

III. Existing Environmental Conditions, Anticipated Impacts and Mitigation

This section provides existing conditions, and analyzes potential Project impacts and mitigation measures in each of the areas required for this DEIS, as per the DEIS Scope (included in Appendix A). It is noted that the conclusions and opinions related to anticipated impacts in each chapter are those of the Applicant.

A. Land Use

1. Existing Conditions

a) Land Use on and Surrounding the Site

The Site is comprised of undeveloped vacant land. The Site has frontage on Route 202 to the north, opposite the entry to Heritage Hills, and wraps around the Somers Towne Centre shopping area, fronting on the west side of Route 100 immediately south of Towne Centre.

Exhibit III.A-1 (Existing Land Use) shows the existing surrounding land uses within a half-mile of the Site. These uses include single family and multifamily residential, office, public/quasi-public, retail and vacant land. Specifically, located within a half-mile of the Site are: Towne Centre at Somers shopping center, the New York State Police substation, a Mobil gas station and convenience store, the Mill Pond Office complex, the IBM corporate campus (all on Route 100), Heritage Hills planned community, St. Luke's Church Episcopal Church, the Somers Town House, Fireman's Field, Somers Middle School, Somers Intermediate School (on Route 202), and other retail and commercial uses in the hamlet, as well as vacant land. See also Exhibit II-2, Aerial Photograph for description of the context of site.

Single-Family Residential: This category is a common land use in Town. In the half-mile study area there are areas of single-family residential use to the north, east, and west of the Site. These residential neighborhoods are largely in the form of conventional subdivisions.

Multi-Family Residential: Heritage Hills is the only multi-family housing found within a half-mile of the Site.

Planned Community: This land use category contains the Heritage Hills planned community located directly north of the Site on over 1,000 acres. Heritage Hills consists of detached and attached residential units, a private road network,

support retail and utilities (including an on-site sewage treatment plant), and a golf course.

Commercial: Commercial uses within a half-mile of the site are confined to the Route 100 corridor and on Route 202, north and east of the Site. The Towne Centre at Somers is located adjacent to the north and east of the Site. The Towne Centre is a neighborhood shopping center with a large chain pharmacy (CVS), a post office and several smaller stores and restaurants. Also, in close proximity to the Site are a bank, gas station, and other smaller scale commercial uses.

Office: Office uses within a half-mile of the Site consist of the IBM corporate campus on approximately 700 acres east of the Site abutting Route 100; offices to the south of the Site on the west side of Route 100 (Mill Pond Offices); and office space on the south side of Route 202, west of the intersection with Route 100.

Public/Quasi-Public: Public/quasi-public uses within a half-mile of the Site consist of the Somers Intermediate School and Middle School on Route 202, Fireman's Field, a park adjacent, the Somers Town House (Elephant hotel), St. Luke's Church, a substation of the New York State Police on Route 100, and a Somers Volunteer Fire Department fire house on Route 202.

Recreation and Open Space: Just north of the Site is Bailey Park, a public park located at the intersection of Route 100 and Route 202. A portion of the Heritage Hills golf course is also located within one-half mile of the Site.

Vacant: Vacant parcels within one-half mile of the Site consist of the large parcel abutting the Site to the west, with frontage on Route 202 and Route 100. The single-family neighborhoods within one-half mile of the Site all contain some smaller scale vacant parcels.

On-Site Easements and Restrictions: The following are easements/restrictions related to the Project Site as illustrated on Exhibit II-3, Site Survey:

- A 50-foot wide access easement on the south portion of the Somers Crossing site in favor of IBM that runs from Route 100 west to the land that IBM owns on the west side of the Site.
- A 10-foot wide strip of land along Route 202 in favor of New York State Electric & Gas Corporation (and assigns) for installation of electric distribution and transmission lines;
- An easement in favor of the Somers Crossing property that permits ingress, egress and access across the Common Areas on the Towne



Centre at Somers property i.e. all portions other than those portions upon which buildings are constructed; and,

- Two drainage easements in favor of the Towne Centre at Somers shopping center for use of portions of the Site adjacent to the southwest corner of the Towne Centre parcel and behind the existing retail building south of Route 202.

There is an existing wireless telecommunication antenna located on the southwest corner of the Towne Centre property. No development restrictions are associated with the antenna. No other restrictions affecting the use of the Site are known.

b) Existing Uses in the Town Similar to Those Proposed

A Stop & Shop grocery store is located on US Route 6 in the Baldwin Place section of Somers. Mrs. Green's Natural Market, a small specialty grocery store is also located on US Route 6. Both stores are approximately 6.5 miles from the Site. The Somers Towne Centre formerly contained a Gristedes grocery store in the current location of the CVS.

There are many other multifamily townhomes in the Town. These include: The Willows (townhomes), the Mews at Baldwin Place (affordable senior housing), Green Briar (townhomes and condominiums) and Heritage Hills (townhomes). See Exhibit III.A-2, Similar Uses in Somers.

See also, Section III.A.2.b. below for discussion of marketability of the Project.

c) Relevant Planning Studies

Town of Somers Comprehensive Plan (1994)

The *Town of Somers Comprehensive Master Plan* (January 1994) is a town-wide comprehensive master plan prepared by the Town Planning Board to set out policies and recommendations on future land use, development, and zoning in the Town. This Plan both replaces and updates the Town's first comprehensive master plan that it adopted in 1973. The Town has since sought to update the Comprehensive Master Plan and produced a Comprehensive Plan Update Interim Working Draft in December 2005. This Draft Update was not completed or adopted, and therefore the Town is not bound by anything in that document. The Draft Update, however, remains on the Town website and since the Comprehensive Plan was required to be evaluated as per the adopted scope, it is included as described below. It is noted that the Town of Somers is again (2014)



actively in the process of revising its Comprehensive Plan, and the draft chapters from 2005 will likely be superseded in the near future.

Chapter II, Residential Development, of the Comprehensive Master Plan states “This Plan continues to support the construction of smaller, denser and lower cost housing in the Somers hamlet as a Town planning objective.” The following are other specific objectives and recommended policies from the 1994 Comprehensive Plan that are relevant to the Proposed Action:

Objective 1: Predominantly Residential Community

The Plan states that “Somers is and should continue to be a predominantly residential community. Future development should be compatible with the Town’s natural systems and promote diversity of housing options in type, cost and size. Single family housing should continue to be the dominant form of land development.” Following are the policies of Objective 1, of which the Applicant identifies Policies A and G (in bold) are most relevant to the Project:

- **Policy A. Permitted housing density must relate to the physical development limitations of the land, including provisions for safe and adequate water supply and waste disposal.**
- Policy B. The semi-rural character of much of Somers can be preserved by incorporating major features of the natural and man-made terrain into subdivision design. Stream corridors, wetlands, stone walls, tree lines, fields and wooded areas can and should be retained as integral parts of development proposals. Recognized greenbelts and open space vistas should be preserved.
- Policy C. A cluster approach to subdivision should be encouraged when a cluster plan will achieve protection of open space areas identified in this Plan, produce a better relationship of development to the land, increase the diversity of housing types or eliminate the construction of short dead end streets and concurrently promote open space preservation.
- Policy D. Distinction must be maintained between the moderately high density business centers/hamlets and semi-rural areas. The appearance of development sprawl is to be avoided.
- Policy E. Accessory apartments (housing units incidental and subordinate to a single-family residence located on the same lot) offer the best opportunity to provide small, rental housing units in Somers. Subject to compliance with health, safety and density criteria, such apartments are appropriate in most sections of Somers in either existing or newly constructed residences.
- Policy F. Business and commercial uses should not be permitted to locate in residential areas shown on the Plan Map. Very small neighborhood retail facilities, subject to specific limitations, may be appropriate when integrated in larger development as part of a comprehensive plan. Low profile activities



which are incidental to a residence, such as a home occupation, should be permitted as accessory uses.

- **Policy G. Moderately high density residential areas are appropriate in Baldwin Place, Whitehall Corners and Somers Hamlet to increase housing opportunities in terms of type, cost and character as well as to provide a residential nucleus for these areas.**
- Policy H. Provision for congregate housing for seniors on sites that relate to necessary services should be permitted in a quantity that relates to Somers' population characteristics.

Objective 2: Convenient Town Business Areas

According to the Town's Comprehensive Plan, "historically six areas of Somers have been sites of locally oriented business development. These areas provide sufficient land for local commercial demand. Regional retail needs can be met in large nearby commercial centers."

The applicant identifies Policies B3 and C being the most relevant to the Project:

- Policy A. Business development should be limited to the six areas recognized by this Plan. No land not currently recognized as non-residential should be reclassified for such use.
- Policy B. The six local business areas in Somers have the three different characters arising from historic uses and functions. Land use regulations should be enacted to enhance each so as to best achieve the Master Plan objectives within each category.
- Policy B1. Established centers. Three business areas provide services for nearby residents (Lincolndale, Granite Springs at Routes 118/202 and Shenorock). They should continue as neighborhood centers but zoning boundaries should coincide with the actual area in commercial use.
- Policy B2. Evolving centers. Two areas have seen their role as business centers decline and do not function well (Whitehall Center and Baldwin Place). Both encompass large tracts of undeveloped land. New commercial development should evolve from comprehensive planning and further the objectives of this Plan. Development should primarily at a local-oriented scale and linked to the establishment of higher density, affordable housing. The result would be mixed use neighborhood centers.
- **Policy B3. Somers hamlet. The Somers hamlet has a unique position in the Town and should be strengthened as the Town's center.**
- **Policy C. All development and redevelopment in business centers should incorporate up-to-date building and site design standards to enhance attractiveness and safety. Attention must be paid to vehicle and pedestrian access, parking, lighting, landscaping, drainage and signing. An area site plan should be prepared for each area.**
- Policy D. Four business areas in Somers do not conform with the policies and objectives of this Plan (Route 100 opposite IBM, Route 118 at Miller



Road, Route 100 at Primrose Street and Granite Springs at Mahopac Avenue). Geographical expansion of non-residential uses in these small areas should not be permitted. Existing commercial uses need to be upgraded both as to appearance and to compatibility with surrounding residential uses.

- Policy E. Establishment of very small neighborhood convenience facilities may be appropriate when planned as part of a comprehensive residential development and restricted in size, ownership and use.

Objective 3: Somers Hamlet as Town Center

The Comprehensive Plan also identifies the hamlet of Somers as the Town Center. The Plan states that “the heart of Somers is its hamlet. This historic crossroads and settlement area must be strengthened as the center of the Town and the center of Town government. There must be a careful balance and integration of several diverse components including historic elements and character, modern business and retail requirements, developed commercial sites, undeveloped land, new housing opportunities, traffic flow and the pedestrian environment.”

Of the policies discussed under Objective 3, the Applicant identifies Policy E and F are the most relevant. Policies A through F are listed below:

- Policy A. Site, architectural and landscape design standards and elements should be established for the entire Somers hamlet and implemented as an overlay district. Massive buildings would be inappropriate for an area that must maintain as anchors the Elephant Hotel and St. Luke’s Church. The regulatory overview should establish focal points, a sidewalk plan and underground utility requirements.
- Policy B. A designated historic preservation district should consist of:
 - Lots that front on Somerstown Turnpike between a line 1,000 feet north of the Route 116 intersection south to the southern edge of the St. Luke’s Church property.
 - Lots that front on Route 116 from Somerstown Turnpike east to the east side of lots east of the intersection of Dean’s Bridge Road.
 - Lots that abut the west side of Bailey Park and lots that front on the south side of Route 202 from Bailey Park west to the Somers fire house.
- Policy C. The character of the historic preservation district requires immediate protection. Recently approved commercial development will stress the historic scale of the area to the limit. Legislation is required to favor residential uses over increased business use.
- Policy D. Lots that front on the north side of Route 202 from the Elephant Hotel west to Heritage Hills Drive should be developed for new structures and uses appropriate for a village center including retail, personal services,



professional offices and residential. An area site plan should be developed to ensure maximum efficiency and safety in vehicular and pedestrian access and circulation.

- **Policy E. New housing can build upon the old form of the Town as suggested by the “village” organization of the short street behind Bailey Park, the village green. Small detached village houses should be encouraged to complement existing houses and character, add to the blend of village uses and, by being small, offer less expensive housing alternatives.**
- **Policy F. The development of central sewer and water systems for the hamlet must be a priority consideration to ensure the long-term environmental stability, safety, and feasibility of the hamlet development envisioned by this Plan.**

Objective 8: Maintain and Enhance Community Character and Appearance

The Town also identifies the character and the aesthetic appearance of the corridor. According to the Comprehensive Plan, “One reason Somers has attracted growth is the pleasing physical image of the community consisting of a combination of natural and man-made elements. The Town should be at the forefront of efforts to maintain and enhance the components that define community character and appearance.”

Comprehensive Plan Update Interim Working Draft (December 2005)

It is again noted that the 2005 Interim Working Draft Update was never completed or adopted by the Town, and the Town is currently (2014) updating its Comprehensive Plan. The Residential Development chapter of the Draft Update states “...this Plan affirms the recommendations of the 1973 and 1994 Plans that it is proper and reasonable for the Town of Somers to provide opportunities for the development of multi-family housing as well as other housing types.”

For residential uses in the Somers hamlet, the Draft Update states, “This Plan continues to support ‘mixed-use’ development, including the construction of smaller, denser and lower cost housing in the Somers hamlet as a Town planning objective. This housing can be provided in several alternative forms including residential apartments above retail and commercial uses and is not limited to the typical townhouse-type or garden apartment development.”

There is no written text for a Somers Hamlet chapter of the Draft Update, however, a map titled “Draft Recommendations for the Somers Hamlet Business Center” was provided. This map lists the following recommendation for the Site: “Recommended traditional neighborhood development (TND) zoning



designation to encourage a traditional village/neighborhood development cluster containing a combination of diverse multi-family housing and small scale non-residential uses, linked to, and supportive of adjoining neighborhood/community shopping areas. Environmentally sensitive areas of the site must be preserved, and this concept requires a sewer connection to the Heritage Hills sewer treatment facility". Note that 'traditional neighborhood development' zoning designation is not currently defined or mapped in the Town Code. However, links from new development of a grocery store and new multifamily residences shall be encouraged with this proposed plan, through pedestrian connections and a trail in the open space.

The map for Somers hamlet further states: "Recommended pedestrian and cyclist pathways to improve movement and access within the Somers Hamlet" and "Recommended scenic roadway designation 50-100 foot buffer along Route 100 to Stone House." A 75-foot buffer along Route 100 is proposed, as described. Sidewalks are not proposed along the interior residential roads given the low traffic levels anticipated, although paved connectors to the existing shopping center will be provided. It is noted that currently, the only sidewalks in the Somers hamlet are located in front of Town Hall and in front of 342 Route 202 and there are no bicycle facilities, i.e. striped lanes or pathways.

Patterns for Westchester (1995) and Westchester 2025

Prepared by the Westchester County Planning Board and adopted in 1995, *Patterns for Westchester (Patterns)* is a broad policy document about the County's physical development. *Patterns* functions as the County Planning Board's reference for the standards to be used in carrying out its three principal County Charter responsibilities: Long Range Planning; advising the County Executive and Legislature on capital spending for infrastructure, land acquisition and other public facilities; and bringing the County's perspective to bear on planning and zoning referrals from municipal governments.

The *Patterns for Westchester Map* is the land use map that provides "parameters for county and municipal planning decisions by providing a unified picture of density that surrounds existing centers." The Land Use Map in *Patterns* designates the Somers Crossing Site as Medium Density Suburban 1-3 (MDS 1-3). The floor area ratio proposed by *Patterns* for the Site is from 0.025 to 0.1, and the Gross Residential Density is 1 to 3 dwelling units per acre. The Land Use Map designates the adjacent area to the east, the Somers Hamlet at the intersection of Route 202 and Route 100, as Medium Density Suburban 3-5 (MDS 3-5). MDS 3-5 has a floor area ratio range of 0.1 to 0.4 and a Gross Residential Density of 3 to 13 dwelling units per acre.



Additionally, *Patterns* contains the “basic premise” that “existing centers, if nurtured by necessary infrastructure, can support commercial and residential growth” and that “centers remain the optimum locale for development investment.”¹

Westchester 2025

Adopted by the Westchester County Planning Board in 2008, the Westchester 2025 plan reviews the County’s planning policies in the context of the challenges facing the region today. The plan identifies land use policies and provides a context for a planning partnership between the County and its 45 municipalities.

