate to support the projected level of new residential development. Acquisition of WAC easements on 786 acres of agricultural land could help preserve the Town's working farmland. The Extended LAP would also help preserve the Town's natural environment; and opening lands acquired by NYCDEP for public recreational use could provide and significant amenity for both residents and visitors. As noted above, pursuant to the 1997 MOA, the Town had designated a 1,052-acre hamlet area, within which NYCDEP cannot acquire land in fee simple, which will help maintain the current character of this area.

On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Andes.

TOWN OF BOVINA

EXISTING CONDITIONS

The Town of Bovina is located at the center of the eastern portion of Delaware County. The Town's resident population in 2008 was estimated to be 633 – a decrease of 4.7 percent since 2000. With a population density of only 14.1 persons per square mile, Bovina is primarily rural in character, with some limited commercial activity concentrated in the hamlet of Bovina Center.

Figure 4-4: Map of Bovina in relation to the watershed

Town of Bovina – Quick Facts	
Land area:	28,427 acres
Percent of town land area within the watershed:	100%
Percent of land protected:	13%
Population (estimated), 2008:	633
Median age (estimated), 2008	47
Median household income (estimated), 2008	$50,943

As shown in Table 4-4 and Figure 4-5, one-third of the Town's total area is agricultural land; and another 30 percent is low-density residential. Economic activity in the town includes a mix of agriculture, small businesses that serve the local population, and businesses – such as several small inns and bed-and-breakfasts – that serve tourists. As the seat of Delaware County government and the site of SUNY Delhi, the nearby Village of Delhi serves as a center of commerce, services and employment for many residents of Bovina.

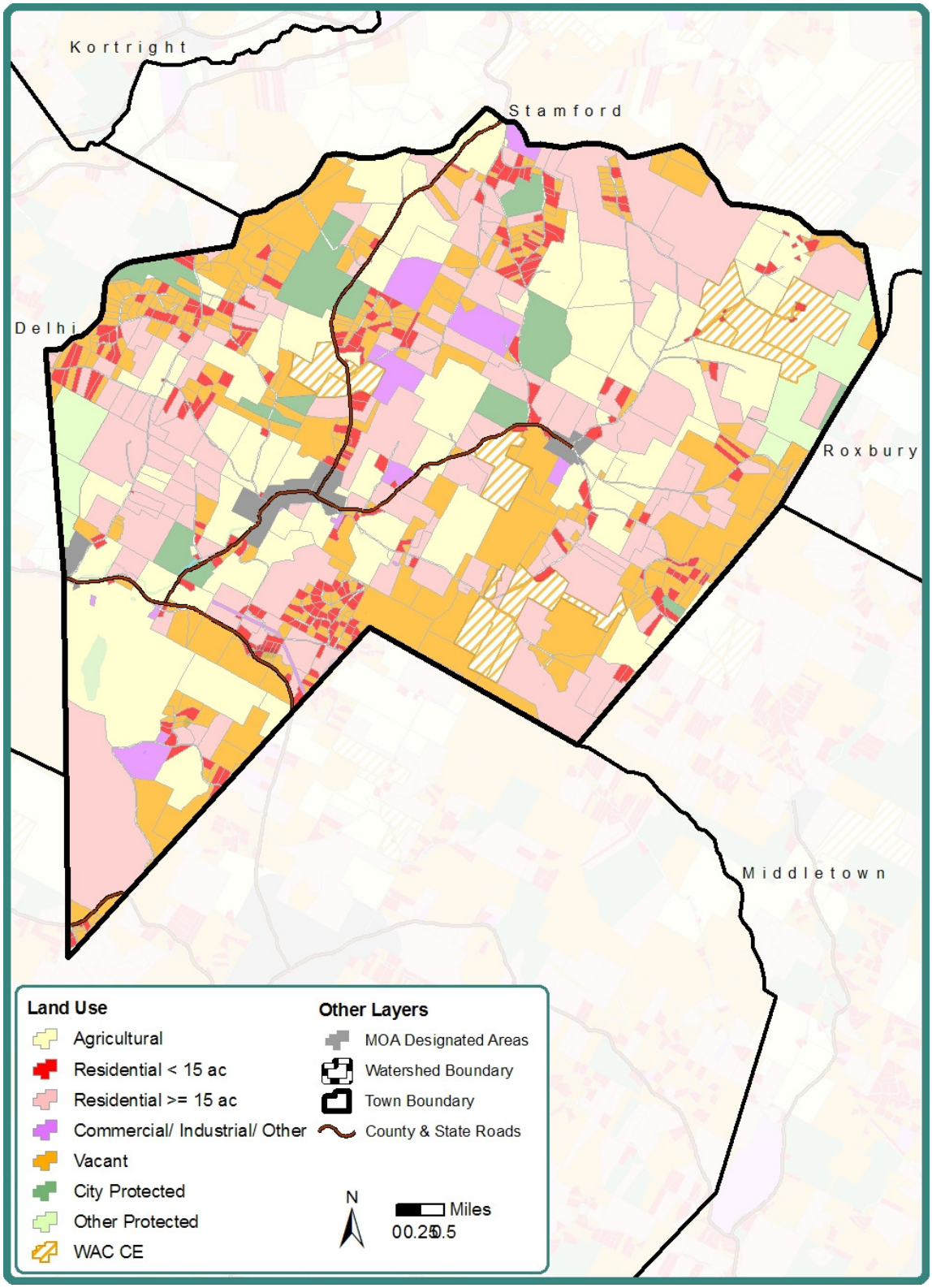
Second homes made up 40 percent of Bovina's housing stock in 2000, down from 49.8 percent in 1990. The Town's population grew between 1990 and 2000; some of this growth appears to have been related to conversions of second homes to permanent residences.[3] Based on U.S. Census data and estimates by DemographicsNow, it is estimated that between 2000 and 2008, 5 new housing units were built in Bovina.

Table 4-4: Land uses by type

	In Watershed/Total	
Land Use	*Acres*	*% of Total*
Agricultural	9,257	33%
High-Density Residential	1,704	6%
Low-Density Residential	8,352	29%
Commercial/Other	718	3%
State/Other Protected	875	3%
City Protected	1,105	4%
Vacant	6,100	21%
Total	**28,427**	

[3] Town of Bovina Delaware County, NY Comprehensive Plan (2002), p. 2-10.

Figure 4-5: Map of Bovina showing land use and protected land within the Watershed



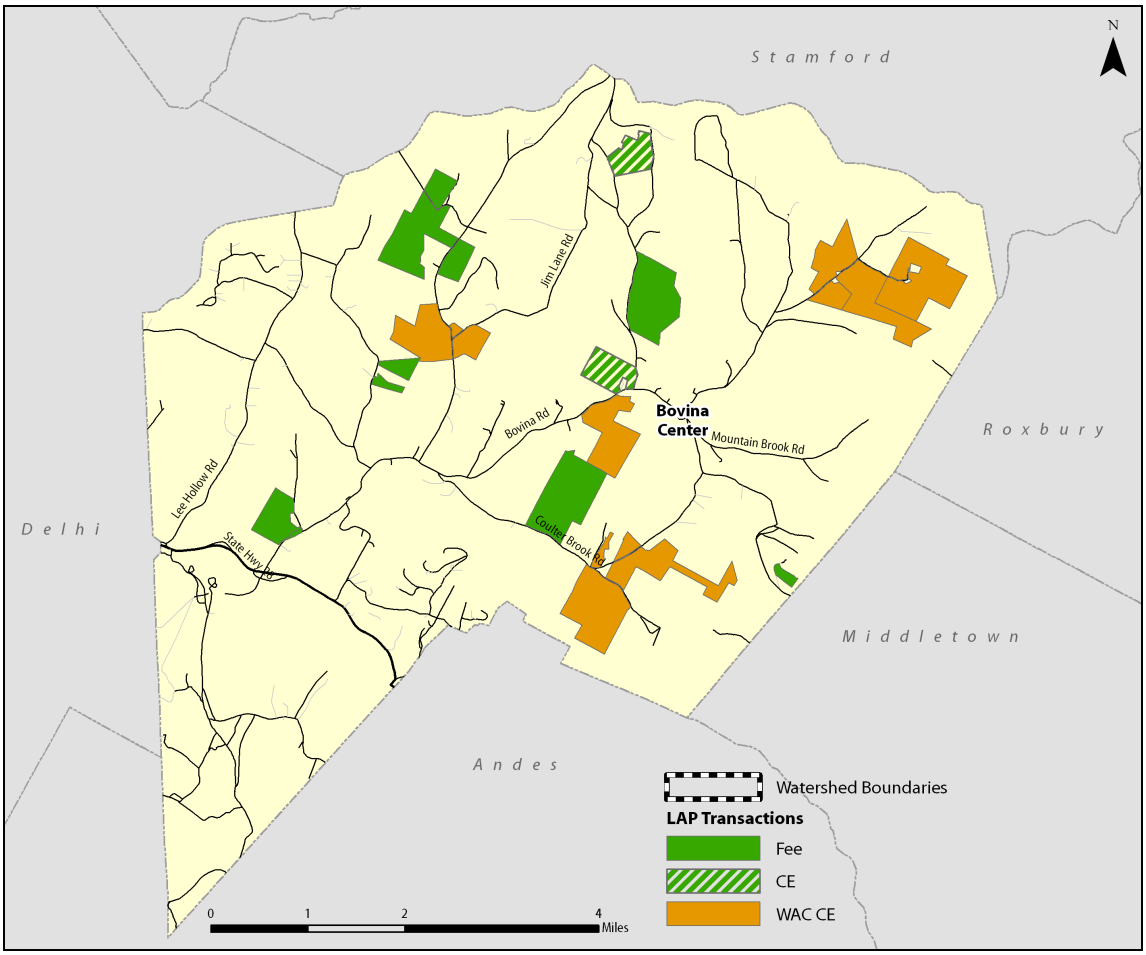
Previous LAP Activity

Through June 2009, NYCDEP had acquired a total of 2,685 acres in Bovina pursuant to the 1997 MOA. As shown in Table 4-5 below, purchases of land in fee simple account for 37 percent of the total acreage acquired under LAP. Figure 4-6 shows the location of LAP properties in Bovina, by type of acquisition.

Table 4-5: Acquisitions in the Town of Bovina through July 2009

Type of acquisition	Acres
Fee simple	1,009
Conservation easements	240
WAC agricultural easements	1,436
Total acquired	**2,685**

Figure 4-6: Map of LAP properties in Bovina, by type of acquisition



As of July 2009, WAC had acquired agricultural easements covering 1,436 acres in Bovina – about 16 percent of all land in the Town that is coded as agricultural.

As of October 2009, a total of 330 acres acquired by NYCDEP in fee simple in Bovina had been opened by NYCDEP for recreational use – about 33 percent of the land that NYCDEP has acquired in fee simple in the Town since the beginning of the Land Acquisition Program. This figure can be expected to grow as additional properties are closed and reviewed for public access.

Pursuant to the 1997 MOA, the Town designated 392 acres of hamlet areas, within which NYCDEP cannot acquire land in fee simple. These designations ensure that acquisitions by NYCDEP will not conflict with commercial and community uses within the designated areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Delaware County is expected to decline slightly. At the same time, the demand for second homes may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development was estimated based on the rate of development during the past two decades. If it is assumed that the pace of new development in Bovina (as measured by new residential units) remains the same as it was between 1990 and 2008, it can be estimated that the land required to support new development through 2022 would total approximately 187 acres – including 68 acres of land characterized as developable[4] – about 2 percent of the Town's supply of developable land.

There is currently one major project planned in Bovina that could result in further development beyond the level cited above – the Aman Resort at Broadlands. The resort is to be developed by Aman, a major international resort operator, on a 2,000-acre property (parts of which are in Andes and Delhi) that was formerly the Gerry estate. It would include a 50-room hotel and luxury spa, along with a 50-lot subdivision that would accommodate the construction of 50 individually-owned "villas." The project was announced in 2007, but has reportedly been delayed due to economic conditions.

Between 2010 and 2022, the long-term decline in land used for agricultural production is likely to continue. Other commercial activity in the Town is likely to remain stable.

In its 2002 Comprehensive Plan, the Town of Bovina listed several goals:

1. *Use positive incentive-based programs to guide development.*

[4] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

2. *Provide for the orderly future growth and development of the Town of Bovina.*

3. *Provide adequate light, air and privacy; secure safety from fire, flood and other danger; and prevent overcrowding.*

4. *Preserve the character of existing rural highways and promote safe, efficient and uncongested circulation of traffic.*

5. *Protect surface and groundwater supplies from pollution, maintain high quality physical environments and preserve wildlife habitats.*

6. *Promote the economic development of the Town of Bovina so as to improve incomes, create new business and employment opportunities and raise the standard of living within the community.*
7. *Encourage the retention and further development of the Town of Bovina's vital agricultural sector so as to improve farm incomes and maintain the working landscapes that define the Town's character.*

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Bovina to date, NYCDEP estimates that through 2022, it could acquire a total of 2,273 acres either in fee simple or through conservation easements. It is estimated that this total could include approximately 711 acres of developable land. NYCDEP further estimates that WAC could during the same period purchase easements on 512 acres of agricultural land.

As shown in the following table, after taking into account both LAP acquisitions and the land required to support new development, Bovina would still be left with approximately 79 percent of the Town's current stock of developable vacant and low-density residential land.

Table 4-6: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		3,726 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	2,273 acres	
Developable vacant or low-density residential land acquired		711 acres
Residential Development, 2010-2022		
Projected housing units built	24 units	
Land needed for housing	187 acres	
Developable portion of land needed for housing		68 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		2,948 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		79 percent

It should be noted that the 2009 and 2022 estimates of developable land presented in Table 4-6 are in several respects conservative. The definition of developable land cited above does not include agricultural land; nor does it include undeveloped portions of residential parcels of less than 15 acres. Overall, NYCDEP's acquisitions through 2022 are thus unlikely to have any adverse impact on the availability of land for development in Bovina – through 2022 and beyond.

Extension of LAP can also be assessed in terms of its potential impact on the character of the community.

While LAP has little or no direct impact on several of the Town's goals, it is clearly consistent with those relating to the protection of water quality and a high-quality physical environment. WAC's acquisition of easements on 512 additional acres of farmland is also consistent with the goal of maintaining Bovina's agricultural economy and working landscapes.

Assuming that the proportion of newly-acquired land opened by NYCDEP for public recreational use will be similar to the proportion made available in Bovina as of October 2009, additional acquisitions by NYCDEP are likely to result in more than 675 acres of additional land being opened for public recreation in Bovina by 2022.

CONCLUSIONS

While the amount of land that could be acquired in Bovina under the Extended LAP is substantial, the remaining supply of developable land would be more than adequate to support the relatively low level of new development expected to occur between 2010 and 2022. Acquisition of WAC easements on 512 acres would also help preserve farmland in Bovina; and acquisitions by NYCDEP will help preserve the Town's high-quality natural environment. As noted above, pursuant to the 1997 MOA, the Town had designated 392 acres of hamlet areas, within which NYCDEP cannot acquire land in fee simple, which will help maintain the current character of this area.

On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Bovina.

TOWN OF DELHI

EXISTING CONDITIONS

The Town of Delhi, located in central Delaware County, is a low-density, primarily rural town. The Village of Delhi, located entirely within the Town, is the County seat and serves as a commercial center for much of Delaware County. The Town's resident population declined by about 8 percent in the 1990s, and is estimated to have declined an additional 2 percent since 2000. In 2008, its population was estimated at 4,547.

Figure 4-7: Map of Town of Delhi in relation to the watershed

Town of Delhi – Quick Facts	
Land area:	41,343 acres
Percent of town land area within the watershed:	100%
Percent of land protected	10%
Population (estimated), 2008:	4,547
Median age (estimated), 2008	31
Median household income (estimated), 2008	$44,018

As shown in Table 4-7 and Figure 4-8, more than one-third of the Town's total area consists of low-density residential land. Privately-owned vacant and agricultural land each account for slightly less than one-quarter of the total. More than half the Town's population and much of its commercial activity are concentrated in the Village of Delhi. (According to the 2000 Census, the Village accounted for 56 percent of the Town's population). In addition to employment related to county government, the Village also contains SUNY Delhi – the Town's largest enterprise, with about 3,100 students and 300 employees. Other notable institutions and businesses in Delhi include O'Connor Hospital, the Countryview nursing home, Delhi Bank, Delhi Telephone Company and a variety of farm-related businesses.

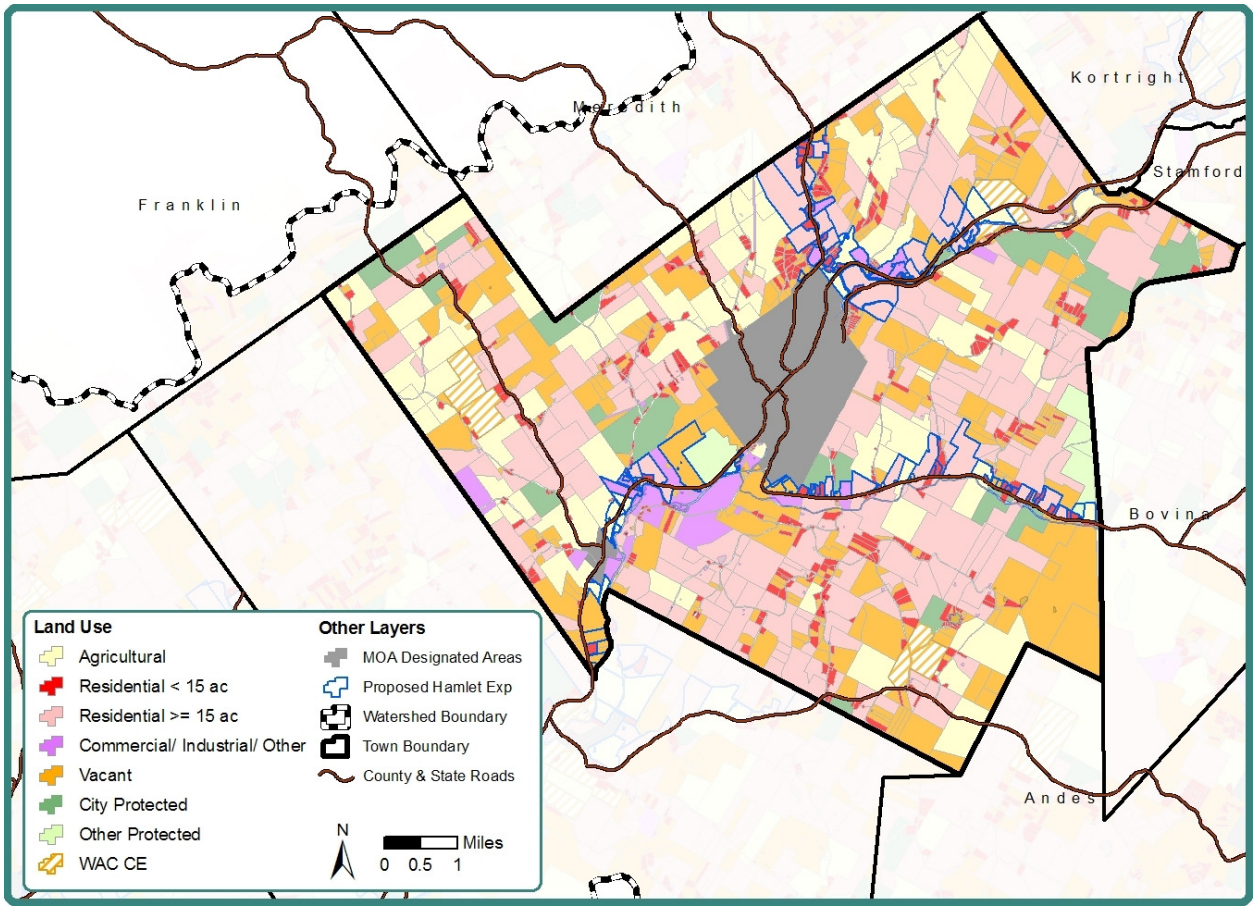
While the number of housing units in Delhi grew by a net average of about 10 new units per year between 1990 and 2008, most of this growth appears to have occurred in the 1990's. Based on U.S. Census data and estimates by DemographicsNow, it is estimated that between 2000 and 2009, a net of 4 new residential units were developed in Delhi.

Table 4-7: Land uses by type

	In Watershed/Total	
Land Use	*Acres*	*% of Total*
Agricultural[5]	9,105	22%
High-Density Residential	2,576	6%
Low-Density Residential	14,442	35%
Commercial/Other	1,768	4%
State/Other Protected	734	2%
City Protected	2,228	5%
Vacant	9,610	23%
Total	**41,343**	

[5] The agricultural category includes WAC conservation easements.

Figure 4-8: Map of Delhi showing land use and protected land within the Watershed



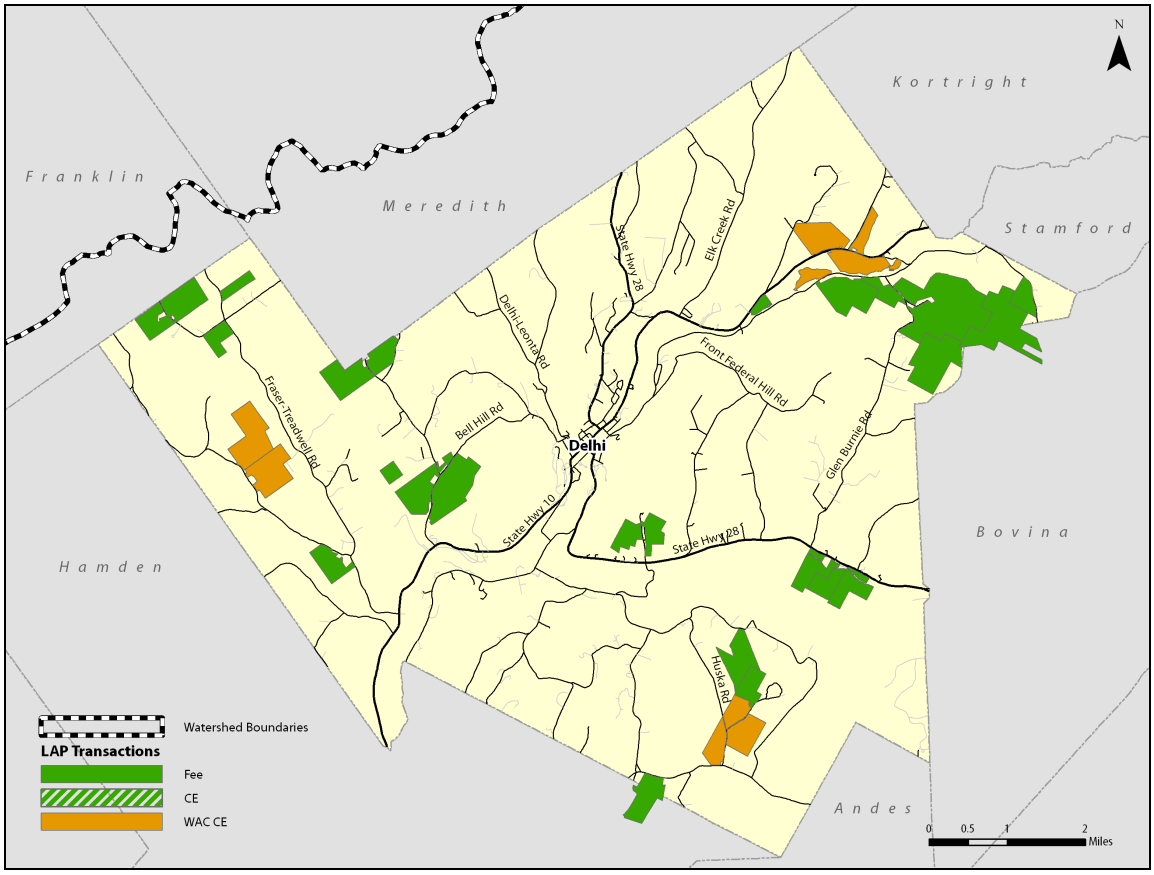
Previous LAP Activity

Through July 2009, 3,594 acres had been acquired in Delhi under the Land Acquisition Program – about 8.7 percent of the Town's total land area. Figure 4-9 shows the location of LAP properties in Delhi, by type of acquisition.

Table 4-8: Acquisitions in the Town of Delhi through July 2009

Type of acquisition	Acres
Fee simple	2,731
Conservation easements	0
WAC agricultural easements	862
Total acquired	**3,594**

Figure 4-9: Map of LAP properties in Delhi, by type of acquisition



As of October 2009, NYCDEP's purchases of land in fee simple in Delhi included 136 acres that had been actively used for agricultural production prior to acquisition. The Department had issued one permit for agricultural use of 50 acres of land it had acquired in fee simple in Delhi. As of July 2009, approximately 862 acres of agricultural land in Delhi was covered by WAC easements.

As of the fall of 2009, NYCDEP had opened a total of 2,634 acres of land acquired under LAP in Delhi for a variety of recreational uses – more than 96 percent of the land that LAP has acquired in fee simple in Delhi.

Pursuant to the 1997 MOA, Delhi designated hamlet areas totaling 2,346 acres, within which NYCDEP cannot acquire land. The area covers the Village of Delhi and the hamlet of Fraser and is the second-largest area designated by any of the watershed towns. This has helped ensure that LAP does not conflict with commercial, civic and community uses within the designated areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Delaware County is expected to decline slightly. For purposes of constructing a "reasonable worst-case scenario," it is estimated that future residential development based on the rate of development during the past two decades. Assuming that the pace of new development in Delhi (as measured by new residential units) remains the same as it was between 1990 and 2008 (about 10 new units per year), it is estimated that the land required to support new development through 2022 will total approximately 743 acres. This would include 264 acres of land characterized as developable[6] – about 5 percent of the Town's supply of developable land.

Between 2010 and 2022, the amount of land used in agricultural production in Delhi will probably continue to decline; there is, however, some potential for the growth of smaller-scale, specialty agriculture. SUNY Delhi could also be a source of new development, potentially including the construction of new off-campus housing for students.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

NYCDEP estimates that through 2022 it is projected to acquire 3,432 additional acres in Delhi either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, these acquisitions are projected to include approximately 990 acres of developable land – 17 percent of the Town's supply of developable vacant and low-density residential land in 2009. NYCDEP further estimates that WAC could during the same period purchase easements on 519 acres of agricultural land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Delhi would still be left with approximately 79 percent of the Town's current stock of developable land.

[6] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

Table 4-9: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		5,851 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	3,432 acres	
Developable vacant or low-density residential land acquired		990 acres
Residential Development, 2010-2022		
Projected housing units built	120 units	
Land needed for housing	743 acres	
Developable portion of land needed for housing		264 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		4,596 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		79 percent

The 2009 and 2022 estimates of developable land presented in Table 4-9 are conservative in several respects. The definition of developable land cited above does not include agricultural or commercial/industrial land; nor does it include undeveloped portions of residential parcels of less than 15 acres. Table 4-9 may thus understate the amount of developable land likely to remain in 2022. Overall, NYCDEP's acquisitions through 2022 are unlikely to have an adverse impact on the availability of land for new development in Delhi – through 2022 and beyond.

Future acquisitions under LAP can also be assessed in terms of their impact on the character of the community. In several areas, this impact is likely to be positive. The purchase of WAC easements on 519 acres of farmland (in addition to the WAC easements already in place) can help preserve agricultural activity in Delhi; and NYCDEP's purchases of land and conservation easements can help to protect the Town's natural environment.

Assuming that the percentage of newly-acquired land opened to public recreational use is similar to what it has been through 2009, it can be estimated that through 2022 more than 3,000 additional acres of land acquired in fee simple could be made available by NYCDEP for public recreational use. In some cases, land acquired by NYCDEP could provide a significant amenity for both full-time and part-time residents, and a resource for further development of visitor-based businesses.

Finally, under a proposed agreement among NYCDEP, the Town, the regulatory agencies and other stakeholders, Delhi's designated hamlet areas would be expanded from 2,346 to 5,105 acres.

Overall, it appears that the extension of the LAP program through 2022 is unlikely to have any significant adverse impact on the character of the community.

CONCLUSIONS

Although the number of acres projected to be acquired in Delhi under the Extended LAP is substantial, the Town's supply of developable land would still be more than adequate to accommodate the projected level of new development through 2022 and beyond. The Extended LAP would help protect the Town's natural environment and would result in additional City-owned land being opened for public recreational use. WAC's projected acquisition of farm

easements on 519 acres would help preserve some of the Town's agricultural land; and the proposed addition of 2,759 acres to the Town's designated hamlet area would help ensure that land is available to accommodate future development not only in the Village of Delhi, but also along major roads throughout the Town.

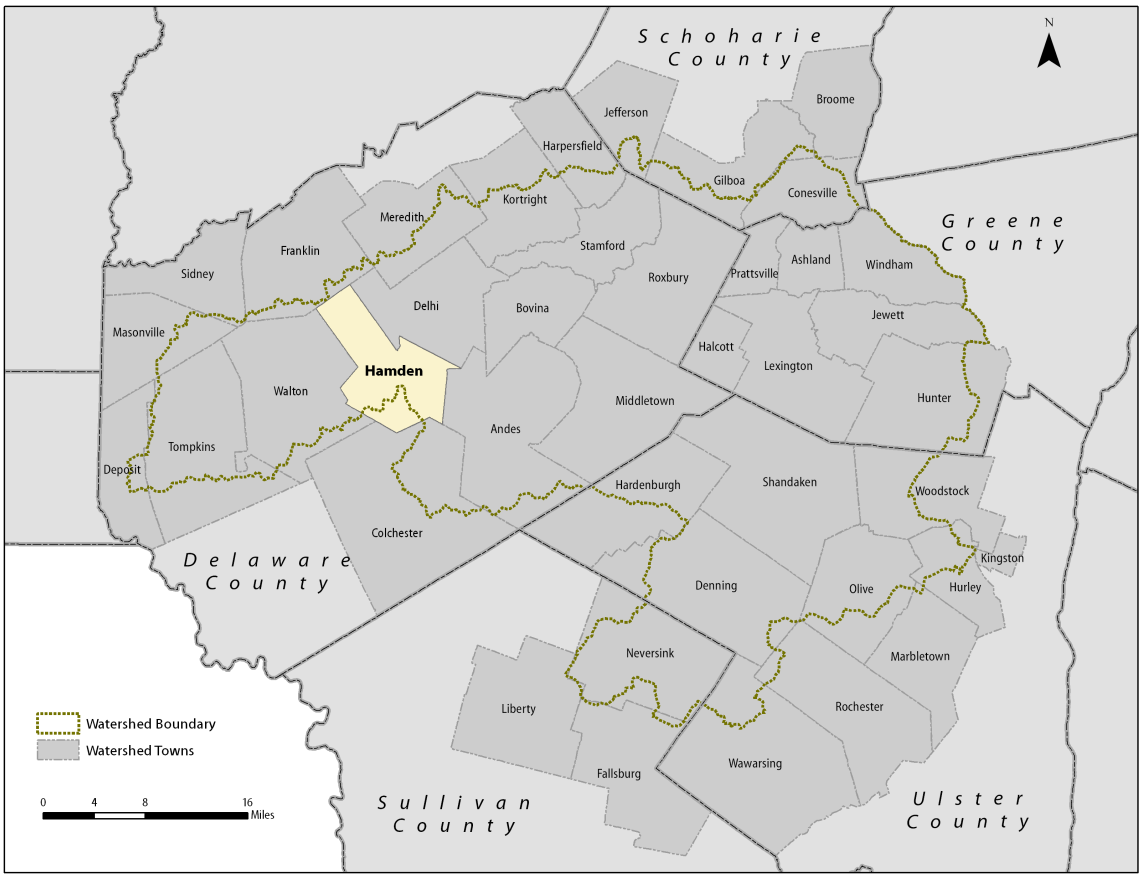
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Delhi.

TOWN OF HAMDEN

EXISTING CONDITIONS

The Town of Hamden is a low-density rural community located at the geographic center of Delaware County. The Town's resident population was estimated in 2008 at 1,237. Hamden's population grew by 12 percent during the 1990s, but is estimated to have declined by 4 percent since 2000.

Figure 4-10: Map of watershed towns



Town of Hamden – Quick Facts	
Land area:	38,310 acres
Percent of town land area within the watershed:	87%
Percent of land protected	9%
Population (estimated), 2008:	1,237
Median age (estimated), 2008	44.4
Median household income (estimated), 2008	$43,357

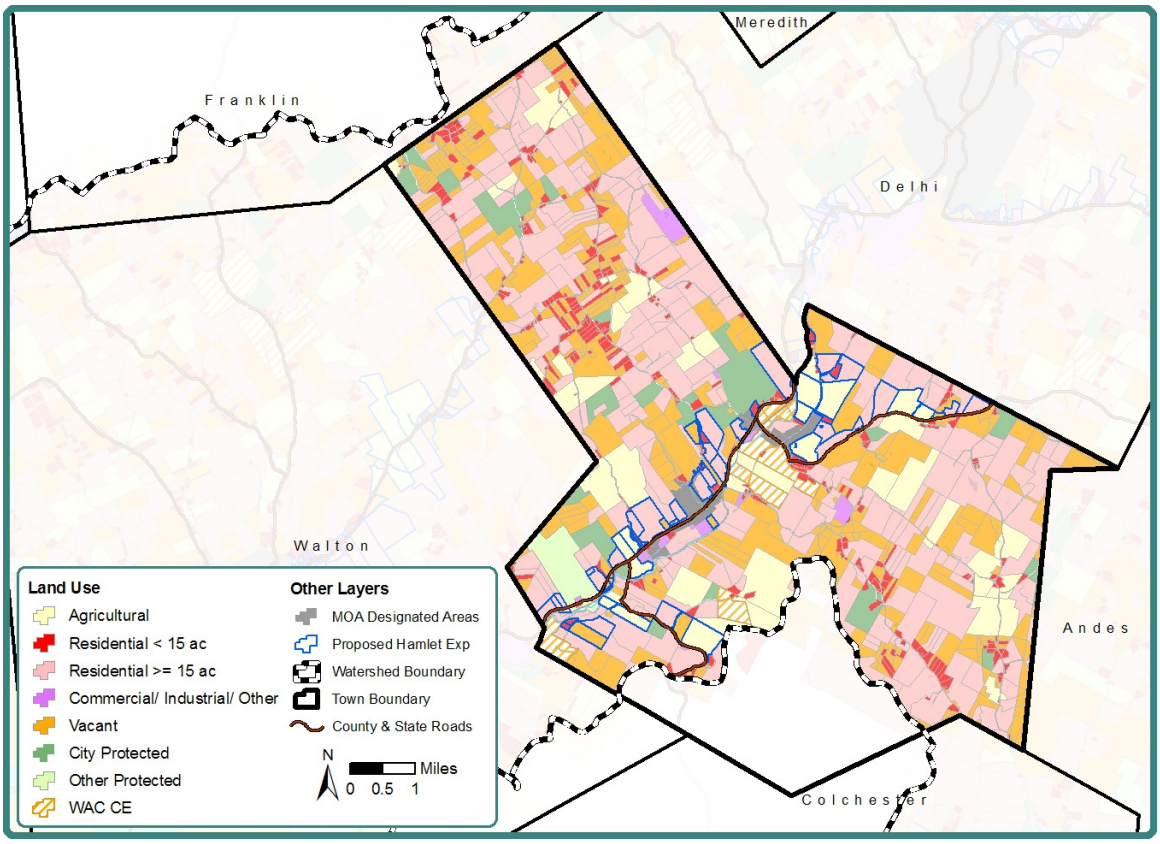
As Table 4-10 and Figure 4-11 show, about 72 percent of Hamden's total area consists of either low-density residential land (45 percent of the Town's total acreage) or privately-owned vacant land (27 percent). The Town also has a substantial supply of agricultural land – 14 percent of its total land area – which is particularly concentrated in the eastern portion of the Town. Hamden has a substantial second-home sector as well; in 2000, 33 percent of the Town's housing units were for seasonal or recreational use. Hamden also has a small commercial base, located primarily along Route 10 in the hamlets of Hamden and Delancey, consisting primarily of small businesses that serve the local population, as well as some tourist-oriented businesses.

Using data on building permits, it is estimated that between 2000 and 2009, about 20 new housing units were built in Hamden.

Table 4-10: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural	5,106	15%	121	3%	5,227	14%
High-Density Residential	1,904	6%	243	5%	2,147	6%
Low-Density Residential	14,609	44%	2,538	53%	17,146	45%
Commercial/Other	359	1%	104	2%	463	1%
State/Other Protected	459	1%	0	0%	459	1%
City Protected	1,765	5%	N/A	N/A	1,765	5%
Vacant	8,402	25%	2,007	42%	10,410	27%
Total	**33,517**		**4,793**		**38,310**	

Figure 4-11: Map of Hamden showing land use and protected land within the Watershed



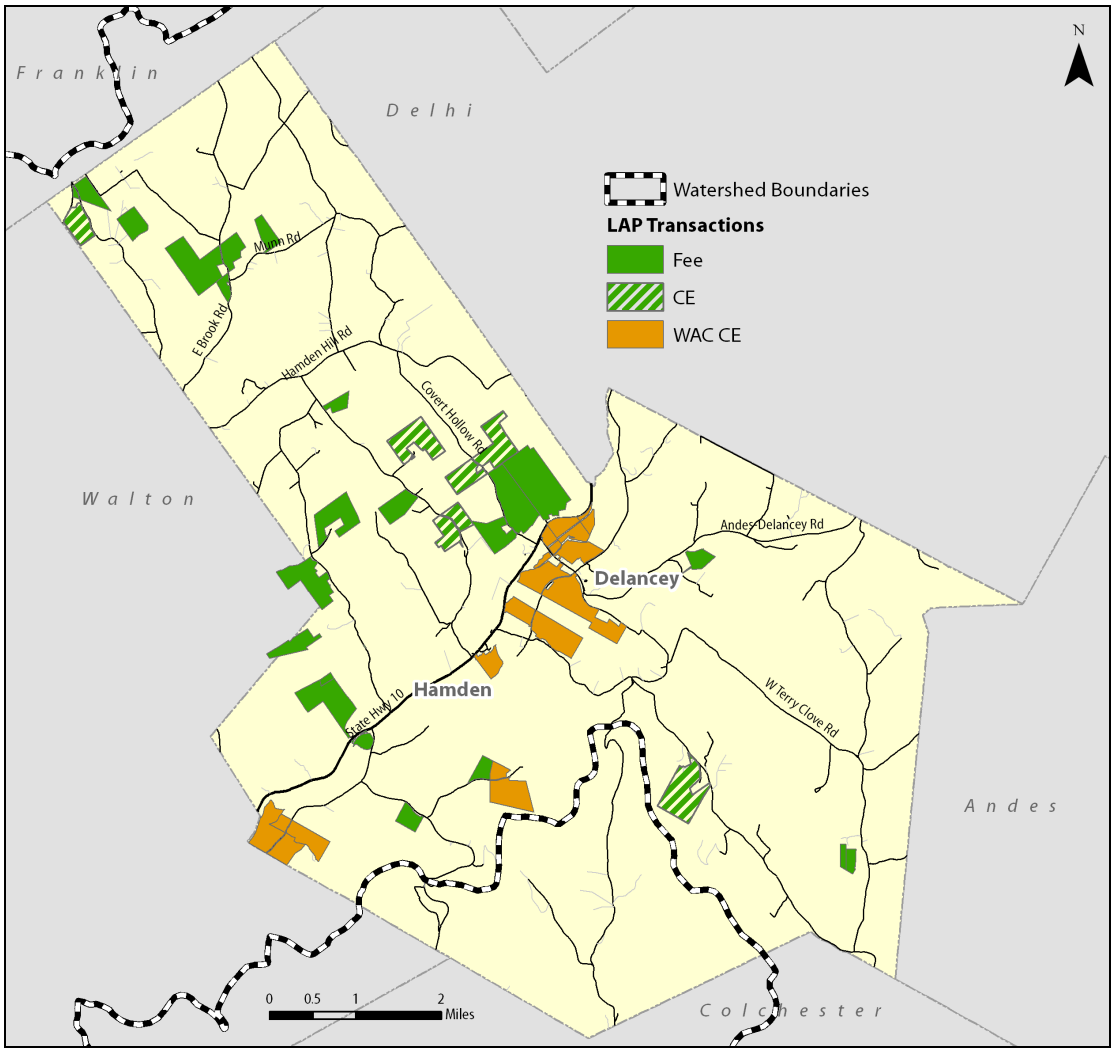
Previous LAP Activity

Through June 2009, NYCDEP had acquired a total of 2,942 acres in Hamden pursuant to the 1997 MOA. As shown in Table 4-11 below, purchases of land in fee simple account for about 49 percent of all acquisitions in the Town. Figure 4-12 shows the location of LAP properties in Hamden, by type of acquisition.

Table 4-11: Acquisitions in the Town of Hamden through July 2009

Type of acquisition	Acres
Fee simple	1,429
Conservation easements	612
WAC agricultural easements	901
Total acquired	**2,942**

Figure 4-12: Map of LAP properties in Hamden, by type of acquisition



As of October 2009, NYCDEP had acquired 118 acres that had been in agricultural use prior to acquisition. In 2006, NYCDEP issued a five-year permit for agricultural use of 15 acres of land that had been acquired under LAP; the property is currently being used for the production of corn and hay. WAC has also purchased easements covering 901 acres of farmland in Hamden – about 17 percent of all agricultural land in the Town.

Of the 1,429 acres that NYCDEP acquired in fee simple in Hamden through June 2009, 842 acres – 59 percent of the total – had been opened for public recreational use as of October 2009. This figure, which will grow as additional properties are closed and reviewed for public access, represents a significant resource in a Town with relatively little State-owned land, and no pre-MOA City-owned land.

Pursuant to the 1997 MOA, the Town designated parcels in the hamlets of Delancey and Hamden totaling 420 acres. However, the Town did not elect to preclude fee simple acquisitions in these areas. As shown in Figure 4-12, WAC easements have been acquired on one property in

the hamlet of Hamden and several in the hamlet of Delancey. While these easements are intended to support the continuation of agricultural use of those lands, they removed land from potential development in and around these hamlets. In recognition of the growth concerns raised by local officials, as part of the land acquisition negotiations with regulators and local officials, NYCDEP supports the exclusion of WAC easement in hamlets in the Extended LAP.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Delaware County is expected to decline slightly. If it is assumed that the pace of new development in Hamden (as measured by new residential units) remains the same as it was between 1990 and 2008, it can be estimated that about 156 additional units will be built by 2022; and that the land required to support this new development through 2022 will total approximately 1,682 acres, including 701 acres of land characterized as developable[7] – about 11 percent of the Town's supply of such land as of 2009.

Between 2010 and 2022, Hamden is also likely to see a continued decline in land used for agricultural purposes; and the scale of commercial activity in other sectors is likely to remain small.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based in part on LAP's experience in Hamden to date, NYCDEP estimates that through 2022, it could acquire 2,696 additional acres either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions could include approximately 724 acres of developable land – about 12 percent of the Town's supply of developable vacant and low-density residential land as of 2009. During the same period, it is estimated that WAC could acquire agricultural easements covering 944 acres of farmland.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support residential new development, Hamden would still be left with 4,721 acres of developable vacant and low-density residential land in 2022 – approximately 77 percent of the Town's current stock of such land.

[7] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

Table 4-12: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		6,146 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	2,696 acres	
Developable vacant or low-density residential land acquired		724 acres
Residential Development, 2010-2022		
Projected housing units built	156 units	
Land needed for housing	1,682 acres	
Developable portion of land needed for housing		701 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		4,721 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		77 percent

The estimate of the amount of developable land remaining in 2022 may be conservative in several respects. The pace of residential development in Hamden has been slower since 2000 than it was in the 1990s. By using the period 1990-2008 as the basis for our estimate of the land required for new development between 2010 and 2012, we may be overstating the likely rate of new development in the Town through 2022.

Moreover, the definition of developable vacant and low-density residential land cited above excludes agricultural land. Given trends in agriculture in Delaware County, some of this land is likely in the future to be available for development.

The potential impact of additional acquisitions can also be assessed in terms of how they affect the character of the community. Acquisitions of land in fee simple and through conservation easements at the scale projected by NYCDEP through 2022 could reinforce the low-density, predominantly rural character of the Town – but are unlikely to affect development in the Route 10 corridor during this period. Under a proposed agreement among NYCDEP, the Town, the regulatory agencies and other stakeholders, Hamden's designated hamlet areas would be expanded from 420 to 2,859acres. If the Town elects to preclude LAP acquisition, this agreement could help ensure that land remains available to accommodate future development in the Route 10 corridor.

Finally, the projected purchase of WAC agricultural easements could contribute to preservation of farm land in Hamden – a town in which a substantial portion of the Town's total area is still devoted to agricultural uses.

CONCLUSIONS

Under the Extended LAP, the projected acquisition of nearly 2,700 acres of land in Hamden in fee simple and through conservation easements would help protect the Town's low-density rural character and the quality of its environment, and expand opportunities for outdoor recreation in a town with relatively little publicly accessible open space. WAC's projected acquisition of farm easements would also protect a portion of the Town's agricultural land.

If further acquisitions by NYCDEP or LAP are not precluded within the designated (or proposed expanded) hamlet areas, such acquisitions could to some extent limit opportunities for development within the designated areas. Neverthelesss, even with the substantial acquisitions

projected in this analysis, Hamden would have more than enough developable land within the Town to support the projected level of new residential development through 2022 and beyond.

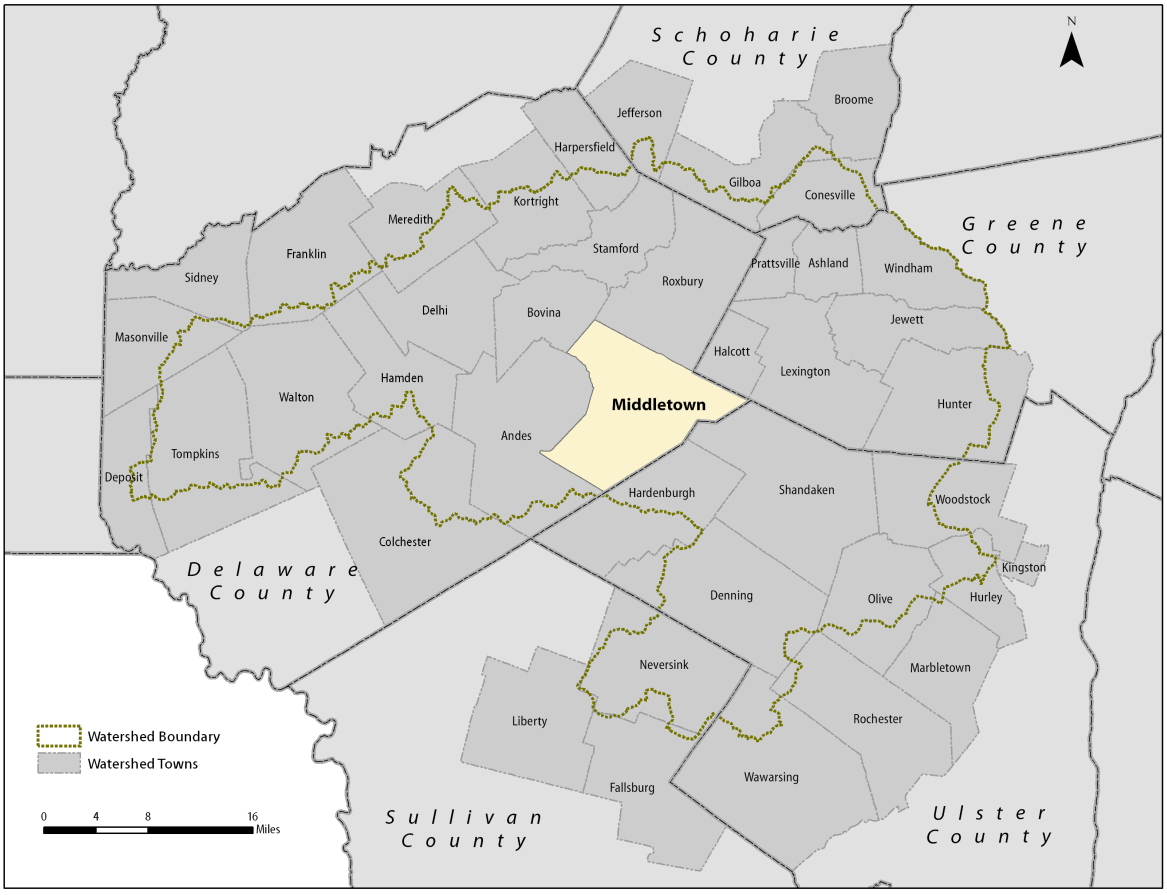
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Hamden.

TOWN OF MIDDLETOWN

EXISTING CONDITIONS

The Town of Middletown is a primarily rural town located in southeastern Delaware County, with an estimated resident population of 3,881 in 2008. The Town includes the Village of Margaretville, a regional commercial center for the Central Catskills. The Town's population grew by nearly 19 percent in the 1990s – but since 2000 is estimated to have declined by 4 percent.

Figure 4-13: Map of Middletown in relation to west-of-Hudson watershed



Town of Middletown – Quick Facts	
Land area:	62,244 acres
Percent of town land area within the watershed:	100%
Percent of land protected	23%
Population (estimated), 2008:	3,881
Median age (estimated), 2008	48
Median household income (estimated), 2008	$38,598

As Table 4-13 and Figure 4-14 show, low-density residential land and privately-owned vacant land are the predominant land uses in Middletown, accounting for 28 percent and 30 percent respectively of the Town's total area. Middletown has a mixed economy. Commercial activity is located primarily in the villages of Margaretville and Fleischmanns, the hamlet of Arkville and elsewhere along Route 28. The Town also has a substantial agricultural sector, and a substantial second-home sector as well – about 36 percent of all housing units in Middletown in 2000 were for seasonal or recreational use.

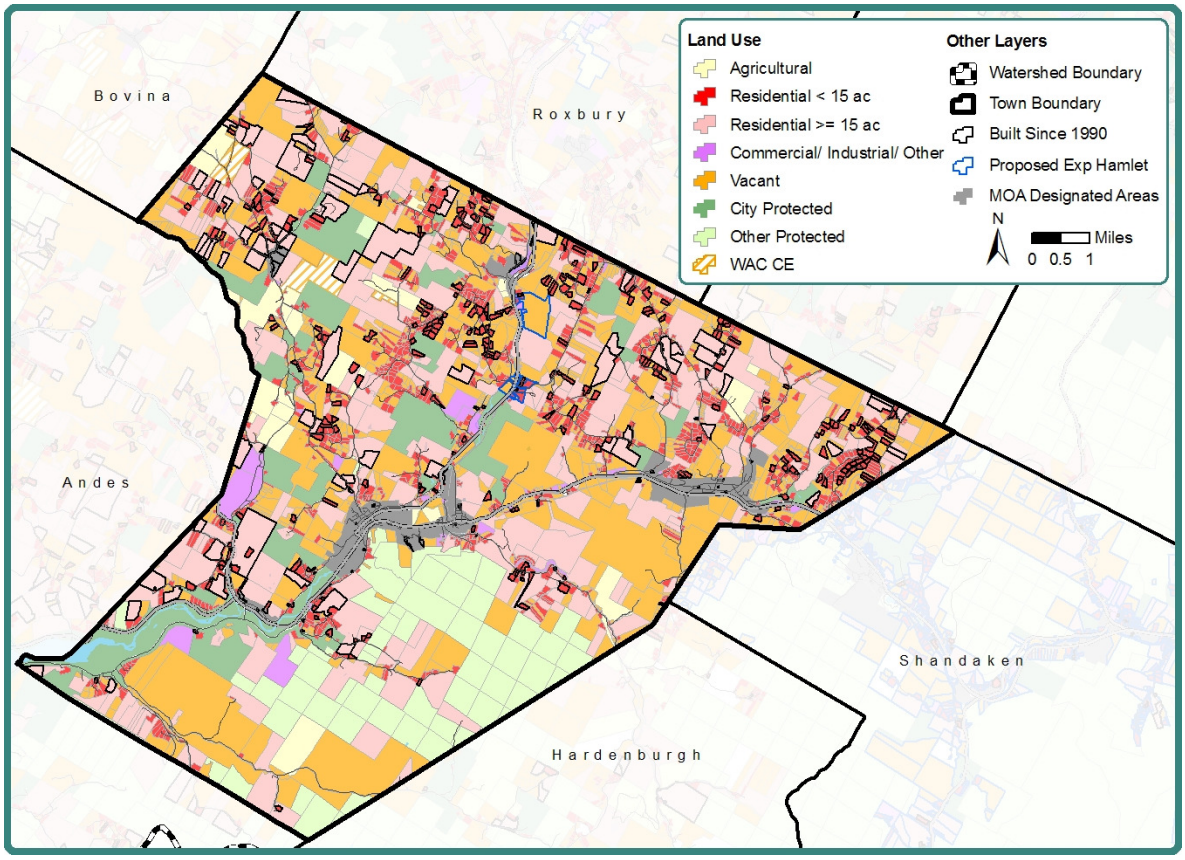
Development activity since 1990 (as shown by parcels outlined in black in Figure 4-14) has occurred throughout the area north and west of Route 28. As noted above, most of the Town's growth in the past two decades occurred in the 1990s. Between 2000 and 2008, the number of housing units in Middletown increased by 18.

Table 4-13: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural[8]	2,659	4%
High-Density Residential	7,733	12%
Low-Density Residential	17,399	28%
Commercial/Other	1,512	2%
State/Other Protected	6,942	11%
City Protected	5,764	9%
Vacant	18,727	30%
Total Town Acres	**62,244**	

[8] The agricultural category includes WAC conservation easements.