Westchester 2025 currently is a Web-based format of its county-wide planning policies, with the intent of showing residents and municipalities the importance of working together. As part of Westchester 2025, detailed analyses of existing municipal zoning ordinances using new and innovative GIS-based and Web-based planning tools are occurring.

In May 2008, and then amended in January 2010, the Westchester County Planning Board adopted the “Context and Policies” for the Plan. This adopted portion of Westchester 2025 lays out general policies and goals for regional planning efforts.

Two relevant goals from *Westchester 2025* (listed under “Policies To Guide County Planning”) include:

1. “Channel development whenever possible to centers where infrastructure can support growth, where public transportation can be provided efficiently and where redevelopment can enhance economic vitality. Development should be consistent with defined community character and be designed to facilitate or enhance a smart growth urban fabric.”
6. “Encourage a range of housing types that are permanently affordable to renters and home buyers, with the County working with each municipality to address its needs for affordable housing as well as a share of the regional need.”

Croton Kensico Watershed Intermunicipal Coalition

In 1997, Westchester County signed a Memorandum of Agreement (MOA) to protect New York City’s drinking water supply. Twelve of Westchester County’s municipalities, including Somers, lie within the boundaries of the New York City Watershed. These 12 municipalities comprise the Croton Kensico Watershed

¹ Patterns for Westchester. Centers, Corridors and Open Space. 1996.

Intermunicipal Coalition (CKWIC). To further the goals of protecting water quality within the New York City Watershed, the CKWIC has agreed to “install storm water retrofit projects to meet requirements for phosphorus reduction defined by the New York State Department of Environmental Conservation (NYS DEC).”² The funds for these projects are disbursed through the East of Hudson Watershed Corporation, a Local Development Corporation.

Town of Somers Stormwater Management Plan

The Town of Somers Stormwater Management Plan, revised in 2007, and CKWIC do not have any specific relevant planning studies for the Site. However, the proposed stormwater management program for the Site has been designed to comply with both above referenced organizations’ policies as well as the NYCDEP Watershed Rules and Regulations and NYSDEC Stormwater Standards.

d) Affirmatively Furthering Fair Housing

Westchester County Settlement

Under a 2009 settlement agreement with the U.S. Department of Housing and Urban Development and the Anti-Discrimination Center of Metro New York, Westchester County needs to facilitate the construction of 750 “fair and affordable” units over a seven year period, with these units located in municipalities with limited racial and ethnic diversity, including Somers. The settlement requires that the for-sale units be affordable to families having household income at 80% of the County median adjusted for family size, and rental units at 60% of the median adjusted for family size. These units must be designed to attract potential households from a broad market area, without local preferences.

The County developed a Model Ordinance for consideration by local municipalities as part of the settlement. The Model Ordinance includes a 10% affordable housing set aside in virtually all housing developments. As of this writing, the Town of Somers has not adopted the Model Ordinance.

Affordable Housing in the Town of Somers

The Town drafted “A Plan for More Affordable Housing in the Town of Somers, New York” in June 2005. This report explains the Town’s previous and current efforts to increase affordable housing, as well as provides new recommendations. Previous actions taken by the Town include the creation of multi-family

² Information obtained from the East of Hudson Watershed website, <http://eohwc.org>, accessed 2/20/14.

residential and hamlet zoning districts that permit bonuses for the development of affordable housing, amendments to the zoning code to permit accessory apartments, creation of the Affordable Housing Board in 1992, amendment to the Business Historic Preservation (BHP) district to permit residential use on the second floor of commercial properties, and the potential of the Town Board to waive recreation fees for new affordable units.

Recommendations for next steps for the Town include amending the zoning code to further encourage or require affordable housing, providing staff support to the Affordable Housing Board, and additional review of Westchester County affordable housing recommendations.

In 2006, the Town and Westchester County entered into an agreement to each provide approximately \$4 million toward the purchase of approximately 385 acres of the Angle Fly Preserve. As part of that agreement, the Town has to develop a certain amount of affordable housing. Housing provisions of the Town's agreement with Westchester County regarding the purchase of the Angle Fly Preserve are not directly related to the Proposed Project at the Somers hamlet. That agreement was made between the Town and the County; as such, it is the Town's responsibility to develop a plan for provision of affordable housing. Further, it is not known by the Applicant whether the Town is considering adoption of the County's Model Ordinance Provisions for the affirmative furthering of fair housing.

2. Anticipated Impacts

a) Land Use

The preliminary design of the Proposed Action is consistent with existing surrounding land uses. The proposed residential and retail uses are not new uses and add to the residential and retail uses already present in the Somers hamlet. The proposed development would not impact surrounding vacant lands to the south or west. The multi-family development would expand the customer base for the existing Towne Centre at Somers shopping center and other existing retail uses within a half mile of the Project Site and beyond. The residential units would also be a complementary base to the Heritage Hills residents as customers for the proposed neighborhood grocery store.

The proposed zoning does not promote or discourage pedestrian linkages, however, linkages are supported in the proposed site plan. Given the close proximity of the proposed residential development, new residents would be within walking distance to all areas of the hamlet business district with opportunities for pedestrians to walk between the residential area and the

Towne Centre parking lot. Also, a walking trail through the proposed open space will connect the residences with the parking lot of the proposed grocery store, near Route 202. Sidewalks are not proposed at this time on the site due to the low volume traffic anticipated on the interior roads and since there is not a sidewalk network to connect to in the hamlet. The only currently existing sidewalks in the hamlet are in front of the Somers Town Hall and 342 Route 202.

The proposed grocery store is consistent in use and scale with the Towne Centre shopping center and with the shopping center across Route 202 (Heritage Center) to the north. The proposed grocery store would be approximately 19,000 square feet and would provide a neighborhood grocery store in the area.

b) Need for and Marketability of Proposed Uses³

Both the retail grocery and the townhouse uses are expected to help meet existing and projected needs in the community.

The townhouses would be marketed as non-age restricted condominium units, ranging in size from 2,200 to 2,600 square feet of floor area. These two-story townhomes would be a mix of two-bedroom (50 units) and three-bedroom (30 units); all would have two-car garages. The Applicant anticipates that this size and bedroom mix would appeal to various types of potential buyers, including singles, young couples and empty-nesters, helping to support the development's marketability.

With the recent improvement in housing markets nationally and regionally, sales of condominiums in the market area have strengthened. Information from a local real estate broker⁴ indicates that, whereas there have typically been 50 to 100 condominiums available in the Town at any one time, today that number is more likely to be 15 to 30. This is consistent with the length of time these units are staying on the market, declining from an average of six to 12 months to a current figure of three to six months. And, as a result, sales prices have been rising. As an example, a three-bedroom, 2,161 square foot condominium unit at Heritage Hills recently sold for \$685,000.

By offering new construction with luxury features, including state-of-the-art energy efficiency packages, the new units are intended to be priced at around \$700,000. Given recent area sales such as that noted above, these prices should be readily achievable. And, with the aging of the Baby Boom generation, it is

³ Approvals from outside agencies relative to need are not required.

⁴ Lee Zipp, Branch Manager, Houlihan Lawrence, Somers (2014)



expected that there will continue to be a demand for units suitable for downsizing from larger single-family homes.

Selection of this site for a grocery store responds to the desire of local residents for a more convenient shopping opportunity. From the perspective of the potential store operator – who is very experienced in evaluating store locations to ensure profitability – the location represents a business opportunity where a grocery store can be built to serve a currently underserved population. Analyses undertaken by the potential store operator in December 2013 found the following:

- There is only one competitive store (A&P) within five miles (See Exhibit III.A-3, Grocery Stores in the Area).
- There is a population of 10,000 + people within two miles of the Site, more than needed to support a store this size.
- In addition, there are 5,000 employees within two miles, providing additional customer support.
- The market area median income exceeds the \$75,000 that the store operators look for.

The townhomes and the grocery store would each also help to support the marketability of the other: making the homes more attractive to purchasers and providing additional customers to shop.

c) Compliance with Relevant Planning Studies

The Proposed Action would position moderate density multifamily residential units (approximately 3.0 units per acre, (80 units/26.68 acres) immediately adjacent to the Towne Centre shopping center and the hamlet of Somers.

The residential units will further increase the Town's housing opportunities by providing townhomes as an alternative to single-family homes.

The Proposed Action includes a proposed 19,000 sf neighborhood grocery store opposite the Route 202 entry to Heritage Hills. A small, locally-oriented grocery store targeting Somers residents would strengthen the Town's center, without attracting a regional draw. This new store would reduce traffic on local roads by providing an alternative to the closest grocery stores, which are about 4 miles east in Goldens Bridge and about 6 miles north on Route 6.

The Proposed Action would extend the Heritage Hills Utilities Service Areas to include the entire Site. The Proposed Action would connect the residential units

and grocery store to the Heritage Hills water and sewer utilities that have the capacity to service the Proposed Action.

It is understood that the Town has been working to complete an update to the 1994 Comprehensive Master Plan. Review of the Draft Comprehensive Master Plan Update chapters from 2005 (available on the Town's website as of October 2014), demonstrates in the Applicant's opinion that the proposed zoning amendments and the proposed development are generally consistent with the Draft Comprehensive Master Plan Update that was being contemplated in 2005. The Town Comprehensive Plan is currently being further revised by the Town, and those chapters from 2005 will again be updated. Although the 2005 Draft Update recommends 'traditional neighborhood development' zoning designation for the Site, this zoning designation is not currently defined or mapped in the Town Code, nor is it fully defined in the 2005 Draft Update.

The 2005 Draft Comprehensive Master Plan Update mimics the 1994 Comprehensive Master Plan in its recommendation for moderately dense housing in the Somers hamlet, as well as its recommendation for alternative forms of housing.

Additionally, the 2005 Draft Comprehensive Plan Update calls for integration of the Somers hamlet through "internal pedestrian circulation paths, linking all parcels in the Hamlet to provide an enhanced shopping experience." The proposed residential community will have a pedestrian connection to the Towne Centre at Somers shopping center and a pedestrian trail will link the residential community to the proposed grocery store, establishing walkability among the proposed uses. Sidewalks and bicycle pathways are not proposed. The proposed residential community will also be set back 75 feet from Route 100, which is within the 50-100 foot recommendation of the 2005 Draft Update.

Consistent with the objectives of the 2005 Draft Comprehensive Master Plan, the proposed zoning amendments and proposed development plan will permit the construction of attached multifamily housing, which will be centrally located within walking distance to shopping and dining opportunities in the downtown area, thus integrating the proposed development with existing uses through walkable connections. The existing zoning on the Site permits single family detached homes on individual lots; and the existing overlay district (MFR-H) that could be applied permits multifamily housing; but neither of these zoning districts permits a grocery store (see Chapter IV, Alternatives).

In the Applicant's opinion, the Proposed Action is consistent with the goals of the Town Comprehensive Plan as well as Patterns for Westchester and Westchester



2025. Specifically, the proposed density in an area that has the ability to have sanitary sewer and water infrastructure extended. It is noted that the Proposed Action will not contribute to the Town's supply of affordable housing, but will provide a new grocery store and multifamily housing while still preserving open space in the hamlet.

Croton Kensico Watershed Intermunicipal Coalition

The Proposed Project is not anticipated to affect the CKWIC phosphorus reduction program. For additional information regarding water quality, see Chapter III.E, Water Resources.

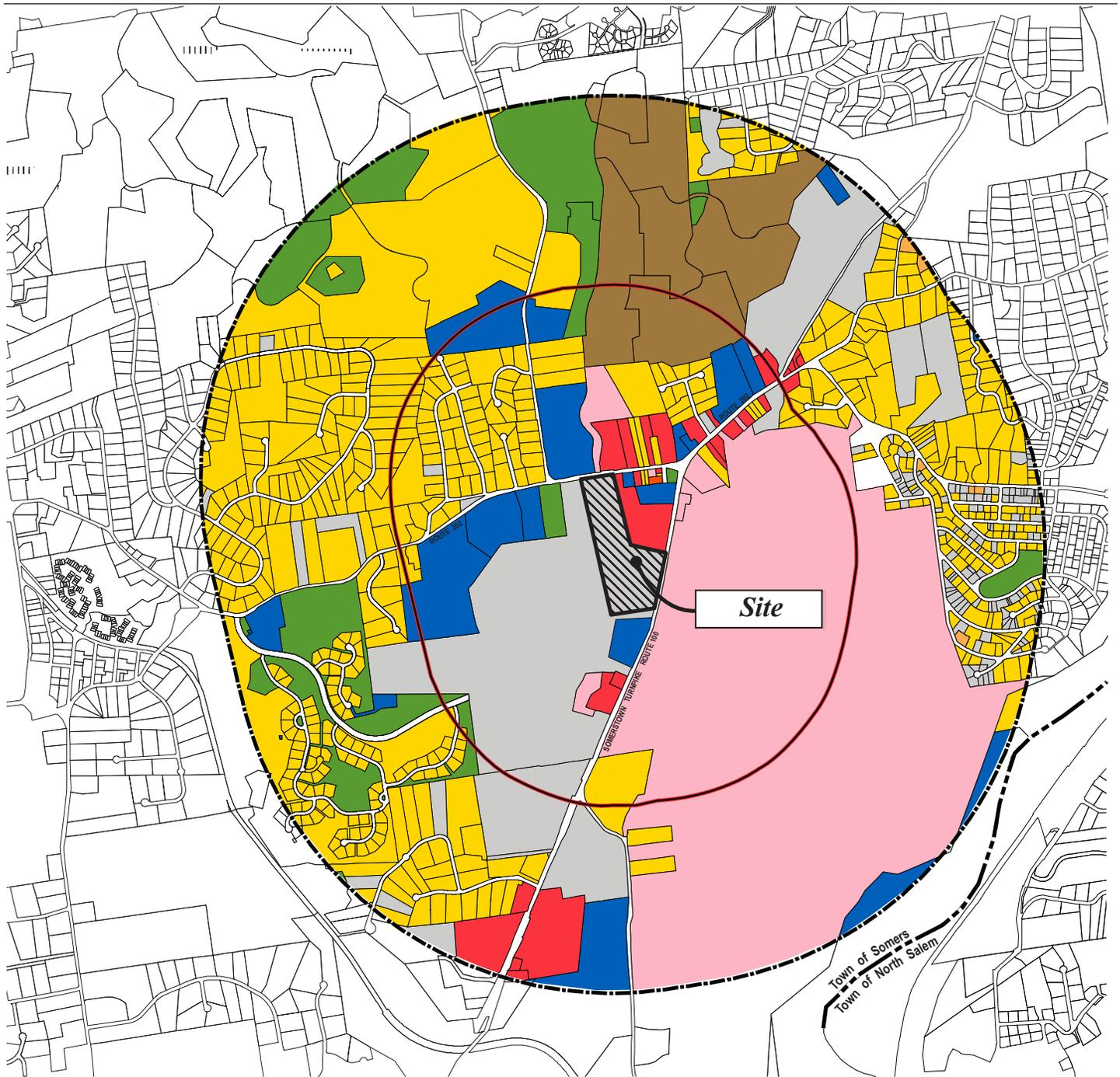
d) Affirmatively Furthering Fair Housing

This particular project will not contribute to the Town's obligations under the Westchester County settlement to provide affordable housing units. Chapter IV. Alternatives, of this DEIS, describes alternatives to the Proposed Action that include affordable housing.

3. Mitigation Measures

The Proposed Action is consistent with, and complements, existing surrounding land uses. The Project will contribute multi-family housing and a grocery store to the hamlet, an appropriate location for both uses. The Proposed Action is further generally consistent with relevant local planning studies, although it will not contribute to the Town's obligation to provide affordable housing. It is the Applicant's opinion that the addition of multi-family housing and a grocery store are positive benefits to land use in the hamlet, therefore, no mitigation is proposed.