Figure 4-14: Map of the Town of Middletown, showing land use, protected land and proposed hamlet expansion areas



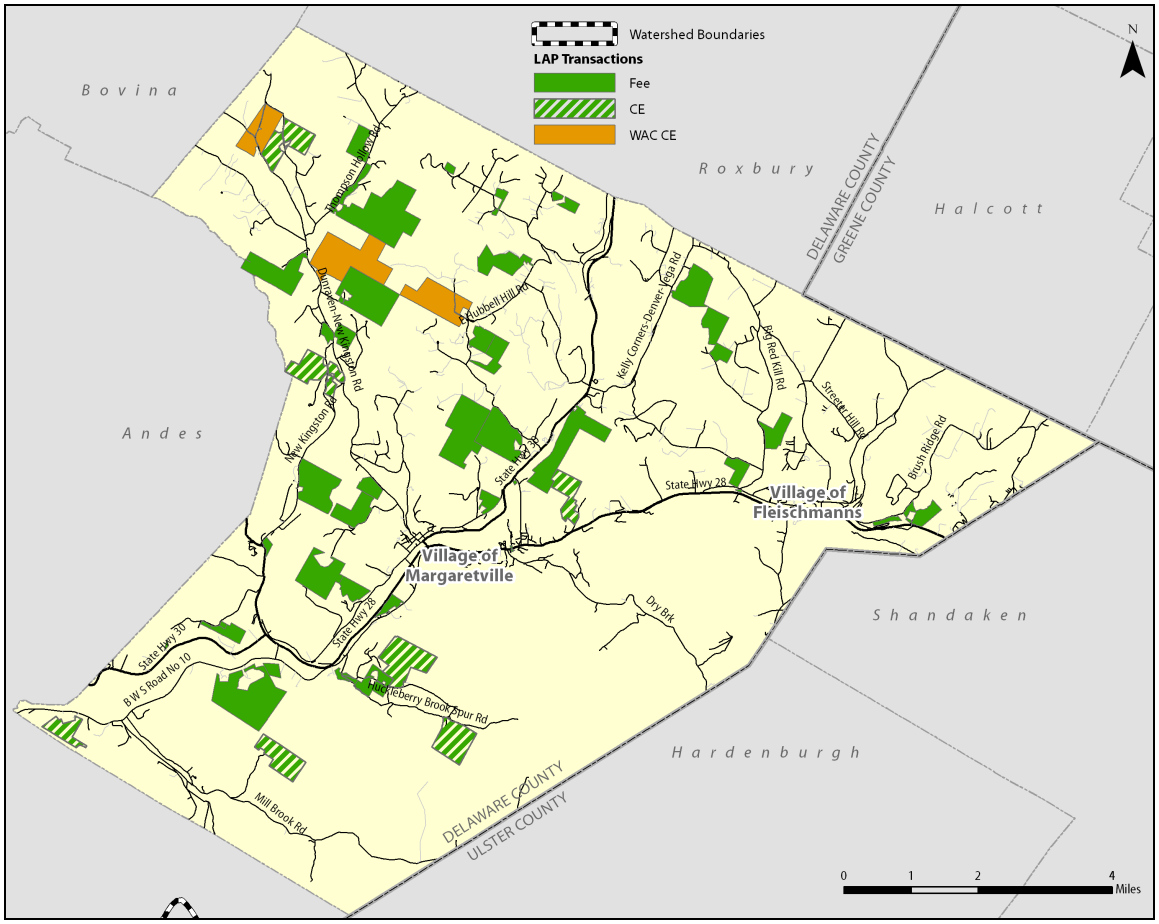
Previous LAP Activity

Through June 2009, 5,689 acres had been acquired in Middletown pursuant to the 1997 MOA. As shown in Table 4-14 below, about 68 percent of this total was acquired in fee simple; NYCDEP acquired conservation easements on 19 percent; and WAC acquired agricultural easements on 13 percent. Figure 4-15 shows the location of LAP properties in Middletown, by type of acquisition.

Table 4-14: Acquisitions in the Town of Middletown through July 2009

Type of acquisition	Acres
Fee simple	3,892
Conservation easements	1,063
WAC agricultural easements	733
Total acquired	**5,689**

Figure 4-15: Map of LAP properties in Middletown, by type of acquisition



Through 2009, WAC has acquired agricultural easements on 733 acres of farmland in Middletown – about 25 percent of the Town's agricultural land. In addition to land covered by WAC easements in Middletown, NYCDEP has acquired in fee simple 23 acres that had been in active agricultural use prior to NYCDEP's acquisition of the property. Since 2007, however, NYCDEP has issued permits to three farm operators for use of 36 acres of LAP-acquired land – primarily for production of corn and hay.

As of October 2009, a total of 2,059 acres acquired by NYCDEP in fee simple in Middletown had been opened by NYCDEP for public recreational use – about 53 percent of the land that NYCDEP has acquired in fee simple in the Town since the beginning of the Land Acquisition Program. This represents a significant addition to the total amount of land open for public recreation in a town that prior to the Land Acquisition Program had relatively little publicly available open space.

Pursuant to the 1997 MOA, Middletown established five designated hamlets (Arkville, Dunraven, Halcottsville, Clovesville and New Kingston). In addition, the Town contains the Villages of Margaretville and Fleischmanns. These designated areas total 1,734 acres. The Town elected to preclude LAP purchases in fee simple in the Village of Margaretville, but not in the other designated hamlets.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Delaware County is expected to decline slightly. At the same time, the demand for second homes may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development has nevertheless been estimated based on the rate of development during the past two decades. If we assume that the pace of new development in Middletown (as measured by new residential units) remains the same as it was between 1990 and 2008, we can estimate that the land required to support new development through 2022 would total approximately 1,446 acres – including 513 acres of land characterized as developable. [9]

The planned Belleayre Resort straddles the boundary between Shandaken and Middletown. Under an agreement negotiated in 2007 among the developer, local officials, NYCDEP, and NYSDEC, the project would include two hotels with a total of 370 rooms, an 18-hole golf course, and 259 lodging units and other facilities.

The Comprehensive Plan for Fleischmanns presents a vision for the future in which the village seeks to:

> *manage development and redevelopment to protect the integrity of our village, its historic districts, Main Street business district, cultural & civic institutions, public parks, and our natural resources; preserve historic buildings, open space and the integrity of our historic residential neighborhoods; enhance the convenience of pedestrian access to services and facilities within our walkable community and employment opportunities for our residents; provide sustainable public infrastructure and services to meet growing community needs in a cost-effective manner; recreational opportunities for all age groups; and set quality design standards to ensure that new growth and redevelopment enriches our community aesthetics and is in harmony with the existing fabric of the Village.*

The goals outlined in Margaretville's Comprehensive Plan are similar. They include:

I. Revitalizing commercial activity

- *Maintaining an economically viable and vibrant Main Street that caters to a broad variety of consumer markets.*
- *Developing Margaretville's reputation as a year-round destination.*

II. Driving the innovative and creative economy.

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[9] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

- *Encouraging environmentally friendly businesses that help build sustainable wealth*
- *Developing economically sustainable businesses that incorporate green construction guidelines and sustainable business practices, and generate jobs at community scale.*
- *Promoting and expanding opportunities to experience arts, culture, healthy lifestyles and generate a community of well-being in Margaretville.*

III. Generating jobs

- *Creating 50-100 locally available full-time jobs.*
- *Attracting and retaining health practitioners.*

IV. Enhancing community housing

- *To ensure a healthy, well-balanced mix of affordable housing that serves all income and age groups.*

V. Benchmarking cultural resources

- *To preserve, protect and restore culturally and historically significant structures in the community.*

VI. Promoting recreation

- *Integrating the region's recreational amenities into Margaretville's quality of life.*
- *Capitalizing upon recreational assets and integrating them into the Margaretville economy*

Several other sources highlight the characteristics that residents of Middletown value. For example, the Central Catskills Collaborative – an alliance of municipalities along the Route 28 corridor that includes Middletown, Margaretville and Fleischmanns – notes that this area has "retained the beauty and charm that have attracted visitors and residents to the region for generations." Qualities cited by the Collaborative include:

> *….the closely knit hamlets with their mixed uses, sidewalks and historic architecture; the surrounding forests and clean waterways with their recreational opportunities; and the open, rolling farmland.*

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Middletown to date, NYCDEP estimates that through 2022, it is projected to acquire 4,507 additional acres either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions would include approximately 1,191 acres of developable land.

NYCDEP further estimates that WAC could during the same period purchase easements on 476 acres of agricultural land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Middletown would still be left with 5,751 acres of developable vacant and low-density residential land – approximately 77 percent of the Town's current stock of such land.

Table 4-15: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		7,455 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	4,507 acres	
Developable vacant or low-density residential land acquired		1,191 acres
Residential Development, 2010-2022		
Projected housing units built	249 units	
Land needed for housing	1,446 acres	
Developable portion of land needed for housing		513 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		5,751 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		77 percent

As noted in Chapter 3, this estimate of LAP's impact on the Town's supply of developable land needs also to take into account that as of 2009, Middletown's supply of such land is relatively limited. As defined here, developable land represented about 12 percent of the Town's total land area in 2009; and by 2022 this percentage is projected to decline to 9.3 percent.

It is important to note, however, that the estimates of developable land cited in Table 4-15 are in several respects conservative. The definition of developable land cited above in effect assumes that no currently-agricultural land will become available for development during the next 12 years; given the long-term decline in Delaware County in the use of land for agriculture, this is probably an unrealistic assumption. Moreover, projecting future residential development on the basis of "year-built" data for 1990 through 2008 may overstate the amount of land likely to be required for new development through 2022.

Based on this analysis, we conclude that the projected level of acquisitions by NYCDEP is not likely to adversely affect the availability of land for new development in Middletown.

LAP's impact in Middletown can also be assessed in terms of its impact on the character of the community. While additional acquisitions by NYCDEP through 2022 may have little or no direct impact on some of the values and goals defined in the Fleischmanns and Margaretville plans – such as goals regarding job creation and affordable housing – the Extended LAP is likely to be broadly consistent with the plans' emphasis on encouraging development within the villages and promoting recreation.

Assuming that the proportion of newly-acquired land opened by NYCDEP for public recreational use will be similar to the proportion made available in Middletown as of October 2009, additional acquisitions by NYCDEP could result in more than 1,800 acres of additional land being made opened for public recreation in Middletown by 2022 – reinforcing what is already one of the Town's strengths.

WAC's acquisition of easements on 476 additional acres of farmland is also consistent with the goal of preserving farmland in Middletown, as expressed by the Central Catskills Collaborative and others.

Finally, the Town is proposing to add 296 acres to Middletown's designated hamlet areas, which NYCDEP agrees is reasonable. If the Town elects to preclude LAP acquisition on this expansion area of the MOA hamlets, this could help ensure that further acquisitions are compatible with the goal of continued revitalizations of the Town's population centers.

CONCLUSIONS

Under the Extended LAP, the acquisition of land in Middletown in fee simple and through conservation easements (which could total more than 4,500 acres by 2022) would help protect the quality of the Town's natural environment, and could add more than 1,800 acres to the land available for public recreation. Additional WAC easements would also help preserve farmland in the Town. Even with these acquisitions, Middletown's supply of developable land would be more than adequate to support the projected level of development through 2022 and beyond. If the Town and Village of Fleischmanns elect to preclude LAP acquisitions within the expanded MOA hamlets, this could help ensure that further acquisitions are compatible with the goal of continued revitalization of the Town's population centers.

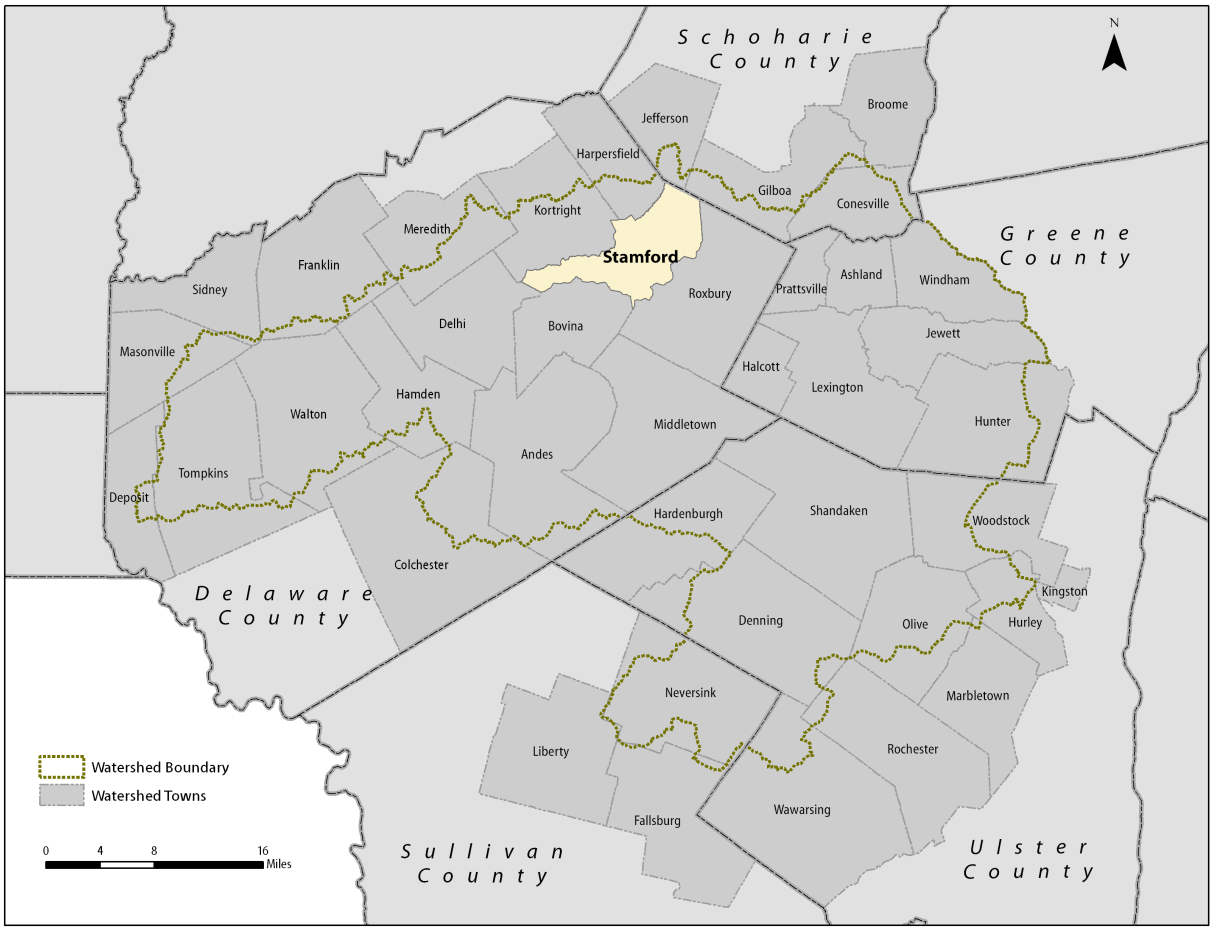
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Middletown.

TOWN OF STAMFORD

EXISTING CONDITIONS

The Town of Stamford is located in northeastern Delaware County. Stamford's resident population in 2008 was estimated to be 1,954 – a slight increase from 2000, but still 4.5 percent below the Town's population in 1990. Stamford, one of the region's leading agricultural centers, is primarily rural in character, with a majority of its residents concentrated in and around the villages of Stamford (part of which is located in the Town of Harpersfield) and Hobart (which is located close to the borders of both Harpersfield and Kortright).

Figure 4-16: Map of Stamford in relation to the watershed



Town of Stamford – Quick Facts	
Land area:	31,120 acres
Percent of town land area within the watershed:	100%
Percent of town protected as of 7/31/09:	27%
Population (estimated), 2008:	1,954
Median age (estimated), 2008:	42
Median household income (estimated), 2008:	$42,881

Stamford is among the region's more economically diverse towns. It has a large agricultural sector – one of the region's largest manufacturing enterprises (Covidien, with 700 employees, located in the village of Hobart), and a unique cluster of booksellers, also in Hobart. The Village of Stamford has a concentration of businesses serving local residents, and several arts organizations, as well as housing for the elderly, an adult home and a 122-bed nursing home. The Town also has a substantial second-home population – as of 2000, 24 percent of all housing units were for seasonal or recreational use.

Much of the Town's population and commercial activity is concentrated along its northern boundary – in the villages of Stamford and Hobart (and to a lesser extent in the hamlet of South Kortright), paralleling the West Branch of the Delaware River as well as Routes 23 and 10. As noted above, the Village of Stamford – the largest population center in northeastern Delaware County, with a population of more than 1,200 – is partly within the Town of Stamford, and partly in the neighboring Town of Harpersfield. Hobart and South Kortright similarly border on the towns of Harpersfield and Kortright.

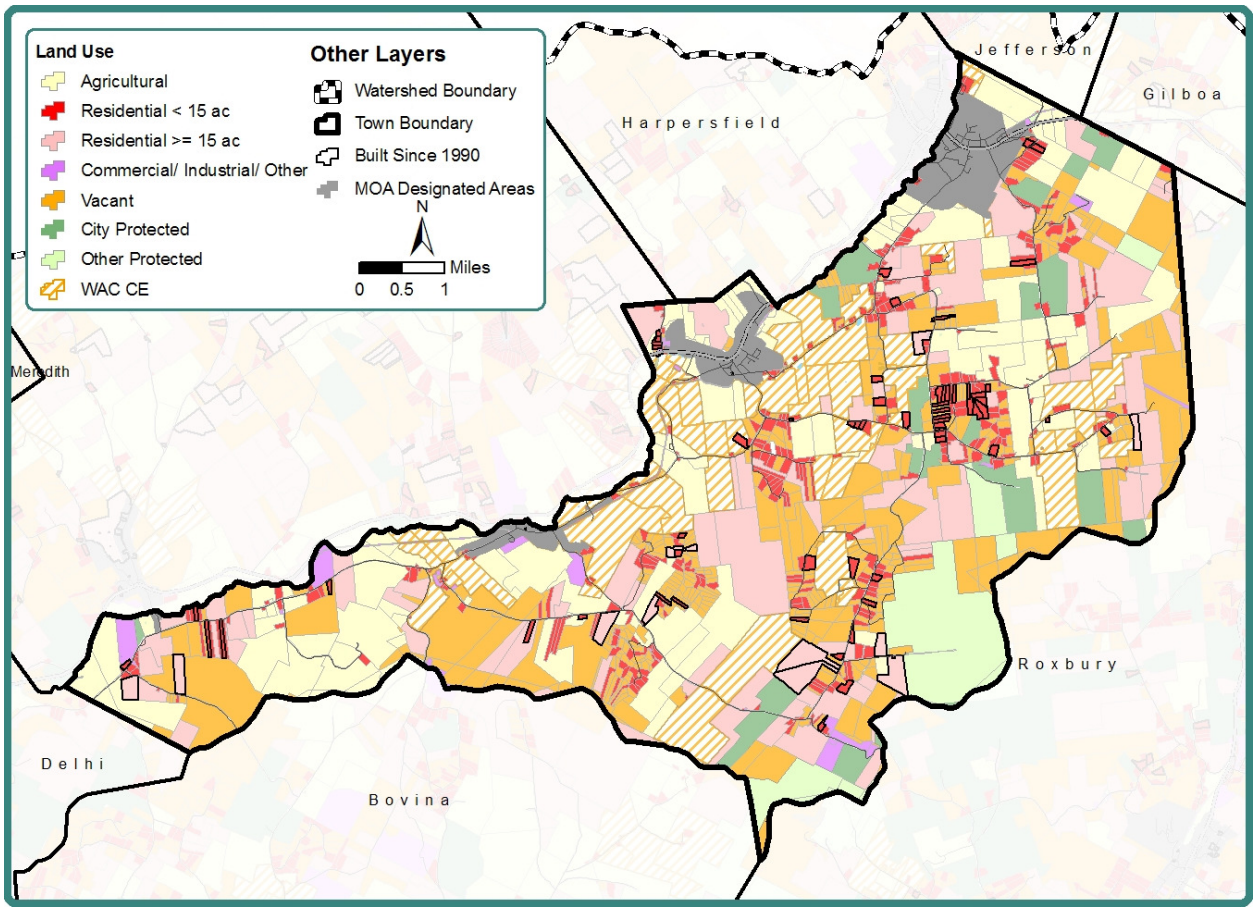
As Table 4-16 and Figure 4-17 show, agricultural land (including land covered by WAC easements) accounts for the largest part of the Town's total area – about 38 percent. Low-density residential land accounts for 17 percent of the total and privately-owned vacant land for 23 percent. In contrast to many watershed towns in Greene and Ulster counties, Stamford has historically had relatively little publicly-protected land. Other than land acquired under LAP, State-owned and other protected land totals only 1,742 acres – less than 6 percent of the Town's total area.

There are several clusters of residential development since 1990, including some more compact developments in the eastern part of the town and low-density residential developments in the southern and western parts of the town (see parcels outlined in black in Figure 4-17). Between 2000 and 2008, the number of housing units in the Town increased by 72; and the same period saw some business growth in the villages.

Table 4-16: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural[10]	11,718	38%
High-Density Residential	2,389	8%
Low-Density Residential	5,406	17%
Commercial/Other	643	2%
State/Other Protected	1,742	6%
City Protected	1,418	5%
Vacant	7,082	23%
Total Town Acres	**31,120**	

Figure 4-17: Map of the Town of Stamford, showing land uses, development since 1990



Previous LAP Activity

[10] The agricultural category includes WAC conservation easements.

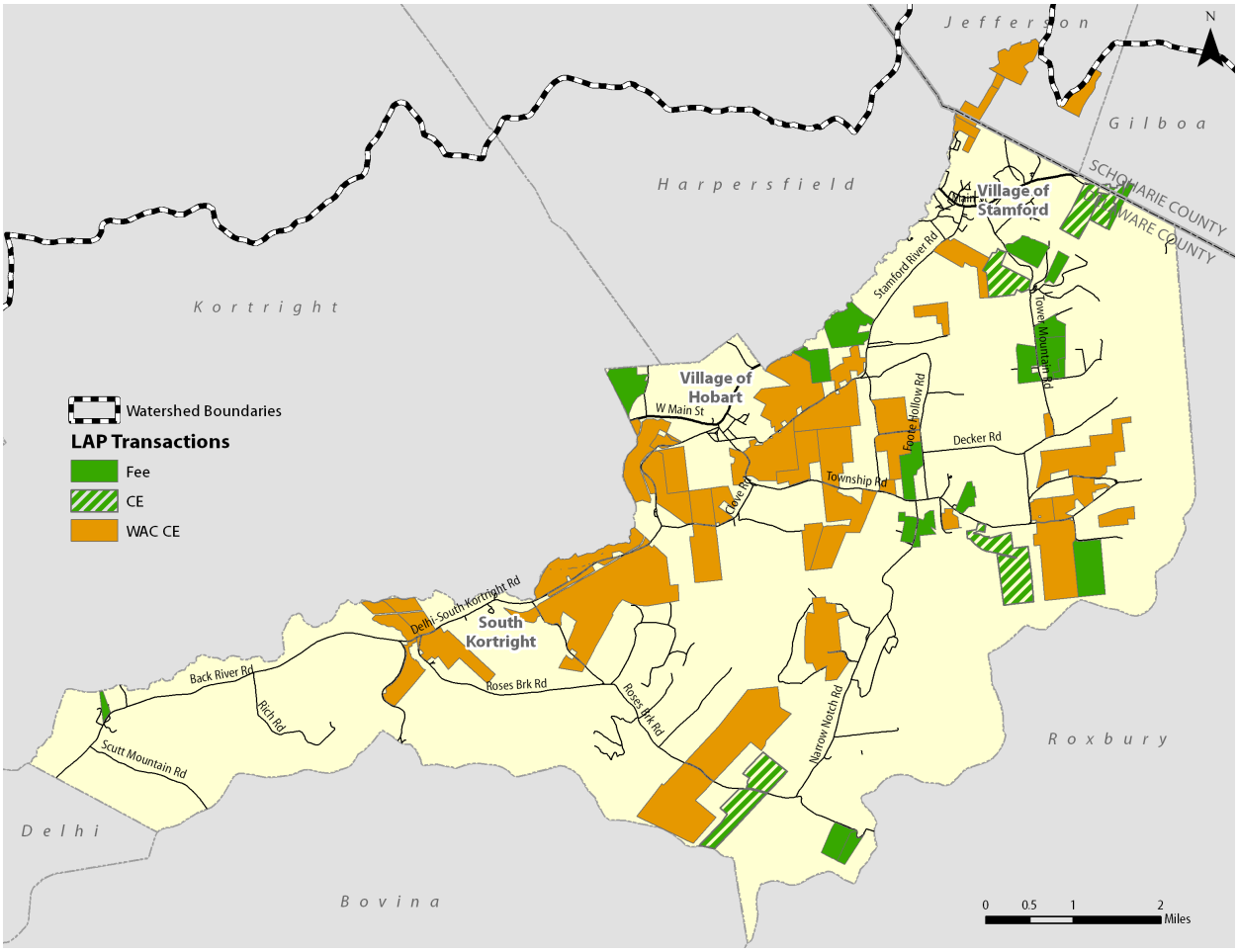
Through July 2009, NYCDEP and WAC had acquired interests in a total of 6,535 acres in Stamford. As shown in Table 4-17 below, WAC agricultural easements account for nearly 75 percent of all land acquired under LAP.

Table 4-17: Acquisitions in the Town of Stamford through July 2009

Type of acquisition	Acres
Fee simple	1,034
Conservation easements	652
WAC agricultural easements	4,849
Total acquired	**6,535**

Figure 4-18 shows the location of NYCDEP- and WAC-acquired properties in Stamford, by type of acquisition. As shown, a substantial part of the acquired acreage is located in areas immediately adjacent to the Villages of Stamford and Hobart, mostly in the form of WAC easements. Land acquired in fee simple or in the form of City conservation easements is mostly located in the eastern portion of the Town.

Figure 4-18: Map of LAP properties in Stamford, by type of acquisition



Through June 2009, WAC had acquired agricultural easements covering 4,849 acres in Stamford – far more than in any other West-of-Hudson watershed town. These easements cover about 16 percent of the Town's total area, and about 41 percent of its agricultural land. While WAC easements have helped to preserve farmland, the concentration of these easements in areas just outside the villages of Stamford and Hobart and the hamlet of South Kortright has removed this land from potential development

As of October 2009, NYCDEP had acquired in fee simple a total of 156 acres of land in Stamford previously used for agricultural production. However, NYCDEP had also issued permits to three farm operators for use of a total of 143 acres of this City-owned land for agricultural production. These properties are used primarily for the production of hay.

As of October 2009, NYCDEP has opened 522 acres of land in Stamford that has been acquired under LAP for public recreational use – including 302 acres on which hunting is allowed. This represents slightly more than half of the 1,034 acres that NYCDEP has acquired in fee simple within Stamford since the beginning of the land acquisition program – and a major addition to the Town's overall supply of land available for public recreational use.

Pursuant to the MOA, the Town designated hamlet areas totaling 1,331 acres. The Town did not elect to preclude LAP fee simple purchases in the hamlet of South Kortright, or in the Village Extension Areas around Stamford and Hobart, but the Villages of Stamford and Hobart did elect to preclude fee simple acquisitions within their borders. This helps ensure that LAP fee purchases do not conflict with future development potential and plans within the villages. However, as shown in Figure 3, the land on which WAC has acquired easements includes substantial tracts of land in areas immediately adjacent to the Villages of Hobart and Stamford, and the hamlet of South Kortright. To the extent that these areas are potentially more attractive for development – for example, because of proximity to commercial areas and major roads – WAC conservation easements will limit development in areas within the Town of Stamford adjacent to these communities. However, there does not appear to be significant development pressure in these areas. Although there has been some commercial business development within the Village of Stamford over the past decade, The Village's comprehensive plan notes that there are 85 vacant parcels, many of which could be developable, including a site identified for potential affordable housing, and there are further opportunities for redevelopment. There are likely to be redevelopment opportunities in the Village of Hobart and hamlet of South Kortright as well. Furthermore, the preclusion of LAP purchases within the villages ensures that the villages can support future opportunities for commercial development. In recognition of the growth concerns raised by local officials, as part of the land acquisition negotiations with regulators and local officials, NYCDEP supports extending the opportunity to local governments to exclude WAC and NYCDEP easements (in addition to excluding DEP fee simple acquisitions) within designated areas in the Extended LAP.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Delaware County is expected to decline slightly. At the same time, the demand for second homes in the area may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," estimated future residential development is based on the rate of development during the past two decades. Assuming that the pace of new development in Stamford (as measured by new residential units) remains the same as it was between 1990 and 2008, it is estimate that 84 new units would be developed in the Town between 2010 and 2022, and that the land required to support this new development would total approximately 459 acres.

Between 2010 and 2022, Stamford is also likely to see a continued decline in land used for agricultural purposes, coupled with slow growth in a number of other sectors. Stamford's ability to retain (and if possible build on) its existing manufacturing base could be critical to the health of the Town's economy during this period.

The vision of the community set forth in the Village of Stamford's comprehensive plan cites several factors as contributing to the qualities that "make Stamford special."

> *Physical beauty and a mountain setting are assets that draw residents and visitors to the Village. The small size of the community, coupled with the quiet, rural setting, creates a safe, family-oriented atmosphere. Also because of this setting, residents of Stamford have endless opportunities to participate in outdoor recreation such as camping, hiking, hunting, fishing, cycling, snowmobiling, cross-country and downhill skiing. Given these excellent recreational opportunities and beautiful setting, it is no coincidence that the Village has a number of second homes.*
>
> *Residents of the Village are fortunate in enjoying a rural setting while having access to an array of community services such as water and sewer, fire protection, snow removal, basic health care, assisted care facilities, education and a library. Beyond basic services, it is remarkable how many arts and cultural opportunities are found in and around Stamford. This unique aspect of the community provides a major building block for the Village's development strategy. Another distinguishing characteristic of the Village is its rich history as a resort community, reflected in its architecturally interesting building stock. These unique buildings invite tourism-based development strategies. Rehabilitation and street beautification are two obvious components of such strategies.*

The plan notes that the Village has seen the development of an array of new businesses since 1995 – mostly retail and service businesses serving the local population. The plan also notes that (as of 2007) there were sites available within the village center for both new commercial development and affordable housing.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

NYCDEP estimates that through 2022, it could acquire an additional 3,035 acres either in fee simple or through NYCDEP conservation easements within the Town of Stamford. Based on the developable percentage of land acquired in fee simple or as conservation easements as of June 2009, it is estimated that these acquisitions could include approximately 502 acres of developable land.[11]

[11] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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

NYCDEP further estimates that WAC could acquire an additional 1,504 acres in easements during the same period. It is estimated that this total would include about 685 acres of developable land. If the Town and Villages elect to preclude LAP and WAC acquisitions under the proposed settlement, some of these projected easements would likely be precluded.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Stamford would still be left with approximately 72 percent of the town's current stock of developable land.

Table 4-18: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant, low-density residential or agricultural land in 2009		4,939 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	3,035 acres	
Projected WAC acquisitions	1,504 acres	
Developable vacant, low-density residential or agricultural land acquired		1,187 acres
Residential Development, 2010-2022		
Projected housing units built	84 units	
Land needed for housing	459 acres	
Developable portion of land needed for housing		199 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		3,554 acres
Percent of 2009 developable vacant, low-density residential or agricultural land remaining in 2022		72 percent

The potential impact of additional acquisitions can also be assessed in terms of their impact on the character of the community. Aside from its limited impact on the supply of developable land, the Extended LAP's impact on socioeconomic conditions and community character in Stamford is likely to be at least neutral for the reasons discussed below.

Further acquisitions in fee simple, and NYCDEP's continuing review of policies governing recreational uses of watershed land, could result in an increase in the City-owned acreage in Stamford available for public recreational use. Assuming that the percentage of newly-acquired land opened to public recreational use is similar to what it has been through 2009, more than 900 acres of land acquired in fee simple through 2022 could be made available by NYCDEP for public recreational use. NYCDEP's policies on active management of forest land will also likely result in greater use of NYCDEP-owned land for productive activities such as timber harvesting. Preservation of the town's natural environment will support local efforts to develop visitor-oriented businesses, building on such assets as the Catskill Scenic Trail and the Mt. Utsayantha Trail.

Since the adoption of the MOA, economic development efforts in the region have emphasized growth within hamlets and village centers.[12] And while the Town has not sought to expand the hamlet areas designated pursuant to the MOA, the Town and Village boards may elect to preclude easement acquisitions within the existing hamlet designated areas in the future, which

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 is considered undevelopable.

[12] Village of Stamford Comprehensive Plan, April 2007.

would help to reduce future conflicts between NYCDEP acquisitions and village revitalization efforts.

CONCLUSIONS

Between 2010 and 2022, it is projected that NYCDEP could acquire more than 3,000 acres in fee simple or conservation easements in Stamford. These acquisitions could help preserve the quality of the Town's natural environment, and could result in the opening of more than 900 acres of City-owned land for public recreational use. In addition, it is projected that during the same period WAC could acquire farm easements on more than 1,500 acres of agricultural land. Despite these acquisitions, the remaining supply of developable land would be adequate to support the projected level of new development through 2022 and beyond.

As noted above, 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.

Furthermore, there does not appear to be significant development pressure in these areas. Commercial development has been focused within the two villages, and it is expected that opportunities for redevelopment and new commercial development will continue to be available in the Villages of Hobart and Stamford. The preclusion of LAP purchases within the villages ensures that they can support future opportunities for commercial development. New residential development can be expected to continue to be accommodated in the outlying portions of the Town.

On the basis of the analyses described above and in Chapters 2 and 3, 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 Town of Stamford.

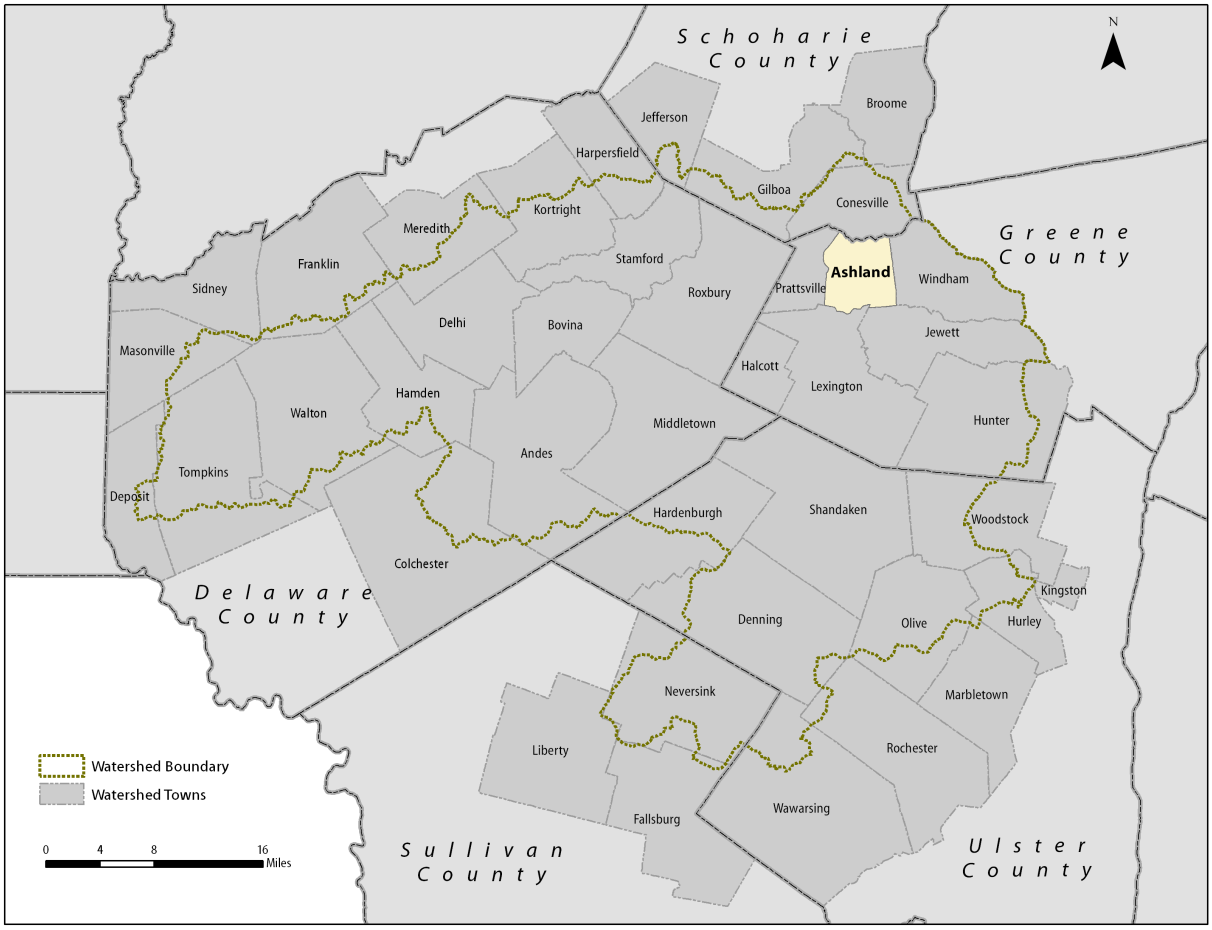
GREENE COUNTY

TOWN OF ASHLAND

EXISTING CONDITIONS

The Town of Ashland is one of Greene County's "mountaintop towns." Ashland's resident population in 2008 was estimated to be 827 – a 10 percent increase since 2000, making the Town one of the fastest-growing in the West-of-Hudson watershed.

Figure 4-19: Map of Town of Ashland in relation to west-of-Hudson watershed



Town of Ashland – Quick Facts	
Land area:	15,987 acres
Percent of town land area within the watershed:	100%
Percent of land protected	19%
Population (estimated), 2008:	827
Median age (estimated), 2008	42.4
Median household income (estimated), 2008	$43,457

Ashland is a largely rural, primarily residential community. As shown in Table 4-19 and Figure 4-20, more than 60 percent of the Town's land area consists of low-density residential or vacant land, with higher-density development taking place primarily along the State Route 23 and other main roads.

Like other mountaintop towns, Ashland has a strong second home sector: about 42 percent of all housing units in 2000 were for seasonal or recreational use. Between 2000 and 2008, the Town's housing stock grew by 12 percent. Much of the Town's recent development (as shown in the black highlighted parcels on Figure 4-20) has occurred along Route 23, Sutton Hollow Road and Route 10, or on the eastern side of the Town (bordering Windham). Using data on building permits, it is estimated that between 2000 and 2009, about 81 new housing units were built in Ashland.

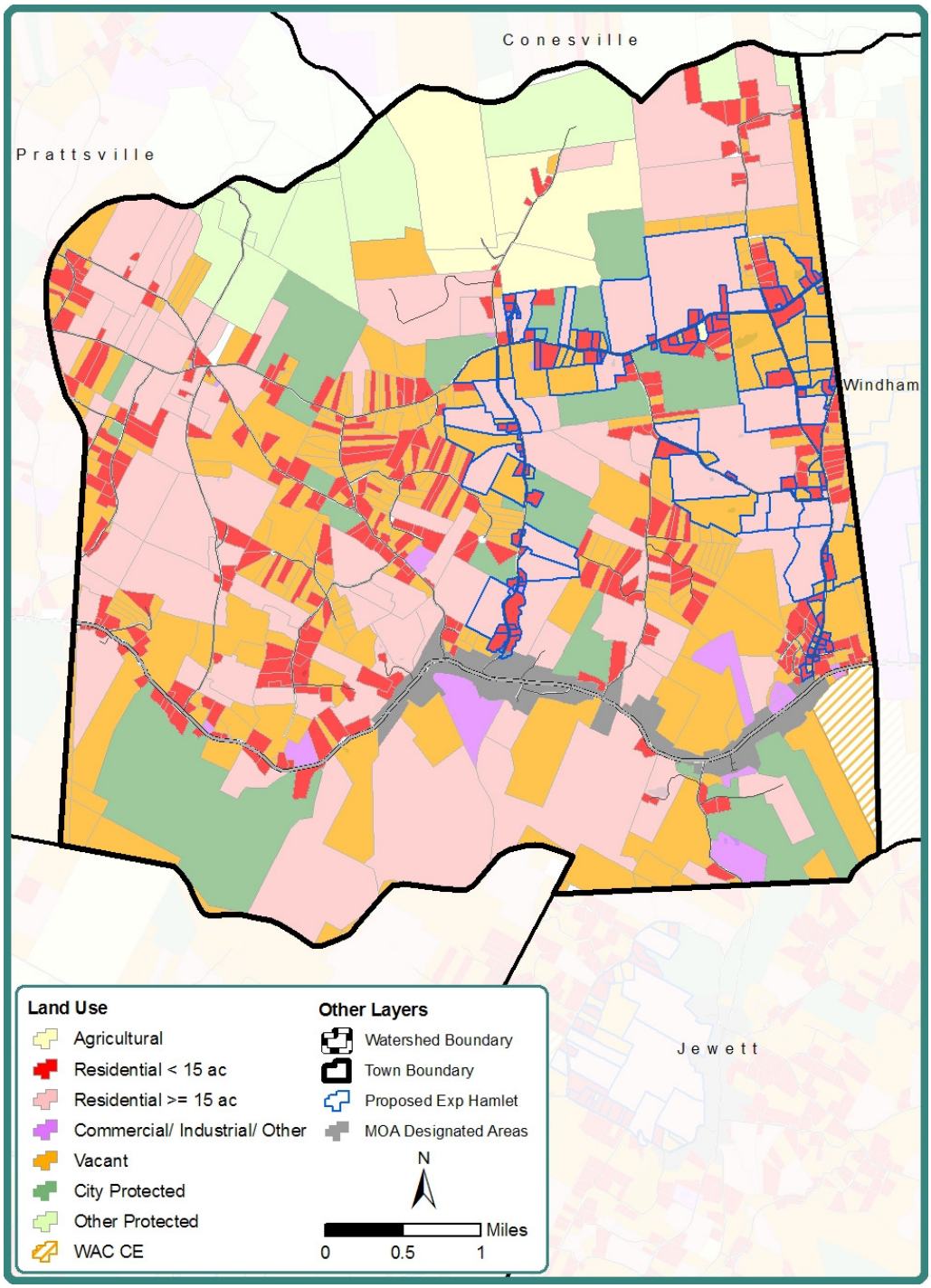
Commercial activity in Ashland is limited, consisting largely of small businesses serving the local population. It also includes a winery and the mountaintop area's only active bluestone mine. Commercial and community activity in Ashland is concentrated primarily along Route 23. As Figure 4-20 shows, Ashland currently has a limited amount of land in agricultural use – in the northern part of the Town (near Conesville) and in its southeastern corner (bordering Windham).

Table 4-19: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural[13]	963	6%
High-Density Residential	1,868	12%
Low-Density Residential	5,611	35%
Commercial/Other	301	2%
State/Other Protected	1,035	6%
City Protected	1,811	11%
Vacant	4,058	25%
Total Town Acres	**15,987**	

[13] The agricultural category includes WAC conservation easements.

Figure 4-20: Map of Ashland showing land use and protected land within the Watershed



Previous LAP Activity

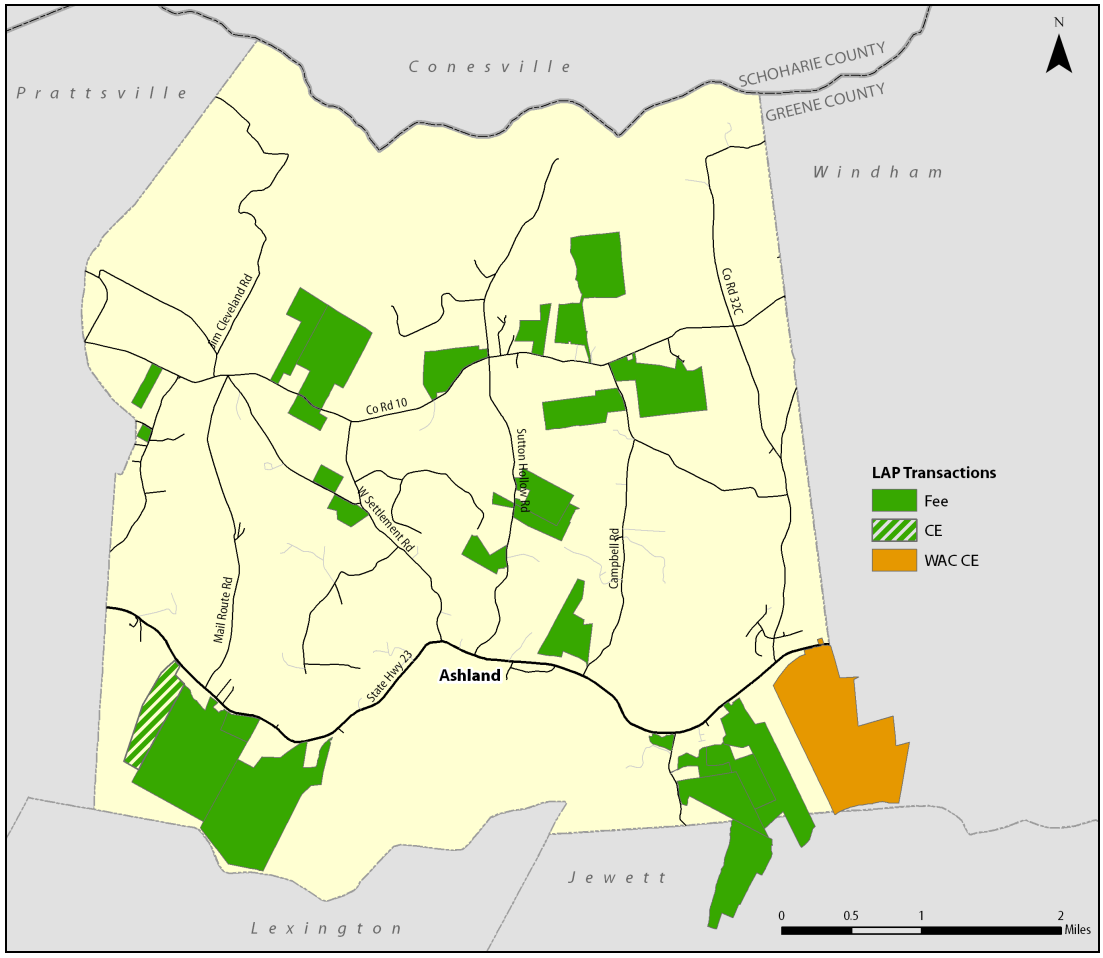
Through June 2009, NYCDEP had acquired a total of 2,068 acres in Ashland pursuant to the 1997 MOA. As shown in

Table 4-20 below, purchases of land in fee simple account for about 88 percent of all LAP acquisitions in the Town. Figure 4-21 shows the location of LAP properties in Ashland, by type of acquisition.

Table 4-20: Acquisitions in the Town of Ashland through July 2009

Type of acquisition	Acres
Fee simple	1,812
Conservation easements	77
WAC agricultural easements	178
Total acquired	**2,068**

Figure 4-21: Map of LAP properties in Ashland, by type of acquisition



As of October 2009, NYCDEP had acquired 18 acres in fee simple that prior to acquisition had been in active agricultural use. In 2008, NYCDEP issued a five-year permit for agricultural use of 28 acres of land it had acquired in fee simple; the property is currently being used as pasture and for the production of hay. WAC has also purchased an easement covering 77 acres of farmland in the southeastern portion of the town.

Of the 1,812 acres that NYCDEP acquired in fee simple as of July 2009, 986 acres – 53 percent of the total – had been opened for public recreational use as of October 2009. This represents a significant addition to recreational resources in a Town with a relatively small amount of protected, publicly-owned land. State-owned land in Ashland totals only 1,035 acres, or about 6 percent of the Town's total area.

Pursuant to the watershed MOA, the Town designated parcels with a total of 362 acres as the hamlets of Ashland and East Ashland. These parcels are along Route 23, and cannot be acquired by the City in fee simple, helping to ensure that such acquisitions do not conflict with commercial and residential development in these hamlet areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Greene County is expected to grow by about 3 percent – significantly slower than the rate of growth in Ashland during the past decade. At the same time, the demand for second homes in the mountaintop towns may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. Assuming that the pace of new development in Ashland (as measured by new residential units) remains the same as it was between 1990 and 2008, it can be estimated that about 84 additional units would be built by 2022; and that the land required to support this new development through 2022 would total approximately 449 acres, including 260 acres of land characterized as developable[14] – about 8 percent of the Town's supply of such land as of 2009.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based in part on LAP's experience in Ashland to date, NYCDEP estimates that through 2022, it is projected to acquire an additional 1,778 acres either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that this total would include approximately 698 acres of

[14] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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 Group D).

developable land – about 21 percent of the Town's supply of developable vacant and low-density residential land as of 2009.

In additional to the land and easements acquired by NYCDEP, between 2010 and 2022 WAC is expected to acquire easements on 170 acres of agricultural land in Ashland.

As shown in the following table, it is thus estimated that after taking into account both LAP acquisitions and the land required to support new development, Ashland would have 2,393 acres of developable vacant and low-density residential land remaining in 2022 – approximately 71 percent of the Town's current stock of such land.

Table 4-21: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		3,351 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	1,778 acres	
Developable vacant or low-density residential land acquired		698 acres
Residential Development, 2010-2022		
Projected housing units built	84 units	
Land needed for housing	449 acres	
Developable portion of land needed for housing		260 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		2,393 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		71 percent

NYCDEP's projected acquisitions in Ashland through 2022 are unlikely to adversely affect the predominantly rural, low-density character of the Town. Moreover, additional WAC easements are likely to help preserve some of the Town's remaining agricultural activity.

Under a proposed agreement among the Town, NYCDEP, the regulatory agencies and other stakeholders, Ashland's designated hamlet areas would be expanded from 362 to 2,046 acres. This agreement would help ensure that land remains available to accommodate further development in areas along Sutton Hollow Road and Route 10, and on the Town's eastern edge, bordering Windham – areas that appear to have significant potential for further growth.

CONCLUSIONS

While the number of acres that could be acquired in Ashland under the Extended LAP is substantial, there is likely to be sufficient developable land available to accommodate projected growth through 2022. Moreover, the significant proposed increase in the size of the Town's designated hamlet areas would help alleviate any potential conflict between acquisitions under Extended LAP and the need for land for development. Acquisitions in outlying areas would help preserve Ashland's natural environment; and additional WAC easements could help preserve its remaining farmland.

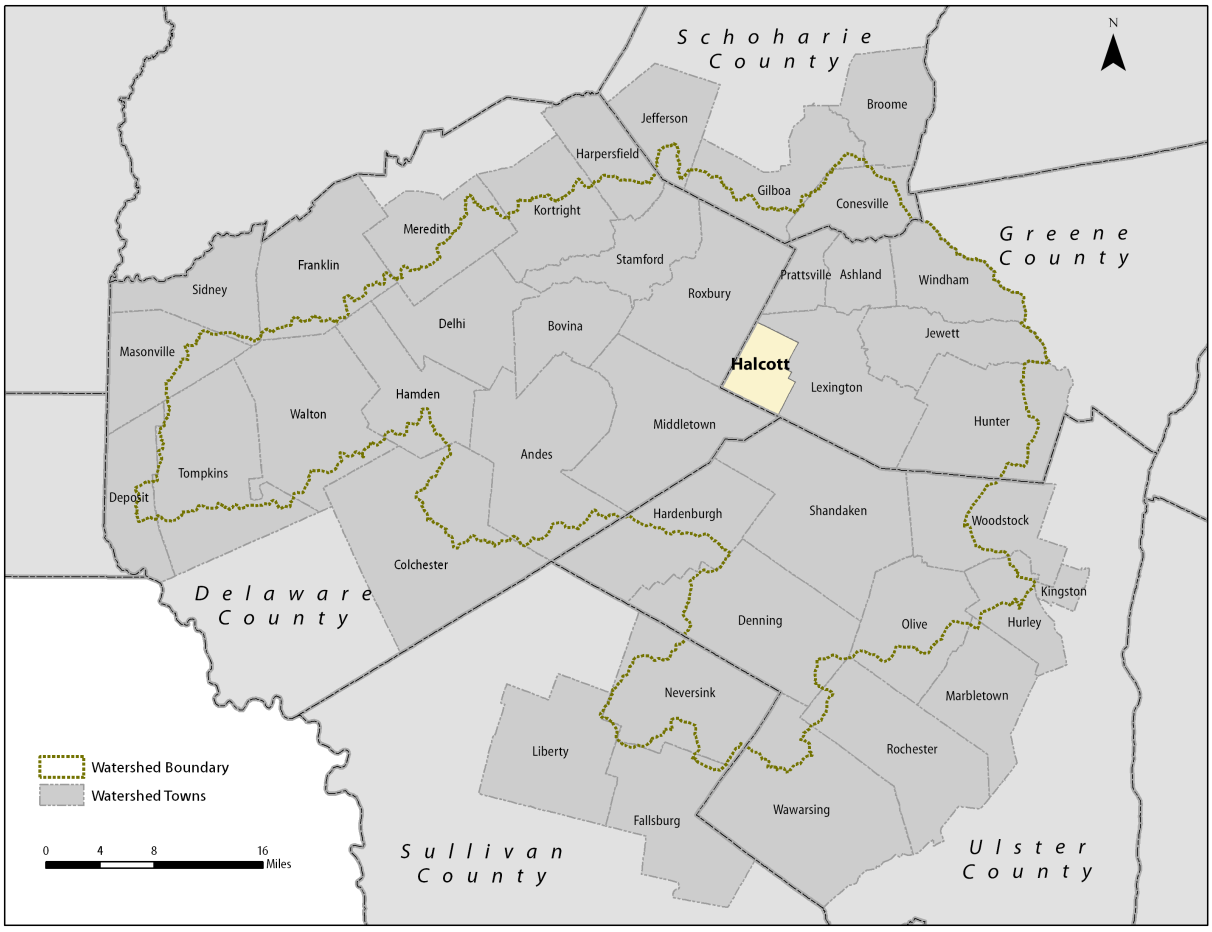
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Ashland.

TOWN OF HALCOTT

EXISTING CONDITIONS

With an estimated 203 residents in 2008, Halcott – the westernmost of Greene County's "mountaintop towns" – is the least-populated of the West-of-Hudson watershed towns. The Town's population is estimated to have grown by about 5.2 percent since 1990, with all of the increase coming after 2000. The town is almost entirely rural in character, with a population density of 9.0 per square mile.

Figure 4-22: Map of Town of Halcott in relation to west-of-Hudson watershed



Town of Halcott – Quick Facts	
Land area:	14,375 acres
Percent of town land area within the watershed:	100%
Percent of land protected	35%
Population (estimated), 2008:	203
Median age (estimated), 2008	48
Median household income (estimated), 2008	$36,654

Halcott's location contributes to its small population and rural character. The northern reaches of the Town are dominated by the Bear Pen and Vly Mountains, which effectively limit access to and from Halcott to roads coming from the south. The Town's limited developed land is concentrated in the hamlet of Halcott and along several Town roads which parallel Vly Creek and its tributaries.

As shown in Table 4-22 and Figure 4-23 land use in Halcott is primarily low-density residential, with clusters of higher-density residential development along Silas Lake Road, County Road 3 and Elk Creek Road. Halcott also has a substantial second-home population. In 2000, 54 percent of the town's 209 housing units were for seasonal or part-time use. About 31 percent of Halcott is privately-owned vacant land, and there is very little (about 4 acres) commercial, industrial or community land use in the Town. Halcott's 2003 comprehensive plan states that the Town has only a few commercial enterprises, most of which are home-based. Agriculture has long been a feature of life in Halcott. The Town's 2003 comprehensive plan states that as of 2003 there were only two commercial farms operating in the Town; but that many land-owners engage in a variety of smaller-scale, less-formal agricultural activities.

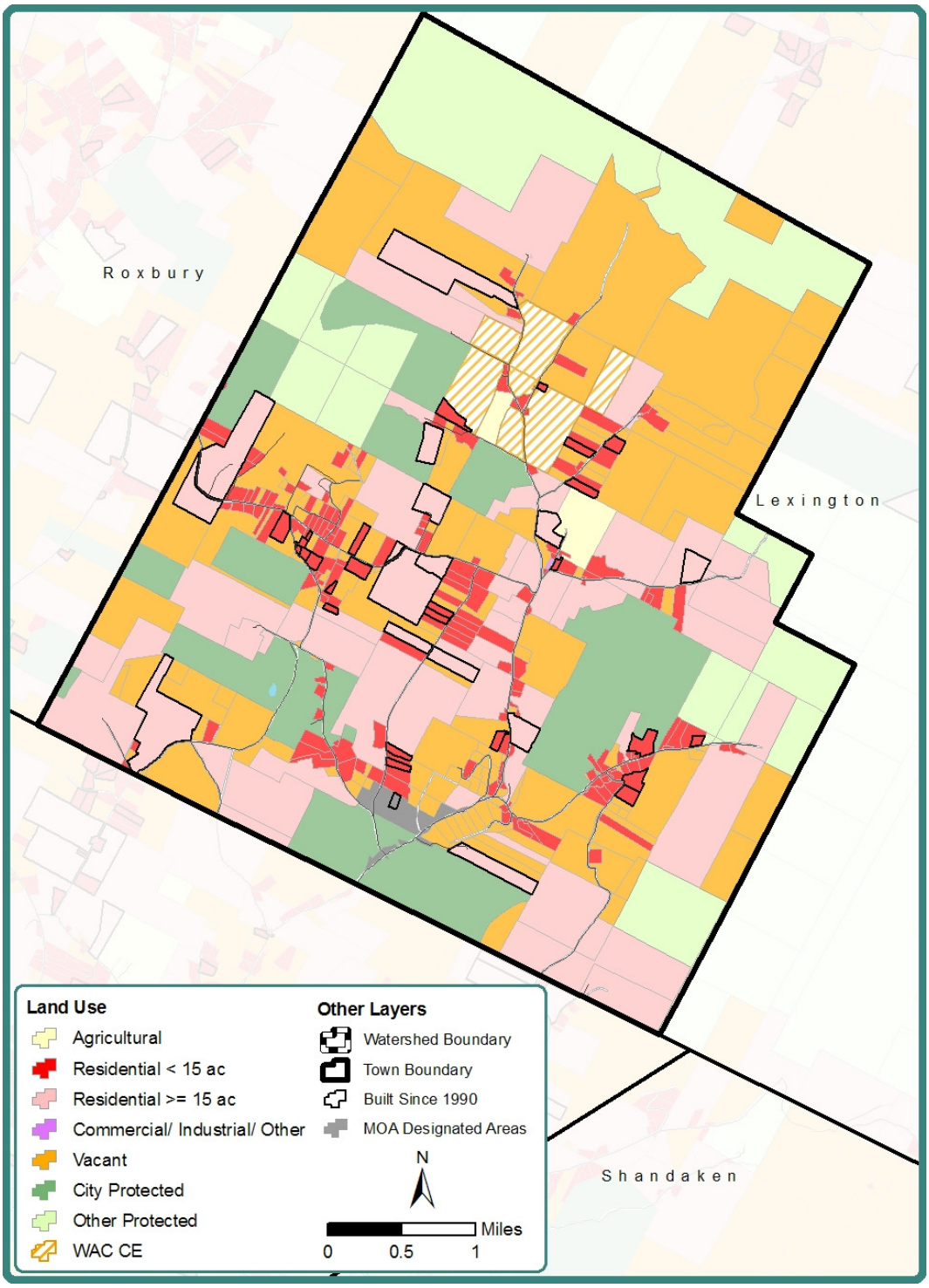
Most development since 1990 (as shown by the parcels outlined in black in Figure 4-23), occurred in or near Silas Lake Road, County Road 3 and Elk Creek Road. Based on building permit data, it is estimated that between 2000 and 2009, 18 new housing units were built in Halcott.

Table 4-22: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural[15]	523	4%
High-Density Residential	936	7%
Low-Density Residential	3,930	27%
Commercial/Other	4	0%
State/Other Protected	2,488	17%
City Protected	2,028	14%
Vacant	4,421	31%
Total Town Acres	**14,375**	

[15] The agricultural category includes WAC conservation easements.

Figure 4-23: Map of the Town of Halcott, showing land use, protected land and proposed hamlet expansion areas



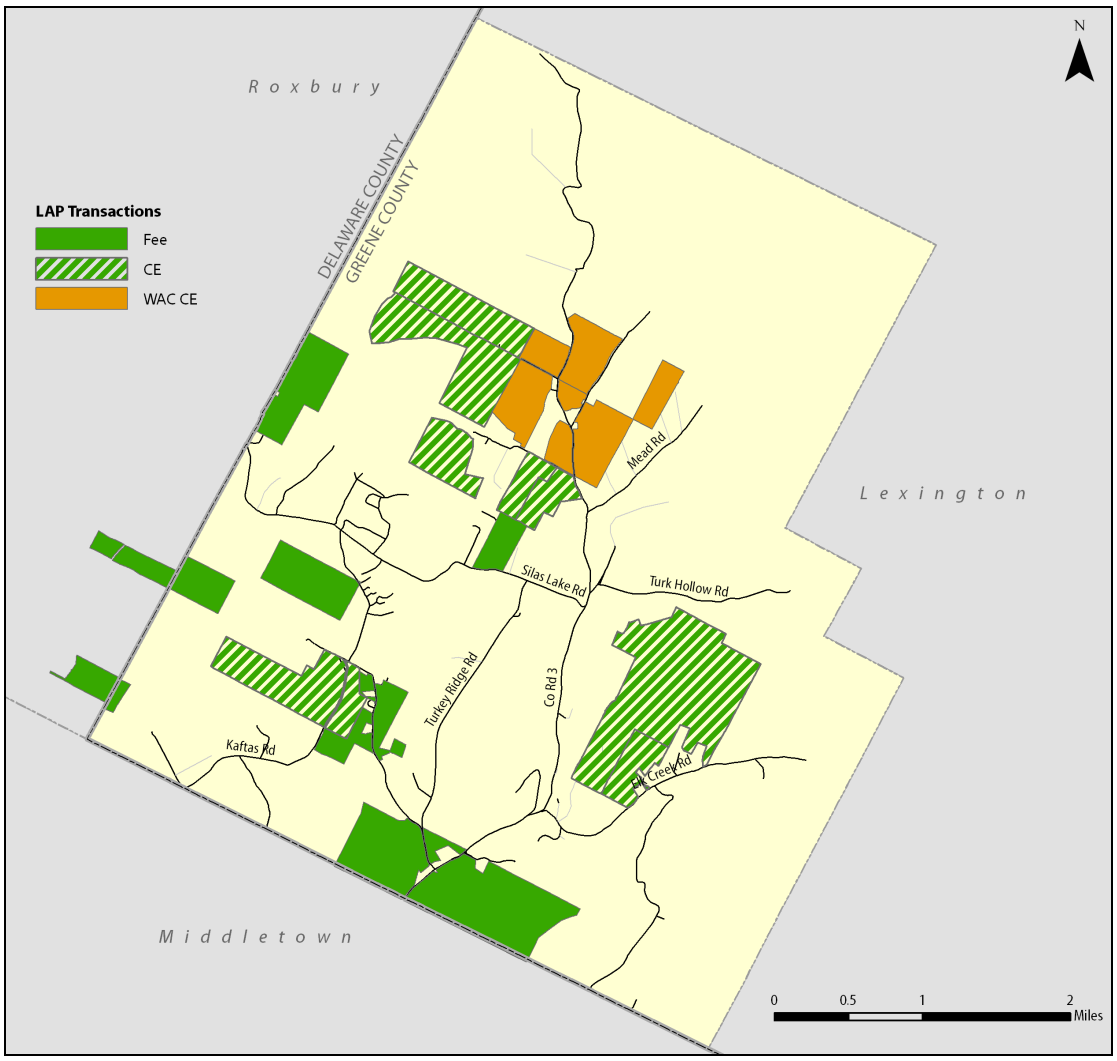
Previous LAP Activity

Through July 2009, NYCDEP had acquired a total of 2,611 acres in Halcott pursuant to the 1997 MOA – 18.2 percent of the town's land area. As shown in Table 4-23 below, conservation easements acquired by the City account for nearly half of the total acreage acquired under LAP. Figure 4-24 shows the location of LAP properties in Halcott, by type of acquisition.

Table 4-23: Acquisitions in the Town of Halcott through July 2009

Type of acquisition	Acres
Fee simple	919
Conservation easements	1303
WAC agricultural easements	389
Total acquired	**2,611**

Figure 4-24: Map of LAP properties in Halcott, by type of acquisition



Through 2009, WAC has acquired agricultural easements on 389 acres of farmland – about 75 percent of the Town's agricultural land. As of October 2009, NYCDEP had acquired in fee simple 47 acres of land previously used for agricultural production. To date, the Department has not issued permits for agricultural use of any of this land.

As of October 2009, a total of 394 acres acquired by NYCDEP in fee simple in Halcott had been opened by NYCDEP for recreational use – more than 42 percent of the land that NYCDEP has acquired in fee simple in the Town since the beginning of the Land Acquisition Program.

Pursuant to the 1997 MOA, Halcott designated a hamlet area totaling 69 acres. However, the Town did not elect to preclude fee simple acquisitions in these areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Greene County is expected to grow by about 3 percent – somewhat slower than the rate of growth in Halcott during the past decade. At the same time, the demand for second homes in the mountaintop towns may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development has nevertheless been estimated based on the rate of development during the past two decades. If the pace of new development in Halcott (as measured by new residential units) remains the same as it was between 1990 and 2008, it is estimated that the land required to support new development through 2022 would total approximately 206 acres – including 79 acres of land characterized as developable.[16]

Beyond the projected rate of new residential development, conditions in Halcott are likely to remain stable – a very low-density rural community, with limited commercial activity geared primarily to serving the local population.

In a survey of residents and second-home owners conducted as part of the planning process, the three issues identified as being most critical to Halcott's future were preserving the community's rural character, maintaining the quality of the environment, and open space preservation. (All three rated ahead of keeping taxes low and keeping roads in good repair.)

A community workshop held in conjunction with the planning process similarly found nearly-unanimous opposition to any type of larger-scale commercial or industrial development, or

[16] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

development of any type of multi-family housing. The plan notes that "people highly value the small family farms and working landscapes remaining in Halcott."

Addressing the future, the vision statement included in Halcott's 2003 comprehensive plan says that:

> *In the future, our natural beauty and secluded rural character remain the most prominent features of Halcott. The landscape is a mix of undeveloped open and forested land, thriving farms and low-density rural residences that are consistent with Halcott's traditional character. Clean air and clean water, unobstructed views of the mountains and an abundant wildlife community exist throughout the town. Agriculture is actively encouraged and sustained locally in a non-polluting manner…*

The plan describes the Town's goals as follows:

1) *Land Use: Halcott will utilize land use laws appropriate to a small town to maintain its rural character. The Town will continue to operate with an understanding of the New York City watershed regulations and will consider the impact of Town policy on state-owned lands and Catskill Forest Preserve lands located within the Town boundaries.*

2) *Visual Resources: Policies will guide development to conserve the rural views valued by the community.*

3) *Community Character: The continuation of Halcott's rural atmosphere will be maintained by preserving open space, establishing the Town's center, and promoting historical resources.*

4) *Transportation: Existing roads will be maintained in a safe and cost-effective manner. New development will not create negative impacts on the rural quality of existing roads.*

5) *Community Services and Community Building: Communication will be encouraged among all residents. The Town will seek solutions for providing adequate garbage removal and emergency services through Greene County or through reciprocal arrangements with adjacent counties. Townspeople will be educated about existing community resources. The Town will improve recreational opportunities for residents.*

6) *Job Opportunities: Home-based and small businesses that are consistent with the rural character and quality environment of the Town will be encouraged.*

The comprehensive plan also calls for promoting "home-based and small businesses that are consistent with the rural character and quality environment of the Town."

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Halcott to date, NYCDEP estimates that through 2022, it could acquire an additional 1,571 acres either in fee simple or through conservation easements. Based on the developable percentage of land acquired in fee simple or as conservation easements as of June 2009, it is estimated that this total will include approximately 389 acres of developable land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Halcott would still be left with approximately 72 percent of the Town's current stock of developable vacant, low-density residential and agricultural land.

Table 4-24: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant, low-density residential or agricultural land in 2009		1,668 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	1,571 acres	
Projected WAC acquisitions	0 acres	
Developable vacant, low-density residential or agricultural land acquired		389 acres
Residential Development, 2010-2022		
Projected housing units built	24 units	
Land needed for housing	206 acres	
Developable portion of land needed for housing		79 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		1,199 acres
Percent of 2009 developable vacant, low-density residential or agricultural land remaining in 2022		72 percent

As noted in Chapter 3, this estimate of LAP's impact on the Town's supply of developable land needs also to take into account that as of 2009, Halcott's supply of such land is relatively limited. As defined here, developable land represents about 11.6 percent of the Town's total land area; by 2022 it would decline to 8.3 percent. Nevertheless, given its very low density and the modest level of new development projected through 2022, the supply of land in Halcott should be adequate to accommodate both the projected level of LAP acquisitions and the projected rate of growth. Moreover, the Town's plan shows a clear preference for allowing most of Halcott to remain undeveloped.

The impact of additional acquisitions through 2022 can also be assessed in terms of their impact on the character of the community. NYCDEP's acquisition of land and easements in Halcott appears to be broadly consistent with values and vision presented in the Town's 2003 comprehensive plan.

Additional acquisitions under LAP are likely to contribute to the achievement of the Town's goals regarding its rural character, open space and visual resources and are also likely to expand the range of recreational resources available to local residents. Moreover, while LAP may not contribute directly to achievement of the plan's transportation and job creation goals, and does not directly address the Town's objectives in areas such as ensuring the availability of affordable housing and sustainable economic development, it does not appear to be in conflict with these goals.

Despite the relatively high level of program activity projected for Halcott, there appears to be no conflict between additional acquisitions by NYCDEP and the Town's vision for its future. Acquisitions by NYCDEP appear to be consistent with the overall character of the community. And to the extent that they help preserve the Town's remaining farmland, WAC easements also help to maintain the character of the community.

CONCLUSIONS

The acquisition of additional land in Halcott under Extended LAP would help preserve the Town's very-low-density, rural character, and would leave sufficient developable land to accommodate the limited future development projected for Halcott. Moreover, the Extended LAP would generally not conflict with the small-scale commercial activity that is typical in Halcott.

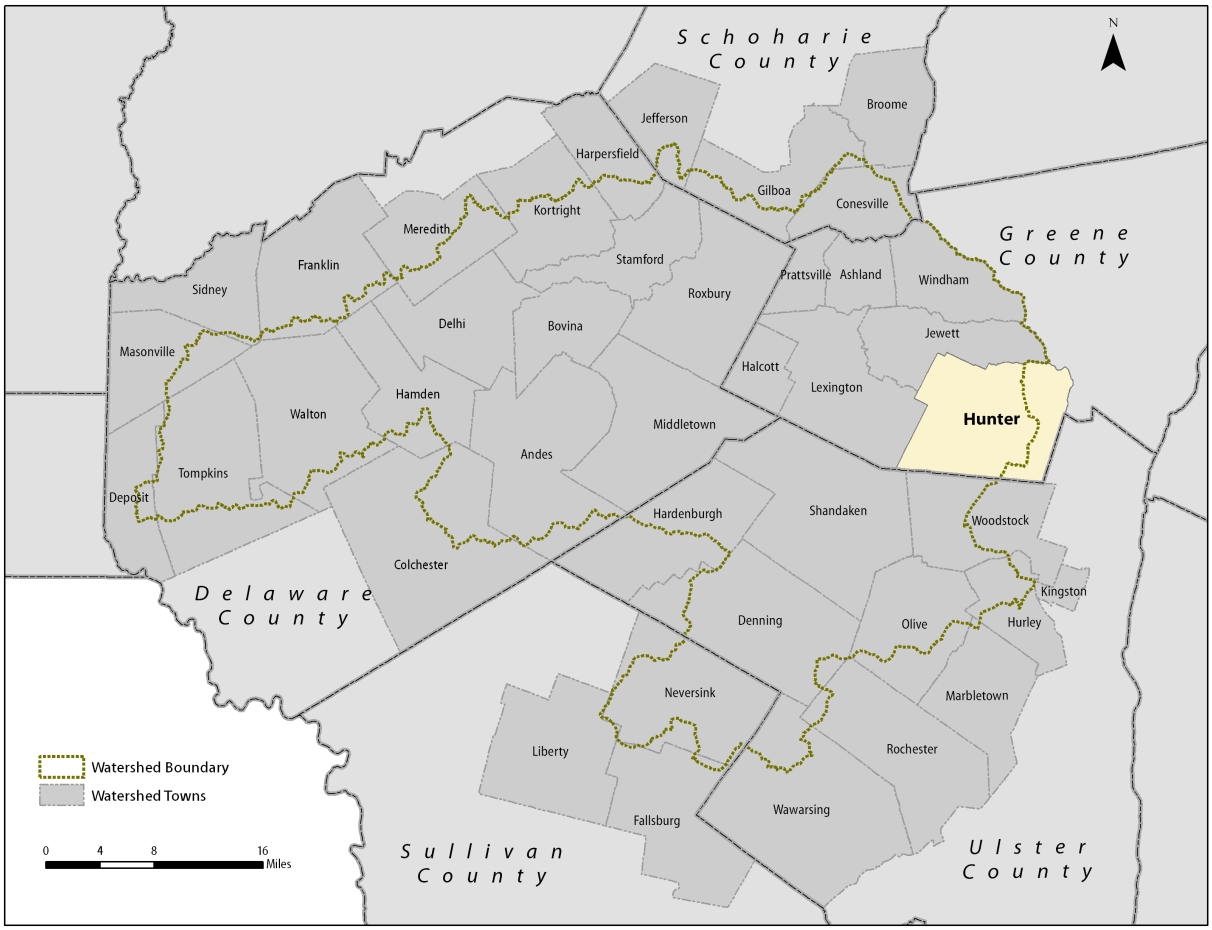
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Halcott.

TOWN OF HUNTER

EXISTING CONDITIONS

The Town of Hunter, located in southern Greene County, is one of the county's "mountaintop towns." Hunter's resident population in 2008 was estimated to be 2,759. The Town's population grew by 29 percent in the 1990s; but has grown only slightly since 2000. Population centers include the Villages of Hunter and Tannersville and several hamlets, including Maplecrest, Haines Falls and Onteora Park.

Figure 4-25: Map of Town of Hunter in relation to west-of-Hudson watershed



Town of Hunter – Quick Facts	
Land area:	57,702 acres
Percent of town land area within the watershed:	75%
Percent of land protected	58%
Population (estimated), 2008:	2,759
Median age (estimated), 2008	42
Median household income (estimated), 2008	$41,249

Hunter's economy is centered on skiing and other recreational activities at Hunter Mountain, and other leisure activities elsewhere in the Town. Like many similar towns, Hunter has a strong second-home sector; in 2000, 48 percent of all housing units were for seasonal or recreational use. Much of the Town's commercial activity is concentrated in the two villages. Hunter currently has no land in agricultural use.

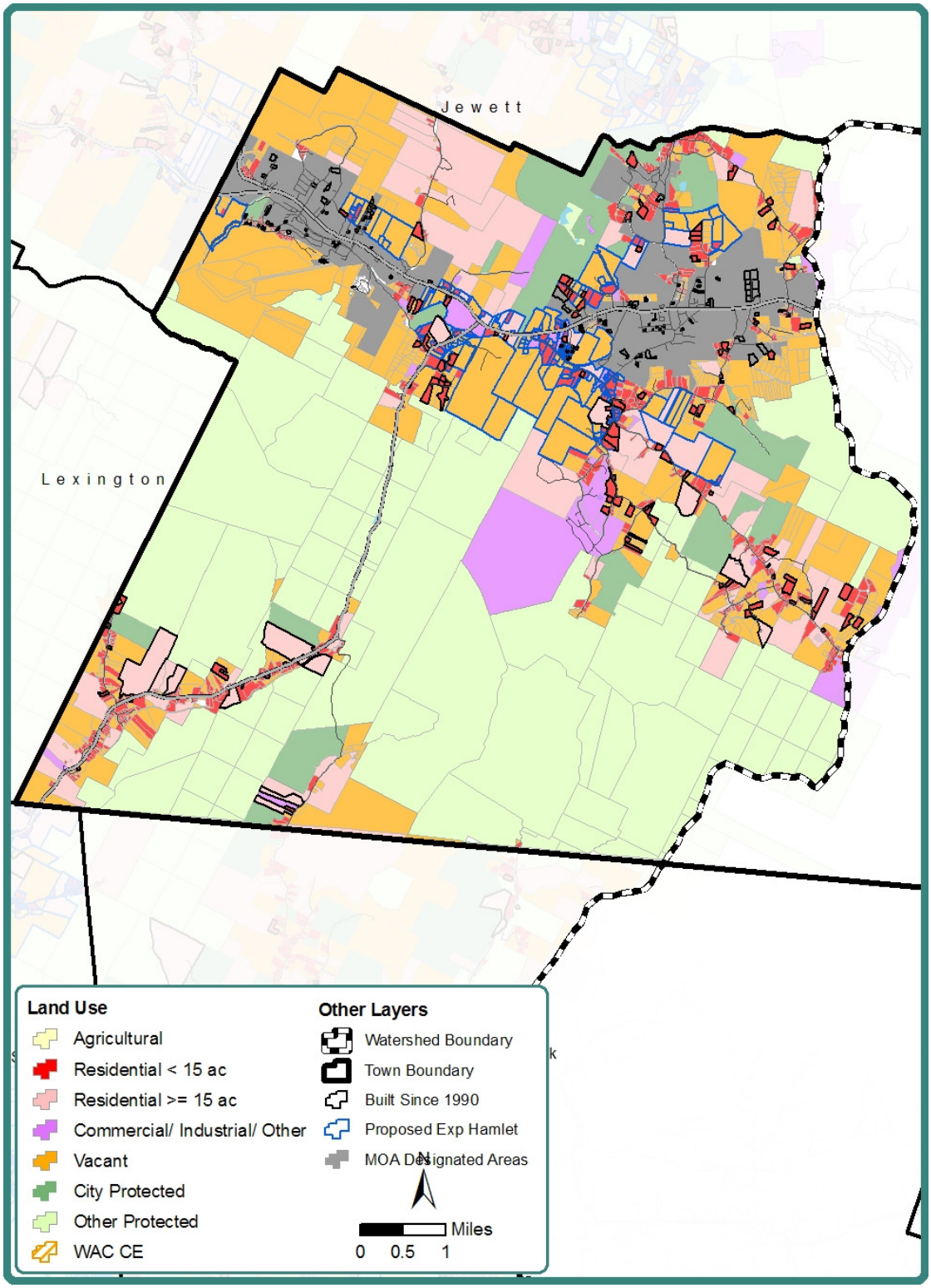
As shown in Table 4-25 and Figure 4-26, state-owned land accounts for more than half the Town's total area, and privately-owned vacant land for 22 percent. A relatively high percentage (5 percent) of Hunter's total area is devoted to commercial, industrial or community uses.

Much of the recent development that has occurred in the watershed portion of Hunter since 1990 (as shown in the black highlighted parcels on Figure 4-26), has been clustered in and near Route 23 and the Villages of Hunter and Tannersville. Using data on building permits, it was estimated that between 2000 and 2009, approximately 120 new housing units were built in Hunter.

Table 4-25: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural	0	0%	0	0%	0	0%
High-Density Residential	2,919	7%	434	3%	3,353	6%
Low-Density Residential	4,217	10%	630	4%	4,847	8%
Commercial/Other	2,168	5%	755	5%	2,923	5%
State/Other Protected	19,870	46%	11,091	76%	30,961	54%
City Protected	2,598	6%	N/A	N/A	2,598	5%
Vacant	10,646	25%	2,164	15%	12,810	22%
Total	**43,174**		**14,529**		**57,703**	

Figure 4-26: Map of the Town of Hunter showing land use, protected land and proposed hamlet expansion areas



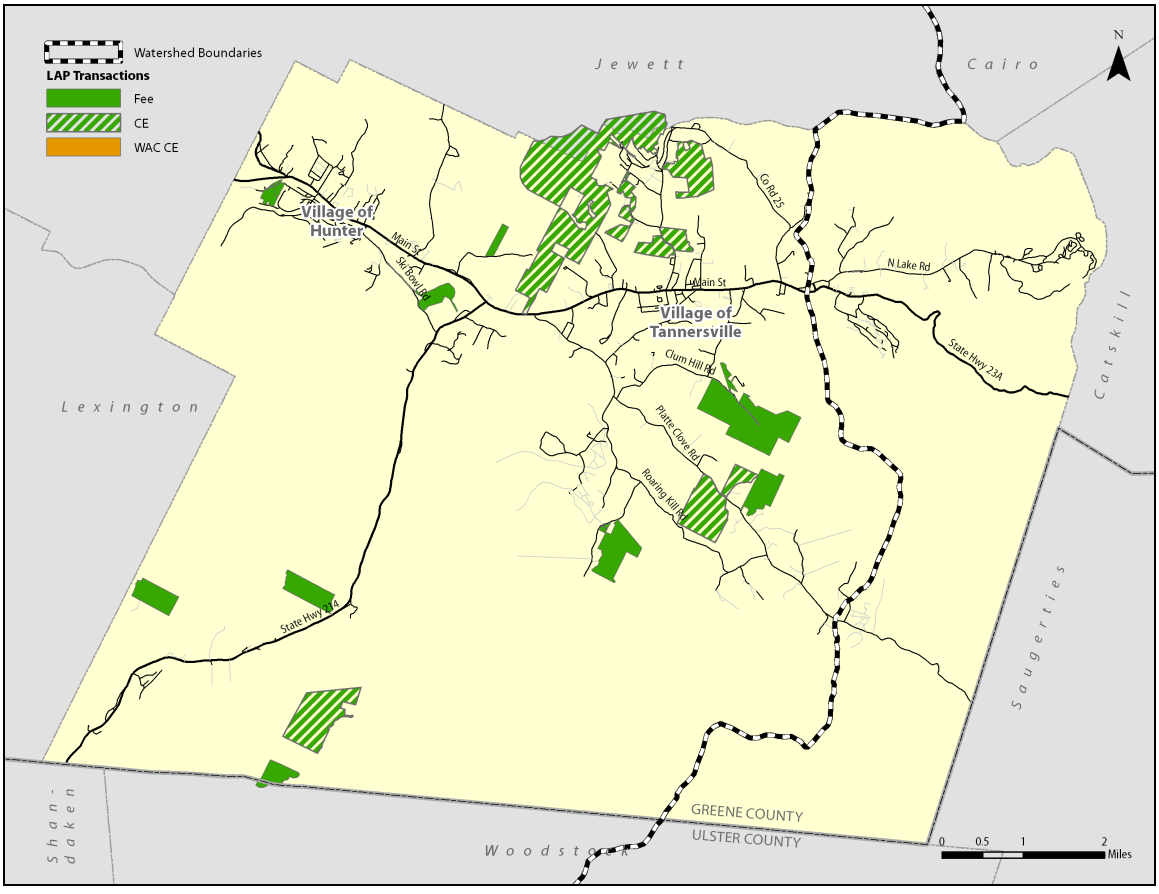
Previous LAP Activity

Through June 2009, NYCDEP had acquired a total of 2,490 acres in Hunter pursuant to the 1997 MOA. As shown in Table 4-26 below, conservation easements account for about 63 percent of all acquisitions in the Town. Figure 4-27 shows the location of LAP properties in Hunter, by type of acquisition.

Table 4-26: Acquisitions in the Town of Hunter through July 2009

Type of acquisition	Acres
Fee simple	933
Conservation easements	1,557
WAC agricultural easements	0
Total acquired	**2,490**

Figure 4-27: Map of LAP properties in Hunter, by type of acquisition



Of the 933 acres that NYCDEP acquired in fee simple as of July 2009, 666 acres – 71 percent of the total – had been opened for public recreational use as of October 2009. Opening City-owned land for public recreational use reinforces what is already one of the Town's leading strengths.

As noted above, much of the Town's commercial activity is concentrated in the villages of Hunter and Tannersville. Pursuant to the 1997 MOA, the Town designated hamlet areas in Haines Falls and Onteora Park, and in 2006 the Town elected to preclude further fee simple purchased in these hamlet areas. The Villages of Hunter and Tannersville are also designated areas, although the Village did not elect to preclude fee simple purchases by LAP. These designated areas (totaling 3,251 acres, the largest such area for any watershed town) provide the Town and Village with an opportunity to ensure that acquisition of real property interests by NYCDEP does not conflict with commercial activity in the villages and hamlet areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Greene County is expected to grow by about 3 percent – significantly slower than the rate of growth in the County during the past decade. At the same time, the demand for second homes in the mountaintop towns may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development has nevertheless been estimated based on the rate of development during the past two decades. Assuming the pace of new development in Hunter (as measured by new residential units) remains the same as it was between 1990 and 2008, it can be estimated that the land required to support new development through 2022 would total approximately 609 acres, including 348 acres of land characterized as developable[17] – about 5 percent of the Town's supply of such land as of 2009.

Several new development projects are currently in various stages of planning in Hunter, including Cortina Mountain Estates, a 94-lot subdivision, Twin Mountain Estates, consisting of 8 duplex residences, and Catskill Camp and Cottages, a 99-lot subdivision in Tannersville. Depending on market conditions and regulatory approvals, construction could begin on those projects within the next several years.

Hunter's most recent comprehensive plan was completed in 2000. This plan cites a series of "primary land use policies" defined in a 1991 Town plan as still being relevant in 2000.

- *Protect the Rural Character and Social, Environmental and Economic Stability of Hunter. Support efforts to concentrate any future development in and near areas where development already exists.*

[17] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

- *Guide Future Growth to Minimize Conflicts among Uses of Land. Future development should complement existing public facility service areas, road network and development patterns.*

- *Balance Municipal Facilities and Services with Population Requirements. As land develops and demographics change, requirements for public services will change as well.*

- *Protect the Outstanding Visual Qualities of Hunter's Landscape. Any new development must be sensitive to this quality.*

- *Encourage Public Input in All Planning and Land Use Decisions. Public participation in and appreciation of the Town's planning and land use efforts is highly desirable.*

- *Provide for a Variety of Housing Types, Living Choices, and Affordable Locations in recognition of the critical need of all families and individuals to have adequate housing, as well as the opportunity for every citizen to live in decent housing within their ability to pay.*[18]

The Town of Hunter has recognized the beauty of the Catskill environment as one of its most important assets. A plan for designation of the "Mountain Cloves Scenic Byway," developed by the Town in collaboration with the Villages of Hunter and Tannersville, the Catskill Center for Conservation and Development and several other organizations, calls both for preservation of the Town's scenic assets and for a more coherent approach to marketing them.

The Hunter Chamber of Commerce similarly characterizes the Town as "famous for its waterfalls, views and vistas," and notes the importance of outdoor recreation – including "hiking trails, mountain biking, fishing streams, camping, swimming, cross-country and downhill skiing" – as one of the Town's most important assets.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Hunter to date, NYCDEP projects that through 2022, it will acquire 2,726 additional acres either in fee simple or through conservation easements. Based on the developable percentage of land acquired in fee simple or as conservation easements as of June 2009, it is estimated that these acquisitions would include approximately 1,166 acres of developable land – about 17 percent of the Town's supply of developable vacant and low-density residential land as of 2009.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Hunter would still be left with 5,207 acres of developable vacant and low-density residential land in 2022 – approximately 77 percent of the Town's current stock of such land.

[18] Town of Hunter, Comprehensive Plan, 2000, p. 17.

Table 4-27: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		6,722 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	2,726 acres	
Developable vacant or low-density residential land acquired		1,166 acres
Residential Development, 2010-2022		
Projected housing units built	305 units	
Land needed for housing	609 acres	
Developable portion of land needed for housing		348 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		5,207 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		77 percent

As noted in Chapter 3, this estimate of LAP's impact on the Town's supply of developable land needs also to take into account that as of 2009, Hunter's supply of such land is relatively limited. As defined here, developable land represents about 11.6 percent of the Town's total land area, and would by 2022 fall to 9 percent. Nevertheless, Hunter's supply of developable land appears to be sufficient to accommodate both additional LAP acquisitions and the projected level of new development.

Moreover, the estimate of remaining developable land in 2022 cited in Table 4-27 could well prove to be conservative. As noted above, the pace of development in Hunter has been considerably slower since 2000 than it was in the 1990s; the assumption that new development will average 25 new units per year could prove to be overstated. The estimate in Table 4-27 of the land required to support new development also assumes an average of 2.0 acres per unit; median parcel size for new units has in fact been smaller during the past decade.

The impact of future acquisitions by NYCDEP can also be assessed in terms of their impact on the character of the community.

The Land Acquisition Program is broadly consistent with the Town's stated policies regarding the preservation of Hunter's rural character, its natural environment and its outstanding visual quality. And by opening more land for public recreational use, the Land Acquisition Program is also helping to reinforce one of the Town's greatest strengths. Future acquisitions are likely have a positive impact in areas such as preserving the Town's visual quality, and are likely to be consistent with the Town's desire to encourage development in already-developed areas. Under a proposed agreement among the Town, NYCDEP, the regulatory agencies and other stakeholders, the Town hamlet areas would be expanded to cover a total of 6,142 acres. The proposed expansion could help ensure that land remains available to accommodate further development in and around the villages of Hunter and Tannersville.

Except to the extent that they support the concentration of new development in areas already served by public infrastructure, additional acquisitions would not directly contribute to maintaining a balance between public facilities and a growing, changing population. It is worth noting however, that other NYCDEP watershed programs have directly assisted the Town in its efforts to maintain this balance. And while LAP would not directly contribute to achieving the Town's affordable housing goals, it is unlikely to have any adverse impact on the Town's efforts in that area.

CONCLUSIONS

Hunter's supply of developable land should be sufficient to accommodate both the projected level of acquisitions under the Extended LAP and substantial new development. Moreover, the proposed expansion of the Town's designated hamlet areas would give Hunter the largest hamlet areas – totaling 6,142 acres – of any of the West-of-Hudson watershed towns. This expansion would help ensure that new acquisitions under the extended LAP are focused primarily in outlying areas, where they would help to protect the natural environment that is so critical to the Town's economy; and that land remains available for development near the Town's village centers.

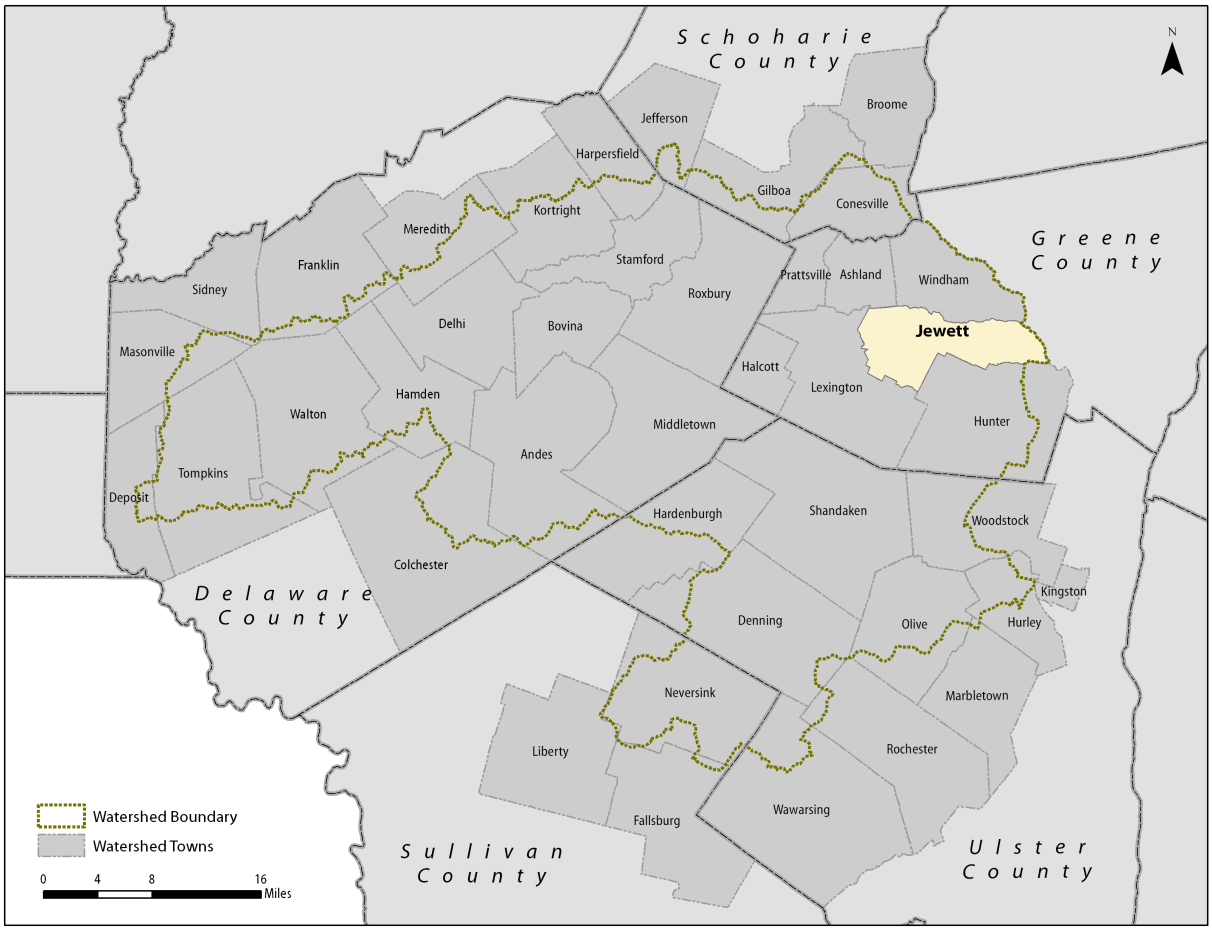
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Hunter.

TOWN OF JEWETT

EXISTING CONDITIONS

The Town of Jewett, one of Greene County's "mountaintop towns," is a low-density, primarily rural town situated between Hunter and Windham. The resident population in 2008 was estimated to be 1,015. The Town's population grew by 4 percent in the 1990s and an additional 5 percent since 2000. Population centers include the hamlets of Jewett and East Jewett.

Figure 4-28: Map of Town of Jewett in relation to west-of-Hudson watershed



Town of Jewett – Quick Facts	
Land area:	32,095 acres
Percent of town land area within the watershed:	100%
Percent of land protected	33%
Population (estimated), 2008:	1,015
Median age (estimated), 2008	46
Median household income (estimated), 2008	$50,097

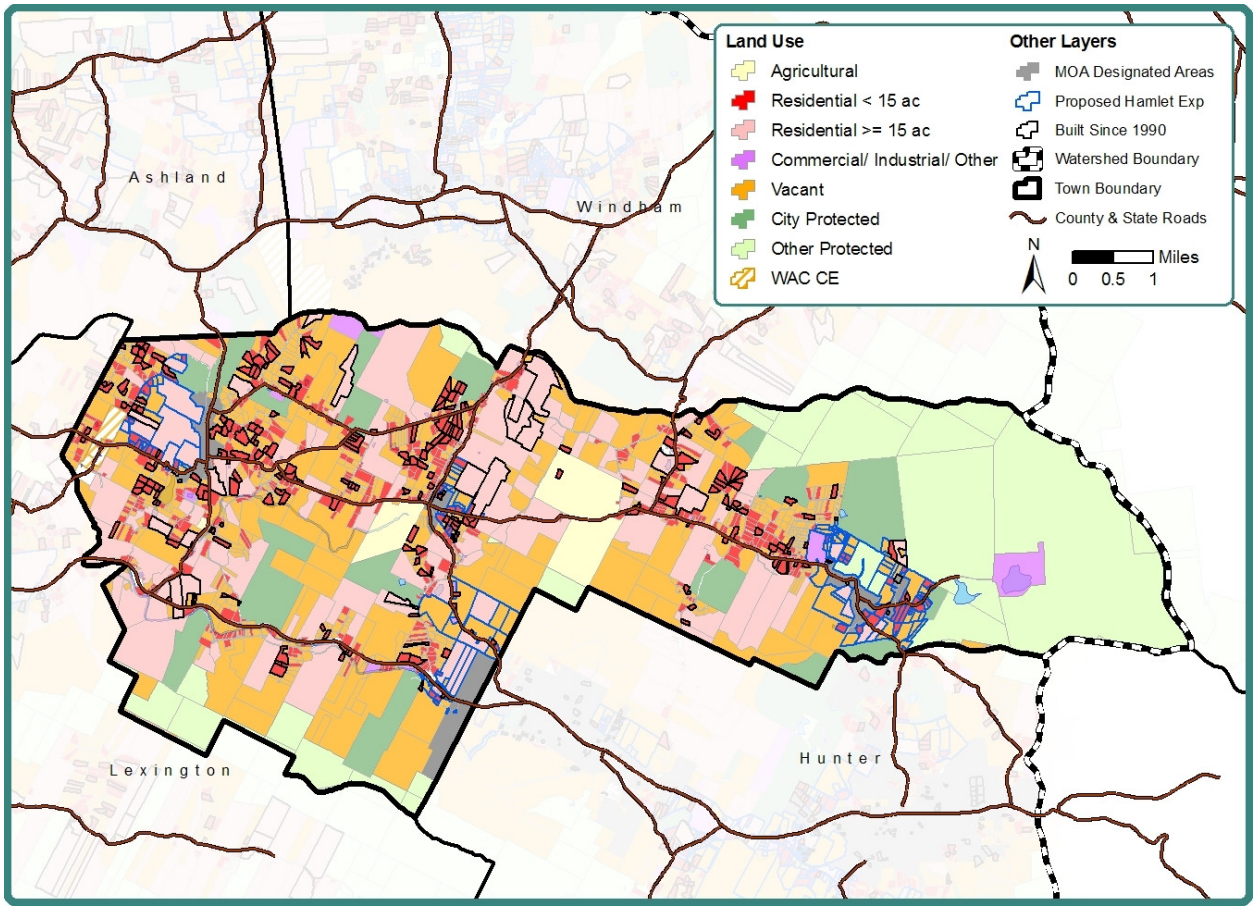
As shown in Table 4-28 and Figure 4-29, about 30 percent of the Town's total area is privately-owned vacant land; and another 23 percent is protected by the State or other entities. Like most of the mountaintop towns, Jewett has a strong second-home sector; in 2000, 52 percent of all housing units were for seasonal or recreational use. Only 1 percent of Jewett's total area is devoted to commercial, industrial or community uses. There is limited commercial activity in the Town, consisting mostly of small businesses serving the local population, as well as visitors to the area. Harriman Lodge – a summer camp serving developmentally disabled adults, operated by AHRC New York City – is located near the hamlet of East Jewett.

Using data on building permits, it is estimated that between 2000 and 2009, approximately 68 new housing units were built in Jewett. As shown by the parcels outlined in black in Figure 4-29, most of this recent development is concentrated around the hamlets of Jewett and East Jewett, and in the area north of the Village of Hunter.

Table 4-28: Land uses by type

	In Watershed/Total	
Land Use	*Acres*	*% of Total*
Agricultural	1,048	3%
High-Density Residential	3,261	10%
Low-Density Residential	6,747	21%
Commercial/Other	425	1%
State/Other Protected	7,414	23%
City Protected	2,852	9%
Vacant	9,783	30%
Total	**32,095**	

Figure 4-29: Map of the Town of Jewett showing land use, protected land and proposed hamlet expansion areas



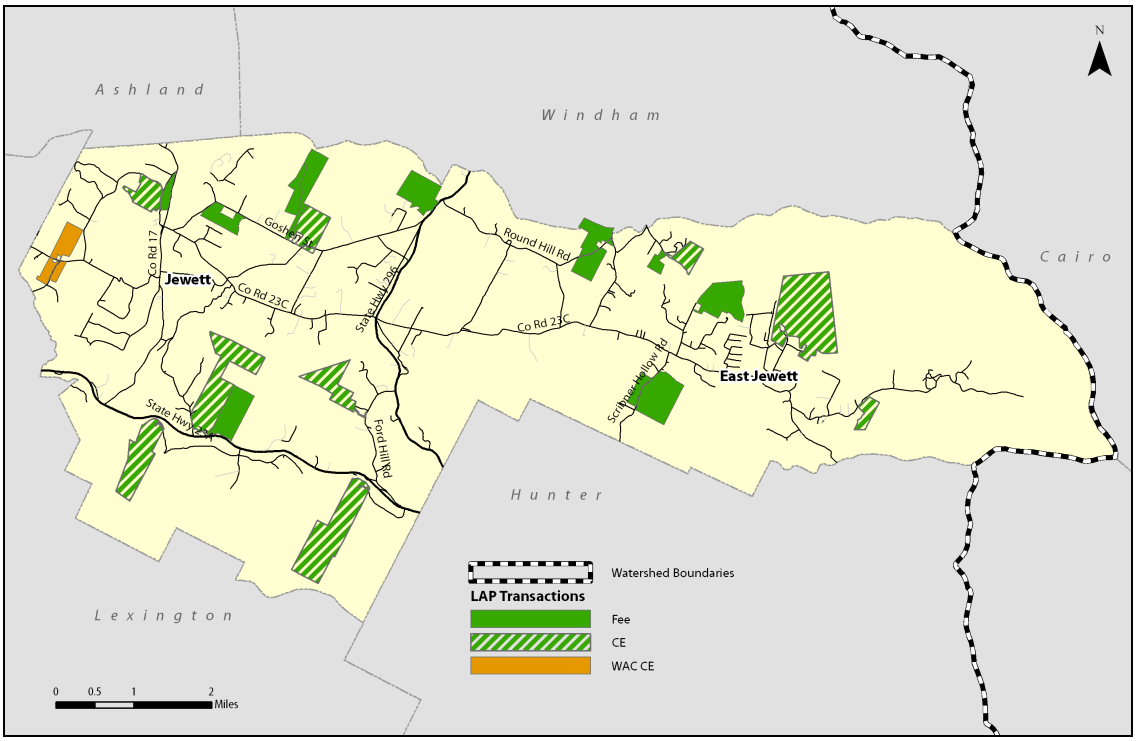
Previous LAP Activity

Through June 2009, NYCDEP had acquired a total of 3,037 acres in Jewett pursuant to the 1997 MOA. As shown in Table 4-29, conservation easements account for about 62 percent of all acquisitions in the Town. Figure 4-30 shows the location of LAP properties in Jewett, by type of acquisition.

Table 4-29: Acquisitions in the Town of Jewett through July 2009

Type of acquisition	Acres
Fee simple	1,062
Conservation easements	1,870
WAC agricultural easements	105
Total acquired	**3,037**

Figure 4-30: Map of LAP properties in Jewett, by type of acquisition



As of October 2009, NYCDEP's purchases of land in fee simple in Jewett included 21 acres that had been actively used for agricultural production prior to acquisition. As of that date, no for agricultural use of NYCDEP-owned property in Jewett had been submitted. As of July 2009, approximately 105 acres of agricultural land in Jewett was covered by WAC easements.

Of the 1,062 acres that NYCDEP acquired in fee simple as of July 2009, 672 acres – 63 percent of the total – had been opened for public recreational use as of October 2009. Opening City-owned land for public recreational use reinforces what is already one of the Town's leading strengths.

Pursuant to the 1997 MOA, Jewett designated hamlet areas totaling 652 acres, covering parts of the hamlets of Jewett and East Jewett, and an area bordering the Village of Hunter. Designation of these areas, within which LAP cannot acquire land in fee simple, has helped ensure that LAP does not conflict with existing uses within the designated areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Greene County is expected to grow by about 3 percent – somewhat slower than the rate of growth in Jewett during the past decade. At the same time, the demand for second homes in the mountaintop towns may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development was estimated based on the rate of development during the past two decades. Assuming that the pace of new development in Jewett (as measured by new residential units) remains the same as it was between 1990 and 2008, it is estimated that the land required to support new development through 2022 will total approximately 818 acres, including 511 acres of land characterized as developable[19] – about 8 percent of the Town's supply of such land as of 2009.

Between 2010 and 2022, the long-term decline in agricultural uses that has occurred in recent decades is expected to continue, although there is some potential for the development of small-scale, specialized agriculture. Some growth in commercial activity is also likely, reflecting the projected increase in population.

In its comprehensive plan, completed in 2007, the Town of Jewett set out a vision for its future, and identified twelve goals to guide the Town toward long-term prosperity. *Goal 1: Rural and small town character is maintained.*

Goal 2: Jewett maintains a clean and healthy natural environment.

Goal 3: Agricultural activities and farmlands are maintained and encouraged.

Goal 3: Roads are safe, free of traffic congestion, and remain an important part of the rural aesthetic character of Jewett.

Goal 4: Telecommunication services and facilities are available for personal and business uses.

Goal 5: Town government is responsive, open, and stable to provide efficient and effective local public services and amenities.

Goal 6: Businesses operate in an unobtrusive manner consistent with the character and needs of Jewett.

Goal 7: Housing opportunities are diverse and available to many income levels and ages.

Goal 8: Outdoor recreational facilities and opportunities are available.

Goal 9: Jewett is a friendly, neighborly community with high community involvement and spirit.

Goal 10: Accommodate our aging population.

Goal 11: Create opportunities for a younger population.

Goal 12: There is an increased convergence of interests between primary and secondary homeowners in Jewett.

[19] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Jewett to date, NYCDEP estimates that through 2022, it could acquire 2,591 additional acres either in fee simple or through conservation easements. Based on the developable percentage of land acquired in fee simple or as conservation easements as of June 2009, it is estimated that these acquisitions will include approximately 1,052 acres of developable land – about 17 percent of the Town's supply of developable vacant and low-density residential land as of 2009. NYCDEP further estimates that WAC could during the same period purchase easements on 203 acres of agricultural land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Jewett would still be left with 4,729 acres of developable vacant and low-density residential land in 2022 – approximately 75 percent of the Town's current stock of such land.

Table 4-30: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		6,292 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	2,591 acres	
Developable vacant or low-density residential land acquired		1,052 acres
Residential Development, 2010-2022		
Projected housing units built	156 units	
Land needed for housing	818 acres	
Developable portion of land needed for housing		511 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		4,729 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		75 percent

The impact of future acquisitions can also be assessed in terms of how they affect the character of the community.

Several of these goals listed in the town comprehensive plan– notably goals 1 through 3 and 8 – are consistent with the purposes of the Land Acquisition Program. Further acquisitions under LAP would support maintenance of Jewett's rural, small-town character, and the quality of its natural environment. The acquisition of WAC easements on 203 acres of additional farmland could help preserve agricultural activity.

Moreover, if the percentage of land acquired in fee simple that is opened to public recreational use is the same between 2010 and 2022 as it has been to date, it can be estimated that NYCDEP would open more than 600 additional acres in Jewett for recreational use.

Finally, under a proposed agreement among NYCDEP, the Town, the regulatory agencies and other stakeholders, Jewett's designated hamlet areas (areas in which LAP would be precluded from acquiring additional land) would be expanded from 652 to 2,667 acres. This would help ensure that land in and near the hamlets remains available for future development.

CONCLUSIONS

While the amount of land to be acquired in Jewett under the Extended LAP could be substantial, it appears that sufficient developable land would be available to support the projected level of residential development through 2022. The projected acquisitions would help preserve the Town's natural environment; and the projected acquisition of WAC easements on 203 acres of farmland could help preserve the Town's remaining farmland. Moreover, the proposed increase in the acreage included in the Town's designated hamlet areas should help ensure that land remains available for development in these areas.

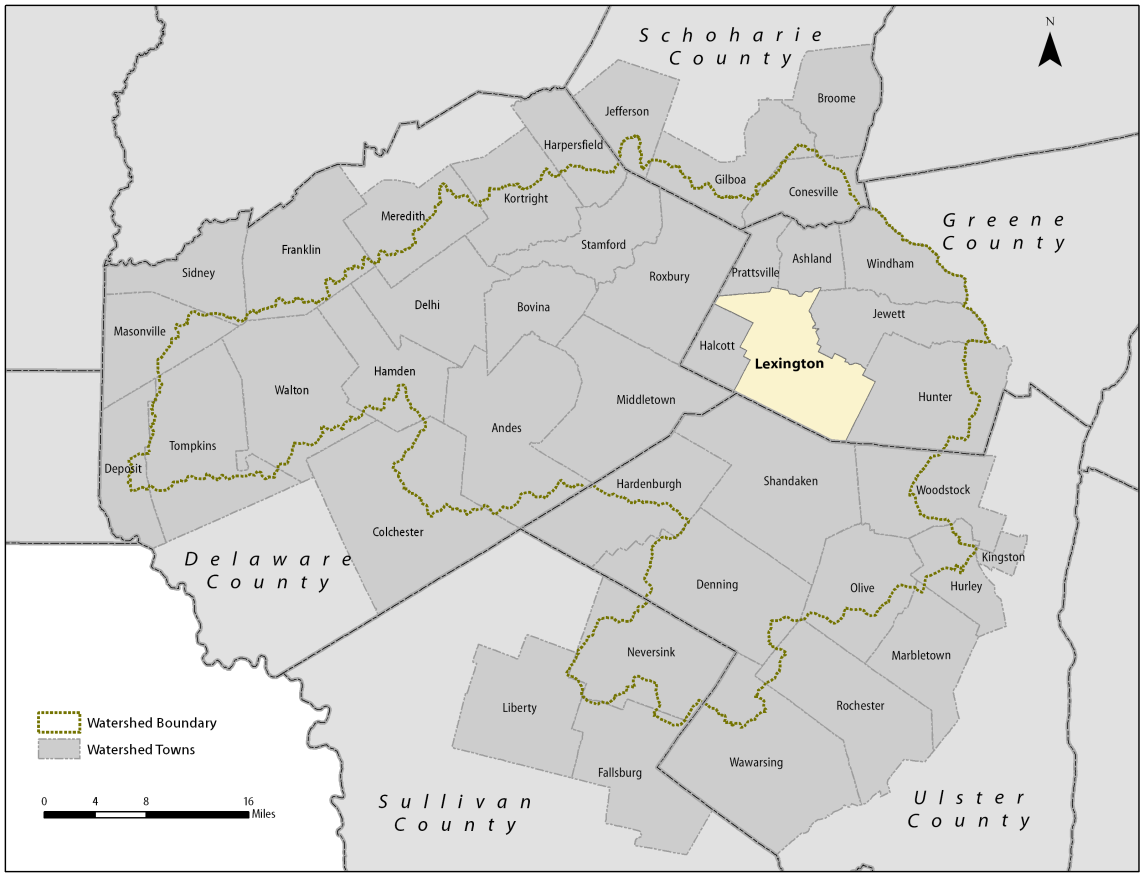
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Jewett.

TOWN OF LEXINGTON

EXISTING CONDITIONS

With an estimated 874 residents in 2008, Lexington is a low-density rural community. It is the second-largest of Greene County's "mountaintop towns" in terms of area (after Hunter) – but at 10.9 persons per square mile, it has the second-lowest population density of these towns (after Halcott). Lexington's overall low density in part reflects the fact that 56 percent of its total area consists of protected land (mostly owned by New York State). Lexington's population is estimated to have grown by about 5.3 percent between 2000 and 2008.