- Single-Family Residential
- Multi-Family Residential
- Commercial
- Office
- Recreation/Open Space

- Public/Quasi-Public
- Planned Communities/Heritage Hills
- Vacant
- 1-Mile Radius
- 0.5-Mile Radius

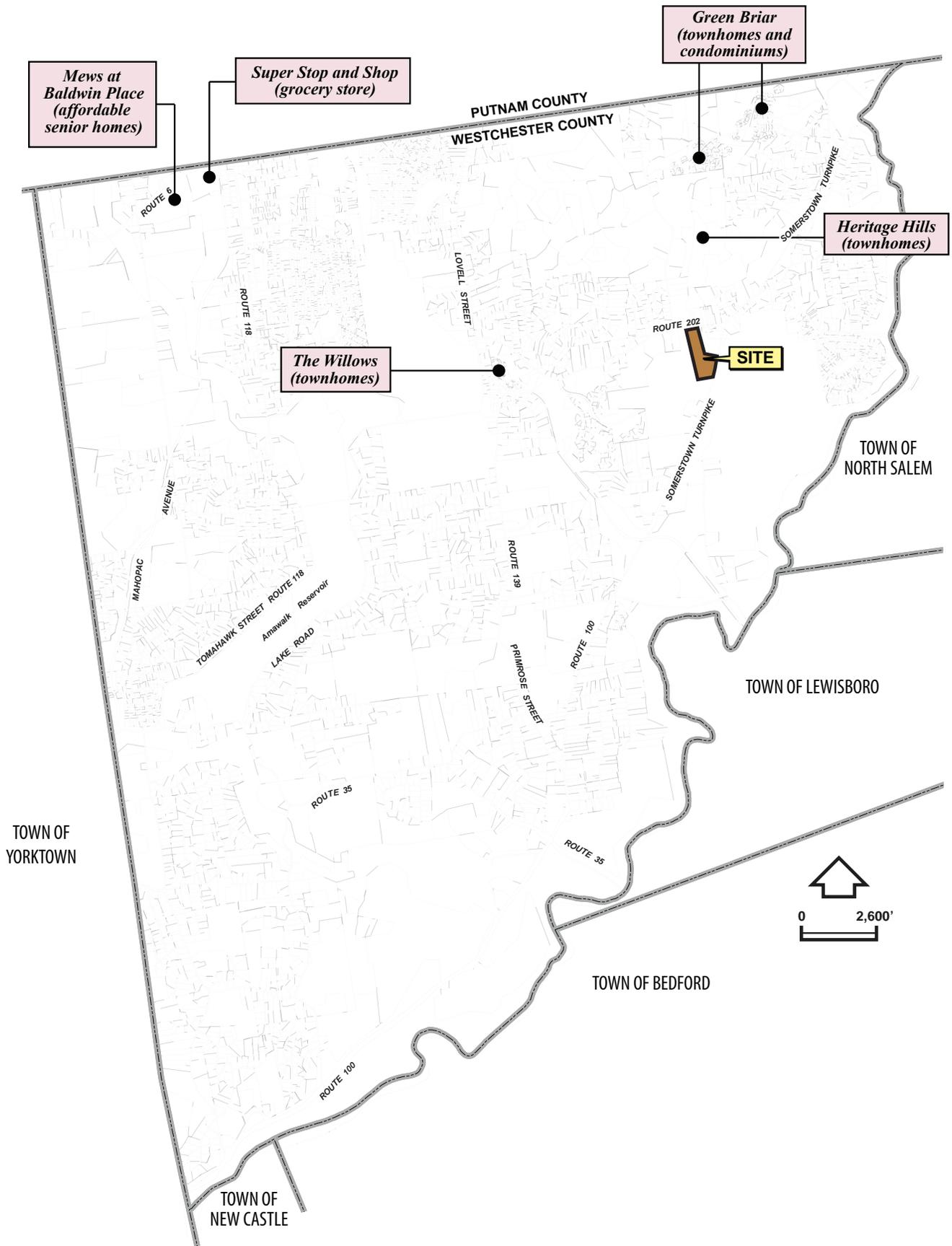


Source: Westchester County GIS

SOMERS CROSSING
Somers, New York

Existing Land Use

Exhibit
III.A-1

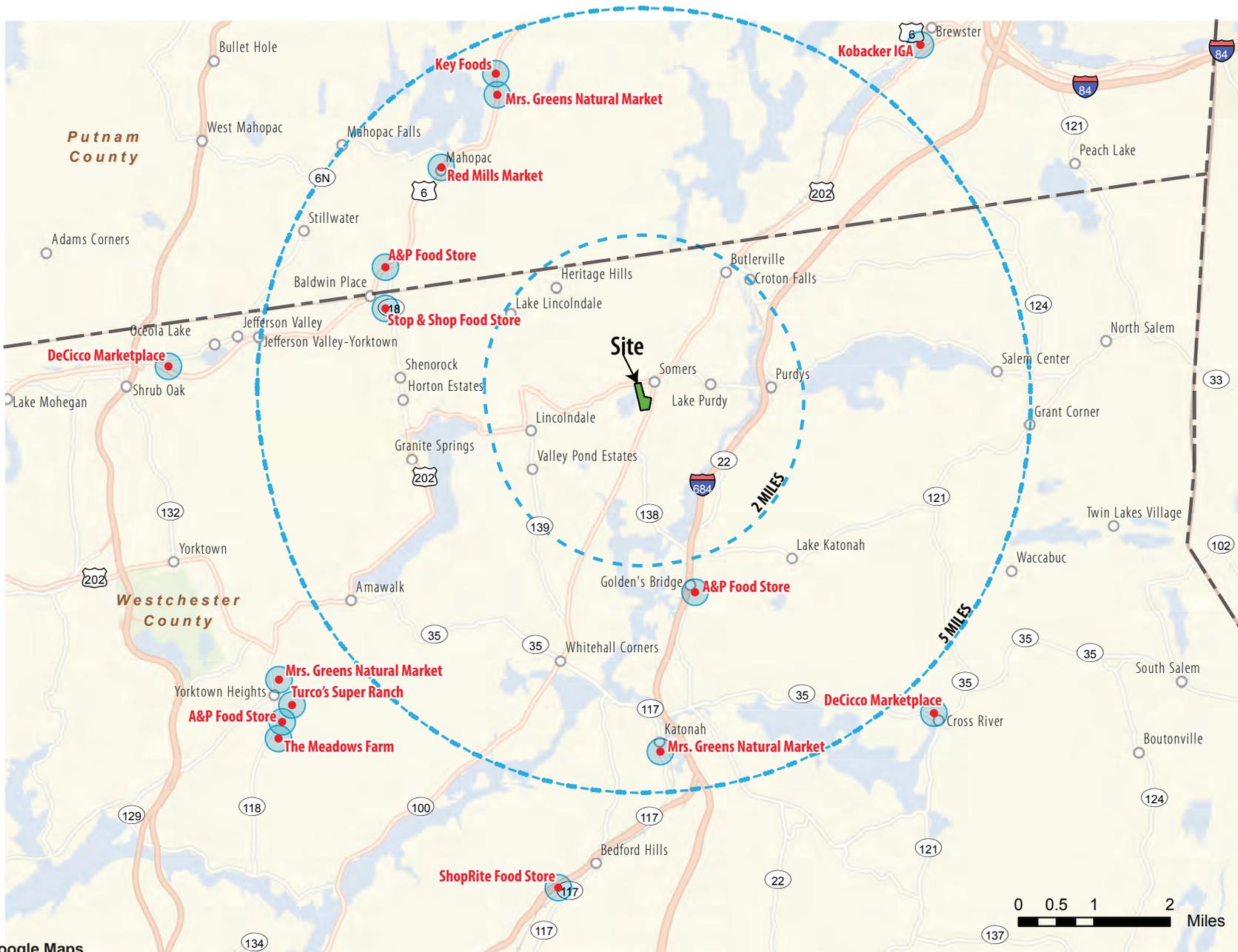


Source: NYS GIS Clearinghouse

SOMERS CROSSING
Somers, New York

Similar Uses in Somers

Exhibit
III.A-2



Source: Google Maps

SOMERS CROSSING
Somers, New York

Grocery Stores in the Area

Exhibit
III.A-3

B. Zoning

1. Existing Conditions

a) Existing Zoning Districts On-Site

The Site contains the R80 and R40 zoning districts, and is also located within the limits of the Somers Groundwater Protection Overlay District (GPOD). The R40 portion of the Site is a small area of the Site with frontage on Route 202, and the remainder of the Site is within the R80 district. See Exhibit III.B-1, Existing Zoning.

The Site meets criteria to have the MFR-H (Multifamily Residence – Hamlet) overlay district applied, which is an existing floating zone in Somers. However, the MFR-H district does not permit a grocery store use. (See Alternative B.4, Plan Applying MFR-H to the Site, in Chapter IV.)

Descriptions of the R40 and R80 districts are listed below. The Groundwater Protection Overlay Zone is described in Chapter III.E, Water Resources, and the MFR-H floating zone is described below.

R40: Single Family Residence District (with minimum lot area 40,000 sf)

The R40 district permits single family dwellings with a minimum lot area of 40,000 square feet. Railroad rights of way, farms and religious uses are the principal uses permitted in addition to single family units. Required parking varies by use. A single family dwelling is required to have two parking spots.

**Table III.B-1
Selected Lot, Bulk, and Height Requirements for the R40 and R80 Districts**

District	Max. % of Lot to be Occupied	Minimum Yard Size				Maximum Height	
		Principal Building	Front Yard	One Side Yard	Two Side Yards	Rear Yard	Stories
R40	6%	40	30	60	50	2.5	30
R80	5%	40	40	95	50	2.5	30

Source: Town of Somers Town Code, Section 170-7, Schedule

R80: Single Family Residence District (with minimum lot area 80,000 sf)

The R80 district is similar to the R40 above, except single family units are permitted with a minimum lot area of 80,000 square feet. Height, lot and bulk requirements are described in the table above.

b) On-Site Applicable Development Regulations

All applicable regulations that affect land development potential on the Site are listed below:

Table III.B-2
Applicable Land Development Regulations

Name	Town Code Section
Development on Environmentally Sensitive Lands	170-58
Stormwater Management and Erosion and Sediment Control	93
Flood Damage Prevention	102
Highway Permits	112
Site Plan Review*	144
Steep Slopes Protection	148
Subdivision of Land	150
Tree Preservation	156
Wetlands and Watercourse Protection	167
Groundwater Protection Overlay GP District	170-32
Required Landscaped Strips and Shrubbery Screens**	170-34

* Regarding lighting, Section 144-8.C (3) of the Town Code states "Exterior lighting and accessory facilities (e.g., air-conditioning systems) shall not create a nuisance for surrounding properties or the public in general."

** Regarding landscaping, Section 170-34 describes various standards and requirements for landscape buffering depending on use and location.

Section 170-58 of the Town Code regulates development on environmentally sensitive lands. As shown on Exhibit II-4, Site Constraints, the Site contains wetlands, very steep slopes (equal to or greater than 25%), and is within a one-hundred year floodplain. A 75% deduction in lot area is required for these areas. Therefore, the base area for the Site is approximately 22.04 acres.

Table III.B-3
Residential Net Site Area

	Gross Area (acre)	Deduction (%)	Net Area (acre)
Site Area	26.68	--	26.68
State wetlands/100-yr floodplains	6.08	75%	-4.55
Local Wetlands	0.12	75%	-0.09
Very Steep Slopes (25%)	0.0	75%	-0.0
Net Land Area			22.04

Source: Bibbo Associates, LLP

c) Zoning Districts in Surrounding Area

Exhibit III.B-1 indicates existing zoning districts within one-half mile of the Site. The zoning districts surrounding the Site include: B-HP to the northeast (Business



Historic Preservation District in the hamlet center); DRD to the north (Designed Residential Development on the Heritage Hills community); NS adjacent to the north (Neighborhood Shopping on Towne Centre at Somers); OB-100 to the east (Office Business District on the IBM campus); R10 to the east; R80 to the west and south (on primarily vacant parcels); and R40 to the west and northeast. A large portion of the study area is also located in the Groundwater Protection Overlay District.

The following zoning districts are located along the Route 100 and Route 202 corridors within the study area: B-HP, DRD, NS, OB-100, OLI (Office and Light Industry Zoning), R80 and R40. It is assumed that the existing uses along the Route 100 and Route 202 study area corridor within 2,500 feet of the Site are generally in compliance with existing zoning regulations or contain preexisting conditions. Locations that are not in compliance with local regulations due to preexisting conditions would need to comply with environmental quality review and site plan review regulations as appropriate before modification.

d) Existing MFR-BP Multifamily Residence Baldwin Place and MFR-H Multifamily Residence Hamlet Districts

The Town of Somers Zoning Code currently provides two types of multifamily residence (MFR) zoning districts established on a floating-zone basis, subject to approval by the Town Board, consistent with an approved preliminary development concept plan. The two existing MFR districts are described as the MFR-Baldwin Place (MFR-BP) district and the MFR-Hamlet (MFR-H) district (Town Code Section 170-13).

The MFR-BP district permits multifamily residences with a 10-acre minimum lot size. The average gross density is a maximum of 3 density units (DU) per acre of net land area. At least 15% of the basic permitted density must be affordable units. This district also contains a density bonus of not more than 50% for the provision of affordable units for low/moderate income families. Properties in this district must have direct frontage on a major or collector road or adequate access to such road without passing through a single-family residence neighborhood. Properties must further be located within public water and sewer districts. Multifamily developments in the MFR-BP district are required to provide a recreation area, with at least 300 square feet of lot area per density unit, for residents. The MFR-BP district is currently not mapped in the Town.

The MFR-H district contains the same regulations as the MFR-BP district, including affordable housing and bonus units, except the basic average gross density is not to exceed two density units per acre of net land area. The MFR-H district also has



lower lot coverage requirements than the MFR-BP district. The MFR-H district is mapped for the Willows community in the Lincolnale hamlet, which contains approximately 120 residential units.

2. Anticipated Impacts

a) Proposed Zoning Amendments

As described above, the Town currently provides two categories of multifamily residence (MFR) zoning districts established on a floating-zone basis. In content, a floating zone is the same as a conventional zone. It describes the permitted uses, setback requirements, and other standards to be applied in the district. Unlike conventional zoning districts, however, the floating zone is not designated on the zoning map. Once enacted into law it "floats" over the community until, upon approval of an application, it is applied to a particular parcel through an amendment to the zoning map (provided it meets specified criteria for mapping the zone on a particular site). (For additional detail regarding floating zones, see Alternative B2 in Chapter IV, Alternatives.)

The proposed amendment to the Zoning Code would add a third type of MFR floating zone – the MFR-Downtown Hamlet (MFR-DH) district. (See Appendix B for the proposed zone text amendment.) Recognizing the differences between areas zoned MFR, the MFR-DH district is proposed to be specifically applicable to properties with direct access to Route 202 or Route 100 and within 2,500 feet of the intersection of Route 202 and Route 100 in the Somers hamlet only (not applicable at Baldwin Place or Whitehall Corners). Consistent with the MFR-BP and MFR-H districts, the MFR-DH district would require eligible sites to be within an existing, expanded or new sanitary sewer district, capable of being served with a central water system, and convenient access to shopping, major roads and community facilities and services.

The MFR-DH district would differ from the existing MFR districts in that it would permit a variety of symbiotic uses that are consistent with a mixed-use downtown Somers hamlet area, rather than being limited strictly to multifamily residential uses. For example, the MFR-DH district would not only permit multifamily residential housing, but also complementary neighborhood retail shopping opportunities. The uses provide a collaborative relationship that is critical to a downtown hamlet area.

The proposed MFR-DH district would specifically permit the following:



Multifamily Residential Housing

- Development density¹: the basic density for multifamily residential housing shall be calculated as in the MFR-BP district, consistent with the MFR-H basic average gross density which shall not exceed two density units per acre of net land area.
- Coverage: the maximum building coverage shall be 15% and the maximum combined coverage of buildings and paved surfaces shall be 35%. The net site area to be used in this calculation shall be established as set forth for the MFR-BP district in Section 170.13.A (4).

Grocery Store and Other Neighborhood Retail Use that compliments retail use on the abutting lands.

- Lot location and size: the site shall have frontage on, and direct access to a New York State Highway, at a signalized intersection. The minimum lot area for retail use shall be 4 acres.
- Coverage: the maximum building coverage shall be 15% of the lot area.
- Yards: the retail building may be located directly on the front lot line and directly on a side lot line that abuts an adjacent shopping area. A front yard along Route 100 shall have a minimum depth of 75 feet. Other yards shall have a minimum depth of 20 feet.
- Building height: the maximum height shall be two stories or 35 feet.
- Maximum store size: the maximum footprint of an individual store shall be 25,000 square feet.

All multifamily residence districts in Somers must be established on a floating zone basis, subject to approval by the Town Board and in accordance with an approved preliminary development concept plan.