Figure 4-31: Map of Town of Lexington in relation to west-of-Hudson watershed



Town of Lexington – Quick Facts	
Land area:	51,274 acres
Percent of town land area within the watershed:	100%
Percent of land protected	56%
Population (estimated), 2008:	874
Median age (estimated), 2008	47.9
Median household income (estimated), 2008	$36,654

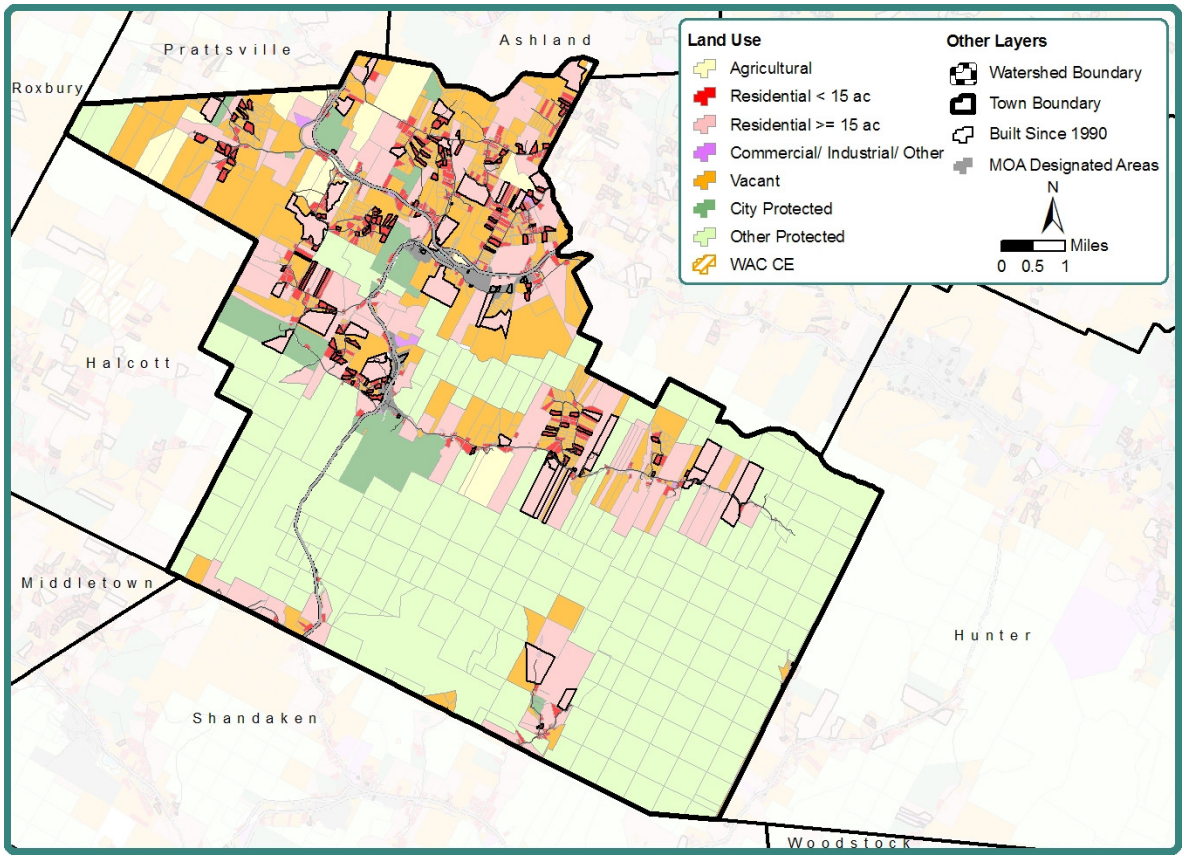
As Table 4-31 and Figure 4-32 show, about three-quarters of the Town's non-protected land consists of either low-density residential or privately-owned vacant land. Commercial and community uses occupy only 113 acres, and consist primarily of small businesses serving the local population, along with some tourist-oriented businesses such as bed-and-breakfasts. Commercial activity and community uses in Lexington are located primarily along Route 42, in the hamlets of Lexington and West Kill. Like most other mountaintop towns, Lexington has a large second-home sector. In 2000, 54 percent of all housing units were for seasonal or recreational use. Lexington currently has a limited amount of land in agricultural use.

Most development since 1990 (as shown by the parcels outlined in black in Figure 4-32), occurred in or near the hamlets of Lexington and West Kill, or in the hamlet of Spruceton in the eastern part of the Town. Using data on building permits, it was estimated that between 2000 and 2009, about 81 new housing units were built in Lexington.

Table 4-31: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural	1,617	3%
High-Density Residential	2,437	5%
Low-Density Residential	9,185	18%
Commercial/Other	113	0%
State/Other Protected	26,696	52%
City Protected	1,940	4%
Vacant	8,738	17%
Total Town Acres	**51,274**	

Figure 4-32: Map of the Town of Lexington showing land use, protected land and proposed hamlet expansion areas



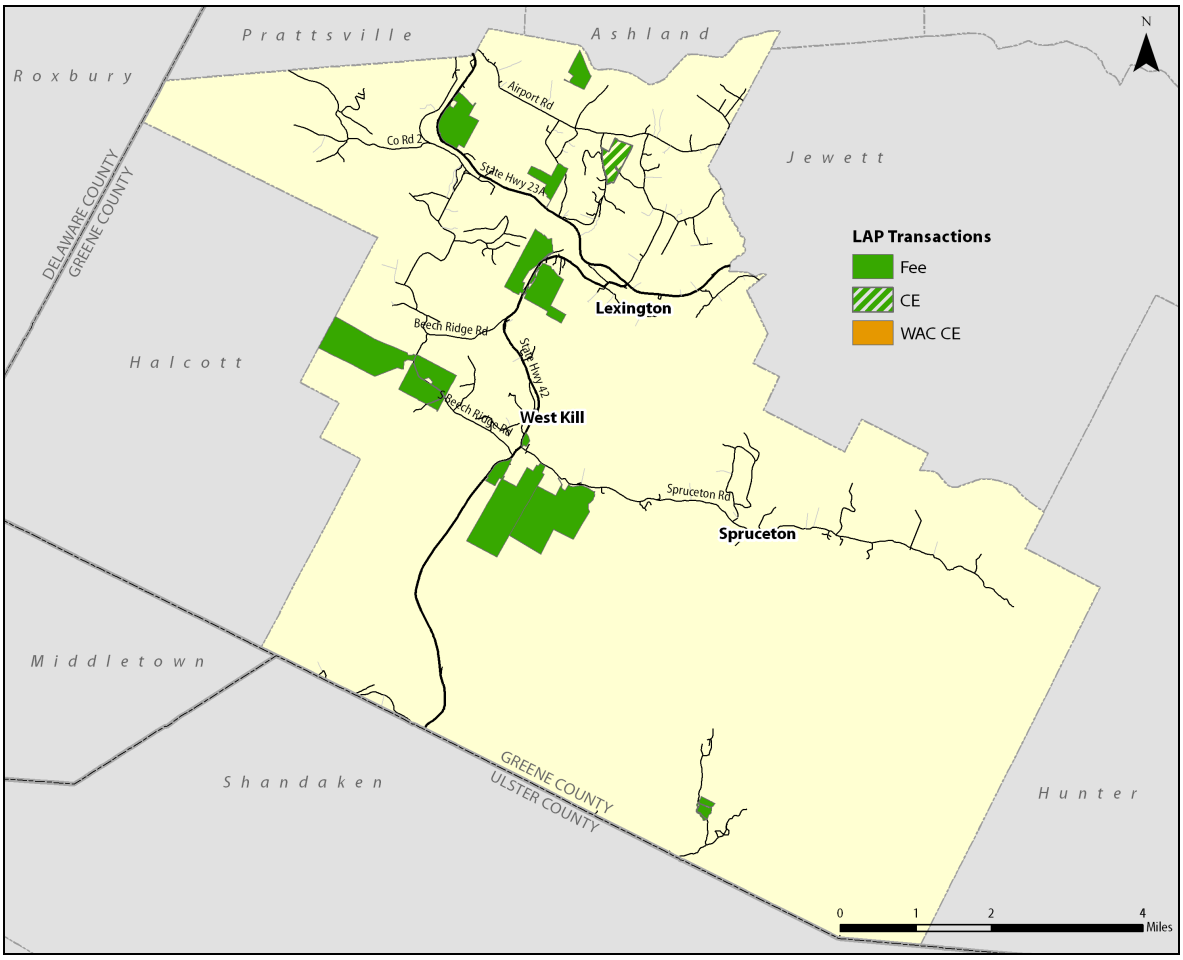
Previous LAP Activity

Through June 2009, NYCDEP had acquired interests in a total of 1,951 acres in Lexington pursuant to the 1997 MOA. As shown in Table 4-32 below, purchases of land in fee simple account for about 94 percent of all acquisitions in the Town. Figure 4-33 shows the location of LAP properties in Lexington, by type of acquisition.

Table 4-32: Acquisitions in the Town of Lexington through July 2009

Type of acquisition	**Acres**
Fee simple	1,866
Conservation easements	85
WAC agricultural easements	0
Total acquired	**1,951**

Figure 4-33: Map of LAP properties in Lexington, by type of acquisition



As of October 2009, NYCDEP had acquired 13 acres in fee simple in Lexington that prior to acquisition had been in active agricultural use. As of October 2009, no application for agricultural use of this land had been submitted to NYCDEP. Through June 2009, WAC had not purchased any agricultural easements in Lexington.

Of the 1,866 acres that NYCDEP acquired in fee simple as of July 2009, 1,715 acres – 92 percent of the total – had been opened for public recreational use as of October 2009. This reinforces what is already one of the Town's strengths –opportunities for outdoor recreation.
Pursuant to the 1997 MOA, the Town designated hamlet areas totaling 362 acres. While NYCDEP has acquired some properties near the designated areas, the hamlet designation ensures that the City's acquisitions do not conflict with commercial and other uses within the designated areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Greene County is expected to grow by about 3 percent – somewhat slower than the rate of growth in Lexington

during the past decade. At the same time, the demand for second homes in the mountaintop towns may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development has nevertheless been estimated based on the rate of development during the past two decades. Assuming that the pace of new development in Lexington (as measured by new residential units) remains the same as it was between 1990 and 2008, it is estimated that about 108 additional units would be built by 2022; and that the land required to support this new development through 2022 would total approximately 682 acres, including 314 acres of developable land[20] – about 9 percent of the Town's supply of such land as of 2009.

Beyond the projected residential development, Lexington is likely to remain a low-density, primarily rural town. Any new commercial development in the Town is likely to focus primarily on small businesses serving the local population or visitors to the mountaintop region.

A Generic EIS prepared for the Town in 2003 sets out the following vision:

> *The Town of Lexington is remarkable for its extraordinary natural beauty and relatively low level of development. The Town is nestled in the rural, mountaintop region of southwest Greene County with a small, stable and closely knit population. The mountainous terrain and distance from cities has allowed it to retain its year-round population while attracting a slowly increasing number of seasonal residents….the Town should remain predominantly rural, with low levels of development designed to serve its residents. Tourist oriented business and condominium development are to be discouraged in order to maintain the sense of community desired by its residents.*
>
> *….The quiet and natural setting of the Town is one of its strongest assets, attracting its permanent and seasonal residents alike…The acquisition of large portions of the Town by the State for the Catskill Park and the ongoing purchases of land by New York City to protect its watershed have assured that the forested mountains will remain undeveloped. The strongest commercial businesses should be built around these resources, including hunting, outdoor recreation and related services. In the next 10 to 20 years, the Town should create opportunities for new businesses and jobs in the existing hamlets, and at the same time strive to maintain low-density residential development in the outlying areas….* [21]

[20] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

[21] Town of Lexington, Draft Generic EIS, August 2003, pp. 2-3.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Because Lexington is in an "area of high focus," as defined in NYCDEP's Long-Term Land Acquisition Plan – primarily because Schoharie Creek runs through the town – NYCDEP expects that the amount of land to be acquired in the Town will increase substantially during the next twelve years. NYCDEP estimates that through 2022, it could acquire 3,771 additional acres in the Town either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions could include approximately 871 acres of developable land – about 25 percent of the Town's supply of developable vacant and low-density residential land as of 2009. NYCDEP does not currently expect that any agricultural easements would be acquired in Lexington through 2022.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Lexington would still be left with 2,290 acres of developable vacant and low-density residential land in 2022 – approximately 66 percent of the Town's current stock of such land.

Table 4-33: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		3,475 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	3,771 acres	
Developable vacant or low-density residential land acquired		871 acres
Residential Development, 2010-2022		
Projected housing units built	108 units	
Land needed for housing	682 acres	
Developable portion of land needed for housing		314 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		2,290 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		66 percent

As noted in Chapter 3, this estimate of LAP's impact on the Town's supply of developable land needs also to take into account that as of 2009, Lexington's supply of such land is already limited. As defined here, developable land represents about 6.8 percent of the Town's total land area; and by 2022 this percentage would decline to 4.5 percent.

While the large percentage of LAP purchases may imply some potential for conflict between further LAP acquisitions and future development, it is important to note that the 2009 and 2022 estimates for the supply of developable land presented in Table 4-33 are conservative in several respects. They do not include agricultural land, or any undeveloped portions of residential parcels of less than 15 acres. Overall, the supply of developable land in Lexington appears to be sufficient to accommodate both additional LAP acquisitions and the projected level of new development through 2022.

The potential impact of additional acquisitions on the character of the community can be assessed relative to the vision the Town has defined for itself.

As a result of the projected level of acquisitions, the percentage of Lexington's total area that is protected would rise to 63 percent. This will help preserve the natural features that are among the Town's greatest assets, and the rural, low-density character cited in the Generic EIS, while leaving room for some additional low-density residential development. If the percentage of land acquired in fee simple that is opened for public recreational use remains the same as it has been to date, more than 3,000 acres of additional LAP-acquired land could be opened for recreational use by 2022.

Under a proposed agreement among the Town, NYCDEP, the regulatory agencies and other stakeholders, Lexington's designated hamlet areas would be expanded to cover a total of 737 acres – more than doubling the current acreage in designated areas. This expansion would help ensure that land remains available to accommodate limited development in the Town's major corridors, consistent with the vision described above.

CONCLUSIONS

The amount of land to be acquired in Lexington under the Extended LAP could be substantial – and would represent a substantial percentage of the Town's supply of developable land. Nevertheless, given the Town's very low density, there is likely to be sufficient developable land available to support the projected level of residential development through 2022 and many years beyond. Expansion of the Town's designated hamlet areas would also help to accommodate some commercial development, consistent with the Town's stated goal of developing business and employment opportunities in these areas.

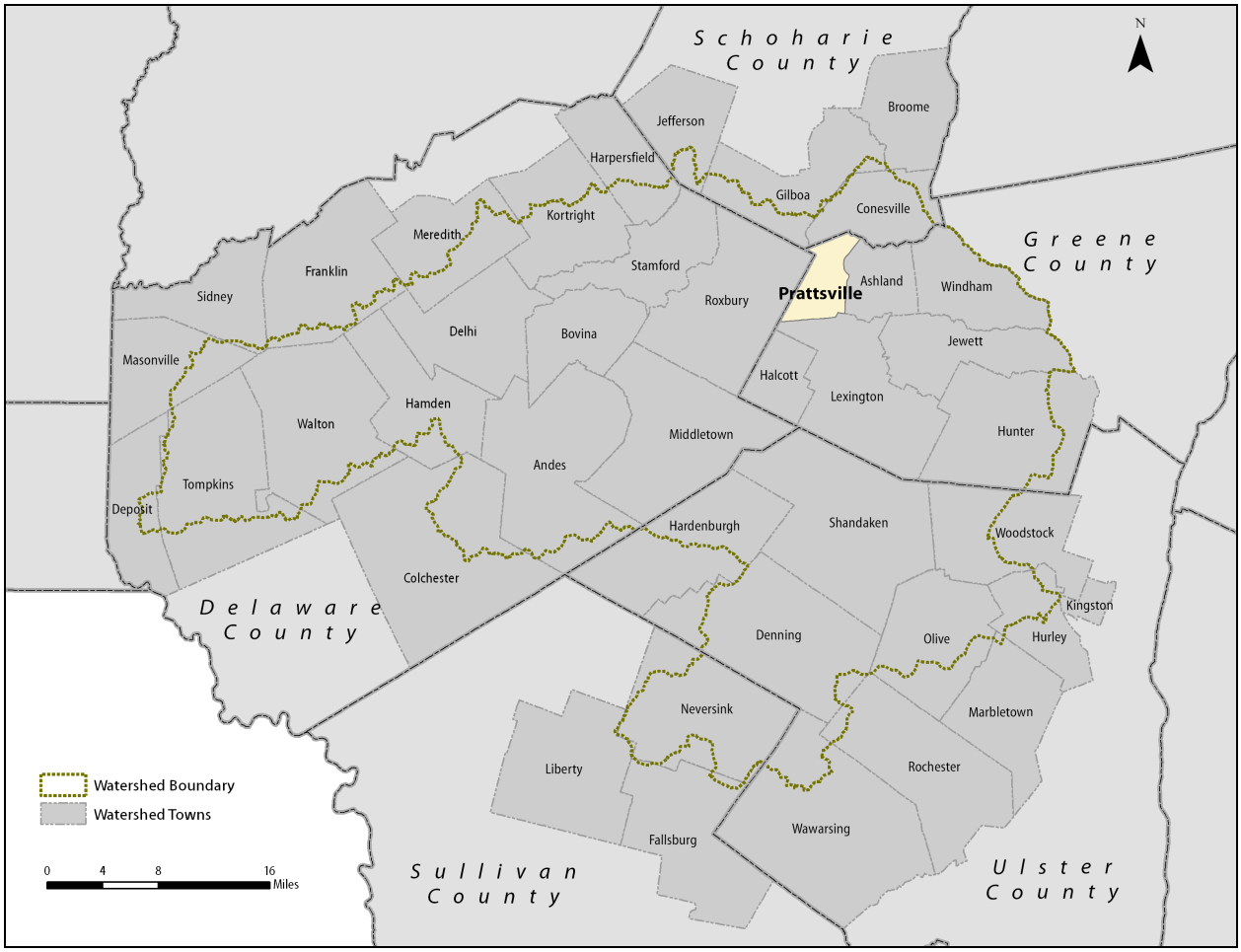
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Lexington.

TOWN OF PRATTSVILLE

EXISTING CONDITIONS

The Town of Prattsville is one of Greene County's "mountaintop towns." Prattsville's resident population in 2008 was estimated to be 712 – an increase of 7.1 percent since 2000. Prattsville is primarily rural in character, with a resident population density of approximately 33 per square mile.

Figure 4-34: Map of Town of Prattsville in relation to west-of-Hudson watershed



Town of Prattsville – Quick Facts	
Land area:	13,851 acres
Percent of town land area within the watershed:	100%
Percent of land protected	23%
Population (estimated), 2008:	712
Median age (estimated), 2008	37
Median household income (estimated), 2008	$37,460

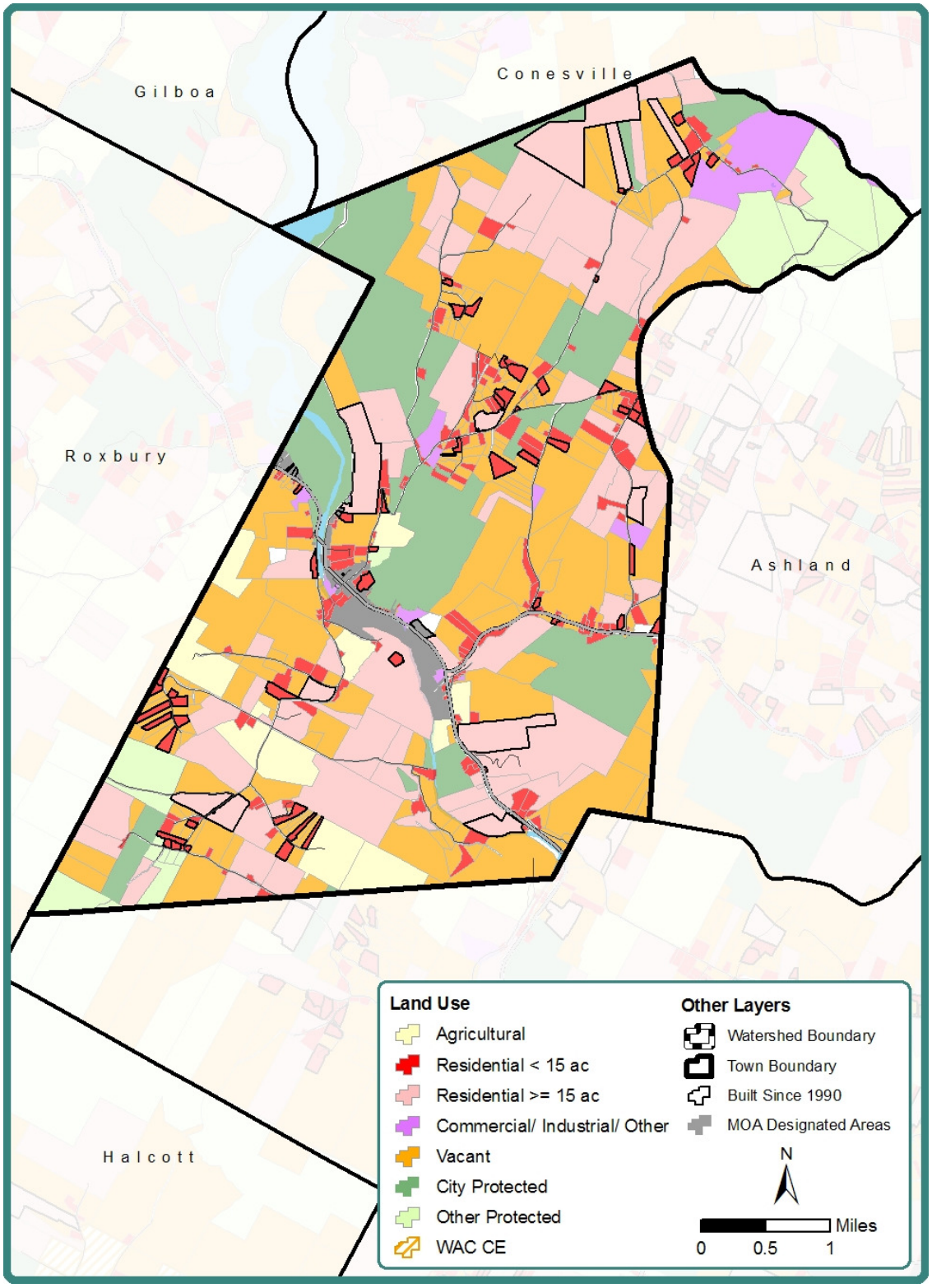
As shown in Table 4-34 and Figure 4-35, 60 percent of Prattsville's total area consists of either low-density residential (28 percent) or privately-owned vacant land (32 percent). The Town has a substantial seasonal or part-time population. In 2000, according to the Census Bureau, 29 percent of Prattsville's 406 housing units were for seasonal or recreational use. Commercial activity in the Town is generally limited to retail and service businesses that serve the local population, with some concentrated along Route 23A in the hamlet of Prattsville. While about 5 percent of Prattsville's land area (about 701 acres) is coded as being agricultural, active farming within the Town appears to be limited. According to the website of the Pratt Museum – a local institution that focuses on the community's history – there was only one active farm in the Town in the fall of 2009.

Recent development activity since 1990 (as shown in black highlighted parcels in Figure 4-35) has generally been small in size and scattered throughout the town. Using data from the New York State Office of Real Property Services, it is estimated that between 2000 and 2009, 43 new housing units were built in Prattsville.

Table 4-34: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural	701	5%
High-Density Residential	955	7%
Low-Density Residential	3,905	28%
Commercial/Other	398	3%
State/Other Protected	914	7%
City Protected	2,338	16%
Vacant	4,395	32%
Total Town Acres	**13,851**	

Figure 4-35: Map of the Town of Prattsville, showing land use and protected land



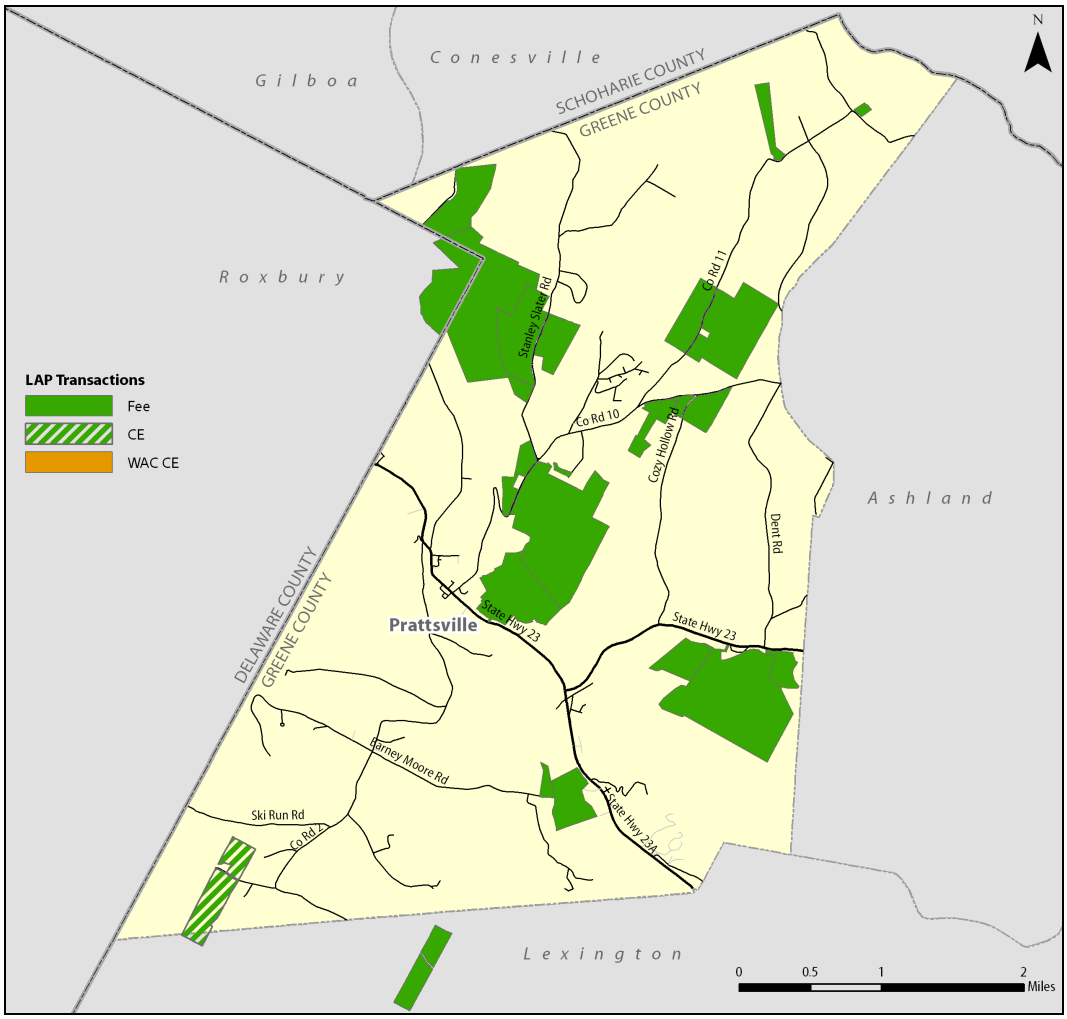
Previous LAP Activity

Through July 2009, NYCDEP had acquired a total of 1,924 acres in Prattsville under LAP – about 14 percent of the Town's land area. As shown in Table 4-35, nearly 90 percent the land was acquired in fee simple. Figure 4-36 shows the location of LAP properties in Prattsville, by type of acquisition.

Table 4-35: Acquisitions in the Town of Prattsville through July 2009

Type of acquisition	Acres
Fee simple	1,724
Conservation easements	200
WAC agricultural easements	0
Total acquired	**1,924**

Figure 4-36: Map of LAP properties in Prattsville, by type of acquisition



As of October 2009, NYCDEP had acquired approximately 146 acres in fee simple in Prattsville that had previously been used for agricultural production. In 2009, NYCDEP, issued a permit to a farm operator for use of 67 acres, which will be used for production of hay. As of October 2009, no agricultural easements have been acquired in Prattsville.

As of October 2009, a total of 556 acres acquired by NYCDEP in fee simple in Prattsville had been opened by NYCDEP for public recreational use – about 32 percent of the land that NYCDEP has acquired in fee simple in the Town since the beginning of the Land Acquisition Program.

Pursuant to the 1997 MOA, the Town designated a 207-acre hamlet area in the hamlet of Prattsville, along Route 23, within which NYCDEP cannot acquire land. This designation ensures that acquisitions by NYCDEP will not conflict with commercial and community development within the designated area.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Greene County is expected to grow by about 3 percent – somewhat slower than the rate of growth in Prattsville during the past decade. At the same time, the demand for second homes in the mountaintop towns may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. If we assume that the pace of new development in Prattsville (as measured by new residential units) remains the same as it was between 2000 and 2009, we can estimate that the land required to support new development through 2022 will total approximately 247 acres – including 100 acres of land characterized as developable. [22]

As noted above, commercial activity the Town is currently limited; and any growth in this sector is likely to be limited as well.

A parks master plan prepared for Prattsville in 2008 notes that "While agriculture and manufacturing have generally declined, tourism, recreation and the arts have remained important components of the regional economy."

> *Although all lands in the New York City watershed are subject to an additional layer of regulatory oversight, the undeveloped character of the watershed is desirable for low-*

[22] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

impact residential development. Second-home owners from the New York City metropolitan area contribute to the population and economy of the Town and the surrounding region.[23]

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Prattsville to date, and the fact that portions of Prattsville in the Schoharie Creek and Johnson Hollow sub-basins are Areas of High Focus under the Extended LAP, NYCDEP estimates that through 2022, it could acquire 2,195 additional acres either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions will include approximately 820 acres of developable land.

NYCDEP further estimates that WAC could during the same period purchase easements on 151 acres.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Prattsville would still be left with approximately 67 percent of the Town's current stock of developable vacant and low-density residential land.

Table 4-36: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		2,773 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	2,195 acres	
Developable vacant or low-density residential land acquired		820 acres
Residential Development, 2010-2022		
Projected housing units built	47 units	
Land needed for housing	247 acres	
Developable portion of land needed for housing		100 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		1,853 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		67 percent

The impact of future acquisitions can also be assessed in terms of how they affect the character of the community. Further acquisitions by NYCDEP, whether in fee simple or through conservation easements, could help maintain the low-density, rural character and the natural assets that the Town values. Moreover, if the percentage of newly-acquired land that is opened for public recreational use remains consistent with what it has been to date in Prattsville, Town residents and visitors could between 2010 and 2022 gain access to more than 400 acres of additional City-owned land.

If the projected purchase of WAC agricultural easements on 151 acres of farmland occurs– which would be the first use of this program in the Town – it could potentially help maintain the limited agricultural activity that remains in Prattsville.

[23] Town of Prattsville, Draft Parks Master Plan, 2008

As noted above, pursuant to the 1997 MOA, the Town had designated a 207-acre hamlet area, within which NYCDEP cannot acquire land in fee simple. This will help maintain the current character in this area assuming the Town continues to preclude DEP from acquiring land within it. Prattsville is one of fifteen watershed towns that have not sought to expand designated hamlet areas.

CONCLUSIONS

The number of acres that could be acquired in Prattsville under the Extended LAP is substantial – especially in relation to the total size of the Town and its supply of developable land. Nevertheless, given the Town's low density and relatively slow growth, there appears to be little potential for conflict between the Extended LAP and the need for land to accommodate new development.

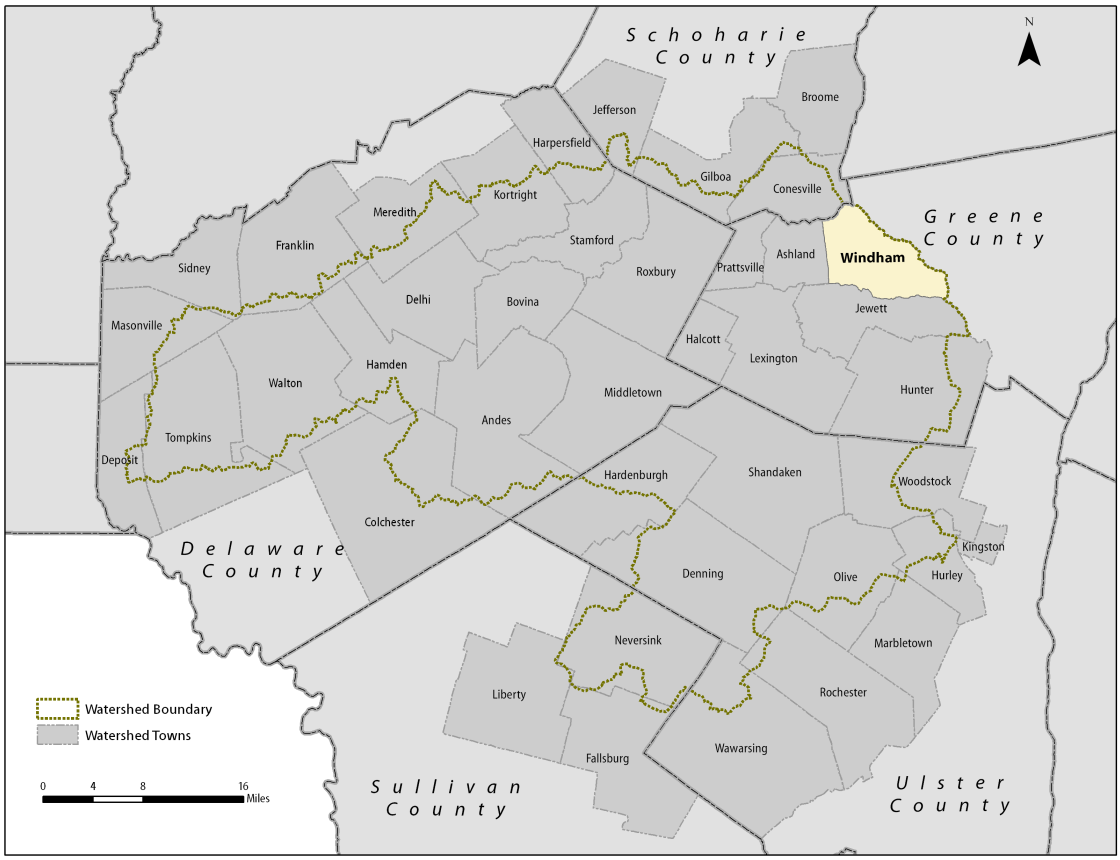
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Prattsville.

TOWN OF WINDHAM

EXISTING CONDITIONS

The Town of Windham is one of Greene County's "mountaintop towns." Windham's resident population in 2008 was estimated to be 1,755 – an increase of 5.7 percent since 2000. Windham is primarily rural in character, with a majority of its full-time residents concentrated in and around the hamlets of Windham, Hensonville and Maplecrest.

Figure 4-37: Map of Town of Windham in relation to west-of-Hudson watershed



Town of Windham – Quick Facts	
Land area:	29,009 acres
Percent of town land area within the watershed:	100%
Percent of land protected	31%
Population (estimated), 2008:	1,755
Median age (estimated), 2008	46
Median household income (estimated), 2008	$44,952

Windham has in recent years experienced more rapid growth and subdivision activity than most other towns in the West-of-Hudson watershed. Ski Windham, a large downhill ski resort adjacent to the hamlet of Windham that together with nearby Hunter Mountain attracts 600,000 visitors each year, has been among the leading drivers of this growth.

In addition to its full-time population, the Town has a relatively large seasonal or part-time population; in 2000, according to the Census Bureau, 56 percent of Windham's 2,002 housing units were for seasonal or recreational use – the highest percentage among all west-of-Hudson watershed towns. Second-home owners are drawn to the Town in part by Ski Windham and other outdoor recreational opportunities.

Most of the development in Windham since 1990 (as shown by the parcels outlined in black in Figure 4-38) has occurred on fairly small parcels in the southern, central and western parts of the town. Based on building permit data, it is estimated that between 2000 and 2008, 416 new housing units were built in Windham. The pace of development in Windham (as measured by either population or growth in the number of housing units) was significantly faster between 2000 and 2008 than it had been in the preceding decade. Land prices in Windham are among the highest in the West-of-Hudson watershed region – and as elsewhere in the region, prices rose sharply during the 2000-2008 real estate boom. The Town's popularity as a second-home destination appears to be a major contributor to high land costs. A Generic EIS prepared for the Town in 2009 noted that "slope-side development" at Windham Mountain "has greatly skewed local real estate prices."[24]

As Table 4-37 and Figure 4-38 shows, commercial and industrial uses make up only about 2.5 percent of the town area. Commercial activity is primarily clustered in and around the hamlets of Windham and Hensonville and along Route 296. The heart of Windham's economy – along with that of most of Greene County's other mountaintop towns – is the tourism industry, which brings skiers to Ski Windham in the winter and hikers, mountain bikers, anglers and hunters to the Town during the rest of the year. Agriculture has a limited role in Windham, accounting for only 2.4 percent of the Town's land area.

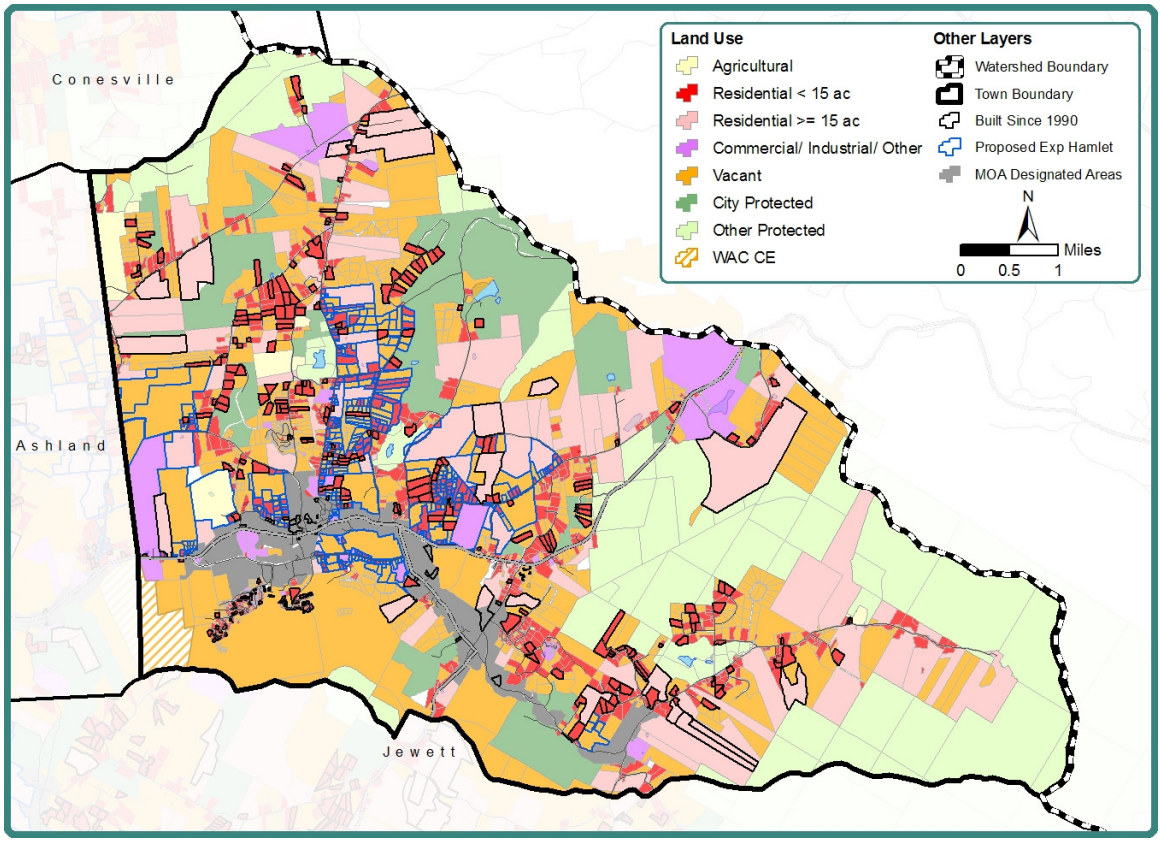
Table 4-37: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural[25]	599	2%
High-Density Residential	3,282	11%
Low-Density Residential	5,477	19%
Commercial/Other	1,319	5%
State/Other Protected	6,229	21%
City Protected	2,725	9%
Vacant	8,316	29%
Total Town Acres	**29,009**	

[24] Town of Windham Draft Generic Environmental Impact Statement on the Development Capacity of the Town of Windham (May 2009), p. 9.

[25] The agricultural category includes WAC conservation easements.

Figure 4-38: Map of Windham, showing land use, protected land and proposed hamlet expansion areas



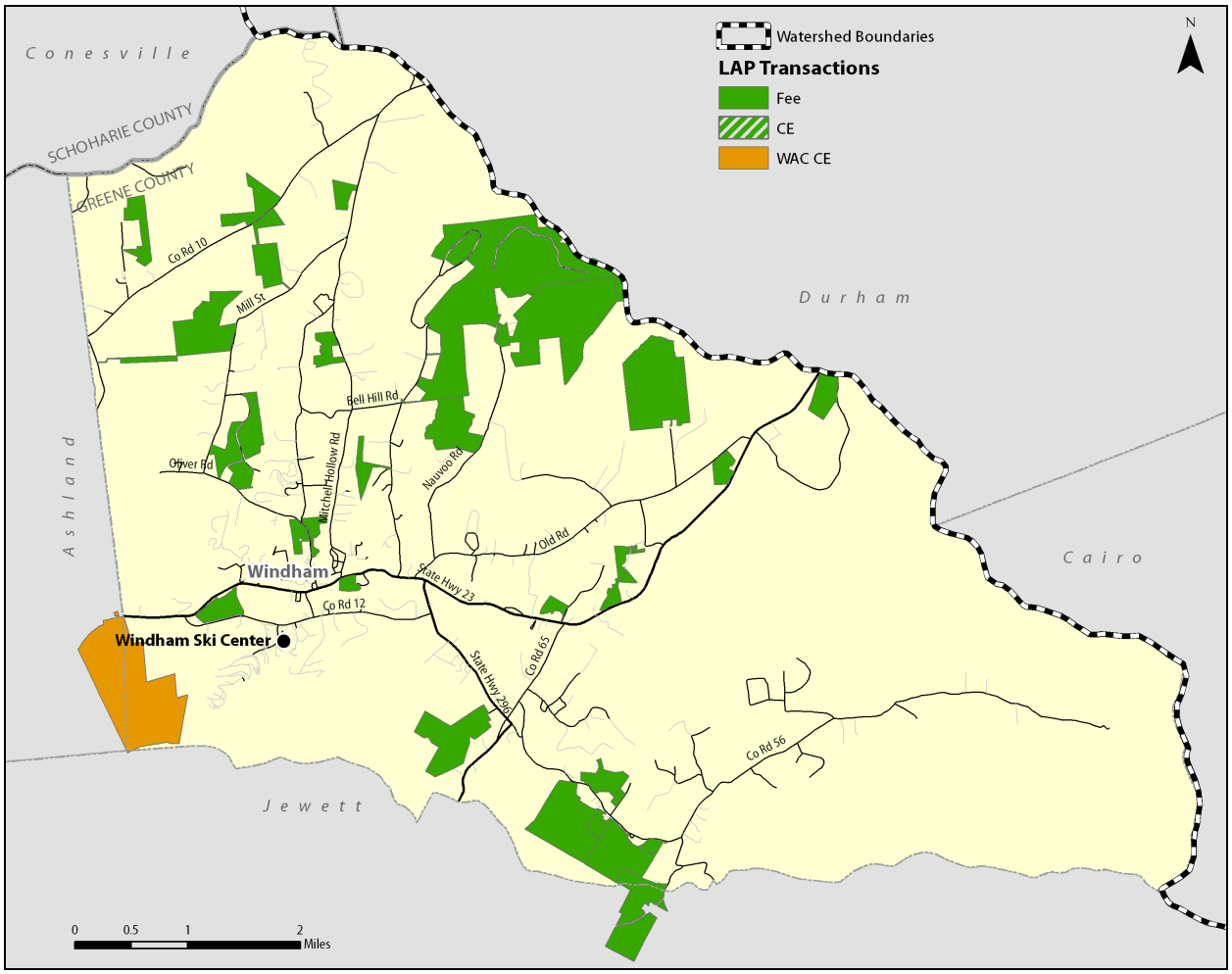
Previous LAP Activity

Through July 2009, NYCDEP had acquired a total of 2,889 acres in Windham pursuant to the 1997 MOA – just under 10 percent of the Town's total land area. As shown in Table 4-38 below, purchases of land in fee simple account for 92 percent of the total acreage acquired under LAP. Figure 4-39 shows the location of LAP properties in Windham, by type of acquisition.

Table 4-38: Acquisitions in the Town of Windham through July 2009

Type of acquisition	Acres
Fee simple	2,662
Conservation easements	0
WAC agricultural easements	226
Total acquired	**2,889**

Figure 4-39: Map of LAP properties in Windham, by type of acquisition



Through June 2009, WAC had acquired easements on 226 acres of agricultural land in Windham, covering about 36 percent of the Town's farmland. As of October 2009, NYCDEP had also acquired in fee simple approximately 29 acres of land previously used for agricultural production. In 2006, NYCDEP issued a permit to a farm operator for use of 27 acres for agricultural production. This property is used primarily for the production of hay and alfalfa.

As of October 2009, a total of 1,261 acres acquired by NYCDEP in fee simple in Windham had been opened by NYCDEP for recreational use – more than 47 percent of the land that NYCDEP has acquired in fee simple in the Town since the beginning of the Land Acquisition Program. Opening additional land for public recreational use adds to what is already one of the Town's greatest assets – resources for outdoor recreation.

As shown in Figure 4-39, most of the land acquired in Windham by the Land Acquisition Program through July 2009 is located in outlying areas of the Town, not immediately adjacent to the Town's main hamlet areas, and the ski center. Pursuant to the 1997 MOA, Windham had designated hamlet areas totaling 1,148 acres and the Town Board voted in 2006 to make these

hamlet areas off-limits for acquisition in fee simple by NYCDEP. Accordingly, NYCDEP has not acquired any land in fee simple Windham's 1997 hamlet areas since 2006.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Greene County is expected to grow by about 3 percent – significantly slower than the rate of growth in Windham during the past decade. At the same time, the demand for second homes in the mountaintop towns may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development has nevertheless been based on the rate of development during the past two decades. Assuming the pace of new development in Windham (as measured by new residential units) remains the same as it was between 1990 and 2008, we can estimate that the land required to support new development through 2022 would total approximately 888 acres – including 540 acres of land characterized as developable.[26] [27]

Several new development projects are in various stages of planning in Windham, including the Windham Mountain Sporting Club, a multi-phase development that would include 169 residential units on 465 acres, and Stonewall Glen, a recently approved project including 48 townhouse units, a clubhouse and some commercial space. Both are located near Windham Mountain. As noted in Chapter 3, as of March 2010, NYCDEP either had approved or was in various stages of the review process for developments in Windham totaling more than 600 units.

Even with a slower economy and changing demographic trends, Windham could thus experience greater growth between 2010 and 2022 than the great majority of west-of-Hudson watershed towns.

The 2009 Generic EIS cited above sets out a vision for the town:

> *The Town desires to create a sustainable community primarily through the creation of a diverse economy. The key to a sustainable community is a stable employment base that provides a livable wage….To realize these goals, the Town will expand its tourism industry to become a full four-season destination community. The present tourism based*

[26] For Windham, the calculation of land needed for housing unit development was based on a relatively conservative assumption that future development would consume lots somewhat larger than has been typical of recent development. Based on ORPS data, DEP calculated a median lot size of 0.8 acres per unit for housing units built since 2000. Applying a more conservative 2.0 acres per unit to the housing units projection, we project 888 acres being needed to support residential development.

[27] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

local economy is too reliant on the ski industry and related businesses serving Windham Mountain….More diverse recreation and tourism are envisioned.[28]

In line with this vision, the Generic EIS identifies certain goals and values as being critical to the Town's future. These include:

a. *Maintaining and increasing diversity in recreation, education, and appreciation of cultural, historic and natural resources.*

b. *Increased and higher quality of employment opportunities.*

c. *Sustainable and increased entrepreneurial, commercial and industrial opportunities.*

d. *Diversified sources of consumer services and retail products, especially in areas totally or substantially lacking.*

e. *Enhanced housing stock, with a distributed balance of value enabling people with a variety of incomes to reside in the towns.*

f. *Vehicular and traffic patterns and controls that function smoothly and do not interfere with the enjoyment of the Town by residents and visitors.*29

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Windham to date, NYCDEP estimates that through 2022, it could acquire 2,127 additional acres either in fee simple or through conservation easements. Based on the percentage of the Town's vacant and low-density residential land that is developable as of 2009, it is estimated that this total could include approximately 880 acres of developable land. NYCDEP further estimates that WAC could during the same period purchase easements on 80 acres of agricultural land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Windham would still be left with approximately 73 percent of the Town's current stock of developable vacant and low-density residential land.

[28] Town of Windham, op cit, p. 2.

[29] Ibid. p. 14.

Table 4-39: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		5,272 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	2,127 acres	
Developable vacant or low-density residential land acquired		880 acres
Residential Development, 2010-2022		
Projected housing units built	444 units	
Land needed for housing	888 acres	
Developable portion of land needed for housing		540 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		3,853 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		73 percent

Given the pace of development in Windham, projected LAP acquisitions through 2022 might be expected to have some impact on the availability of land for development, and possibly on the price of developable land. Several factors, however, are likely to reduce significantly any potential impacts:

- The Town has proposed an expansion of Windham's designated hamlet areas by 2,794 acres, to a total of 3,942 acres, which NYCDEP has determined is reasonable. This expansion could help ensure that areas near the existing hamlets that are particularly suited to new development would not be acquired by NYCDEP.

- Our estimate of the supply of developable land remaining in Windham is probably conservative. It excludes, for example, some smaller parcels in and around the hamlets that are already available for residential development, and it excludes land that might be made available by subdivision of residential parcels of less than 15 acres. It also excludes agricultural land – in effect assuming that no land currently used for agricultural purposes will be developed between now and 2022.

- Moreover, our projection of land required for new development through 2022 assumes an average of 2.0 acres per unit – a higher average than recent experience would suggest.

The potential impact of future acquisitions on the character of Windham can also be assessed relative to the future the Town has envisioned for itself. While additional acquisitions under LAP will not directly contribute to achievement of the Town's goals regarding diversification, expanded economic opportunity and affordable housing, such acquisitions are generally compatible with the Town's goals. They would help the Town maintain its rural character, protect its natural beauty and preserve some of its remaining farmland. Moreover, by opening up additional land for recreational uses other than skiing, LAP could in the future contribute in a modest way to the process of diversifying Windham's tourist business.

Perhaps most notably, the proposed expansion of designated hamlet areas would help ensure that the further acquisitions do not conflict with the types of development the Town is seeking to

promote in and around the hamlets. The Extended Land Acquisition Program thus appears to be consistent with many of the Town's goals.

CONCLUSIONS

The pace of development in Windham in recent years suggests that this is one of several towns where there may be some potential for conflict between projected acquisitions under the Extended LAP and projected future development. For the reasons noted above, however, the rate of new development in Windham between 2010 and 2022 may be slower than it has been during the past decade, and the amount of land required to support such development may likewise be less. Moreover, the proposed expansion of the Town's designated hamlet areas would help ensure that new acquisitions under the Extended LAP take place primarily in outlying areas, and that Extended LAP would not acquire land that can support new development in and around the existing hamlets.

Beyond the availability of land for new development, the Extended LAP is not expected to affect the overall level of economic activity in the Town – and would help preserve the high-quality natural environment on which much of its economy depends.

On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Windham.

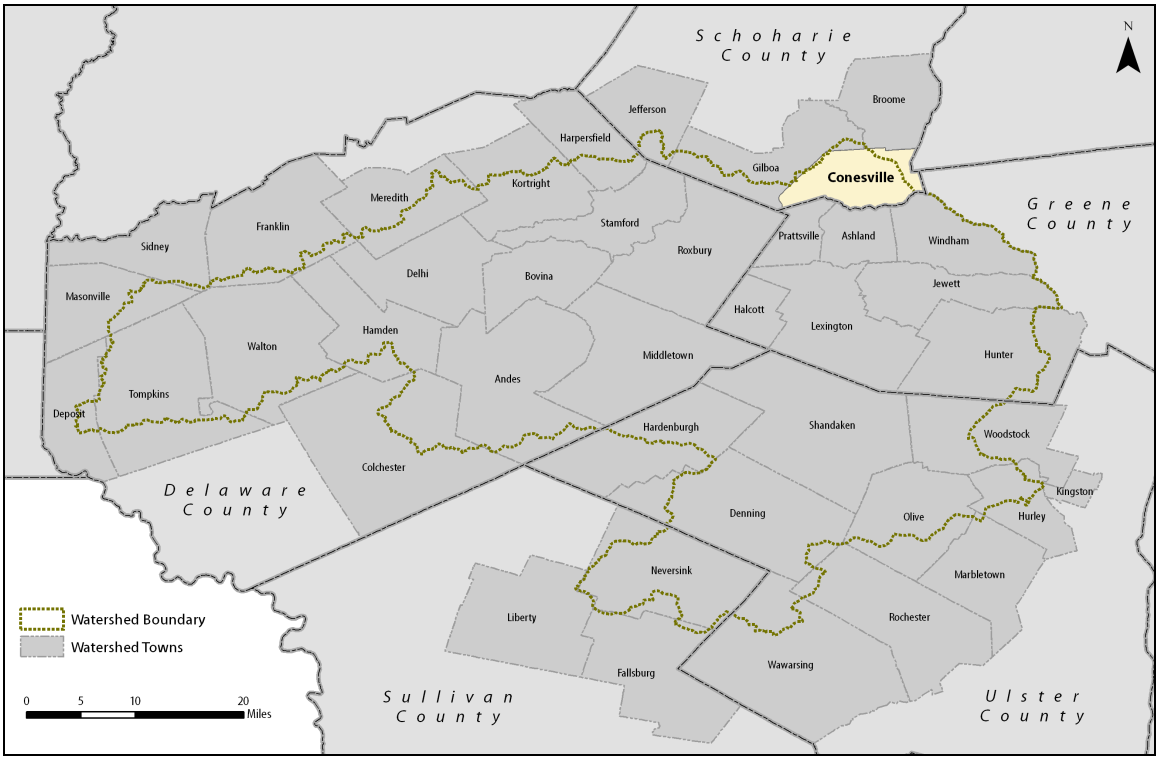
SCHOHARIE COUNTY

TOWN OF CONESVILLE

EXISTING CONDITIONS

The Town of Conesville is located in the southeastern corner of Schoharie County. The Town's estimated population in 2008 was 714. Population has grown by 4 percent since 1990, with all of the increase estimated to have occurred between 1990 and 2000. Conesville includes three hamlet areas – Manor Kill, Conesville and West Conesville. It has a diverse agricultural base, but relatively little commercial activity.

Figure 4-40: Map of Conesville in relation to the watershed



Town of Conesville – Quick Facts	
Land area:	25,492 acres
Percent of town land area within the watershed:	85%
Percent of land protected	20%
Population (estimated), 2008:	714
Median age (estimated), 2008	45
Median household income (estimated), 2008	$41,384

As Table 4-40 and Figure 4-41 show, low-density residential and privately-owned vacant land together account for more than half the Town's total area. According to the Town's 2007 comprehensive plan, Conesville's agricultural sector includes several substantial farms, as well

as several smaller niche enterprises. Commercial activity in the Town is limited primarily to businesses serving the local population – both residents and second-home owners.

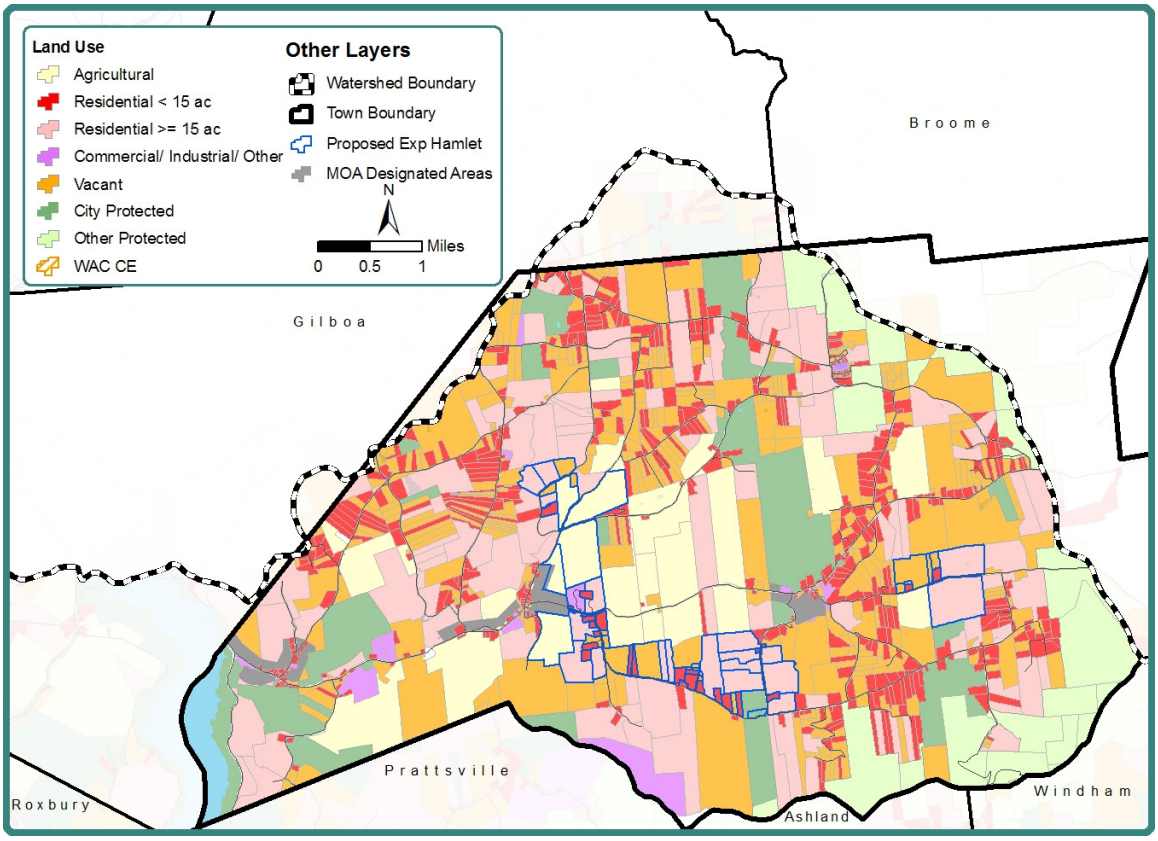
With access to the New York City metropolitan area, as well as the Greater Albany area, Conesville has a large second-home population. About 54 percent of all housing units in 2000 were for seasonal or recreational use. Growth in this sector was especially strong in the 1990s, when – despite a modest increase in resident population – the number of housing units in the Town grew by 41 percent.

Based on U.S. Census data and estimates by DemogaphicsNow, it is estimated that between 2000 and 2009, there was no net increase in Conesville in land used for residential development.

Table 4-40: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural	2,653	12%	115	3%	2,768	11%
High-Density Residential	2,692	12%	72	2%	2,764	11%
Low-Density Residential	5,363	25%	1,105	28%	6,468	25%
Commercial/Other	391	2%	15	0%	406	2%
State/Other Protected	2,407	11%	1,385	35%	3,791	15%
City Protected	2,084	10%	N/A	N/A	2,084	8%
Vacant	5,468	25%	1,059	27%	6,527	26%
Total	**21,590**		**3,902**		**25,492**	

Figure 4-41: Town of Conesville, land use, protected land and proposed expansion area



Previous LAP Activity

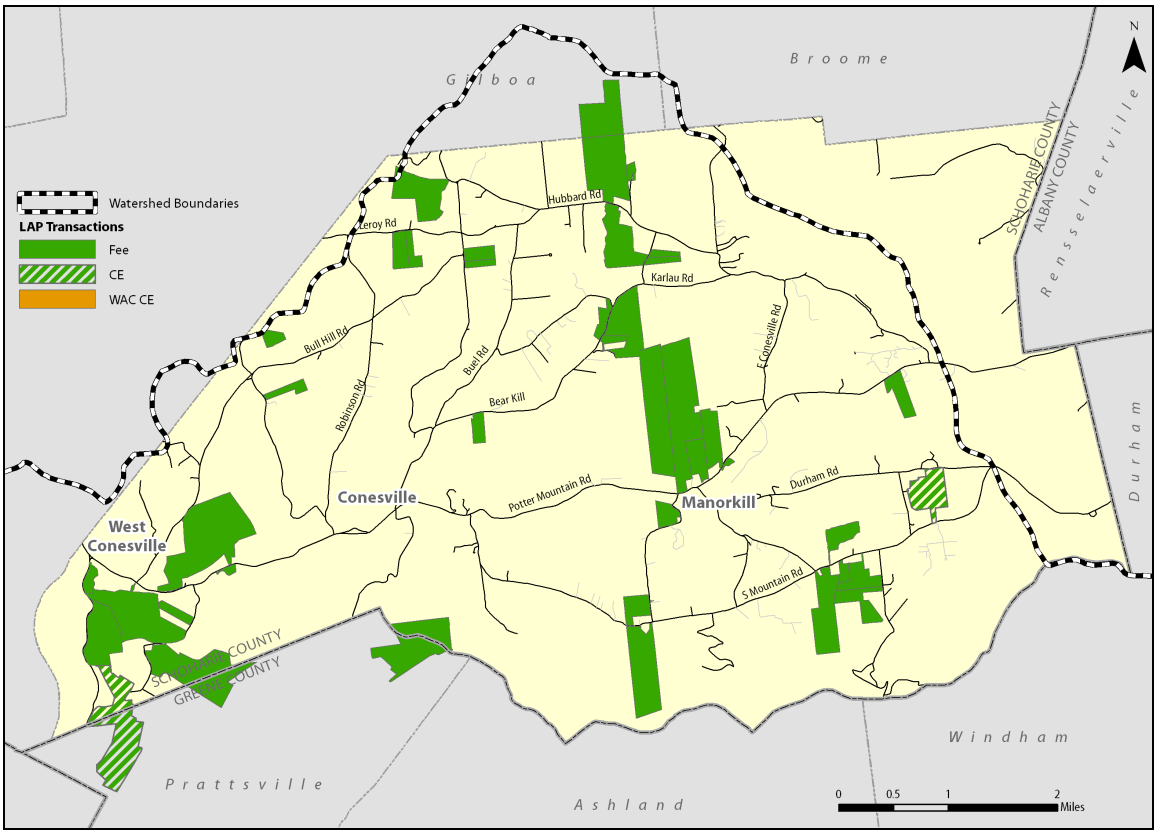
Through June 2009, NYCDEP had acquired 2,274 acres in Conesville under the Land Acquisition Program – about 8.9 percent of the Town's total land area. As shown below, purchases of land in fee simple accounted for 94 percent of the total. Figure 4-42 shows the location of LAP properties in Conesville, by type of acquisition.

.

Table 4-41: Acquisitions in the Town of Conesville through July 2009

Type of acquisition	Acres
Fee simple	2,148
Conservation easements	127
WAC agricultural easements	0
Total acquired	**2,274**

Figure 4-42: Map of LAP properties in Conesville, by type of acquisition



As of July 2009, none of Conesville's agricultural land was covered by WAC easements. As part of its acquisition of several larger parcels in fee simple, NYCDEP has to date acquired about 70 acres of land that had previously been in active agricultural use. One agreement with a landowner for use of DEP land for maple tapping is in place.

As of the fall of 2009, NYCDEP had opened a total of 1,236 acres of land acquired under LAP for a variety of recreational uses – about 60 percent of the land that LAP has acquired in fee simple in Conesville.

Pursuant to the 1997 MOA, Conesville designated hamlet areas totaling 275 acres, within which NYCDEP cannot acquire land in fee simple. These designations help ensure the acquisitions by NYCDEP do not conflict with existing commercial activity or further development within the hamlets of Manor Kill, Conesville and West Conesville.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Schoharie County is expected to decline slightly. At the same time, the demand for second homes in Conesville may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the

number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," future residential development has nevertheless been estimated based on the rate of development during the past two decades. If it is assumed that the pace of new development in Conesville (as measured by new residential units) remains the same as it was between 1990 and 2008 (about 12 new units per year), it can be estimated that the land required to support new development through 2022 will total approximately 899 acres – including 560 acres of land characterized as developable.[30] (This estimate may in fact overstate the number of new units, and thus the amount of land, likely to be developed during this period. As noted above, the available data suggest that the pace of development has been much slower since 2000 than it was in the 1990s.)

Between 2010 and 2022, Conesville is also likely to see a continued decline in land used for agricultural purpose, potentially offset by modest growth in other sectors.

A survey conducted in conjunction with the development of Conesville's comprehensive plan found that:

> *When asked to describe their vision for Conesville after the next 10-20 years, the three elements that came out on top were a "clean and green" environment, preservation of remaining farms and a strong natural resources industry.*

The goals stated in Conesville's comprehensive plan are to:

1) *Base all land use regulations on a foundation of protecting private property rights.*

2) *Provide for orderly growth and development in the Town of Conesville.*

3) *Make the Town secure from dangers of flooding, fire and other dangers.*

4) *Preserve where practical the character of existing highways and promote efficient and safe circulation of traffic.*

5) *Protect surface and ground water quality, maintain high-quality physical environments and preserve wildlife habitats through effective design.*

6) *Provide for those agricultural, forestry, tourism and similar businesses with potential to improve local incomes and preserve working landscapes.*

[30] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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 plan also urges greater use of WAC easements to preserve farmland.[31]

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based in part on LAP's experience in the Town to date, NYCDEP estimates that through 2022 it could acquire 1,828 additional acres in Conesville either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that the projected total could include approximately 955 acres of developable land. NYCDEP further estimates that WAC could during the same period purchase easements on 572 acres of agricultural land.

As shown in the following table, it is estimated that after taking into account both the Extended LAP acquisitions and the land required to support new development, Conesville would still be left with approximately 73 percent of the Town's current stock of developable vacant and low-density residential land.

Table 4-42: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		5,525 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	1,828 acres	
Developable vacant or low-density residential land acquired		955 acres
Residential Development, 2010-2022		
Projected housing units built	144 units	
Land needed for housing	899 acres	
Developable portion of land needed for housing		560 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		4,009 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		73 percent

Further acquisitions in Conesville through 2022 can also be assessed in terms of their potential impact on the character of the community. NYCDEP's Land Acquisition Program appears to be broadly consistent with the goals outlined in the Conesville comprehensive plan – especially those relating to preservation of environmental quality and of "working landscapes." Moreover, because the program operates strictly on a "willing seller, willing buyer" basis, it is also consistent with the goal of protecting property rights.

The acquisitions in fee simple and through conservation easements projected above could have a positive impact on the Town's stated goals of preserving its rural character and maintaining a "clean and green" environment. And as called for in the Town's comprehensive plan, the introduction of WAC agricultural easements in Conesville could contribute to preservation of the Town's existing farms.

Assuming that the percentage of NYCDEP-acquired land remains constant, NYCDEP's projected acquisitions in fee simple through 2022 would open more than 1,000 additional acres

[31] Town of Conesville, Comprehensive Plan, 2007, pp.3-1 to 3-3.

to public recreational use. This could represent a significant amenity for both residents and second-home owners – and could also support the development of tourism-based businesses.

The Town has proposed that designated hamlet areas be increased from 275 to 1,841 acres, which NYCDEP has agreed is appropriate. This expansion, focused in the central portion of the Town east of the hamlet of Conesville, could shift NYCDEP acquisitions away from areas that the Town feels are likely to be most suited for new development – and could help ensure that land is available in these areas for new commercial, residential or other development.

CONCLUSIONS

Even with the Extended LAP projected to acquire more than 1,800 acres through fee purchases and conservation easements between 2010 and 2022, there should be sufficient developable land available in Conesville to support the projected level of new residential development – especially if as discussed above the rate of new development proves to be substantially lower than that which occurred between 1990 and 2008. At the same time, the Extended LAP would help preserve the natural environment that is valued both by full-time residents and second-home owners; and the projected acquisition of WAC easements on 572 acres of farmland in the Town should help preserve its agricultural base. The proposed increase in the size of Conesville's designated hamlet areas will also ensure that some land is available to support development in other sectors.

On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Conesville.

SULLIVAN COUNTY

TOWN OF NEVERSINK

EXISTING CONDITIONS

The Town of Neversink, located in northeastern Sullivan County, had an estimated population of 3,909 in 2008. The Town's resident population has grown by more than 32 percent since 1990, with most of this growth occurring before 2000.

Figure 4-43: Map of Neversink in relation to the watershed

Town of Neversink – Quick Facts	
Land area:	55,144 acres
Percent of town land area within the watershed:	79%
Percent of land protected	31%
Population (estimated), 2008:	3,909
Median age (estimated), 2008	39.7
Median household income (estimated), 2008	$54,855

As shown in Table 4-43 and Figure 4-44, low-density residential and privately-owned vacant land together account for nearly half the Town's total area. Neversink has an active agricultural sector. Commercial activity is generally concentrated along Routes 55 and 42, in and around the hamlet of Grahamsville.

Neversink has a substantial second-home sector. About 25 percent of all housing units in 2000 were for seasonal or recreational use. Growth in this sector appears to have continued since 2000; between 2000 and 2008, the Town's housing stock grew by nearly 15 percent, while its resident population grew by about 5 percent.

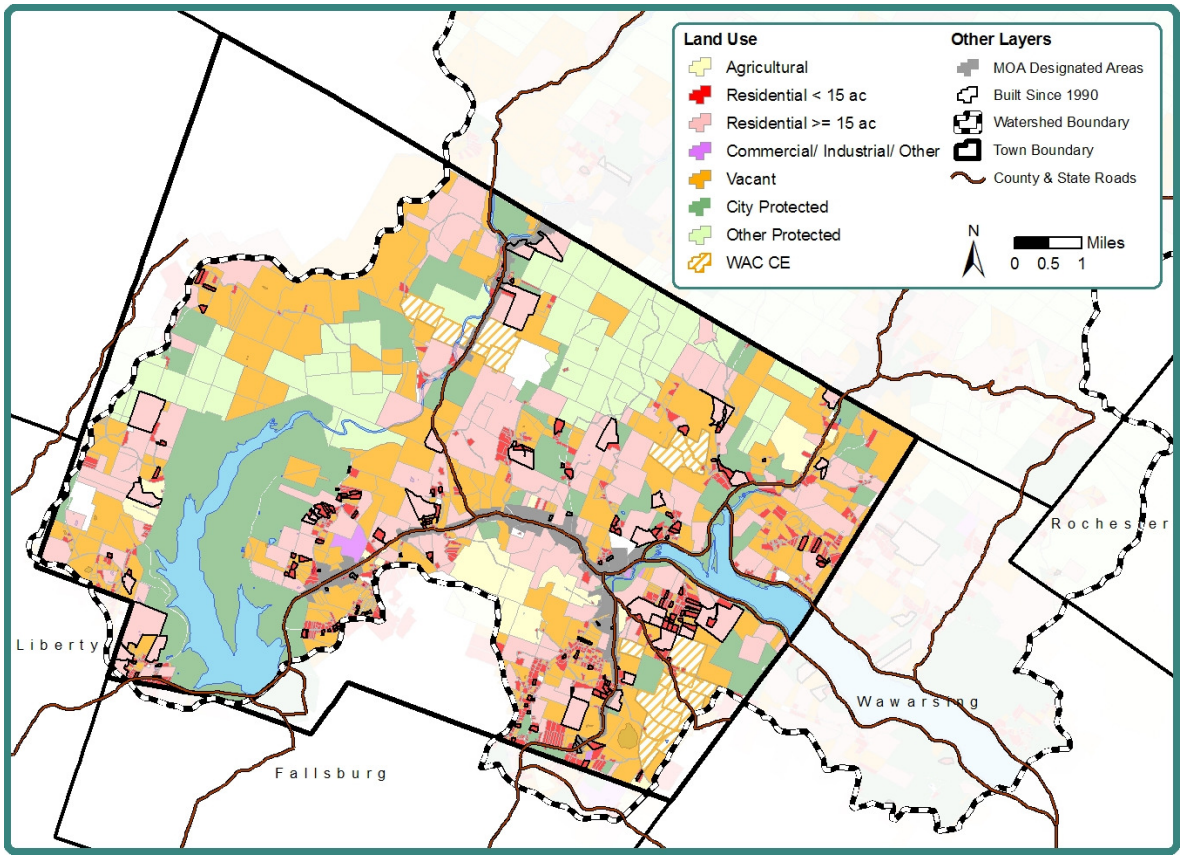
Recent development activity since 1990 (as shown in the black highlighted parcels in Figure 4-44) has largely occurred in the vicinity of the hamlet of Grahamsville and Routes 55 and 42. Based on estimates supplied by DemographicsNow, it is estimated that between 2000 and 2009, approximately 289 new housing units were built in Neversink. This level of growth, high in comparison to many West-of-Hudson towns, can be attributed to the Town's closer proximity to the New York metropolitan area, and to easy access to Rte 17/I-86.

Table 4-43: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural[32]	2,909	7%	365	3%	3,274	6%
High-Density Residential	2,939	7%	1,122	10%	4,060	7%
Low-Density Residential	9,120	21%	2,410	21%	11,530	21%
Commercial/Other	283	1%	68	1%	351	1%
State/Other Protected	5,616	13%	2,836	25%	8,452	15%
City Protected	9,918	19%	N/A	N/A	8,324	15%
Vacant	11,670	27%	3,539	31%	15,210	28%
Total	**43,804**		**11,340**		**55,144**	

[32] The agricultural category includes WAC conservation easements.

Figure 4-44: Map of Neversink showing land use and protected land within the Watershed



Neversink's website highlights the Town's historic relationship to the watershed, noting that it is "home to the Neversink Reservoir and part of the Rondout Reservoir." The Town also notes that because of its position in the city's water supply system, "Neversink has the added benefit of a guaranteed pristine environment."

Moreover, because of its location in the watershed and at the southern end of the Catskill Park, "Neversink affords residents and visitors numerous recreational activities including hiking, biking, hunting, fishing and camping."

Previous LAP Activity

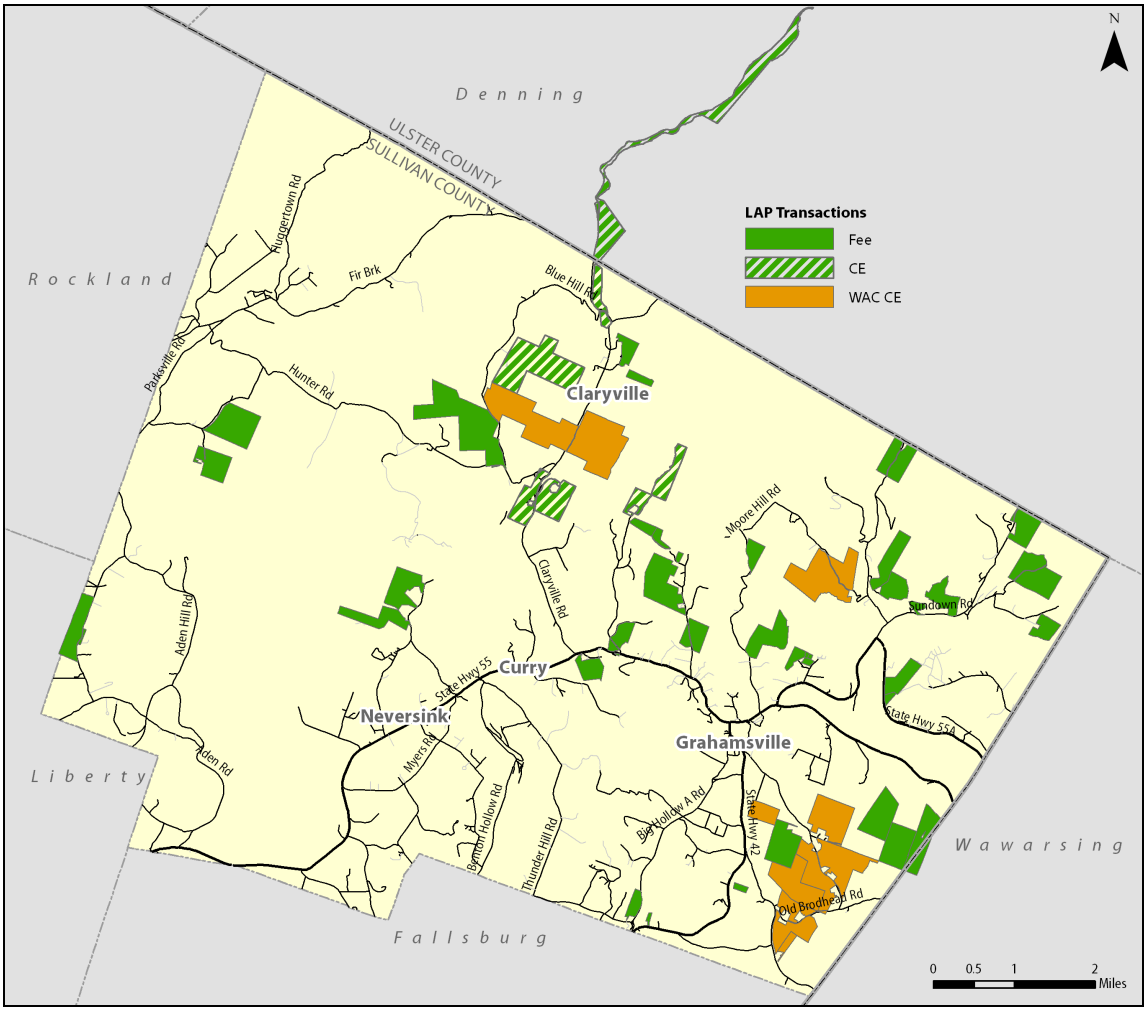
Through June 2009, NYCDEP had acquired a total of 4,671 acres in Neversink pursuant to the 1997 MOA. As shown in Table 4-44 below, purchases in fee simple account for about 53 percent of all acquisitions in the town.

Figure 4-45 shows the location of LAP properties in Neversink, by type of acquisition.

Table 4-44: Acquisitions in the Town of Neversink through July 2009

Type of acquisition	Acres
Fee simple	2,462
Conservation easements	748
WAC agricultural easements	1,462
Total acquired	**4,671**

Figure 4-45: Map of LAP properties in Neversink, by type of acquisition



Through June 2009, as noted above, WAC had acquired easements on 1,462 acres of agricultural land – about 45 percent of all agricultural land in Neversink.

As of July 2009, NYCDEP had opened 2,487 acres of land acquired under LAP for public recreational use. Opening this land for recreational use represented a 79 percent increase in the total City-owned acreage available for public recreational use in Neversink.

Pursuant to the 1997 MOA, the Town designated hamlet areas totaling 1,197 acres, concentrated along the major roads in and around Grahamsville. While the Town did not elect to preclude fee simple purchases in these hamlet areas, acquisitions under LAP (including WAC easements) have nevertheless focused primarily on outlying areas.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Sullivan County is expected to grow by about 3 percent – a much lower growth rate than the County has experienced in the past two decades. At the same time, the demand for second homes in Sullivan County may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. If it is assumed that the pace of new development in Neversink (as measured by new residential units) remains the same as it was between 1990 and 2008, it can then be estimated that the land required to support new development through 2022 will total approximately 2,027 acres, including 1,501 acres of land characterized as developable[33] – about 12 percent of the Town's supply of such land as of 2009.

As it will elsewhere in the region, the overall level of agricultural production in Neversink is likely to decline.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

As shown in Table 4-45, NYCDEP projects that through 2022, it could acquire 4,171 additional acres in Neversink either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions will include approximately 1,833 acres of developable land – about 14 percent of the Town's supply of developable vacant, low-density residential and agricultural land as of 2009.

NYCDEP also projects that WAC could acquire easements on 301 acres of agricultural land – of which 143 acres, or one percent of the Town's 2009 supply, will be developable.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions (including WAC easements) and the land required to support new development, Neversink would still be left with 9,319 acres of developable vacant, low-density residential and agricultural land in 2022 – approximately 73 percent of the Town's current stock of such land.

[33] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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.

Table 4-45: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant, low-density residential or agricultural land in 2009		12,797 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	4,171 acres	
Projected WAC acquisitions	301 acres	
Developable vacant, low-density residential or agricultural land acquired		1,976 acres
Residential Development, 2010-2022		
Projected housing units built	456 units	
Land needed for housing	2,027 acres	
Developable portion of land needed for housing		1,501 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		9,319 acres
Percent of 2009 developable vacant, low-density residential or agricultural land remaining in 2022		73 percent

The estimate of the amount of developable land remaining in 2022 may be conservative in several respects. As noted above, the pace of development in Neversink has been somewhat slower since 2000 than it was in the 1990s; the assumption that new development will average 38 new units per year could prove to be overstated.

The potential impact of additional acquisitions between 2010 and 2022 can also be assessed in terms of their potential effects on the character of the community. To the extent that it helps to protect the Town's natural environment, the Land Acquisition Program thus reinforces some of Neversink's greatest strengths.

Agriculture is an important aspect of community life in Neversink. Each year the Neversink Agricultural Society sponsors a local fair that is one of the oldest events of its kind in New York State. By helping to preserve farmland in an area that has seen significant development during the past twenty years, the WAC easement program helps to preserve the Town's agricultural heritage.

Acquisition of additional land by NYCDEP will further protect the "pristine environment" that Neversink highly values. Moreover, based on NYCDEP's experience in Neversink to date, we estimate that more than 2,000 acres of additional land acquired by NYCDEP in fee simple could be opened for public recreational use – further enhancing one of the Town's greatest attractions.

As noted above, Neversink designated hamlet areas totaling 1,197 acres pursuant to the 1997 MOA. The Town has not sought to expand these areas. Under the terms of the proposed agreement concerning hamlet expansions, Neversink would once again have the option to precude LAP purchases in designated areas.

NYCDEP's acquisition of land in outlying areas of Neversink helps to maintain the Town's primarily low-density, rural character, and helps protect the quality of the Town's natural environment.

CONCLUSIONS

Despite the projected acquisition of more than 4,100 acres in fee simple or conservation easements under the Extended LAP, and 301 acres in WAC farm easements, it is estimated that in 2022 there would still be more than 9,000 acres of developable land remaining in Neversink.

The Town's supply of such land thus appears to be more than sufficient to support the projected rate of residential development. Projected acquisitions under the Extended LAP would help preserve the Town's high-quality natural environment; and Extended LAP could also result in the opening of more than 2,000 acres in Neversink for public recreational use – thus reinforcing one of the Town's greatest strengths.

On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Neversink.

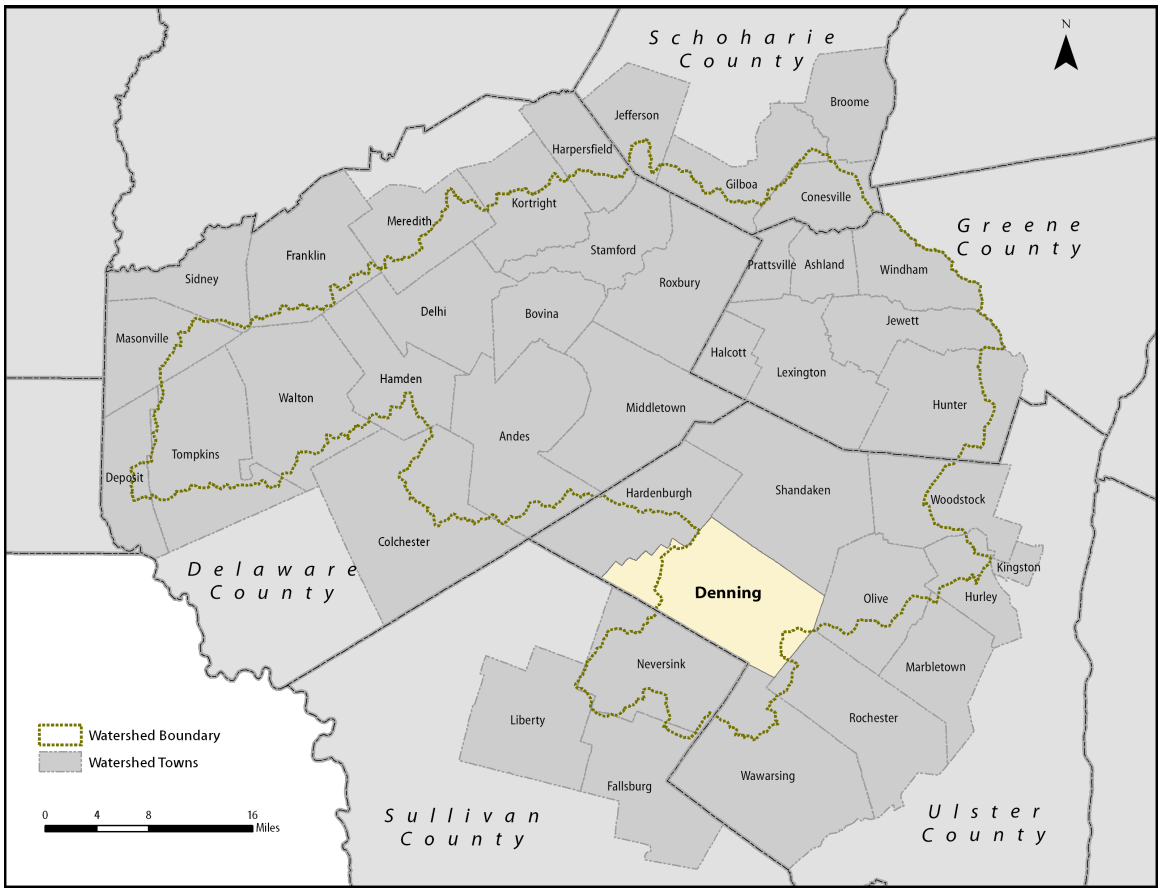
ULSTER COUNTY

TOWN OF DENNING

EXISTING CONDITIONS

Denning is primarily rural, with development concentrated on the southern border of the town. Denning's resident population in 2008 was estimated to be 524 – an increase of 1.6 percent since 2000. The Town's population density is only 5.1 persons per square mile.

Figure 4-46: Map of Denning in relation to the watershed



Town of Denning – Quick Facts	
Land area:	65,430 acres
Percent of town land area within the watershed:	86%
Percent of land protected:	55%
Population (estimated), 2008:	524
Median age (estimated), 2008	48
Median household income (estimated), 2008	$43,765

As shown in Table 4-46 and Figure 4-47, land use in Denning is dominated by New York State Forest Preserve land, comprising 41,061 acres or 63 percent of the Town's total area. The rest of the Town consists primarily of either low-density residential parcels (19 percent of the Town's area) or privately-owned vacant land (12 percent). In addition to its full-time population, the Town has a relatively large seasonal or part-time population; in 2000, according to the Census Bureau, 47 percent of Denning's 518 housing units were for seasonal or recreational use. The land area devoted to commercial, industrial and community uses is small (181 acres) and located mostly outside the watershed.

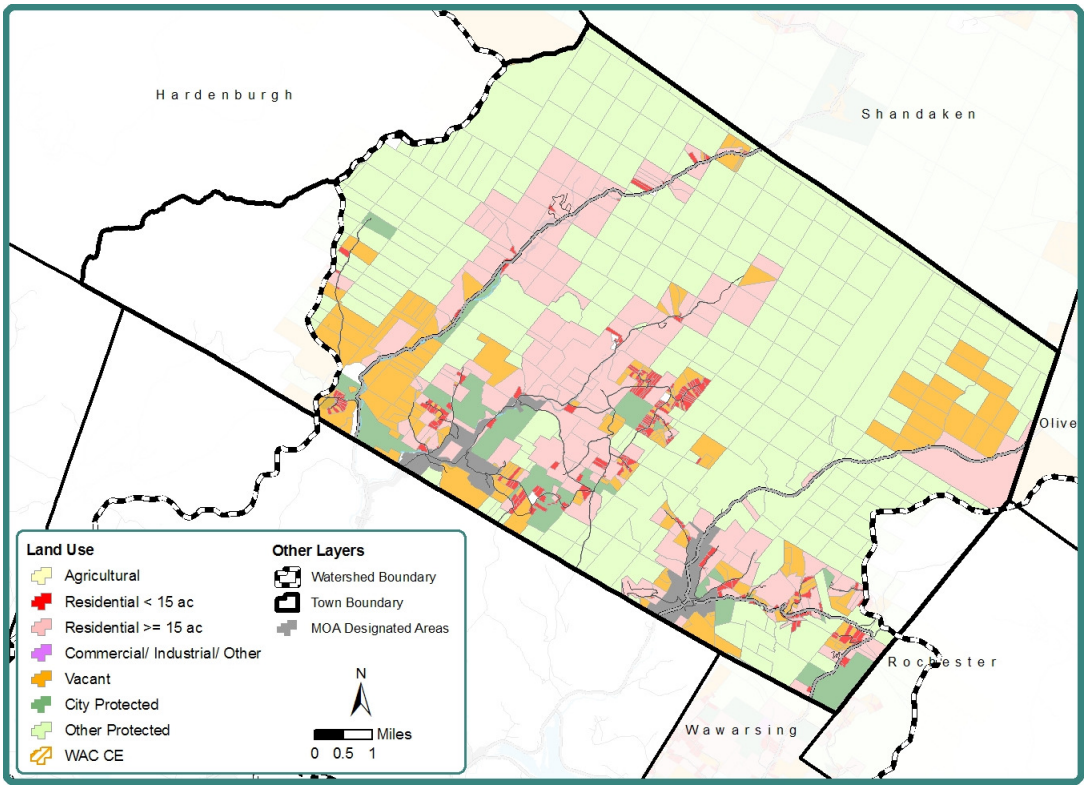
The Town's largest enterprise, and one of its strongest economic assets, is the Frost Valley YMCA, a 6,000-acre complex that draws 40,000 visitors a year for family vacations and other recreational, cultural and educational activities, and employs 120 people. Due largely to its mountain terrain, agricultural uses are very limited in Denning.

There has been little recent development activity. Based on Census data, it is estimated that between 2000 and 2008, 19 new housing units were built in Denning.

Table 4-46: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural	0	0%	0	0%	0	0%
High-Density Residential	1,544	3%	201	2%	1,745	3%
Low-Density Residential	11,320	20%	1,429	16%	12,750	19%
Commercial/Other	10	0%	171	2%	181	0%
State/Other Protected	33,367	59%	7,845	87%	41,212	63%
City Protected	2,402	4%	N/A	N/A	2,402	4%
Vacant	6,415	11%	1,716	19%	8,130	12%
Total	**56,447**		**8,983**		**65,430**	

Figure 4-47: Map of Denning showing land use and protected land within the Watershed



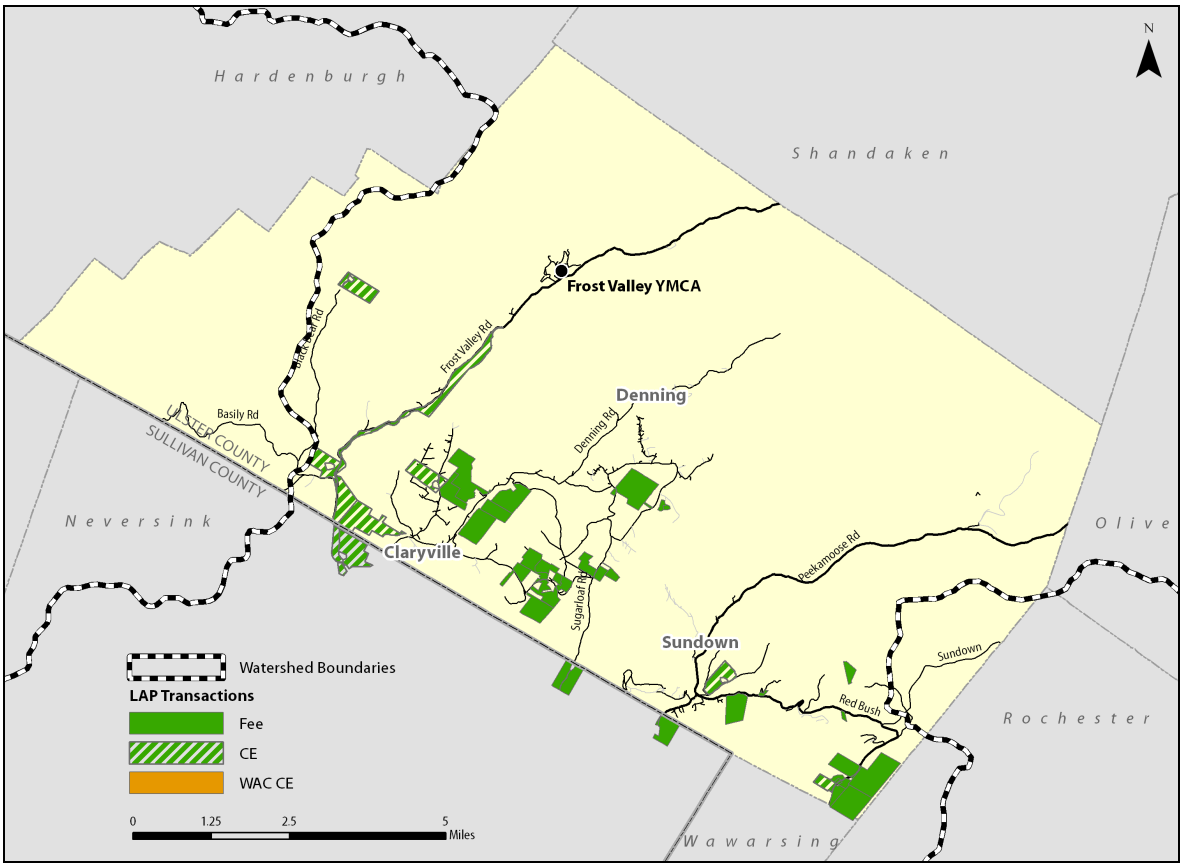
Previous LAP Activity

Through July 2009, NYCDEP had acquired a total of 2,499 acres in Denning pursuant to the 1997 MOA. As shown in Table 4-47 below, purchases of land in fee simple account for 65 percent of the total acreage acquired under LAP. Figure 4-48 shows the location of LAP properties in Denning, by type of acquisition.

Table 4-47: Acquisitions in the Town of Denning through July 2009

Type of acquisition	Acres
Fee simple	1,634
Conservation easements	865
WAC agricultural easements	-
Total acquired	**2,499**

Figure 4-48: Map of LAP properties in Denning, by type of acquisition



As of October 2009, a total of 1,206 acres acquired by NYCDEP in fee simple in Denning had been opened by NYCDEP for recreational use – about 74 percent of the land that NYCDEP has acquired in fee simple in the Town since the beginning of the Land Acquisition Program.

As shown in Figure 4-48, much of the land acquired in Denning by the NYCDEP Land Acquisition Program through July 2009 is located on the outskirts of the town's two hamlets, Claryville (which is partly in the Town of Neversink) and Sundown. Under the terms of the MOA, the Town elected to preclude acquisitions within the designated hamlets themselves; Denning has designated hamlet areas totaling 1,107 acres.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Ulster County is expected to grow by about 3 percent, somewhat slower than the rate of growth during the past two decades. At the same time, the demand for second homes in the County may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. Assuming the pace of new development in Denning (as measured by new residential units) remains the same as it was between 1990 and 2008, it is estimated that the land required to support new development through 2022 will total approximately 241 acres – including 71 acres of land characterized as developable. [34]

Beyond this modest residential development, conditions are likely to remain consistent with those of the past decade – a largely rural community, with commercial activity limited primarily to businesses that serve the local population, and visitors to the region.

Denning's 2007 Comprehensive Plan calls for lower density zoning outside of the Town's hamlet areas to help "manage growth" and preserve the rural character of the Town.35 The Comprehensive Plan also highlights the importance of protecting the natural environment – including areas that are protected under LAP. As the Town's Plan puts it:

> *Denning is not a suburban community. Nor is it a place with all modern conveniences. Accordingly, new housing will be carefully sited to protect natural resources and enhance established neighborhoods and roads in, or adjacent to, the hamlets in Claryville and Sundown, and also the settlements at Frost Valley, Red Hill, Denning and Ladleton. Outside of these places, forestry and other physical development should occur selectively, with consideration of the capability of the soils, slopes, and streams to support new development.*[36]

The plan defines a series of goals that Denning seeks to achieve, including:

- *Maintain and preserve Denning's natural beauty and rural character, such as its hillsides and views*
- *Help keep land and housing prices affordable for residents*
- *Manage and improve the form and quality of existing neighborhoods to reinforce and enhance existing community character*
- *Protect water resources*
- *Accommodate new growth within the traditional community settings and specific designated areas. Minimize the conversion of undeveloped land in the remote mountain areas and other outlying areas in favor of careful infill in and adjacent to the valley and on Red Hill. This will strengthen the community and its sense of place.*

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[34] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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, or slopes of greater than 15 percent. Land with any one or more of these characteristic in considered undevelopable.

[35] Source: Town of Denning Comprehensive Plan 2007, pg. 19.

[36] Town of Denning Comprehensive Plan 2007, pg. 5.

- *Ensure that development is compatible with natural resources protection by achieving site development where buildings and access are separated from the most sensitive resources*
- *Allow for adequate, affordable housing in Denning, including some that meets the needs of older seniors and those of more modest means*
- *By working collaboratively with the Town of Neversink, plan for coherent growth which straddles municipal boundaries and provides the desired mix*
- *Diversify and strengthen the Town's fiscal base*
- *Promote a strong sense of community*
- *Foster systems of public communication which are informative and accessible in a variety of forms so that anyone interested has access*
- *Recognize that various lifestyles make up the intrinsic character of Denning*
- *Emphasize maintaining and enhancing existing road and stormwater facilities before adding new infrastructure*
- *Encourage and accommodate pedestrian options in hamlets and at large institutional properties*
- *Encourage opportunities in technology and economic development that are compatible with rural development and sustainable resource management*
- *Support tourism and cooperate with county- and state-level economic development policies and programs*
- *Minimize the costs of municipal services, especially costs related to fringe development*
- *Recognize the limited potential for growth in the hamlets – that which occurs should appear as small scale and should not be overly intensive*
- *Support businesses which practice the sustainable utilization of natural resources, including forestry and farming*
- *Provide clear and effective land use laws that are specific to the type of land use activity and its setting. Provide incentives in order to promote and achieve desired outcomes*
- *Promote public health and well-being by informing residents about how to minimize flood hazards and other risks, and describe how they should act in the event of a natural disaster*

- *Achieve innovative application of energy conservation and production in order to save public sector resources and sustain supplies*[37]

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Denning to date, NYCDEP estimates that through 2022, it could acquire a total of 5,046 acres either in fee simple or through conservation easements. Based on the developable percentage of land acquired in fee simple or as conservation easements as of June 2009, it is estimated that these acquisitions will include approximately 1,359 acres of developable land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Denning will still be left with approximately 66 percent of the Town's current stock of developable land.

Table 4-48: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		4,187 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	5,046 acres	
Developable vacant or low-density residential land acquired		1,359 acres
Residential Development, 2010-2022		
Projected housing units built	36 units	
Land needed for housing	241 acres	
Developable portion of land needed for housing		71 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		2,757 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		66 percent

As noted in Chapter 3, this estimate of LAP's impact on the Town's supply of developable land needs also to take into account that as of 2009, Denning's supply of such land is already quite limited. As defined here, developable land represents about 6.4 percent of the Town's total land area; and by 2022 this percentage would decline to 4.2 percent. Although NYCDEP is proposing to acquire a significant amount of land in Denning through 2022, the rate of housing development in the town has been extremely low. It is expected that there would be little potential for conflict between the projected level of the Extended LAP acquisitions and land needed for new development, given the low level of new development projected through 2022 and the Town's desire (discussed above) to maintain its rural character.

NYCDEP's Land Acquisition Program appears to be broadly consistent with the Town's goals, in particular those that relate to preserving the town's natural beauty and rural character, protecting water resources and other natural resources, and accommodating growth within traditional community settings.

[37] Ibid. pp. 10-11

CONCLUSIONS

While the amount of land projected to be acquired under the Extended LAP is substantial, the program is unlikely to affect the pace or character of development in the Denning. Extended LAP be consistent with the low-density, rural character of the Town, and would help preserve the natural environment that is among the Town's greatest assets.

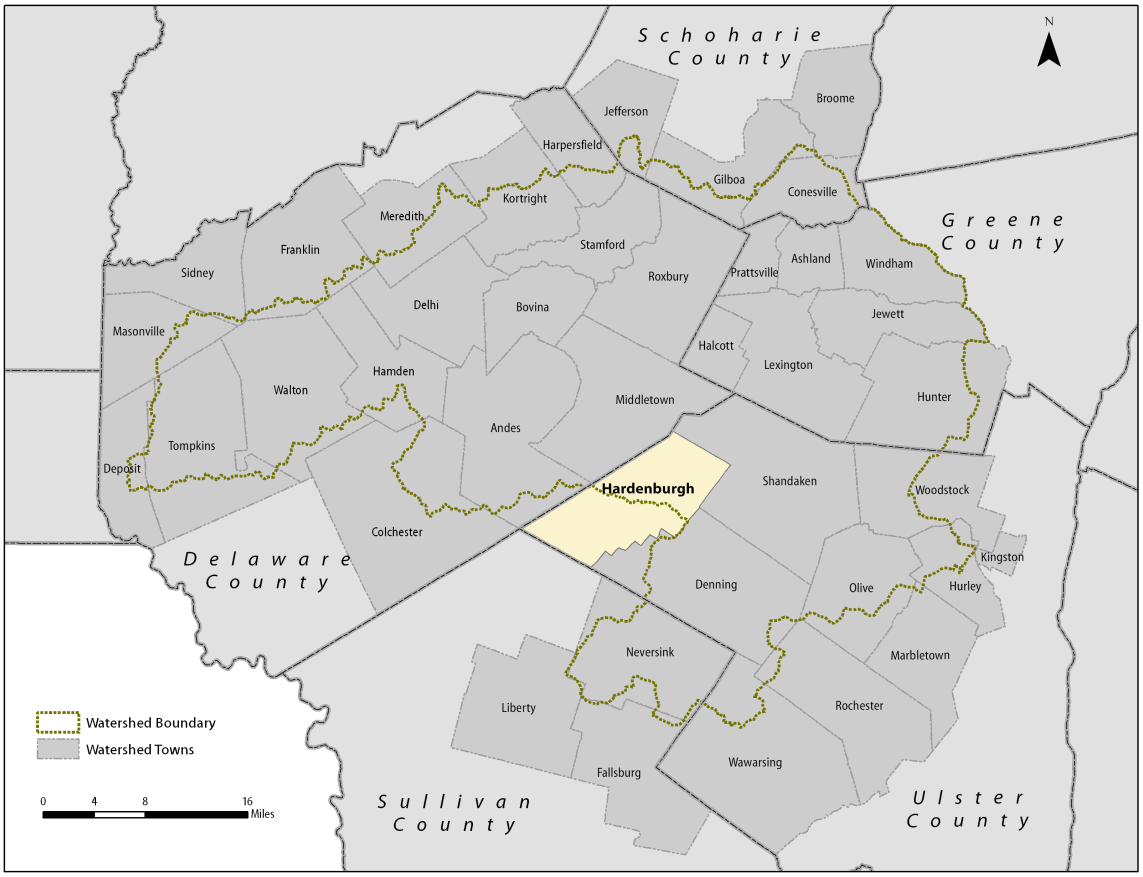
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Denning.

TOWN OF HARDENBURGH

EXISTING CONDITIONS

The Town of Hardenburgh – the westernmost town in Ulster County – is a very low-density rural community. With a resident population of 211, it has the lowest population density of any watershed town – 2.6 persons per square mile. Although only 44 percent of the Town's total area lies within the watershed, we estimate (based on the location of residential parcels) that about two-thirds of the Town's resident population live within the watershed.

Figure 4-49: Map of Hardenburgh in relation to the watershed



Town of Hardenburgh – Quick Facts	
Land area:	51,756 acres
Percent of town land area within the watershed:	44%
Percent of land protected	53%
Population (estimated), 2008:	211
Median age (estimated), 2008	48.2
Median household income (estimated), 2008	$44,509

Land uses in Hardenburgh reflect the Town's low-density rural character. As Table 4-49 and Figure 4-50 show, State-owned land accounts for more than half the Town's total area – especially in the portion of the Town that lies outside the watershed. Vacant land (23 percent of the total) and low-density residential parcels (10 percent) account for most of Hardenburgh's non-protected land. Most of the undeveloped privately owned land in the watershed portion of the town is controlled by a single land owner.

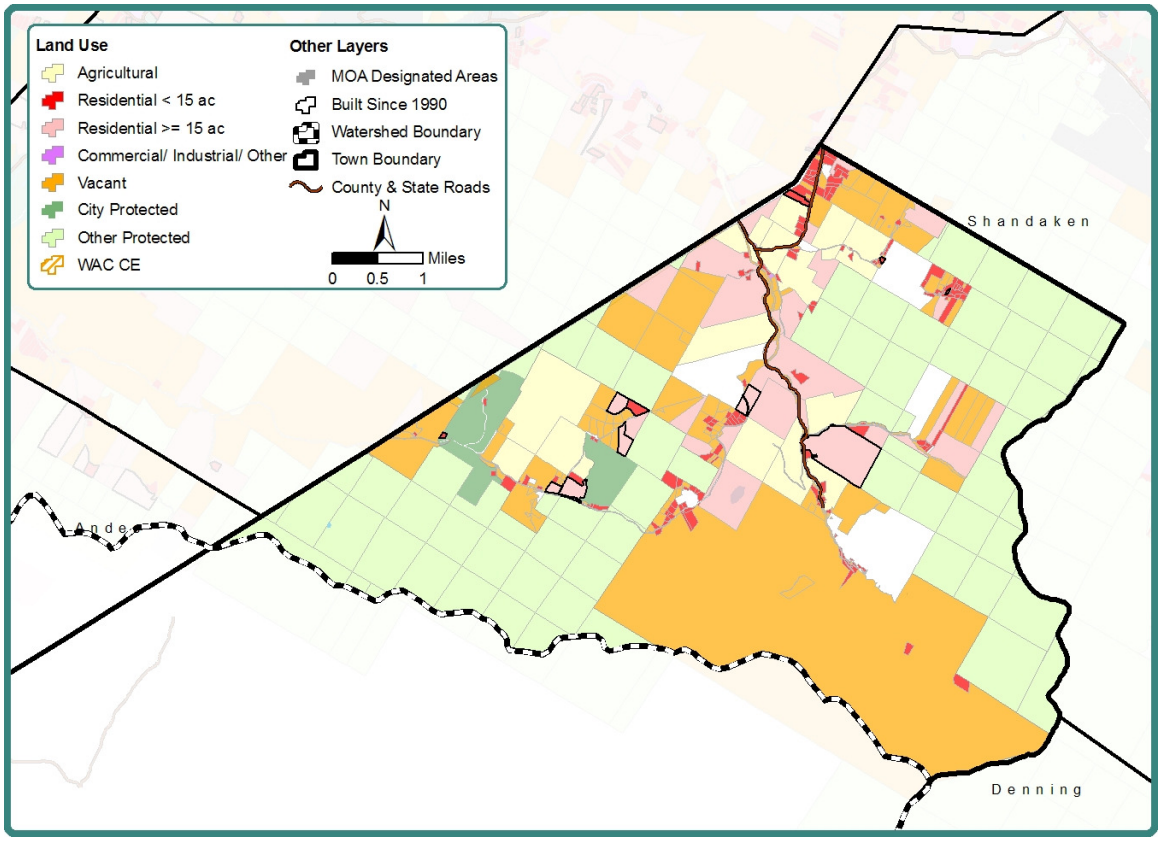
Although its total population is small, Hardenburgh has a relatively large second-home sector. In 2000, 47 percent of the Town's housing units were for seasonal or recreational use. Commercial, industrial and community uses occupy about 4 percent of the Town's land; but are almost entirely located outside the watershed. Commercial services for the northern portion of the Town (within the watershed), which is geographically distinct from the southern portion, are provided primarily in the hamlet of Arkville, in Delaware County.

There has been a modest amount of development in Hardenburgh since 1990 (as shown in the black highlighted parcels on Figure 4-50). Based on estimates from DemographicsNow on growth in the number of housing units in the Town, it is estimated that between 2000 and 2009, 9 housing units were added in Hardenburgh.

Table 4-49: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural	2,007	9%	175	1%	2,182	4%
High-Density Residential	534	2%	304	1%	838	2%
Low-Density Residential	1,989	9%	3,188	11%	5,178	10%
Commercial/Other	3	0%	1,877	6%	1,880	4%
State/Other Protected	9,108	40%	17,634	61%	26,743	52%
City Protected	543	2%	N/A	N/A	543	1%
Vacant	6,808	30%	4,864	17%	11,672	23%
Total	**22,675**		**29,081**		**51,756**	

Figure 4-50: Map of Hardenburgh showing land use and protected land within the Watershed



Previous LAP Activity

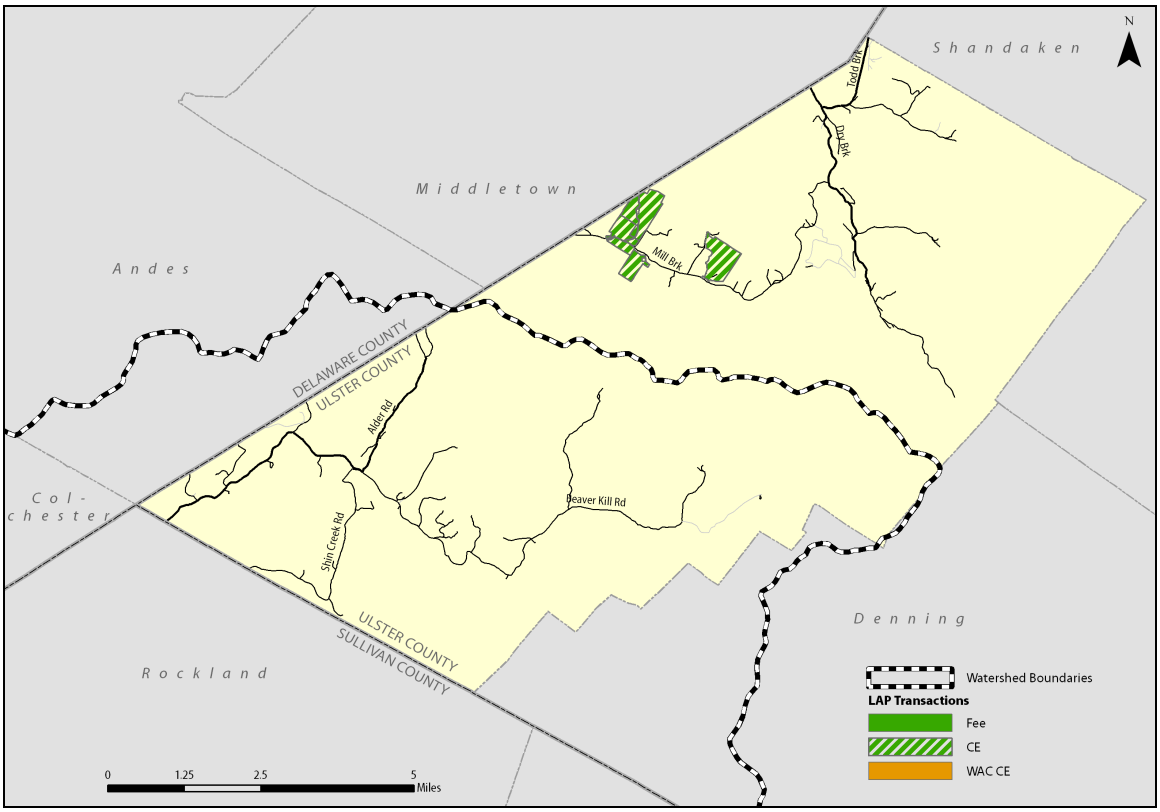
Through June 2009, as Table 4-50 shows, NYCDEP had acquired conservation easements on 595 acres of watershed land in Hardenburgh – slightly more than 1 percent of the Town's total area. As of that date, NYCDEP had not acquired any acreage in Hardenburgh in fee simple; nor had WAC acquired any agricultural easements.