Section 170-13 of the Zoning Code sets forth as its purpose that multifamily residence districts be *“established in order to provide suitable opportunities within the Town for the development of housing designed to satisfy the needs of households maintained by the young, the elderly and families earning less than 80% of the county's median income, and to permit a broad array of housing types, dwelling unit sizes and forms of ownership/occupancy.”*

The proposed new floating multifamily zone, MFR-DH, has been designed to meet some of the purpose by providing multi-family housing. The MFR-DH establishes a new floating zone that is, in the Applicant’s opinion, appropriate specifically for

¹ It is noted that the Somers Building Inspector would make the determination of compliance for the project density.

the Somers hamlet with the inclusion of a retail component adjacent to existing retail. The proposed MFR-DH floating zone, however, does not include an affordable housing component (a difference from the MFR-H district) and all residential units are proposed to be market-rate condominium, and will be designed to be appropriate for empty nesters and professional couples. The MFR-DH also includes the provisions for a neighborhood grocery store; another difference from the MFR-H, but considered by the applicant to be filling a community need in the hamlet.

The density is within that permitted for the district (2 density units per acre) and the Site is adjacent to existing sanitary sewer and water districts capable of expansion (Heritage Hills). It has convenient access to major roads and to local shopping with the adjacent Somers Towne Centre.

As described in Chapter II, Project Description, the proposed design for the residential units complies with the requirements of Section 170-13(B), the MFR-H District, and, by reference, Section 170-13(A), the MFR-BP District, Subsections 1-15 with the exception of Subsection 6(a). Subsection 6(a) requires a 50-foot setback from any other lot line except if the property line is shared with an adjoining single family residential district. In that case, the setback required is to be at least 100 feet. The land to the south and west of the Project Site is within the R-80 district, thus requiring a 100-foot setback. The Applicant is requesting a reduction to this requirement, on the basis that this adjacent land is vacant, and unlikely to be developed, and providing a 50-foot setback allows for a design with less impact to the steeper slopes on the east side of the Site adjacent to Route 100. This vacant land has limited development potential due to its large areas of environmental constraints, including NYS regulated wetlands.

Therefore, the proposed site layout (see Exhibit II-2, Conceptual Site Plan) reflects a 50-foot setback along the south and west bounds of the Site adjoining this single family district.

The proposed plan also does not include active recreation as is required for the MFR districts (300 square feet of recreation lot area per density unit, or 13,224 sf). The Applicant proposes payment of a fee-in-lieu of this recreation requirement. Approximately 10.58 acres (almost 40% of the Site) of open space lands will be maintained and a walking path will be provided to link the residential development with the grocery store and Route 202 in the northern portion of the Site providing passive recreation.

The proposed community is intended to be developed to serve the purposes defined within the definition of the Multifamily Residence Hamlet District (MFR-

H) of the Somers Zoning Code by providing a low to medium density multifamily housing community adjacent to an existing neighborhood shopping center. Covenants or other permanent restrictions on the addition of bedrooms will be placed by the Applicant as per Town Code Section 170-12D (1) (a). Table III.B-4 calculates the number of dwelling units based on density units permitted as defined in Section 170-12D(1)(a) of the Town Code, as well as the required amount of active recreation space. Zoning compliance with various requirements of the MFR-H district is described in Table III.B-5.

Table III.B-4
Calculation of Maximum Permitted Dwelling Units and Required Active Recreation

Maximum Permitted Dwelling Units	
2 Density Units X Base Lot Area (22.04)	44.08
# Unit Types Per Density Unit	
2 Two-BR Units	
1.5 Three-BR Units	
X= Number of Two-BR Units	
Y= Number of Three-BR Units	
Proposed Ratio of Two-BR to Three-BR Units = $\frac{5}{3} Y$	
Therefore:	
$\frac{1}{2} X + \frac{2}{3} Y = 44.08$	
$\frac{5}{3} (\frac{1}{2} Y) + \frac{2}{3} Y = 44.08$	
$\frac{5}{6} Y + \frac{4}{6} Y = \frac{3}{2} Y = 44.08$	
Number of Three-BR Units: Y = 30	30
Number of Two-BR Units: X = $\frac{5}{3} Y = 50$	<u>50</u>
Maximum Number of Units	80
Required Active Recreation Space	
300 sf Per Density Unit	
300 sf x 45 D.U. = 13,500 sf	
Required SF of Active Recreation Space	13,500 sf

**Table III.B-5
Residential Zoning Compliance¹**

	Code Requirements (MFR-H)	Proposed MFR-DH Zone Requirements	Proposed Project
Minimum parcel size	10 acres	10 acres for residential use, 4 acres for retail use	26.68 acres
Max. Permitted Building Coverage	15%	15%	12.7%
Max. Combined Coverage (roads, driveways, parking and buildings)	35%	35%	27.3%
Max. Building Height	2-1/2 stories or 30 feet	2 stories or 35 feet (commercial)	2 stories or 35 feet
Min. Setback from Street	75 feet	75 feet from Route 100 20 feet for other yards	75 feet from Route 100 20 feet from Route 202
Min. Setback from other lot lines	50 ft (north and east) 100 ft (south and west)	50 ft (north and east) 100 ft (south and west)	50 feet (north and east)* 50 feet (south and west)*

¹ The Town Building Inspector shall make the determination of compliance, and if found no to be in compliance, relief will be sought from the ZBA.

*Wavier sought for 50' setback.

Parking

Overall, 457 parking spaces (including garages) will be provided on-site (299 spaces are required). Parking requirements and proposed compliance are described in the table below.

**Table III.B-6
Proposed Parking**

	Required	Proposed
Parking Requirements per Unit (1 1/3 per unit and 1/3 per bedroom)		
Required Parking (1 1/3 per unit and 1/3 per bedroom) (1/3 to 2/3 of total spaces required to be covered)	113 covered <u>57 uncovered</u> 170 total	113 covered <u>57 uncovered</u> 170 total
Required Visitor Parking (20% of minimum required parking)	34	32*
Extra Proposed Parking		47 covered 101 uncovered
Total Proposed Residential Parking Spaces		350
Required Retail Store Parking (1 per 200 sf)**	95	107
Total Parking Spaces	299	457

*32 visitor spaces provided along the internal roadway, extra spaces provided in driveways.

** The grocery store is also required to have one loading space, one loading space is proposed.

b) Other Potential Town Sites Eligible for MFR-DH District

The study area (2,500 foot radius from the intersection of Route 100 and US Route 202) has been examined for sites that may be eligible for the proposed MFR-DH district floating zone as required in the DEIS scoping document. As shown on Exhibit III.B-3, Eligible Sites Within 2500’ of Intersection, for MFR-DH District, one other site within the study area is considered eligible for the new floating zone. Exhibit III.B-4, Land Uses Within 2500’ of Intersection shows the existing land uses there and Exhibit III.B-5, Zoning within 2500’ of Intersection, indicates existing zoning.

The table below provides a description of the sites that were examined. (All sites are within the 2,500 foot radius from the Intersection of Route 100 and US Route 202, and that have direct access on Route 100 or 202) and that criteria were examined. Sites were identified with letters (i.e., A, B, C) for ease of review.



**Table III.B-7
Potential Town Sites Eligible for MFR-DH District**

Site	Direct Access to US Route 202 or NYS Route 100	Residential Use: 10 Acre Min. ¹	Retail Use: 4 Acre Min.	Retail Use:-- Located at a Signalized Intersection	Eligible for MFR-DH Floating Zone	Eligible for MFR-H Floating Zone	Notes
A	US Route 202	x	✓	✓	✓	x	Site is developed with retail but is vacant in the rear portion.
B	US Route 202	✓	✓	x	x	x	Site contains a cemetery. (not to be developed)
C	US Route 202	x	✓	✓	x	✓	Site is part of a larger tract and would need to be subdivided, also has environmental constraints possibly including steep slopes.
D	US Route 202	x	x	✓	x	x	Site is not large enough.
E	NYS Route 100	✓	✓	x	x	✓	Site is part of the already developed IBM property (corporate office campus).
F	US Route 202 and NYS Route 100	✓	✓	x	x	✓	Site is part of a larger tract and would need to be subdivided, has considerable environmental constraints including wetlands, and contains the NYS State Police barracks.
G	US Route 202	x	✓	✓	x	x	Site is part of the Heritage Hills development and contains the Heritage Hills sewage treatment facility. Also has environmental constraints including wetlands.

¹ The minimum lot size for MFR-H, Multifamily Residence Hamlet District is also 10 acres.

Site A is 4.03 acres, has direct access to and frontage on US Route 202 and is located at the signalized intersection of US Route 202 and Route 100, so is therefore, potentially eligible for the MFR-DH district floating zone. Site A is designated on Town tax maps as sheet 17.11, block 10, lot 21. A commercial strip with a bank, deli and catering business, and dry cleaner, with surrounding parking, are currently located on this site. Behind the parking lot is a large, undeveloped, grass field and some wooded areas.

Site A is located within the B-HP, Business Historic Preservation district. The B-HP district permits retail stores in new buildings “provided that all such uses are located only on the lowest level at grade that faces the major roadways of U.S.

Route 202, N.Y. Route 100 or N.Y. Route 116 and residential uses are established on the upper level(s) of such building.” The FAR is 0.08 on lots of one acre and larger for nonresidential uses. The existing development is approximately 4,300 square feet.

With the MFR-DH floating zone designation, this site could achieve a maximum lot coverage of 0.6045 acres, or 26,332 square feet (15% of lot area). The maximum footprint for an individual store is 25,000 square feet. Therefore, the site could contain a series of shops totaling 26,332 square feet or one 25,000 square-foot store.

Site A would not be eligible for the existing MFR-H District because it is 4.03 acres and the MFR-H District requires a minimum lot size of 10 acres. Sites C, E, and F, however, could be eligible for the MFR-H District because they are all over 10 acres. It should be noted that site E is the already developed IBM campus, so is not likely to be redeveloped. Site F currently contains the New York State Police station and a NYSDEC wetland, as well as other environmental constraints.

c) Development Under Existing Zoning or With MFR-H Floating Zone

If the Site were not rezoned, ten single-family homes could be constructed on the Site under existing zoning regulations (R-40 and R-80 districts) and accounting for environmental constraints. The resulting character would be that of new homes on single-family lots which would be somewhat of a contrast to the hamlet which contains commercial, municipal, cultural, and multi-family residential uses. A more detailed analysis and conceptual layout plan for development on the Site with existing zoning is provided as Alternative B1 in Chapter IV, Alternatives.

If the MFR-H Floating District was applied to the Site, 109 multifamily condominium units (85 market rate 2-bedroom units and 24 affordable 2-bedroom units) could be constructed. The resulting character would be denser than the Proposed Action, and would provide affordable housing, but no neighborhood grocery store. As with the Proposed Action, this use would be in character with the Somers hamlet. An analysis and conceptual layout plan for this alternative is provided as Alternative B4 in Chapter IV, Alternatives.



3. Mitigation Measures

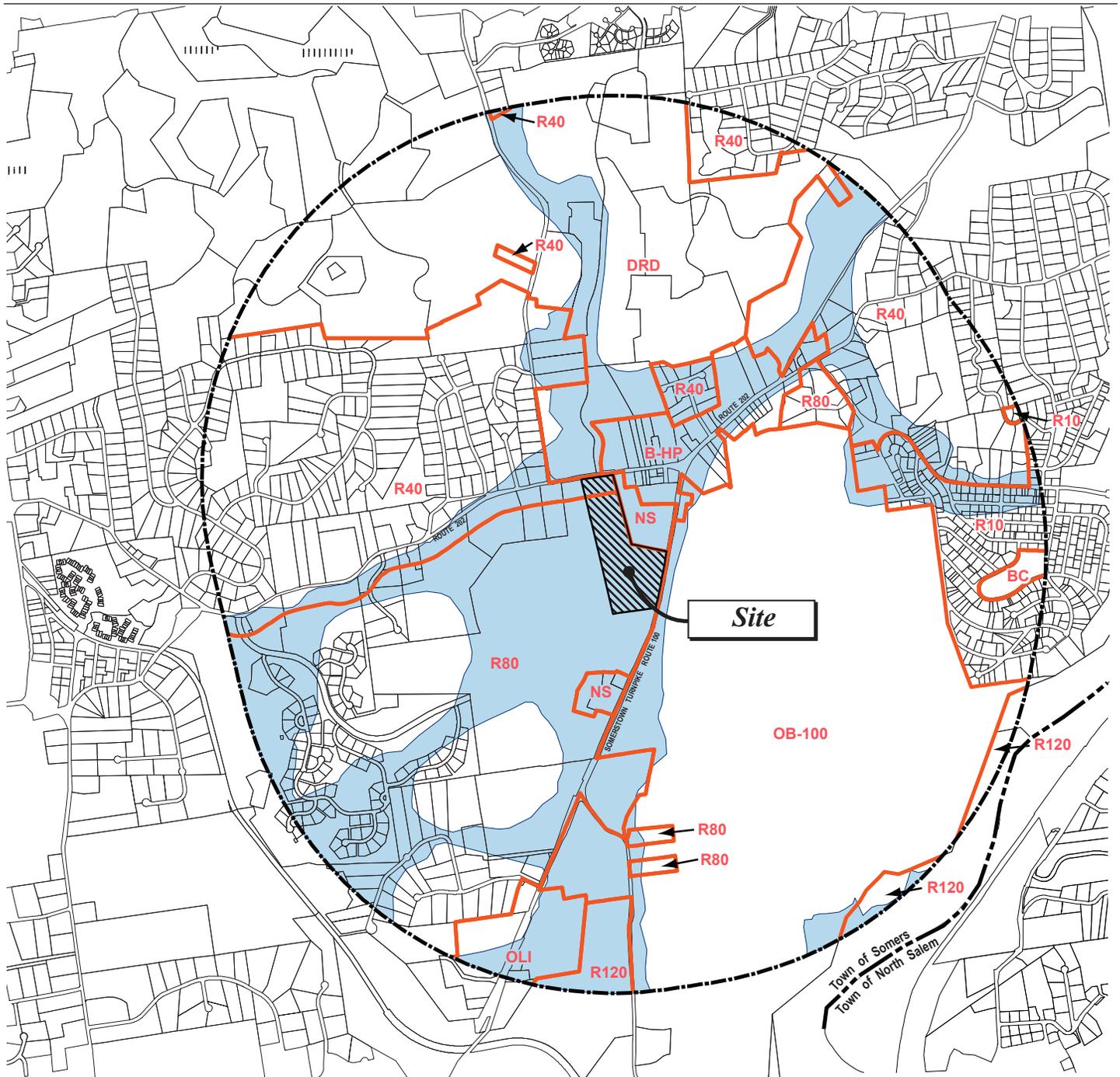
The proposed residential component will require a reduction in the setback requirement for land bordering a residential zoning district. The Town Code specifically authorizes the Planning Board to reduce this requirement provided the objectives are met, and based upon, among other things, the nature of neighboring land uses. The land to the west and south of the Site, currently zoned R-80, is land that would not likely be developed with a residential use, at least in the vicinity of the proposed development, as a result of environmental constraints.

The Applicant is also requesting a payment in lieu of providing active recreation space in the residential community. Approximately 10.6 acres of open space (almost 40% of Site) will be preserved and a walking path will connect the residences with the grocery store and US Route 202.

The proposed new floating district, MFR-DH, is composed as closely to the two existing MFR districts as possible to allow retail use while keeping the residential density at a scale that conforms with the Town's Comprehensive Plan and the objectives of the other MFR districts. It is anticipated that the new floating district will be applied sparsely throughout the hamlet (if at all beyond this site), thereby lowering the potential for significant cumulative impacts.

Therefore, the proposed creation of a new floating MFR-DH district and rezoning of the Site is not anticipated to result in any significant adverse impacts to the Town and no additional mitigation is proposed.