Figure 4-51 shows the location of LAP properties in Hardenburgh.

Table 4-50: Acquisitions in the Town of Hardenburgh through July 2009

Type of acquisition	Acres
Fee simple	0
Conservation easements	595
WAC agricultural easements	0
Total acquired	**595**

Figure 4-51: Map of LAP properties in Hardenburgh, by type of acquisition



Through June 2009, as noted above, WAC had acquired no agricultural easements in Hardenburgh. Nor had NYCDEP acquired in fee simple any land that had previously been used for agricultural purposes.

Having acquired no land in fee simple, NYCDEP has not opened any land acquired in Hardenburgh for recreational use. (Acquisition of conservation easements by NYCDEP does not bring with it the right to open land for public recreational use; control over access to such land remains with the owner.)

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Ulster County is expected to grow by about 3 percent, somewhat slower than the rate of growth during the past two decades. At the same time, the demand for second homes in the County may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. Assuming that the pace of new residential development in Hardenburgh averages 3 new units per year (a rate consistent with the issuance of building permits between 1997 and 2008), and that each new unit consumes 15 acres of land, it is estimated that the land required to support new

development through 2022 will total approximately 540 acres. This would include 166 acres of land characterized as developable – about 6 percent of the Town's supply of developable land.[38]

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Because a relatively high proportion of its total area (53 percent) is already protected, especially through State ownership, as well as the Town's physical characteristics, the total supply of developable vacant and low-density residential land in Hardenburgh is limited – an estimated 2,692 acres as of 2009.

After having acquired relatively little land through June 2009, NYCDEP estimates that through 2022 it could acquire a total of 3,209 acres in Hardenburgh either in fee simple or through conservation easements. Based on the developable percentage of land acquired in fee simple or as conservation easements as of June 2009, it is estimated that these acquisitions will include approximately 636 acres of developable land – 24 percent of the Town's supply of developable vacant and low-density residential land in 2009. NYCDEP further estimates that WAC will during the same period purchase easements on 432 acres of agricultural land.

As shown in the following table, after taking into account both LAP acquisitions and the land required to support new development, it is estimated that Hardenburgh would still be left with approximately 70 percent of the Town's current stock of developable vacant and low-density residential land.

Table 4-51: Remaining developable land after LAP and housing development, 2010-2022

[38] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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, or slopes of greater than 15 percent. Land with any one or more of these characteristic in considered undevelopable.

Developable vacant or low-density residential land in 2009		2,692 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	3,209 acres	
Developable vacant or low-density residential land acquired		636 acres
Residential Development, 2010-2022		
Projected housing units built	36 units	
Land needed for housing	540 acres	
Developable portion of land needed for housing		166 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		1,891 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		70 percent

As noted in Chapter 3, this estimate of LAP's impact on the Town's supply of developable land needs also to take into account that as of 2009, Hardenburgh's supply of such land is already quite limited. As defined here, developable land represents only 5.2 percent of the Town's total land area; and by 2022 this percentage would decline to 3.7 percent. However, with the low rate of new development projected in Hardenburgh (36 units over 12 years), it is expected that there is little potential for conflict between projected LAP acquisitions and the land needed to support new development. The Extended LAP through 2022 is thus unlikely to have any adverse impact on the rate of residential development in Hardenburgh.

NYCDEP acquisitions would also help protect the Town's natural environment, thus preserving the rural character of the Town. Moreover, assuming that the percentage of newly-acquired land opened to public recreational use is similar to what it has been in other watershed towns through 2009, it is estimated that through 2022 more than 1,200 acres of land acquired in fee simple in Hardenburgh could be made available by NYCDEP for public recreational use. WAC's acquisition of additional easements could also help preserve the Town's remaining agricultural uses.

Hardenburgh is one of several watershed towns that did not have the option to designate any hamlet areas under the 1997 MOA. In 2009, the Town also chose not to propose any new hamlet-area designations.

CONCLUSIONS

Hardenburgh has a very limited supply of developable land. But given the extremely low-density character of the Town and its history of limited growth, the projected level of acquisitions in Hardenburgh under the extended LAP is unlikely to affect in any substantial way the existing patterns of land use in the Town, or the availability of land for development through 2022.

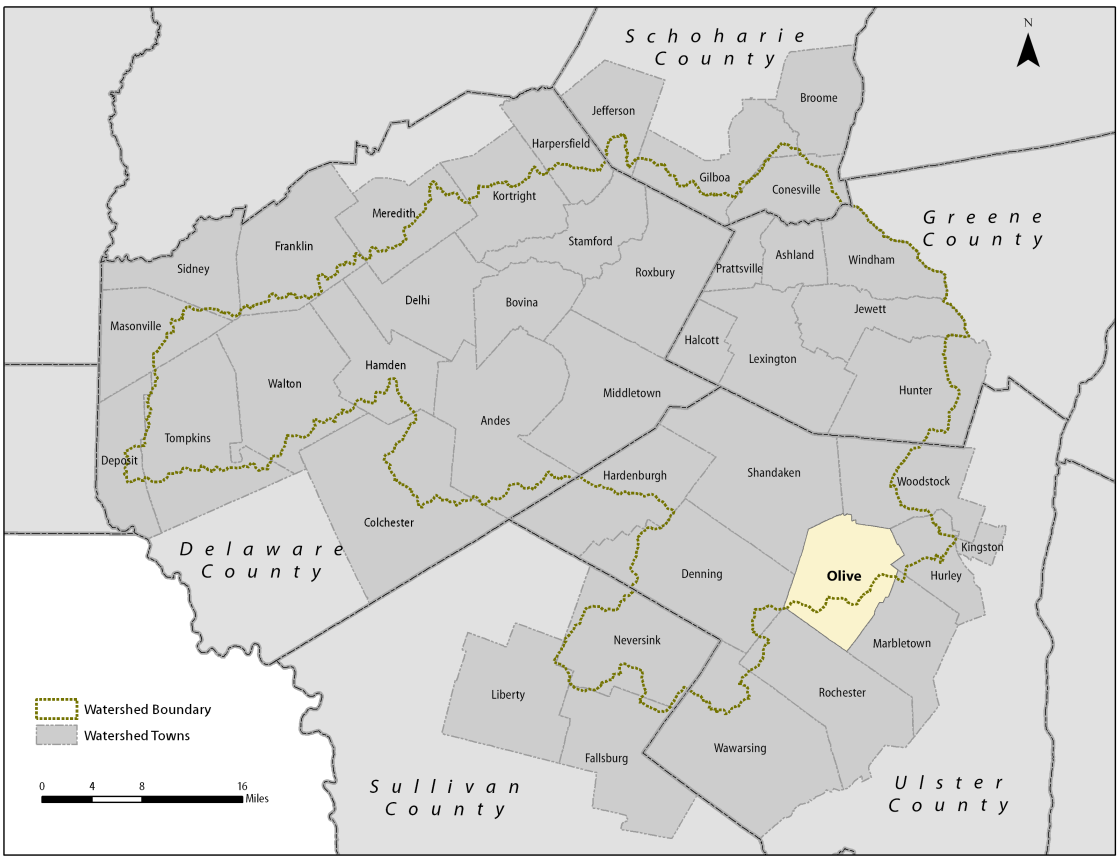
On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Hardenburgh.

TOWN OF OLIVE

EXISTING CONDITIONS

The Town of Olive is located in central Ulster County, at the eastern edge of the West-of-Hudson watershed region. The Town's resident population in 2008 was estimated at 4,759 – an increase of more than 16 percent since 1990, with most of this growth occurring before 2000.

Figure 4-52: Map of Olive in relation to the watershed



Town of Olive – Quick Facts	
Land area:	41,735 acres
Percent of town land area within the watershed (including reservoirs):	70%
Percent of land protected	58%
Population (estimated), 2008:	4,759
Median age (estimated), 2008	45.0
Median household income (estimated), 2008	$55,202

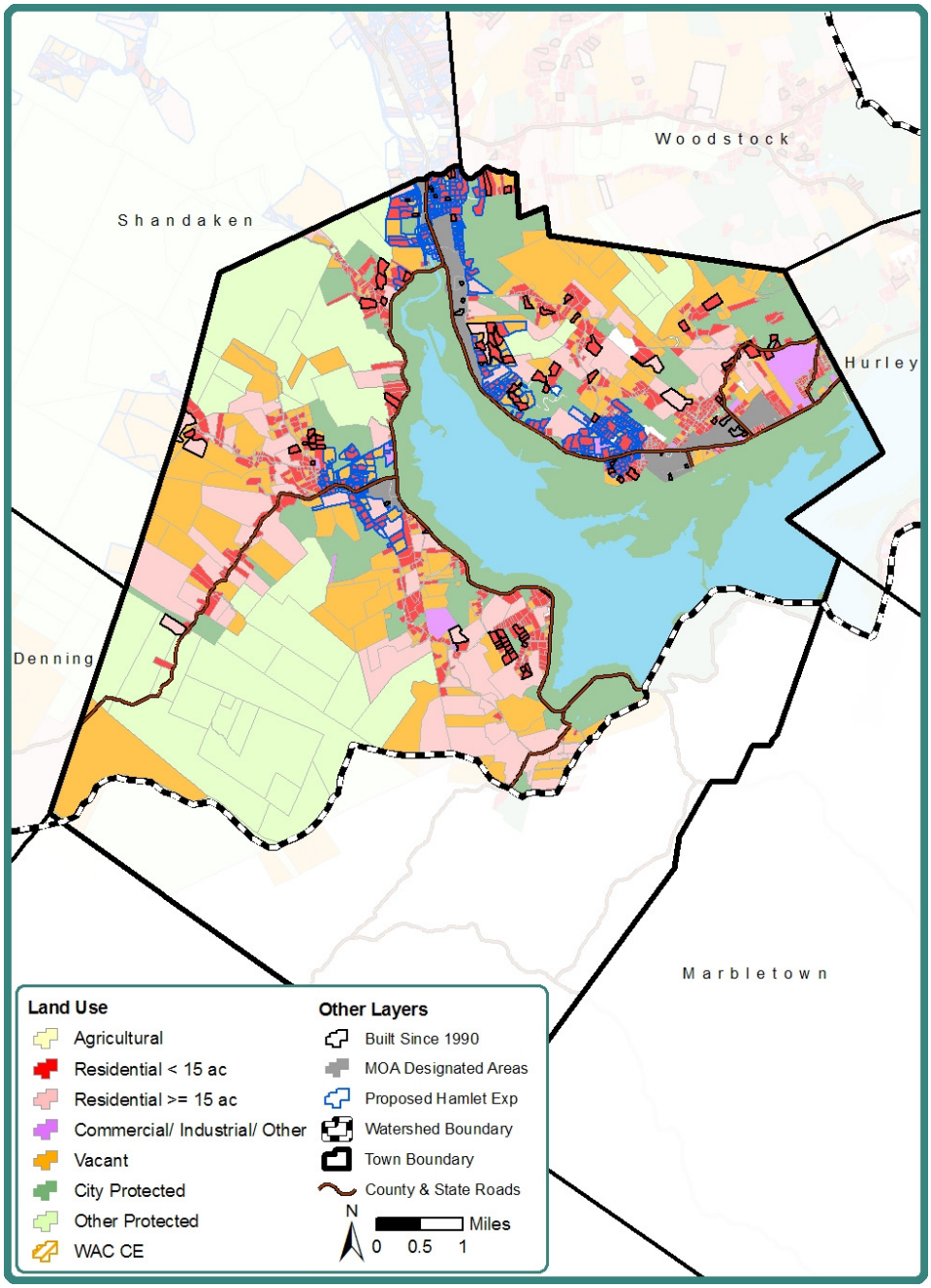
About 58 percent of the total area of the Town of Olive is protected (including the surface area of part of the Ashokan Reservoir, which makes up about 10 percent of the total area of the Town). Low-density residential and privately-owned vacant land makes up much of the rest – about 38 percent of the Town's total area (see Table 4-52 and Figure 4-53). Compared to many other watershed towns, a relatively high percentage of the Town's land is in higher-density residential use, reflecting the concentration of a substantial part of the Town's population in its hamlets, as well as the Town's proximity to employment opportunities in Kingston and along the New York State Thruway. About 13 percent of all housing units in Olive in 2000 were for seasonal or recreational use – one of the lowest percentages among all west-of-Hudson watershed towns. Olive currently has very little agricultural land – about 191 acres, virtually all of which is located outside the watershed.

Much of the recent development that has occurred in the watershed portion of Olive since 1990 (as shown in the black highlighted parcels on Figure 4-53), has been clustered in and near the hamlets along Routes 28 and 28A, including Ashokan, Shokan, Boiceville, West Shokan and Olivebridge. Based on estimates supplied by DemographicsNow, we estimate that between 2000 and 2009, approximately 158 new housing units were built in Olive.

Table 4-52: Land uses by type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural	1	0%	190	2%	191	0%
High-Density Residential	3,044	10%	2,751	22%	5,795	14%
Low-Density Residential	3,394	12%	3,545	28%	6,939	17%
Commercial/Other	426	1%	463	4%	888	2%
State/Other Protected	6,907	24%	1,183	9%	8,090	19%
City Protected	10,044	22%	N/A	N/A	6,524	16%
Vacant	5,039	17%	3,728	30%	8,767	21%
Total	**29,252**		**12,483**		**41,735**	

Figure 4-53: Map of Olive showing land use and protected land within the Watershed



The Town's website describes Olive as "primarily residential in nature, with a large percentage of seasonal residents, and a limited number of backyard farms with victory gardens." In a section geared to visitors, the site highlights Olive's natural beauty and recreational resources.

> *Olive embodies the beauty of the Catskills with its pristine streams and majestic mountain peaks. Sunrise and sunset at the Ashokan reservoir will take your breath away as you watch Mother Nature's color show. Olive has something for everyone. Fishing and wild game hunting….Hiking trails, maintained walkways, mountain bike trails and picnic areas around the Ashokan.*
>
> *Natural beauty is Olive's strong point, from its cool, clear mountain streams to the majestic forests.*

In describing opportunities for outdoor recreation in Olive, the site highlights fishing and boating on the Ashokan Reservoir, and hiking on the trails above the reservoir. The site also highlights opportunities for snowmobiling, tubing on the Esopus Creek, and the Town's restaurants and shops.

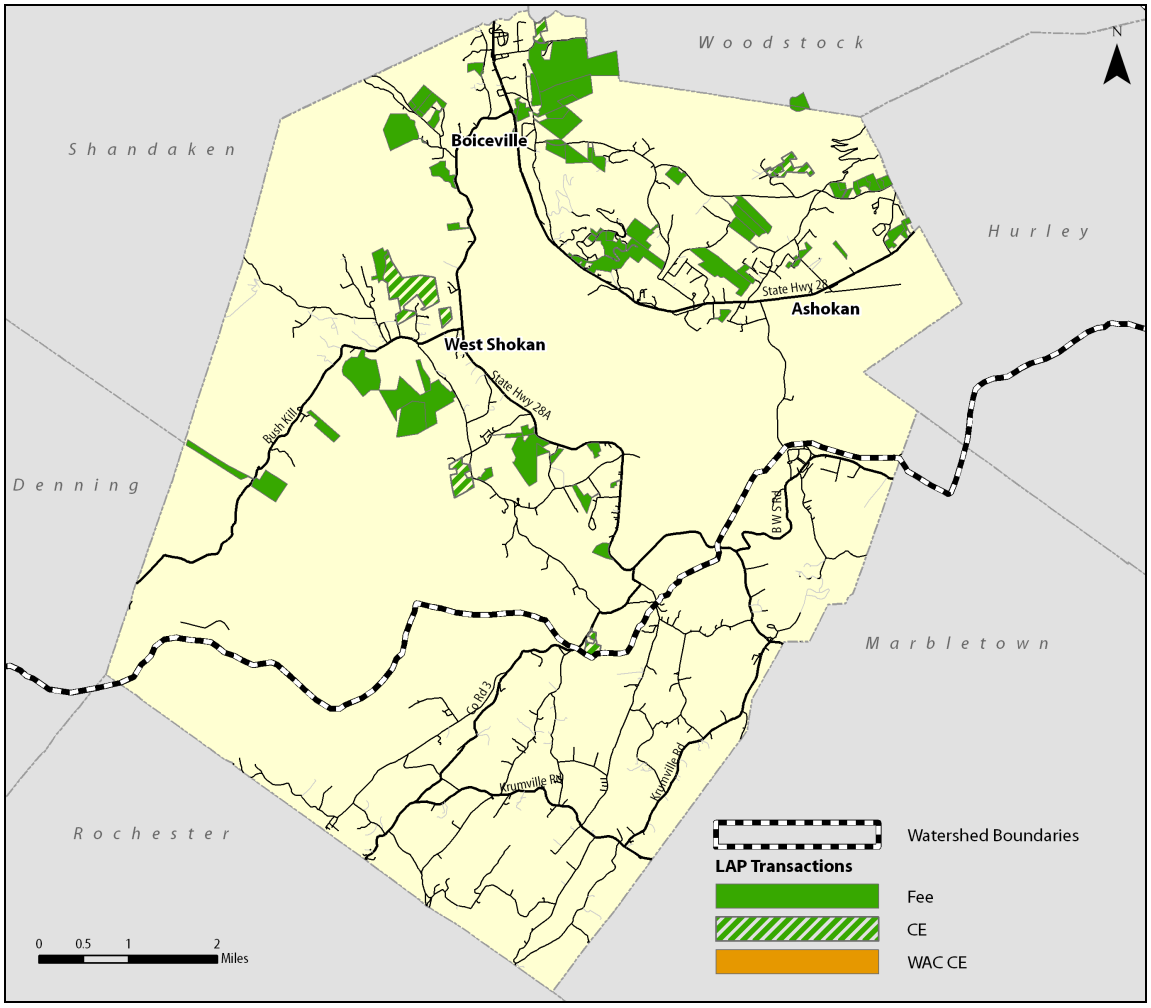
Previous LAP Activity

Through June 2009, NYCDEP had acquired a total of 2,285 acres in Olive pursuant to the 1997 MOA. As shown in Table 4-53 below, purchases in fee simple account for about 63 percent of all acquisitions in the town. Figure 4-54 shows the location of LAP properties in Olive, by type of acquisition.

Table 4-53: Acquisitions in the Town of Olive through July 2009

Type of acquisition	Acres
Fee simple	1,717
Conservation easements	568
WAC agricultural easements	0
Total acquired	**2,285**

Figure 4-54: Map of LAP properties in Olive, by type of acquisition



Of the 1,717 acres that NYCDEP acquired in fee simple as of July 2009, 926 acres – 54 percent of the total – had been opened for public recreational use.

Pursuant to the 1997 MOA, the Town designated hamlet areas totaling 547 acres. However the Town did not elect to prohibit acquisition of lands by LAP within these designated Hamlets.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Ulster County is expected to grow by about 3 percent, somewhat slower than the rate of growth during the past two decades. For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. Assuming the pace of new development in Olive (as measured by new residential units) remains the same as it was between 1990 and 2008 (about 23 units per year), it is estimate that the land required to support new development through 2022 will total

approximately 1,194 acres, including 748 acres of land characterized as developable – about 13 percent of the Town's supply of such land as of 2009.[39]

In addition to new residential development, the Town could see some additional growth in small businesses that serve local residents and visitors to the region.

FUTURE CONDITIONS WITH THE PROPOSED ACTION

Based on LAP's experience in Olive to date, NYCDEP estimates that through 2022, it could acquire an additional 1,899 acres either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions will include approximately 871 acres of developable land – about 15 percent of the Town's supply of developable vacant and low-density residential land as of 2009.

As shown in the following table, it is thus estimated that after taking into account both LAP acquisitions and the land required to support new development, Olive will still be left with 4,065 acres of developable vacant and low-density residential land in 2022 – approximately 72 percent of the town's current stock of such land.

Table 4-54: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		5,684 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	1,899 acres	
Developable vacant or low-density residential land acquired		871 acres
Residential Development, 2010-2022		
Projected housing units built	276 units	
Land needed for housing	1,194 acres	
Developable portion of land needed for housing		748 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		4,065 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		72 percent

This estimate could prove to be conservative. As noted above, the pace of development in Olive has been somewhat slower since 2000 than it was in the 1990s. The assumption that new

[39] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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, or slopes of greater than 15 percent. Land with any one or more of these characteristic in considered undevelopable.

development will average 23 new units per year between 2010 and 2022 could prove to be overstated.

The relatively high demand for land to accommodate new development that has been projected here could suggest some potential for conflict between the projected level of acquisitions by NYCDEP and future development in Olive. However, as Figure 4-54 indicates, much of the recent development within the Town has been concentrated along or near Routes 28 and 28A, while much of the vacant and low-density residential land most likely to be acquired by NYCDEP lies outside these corridors.

The potential impact of future acquisitions can be assessed relative to the character of the community, as reflected both in historic patterns of development and as that character is described by the Town in the above section. NYCDEP's acquisition of watershed land and conservation easements is broadly consistent with the preservation of the Town's natural assets, and has added to the supply of land available for public recreation. Moreover, the designation of hamlet areas within which the City does not acquire property helps ensure that LAP is compatible with the goals for preservation and revitalization of hamlets in the Route 28 corridor that have been stated by the Central Catskills Collaborative, of which the Town of Olive is a member. Moreover, the Town has proposed to expand Olive's designated hamlet areas from 547 to 1,880 acres, which NYCDEP agrees is reasonable. If the Town elects, in the future, to prohibit acquisitions from the designated area, this would further ensure that land is available within these areas to continue to accommodate future development.

CONCLUSIONS

While the amount of land projected to be acquired in Olive under the Extended LAP is substantial, the Town would still have a substantial supply of undeveloped land as of 2022. Additional acquisitions under the Extended LAP would help protect the high-quality natural environment that is clearly among Olive's greatest economic assets.

On the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Olive.

TOWN OF SHANDAKEN

EXISTING CONDITIONS

The Town of Shandaken is located in northwestern Ulster County, entirely within the New York City watershed. Shandaken's resident population in 2008 was estimated to be 3,427 – an increase of 5.9 percent since 2000. Shandaken is primarily rural in character, with most of its population concentrated in hamlets such as Pine Hill, Shandaken, Phoenicia and Big Indian along Route 28.

Figure 4-55: Map of Shandaken in relation to the watershed

Town of Shandaken – Quick Facts

Land area:	78,875 acres
Percent of town land area within the watershed:	100%
Percent of land protected:	72%
Population (estimated), 2008:	3,427
Median age (estimated), 2008	47
Median household income (estimated), 2008	$39,555

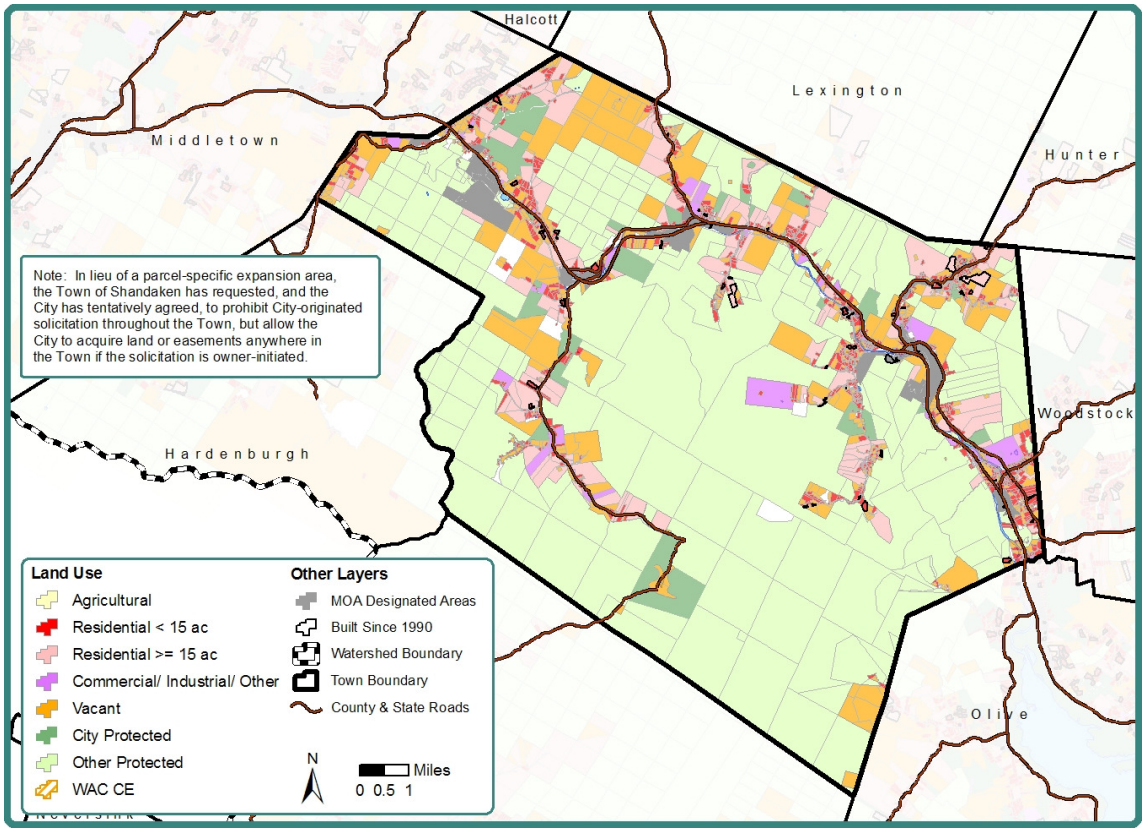
The local economy is based primarily on recreational activity, including skiing at Belleayre Mountain as well as hiking and hunting in the State Forest Preserve. In addition to its full-time population, the Town has a relatively large seasonal or part-time population; in 2000, according to the Census Bureau, 32 percent of Shandaken's 2,710 housing units were for seasonal or recreational use. DemographicsNow estimates that between 2000 and 2008, the total number of housing units in the Town increased by 205 – an average of 25.6 units per year.

As Table 4-55 and Figure 4-56 show, nearly 72 percent of Shandaken's total area consists of protected land, with privately-owned vacant land and low-density residential land accounting for about two-thirds of the remainder.

Table 4-55: Land uses by type

Land Use	*Acres*	*% of Total*
Agricultural	0	0%
High-Density Residential	3,808	5%
Low-Density Residential	6,361	8%
Commercial/Other	1,474	2%
State/Other Protected	53,753	68%
City Protected	2,701	3%
Vacant	9,804	12%
Total Town Acres	**78,875**	

Figure 4-56: Map of the Town of Shandaken, showing land uses, development since 1990



After declining sharply in the first half of the twentieth century, the Town's population has grown steadily in recent decades. With a resident population of 3,235 in 2000, Shandaken for the first time surpassed its previous high – which had been set in 1900. With a high percentage of its lands already protected – its mountainous terrain – and much of the land in its hamlet areas already developed – Shandaken has relatively little developable land remaining.

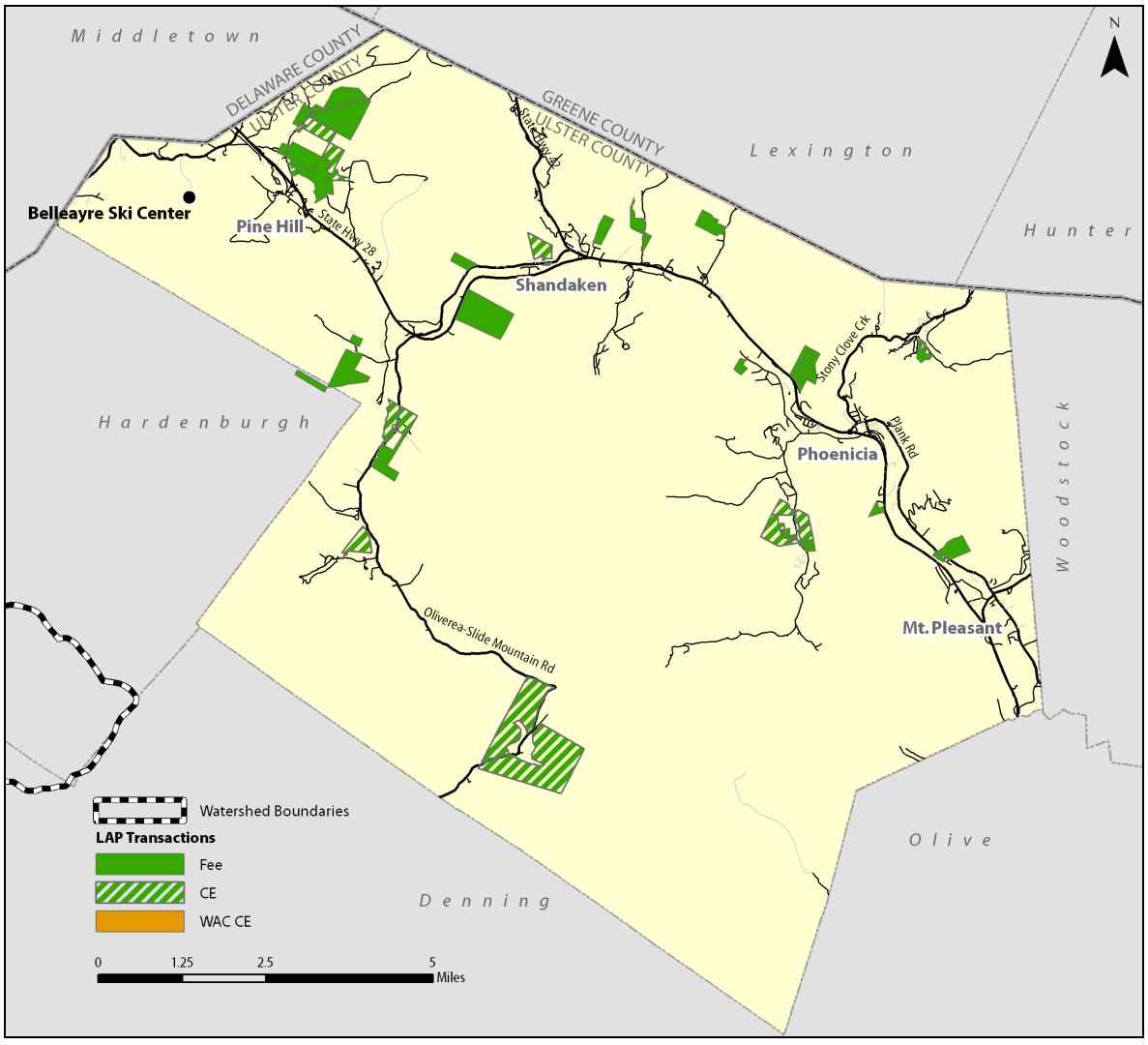
Previous LAP Activity

Through July 2009, NYCDEP had acquired a total of 2,660 acres in Shandaken pursuant to the 1997 MOA. As shown in Table 4-56, below, purchases of land in fee simple account for 54 percent of the total acreage acquired under LAP. Figure 4-57 shows the location of LAP properties in Shandaken, by type of acquisition.

Table 4-56: Acquisitions in the Town of Shandaken through July 2009

Type of acquisition	Acres
Fee simple	1,424
Conservation easements	1,236
WAC agricultural easements	-
Total acquired	**2,660**

Figure 4-57: Map of LAP properties in Shandaken, by type of acquisition



As shown in Figure 4-57, most of the land acquired in Shandaken by the LAP through June 2009 is located near the Route 28 corridor, but outside the Town's main hamlet areas.

Of the 1,424 acres acquired by NYCDEP in fee simple in Shandaken, 1,220 acres have been opened for public recreational use.

Pursuant to the 1997 MOA, Shandaken designated six hamlet areas totaling 1,506 acres in Pine Hill, Big Indian, Allaben, Phoenicia, Mount Tremper and Chichester. These designations, which are shown in gray in Figure 4-56, have helped ensure that acquisition of land and easements by NYCDEP does not conflict with commercial activity and further development in the hamlets.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2022, as discussed in Chapter 3, the resident population of Ulster County is expected to grow by about 3 percent, somewhat slower than the rate of growth during the past two decades. At the same time, the demand for second homes in the County may not return to the peak levels of the last twenty years – in the near term due to economic conditions, and later in the forecast period (as also discussed in Chapter 3) due to a decline in the number of greater New York area residents in the 45-to-64 age bracket – the prime second-home-buying years.

For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. Assuming the pace of new development in Shandaken (as measured by new residential units) remains, on an average annual basis, the same as it was between 1990 and 2008, we can estimate that the land required to support new development through 2022 will total approximately 650 acres – including 186 acres of land characterized as developable. [40]

The planned Belleayre Resort straddles the boundary between Shandaken and Middletown. Under an agreement negotiated in 2007 among the developer, local officials, NYCDEP, and NYSDEC, the project would include two hotels with a total of 370 rooms, an 18-hole golf course, and 259 lodging units and other facilities.

The Town of Shandaken's 2005 comprehensive plan presents a vision of the Town as a place:

> *…with bustling hamlets, interesting shops, successful restaurants and attractive overnight accommodations, surrounded by open spaces and unspoiled natural beauty – one with a prosperous economy centered on tourism, historically our most enduring business…We put a high priority on the revitalization of our hamlets.*[41]

The Town's goals as defined in the comprehensive plan are to:

> A. *Protect and preserve the environmental, historical, and cultural features and resources within the Town of Shandaken from harm, physical degradation and visual impacts.*

[40] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres, reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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, or slopes of greater than 15 percent.. Land with any one or more of these characteristic in considered undevelopable.

[41] Robert G. Cross, Town Supervisor, "Vision Statement," Town of Shandaken, *Comprehensive Plan for the Town of Shandaken*, New York, July 2005.

B. Promote the economic development of the Town of Shandaken to ensure an acceptable standard of living for its residents.

C. Provide programs and laws to guide future development toward desired patterns within the Town of Shandaken.

D. Provide the infrastructure needed to meet the other Comprehensive Plan goals and to meet the health, safety and quality of life needs of residents of Shandaken.

E. Be proactive in establishing regional partnerships to address issues that transcend Town boundaries.

F. Develop community education and outreach programs that foster an understanding of key issues facing the Town and encourage public participation in developing effective solutions.[42]

FUTURE CONDITIONS WITH THE PROPOSED ACTION

As noted in Chapter 3, any analysis of the Extended LAP's impact on Shandaken's supply of developable land needs to take into account that as of 2009, Shandaken's supply of such land is already quite limited. As defined here, developable land represents only 1.8 percent of the Town's total land area. Given the projected level of development in Shandaken, and the number of developable acres projected to be acquired by LAP, this percentage could decline to 1.4 percent by 2022.

- Given the pace of development in Shandaken, projected LAP acquisitions through 2022 might thus be expected to impact the availability of land for development. Several factors, however, are likely to reduce significantly any potential impacts: As noted above, the definition of developable land used in this analysis is conservative in several respects. The effective supply of developable land as of 2009 is in reality likely to be somewhat larger than Table 4-57 indicates. In fact, Shandaken's 2005 comprehensive plan, using a somewhat broader definition of developable land, estimated the Town's remaining developable land at 4,760 acres compared to 1,444 used in this analysis. Even under this broader definition the supply of land available for development is clearly limited. It should nevertheless be noted that despite this relatively tight supply of developable land, both the Town's population and its housing stock has grown significantly between 2000 and 2008 – by 5.9 and 7.6 percent, respectively.

- Incorporated into the Extend LAP will be a new NYCDEP policy that will potentially reduce acquisitions in Shandakan. Recognizing the reality that nearly 72 percent of Shandaken's land area is already protected, Town officials have proposed and NYCDEP has agreed to a new policy under which the Department will forego active solicitation of individual land-owners in the Town, but will still be free to enter into negotiations with, and purchase land from, owners who initiate contact with NYCDEP. This change is

[42] Ibid., p. III-3

likely to result in some reduction in the total acreage acquired in Shandaken through 2022.

Based on LAP's experience in the Town to date, and taking into account the change in policy described above, NYCDEP estimates that through 2022, it could acquire an additional 1,450 acres in Shandaken either in fee simple or through conservation easements. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, we estimate that these acquisitions will include approximately 185 acres of developable land.

As shown in the following table, it is estimated that after taking into account both LAP acquisitions and the land required to support new development, Shandaken will still be left with approximately 74 percent of the Town's current stock of developable non-agricultural land.

Table 4-57: Remaining developable land after LAP and housing development, 2010-2022

Developable vacant or low-density residential land in 2009		1,444 acres
LAP Acquisitions, 2010-2022		
Projected fee and CE acquisitions	1,450 acres	
Developable vacant or low-density residential land acquired		185 acres
Residential Development, 2010-2022		
Projected housing units built	216 units	
Land needed for housing	650 acres	
Developable portion of land needed for housing		186 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2022		1,073 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2022		74 percent

The potential impact of additional acquisitions through 2022 can also be assessed in terms of how such acquisitions affect the character of the community. The comprehensive plan acknowledges some tension among three important priorities: protecting the natural environment; the need to protect the city's water supply, resulting in additional acquisitions by NYCDEP from the town's already-limited supply of developable land; and "local residents who need additional economic opportunities to sustain their quality of life." The plan expresses particular concern about "a growing disconnect between the cost of housing and the ability of local wage-earners to afford a place to live."

While LAP may not contribute directly to achievement of other goals outlined in the plan – such as promoting economic development – it does not appear to conflict with those goals. The very high proportion of protected land in the town means that its development capacity will inevitably be limited – but with collaboration between the Town and the Department, it should be possible to accommodate both new development, additional acquisitions under LAP and preserve the character of the Town, through 2022 and beyond.

CONCLUSIONS

Due to the Town's very limited supply of developable land, Shandaken is one of just a few West-of-Hudson watershed towns where there may be some potential for conflict between projected acquisitions under the Extended LAP and projected future development. However, the

proposed agreement among NYCDEP, the Town and other stakeholders under which NYCDEP would no longer actively solicit land in Shandaken will help alleviate any potential for conflict. Moreover, LAP does not conflict with what appears likely to be by far the most significant development proposal affecting the town – the planned Belleayre Resort.

Given the likelihood of relatively limited acquisitions in Shandaken under the Extended LAP, and on the basis of the analyses described above and in Chapters 2 and 3, the Extended LAP would not be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Shandaken.

CHAPTER 5:

WATER QUALITY AND NATURAL RESOURCES

INTRODUCTION

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.

This section will provide a description of existing water quality in the watershed and a discussion of the anticipated beneficial effects of land acquisition on water quality, water resources, and natural resources. It will also examine the water quality and natural resource impacts of avoiding land acquisition in and around hamlet areas where centralized services already exist, while focusing acquisition efforts in other areas, consistent with "smart growth" principles.

The Extended LAP would result in a beneficial effect on water quality and natural resources, and there would be no potential for significant adverse impacts to occur. Therefore, the analysis provided in this chapter is qualitative and relies on the extensive documentation in the literature that demonstrates beneficial impacts on water quality and natural resources of land preservation and smart growth principles.

EXISTING CONDITIONS

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 nine million residents of the City and nearby communities in New York State. Since the program started in the 1990s, LAP has protected, through acquisition, over 96,000 acres of land in the one million-acre Cat-Del System. Together with lands previously 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.

The NYC reservoirs and water supply system are subject to the federal Surface Water Treatment Rule (SWTR) standards, NYS ambient water quality standards, and NYCDEP's own target criteria for water quality. A summary of the latest reservoir-wide statistics for a variety of physical, biological, and chemical analytes are shown in Figures 5-1a through 5-1d[1] for individual reservoirs throughout the Cat-Del system.

Median turbidity levels in all terminal reservoirs are well below the standard of 5.0 NTU. Median total phosphorus was lower than the water quality guidance value of 15 µg/L for each source water reservoir in 2008. Nitrate was uniformly low in all reservoirs with no samples

[1] "2008 Watershed Water Quality Annual Report," New York City Department of Environmental Protection, Bureau of Water Supply, July 2009

approaching the standard of 10 mg/ L. Ammonia was very low for WOH terminal reservoirs and no excursions above the standard were evident.

Table 5-1a: Reservoir-wide summary statistics for a variety of physical, biological, and chemical analytes, 2008.

		West Ashokan Basin			East Ashokan Basin			Schoharie		
Analyte	WQS	N	Range	Median	N	Range	Median	N	Range	Median
PHYSICAL										
Temperature (°C)		143	4.0 - 22.8	9.5	92	3.8 - 23.7	10.5	119	4.2 - 22.1	9.7
pH (units)	6.5-8.5 [1]	143	5.9 - 7.5	6.7	92	5.9 - 8.2	7.1	119	6.3 - 7.7	6.9
Alkalinity (mg/L)		12	6.6 - 13.9	10.1	9	9.2 - 12.1	9.9	9	9.7 - 18.8	12.9
Conductivity		105	42 - 70	55	86	50 - 64	56	108	58 - 92	73
Hardness (mg/L) [2]		9	12.7 - 20.0	18.1	8	15.9 - 18.2	16.3	6	16.4 - 19.8	18.6
Color (Pt-Co units)	(15)	141	6 - 18	12	89	5 - 15	9	91	5 - 24	16
Turbidity (NTU)	(5) [3]	144	1.3 - 9.3	3.6	91	0.8 - 6.6	1.6	120	1.2 - 11.0	4.3
Secchi Disk Depth (m)		39	1.4 - 4.5	3.1	25	2.1 - 5.8	4.2	41	1.1 - 4.0	2.2
BIOLOGICAL										
Chlorophyll a (µg/L)	7 [4]	28	1.04 - 4.71	2.18	20	0.96 - 3.78	1.88	35	0.16 - 5.67	1.63
Total Phytoplankton (SAU)	2000 [4]	75	<5 - 610	180	59	5 - 870	170	52	<5 - 1100	56
CHEMICAL										
Dissolved Organic Carbon (mg/L)		85	1.0 - 2.1	1.3	57	1.3 - 1.8	1.5	73	1.4 - 2.8	1.7
Total Phosphorus (µg/L)	15 [4]	105	<5 - 14	8	65	<5 - 13	8	104	6 - 19	10
Total Nitrogen (mg/L)		75	0.15 - 0.39	0.30	48	0.11 - 0.40	0.29	73	0.14 - 0.45	0.32
Nitrate+Nitrite-N (mg/L)	10 [1]	59	<0.050 - 0.301	0.222	42	<0.050 - 0.276	0.181	37	<0.050 - 0.350	0.180
Total Ammonia-N (mg/L)	2 [1]	85	<0.02 - 0.03	<0.02	57	<0.02 - 0.05	0.02	64	<0.02 - 0.04	0.02
Iron (mg/L)	0.3 [1]	8	0.02 - 0.50	0.05	8	0.02 - 0.06	0.03	4	0.11 - 0.33	0.15
Manganese (mg/L)	(0.05)	8	na	na	8	na	na	4	na	na
Lead (µg/L)	50 [1]	8	<1 - 1	<1	8	<1 - <1	<1	4	<1 - <1	<1
Copper (µg/l)	200 [1]	8	<3 - 14	<3	8	<3 - 27	<3	4	<3 - <3	<3
Calcium (mg/L)		9	3.8 - 6.2	5.5	8	4.8 - 5.2	5.0	6	5.1 - 6.0	5.8
Sodium (mg/L)		9	3.32 - 4.41	3.79	8	3.59 - 4.09	3.75	6	4.57 - 5.32	5.04
Chloride (mg/L)	250 [1]	36	5.9 - 7.6	6.6	27	6.3 - 7.1	6.7	28	6.8 - 11.1	9.6

Table 5-1b: Reservoir-wide summary statistics for a variety of physical, biological, and chemical analytes, 2008.

Analyte	WQS	Cannonsville N	Cannonsville Range	Cannonsville Median	Pepacton N	Pepacton Range	Pepacton Median
PHYSICAL							
Temperature (°C)		183	3.7 - 23.2	11.8	203	2.7 - 23.3	7.3
pH (units)	6.5-8.5 [1]	166	6.5 - 9.1	7.0	157	6.6 - 9.2	7.1
Alkalinity (mg/L)		18	10.9 - 20.4	15.8	21	9.2 - 13.5	10.5
Conductivity		183	73 - 103	83	190	54 - 67	58
Hardness (mg/L) [2]		18	20.0 - 26.6	24.7	19	16.3 - 20.3	18.2
Color (Pt-Co units)	(15)	165	8 - 23	14	197	6 - 17	12
Turbidity (NTU)	(5) [3]	165	0.8 - 11.0	2.4	197	0.4 - 9.0	1.6
Secchi Disk Depth (m)		59	1.7 - 5.3	2.9	66	0.6 - 5.1	3.9
BIOLOGICAL							
Chlorophyll a (µg/L)	7 [4]	48	1.44 - 13.27	5.07	43	0.03 - 8.03	4.33
Total Phytoplankton (SAU)	2000 [4]	76	5 - 4400	295	61	<5 - 880	230
CHEMICAL							
Dissolved Organic Carbon (mg/L)		147	1.3 - 2.2	1.6	145	1.2 - 2.0	1.4
Total Phosphorus (µg/L)	15 [4]	163	5 - 19	14	192	<5 - 22	8
Total Nitrogen (mg/L)		120	0.20 - 0.79	0.54	130	0.14 - 0.59	0.47
Nitrate+Nitrite-N (mg/L)	10 [1]	60	<0.050 - 0.721	0.402	64	<0.050 - 0.480	0.381
Total Ammonia-N (mg/L)	2 [1]	132	<0.02 - 0.05	0.02	142	<0.02 - 0.04	<0.02
Iron (mg/L)	0.3 [1]	8	0.04 - 0.11	0.07	8	0.02 - 0.04	0.03
Manganese (mg/L)	(0.05)	8	na	na	8	na	na
Lead (µg/L)	50 [1]	8	<1 - <1	<1	8	<1 - <1	<1
Copper (µg/l)	200 [1]	8	<3 - 5	<3	8	<3 - 3	<3
Calcium (mg/L)		18	5.6 - 7.6	7.1	19	4.8 - 6.1	5.3
Sodium (mg/L)		18	5.94 - 7.56	6.40	19	3.62 - 3.90	3.74
Chloride (mg/L)	250 [1]	32	10.3 - 12.7	11.1	40	6.2 - 7	6.8

Table 5-1c: Reservoir-wide summary statistics for a variety of physical, biological, and chemical analytes, 2008.

Analyte	WQS	Neversink N	Neversink Range	Neversink Median	Rondout N	Rondout Range	Rondout Median
PHYSICAL							
Temperature (°C)		136	3.3 - 22.4	8.1	179	2.9 - 22.3	10.4
pH (units)	6.5-8.5 [1]	136	5.6 - 7.3	6.3	149	6.0 - 8.5	7.0
Alkalinity (mg/L)		9	1.7 - 6.5	3.0	9	5.3 - 9.9	6.5
Conductivity		136	25 - 31	29	179	44 - 61	53
Hardness (mg/L) [2]		9	7.3 - 8.2	8.0	9	12.1 - 16.9	14.3
Color (Pt-Co units)	(15)	136	7 - 18	12	180	7 - 16	12
Turbidity (NTU)	(5) [3]	136	0.3 - 1.6	0.8	180	0.4 - 1.7	0.9
Secchi Disk Depth (m)		39	4.4 - 9.8	5.8	51	3.7 - 6.9	5.3
BIOLOGICAL							
Chlorophyll a (µg/L)	7 [4]	32	0.47 - 6.00	2.65	24	0.22 - 5.13	2.28
Total Phytoplankton (SAU)	2000 [4]	62	<5 - 220	41	106	<5 - 650	155
CHEMICAL							
Dissolved Organic Carbon (mg/L)		97	1.4 - 2.1	1.6	80	1.3 - 1.9	1.5
Total Phosphorus (µg/L)	15 [4]	135	<5 - 8	5	100	<5 - 9	7
Total Nitrogen (mg/L)		97	0.10 - 0.35	0.28	80	0.25 - 0.47	0.34
Nitrate+Nitrite-N (mg/L)	10 [1]	46	<0.050 - 0.250	0.180	29	0.120 - 0.411	0.257
Total Ammonia-N (mg/L)	2 [1]	96	<0.02 - 0.08	<0.02	70	<0.02 - 0.03	<0.02
Iron (mg/L)	0.3 [1]	7	0.04 - 0.10	0.06	8	0.02 - 0.04	0.02
Manganese (mg/L)	(0.05)	7	na	na	8	na	na
Lead (µg/L)	50 [1]	7	<1 - 1	<1	8	<1 - <1	<1
Copper (µg/l)	200 [1]	7	<3 - <3	<3	8	<3 - <3	<3
Calcium (mg/L)		9	2.1 - 2.3	2.3	9	3.5 - 4.9	4.1
Sodium (mg/L)		9	1.69 - 1.85	1.80	9	3.42 - 4.17	3.64
Chloride (mg/L)	250 [1]	21	3.1 - 3.7	3.5	25	6.4 - 8.1	6.9

Table 5-1d: Reservoir-wide summary statistics for a variety of physical, biological, and chemical analytes, 2008.

Analyte	WQS	West Branch N	West Branch Range	West Branch Median	Kensico N	Kensico Range	Kensico Median	Boyd Corners N	Boyd Corners Range	Boyd Corners Median
PHYSICAL										
Temperature (°C)		147	3.6 - 23.6	13.8	427	2.6 - 21.9	11.4	44	6.9 - 26.0	17.5
pH (units)	6.5-8.5 [1]	133	6.4 - 8.1	7.2	362	6.3 - 7.5	7.0	44	6.8 - 8.1	7.4
Alkalinity (mg/L)		14	9.4 - 50.5	17.9	20	8.7 - 13.3	10.6	5	23.9 - 37.1	34.5
Conductivity		139	59 - 165	95	401	50 - 88	67	44	193 - 224	209
Hardness (mg/L) [2]		5	19.2 - 30.2	22.1	20	16.12 - 20.5	19.0	5	40.4 - 51.2	48.3
Color (Pt-Co units)	(15)	147	8 - 30	15	371	5 - 15	10	39	15 - 30	25
Turbidity (NTU)	(5) [3]	147	0.7 - 3.5	1.4	427	0.2 - 2.5	1.1	40	0.7 - 3.1	1.7
Secchi Disk Depth (m)		60	0.2 - 5.0	3.6	117	2.3 - 6.1	4.8	17	2.6 - 4.3	3.6
BIOLOGICAL										
Chlorophyll a (µg/L)	7 [4]	28	<0.40 - 16.60	4.45	61	<0.40 - 9.30	4.30	18	<0.40 - 14.10	6.90
Total Phytoplankton (SAU)	2000 [4]	76	21 - 2500	440	159	30 - 1300	260	13	30 - 3300	400
CHEMICAL										
Dissolved Organic Carbon (mg/L)		62	1.5 - 3.3	2.0	193	1.1 - 1.9	1.5	40	2.2 - 4.4	3.9
Total Phosphorus (µg/L)	15 [4]	74	5 - 19	9	195	3 - 10	6	40	6 - 15	12
Total Nitrogen (mg/L)		75	0.15 - 0.39	0.26	177	0.15 - 0.44	0.29	37	0.15 - 0.67	0.24
Nitrate+Nitrite-N (mg/L)	10 [1]	76	<0.010 - 0.264	0.131	170	0.042 - 0.336	0.190	38	<0.010 - 0.133	0.005
Total Ammonia-N (mg/L)	2 [1]	76	<0.010 - 0.101	<0.010	136	<0.010 - 0.035	<0.010	38	<0.010 - 0.033	<0.010
Iron (mg/L)	0.3 [1]	5	0.03 - 0.96	0.06	6	0.02 - 0.04	0.02	4	0.07 - 0.49	0.10
Manganese (mg/L)	(0.05)	5	na	na	6	na	na	4	na	na
Lead (µg/L)	50 [1]	5	<1 - <1	<1	6	<1 - <1	<1	4	<1 - <1	<1
Copper (µg/l)	200 [1]	5	<3 - <3	<3	6	<3 - <3	<3	4	<3 - <3	<3
Calcium (mg/L)		5	5.1 - 7.9	5.8	20	4.7 - 5.8	5.4	5	10.1 - 12.6	12.0
Sodium (mg/L)		5	7.85 - 10.5	8.80	20	4.06 - 5.95	5.41	5	20.6 - 22.5	22.10
Chloride (mg/L)	250 [1]	14	9.6 - 34.3	19.0	20	7.3 - 10.9	9.0	5	38 - 41.3	40.4

The SWTR (40 CFR § 141.71(a)(1)) requires that water at a point just prior to disinfection not exceed specified thresholds for fecal coliform bacteria and turbidity. To ensure compliance with this requirement, NYCDEP monitors water quality for each of the water supply systems at "keypoints" (entry points from the reservoirs to the aqueducts) just prior to disinfection. As stated in the latest Annual Water Quality Report (2008), the fecal coliform counts at all the keypoints consistently met the SWTR standard that no more than 10% of daily samples may contain > 20 CFU 100mL-1. The 2008 calculated percentages for effluent waters at Croton Gate House, Catksill Lower Effluent Chamber and Shaft 18 on the Delaware Aqueduct were far below this limit. Median fecal coliform counts (CFU 100mL-1) in raw water samples taken at these sites were the same, at 1 CFU 100mL-1, while maxima were 7, 45, and 74, respectively. The SWTR limit for turbidity is 5 NTU. All three effluent waters, measured at 4-hour intervals, were consistently well below this limit in 2008.

Since 1993, the City has been granted a series of Filtration Avoidance Determinations for the Cat-Del system by the U.S. Environmental Protection Agency (EPA). This designation recognizes the high quality of New York City's West of Hudson water supply.[2]

Through the City's overall Watershed Protection Program, which includes many water quality improvement as well as anti-degradation programs, the high water quality of the system's reservoirs has been maintained and, in certain cases, improved. At the Cannonsville Reservoir, upgrades to wastewater treatment plants and Best Management Practices (BMPs) implemented at farms have resulted in lower algae levels and Total Phosphorus in the Reservoir. At a number of reservoirs, the City's waterfowl management program has dramatically reduced coliform levels.

FUTURE WITHOUT THE PROPOSED ACTION

One of the planning elements of LAP is that it seeks to acquire more ecologically-sensitive lands, thereby encouraging development in areas where it is already occurring, or where it will have less impact of water quality. Without the Extended LAP, development can be expected to occur in a more diffuse manner, also known as sprawl, in areas where the adverse impacts on water quality could be greater. Without the Extended LAP, new development could occur in areas that are less suitable from an ecological standpoint and could be more damaging to water quality. Greater parcel fragmentation could also occur, with adverse impacts on natural resources and habitats.

In addition, the Extended LAP is a requirement of the Filtration Avoidance Determination. Without the Extended LAP, NYCDEP would risk losing filtration avoidance. See also, Chapter 10, *Alternatives, No Action Alternative*.

FUTURE WITH THE PROPOSED ACTION

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

[2] New York City Filtration Avoidance Determination, Surface Water Treatment Rule Determination for New York City's Catskill/Delaware Water Supply System, USEPA in consultation with NYSDOH, July 2007.

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

NYCDEP, in consultation with the State and watershed communities, is considering modifying the Natural Features Criteria for the Extended LAP to include numeric thresholds, but agreement has not yet been reached. As described in Chapter 1, *Project Description*, Table 1-4, the criteria under consideration would remove certain lands from future solicitation. This potential change would focus acquisitions on those lands more connected and sensitive to water quality. Further, by avoiding certain properties which would fall beneath the thresholds for acquisition, future development would be more likely to occur on properties deemed to have a lower potential impact on water quality. As discussed in Chapter 1, the criteria under consideration could reduce the amount of land available for solicitation. from 377,032 acres under current criteria to about 364,379 acres.

As discussed in this chapter, the Extended LAP provides beneficial water quality impacts; therefore the proposed action would result in beneficial water quality impacts under any of the Natural Features Criteria scenarios being considered. 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 Pilot Program, as discussed in Chapter 1, 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.

The next two sections provide a review of the literature on land acquisition and smart growth principles as water quality and natural resources protection measures. These sections are followed by an assessment and conclusions based on the literature review.

LITERATURE REVIEW OF LAND ACQUISITION AS A WATER QUALITY AND NATURAL RESOURCES PROTECTION MEASURE

The importance of preserving undeveloped lands for water quality and ecosystem health is well-documented in the literature. This section reviews a number of these sources.

In a study[3] conducted by the National Research Council (NRC) in 2000, it was concluded that:

> *Purchasing private land is one of the most important nonstructural tools used to protect a watershed…A land acquisition program is potentially one of the most successful strategies for source water protection.*

In their report, "Protecting Water Resources with Smart Growth," EPA notes:

> *Preserving open space is critical to maintaining water quality at the regional level. Large, continuous areas of open space reduce and slow runoff, absorb sediments, serve as flood control, and help maintain aquatic communities. In most regions, open space comprises significant portions of a watershed, filtering out trash, debris, and chemical pollutants before they enter a community's water system. Open space provides a number of other benefits, including habitat for plants and animals, recreational opportunities, forest and ranch land, places of natural beauty, and important community space*: [4].

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 extensively

[3] National Research Council. 2000. Watershed Management for Potable Water Supply: Assessing the New York City Strategy. Washington, DC: National Academy Press.

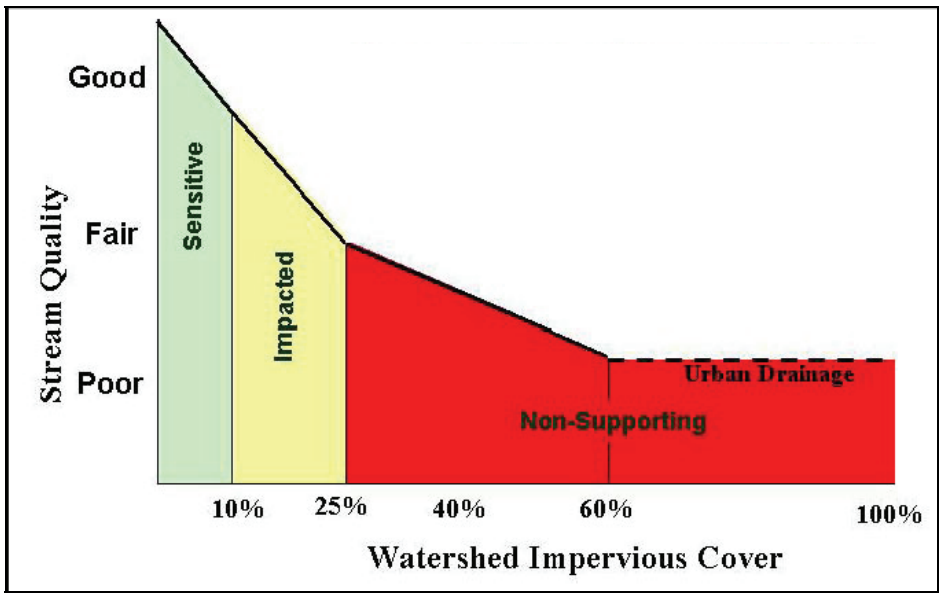
[4] "Protecting Water Resources with Smart Growth," U.S. EPA, www.epa.gov/smartgrowth.

disturbed available for future growth. The Center for Watershed Protection[5] has extensively researched imperviousness and how it relates to habitat structure, water quality and biodiversity of aquatic systems:

> *Impervious surfaces collect and accumulate pollutants deposited from the atmosphere, leaked from vehicles or derived from other sources. During storms, accumulated pollutants are quickly washed off and rapidly delivered to aquatic systems. Monitoring and modeling studies have consistently indicated that urban pollutant loads are directly related to watershed imperviousness. Indeed, imperviousness is the key predictive variable in most simulation and empirical models used to estimate pollutant loads.*

As shown in Figure 5-1, the ecological health of streams is greatly impacted by impervious cover. Biological and physical indicators of stream quality tend to show observable negative impacts at levels of imperviousness as low as 5 percent,[6] and with impervious cover greater than 25 percent, a stream may be unable to support ecological habitat. The Cat-Del watershed has a low percentage of impervious cover, and the Extended LAP would help to increase that protection.

Figure 5-1: Impacts of Imperviousness on Ecological Health



Source: Center for Watershed Protection

[5] "Impacts of Impervious Cover on Aquatic Systems," Center for Watershed Protection, March 2003

[6] "Impacts of Impervious Cover on Aquatic Systems," Center for Watershed Protection, March 2003

In the SUNY College of Environmental Science and Forestry/Yale School of Forestry and Environmental Studies joint study, *Predicting Future Water Quality from Land Use Change Projections in the Catskill-Delaware Watersheds,*[7] the authors state that:

> *Land use and water quality are inextricably linked," and have shown that forest cover provides more optimal land cover for protecting water quality than many of the potential uses to which that land may be converted..*

In regard to the City's watershed in particular, they further note that:

> *Although the forest cover appears to be stable, both through remotely sensed data and 'windshield survey,' fragmentation and parcelization have been increasingly altering the natural landscape by breaking large forest areas into smaller parcels and large land holdings into smaller ones… Fragmentation and parcelization (Sampson and DeCoster 2000) are two agents of change in forest cover, and are often an unnoticed threat.*

As noted in the joint study referenced above:

> *[T]hese current trends of parcelization in the Cat/Del watershed may ultimately threaten water quality. The Croton watershed in the east of Hudson section of the city's water supply system serves as an example of the impacts of development on water quality. In the Croton watershed, widespread development patterns have resulted in the extensive urban infrastructure increasing peak flows of stormwater runoff, leading to erosion, streambank instabilities, and higher concentrations of pollutants (NYC DEP 2003).*

LITERATURE REVIEW OF SMART GROWTH AS A WATER QUALITY PROTECTION MEAURE

Smart growth principles are important tools for protecting water quality and ecosystem health. This section reviews a number of literature sources.

As noted in EPA's "2003 Draft Report on the Environment":

> *When such* [growth and preservation] *areas are clearly defined, development is encouraged on land with less ecological value, such as previously developed areas (e.g., brownfields, greyfields) and vacant properties. Land with higher ecological value, such as wetlands, marshes, and riparian corridors, is then preserved or otherwise removed from the pool of "developable land.*

The Center for Watershed Protection promotes concentration of new development in areas of existing development.

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[7] Myrna Hall, Rene Germain, Mary Tyrrell and Neil Sarpor, Predicting Future Water Quality from Land Use Change Projections in the Catskill-Delaware Watersheds, SUNY College of Environmental Science and Forestry/Yale School of Forestry and Environmental Studies, December 2008.

The best way to minimize the creation of additional impervious area at the regional scale is to concentrate it in high density clusters or centers.[8]

ASSESSMENT AND CONCLUSIONS

LAP was established for the sole purpose of protecting the City's drinking water quality. As shown in the tables in Existing Conditions section above, 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,[9] 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

[8] "The Importance of Imperviousness," feature article from Watershed Protection Techniques. 1(3): 100-111, Center for Watershed Protection.

[9] New York State Open Space Plan. 2009

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 expanded hamlet areas under the Extended LAP (See Chapter 1) 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.

Based on the literature review and assessment above, 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.

CHAPTER 6:

OPEN SPACE AND RECREATION

INTRODUCTION

This chapter assesses the potential impacts of the proposed action on Open Space and land-based recreational opportunities. Open Space may be public or private and may include active and/or passive areas. This chapter will:

- provide a description of the existing conditions of open space in the Cat-Del Watershed;
- discuss future conditions without the proposed action;
- assess the impacts of the Extended LAP on Open Space and Recreation.

WEST-OF- HUDSON

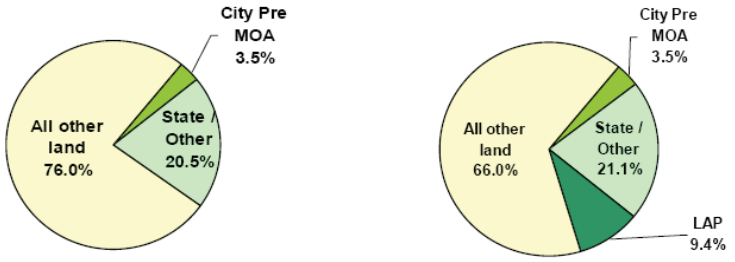
EXISTING CONDITIONS

As of July 2009, a total of 356,247 acres within the West of Hudson watershed can be considered protected lands, including:

- 204,238 acres of State-owned land, concentrated mostly in Ulster and Greene counties;
- 88,674 acres acquired by New York City in fee simple or as conservation or agricultural easements under LAP;
- 32,870 acres of land that New York City had already owned prior to the execution of the MOA, excluding reservoirs (which cover 22,542 acres); and
- 7,923 acres owned or protected by others, such as private non-profit land conservation trusts (but not including the Watershed Agricultural Council).

Excluding the reservoir acreage, together, these four categories account for about 34 percent of the land area of the West-of-Hudson watershed and 20 percent of the total land area of the 41 watershed towns (including lands both within and outside the watershed). As shown in Figure 6-1, the percentage of protected land increased from 24% to 34% in the Cat-Del system since the start of the LAP program.

Figure 6-1 Protected Land in the Cat-Del System, 1997 vs. 2009



The status of protected watershed lands by county is provided in Table 6-1. Ulster County and Greene County have the largest percentages of watershed acres of protected lands occupying 60 percent and 41 percent respectively. In contrast, Sullivan County, Schoharie County and Delaware County have lower percentages of 35 percent, 20 percent and 20 percent, respectively.

Table 6-1: Status of protected watershed lands by county

		Land in the watershed						
County	Total acres	Acres in the watershed	LAP protected	State protected	Other protected	City pre-MOA	Total protected lands	Protected lands % of watershed
Delaware	925,400	492,487	45,350	25,796	3,812	21,634	96,592	20%
Greene	414,720	199,701	16,970	63,815	831	296	81,912	41%
Schoharie	398,080	34,613	3,769	2,569	0	459	6,797	20%
Sullivan	620,800	42,919	4,922	4,054	1,561	4,541	15,079	35%
Ulster	720,640	221,465	17,663	108,004	1,719	5,794	133,179	60%
WOH Total	**3,079,680**	**991,185**	**88,674**	**204,238**	**7,923**	**32,723**	**333,558**	**34%**

Source: NYC DEP

The protected lands listed above that are owned by entities other than the City generally allow for a wide range of recreational uses, including many of those allowed on City lands such as fishing, hiking, showshoeing, cross-country skiing, bird watching, educational programs, nature study and interpretation, and hunting (MOA section 72). Some allow more intensive uses such as horseback riding, overnight camping, boating, mountain biking, and in some cases motorized vehicles – uses that are not generally allowed on land acquired by the City (also as described in MOA section 72).

Just as there is considerable variation among watershed towns on various demographic, economic and development characteristics as described in Chapter 3, so is there with respect to the extent of protected lands. Table 6-2 lists the seven towns with the highest concentrations of protected lands, and the seven towns with the lowest. As shown in this table, most of the towns with low concentrations of protected lands are located in Delaware County. This is mostly due to the fact that the Catskill Park includes a relatively small portion of Delaware County, resulting in a much lower percentage of State land in comparison to Greene, Ulster and Sullivan.

Table 6-2: Seven towns with the lowest and seven towns with the highest concentrations of protected lands (>5% in WS)

Seven towns with lowest concentration of protected lands in the watershed

Town	County	Total acres	Acres in the watershed	Protected acres in the watershed	Protected acres % of watershed
Harpersfield	Delaware	27,069	7,076	151	2.1%
Meredith	Delaware	37,313	15,395	1,116	7.2%
Hamden	Delaware	38,310	33,517	2,942	8.8%
Walton	Delaware	62,574	55,991	5,092	9.1%
Kortright	Delaware	40,004	25,047	2,530	10.1%
Jefferson	Schoharie	27,753	2,942	300	10.2%
Delhi	Delaware	41,343	41,343	4,328	10.5%

Seven towns with highest concentration of protected lands in the watershed

Town	County	Total acres	Acres in the watershed	Protected acres in the watershed	Protected acres % of watershed
Lexington	Greene	51,274	51,274	28,678	56%
Colchester	Delaware	90,916	18,670	10,452	56%
Wawarsing	Ulster	85,857	10,607	6,030	57%
Olive	Ulster	41,735	29,252	16,928	58%
Denning	Ulster	65,430	56,447	35,866	64%
Hurley	Ulster	23,091	8,518	6,164	72%
Shandaken	Ulster	78,875	78,875	56,440	72%

Source: NYCDEP

The protected lands as a percentage of reservoir basin area are shown in Figure 6-2. Cannonsville and Pepacton Reservoir basins have the smallest percentage of protected lands, while Ashokan and Neversink have the highest.

The West of Hudson region has an abundance of existing open space, offering many opportunities for a variety of recreational activities; such as fishing, hunting, hiking, trapping, cross-country skiing, mountain biking and snowmobiling. First and foremost, the State Forest Preserve, covering over 200,000 watershed acres, provides an extensive natural area that is generally open for a number of recreational activities. This large base of open space has been augmented since 1997 by lands acquired by the City and opened for recreational use. As of October 2009 (as shown in Table 6-3), NYCDEP has opened a total of 34,684 acres of West-of-Hudson land acquired under LAP for public recreational use – about 64 percent of the acreage purchased in fee simple under the Land Acquisition Program (land under conservation easements is not generally opened for public access by their owners). This represents a 179 percent increase in the total acreage of NYCDEP-owned land in the region that is available for public recreational use since 1997.

Figure 6-2: Protected Land as a Percentage of Basin Land Area

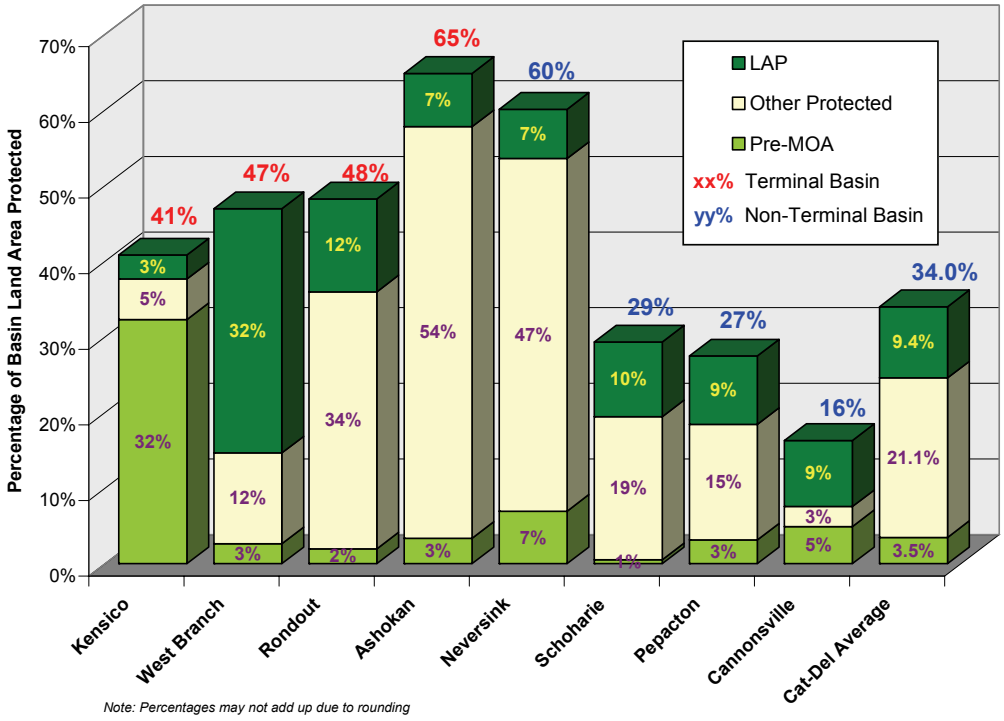


Table 6-2: Acreage open for recreational use, pre-MOA land and LAP land, as of June 30, 2009

County	Pre-MOA Acres	LAP acres	Total Acres
Delaware County	13,048	15,634	28,682
Greene County	-	7,154	7,154
Schoharie County	-	1,637	1,637
Sullivan County	3,136	2,487	5,623
Ulster County	1,535	7,772	9,307
WOH Total	**17,719**	**34,684**	**52,403**

Outdoor recreation is both a major industry in the West-of-Hudson watershed region, and an amenity that is of considerable value to the region's residents and visitors. With few exceptions, properties that have been acquired by NYCDEP were generally not open for public recreational use prior to acquisition, when privately owned. Virtually all of the 34,684 acres acquired under LAP that have been opened to the public thus represent a net addition to the total acreage available in the region for public recreational use. As shown in Figure 6-3 and Table 6-4, NYCDEP allows a number of uses on LAP acquired land where consistent with water quality and public safety. Approximately 59,000 acres since 1997 have been opened for recreational

uses such as fishing, hiking, snowshoeing, cross country skiing, bird watching, educational programs, nature study and interpretation, rifle hunting and to a lesser extent, muzzle-loading implements and trapping. Prior to 2008, NYCDEP required members of the public to hold recreational use permits; in 2008, NYCDEP expanded recreational uses of WOH lands to include Public Access Areas (PAAs) in which no NYCDEP access permits are required. The majority of WOH lands that are not adjacent to reservoirs are being converted to PAAs and this is the default designation for all newly acquired lands. Also in 2008, NYCDEP eliminated the use of the NYCDEP Hunt tag in an attempt to make it easier for the public to access NYCDEP lands.

Figure 6-3: West of Hudson Recreation Areas

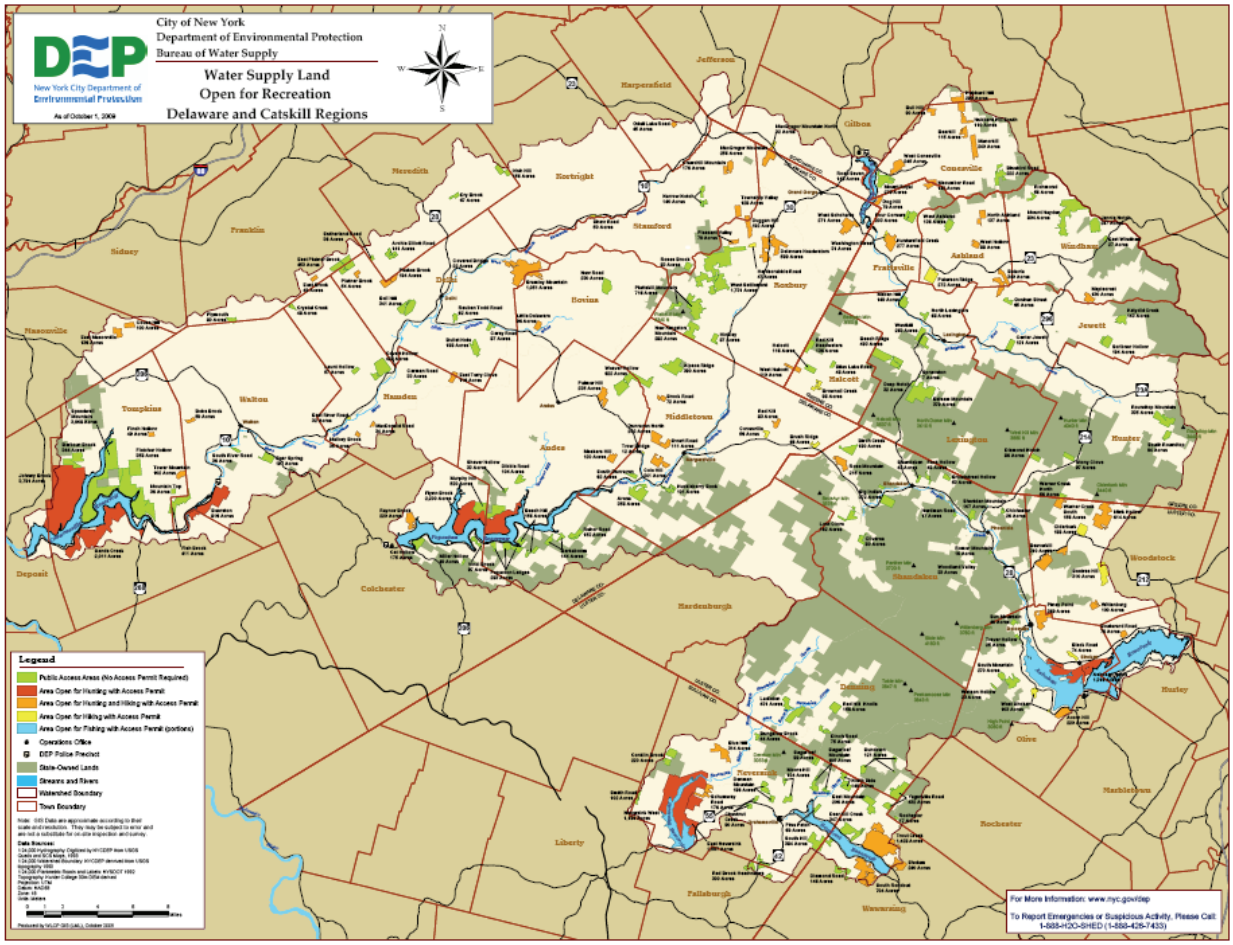


Table 6-3 : City-owned Recreation Acres in West of Hudson Watershed Counties

Delaware County

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS AREA	HIKE	FISH	HUNT	TRAP	ACRES
Alpaca Ridge	Middletown	Thompson Hollow Rd.	4P	✓	✓	✓	✓	✓	401
Archie Elliot Road	Meredith	Archie Elliot Rd.	4O	✓	✓		✓	✓	141
Arena	Middletown	Reservoir Rd	3A	✓	✓		✓	✓	382
Barbour Brook	Tompkins	Barbour Brook Rd.	4O	✓	✓	✓	✓	✓	364
Barkaboom	Andes	Barkaboom Rd	4W	✓	✓		✓	✓	140
Bear Spring	Walton	Route 206	4W	✓	✓		✓	✓	197
Beech Hill	Andes	Beech hill Rd.	4W	✓	✓	✓	✓	✓	156
Beerston	Walton	Route 10	4W				✓		871
Bell Hill	Delhi	Peakes brook & Bell Hill Rd.	4O	✓	✓	✓	✓	✓	328
Betty Brook	Kortright	Betty Brook Rd.	4O	✓	✓	✓	✓	✓	105
Bloomville	Kortright	NY Route 10	4O	✓	✓	✓	✓	✓	245
Bobs Brook	Walton	Bobs Brook Rd.	4O		✓		✓		59
Bramley Mountain	Delhi	Bramley Mountain Rd.	4P	✓	✓	✓	✓		1,051
Brook Road	Middletown	Brook Rd.	4P	✓	✓	✓	✓	✓	70
Brush Ridge	Middletown	Koop Rd.	4R		✓	✓			64
Bryants Brook	Andes	NY Route 28		✓	✓	✓	✓	✓	92
Bullet Hole	Delhi	Bullet Hole Rd.	4P	✓	✓		✓	✓	198
Carey Road	Delhi	NY Route 28	4P	✓	✓	✓	✓	✓	179
Carman Road	Hamden	Carman RD.	4P	✓	✓	✓	✓	✓	33
Cat Hollow	Colchester	Route 30	4W	✓	✓		✓	✓	175
Churchill Mountain	Stamford	McGregor & Tower Mountain Rds.	4P		✓	✓	✓		175
Cole Hill	Middletown	Swart Rd.	4P		✓		✓		241
Couse Hill	Masonville	County Route 27	4O		✓		✓		101
Covered Bridge	Delhi	NY route 10	4P	✓	✓	✓	✓	✓	22
Covert Hollow	Hamden	Covert Hollow Rd.	4O	✓	✓	✓	✓	✓	428
Covesville	Middletown	Hog Mountain Rd.	4R		✓				55
Crystal Creek	Hamden	Dunk Hill Rd. & Fish Hollow	4O	✓	✓	✓	✓	✓	48
Delaware Headwaters	Roxbury	Route 30	4P		✓		✓		600
Dibble Road	Andes	Dibble Rd.	4P	✓	✓		✓	✓	105
Dry Brook	Meredith	Dry Brook Rd.	4O	✓	✓	✓	✓	✓	67
Duggan Hill	Roxbury	Duggan Hill Rd.	4P		✓		✓		189
Dunraven North	Middletown	County Route 6	4P		✓	✓	✓		202
East Brook	Franklin	East Brook Rd.	4O		✓		✓		49
East Masonville	Masonville	Route 27	4O		✓		✓		136
East Platner Brook	Delhi	County Route 16	4O	✓	✓	✓	✓	✓	453
East River Road	Hamden	County Route 26	4P		✓	✓			20
East Terry Clove	Delhi	County Route 2 & East Terry Clove	4P		✓	✓	✓		108
Finch Hollow	Tompkins	Finch hollow Rd.	4O		✓		✓		49
Fish Brook	Walton	Fish Brook Rd.	4O	✓	✓		✓	✓	363
Fletcher Hollow	Tompkins	Fletcher Rd.	4O	✓	✓		✓	✓	371
Flynn Brook	Andes	NYC Road 6	4P			✓	✓		2,183
Hardscrabble Road	Tompkins	Hardscrabble Rd.	4P		✓				47
Hinkley	Roxbury	Carroll hinkley Rd.	4P	✓	✓		✓	✓	87
Huckleberry Brook	Middletown	Huckleberry Brook Rd.	3A	✓	✓	✓	✓	✓	101
Irish Hill	Meredith	Irish Hill Rd.	4O	✓	✓	✓	✓	✓	156
Johnny Brook	Deposit	Barbour Brook Rd.	4O			✓	✓		3,813
Launt Hollow	Hamden	Launt Hollow Rd.	4O	✓	✓	✓	✓	✓	85
Little Delaware	Bovina	Bob Hall Rd.	4P		✓	✓	✓		102
MacDonald Road	Hamden	MacDonald Rd.	4P		✓	✓	✓		30
Mallory Brook	Hamden	County Route 26	4P		✓	✓	✓		36
McGregor Mountain	Roxbury	NY Route 23	4P		✓		✓		255
Meekers Hill	Andes	Close Hollow Rd.	4P		✓	✓	✓		119
Miller Hollow	Colchester	Miller Hollow Rd.	4W	✓	✓		✓	✓	23
Mountain Top	Tompkins	Fish Brook Rd.	4O	✓	✓		✓	✓	36
Murphy Hill	Andes	NYC Rd. 6 & Murphy Hill Rd.	4P	✓	✓		✓	✓	519
Narrow Notch	Stamford	Narrow Notch, Town Brook	4P	✓	✓	✓	✓	✓	140
New Kingston Mountain	Middletown	New Kingston Mountain Rd.	4P	✓	✓		✓	✓	282
New Road	Bovina	New Rd.	4P	✓	✓		✓	✓	231
Odell Lake Road	Harpersfield	O'Dell Lake Rd.	4O		✓	✓	✓		44
Palmer Hill	Andes	Finkle Rd. & Route 28	4P		✓		✓		234

Delaware County (cont)

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS AREA	HIKE	FISH	HUNT	TRAP	ACRES
Peakes Brook	Delhi	Peakes Brook & Frank Hafele Rds.	4O		✓	✓	✓		207
Pepacton Ledges	Andes	Route 30	4W	✓	✓		✓	✓	294
Platner Brook	Delhi	County Route 16	4O		✓	✓	✓		54
Plattekill Mountain	Roxbury	Lower Meeker Hollow Rd.	4P	✓	✓	✓	✓	✓	716
Pleasant Valley	Roxbury	Baumback Rd.	4P		✓		✓		78
Plymouth	Franklin	County Route 21	4O	✓	✓	✓	✓	✓	80
Raynor Brook	Colchester	NYC Rd. 1	4P	✓	✓		✓		360
Red Kill	Middletown	Big Red Kill Rd.	4R		✓	✓	✓		82
Rehor Road	Andes	Barkaboom and Rehor Rds.	3A	✓	✓		✓	✓	145
Reuben Todd Road	Delhi	Reuben Todd Rd.	4P	✓	✓		✓	✓	124
Roses Brook	Stamford	Roses Brook Rd.	4P	✓	✓		✓	✓	83
Sally's Alley	Roxbury	Route 36, Sally's Alley	4R	✓	✓	✓	✓	✓	257
Sands Creek	Tompkins	NYC Road 6	4W			✓	✓		1,956
Shaver Hollow	Andes	Shaver Hollow Rd.	4P	✓	✓	✓	✓	✓	33
Shaw Road	Kortright	NY Route 10	4P		✓	✓			52
South Dunraven	Middletown	Ben Meeker Rd.	4P	✓	✓		✓	✓	62
South River Road	Walton	South River Rd.	4W	✓	✓		✓	✓	37
Speedwell Mountain	Tompkins	Route 10	4O	✓	✓		✓	✓	3,706
Spring Valley	Meredith	Waterman Rd.	4O	✓	✓	✓	✓	✓	35
Sutherland Road	Meredith	Peakes Brook Rd.	4O	✓	✓		✓	✓	36
Swart Road	Middletown	Swart Rd.	4P	✓	✓	✓	✓	✓	160
Tower Mountain	Tompkins	Fish Brook Rd.	4O		✓		✓		107
Town Brook	Stamford	Town Brook Rd.	4P	✓	✓		✓	✓	30
Township Valley	Stamford	Davis Rd.	4P		✓		✓		127
Trow Bridge	Middletown	Sutherland Rd.	4P		✓	✓			12
Vinci Brook	Colchester	NY Route 30	4W	✓	✓		✓	✓	85
Weaver Hollow	Andes	Weaver Hollow Rd.	4P	✓	✓		✓	✓	627
West Halcott	Halcott	Red Kill Rd.	4R		✓	✓	✓		108
West Platner Brook	Delhi	Platner Brook rd.	4O	✓	✓	✓	✓	✓	80
West Schoharie	Roxbury	Willium Lutz Rd.	4R		✓		✓		322
West Settlement	Roxbury	Roses Brook, Burroughs Memorial	4P	✓	✓		✓	✓	1,710

Greene County

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS AREA	HIKE	FISH	HUNT	TRAP	ACRES
Balsam Mountain	Lexington	Spruceton Rd.	3A	✓	✓	✓	✓	✓	708
Batavia	Ashland	NY Route 23 &County Route 17	4R		✓	✓	✓		338
Beech Ridge	Lexington	Beech Ridge Rd.	4R	✓	✓	✓	✓	✓	487
Brownell Creek	Halcott	Kaftas & West Settlement Rd.	4R		✓	✓			98
Center Jewett	Jewett	NY Rte. 23a	4R	✓	✓		✓	✓	121
Deep Notch	Lexington	NY Rte. 42	3A	✓	✓		✓	✓	32
Diamond Notch	Hunter	Diamond Notch Rd.	3A	✓	✓		✓	✓	86
Dog Hill	Prattsville	Gilboa Rd.	4R		✓		✓		81
East Windham	Windham	NY Route 23	4R	✓	✓		✓	✓	27
Four Corners	Prattsville	County Rte.11 & Albert Slater Rd.	4R	✓	✓	✓	✓	✓	203
Halcott	Halcott	West Settlement Rd.	4R	✓	✓	✓	✓	✓	116
Huntersfield Creek	Prattsville	County Route 10& Stanley Slater Rd.	4R	✓	✓	✓	✓		277
Jennie Notch	Windham	Jennie Notch Rd.	4R	✓	✓	✓	✓	✓	246
Katydid Creek	Jewett	Shad Rd.	3A	✓	✓	✓	✓	✓	143
Maben Hill	Lexington	NY Rte. 23a	4R	✓	✓		✓	✓	149
Macumber Road	Conesville	Macumber Rd.	4R		✓		✓		142
Maplecrest	Windham	Route 40	3A		✓		✓		125
Mount Hayden	Windham	Bagley & Narvoo Rds.	4R	✓	✓		✓	✓	815
North Ashland	Ashland	County Route 10	4R		✓	✓	✓		136
North Lexington	Lexington	Off Rte. 23c	4R	✓	✓		✓	✓	69
Patterson Ridge	Ashland	NY Route 23	4R		✓	✓			273
Red Kill Headwaters	Halcott	Travis Faulkner Rd.	4R	✓	✓		✓	✓	137
Richmond	Windham	County Rte. 10	4R	✓	✓		✓	✓	56
Roundtop Mountain	Hunter	Gillespie Rd.	3A	✓	✓		✓	✓	331
Scribner Hollow	Jewett	Scribner Hollow Rd.	3A	✓	✓	✓	✓	✓	194
Silas Lake Road	Halcott	Travis Faulkner Rd.	4R	✓	✓		✓	✓	49
South Roundtop	Hunter	Platte Clove Rd.	3A	✓	✓		✓	✓	95
Spruceton	Lexington	NY Route 42	3A	✓	✓	✓	✓	✓	9
Stony Clove	Hunter	NY Route 214	3A	✓	✓	✓	✓	✓	98
Warner Creek North	Hunter	Silver Hollow Rd.	3A	✓	✓	✓	✓	✓	56
West Ashland	Ashland	West Settlement Rd.	4R	✓	✓		✓	✓	136
West Hollow	Ashland	Sutton Hollow Rd.	4R		✓		✓		85
Westkill	Lexington	NY Route 42	4R	✓	✓	✓	✓	✓	263

Schoharie County

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS AREA	HIKE	FISH	HUNT	TRAP	ACRES
Bearkill	Conesville	Bearkill Rd.	4G		✓		✓		110
Bluebird Road	Conesville	South Mountain & Bluebird Rds.	4R	✓	✓		✓	✓	222
Bull Hill	Conesville	Bull Hill Rd.	4G		✓	✓	✓		92
Hubbard Hill	Gilboa	East Conesville Rd.	4G		✓		✓		290
Hubbard Hill South	Conesville	Hubbard & Bearkill Rds.	4G		✓		✓		110
Manorkill	Conesville	Potter Mountain Rd.	4G		✓		✓		240
McGregor Mountain North	Gilboa	NY Route 23	4P		✓	✓			32
Mount Royal	Conesville	NY Rte. 990v & Pangsburn Rd.	4R	✓	✓	✓	✓	✓	279
Pangman Road	Conesville	Pangman Rd.	4R	✓	✓		✓	✓	175
Road Seven	Gilboa	NYC Road 7	4R			✓	✓		148
Washington Street	Prattsville	NY Rte. 10	4R		✓	✓			31
West Conesville	Conesville	Bull Hill Rd.	4G		✓		✓		240
Windy Ridge	Gilboa	South Gilboa Rd.	4P	✓	✓		✓	✓	42

Sullivan County

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS AREA	HIKE	FISH	HUNT	TRAP	ACRES
Blue Hill	Neversink	Blue Hill & Hunter Rds.	3A		✓	✓	✓		296
Bungalow Brook	Neversink	Bungalo Brook Rd.	3A	✓	✓		✓	✓	38
Chestnut Creek	Neversink	Ny Rt.55	3H	✓	✓	✓	✓	✓	90
Conklin Brook	Neversink	Woodard Rd.	3H	✓	✓	✓	✓	✓	213
Denman Mountain	Neversink	Denman Mountain Road	3A	✓	✓	✓	✓	✓	186
East Neversink	Neversink	Rt.55 and Shields Rd.	3H			✓	✓		1,597
Moore Hill	Neversink	Moore Hill Rd.	3A	✓	✓	✓	✓	✓	125
North Side	Neversink	Northside and Co. Hwy 153	3C	✓	✓	✓	✓	✓	230
Pine Patch	Neversink	Rt.55A	3C	✓	✓		✓	✓	69
Red Brook Headwaters	Neversink	NY Route 42 and Hayden Rd.	3H	✓	✓		✓	✓	369
Schumway Road	Neversink	Schumway Rd.	3H		✓		✓		176
Smith Road	Neversink	Smith Rd.	3H	✓	✓		✓	✓	103
South Hill	Neversink	NY Route 55	3H	✓	✓		✓	✓	385
Sugarloaf	Neversink	Sugarloaf Rd.	3A	✓	✓	✓	✓	✓	93
Sugarloaf Mountain	Neversink	Viscomi Rd.	3A	✓	✓		✓	✓	195
West Neversink	Neversink	Aden Hill Rd.	3H			✓	✓		1,194

Ulster County

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS AREA	HIKE	FISH	HUNT	TRAP	ACRES
Acorn Hill	Olive	NYC Route 28a	3C		✓		✓		220
Ashokan North	Olive	NY Route 28 & Reservoir Rd.	3C			✓	✓		1,316
Beaverkill	Woodstock	Route 212	3A		✓	✓	✓		422
Beetree Hill	Woodstock	Baker Rd.	3A		✓				319
Big Indian Cluster	Shandaken	NY Route 28 & County Route 47	3A, 4R	✓	✓		✓	✓	256
Birch Creek	Shandaken	Lower Birch Creek Rd.	4R	✓	✓	✓	✓	✓	181
Black Road	Olive	Black Rd.	3A		✓	✓			81
Boulevard Road	Hurley	Boulevard Rd.	3C		✓	✓	✓		76
Broadstreet Hollow	Shandaken	Broadstreet Hollow Rd.	3A	✓	✓		✓	✓	58
Chichester	Shandaken	Silver Hollow Rd.	3A	✓	✓	✓	✓	✓	26
Deer Kill Creek	Wawarsing	Off Rte. 55a	3C	✓	✓		✓	✓	347
Diamond Road	Wawarsing	Diamond & Brown Rds.	3H	✓	✓		✓	✓	146
Dinch Road	Denning	Dinch Rd.	3A		✓				75
East Mountain	Wawarsing	Mancuso & Lackawack Rds.	3C	✓	✓		✓	✓	238
Herdman Road	Shandaken	Herdman Rd.	3A	✓	✓	✓	✓	✓	18
Ladleton	Denning	Denning Rd.	3A	✓	✓		✓	✓	431
Lost Clove	Shandaken	Lost Clove Rd.	3A	✓	✓	✓	✓	✓	162
Mink Hollow	Woodstock	Mink Hollow Rd.	3A		✓	✓	✓		623
Olderbark	Woodstock	NY Route 212	3A		✓				186
Oliverea	Shandaken	Oliveria Rd.	3A	✓	✓	✓	✓	✓	79
Peck Hollow	Shandaken	Peck Hollow Rd.	3A	✓	✓	✓	✓	✓	48
Piney Point Road	Olive	Piney Point Rd.	3C		✓		✓		370
Red Hill Knolls	Denning	Red Hill Knolls Rd.	3A	✓	✓		✓	✓	157
Rochester	Rochester	Mill rd.	3C	✓	✓		✓	✓	17
Romer Mountain	Shandaken	NY Route 28	3A	✓	✓		✓	✓	15
Rose Mountain	Shandaken	Birch Creek & St. Katherine Extension	4R		✓		✓		213
Shandaken	Shandaken	High Street	3A	✓	✓		✓	✓	43
Sheridan Mountain	Shandaken	NY Route 28 & County Route 47	3A	✓	✓		✓	✓	108
Sholam	Wawarsing	Sholam Rd.	3C		✓		✓		240
South Mountain	Olive	High Point Mountain	3C	✓	✓		✓	✓	285
South Rondout	Wawarsing	Route 55 & Sherman Rd.	3H		✓		✓		708
Sun Mountain	Olive	Traver Hollow Rd.	3A	✓	✓		✓	✓	46
Sundown	Denning	Sundown/Greenville Rd.	3C	✓	✓	✓	✓	✓	116
Traver Hollow	Olive	NYC Route 28a	3A	✓	✓	✓	✓	✓	25
Trout Creek	Wawarsing	Route 55a & Sholam Rds.	3C		✓	✓	✓		1,429
Watson Hollow	Olive	Private rd. #3	3C	✓	✓		✓	✓	23
Warner Creek South	Woodstock	Silver Hollow Rd.	3A		✓		✓		156
West Shokan	Olive	NYC Route 28a	3C		✓				102
Wittenberg	Woodstock	Wittenberg Rd.	3C		✓	✓	✓		280
Woodland Valley	Shandaken	Woodland Valley Rd.	3A	✓	✓	✓	✓	✓	19
Yagerville	Denning	Yagerville & Mill Rds.	3C	✓	✓	✓	✓	✓	467

* **Quality Deer Management Area, no buck harvest on certain days, antler size regulation in effect**

** **Deer hunting Only no small game or Bear Hunting allowed here**

FUTURE WITHOUT THE PROPOSED ACTION

There are a number of State and local plans to preserve open space and promote recreation into the future including plans formulated by New York State, Greene County, and Ulster County.

New York State Open Space Conservation Plan

The New York State Department of Environmental Conservation (NYSDEC) issued the "New York State Open Space Conservation Plan ("Open Space Plan") in 2009, which detailed the importance of open space and strategies to promote land conservation by New York State and others. Regional Advisory committees were set up to provide recommendations on the implementation of the Open Space Conservation Plan.

The New York City West of Hudson watershed lies within Regions 3 and 4.[1] The Open Space Plan recommends that conservation efforts in Region 3 by the State and others should focus on the following areas located in the NYC Watershed, among others outside the Watershed:

Catskill River Corridor:
On a daily basis, thousands of people use major travel corridors such as Rt. 28, Rt. 212, Rt. 214, Rt. 23, Rt. 23A, Rt. 42 Rt. 30, Rt. 10, Rt. 17 (future Interstate 86), and Rt. 97 to access numerous Catskill communities and popular recreation destinations. Because these major travel corridors generally follow major river corridors, they provide visitors with a startling first impression of the Catskill/Delaware region as a vital riverine habitat. Some of these river corridors are not only particularly important as fisheries resources, but they are also exceptional recreational resources that provide immeasurably to the region's nature-based economy. Unfortunately, many sections of these river and road corridors are experiencing an increase in development which has resulted in severely damaging flood incidents, some of which have proven fatal. Land protection priority should be given to parcels that protect riparian buffer land, preserve or restore flood plain areas, protect scenic areas and vistas along principle road corridors and on visible ridgelines, protect flood prone areas and enhance public access and recreational opportunities. Conservation focus areas include:

- Delaware River Branches - The region encompassing the Delaware River corridor is identified in the Open Space Plan as a Major Greenway and Recreationway in Regions 3, 4 and 7, and the entire Delaware River corridor from Hancock (Delaware County) to Cherry Island (Orange County) is designated as a National Scenic and Recreational River. The East and West Branches of the Delaware River, are exceptional cold-water fisheries, with the Main stem Delaware also being critical as a waterway open to fish migrating to and from the ocean. These rivers also offer numerous recreational opportunities, such as fishing, canoeing, rafting, and eagle watching, which bring in many visitors and boost the regional economy. These rivers and their watersheds are also critical biological resources, from both aquatic and terrestrial standpoints, with many rare, unique, threatened, and endangered species living in this area, including the bald eagle, timber rattlesnake, American shad, and several plant species. The East and West Branches of the Delaware River are part of the New York City Water Supply System, which is the nation's largest unfiltered municipal water supply, and protection of these watersheds is critical for the continuation of a clean drinking water supply for millions of people. Currently only a tiny percentage of land along the Delaware River Branches and Main-stem corridors is permanently protected, especially that area outside and downstream of the New York City Watershed. viewshed on large contiguous vacant parcels held by private hunt clubs through conservation easement acquisitions.

- Route 28 Corridor - New York State Route 28 is the primary road corridor through the central Catskill high peaks region, connecting population centers and major interstates in metropolitan Kingston and Oneonta. Because of this already existing transportation infrastructure, it is well suited for sustainable small-scale economic development to draw visitors, support local businesses and preserve the natural environment. This area provides

[1] DEC Region 3 includes the Counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester. Region 4 includes the Counties of Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie.

an opportunity to simultaneously protect land and promote growth in the Catskills using an outdoor recreation-based tourism that focuses on land preservation and controlled recreational use of public natural areas. Environmentally sound economic development initiatives here are very sustainable. It is a potential State Scenic Byway and includes eastern and western gateways to the Catskill Park. Priority areas along this route are known as Gateway Properties, lands adjacent to, and visible from, the easternmost five or six miles of Rt. 28, and include, but are not limited to:

- Ticeteneyck Mt./Tonshi Mt./Kenozia Lake - The first highly visible, mountainous, open space area along Rt. 28 in Ulster County; no State land has been acquired to date in this area. Large private land-holdings make significant acquisitions possible;

- Catskill Interpretive Center Area - Opportunity to connect the proposed Ulster County Interpretive Center Site with existing Forest Preserve lands situated on Mt. Tobias. Acquisition of key parcels along Rt. 28 and Wittenberg Rd. will protect the views of mountains, forests, and meadows from the proposed Visitor Center.

- Meade Hill/Fleischmann Mountain - A large, highly visible, completely unprotected mountain ridge immediately adjacent to Rt. 28 in the Town of Middletown; critical to the continuity of mountain habitat and vistas between Dry Brook Ridge and the Belleayre Mountain Ski Area.

Catskill Unfragmented Forest

The region encompassing the Catskill Mountains is identified in the Open Space Plan as a Major Resource Area in Regions 3 and 4. The Catskill Park, which is a mosaic of State Forest Preserve lands and private property, comprises a large, central part of this region. Large, unfragmented areas of forest land in the Catskill high peaks area are excellent candidates for addition to the Forest Preserve. Priorities for acquisition within the greater Catskill Mountain/Delaware River Region should focus on securing sensitive, unprotected high elevation areas and alpine communities; protecting expanses of un-fragmented forests; connecting protected areas, particularly in the valleys between high elevations; protecting reverence habitat and riparian buffer land; preserving areas demonstrating high biological diversity; preserving significant cultural and scenic resources; and improving access and recreational opportunities on public land. Special consideration should also be given to protecting and providing access to the Region's water resources, including specific attention to protecting the watershed supplying New York City's public drinking water. Region 3 conservation efforts should focus on the following sites:

- Balsam, Graham and Doubletop Mountains/Dry Brook Valley - Several large tracts including the summits of the last three Catskill peaks over 3500' in elevation still in private ownership lie adjacent to the Big Indian Wilderness. These lands provide habitat for a distinctive assemblage of bird species, especially those that prefer subalpine coniferous forests, as well as at least one known federally threatened plant species. They play a critical role in the wilderness character of the area. Lying within New York City's watershed, they contribute clean drinking water to both the Catskill and Delaware systems. Dry Brook is also an excellent trout stream.

• Peekamoose Gorge - An approximately 3300-acre tract of land in Ulster County surrounded on all sides by Forest Preserve; very rugged and remote with numerous seasonal waterfalls. Rondout Creek drains this property and is a significant trout stream and an important contributor to the New York City drinking water supply. Property harbors at least one known federally listed endangered species.

• Frost Valley - Large forested tracts in the east and west valleys protect the source waters of the Neversink River and merge the two highest quality forest blocks in the High Allegheny Plateau. Protection of these tracts will prevent impacts to the Neversink River, reduce potential for forest fragmentation and improve access between the Big Indian Wilderness, the Slide Mountain Wilderness and the Sundown Wild Forest.

• West Shokan / Sampsonville Area Lands - Opportunities to expand the Forest Preserve holdings on the eastern side of the Slide Mountain Wilderness in Ulster County should be explored; including areas around Maltby Hollow, and Hanover, South, High Point, and Mombaccus Mountains.

Region 4 conservation efforts should focus on the following sites:

• Bearpen / Vly / Roundtop Mountains – Substantial progress has been made to protect the higher elevations of Bearpen, Roundtop, and Vly Mountains; however, additional acquisition is needed on the lower elevations of these mountains.

• Catskill Escarpment North &Windham High Peak - Includes the dramatic landscape between the Hudson River Valley and the Catskill peaks; principal concerns are protection of significant scenic vistas and ecologically unique areas; enhancement of recreational opportunities and improved public access; and consolidation of State holdings.

• Rusk Mountain Wild Forest - This very popular recreation area lacks sufficient access, especially in the Spruceton Valley, and additional protection and access is needed in the western portion of the Wild Forest.

• Hunter West Kill Wilderness - Consolidation, improved access, and preservation of wilderness character are the primary concerns.

• Catskill Mountain Heritage Trail - Includes significant historic sites and scenic views from the John Burroughs Homestead, Burroughs Memorial site, and Woodchuck Lodge near Roxbury on Route 30, continuing easterly along the Route 23 and 23A corridors, and extending to the Thomas Cole House in the Village of Catskill. Very few acres of the original Burroughs Homestead are permanently protected, and there is a critical need to protect the pastoral setting surrounding Woodchuck Lodge and the Burroughs Memorial site.

Greene County Soil and Water Conservation District

Greene County's Soil and Water Conservation District published *The Mountaintop Community Recreation, Cultural Resources & Scenic Quality Strategy* (January 2009) "to identify and prioritize opportunities for improving recreational, cultural and scenic resources that could benefit the Mountaintop communities' tourism industry," covering nine municipalities located in

the Mountaintop region of Greene County, New York in the northern Catskill Forest Preserve and includes the towns of Ashland, Halcott, Hunter, Jewett, Lexington, Prattsville, and Windham, and the villages of Hunter and Tannersville. The plan seeks to improve outdoor recreational activities by focusing on projects that involve:

- Developing multi- use trails conducive for families and casual walkers,
- Working with NYCDEP to create complementary trails on city-owned property,
- Improving access to streams, and
- Creating bicycling lane designations &/or widening shoulders for bicycle riders.

Ulster County

Ulster County's *Open Space Plan* was released in December of 2007 to provide a "framework for coordinated management and protection of natural resources" in the County. The plan identifies and prioritizes both natural resource areas that should be protected, and "priority growth areas" where future development should be concentrated to take advantage of existing infrastructure, zoning and population density.

In the Future Without the Proposed Action, there will be ongoing efforts to preserve and protect open space and provide recreational opportunities in the watershed region, although at levels and a pace below those expected under a Future With the Proposed Action.

FUTURE WITH THE PROPOSED ACTION

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. As noted in the Existing Conditions section, 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 May 15, 2009 (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.[2] Table 6-5 summarizes respondents' answers to questions about hunting, fishing, hiking and access to waterways.

- 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.[3]

- 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 (see

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[2] 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.

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

Chapter 3, *Socioeconomic Conditions*), 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.

Table 6-4: Summary of responses to recreation questions in the 2009 Delaware County telephone survey

Recreation Issue	Percent of respondents
Access to land for fishing	71.6 %
Very important	32.9 %
Important	38.7 %
Access to land for hunting	61.3 %
Very important	32.1 %
Important	29.2 %
Access to local waterways	78.6 %
Very important	39.1 %
Important	39.5 %
Access to land for hiking and walking	76.8 %
Very important	30.4 %
Important	46.4 %

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 otherwise enhance recreational opportunities in the watershed region to compliment the State's goals. As stated in the Plan:

> "*New York City Watershed Lands:* New York City expects to continue acquisition efforts under the 1997 Watershed Agreement (signed by local communities, counties, and the State) and the 1997 Water Supply Permit issued by DEC, and in accordance with a comprehensive water quality-based watershed protection plan. It is recommended that the State work with the City to identify and protect high priority sites with the Region that are not being pursued by or protected under City acquisition programs. In particular the State should focus acquisition efforts on lands that (1) have potential for development, forestry, or fisheries and are (2) relatively large and/or (3) link areas already protected by private or public entities and/or (4) allow for improved long term

> management of land and water resources. All such work by the State should naturally conform to established criteria for protection under the State Open Space Conservation Plan.[4]"

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

EXISTING CONDITIONS

As of July 2009, a total of 64,136 acres within the East-of-Hudson watershed can be considered protected lands, including:

- 4,997 acres of State-owned land,;
- 10,954 acres acquired by New York City in fee simple or as conservation or agricultural easements under LAP;
- 20,231 acres of land that New York City had already owned prior to the execution of the MOA, as well as reservoirs covering 11,200 acres; and
- 16,754 acres owned or protected by others, such as private non-profit land conservation trusts.

On EOH lands, NYCDEP allows: fishing from shore, fishing from boats, hiking and small and big game hunting. City-owned lands open for recreation EOH are allowed by "entry by permit," that is, recreation users must have a valid NYCDEP Access Permit. 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 reservoirs for fishing must also have a valid NYCDEP Boat Tag.

[4] 2009 NYS Open Space Plan.

As mentioned above, NYCDEP issues revocable land use permits to entities such as municipalities and non-profit groups. NYCDEP issues land use permits to allow recreational uses of its lands. For example, NYCDEP issued permits to Teatown Reservation and Putnam County to construct and maintain hiking trails on City land.

A map showing the City land open for public recreation is provided in Figure 6-4.