- R10** Residence District (Minimum Lot Area 10,000 s.f.)
- R40** Residence District (Minimum Lot Area 40,000 s.f.)
- R80** Residence District (Minimum Lot Area 80,000 s.f.)
- R120** Residence District (Minimum Lot Area 120,000 s.f.)
- DRD** Designed Residential Development Overlay District (Minimum Area 500 ac.)
- BC** Beach - Community House District

- B-HP** Business Historic Preservation District
- NS** Neighborhood Shopping District
- OB-100** Office Business District
- OLI** Office and Light Industrial District
- Groundwater Protection Overlay District
- 1- Mile Radius

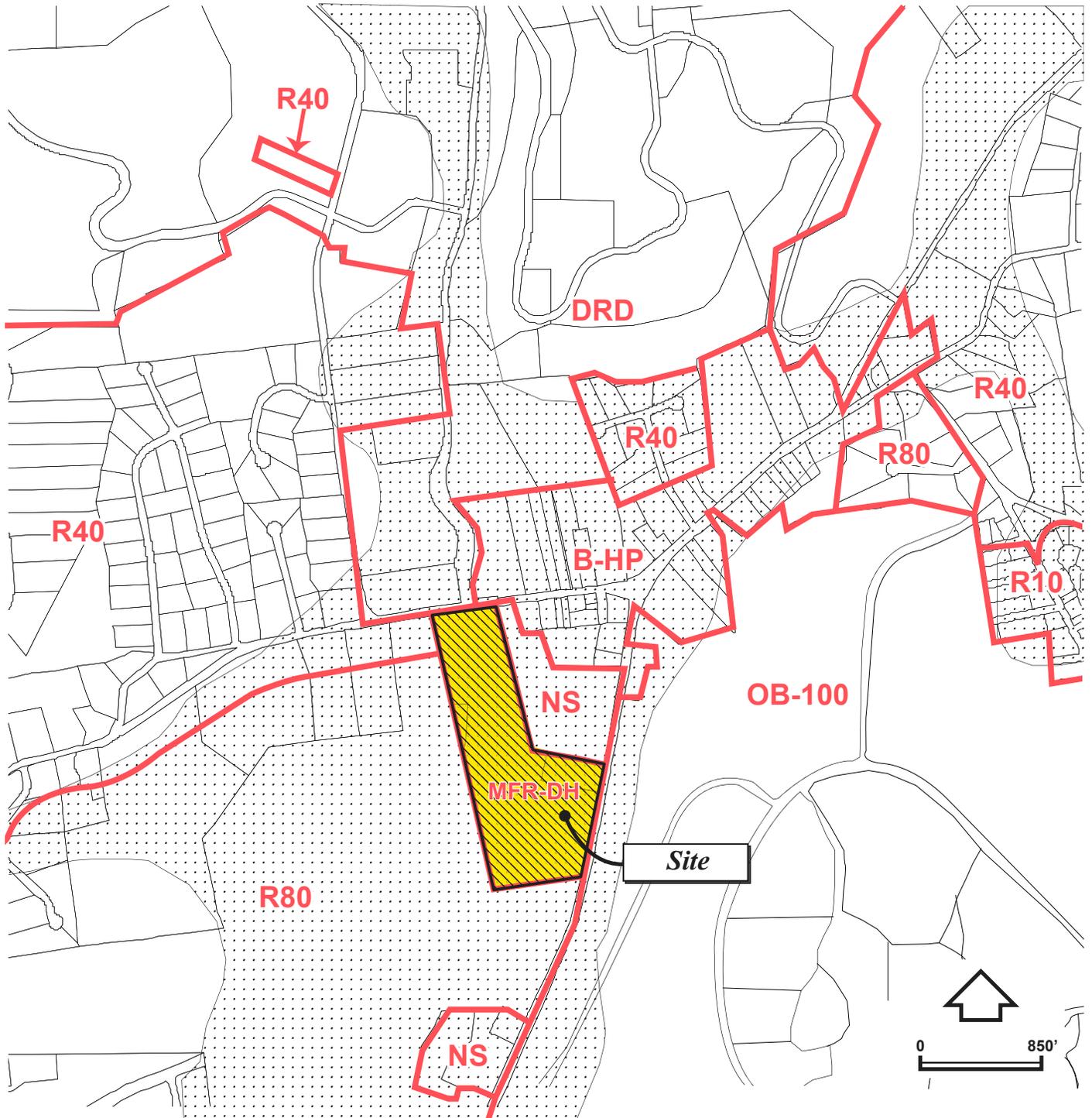


Source: Westchester County GIS

SOMERS CROSSING
Somers, New York

Existing Zoning

Exhibit
III.B-1



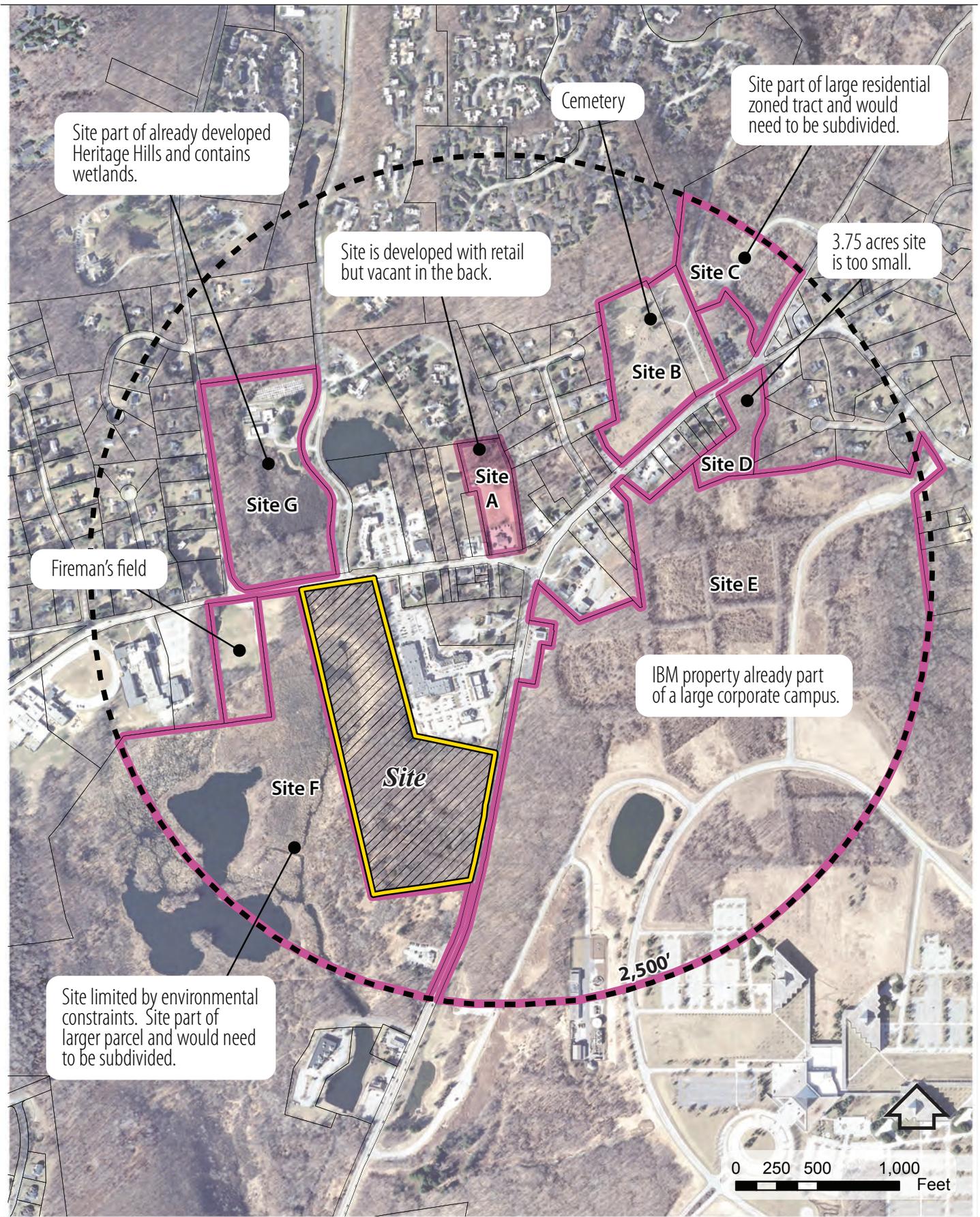
- | | | | |
|---------------|---|---|---|
| OB-100 | Office Business District | B-HP | Business Historic Preservation District |
| R10 | Residence District (Minimum Lot Area 10,000 s.f.) | NS | Neighborhood Shopping District |
| R40 | Residence District (Minimum Lot Area 40,000 s.f.) | MFR-DH | Multifamily Residence Downtown Hamlet |
| R80 | Residence District (Minimum Lot Area 80,000 s.f.) |  | Groundwater Protection Overlay District |
| DRD | Designed Residential Development Overlay District
(Minimum Area 500 ac.) | | |

Source: Town of Somers Zoning Map

SOMERS CROSSING
Somers, New York

Proposed Zoning

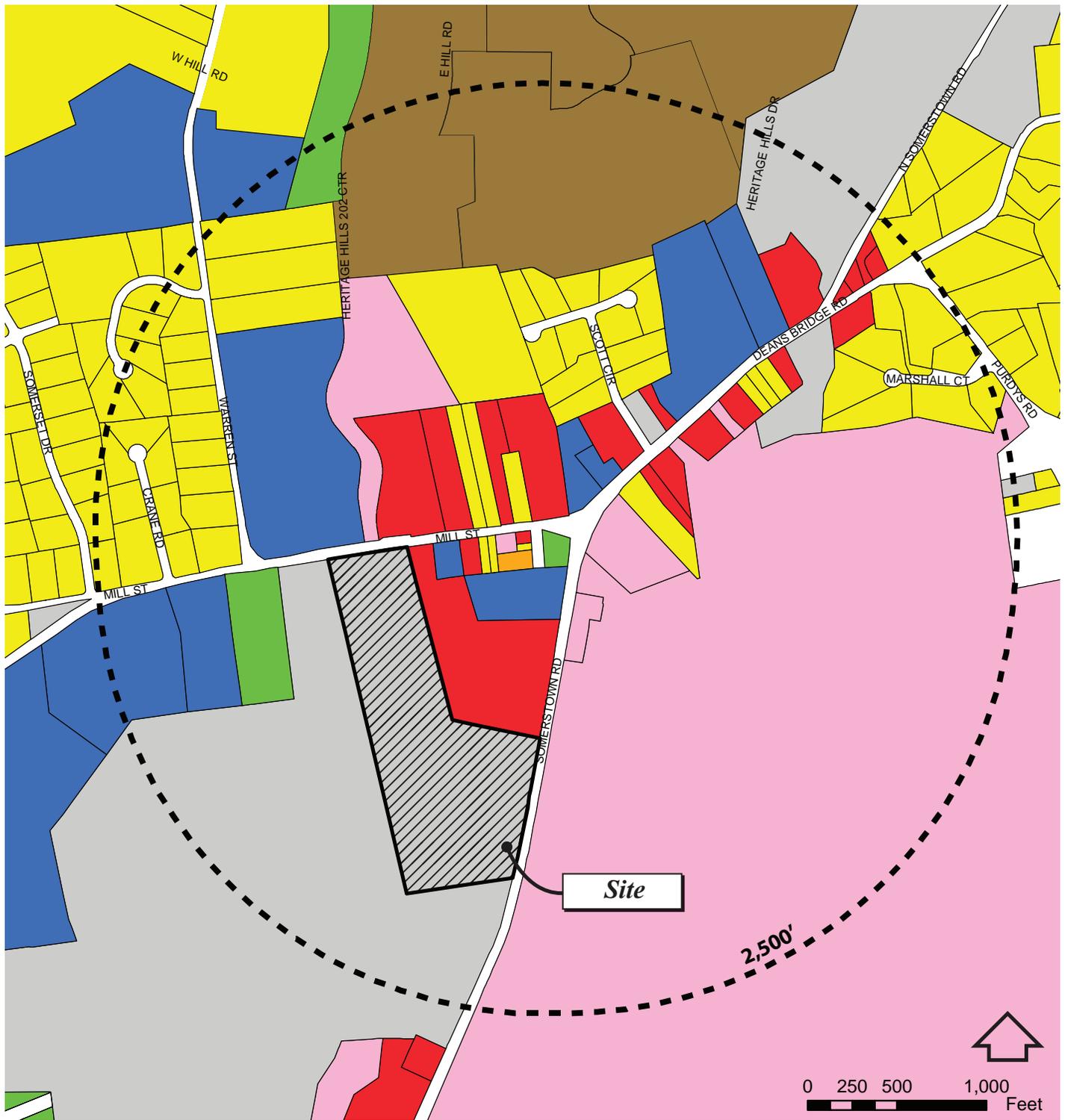
Exhibit
III.B-2



SOMERS CROSSING
Somers, New York

**Eligible Sites within
2500' of intersection**

Exhibit
III.B-3



- Single-Family Residential
- Multi-Family Residential
- Commercial
- Office

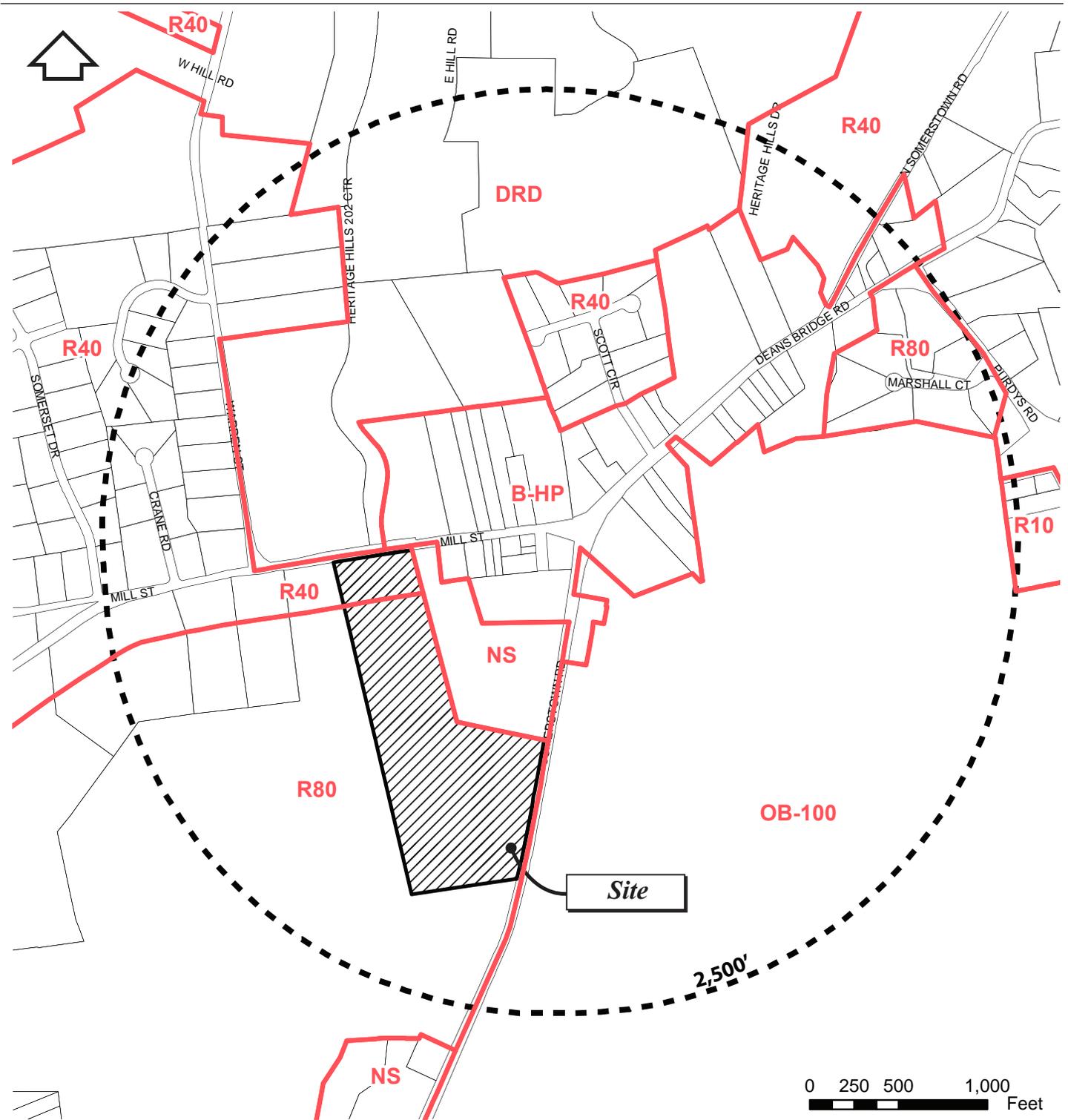
- Recreation/Open Space
- Public/Quasi-Public
- Planned Communities/Heritage Hills
- Vacant
- 2,500' From Route 100/202 Intersection

Source: Westchester County GIS

SOMERS CROSSING
Somers, New York

**Land Use within 2500'
of Intersection**

Exhibit
III.B-4



- | | |
|---|---|
| R10 Residence District (Minimum Lot Area 10,000 s.f.) | B-HP Business Historic Preservation District |
| R40 Residence District (Minimum Lot Area 40,000 s.f.) | NS Neighborhood Shopping District |
| R80 Residence District (Minimum Lot Area 80,000 s.f.) | OB-100 Office Business District |
| DRD Designed Residential Development Overlay District (Minimum Area 500 ac.) | [- - -] 2,500' From Route 100/202 Intersection |

Source: Westchester County GIS

SOMERS CROSSING
Somers, New York

Zoning within 2500'
of Intersection

Exhibit
III.B-5

C. Topography and Slopes (Surface Conditions)

1. Existing Conditions

Topography on the Site ranges in elevation from an approximate high point of 278 feet along the eastern Site frontage on Route 100 to an approximate low point of 233 feet along the western property line of the Site within the NYSDEC wetland. The elevations on-site are illustrated on Exhibit III.C-1, Topography. The topographic survey that is used as the base mapping for the project was prepared by Donnelly Land Surveying, PC, as noted on the engineering plans.