Figure 6-4: City-owned East of Hudson Recreation Areas

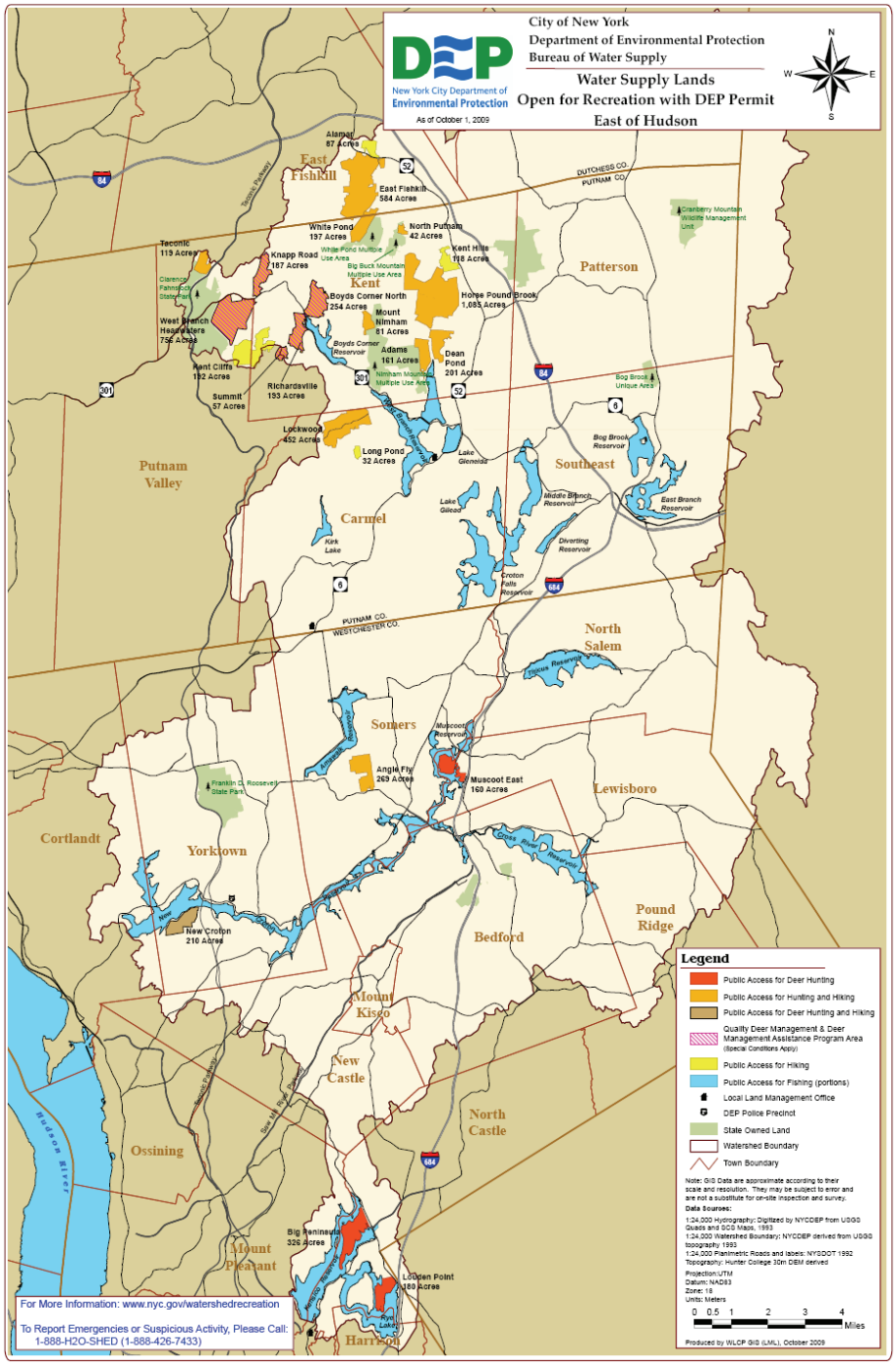


Table 6-5: Recreation Areas in East of Hudson Watershed Counties

Dutchess County

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS	HIKE	FISH	HUNT	TRAP	ACRES
East Fishkill	East Fishkill	NY Rte 52 & Leetown Rd.	3N		✓	✓	✓		807

Westchester County

RECREATION AREA	TOWN	LOCATION	WMU *	PUBLIC ACCESS AREA	HIKE	FISH	HUNT	TRAP	ACRES
Angle Fly	Somers	NY Route 35	3S		✓		✓		269
Big Peninsula	North Castle	King Street	3S			✓	✓		327
Louden Point	North Castle	Route 120	3S			✓	✓		180
Muscoot East	Lewisboro	Old Bedford Rd.	3S			✓	✓		160
New Croton**	Yorktown	Croton Dam Rd.	3S		✓		✓		208

* Quality Deer Management Area, no buck harvest on certain days, antler size regulation in effect

** Deer hunting Only no small game or Bear Hunting allowed here

FUTURE WITHOUT THE PROPOSED ACTION

There are a number of State and local plans to preserve open space and promote recreation in the East-of-Hudson watershed region.

New York State Open Space and Conservation Plan

The NYS Open Space Conservation Plan, as described above, outlines several priority areas in the East of Hudson Watershed. It mentions that roughly 70 percent of NYC's East-of-Hudson reservoir system overlaps with, and has been identified by the USDA Forest Service as part of, a Highlands Conservation Focal Area.

Highlands East of Hudson River

Croton-to-Highlands Biodiversity Area – The Towns of Putnam Valley in Putnam County, and Cortlandt, Yorktown, and New Castle in Westchester County have been recognized for their high biodiversity value by the Wildlife Conservation Society/Metropolitan Conservation Alliance (MCA). MCA's biodiversity plan, published in 2004, delineates those areas it determined are suitable for development and those areas that contain species vulnerable to habitat fragmentation and should be a priority for acquisition. This area of the East of Hudson watershed has also been identified by the Forest Service as a Highlands Conservation Focal Area.

Northern Putnam Greenway - Extending from the Taconic Ridge on the east to the Hudson River on the west, this proposed greenway is critical to maintaining the ecological integrity of the Highlands Region and to protecting the rural character of one of New York's fastest growing counties. Acquisitions in this area of Putnam County would provide important linkages for passive recreation and wildlife corridors, preservation of scenic viewsheds, and protection of critical water supplies. Representative parcels include those areas that would link and are adjacent to Ciaiola County Park, Cranberry Mountain, the Great Swamp, Ice Pond, Wonder Lake State Park, Big Buck, White Pond, Horse Pound Brook, Ninham Mountain, Lockwood Pond, California Hill, and Fahnestock/Hudson Highlands State Parks.

Great Swamp
The largest and highest quality red maple hardwood swamp in southern New York is located in the Towns of Pawling and Dover, Dutchess County and the Towns of Patterson and Southeast, Putnam County. Much of the Great Swamp is within the Croton River Basin and flows directly into the East Branch Reservoir, a New York City reservoir part of the Croton Watershed. It contains critical habitat for bird and aquatic species—nine of which are rare, protects and purifies the water supply for millions of New York residents, is an aquifer recharge area, reduces flooding, and provides outstanding educational and recreational opportunities. This vital and fragile natural resource needs to be safeguarded from further development and associated runoff. In order to protect the unique habitat of the Great Swamp, the diverse range of wildlife it supports, its scenic value, and its critical function of water purification, not only the inholdings but also the surrounding uplands need to be conserved. Large parts of the Great Swamp's 63,000-acre watershed have been identified by the Forest Service as a Highlands Conservation Focal Area.

The Town of Kent

The Town of Kent has identified the preservation of open space – for its scenic beauty, active recreation, and environmental quality – as a goal of its land use planning. As stated in its 2002 Croton Plan, Kent "contains many forested areas as well as lakes, reservoirs and streams, a number of which provide excellent outdoor recreational opportunities, such as fishing, hiking, camping, and hunting. The scenic beauty of much of the landscape, as well as the outdoor recreational opportunities and rural character of the Town, might well be perceived as some of its best and most important assets."[5]

The Town of Carmel

The Town of Carmel 2002 Croton Plan states as a goal the "need to protect watercourses, wetlands, steeply sloped lands and an integrated open space system" and the need to make additional land available for public recreation.[6]

Town of East Fishkill

As in Carmel and Kent, the Town of East Fishkill has developed specific plans and policies in order to preserve open space and limit residential growth. As the Final Generic Environmental Impact Statement for the East Fishkill Comprehensive Plan and Code Amendments puts it:

> *The 2002 Comprehensive Plan seeks to guide the Town's development over the next ten years. It suggests ways to reduce the rate of new residential construction, to encourage the*

[5] Town of Kent Croton Plan, 2002. p. IV-12.

[6] Town of Carmel Croton Watershed Plan, 2002. p. 1-52.

> *preservation of open space and greenways, to protect environmentally sensitive areas, and to lower the potential population build-out of the Town.*[7]

In a 2003 survey of residents of Putnam Valley administered in the development of the comprehensive plan, residents support the preservation of open space and limiting residential development: 71 percent of respondents agreed with the statement "Putnam Valley needs to protect more open space." 68 percent of respondents agreed with the statement.

FUTURE WITH THE PROPOSED ACTION

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.

[7] Final Generic Environmental Impact Statement, East Fishkill Comprehensive Plan And Related Code Amendments, 2002. pg. 1.

CHAPTER 7:

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.

As directed by State and City agencies, NYCDEP staff notifies the State Office of Parks, Recreation and Historic Preservation of their plans to demolish structures, and provide photo documentation of the structures. Where requested by OPRHP, NYCDEP staff generates comprehensive photo documentation of the site and provide a copy to the local historical society. The photo documentation will generally include the historic farmhouse, farmstead, fields and an overview map of the site showing photo locations. Where available from neighbors, former owners, and the internet, a narrative history of the farm will be included in the photo documentation package.

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.

CHAPTER 8:

OTHER IMPACT CATEGORIES

INTRODUCTION

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.

VISUAL CHARACTER

Extended LAP acquisitions would preserve low density and vacant land with natural features. No structures are proposed and no view corridors would be altered. Visual character would remain unaltered. Therefore, through conservation of existing natural landscapes, Extended LAP is not anticipated to have a significant adverse impact to visual character in the watershed towns.

COMMUNITY FACILITIES

The Extended LAP would not directly displace community facilities since Extended LAP would primarily acquire vacant or low-density residential property, occasionally with vacant or uninhabited existing structures. In addition, it is not anticipated that Extended LAP would result in new or increased levels of development or would substantially change population patterns. Therefore, it would not generate increased demand for community facilities such as schools, libraries, police, or hospitals. Because the Extended LAP is not expected to significantly displace populations, for reasons presented in Chapter 3, *Socioeconomic Conditions*, it would not significantly contribute to declining enrollment. In addition, Chapter 3 concluded that the Extended LAP would not have a significant impact on school district revenues. With respect to fire services, the land acquired is currently vacant and would remain so into the future, thereby not impacting fire services. If, absent the program, particular parcels were to be developed, it is not anticipated that developed parcels would place a lesser burden on fire services. Therefore, the Extended LAP is not expected to result in a potential significant adverse impact on community facilities in the watershed towns.

TRAFFIC

The Extended LAP would not generate new increased levels of development or associated vehicular trips. No significant displacement effects are projected and any shifts in locations of development are expected to be localized in nature. In addition, Extended LAP purchases would not occur within hamlets or hamlet expansion areas, thus leaving historic and current development patterns largely unchanged.

While as discussed in Chapter 6 *Open Space and Recreation*, the Extended LAP is expected to result in an increase in the lands available for recreational use, the associated traffic impacts are expected to be minimal as documented in the July 2008 Negative Declaration for the Proposed Amendments to the Rules for the Recreational Use of Waters Supply Lands and Waters. The Extended LAP would not substantially alter traffic flows. Therefore, the Extended LAP is not

expected to result in the potential for significant adverse impacts on traffic conditions in the watershed towns.

NOISE

As discussed under "Traffic" above, the program would not generate significant increases in traffic (new mobile sources of noise). In addition, the Extended LAP would not result in the creation of new stationary noise sources due to the fact that no new development would occur on lands acquired. Any increased use of these lands for recreational purposes and traffic or other noise associated with those uses would not be expected to result in significant elevated noise levels given the large and relatively isolated areas and the numbers of visitors at a given time and as documented in the July 2008 Negative Declaration for the Proposed Amendments to the Rules for the Recreational Use of Waters Supply Lands and Waters. Therefore, the Extended LAP is not expected to result in the potential for significant adverse impacts on noise conditions in the watershed towns.

AIR QUALITY

As explained above in “Traffic” and “Noise,” no significant generation of mobile or stationary sources are expected as a result of Extended LAP activity. Therefore, the Extended LAP is not expected to result in the potential for significant adverse impacts on air quality conditions in the watershed towns.

HAZARDOUS MATERIALS

In general, the Extended LAP would not result in construction activity or excavation on acquired property. Some demolition of vacant structures on the acquired sites may take place and may require the removal of foundations. Prior to demolition, these structures would be surveyed to determine whether they contain asbestos or hazardous substances. Any identified materials would be remediated following the laws of the State of New York, the City of New York and any applicable local regulations. Prior to acquiring title of a piece of property, the City will conduct a Phase I site assessment to investigate the possible presence of hazardous materials. If evidence of hazardous materials are found, the City would not proceed with the purchase until all issues related to the materials are resolved in accordance with federal, State and local regulations. Therefore, the Extended LAP is not expected to result in the potential for significant adverse hazardous materials impacts.

SOLID WASTE

The Extended LAP would not generate a significant increase in solid waste. LAP acquired lands would be preserved. Recreational activities may increase, but should not result in significant generation of solid waste. Therefore, the Extended LAP is not expected to result in the potential for significant adverse solid waste impacts.

ENERGY

As stated above, the Extended LAP would not result in construction activity that would require energy resources. LAP acquired lands would be preserved and it is not anticipated maintenance of these lands would require significant energy resources. Therefore, the Extended LAP is not expected to result in the potential for significant adverse impacts on energy.

CHAPTER 9:

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.

CHAPTER 10:

IRREVERSIBLE AND 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.

CHAPTER 11

ANALYSIS OF ALTERNATIVES

INTRODUCTION

This chapter considers several alternatives to the Proposed Action. As described in Chapter 1, "Project Description," the objective of the proposed action 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 continue to provide high quality drinking water without filtration of the Catskill-Delaware (Cat-Del) System,[1] which provides water to over 9 million residents of the City and other communities in New York State. The program is mandated under the 2007 USEPA Filtration Avoidance Determination (FAD). Land acquisition was similarly a key component of the 1997 and 2002 FADs.

The State Environmental Quality Review Act (SEQRA) and City Environmental Quality Review (CEQR) process require that alternatives to the proposed action be identified and evaluated as part of the EIS process. The alternatives analysis should: (1) present reasonable options for reducing or eliminating project impacts, while substantively meeting project goals and objectives; (2) demonstrate a reasonable range of options to the proposed action; and (3) compare potential impacts under alternative approaches for meeting project objectives. The range of alternatives to be considered is determined by the nature, goals, and objectives of the specific action and its potential impacts, as disclosed by the technical impact assessments (see Chapters 2 through 10).

Each alternative is to be described to the extent that impacts can be compared with the impacts identified for the proposed action. Therefore, the level of detail in the analysis is dependent on the alternative and the project impacts. When limited impacts are identified, a qualitative assessment is appropriate. Where a significant impact of the proposed action has been disclosed, or where the alternative may disclose a significant impact in an area where the proposed action had none, it is appropriate to provide additional detail on impacts under the alternative.

This chapter of the Draft EIS assesses the impact of four alternatives to the Extended LAP (the proposed action as described in Chapter 1). 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 will be 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 Greater-Impact Alternative, in which the amount of land projected to be acquired under the Extended LAP in fee simple and through conservation easements is 10 percent greater

[1] Although the Catskill watershed and Delaware watershed are distinct geographical features, they are functionally managed together and for regulatory purposes are considered a single integrated system.

than estimated in the reasonable worst case scenario evaluated for the Proposed Action; and the authorization for the program is extended through 2027;

- 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 reasonable worst-case 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 Chapter 1 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.

For this EIS, the Proposed Action is the acquisition of a new Water Supply Permit to allow for the continued acquisition of land under the Land Acquisition Program. It is not within the scope of the environmental review, nor is it reasonable or proper to assess the entire Long-Term Watershed Protection Program or FAD requirements within this review.[1] Nor is it required under SEQRA that a cost-benefit analysis be conducted of LAP compared to other elements of the FAD. The analysis included cumulative effects from other FAD requirements to the extent they are overlapping and could result in potential significant adverse impacts such as the Watershed Rules and Regulations limits on development in certain areas of the watershed. It has been determined, based on the analysis in this EIS, that the Extended LAP will have a beneficial effect on water quality and no potential significant adverse impacts on land use, community character, or socioeconomic conditions.

Under the No Action Alternative, in the West-of-Hudson and East-of-Hudson Watersheds, the Land Use, Community Character Socioeconomic, Water Quality and Open Space conditions would be the same as those discussed under the *Future Conditions Without the Proposed Action* sections in each chapter above.

[1] The entire Long Term Watershed Protection Program was the subject of a previous environmental review that resulting in a Negative Declaration, dated September 2007.

GREATER IMPACT ALTERNATIVE

This section discusses the potential impacts of an action in which NYCDEP acquires 10 percent more land than projected, and the NYCDEP Land Acquisition Program is extended for five additional years, through 2027 (the Greater Impact Alternative").

Reasonable worst case estimates of the amount of land to be acquired under the Extended LAP are provided in Chapter 1, *Project Description*. The analysis in this alternative assumes that NYCDEP would acquire an additional 10 percent above those reasonable worst case projections. 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 reasonable worst case scenario. Purchases of farm easements by the Watershed Agricultural Council from 2010 through 2027 are not expected to exceed the level projected as the reasonable worst case scenario – 16,000 acres.

This alternative is considered to be an extremely conservative (i.e. high impact) estimate of land to be acquired under the Extended LAP. The proposed action scenario described in Chapter 1 uses very conservative assumptions to estimate the amount of land to be acquired under the Extended LAP. It is highly unlikely that, even under a 5-year renewal of the Water Supply Permit, additional land would be acquired beyond the levels analyzed under the proposed action. Nevertheless, NYCDEP is providing the following analysis that examines acquisitions of 10 percent more land.

SOCIOECONOMIC CONDITIONS

West-of-Hudson

Impacts on Supply of Developable Land

This section discusses the Greater Impact Alternative's projected potential impact through 2027 on the supply of developable land in watershed towns.

This alternative uses the same process as that described in Chapter 3 to project remaining developable land but here to 2027 instead of 2022. 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

Step 1: Assume the same amount of available developable land in 2009 as determined in Chapter 3.
Step 2: Assume the same reasonable worst case rate of housing demand as determined in Chapter 3, but adds five years of additional development through 2027.
Step 3: Assume that NYCDEP would acquire ten percent more land than under the reasonable worst case scenario, and estimate the portion of those lands that are developable
Step 4: Estimate remaining developable land in 2027 after housing demand and LAP acquisitions.

The town-by-town results of this analysis are presented in Table 11-1. (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 11-1 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. (It was estimated in Chapter 3 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.) Overall, the Greater Impact Alternative 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 66 percent under the proposed action. As discussed above and in Chapter 3 in detail, due to the very conservative nature of the analysis, which represents more than a reasonable worst case scenario, the percentage of developable land remaining in 2027 is likely to be higher.

In some towns – including Olive, Windham, Lexington, Conesville and Neversink – the estimates of developable land remaining in 2027 that are presented in Table 11-1 are significantly lower than those for 2022 that are presented in Chapter 3. In most cases, however, this is primarily a result of projecting through 2027 the relatively high rates of residential development used in Chapter 3 to estimate the land required to support new development through 2022. 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 11-1: Remaining developable acreage in 2027, by town, after projected Extended LAP activity plus 10 percent 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%**

For the region as a whole, this analysis strongly suggests that the projected level of acquisitions by NYCDEP under this Greater Impact Alternative will not significantly constrain the amount of new development in the West-of-Hudson watershed – either between now and 2027 or afterward. As with the proposed action, it would preserve sensitive natural lands, while keeping future development in hamlet and expanded areas where much of it currently occurs.

As in Chapter 3, 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 more than 5 percent of the town's 2009 supply of developable land.

As shown in Table 11-1, 16 towns (those with bold text in the LAP contribution or housing contribution columns) meet these criteria. All but one of these towns – Woodstock – is among the towns for which individual town-level assessments were presented in Chapter 4. In Woodstock, the Greater Impact Alternative would increase the percentage of the Town's 2009 supply that could be acquired under LAP from 12.4 percent as of 2022 to 13.7 percent as of 2027; and developable land needed to support projected residential development would increase from 7.0 percent of the 2009 supply of such land in 2022 to 10.0 percent in 2027. However, any potential for conflict between LAP acquisitions and the need for land for new development would be quite limited, since LAP acquisitions would take place entirely within the much less developed western half of the Town (that is, within the watershed), while new development is most likely to occur in the eastern (non-watershed) portion of the Town, in and near the hamlets of Woodstock, Bearsville and Zena. A more detailed assessment of the Program's impact on Woodstock is provided in the last section of this Chapter.

In the remaining 17 towns (those not shaded in yellow in Table 11-1), the percentage of the town's 2009 supply of developable land that would still remain in 2027 ranges from 73 to 94 percent.

In some towns, particularly those with mountainous terrain or other natural features not easily developed, or that include large areas of land already protected by New York State or New York City, or that are already highly developed, the supply of developable land may already 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.

Table 11-2 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.

Table 11-2: Towns with less than 10 percent or fewer than 3,000 acres of developable town area land remaining in 2009 under Greater Impact Alternative

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%

The towns listed in Table 11-2 include several that are developed at low densities – including Denning, Hardenburgh, Halcott and Prattsville – where, given the projected rate of new development, the limited supply of developable land is unlikely to be a significant constraint on development between 2022 and 2027.

Among the towns listed in Table 11-2 or highlighted in Table 11-1, Shandaken appears to be the only case where a very limited supply of developable land could potentially lead to a conflict between the projected level of acquisitions under the Extended LAP and the need for land to accommodate new development. This potential for conflict was noted in Chapter 3; in this alternative, with 10 percent more land to be acquired through 2027, the potential for conflict would be somewhat greater. As also noted in Chapter 3, however, NYCDEP and the Town have agreed on a change in the way LAP operates in Shandaken that should substantially reduce the potential for conflict. Under this agreement, LAP would no longer actively solicit individual landowners in Shandaken, but would instead only pursue properties of interest whose owners initiate negotiations with NYCDEP.

Among the other towns highlighted in Table 11-1, there may also be some potential for conflict in Windham – not because the supply of land is relatively limited, but because the demand for land for development has been strong during the past decade, and could be in the future. As in Shandaken, a 10 percent increase in projected acquisitions under the Extended LAP would increase somewhat the potential for conflict. In this case, any potential conflict between the Extended LAP and the need for land to accommodate future development could be alleviated by the proposed near-quadrupling of the Town's designated hamlet areas, to a total of 3,942 acres. The expanded hamlet areas would cover 14 percent of the town's land area, and would help ensure that a substantial amount of land remains available for new development through 2027 and beyond, especially since the proposed expansion areas are located in those parts of Windham where much of the Town's development is occurring.

Other Socioeconomic Conditions, Land Use and Community Character

Beyond its impact on the supply of developable land, any incremental effect of the Greater Impact Alternative on socioeconomic conditions in West-of-Hudson watershed towns – over and above the effects of the proposed action, as discussed in Chapter 3 – are likely to be minimal.

As noted in Chapter 3, 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, an increase of 10 percent in the

acreage to be acquired under the Extended LAP would be unlikely to have a significant impact on land prices, over and above those cited for the proposed action in Chapter Three.

Relative to the very limited effects of the Extended LAP on specific industries that were cited in Chapter 3, extending the program through 2027 and increasing the acreage to be acquired by 10 percent would have at most a very minor impact. In some parts of the watershed, increasing the amount of land to be acquired by 10 percent might allow a smaller number of additional landowners (including farmers) to sell all or part of their land (but as discussed in Chapter 3, giving farmers the option to sell land to NYCDEP is not a significant factor in the decline of agriculture in the region).

A 10 percent increase in land to be acquired would slightly increase the possibility of dislocating mining or timbering operations from land acquired under the Extended LAP. As was discussed in Chapter 3, however, LAP has only acquired a very few marginal, largely depleted mining sites, and this is not likely to change. Forestry is allowed on LAP lands subject to conditions. Moreover, as also noted in Chapter 3, NYCDEP policies governing activities that are permitted on City lands and eased land lessen LAP's potential impact on extractive industries. This suggests that the affected activities would either not be impacted, or would occur elsewhere in the region – not that they would be lost due to a LAP acquisition.

On the positive side, a 10 percent increase in the land to be acquired is likely to result in a commensurate increase in the areas opened for public recreational use, which could increase LAP's value as an amenity for local residents, and could potentially attract additional visitors.

As discussed in Chapter 3, the Extended LAP would have no significant impact on local government revenues between 2010 and 2022. Extending the program through 2027 and increasing the amount of land to be acquired by 10 percent would not change this result. Extending LAP through 2027 and increasing the land projected to be acquired by 10 percent is unlikely to have any substantial impact on the character of watershed communities, apart from additionally protecting that character. It would increase slightly the amount of protected land in watershed towns – thus helping to maintain the low-density, rural character that is typical of most of these towns, and helping to protect the natural environment that is highly valued by many residents. And as noted above, a 10 percent increase in the land to be acquired could also increase the areas open for public recreation – which is also an amenity valued by many residents.

Any potential conflict between additional acquisitions and the towns' economic development goals could be alleviated by the proposed expansion of designated hamlet areas – a topic further discussed in the last section of this chapter.

East-of-Hudson

As noted in Chapters 2 and 3, the impact of the proposed action on land use, community character and socioeconomic conditions in the East-of-Hudson region would be very limited – primarily because the amount of land projected to be acquired in the East-of-Hudson region totals only 1,517 acres, spread across four towns. As shown below in Table 11-3, the impact of increasing by 10 percent the total acreage to be acquired is small in both relative and absolute terms.

Table 11-3: Greater impact alternative 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 Greater Impact Alternative, projected acquisitions by NYCDP 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 in Chapter 3 for the proposed action to 8,376 – but this change is due almost entirely to the additional residential development that is projected to occur between 2022 and 2027.

WATER QUALITY AND NATURAL RESOURCES, OPEN SPACE

As described in Chapter 5 *Water Quality and Natural Resources* and Chapter 6 *Open Space and Recreation*, LAP provides benefits to water quality, natural resources and open space. If NYCDEP acquires 10 percent more land than what was projected under the proposed action, more benefits may be realized in terms of protecting water quality, natural resources, and preserving open space.

CULTURAL RESOURCES

Under the Greater Impact Alternative, the same protocol as described in Chapter 7, *Cultural Resources*, would be applied with respect to protecting and preserving historical and archaeological resources.

LESSER IMPACT ALTERNATIVE

This section discusses the potential impacts of an action in which NYCDEP acquires 10 percent less land than was projected for the proposed action in Chapter 1, *Project Description*. 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 reasonable worst-case 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 Proposed Action's reasonable worst case scenario.

SOCIOECONOMIC CONDITIONS

West-of-Hudson

Impacts on Supply of Developable Land

This section discusses the Lesser Impact Alternative's projected potential impact through 2022 on the supply of developable land in watershed towns. This alternative uses the same process as that described in Chapter 3 to project remaining developable land in 2022. 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 Extended LAP program on developable land at the town level through 2022.

Step 1: Assume the same amount of available developable land in 2009 as determined in Chapter 3.
Step 2: Assume the same reasonable worst case rate of housing demand as determined in Chapter 3.
Step 3: Assume that NYCDEP will acquire ten percent less land than the reasonable worst case scenario, and estimate the portion of those lands that are developable.
Step 4: Estimate remaining developable land in 2022 after housing demand and LAP acquisitions.

The amount of developable land acquired was estimated using the methods described in the *Methodology* section above.

The town-by-town results of this analysis are presented in Table 11-4, (The towns are ranked in descending order of the percentage of the town's 2009 supply of developable land remaining in 2022.) 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.

As Table 11-4 shows, 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 in Chapter 3 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. As discussed above and in Chapter 3 in detail, 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, as assessed in Chapter 3. In neither case would the projected level of acquisition significantly constrain new development in the West-of-Hudson watershed between 2010 and 2022.

Table 11-4: Remaining developable acreage in 2022, by town, after Extended LAP activity minus 10 percent and development through 2022. (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 2022 - 10%	Developable land needed for housing through 2022	Developable land left in 2022	% of 2009 developable land left in 2022	LAP contribution	Housing contribution
Greene	Lexington	3,475	784	314	2,377	68.4%	**22.6%**	9.0%
Ulster	Denning	4,187	1,223	71	2,893	69.1%	**29.2%**	1.7%
Greene	Prattsville	2,773	738	100	1,935	69.8%	**26.6%**	3.6%
Ulster	Olive	5,684	784	748	4,152	73.0%	13.8%	**13.2%**
Ulster	Hardenburgh	2,692	572	166	1,954	72.6%	**21.2%**	6.2%
Greene	Ashland	3,351	628	260	2,463	73.5%	18.7%	7.8%
Sullivan	Neversink	12,797	1,778	1,501	9,517	74.4%	13.9%	**11.7%**
Schoharie	Conesville	5,525	860	560	4,105	74.3%	15.6%	**10.1%**
Greene	Windham	5,272	792	540	3,940	74.7%	15.0%	**10.2%**
Greene	Halcott	1,668	350	79	1,238	74.2%	**21.0%**	4.8%
Ulster	Shandaken	1,444	167	186	1,091	75.6%	11.5%	**12.9%**
Delaware	Andes	7,221	1,325	486	5,410	74.9%	18.3%	6.7%
Delaware	Stamford	4,939	1,068	199	3,673	74.4%	**21.6%**	4.0%
Greene	Jewett	6,292	947	511	4,835	76.8%	15.1%	8.1%
Delaware	Hamden	6,146	652	701	4,793	78.0%	10.6%	**11.4%**
Delaware	Middletown	7,455	1,072	513	5,870	78.7%	14.4%	6.9%
Greene	Hunter	6,722	1,049	348	5,324	79.2%	15.6%	5.2%
Delaware	Delhi	5,851	891	264	4,695	80.2%	15.2%	4.5%
Ulster	Woodstock	6,759	755	479	5,524	81.7%	11.2%	7.1%
Delaware	Bovina	3,726	640	68	3,019	81.0%	17.2%	1.8%
Delaware	Roxbury	5,927	856	216	4,855	81.9%	14.4%	3.6%
Delaware	Walton	8,845	1,141	329	7,375	83.4%	12.9%	3.7%
Delaware	Tompkins	10,947	1,094	572	9,282	84.8%	10.0%	5.2%
Delaware	Kortright	8,370	567	406	7,397	88.4%	6.8%	4.9%
Ulster	Hurley	5,003	120	410	4,473	89.4%	2.4%	8.2%
Schoharie	Jefferson	8,722	187	639	7,895	90.5%	2.1%	7.3%
Delaware	Meredith	13,063	742	469	11,852	90.7%	5.7%	3.6%
Schoharie	Gilboa	10,583	643	251	9,690	91.6%	6.1%	2.4%
Delaware	Masonville	10,890	375	447	10,068	92.5%	3.4%	4.1%
Ulster	Wawarsing	23,610	863	802	21,946	93.0%	3.7%	3.4%
Delaware	Deposit	4,052	21	230	3,800	93.8%	0.5%	5.7%
Delaware	Colchester	9,406	211	296	8,899	94.6%	2.2%	3.1%
Delaware	Harpersfield	9,959	280	200	9,479	95.2%	2.8%	2.0%
Delaware	Franklin	19,006	343	520	18,142	95.5%	1.8%	2.7%
	TOTAL	**252,361**	**24,516**	**13,883**	**213,963**	**84.8%**	**9.7%**	**5.5%**

Table 11-4 highlights the towns in which, even under the Lesser-Impact Alternative, the projected level of acquisitions between 2010 and 2022 accounts for at least 20 percent of the Town's 2009 supply of developable land, or the projected level of residential development consumes at least 10 percent of that supply – the thresholds used in Chapter 3 to identify towns for further review. More detailed assessments of the nine of the towns highlighted in yellow in Table 11-4 are already included in Chapter 4.

In the remaining 25 towns (those not shaded in yellow in Table 11-4), the percentage of the town's 2009 supply of developable land still remaining in 2022 ranges from 73.5 to 95.5 percent.

Table 11-5 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.

Table 11-5: Towns with less than 10 percent or fewer than 3,000 acres of developable town area land remaining in 2009 under Lesser Impact Alternative

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	1,091	1.8%	1.4%
Ulster	Hardenburgh	51,756	2,692	1,954	5.2%	3.8%
Ulster	Denning	65,430	4,187	2,893	6.4%	4.4%
Greene	Lexington	51,274	3,475	2,377	6.8%	4.6%
Greene	Halcott	14,375	1,598	1,238	11.1%	8.6%
Greene	Prattsville	13,786	2,773	1,935	20.1%	14.0%

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; but as discussed in the Greater Impact Alternative analysis, 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.

East-of-Hudson

As noted in Chapters 2 and 3, 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 proposed action 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 (see Table 11-6).. 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.

Table 11-6: Lesser Impact Alternative in East-of-Hudson towns

County	Town	Available developable acres, 2009	Projected developable land acquired through 2022 (-10%)	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
Dutchess	East Fishkill	4,192	106	1,516	2,570	61.3%	2.5%	36.2%	11.4%	7.0%
Putnam	Carmel	1,520	73	842	605	39.8%	4.8%	55.4%	6.3%	2.5%
Putnam	Kent	2,096	296	180	1,621	77.3%	14.1%	8.6%	7.8%	6.0%
Putnam	Putnam Valley	5,560	9	569	4,982	89.6%	0.2%	10.2%	20.2%	18.1%
	TOTAL	**13,368**	**484**	**3,107**	**9,777**	**73.1%**	**3.6%**	**23.2%**	**11.4%**	**8.3%**

WATER QUALITY AND NATURAL RESOURCES, OPEN SPACE

As described in Chapter 5, *Water Quality and Natural Resources,* and Chapter 6, *Open Space and Recreation*, LAP provides benefits to water quality, natural resources and open space. If NYCDEP acquires 10 percent less land than the proposed action, these benefits may be reduced, but the action would still provide benefits.

CULTURAL RESOURCES

Under the Lesser Impact Alternative, the same protocol as described in Chapter 7, *Cultural Resources,* would be applied with respect to protecting and preserving historical and archaeological resources.

NO EXPANSION OF DESIGNATED HAMLET AREAS

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 Chapter 1. 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 (as described in Chapter 1) 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.

Table 11-7 shows the number of acres included in each town's designated areas pursuant to the MOA and the number of acres in the proposed expansion areas. As shown, 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 27,449 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 11-8:

- 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[1] 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

[1] 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 11-7: Number of acres in existing designated hamlet areas, and proposed hamlet expansions, by town

County/Town	Existing Designated Hamlet Area, Acres	Proposed Expansion, Acres	Total Hamlet Areas, Acres
Delaware County			
Andes	1,052	0	1,052
Bovina	392	0	392
Delhi	2,346	2,759	5,105
Hamden	420	2,439	2,859
Harpersfield	405	1,295	1,700
Kortright	250	3,853	4,103
Meredith	73	71	144
Middletown	1,734	296	2,030
Roxbury	957	440	1,397
Stamford	1,331	0	1,331
Tompkins	109	0	109
Walton	1,503	3,269	4,772
SUBTOTAL	**10,572**	**14,422**	**24,994**
Greene County			
Ashland	362	1,684	2,046
Halcott	69	0	69
Hunter	3,251	2,891	6,142
Jewett	652	2,015	2,667
Lexington	362	375	737
Prattsville	207	0	207
Windham	1,148	2,794	3,942
SUBTOTAL	**6,051**	**9,759**	**15,810**
Schoharie County			
Conesville	275	1,566	1,841
Ulster County			
Denning	1,107	0	1,107
Olive	547	1,333	1,880
Shandaken	1,561	0	1,561
SUBTOTAL	**3,215**	**1,333**	**4,548**
Sullivan County			
Neversink	1,197	0	1,197
TOTAL	**21,311**	**27,581**	**48,892**

Table 11-8: 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	2,759	7%	1,112	20%	222	818	147	369
Hamden	420	2,439	6%	834	20%	167	1,027	185	352
Harpersfield	405	1,295	5%	369	20%	74	847	152	226
Kortright	250	3,853	10%	1,779	20%	356	1,743	314	670
Masonville	0	150	0%	0	20%	0	0	0	0
Meredith	73	71	0%	60	20%	12	17	0	12
Middletown	1,734	296	0%	208	20%	42	48	0	42
Roxbury	957	440	1%	104	20%	21	342	62	83
Sidney	0	219	1%	34	20%	7	0	0	7
Ashland	362	1,684	11%	1,080	27%	292	17	0	292
Hunter	3,251	2,891	5%	1,912	27%	516	0	0	516
Jewett	652	2,015	6%	1,177	27%	318	0	0	318
Lexington	362	375	1%	375	27%	101	0	0	101
Windham	1,148	2,794	10%	1,886	27%	509	0	0	509
Conesville	275	1,566	6%	1,113	25%	278	583	105	383
Olive	547	1,333	3%	381	25%	95	0	0	95
Total	**12,782**	**24,180**		**12,424**		**3,010**	**5,442**	**965**	**3,975**
Walton	1,503	3,269	5%	2,588	20%	518	1,169	210	728

In some towns, as table 11-8 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.

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

As shown in Table 11-7, the proposed expansion of Windham's designated hamlet area is 2,926 acres that would bring the designated area to a total of 4,074 acres. 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. As discussed in Chapter 4, much of Windham's recent development has tended to occur on small parcels in the proposed expansion area. As shown in Table 11-8, nearly two-thirds of the land in the expansion areas has already been solicited by NYCDEP. 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

Agreement has also been reached among the parties on expansion of Hunter's designated areas by 2,891 acres, to a total of 6,142 acres. These additional designations would provide space to accommodate growth on the outskirts of the Villages of Hunter and Tannersville, and along a portion of Route 23A. As shown in Table 11-8, 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 more than 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. Moreover, the percentage of land within Conesville's expansion area already solicited by NYCDEP – 71 percent – is among the highest in the 16 towns with proposed hamlet expansions. The acreage acquired by NYCDEP in this area could thus be substantial (278 acres) and as noted in Table 11-8, 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 369 acres, as shown in Table 11-8. 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

As noted in Chapter 3, 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 acquisitions by NYCDEP totaling 167 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 (as shown in Table 11-8) could add 152 acres to this total, increasing the potential for conflict between future acquisitions the need for land to accommodate new development.

Kortright

As noted in Chapter 3, 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. Under the No Hamlet Expansion Alternative, it is projected that NYCDEP and WAC could, as shown in Table 11-8, acquire 670 acres within what had been the Town's proposed hamlet expansion areas.

Walton

Walton's proposed hamlet expansion (which is still under discussion with NYCDEP, the regulatory agencies and other stakeholders) totals 3,269 acres, making it one of the largest of the 16 proposed expansions. More than 79 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 700 acres within the expansion area. In Chapter 3 it was projected that as of 2022 Walton would still have 82 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 Chapter 5, *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; 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 as described in Chapter 7, *Cultural Resources*, would be applied with respect to protecting and preserving historical and archaeological resources.

TOWN LEVEL ASSESSMENT FOR WOODSTOCK TO SUPPORT GREATER IMPACT ALTERNATIVE

EXISTING CONDITIONS

The Town of Woodstock is located in northern Ulster County, at the eastern edge of the West-of-Hudson watershed region. The Town's resident population in 2008 was estimated at 6,346 – an increase of one percent since 1990. The hamlet of Woodstock – which is located outside the watershed – is the Town's largest population center, accounting for about one-third of all residents, and its leading commercial center.

Figure 11-1: Map of watershed towns

Town of Woodstock – Quick Facts	
Land area:	43,321 acres
Percent of town land area within the watershed (including reservoirs):	52%
Percent of land protected	30%
Population (estimated), 2008:	6,346
Median age (estimated), 2008	50.0
Median household income (estimated), 2008	$60,000

Unlike most other watershed towns, 19 percent of Woodstock's land is higher-density residential use, reflecting the concentration of a substantial part of the Town's population in its hamlets. An additional 21 percent is low-density residential, and another 24 percent is vacant land. Woodstock currently has very little agricultural land – about 49 acres, all of which is located outside the watershed. Commercial, industrial and community uses account for about 4 percent of the Town's land, with almost all of these uses being located outside the boundaries of the watershed. (See Table 11-9)

Woodstock has long been well-known as a center for the arts, music and entertainment. Its businesses and cultural institutions include galleries, studios, theaters, museums and music venues, and an annual film festival, as well as restaurants and visitor accommodations. The Town is also home to Ametek Rotron, an aerospace firm that, with 350 employees, is among the region's largest manufacturing enterprises.

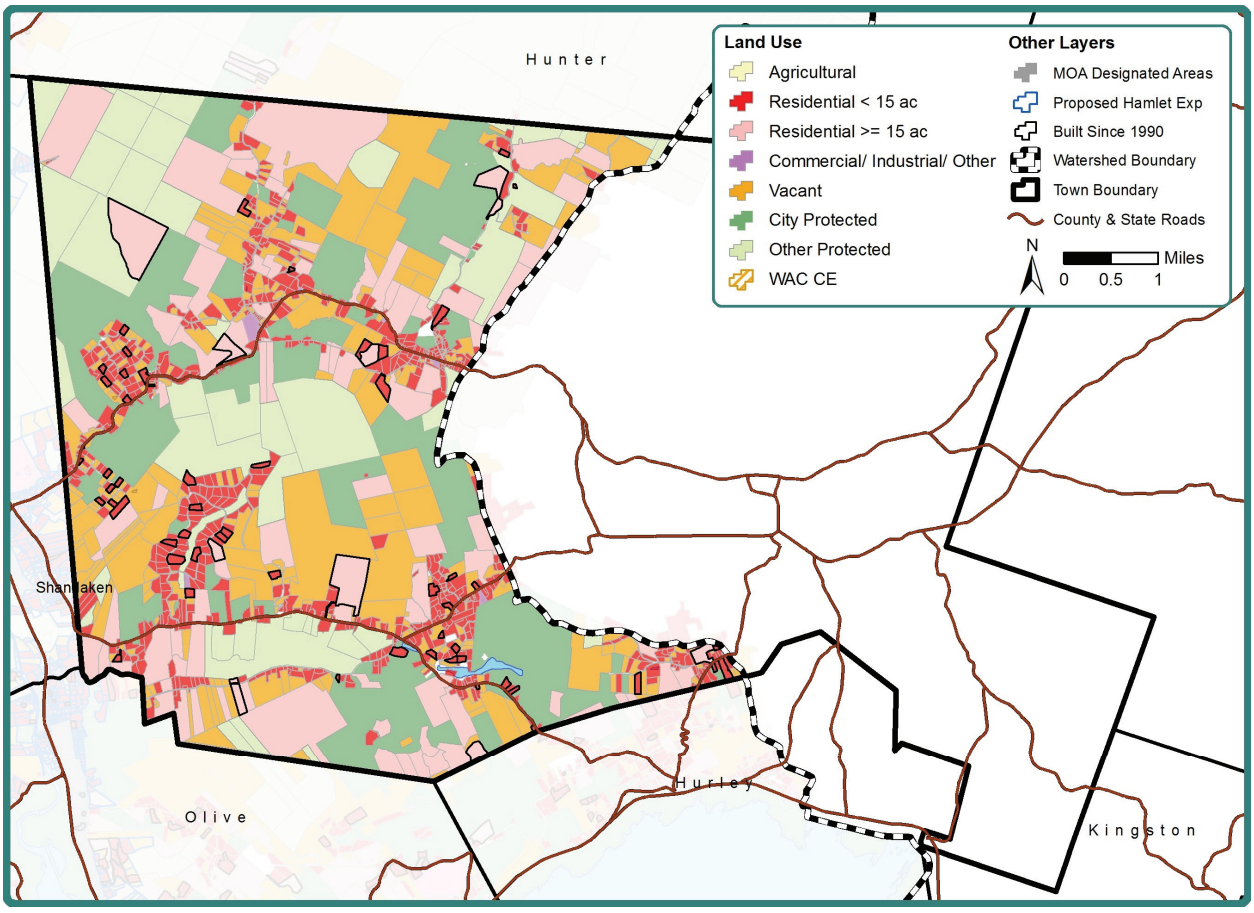
About 13 percent of all housing units in Woodstock in 2000 were for seasonal or recreational use – one of the lowest percentages among all west-of-Hudson watershed towns.

Much of the recent development that has occurred in the watershed portion of Woodstock since 1990 (as shown in the black highlighted parcels on Figure 11-2) has been clustered in and near the hamlets along Route 212 and Wittenburg Road, including Lake Hill, Willow and Wittenburg. Based on estimates supplied by DemographicsNow, we estimate that between 2000 and 2009, approximately 153 new housing units were built in Woodstock.

Table 11-9: Land Uses by Type

	In Watershed		Out Watershed		Total	
Land Use	*Acres*	*% of Total*	*Acres*	*% of Total*	*Acres*	*% of Total*
Agricultural	0	0%	49	0%	49	0%
High-Density Residential	2,817	13%	5,975	27%	8,792	19%
Low-Density Residential	4,851	22%	4,505	21%	9,356	21%
Commercial/Other	50	0%	1,553	7%	1,603	4%
State/Other Protected	4,419	20%	3,888	18%	8,307	18%
City Protected	5,039	23%	N/A	N/A	6,524	14%
Vacant	4,970	22%	5,882	27%	10,852	24%
Total	**22,346**		**20,975**		**43,321**	

Figure 11-2: Map of Woodstock showing land use and protected land within the Watershed



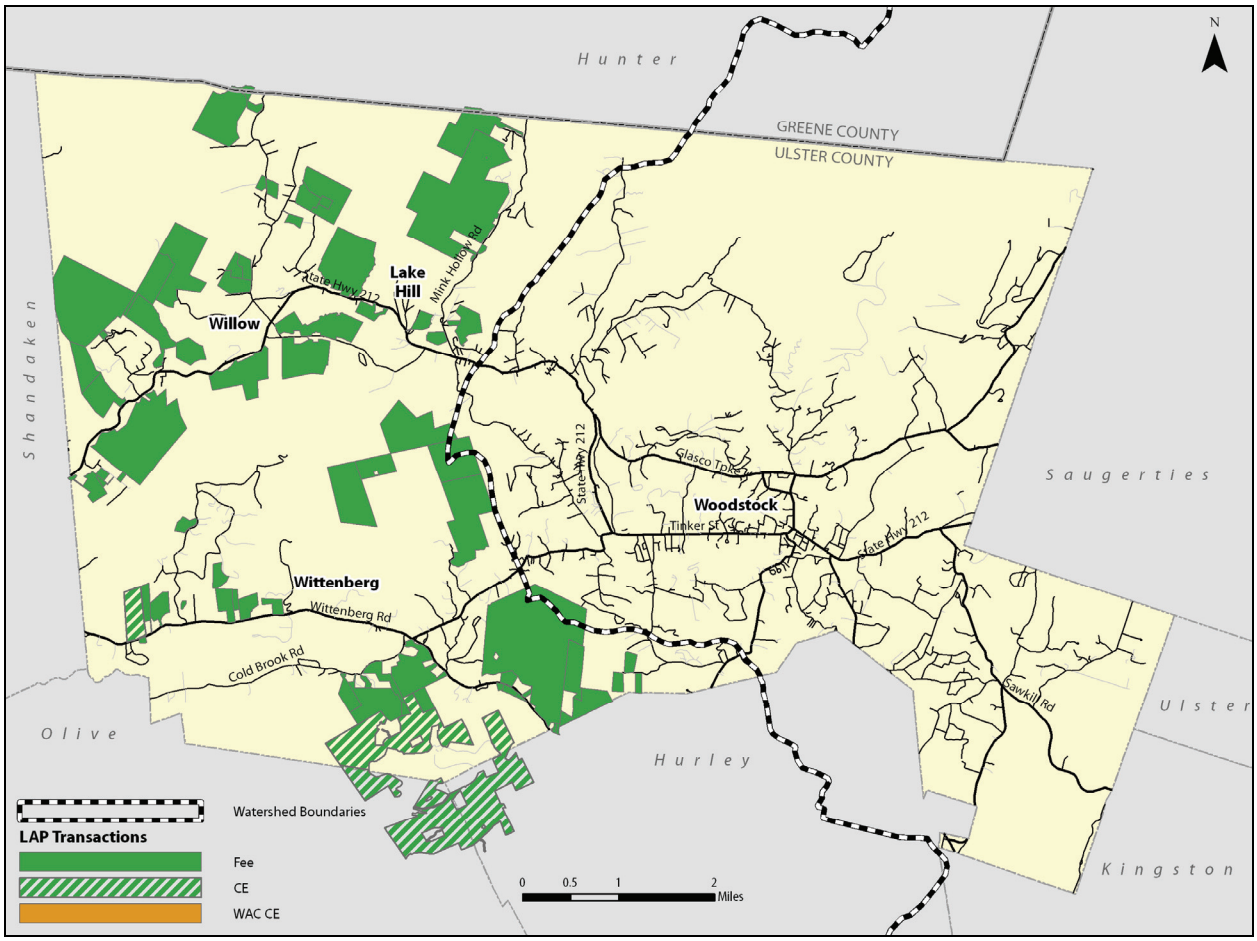
Previous LAP Activity

Through June 2009, NYCDEP had acquired a total of 5,120 acres in Woodstock pursuant to the 1997 MOA. As shown in Table 11-10 below, purchases in fee simple account for about 92 percent of all acquisitions in the town. Figure 11-3 shows the location of LAP properties in Woodstock, by type of acquisition.

Table 11-10: Acquisitions in the Town of Woodstock through July 2009

Type of acquisition	Acres
Fee simple	4,700
Conservation easements	420
WAC agricultural easements	0
Total acquired	**5,120**

Figure 11-3: Map of LAP properties in Woodstock, by type of acquisition



Of the 4,700 acres that NYCDEP acquired in fee simple as of July 2009, 1,212 acres – 26 percent of the total – had been opened for public recreational use.

FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION

Between 2010 and 2025, as discussed in Chapter 3, the resident population of Ulster County is expected to grow by about 3 percent, somewhat slower than the rate of growth during the past two decades. For purposes of constructing a "reasonable worst-case scenario," we have nevertheless estimated future residential development based on the rate of development during the past two decades. Assuming the pace of new development in Woodstock (as measured by new residential units) remains the same as it was between 1990 and 2008 (about 17 units per year), it is estimate that the land required to support new development through 2027 will total approximately 1,112 acres, including 679 acres of land characterized as developable[1] – about 10 percent of the Town's supply of such land as of 2009.

[1] For purposes of this analysis, developable land includes all privately-owned vacant land and low-density residential land (the total area of all residential parcels of 15 or more acres,

Currently-planned development includes a complex of 50 units of affordable housing, to be developed in the hamlet of Woodstock by the Rural Ulster Preservation Corporation. In addition to new residential development, the Town could see some additional growth in arts-related uses, and in small businesses that serve local residents and visitors to Woodstock.

The Town's 2003 Comprehensive Plan outlines the following goals:

- *Protect, maintain, and enhance the quality of Woodstock's natural setting and ecosystems (e.g., forests, streams, drainage systems, groundwater sources, wetlands, meadows, and others) to preserve the distinctive natural setting and ensure a sustainable future for the Town and its residents.*

- *Maintain balance between small-scale recreation opportunities and large-scale environmental features to provide a variety of recreational and cultural opportunities for all residents and visitors.*

- *Preserve and enhance existing hamlet centers as complementary buttresses to the overall quality of life in the Town.*

- *Since affordability breeds diversity, which spurs economic and cultural dynamism, the Town should encourage a variety of housing types to accommodate the varying needs of all Woodstock residents including seniors, starting artists, and young families.*

- *Protect and enhance the town's community, cultural, environmental, and natural resources to maintain Woodstock as a location of choice for residents, artists, artisans, entrepreneurs and others seeking a dynamic cultural life in a rural setting.*

- *Provide an integrated transportation system that can serve a variety of needs in a manner that is safe, economical, ecologically sound, and aesthetically pleasing.*

- *Continue to provide high quality municipal services to every resident in the community that protects the natural environment; regards residents' needs; and protects the health, safety, and general welfare of the community.*

FUTURE CONDITIONS WITH THE GREATER IMPACT ALTERNATIVE

Based on LAP's experience in Woodstock to date, NYCDEP estimates that under the proposed action, it could acquire an additional 2,357 acres in the Town between 2010 and 2022, either in

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reduced by 5 acres per parcel to allow for existing homes on these parcels), but excludes from these two categories land that has any one or more 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, or slopes of greater than 15 percent. Land with any one or more of these characteristic in considered undevelopable.

fee simple or through conservation easements. Under the Greater-Impact Alternative, NYCDEP estimates that it could acquire 2,593 acres between 2010 and 2027. Based on the percentage of the Town's low-density residential and vacant land that is developable as of 2009, it is estimated that these acquisitions under the Greater Impact Alternative will include approximately 923 acres of developable land – about 13.7 percent of the Town's supply of developable vacant and low-density residential land as of 2009.

As shown in Table 11-11, it is thus estimated that after taking into account both LAP acquisitions and the land required to support new development, Woodstock will still be left with 5,157 acres of developable vacant and low-density residential land in 2027 – approximately 76 percent of the Town's current stock of such land.

Table11-11: Remaining developable land after LAP and housing development, 2010-2027

Developable vacant or low-density residential land in 2009		6,759 acres
LAP Acquisitions, 2010-2027		
Projected fee and CE acquisitions	2,593 acres	
Developable vacant or low-density residential land acquired		923 acres
Residential Development, 2010-2027		
Projected housing units built	289 units	
Land needed for housing	1,112 acres	
Developable portion of land needed for housing		679 acres
Remaining Town Land after LAP and Residential Development		
Developable vacant or low-density residential land after LAP and development in 2027		5,157 acres
Percent of 2009 developable vacant or low-density residential land remaining in 2027		76 percent

The Greater-Impact Alternative can also be assessed in terms of its potential impact on the character of the Town of Woodstock. Broadly speaking, this alternative appears to be fully consistent with the goals set out in the Town's draft comprehensive plan in 2003.

The acquisitions projected under the Greater-Impact Alternative would help protect the primarily low-density character and natural environment of the western portion of Woodstock, while having no direct impact in the southeastern portion of the Town – in and near the hamlets of Woodstock, Bearsville and Zena – that are the most likely areas for new development.

With respect to open space and recreation, the Town's goals are consistent with those of NYCDEP. The Town's Comprehensive Plan states:

> *The western portion of the town is located within the New York City Watershed and, as a result, the New York City Department of Environmental Protection (DEP) has targeted the more environmentally sensitive of these lands for acquisition on a willing buyer/willing seller basis. Their intent is to acquire lands to prohibit development and thus protect water quality. Interestingly, DEP's goals are consistent with the goals of this comprehensive plan - to protect the natural environment. However, as lands are acquired they may present new opportunities to expand the recreational resources in the community. To meet this future need, coordinate with DEP to continue to allow public*

access for hiking, hunting, and fishing on city-acquired land per the New York City watershed protection effort.

Because the Town's largest and most developed hamlets are outside the watershed, the projected acquisitions would not affect the character of these areas, or their capacity for further development. (Woodstock is one of several watershed towns that, pursuant to the 1997 MOA, chose not to designate any hamlet areas within the watershed portion of the town. In 2009, the Town also chose not to propose any new hamlet-area designations.) Both the proposed action and the Greater-Impact Alternative thus appear to be generally consistent with the goal of preserving and enhancing these hamlets.

CONCLUSIONS

Under both the proposed action and the Greater-Impact Alternative, additional acquisitions by NYCDEP would be limited to the western portion of the town – the area within the boundaries of the watershed, consisting primarily of low-density residential properties, privately-owned vacant land and land already protected by New York City or New York State. Even with the projected acquisition of nearly 2,600 acres under the Greater-Impact Alternative, there appears to be an adequate supply of land in the non-watershed portions of the Town (and to a lesser extent, within the watershed) to support the projected level of new development. And beyond their potential impact on the supply of developable land, both the proposed action and the Greater-Impact Alternative appear to be consistent with the goals defined in Woodstock's 2003 draft comprehensive plan.

On the basis of the analyses described above and in Chapters 2 and 3, neither the Extended LAP nor the Greater-Impact Alternative would be expected to result in any potentially significant adverse impacts on land use, socioeconomic conditions or community character in Woodstock.