In general, the elevations on the Site are lower than Route 100 (to the east) and Route 202 (to the north). The topography off the Site to the south is a gentle downslope away from Route 100 from east to west, consistent with on-site topography. Topography to the west is general downhill away from the Site, and increasingly flat topography in the areas of the state wetlands which continues off-site to the west. Surface water flows generally from the east side of the Site (along Route 100) to the west side, down toward the NYSDEC wetland. Existing flow paths of surface drainage are described in more detail in Chapter III.E, Water Resources.

There are no special topographic features on the Site, and no rock outcroppings.

Based on the certified topographic survey of the Site, slopes were identified in the following categories: 0% to 15%, 15% to 25%, 25% to 35%, and 35+%. These slope categories are illustrated on Exhibit III.C-2, Slope Analysis, and area of each category is described on the table below:

**Table III.C-1
Existing Slope Analysis**

Slope Category*	Area on Site (acres)	Area on Site (sf)
0-15%	24.14	1,051,127
15-25%	2.54	111,054
25-35%	0.0	0
35%+	0.0*	0
Total	26.68 acres (26.7 rounded)	1,162,181

*As defined by the DEIS Scoping document.

There are no existing site surface features such as rock outcroppings and vegetative growth that provide slope stabilization for the steep slope areas on the Site.



A drainage design point has been selected on the point on the Brown Brook to evaluate the proposed development's hydrological impacts; the design point has been located at the inlet side of the 13'-0" wide, 42" high bridge crossing of the old mining road located on the south side of the Site. Main stream of Brown Brook headwaters are located approximately 2.64 miles north of the Site. The Brown Brook flows from north to south eventually joining to the Muscoot Reservoir. From the starting point near Cuddy Road in the Town of Carmel to confluence point with the Muscoot Reservoir the main stream of Brown Brook has been measured to be approximately 4.07 miles long and classified by the NYSDEC as a Class C (T) stream. Brown Brook is mainly a Class (T) trout stream with consistent flow throughout the year. The main channel is approximately 10-12 feet wide and 12 inches deep with slope of approximately 0.15 percent with some meandering at the area between Route 202 and Route 100 where the proposed development is located. In this area the entire brook is within the flood plain and very flat.

Throughout the Brown Brook there are various existing ponding and swampy areas which is why the time of concentration is determined to be very long.

The channel has sandy/rocky bottom with vertical side slopes. In this area, the channel is part of NYSDEC Wetland F-1 watershed area of Brown Brook to the confluence point to the Muscoot Reservoir 3.58 square miles.

The pre-development subbasins to the design point consist of (2) two subbasins, one of which (Sub OB-4) contains areas developed by IBM. Subbasin OB-4 data has been obtained from approved drainage analysis entitled "*Stormwater Pollution Prevention Plan - Proposed Parking Expansion Program, Somers Associates Office Building Complex*" as it was prepared by Ronald A. Freeman Associates, P. C. Environmental Engineering Consultants, Mt. Kisco, New York, the document dated (last revised) July 7, 1998. See current drainage maps in Stormwater Pollution Prevention Plan, located in Appendix E of this DEIS. The subbasin has been routed through a detention basin (Pond 4) using the numerical data used in the same report. The subbasin "Off-Site" is the remaining of the watershed of the Brown Brook in pre-development conditions for the design point and consists of approximately 1,778 acres. See Chapter III.E, Water Resources for additional information including Table III.E-4 which summarizes the input variables utilized in the hydrologic modeling for the subbasin and IBM detention pond.

The existing design point's Subbasin "Off-Site" has been determined using an USGS Quadrangle Topographic Map and combined with the IBM properties' contribution including the Pond #4 routing in pre- and post-development hydrographs to the design point. The area of the subbasin "Off-Site" has been measured from the available mapping. The composite Curve Number for the subbasin has been estimated using aerial maps, Town Zoning Map and field inspections and calculated to be approximately 69.



2. Anticipated Impacts

Impacts to topography would occur with the construction of the proposed conceptual plan. The Preliminary Grading Plan (see Exhibit III.D-3) for the project illustrates those changes due to earthwork for the site work. The limits of disturbance are illustrated on the Grading Plan as well. A total of 16.1 acres is proposed to be disturbed.

The amount of each slope category within the limit of disturbance is quantified on the table below, and illustrated on Exhibit III.C-3, Proposed Layout with Site Constraints and Exhibit III.C-4, Slope Impacts. A slope analysis of the proposed grading plan is illustrated as Exhibit III.C-5, Post-Development Steep Slopes.

**Table III.C-3
Proposed Slope Impacts**

Slope Category*	Site Area to be Disturbed (acres)	Site Area to be Disturbed (sf)
0-15%	14.56	634,420
15-25%	1.54	67,046
25%-35%	0	0
35%+	0	0
Total	16.1	701,466

*As defined and regulated by Town of Somers.

Chapter 148, Steep Slope Protection is a chapter in the Somers Code that regulates activities on certain steep slopes. Slopes from 15 to 25% are defined as Moderately Steep Slopes, slopes from 25 to 35% are Very Steep Slopes, and slopes over 35% are Extremely Steep Slopes. The proposed plan would disturb approximately 0 acre of slopes over 25%, thereby not requiring a slope permit from the Town for that activity (see Exhibit III.C-4, Slope Impacts). If this condition changed during plan refinement, and steep slopes were proposed to be impacted, the Applicant will comply with the town requirements by submitting an application for slope permit at a later date in the process, (during site plan approval stage) when construction plans are defined in more detail.

Chapter 170, Zoning, regarding environmentally sensitive lands (i.e., wetlands, wetland buffers, slopes over 15%), applies to the Site in that portions of certain lands are deducted from overall density calculations. This is described in table form in Chapter III.B, Zoning. The Proposed Action complies with the requirements of this section.

Regarding the potential for water or wind induced soil erosion during construction, erosion control plans and temporary sediment basins will be designed in accordance with



the applicable regulations, and will be based on the most restrictive conditions (in this case, during construction). All stormwater runoff will be diverted to the temporary sediment basins and the basins will be designed to pass the 10-year storm runoff event without overtopping.

The slopes on site after construction are illustrated in Exhibit III.C-5, Post-Development Steep Slopes and described in the table below. The exhibit indicates areas where steep slopes may be created by the proposed grading. The project layout is planned to avoid creation of steep slope areas, but it is unavoidable in some instances such as: roadway embankments, stormwater treatment area embankments and unit grading, etc.

**Table III.C-2
Proposed Finished Slope Analysis**

Slope Category*	Area on Site (acres)	Area on Site (sf)
0-15%	23.03	1,002,970
15-25%	1.76	76,630
25% - 35%	0.79	34,300
35%+	1.10	48,180
Total	26.68 acres (26.7 rounded)	1,162,080

*As defined by DEIS Scoping document.

After construction is completed, the Site’s drainage conveying and Stormwater Management Systems will handle up to 100-year storm events (see Chapter III.E, Water Resources). Slope alterations will not affect the hydrology of the Site. Proposed development site grading has followed the existing topography providing general drainage patterns flowing from east to west towards the existing low points and wetlands and providing appropriate stormwater quality and quantity features along the way. Refer to Pre and Post Development Drainage Basin Maps and Stormwater Pollution Prevention Plan for the additional detailed information and summary charts.

Exposed soils and slopes will be stabilized immediately (as practical), as described in the preliminary Soil Erosion and Sediment Control Plan (see Chapter III.D, Soils and Geology for description of the proposed erosion control measures). With implementation of proposed erosion and sediment control measures during construction, there should not be negative effects to wetlands, watercourses, wildlife or vegetation. After completion of the development, the potential for the soil erosion shall be minimized due to the proposed on-site stormwater practices and seeding/mulching and stabilization of the entire non-paved areas. All stormwater practices have been designed to handle the 1 year and/or the extreme flood conditions which is the 100 year storm event. The discharge



pipes from stormwater basins to the wetlands and the low points provided with shallow slopes to reduce the flow velocities and further protected and provided with rock outlet protection devices to reduce the flows to non-erosive levels. Therefore, there shall be no erosion impacts on the receiving wetlands during and/or after the project completion. Refer to Proposed Erosion Control Plans and Erosion Control Standards Plans for additional detailed information.

3. Mitigation Measures

Grading the Site is necessary to construct the proposed residential community and grocery store. The preliminary grading plan avoids the steep slopes.

The potential impact to topography and slopes, from soil erosion and sedimentation, is proposed to be mitigated by stabilization during construction, monitoring after storm events, and implementing the detailed Soil Erosion and Sediment Control Plan to be prepared in accordance with all applicable regulations, standards and guidance documents, including Westchester County's Best Management Practices Manual for Erosion and Sediment Control (1991), and the New York State Standards and Specifications for Erosion and Sediment Control. This plan includes provisions for slope stabilization of proposed slopes immediately after disturbance. Erosion control and construction phasing are also described in Chapter III.D, Soils and Geology and Soils.

The Site does not contain "very steep slopes" (25-35%) or "extremely steep slopes" (>35%), however the Site has a minimal amount of "moderately steep slopes" (15-25%) which will be disturbed due to the site development activities. Disturbance to the "moderately steep slopes" has been minimized, however, the site development design as a whole concept cannot avoid minimal slope impacts. The project layout is similarly planned to avoid creation of steep slope areas, but it is unavoidable in some instances such as: roadway embankments, stormwater treatment area embankments and unit grading, etc.

Proposed site topography has been planned to discharge drainage flows matching the existing topography. Existing drainage patterns from the Site flows towards the west to NYSDEC wetland F-1. Without any change the proposed site grading also discharges to the same wetland.

Specific Erosion and Control measures which will minimize and mitigate impacts to steep slopes during and after construction are described below and in detail in Chapter III.D, Soils and Geology, and in the Erosion and Sediment Control Plan, Exhibit III.D-6. Chapter III.E, Water Resources, provides detailed information regarding temporary and permanent erosion and sediment control practices, as well as, short term and long term maintenance and inspection requirements.



Use of vegetated buffer areas and slope stabilization blankets/reinforcing of outlet structures shall be used as necessary. Permanent seed mix for the areas which will be seeded has been specified on the Erosion Control Plan. The plans provide for specific erosion and sediment controls to be employed during construction. It is the intent to provide effective erosion control by minimizing land disturbance at one given time, containing sediment from disturbed areas, treating runoff where possible, and stabilizing disturbed soils as soon as possible. The directives specified on the plans and in this report serve as a minimum for erosion and sediment control. Further practices and measures may be required pursuant to on-site inspections in conformance with the requirements of the SPDES GP-0-10-001 permit. As per the SPDES permit on-site, inspections are to be performed once a week and within 24 hours of ½" of rainfall. All erosion and sediment control practices specified for this site shall be in conformance with the New York Standards & Specifications for Erosion & Sediment Control.

Temporary Erosion and Sediment Control Practices / Short Term Maintenance and Inspection Requirements:

Inspections performed during construction should verify that all practices are functioning properly, correctly maintained, and that accumulated sediment is removed from all control structures. The inspector must also examine the site for any evidence of soil erosion, the potential for pollutants to enter the storm drain system, turbid discharge at all outfalls, and the potential for soil and mud to be transported on the public roadway at the site entrance. In addition to these general guidelines, the project plans will provide more specific erosion control guidelines, as well as a construction sequence to guide the contractor through the construction process. Discussed below are specific maintenance and inspection requirements for the temporary practices to be employed at the site.

During construction, the silt fence should be inspected to ensure correct installation. In addition, any accumulated sediment resulting in "bulges" in the silt fence should be removed and mixed with onsite soil. Any damaged or torn silt fence should be replaced. The silt fence for the site will consist of a geotextile fabric installed at the toe of all disturbed slopes and parallel to the contours. The silt fence is intended to reduce runoff velocity and intercept sediment-laden runoff. Construction details specifying the proposed installation and type of permissible silt fence can be found on the plans.

One of the stormwater treatment basins is designed as pocket Wetland and the other one as a Bioretention Basin. These basins will be used as temporary sediment basins during construction.

The construction entrance should be checked to ensure no sediment is being deposited onto the public roadway. Should sediment be observed, it should be removed from the street, and the stone in the construction entrance replaced.



Temporary sediment basins should be inspected to ensure that 50% of the original capacity is remaining. Should sediment accumulate to 50% of the original volume the sediment should be removed and mixed with onsite soils. Upon achievement of final stabilization the sediment traps can be removed and the stormwater quality basin constructed in their place.

The intent of the temporary sediment basin is to intercept sediment laden water and trap the sediment. Temporary sediment basin will be providing 3,600 cf of volume per acre of drainage area.

The rest of the site's SWTB's are designed as infiltration basins and they will not be used as temporary silt basins during construction.

The temporary swales should be checked for erosion. Any observed erosion should be corrected immediately. In addition it should be verified that non-erosive velocities are maintained at the outlet of the swale. If erosive velocities are observed, i.e. scouring or riling in down gradient areas, the design engineer should be contacted immediately and an outlet protection will be designed and installed.

Once construction is completed and the site has been stabilized, a "Notice of Termination" shall be filed. At this point limited maintenance requirements are anticipated.

Listed below are the Temporary Erosion and Sediment Control Practices specified on the Erosion Control Plan. All practices shall be installed and maintained in conformance with the New York Standards & Specifications for Erosion & Sediment Control:

- Stabilized Construction Entrance
- Sediment Trap
- Silt Fence
- Temporary Swale
- Temporary Sediment Basin
- Diversion channels
- Water Bars

A stabilized construction entrance should be installed at the construction entrance. The construction entrance is designed to prevent outgoing trucks from tracking soil onto the public roads. Construction details specifying installation requirements can be found on the plan.

The intent of the temporary sediment basin is to intercept sediment laden water and trap the sediment. Temporary sediment basin will be providing 3,600 cf of volume per acre of drainage area.



Permanent Erosion and Sediment Control Practices / Long Term Maintenance and Inspection Requirements:

Once final stabilization is achieved and construction complete, maintenance and inspections will be limited to the infiltration basins (x4), Bioretention and the Pocket Wetland. A copy of the Maintenance and Inspection Checklists from Appendix G of the New York State Stormwater Management Design Manual are included in Appendix M of the SWPPP to serve as a guide for maintaining and inspecting the infiltration and other SWTA's.

Inspections of the following items should be performed at a minimum annually and following significant rainstorm events:

Infiltration Basins:

- Inspection of the infiltration basins to ensure accumulated water is infiltrating into the soil, and debris has not entered the infiltration basins. Any debris should be removed. Once debris is removed, if stormwater is still not infiltrating contact a professional engineer licensed in the State of New York to examine the system.
- Inspection of the outlet of the overflow pipe to ensure it is not plugged or clogged.
- Remove silt from forebays when the accumulated sediment is $\frac{1}{2}$ of the design height.

Extended Detention Basins:

- Clogging of Low Flow Orifice
- Debris collecting in or on the outlet structure
- The health and condition of the plantings within the facility. Healthy plants are essential to the practice functioning properly. Any dead or diseased vegetation should be removed immediately and replaced.

Rock Outlet Protection:

- Inspection of the rock pad to ensure no stones have become dislodged. Any missing stones should be replaced.

Catch Basins and Drain Manholes:

- Inspect monthly and after heavy rain storms $> \frac{1}{2}$ " in 24 hours for sediment accumulation in sumps. Accumulated sediment should be removed immediately.

The intent of the permanent erosion and sediment control practices is to permanently stabilize the ground surface via vegetative and structural practices, while controlling and reducing runoff velocities.



Vegetation will be provided on all disturbed soils not covered by the proposed buildings, parking lots and driveways. Permanent vegetation will reduce runoff velocities, filter stormwater runoff, and minimize soil erosion. Optimum times for planting are the early spring and fall; however, plantings can be started in the summer provided adequate mulch and moisture is supplied. In addition to a permanent vegetative cover, the following permanent erosion and sediment, control practices are proposed for the site:

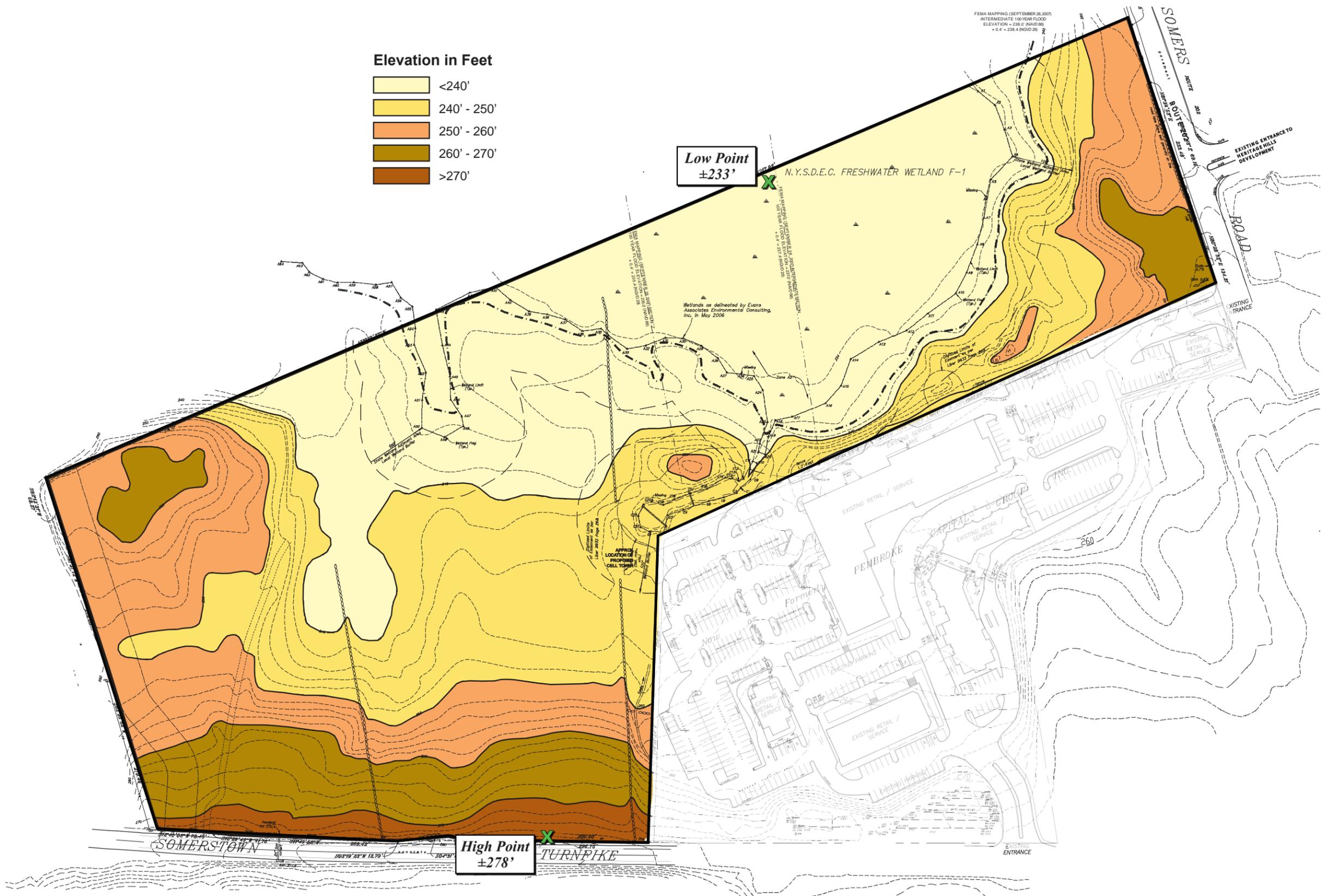
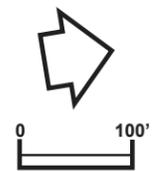
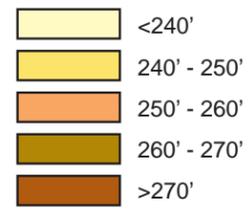
- Rock Outlet Protection
- Land grading

Rock outlet protection is proposed at the outfalls of the infiltration basins and the extended detention basins as well as at all the end sections terminating the site drainage conveying system. The intent of the rock outlet protection is to reduce the depth, velocity, and energy of water to prevent downstream erosion. Designed in accordance with the New York Standards & Specifications for Erosion & Sediment Control, details specifying dimensions of the rock outlet protection have been included on the plans.

Land grading is the reshaping of the existing land surface in accordance with the grading plan. Proper land grading is an essential component of the erosion control plan, as well as the stormwater pollution prevention plan. Given the relatively flat nature of this site, arrows indicating the direction in which the land is to pitch were added to the plan to enhance the proposed grading. Proper grading will ensure the intended drainage areas are directed to the stormwater management practices.



Elevation in Feet

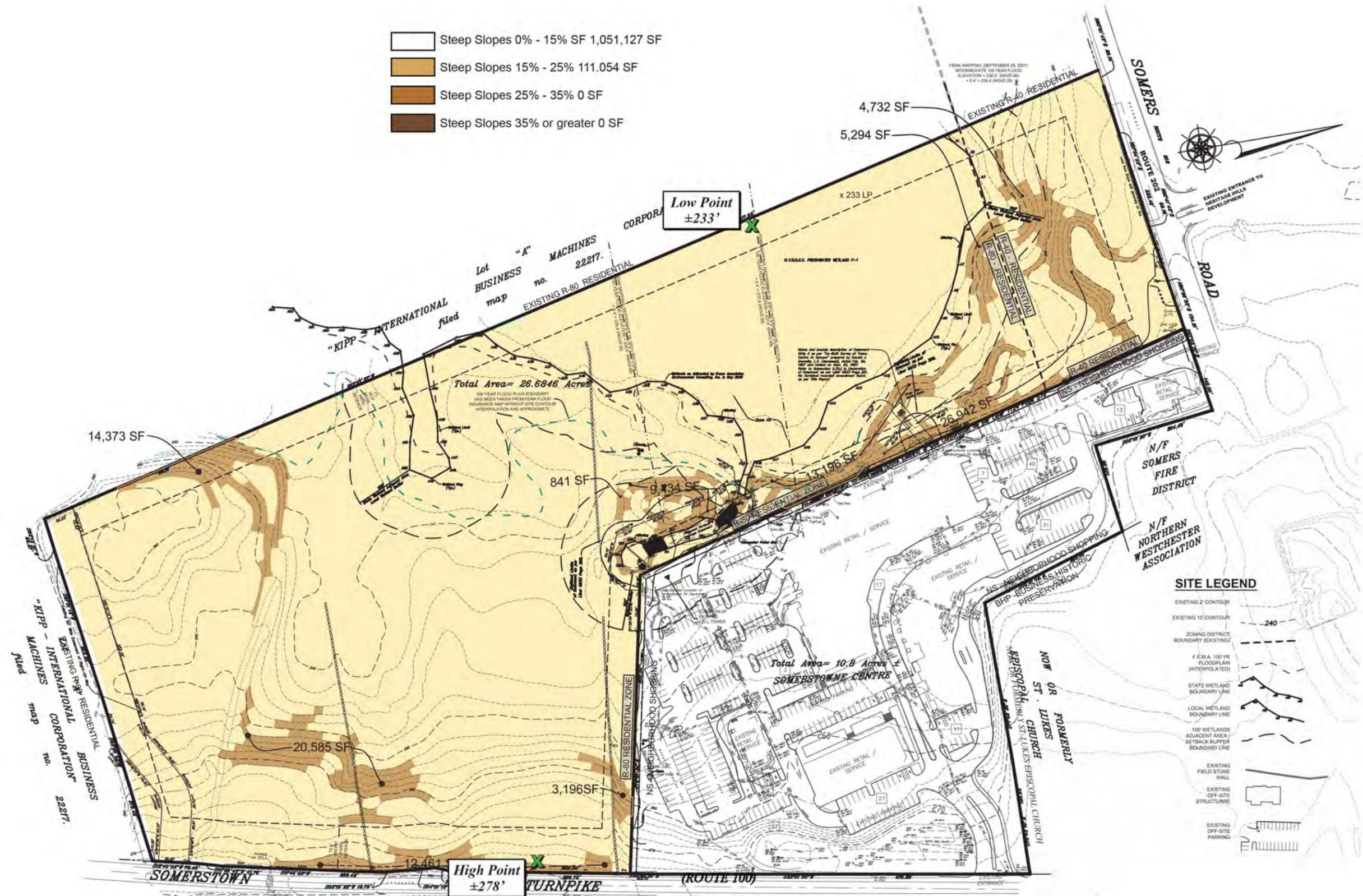


Base Map Source: Bibbo Associates, LLP and Donnelly Land Surveying, PC. (2009)

SOMERS CROSSING
Somers, New York

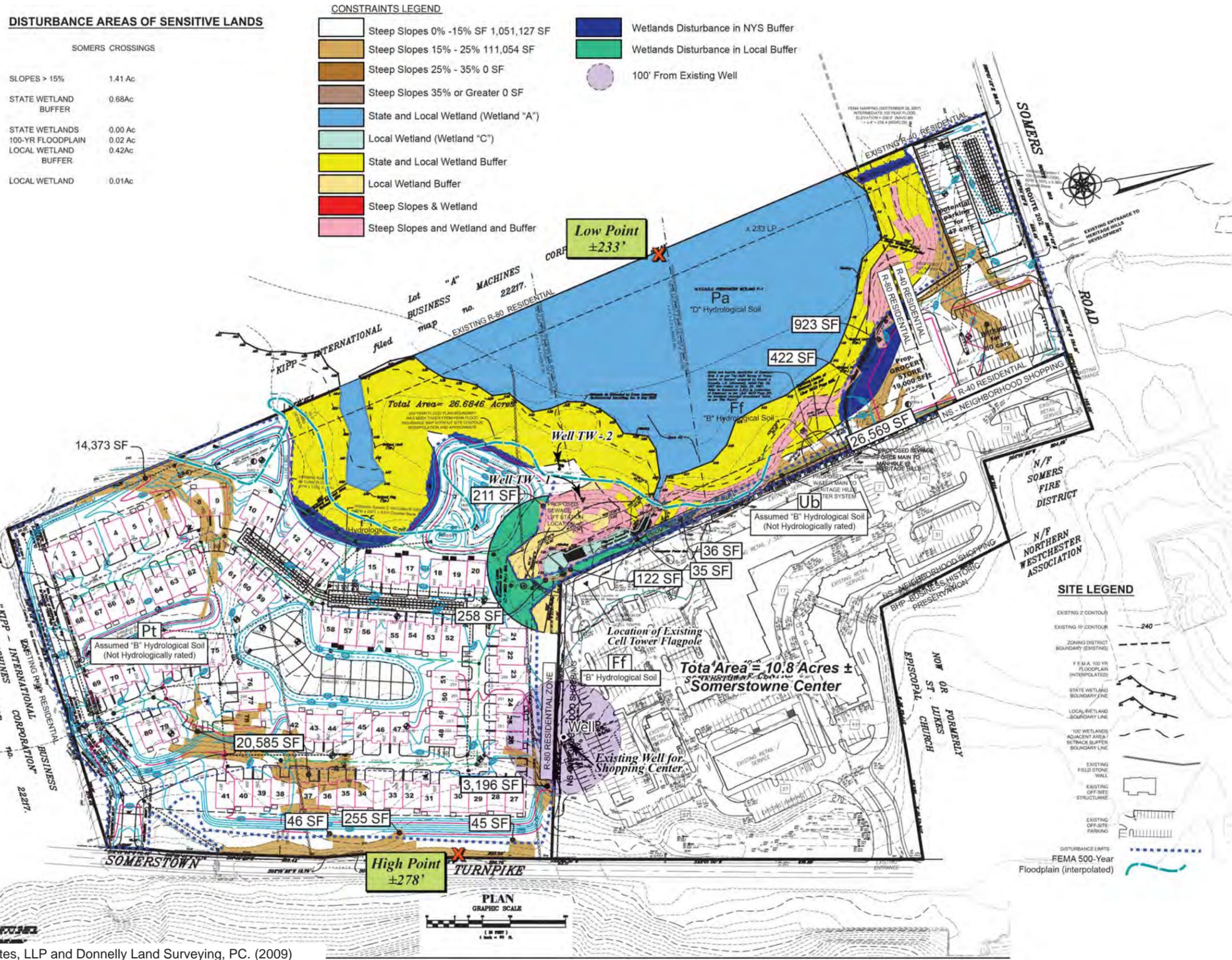
Topography

Exhibit
III.C-1



Base Map Source: Bibbo Associates, LLP and Donnelly Land Surveying, PC. (2009)

SOMERS CROSSING
Somers, New York



Base Map Source: Bibbo Associates, LLP and Donnelly Land Surveying, PC. (2009)

SOMERS CROSSING
Somers, New York

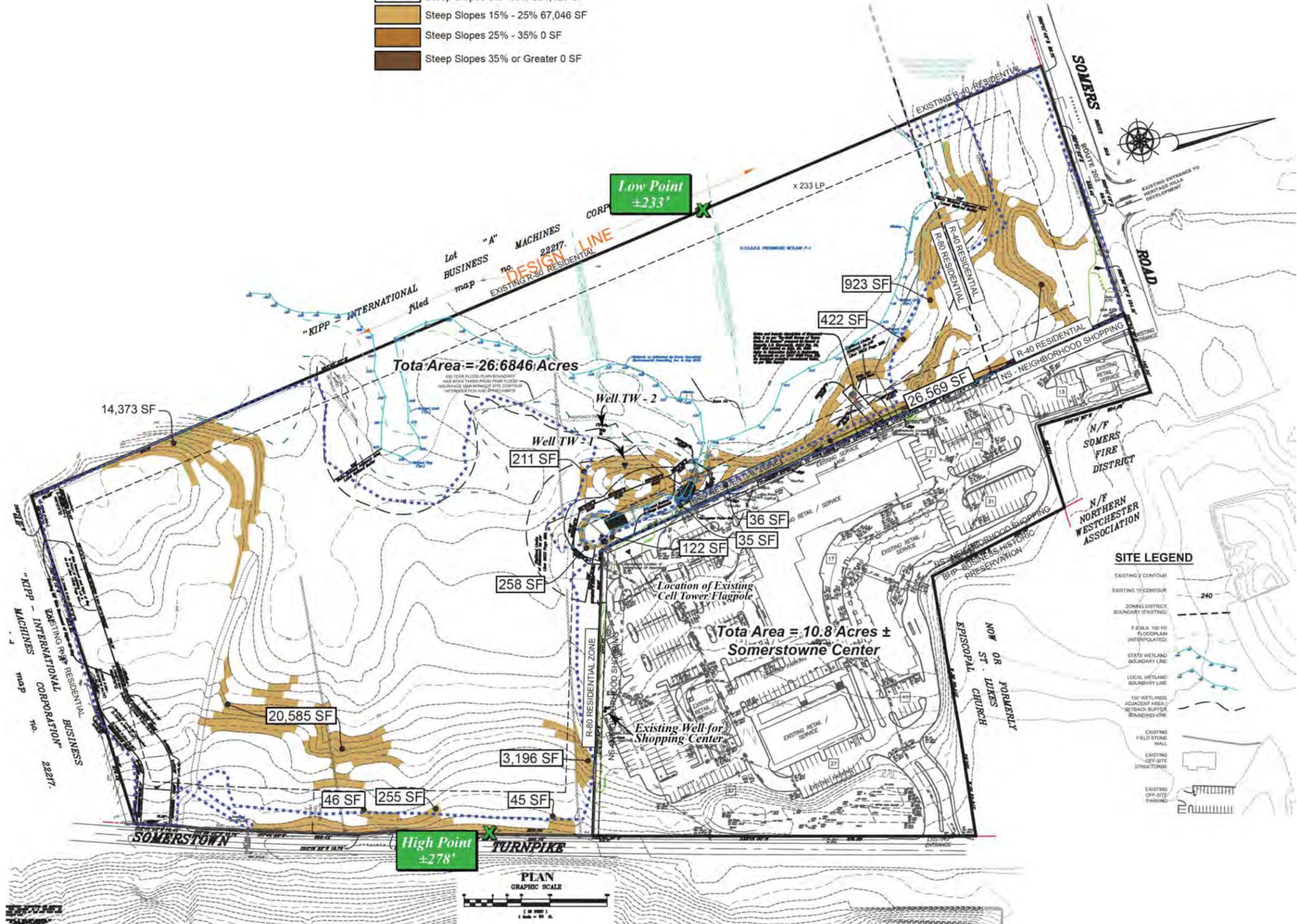
VHB Engineering, Surveying and Landscape Architecture, P.C.

Proposed Layout with Site Constraints

Exhibit
III.C-3

CONSTRAINTS LEGEND

	Steep Slopes 0% - 15% 634,420 SF
	Steep Slopes 15% - 25% 67,046 SF
	Steep Slopes 25% - 35% 0 SF
	Steep Slopes 35% or Greater 0 SF



Base Map Source: Bibbo Associates, LLP and Donnelly Land Surveying, PC. (2009)

SOMERS CROSSING
Somers, New York

Steep Slope Impacts

Exhibit
III-C-4

CONSTRAINTS LEGEND

	STEEP SLOPES 0% - 15% 1,002,970 SF
	STEEP SLOPES 15% - 25% 76,630 SF
	STEEP SLOPES 25% - 35% 34,300 SF
	STEEP SLOPES 35% OR GREATER 48,180 SF

**PROPOSED 3 DUPLEX BUILDINGS(6 UNITS)
14 TRIPLEX BUILDINGS (42 UNITS)
8 QUADRUPLIX BUILDINGS (32 UNITS)
25 BUILDINGS (80 UNITS TOTAL)
32 VISITOR PARKING (RESIDENTIAL)**



LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- 240
- ZONING DISTRICT BOUNDARY (EX. & PROP.)
- F.E.M.A. 100 YR FLOODPLAIN (INTERPOLATED)
- STATE WETLAND BOUNDARY LINE
- LOCAL WETLAND BOUNDARY LINE
- 100' WETLANDS ADJACENT AREA / SETBACK BUFFER BOUNDARY LINE
- EXISTING FIELD STONE WALL

Base Map Source: Bibbo Associates, LLP and Donnelly Land Surveying, PC. (2009)

SOMERS CROSSING

Somers, New York

VHB Engineering, Surveying and Landscape Architecture, PC.

Post-Development Steep Slopes

Exhibit
III.C-5

D. Soils and Geology (Subsurface Conditions)

1. Existing Conditions

The reports referenced below (all located in Appendix D) have been reviewed and accepted as referenced throughout the DEIS, except as modified by the Project Engineer site specific to the Somers Crossing Project DEIS:

- Soil Testing, Inc. and Maser Consulting Reports
- URS letter re: Lead
- URS Phase I ESA
- Leggette Brashears & Graham, Inc. Hydrogeologic Assessment

The above referenced reports and studies are still valid based on the existing conditions have not changed and proposed plans are similar to previous Somers Woods plans. (See Project Engineer's Statement in Appendix D).

Geology

Bedrock underlying the Project Site is comprised of Inwood Marble. Inwood Marble is a carbonate rock of metamorphic origin. A bedrock contact between the Inwood Marble and the bedrock unit identified as Fordham Gneiss is located near the southern property boundary. In addition, fault lines have been mapped to the north, south and west of the property. No bedrock outcrops were identified on the Site. A map of the bedrock geology in the vicinity of the Site is located on Exhibit III.D-1, Bedrock Geology.

Past Land/Soil Uses On Site

The Site has been undeveloped throughout recent history. According to a review of information from the Westchester County Clerk's Office and a previously-completed title search, the property has been undeveloped from prior to August 3, 1973 to the present. Aerial photographs for 1961-1962, 1970, 1976, 1980, 1986, and 1990 were reviewed for evidence of land use changes. The property remained undeveloped in all of the photographs. The IBM complex to the east of the Site is shown being constructed in the 1986 aerial photo. The photos appear to show the upland portions of the property transforming over time from mainly pasture and fields to forest. The property was likely farmed in the past and then left to return to a forested state.

Previous archaeological studies by Sheffield Archaeological Consultants (January 1995) determined that sand and gravel quarrying operations took place on the property around and adjacent to the southwest corner of the Site, as well as along the northern border along Route 202, and in the center of the Site. Current evidence of this activity includes



areas of steep bank cuts and uneven topography. All areas have been overgrown with vegetation, but are still somewhat identifiable. An old road cut is also still visible along the southern edge of the centrally-located Udorthents, smoothed soils.

Changes to soil hydrology in the low-lying south-central portion of the property (surrounding Piezometer 1) are discussed below and in Chapter III.F.E, Wetlands. This area contained hydric soils in the past. In addition, changes to the soil surface in this area include past deposition of silt on top of the existing soil by stormwater runoff from an up-gradient property, prior to the development of the IBM facility.

Other changes to soils on the property include alterations from cutting and filling activities. The creation of the stormwater basin for the shopping center resulted in the removal and stockpiling of soil in the area west of the existing parking lot. In addition, creation of the shopping center resulted in the disturbance and likely alteration of nearby soils.

Soils

The upland and wetland soils on the Site are described below. Locations of the soils are shown on Exhibit III.D-2, Soils. Following the soil descriptions are tables summarizing a variety of soil properties and potential limitations for each of the soil types on the Site. Initial soils information was taken from: Soil Survey Staff, Natural Resources Conservation Service (NRCS), and United States Department of Agriculture and Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>, and United States Department of Agriculture, Soil Conservation Service, in cooperation with Cornell University Agricultural Experiment Station. Soil Survey of Putnam and Westchester Counties, New York, U.S. Government Printing Office, 1994.

The soils maps that were provided by the above-referenced sources are generalized soils maps that are suitable for reviewing large areas and general land uses. On-site investigation is necessary to provide sufficient information to plan for more intensive land uses on smaller land areas. The generalized soils maps were adjusted by a Certified Soil Scientist from Evans Associates based on data collected during on-site soils investigations, including delineation of wetlands, and observation of deep-hole test pits (in September 2009). The soil descriptions below include notations on soil color in accordance with the Munsell System. The Munsell System allows for direct comparison of soils anywhere in the world. The system has three components: hue (a specific color), value (lightness and darkness), and chroma (color intensity) that are arranged in books of color chips. Soil is held next to the chips to find a visual match and assigned the corresponding Munsell notation. For example, a brown soil may be noted as: hue value/chroma (10YR 5/3). Historical and current land uses, topography, and hydrology were also evaluated in order



to describe specific on-site soils conditions. Therefore, the site-specific soils map will differ from the county soils maps.

Subsurface investigations were conducted by Soiltesting, Inc., a geotechnical report was completed by Maser Consulting, P.A., and laboratory testing was completed by Skylands Testing, LLC. See Appendix D. The above referenced reports have been reviewed and accepted as referenced throughout the DEIS, except as modified by the Project Engineer (Bibbo Associates LLP) site specific to the Somers Crossing project DEIS.

A sieve analysis was conducted by Maser Consulting, P.A., (Engineering Report, December 2008) determining various borings at the site. This report shall be used for the design and it is accepted by the Project Engineer. Hydrometer testing is not necessary based on the existing sieve analysis, the grain distribution indicated and engineering judgment. As per the geotechnical report and it is outlined in the cut-fill calculations; the silt layer will be removed from under the building foundations, slabs, roadways etc.

In the mid to late 1980's, during the early phases of construction of the IBM facility that is located upgradient of the subject property, serious erosion of soils occurred on the hillside, resulting in large deposits of sediment onto Route 100 and into the stormwater catch basin which discharged onto the Site. The washout from the IBM property, containing a large amount of eroded soils, flowed onto the subject property through a culvert beneath Route 100 which discharged to a channel leading to the depressional area referred to as the "former wetland" (see DEIS Section F.3a for a detailed discussion of this area). The eroded soils on the IBM property included Paxton soils, which are considered a "Medium" erosion hazard in the surface layer and subsoil, but a "High" erosion hazard in the dense substratum (NRCS data). It is likely that the majority of the soils which were washed onto the Site came from this highly erodible dense substratum based on the characteristics of the soils in the depressional area, which are markedly different from the nearby native soils.

Because the flow from the washout reached a level, depressional area on the subject property, the water ponded and the sediment was deposited in the basin floor. As a response to the off-site impacts, the routing of the stormwater runoff from the IBM property was modified to discharge to a created stormwater basin further south on Route 100, and the flow to the depressional area was cut off. The material which had been deposited on the Site has a very small particle size (aka grain size) relative to the native soils on the site, and there is potential for these soils to be colloidal should they erode or be re-suspended and wash into a surface water body or wetland. Therefore, these soils will be removed from the property and taken off site for disposal prior to the start of construction in this area.



Upland Soils

Charlton loam (Ch) is found on hilltops and hillsides in areas of glacial till. Charlton loam is very deep (greater than 60 inches) to bedrock and is well drained, with a depth to water of more than six feet. Charlton soil typically contains very dark grayish brown (10YR3/2) loam over dark brown (10YR 3/3) loam and dark yellowish brown (10YR 4/4-4/6) sandy loam. Dark grayish brown (2.5Y 4/2) sandy loam comprises the subsoil. Charlton loam has moderate to moderately rapid permeability throughout the profile. Surface runoff is medium and erosion hazard is slight for slopes ranging from zero to eight percent. Surface runoff is medium and erosion hazard is moderate for slopes ranging from eight to fifteen percent. This soil is well suited for many community development activities.

Pompton silt loam, loamy substratum (Pw) is found in flat areas near streams and on small plains in the lowlands. Pompton loam is very deep to bedrock and is moderately well drained and somewhat poorly drained. This soil has slopes of zero to three percent and is subject to rare flooding. Pompton loam typically contains dark brown (7.5YR 3/2) silt loam over yellowish brown (10YR 5/6) fine sandy loam, mottled yellowish brown (10YR5/4) gravelly fine sandy loam, and mottled light olive brown (2.5Y 5/4) gravelly sandy loam. The substratum contains dark yellowish brown (10YR 4/4), yellowish brown (10YR 5/4), dark brown (10YR 4/3), and/or brown (10YR 5/3) very gravelly loamy sand, gravelly sand, and/or gravelly loam. Permeability in Pompton loam varies from moderate to moderately rapid in the surface layer and subsoil, rapid or very rapid in the upper part of the substratum, and moderate or moderately rapid in the lower part of the substratum. Surface runoff is slow and erosion hazard is slight. Pompton loam has a depth to water table ranging from 0.5 to 2.0 feet below grade from October to May. Wetness and rare flooding are the potential limitations to development activities.

Riverhead loam (Rh) is found on the sides of terraces and on small hills in the uplands. This soil is very deep to bedrock and is well drained. Riverhead loam typically consists of dark brown (10YR 3/3) loam and sandy loam over dark yellowish brown (10YR 4/6) sandy loam. The substratum typically consists of yellowish brown (10YR 5/4) and brown (10YR 4/3) loamy sand. Gravel content can range from zero to 40 percent. Riverhead loam has moderately rapid permeability in the surface layer and subsoil and very rapid permeability in the substratum. Surface runoff ranges from slow to rapid, and erosion hazard is slight to severe. Both characteristics are dependent on slope steepness. Many community development activities are suitable uses for Riverhead soils, provided factors such as slope and rapid permeability are taken into consideration.

Udorthents, smoothed (Ub) consist of soils that have been altered by cutting and filling. This soil is very deep to bedrock and excessively drained to moderately well drained. Inclusions may include Urban land, rock and debris piles, and undisturbed soils. Areas of this soil will vary greatly and suitability for development requires on-site investigation.



Unadilla silt loam (Ud) is found on stream terraces along valleys. This soil is very deep to bedrock and well drained. Unadilla loam typically contains very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) silt loam over brown (10YR 4/3) very fine sandy loam. The subsoil contains dark yellowish brown (10YR 4/4) very fine sandy loam over light olive brown (2.5Y 5/4) very fine sandy loam. The substratum contains yellowish brown (10YR 5/4) mottled very fine sandy loam. Unadilla loam has moderate permeability in the surface layer, the subsurface layer, and the subsoil, and moderately rapid to rapid permeability in the substratum. Surface runoff is medium and erosion hazard is moderate. Erosion is a hazard during construction, however if erosion-control measures are implemented, this soil is well suited for many community development activities.

Wetland Soils

Fluvaquents-Udifluvents complex, frequently flooded (Ff) consists of about 50 percent Fluvaquents, 35 percent Udifluvents, and 15 percent other soils. Only the wetland portion of this complex (Fluvaquents) is found on the property. The Fluvaquents were formed on the property in the past when the off-site stream was located closer to the Site, water flow through the wetland was more rapid, and there was less ponding within the wetland. Fluvaquents are frequently flooded, scoured, and eroded, and therefore have no set characteristics or description. Fluvaquents are nearly level, and are formed in alluvial deposits. These soils are poorly drained to very poorly drained with a water table at one foot above to one and a half feet below the surface from October through June. Fluvaquents are very deep to bedrock with slopes of 3 percent or less. This soil complex is found adjacent to streams. The Fluvaquents on the property are located along the outer edges of the wetland, where the buildup of organic material is not great enough to qualify the soil as a muck. This soil may also be located near the off-site stream.

Palms and Carlisle mucks (Pc) are very deep to bedrock, nearly level, and very poorly drained. Palms muck is formed in highly-decomposed organic material between 16 and 51 inches thick. Areas of Carlisle muck, with an organic layer greater than 51 inches thick over mineral deposits, may occur in the deeper portions of Wetland A, likely off site. Palms muck typically consists of black (10YR 2/1) muck over dark brown (7.5YR 3/2) or dark gray (10YR 4/1) muck. Carlisle muck typically contains black (10YR 2/1) muck in the surface and subsurface layers. The substratum is a mineral layer comprised of dark gray (2.5Y 4/1) gravelly fine sandy loam. Carlisle and Palms mucks have a water table at a depth of one-half foot above to one foot below grade from September through June, receding to a depth of two feet during dry periods. Palms muck has moderately slow to moderately rapid permeability in the upper portion, but has moderately slow or moderate permeability in the substratum, while Carlisle muck has moderately slow to moderately rapid permeability throughout. Surface runoff is very slow to ponded. Palms and Carlisle mucks are not recommended for any type of development and more suitable



soils should be chosen. Seasonal high water table, ponding, slow percolation, and low strength constraints are virtually impossible to overcome.

Udorthents, wet substratum (Uc) consist of poorly drained and very poorly drained soils that have been altered by cutting and filling. These soils are located on altered depressions, drainageways, and areas of marsh or other wetland. Inclusions may include Udorthents, smoothed, Urban land, and undisturbed soils. Areas of this soil can vary greatly, but they are generally very wet and most development activities are limited or prohibited.

A summary of the soil types on the Project Site is included on Table III.D-1, below:

**Table III.D-1
Soils on Site**

	Area on Site (acre)
Charlton loam (Ch)	5.699
Pompton silt loam, loamy substratum (Pw)	2.051
Riverhead loam (Rh) and Unadilla silt loam (Ud)	4.979
Udorthents, smoothed (Ub)	8.753
Fluvaquents-Udifluents complex, frequently flooded (Ff) and Palms and Carlisle mucks (Pc) ¹	4.882
Udorthents, wet substratum (Uc) ¹	0.321
Totals	26.68

¹Hydric (wetland) soils

Soil Suitability Tables

The following tables describe potential development limitations of the soil types on the Site, with the exception of Urban Land, which is already developed. Rating categories, where assigned, are as follows: slight indicates that the soil is generally favorable for the indicated land use and soil limitations are minor and easily overcome, moderate indicates that the soil is not favorable and that special planning, design, or maintenance is usually required to overcome or minimize particular soil limitations, and severe indicates that that circumstances are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. In severe cases, an alternate soil choice is often the best option. The symbol “-” indicates that the information was not listed. It is noted that the information on these tables does not eliminate the need for specific on-site investigation.



**Table III.D-2
Soil Seasonal High-Water Table and Permeability**

Soil Type and Symbol	Seasonal High-Water Table (depth to water in feet)	Permeability (inches/hour)
Upland Soils		
Charlton loam (Ch)	>6.0	0.6-6.0
Pompton silt loam, loamy substratum (Pw)	1.0 - 2.0, apparent (Oct. – May) subject to rare flooding	0-28": 0.6-6.0 28-60": 0.2-2.0
Riverhead loam (Rh)	>6.0	0-30": 2.0-6.0 30-60": >20
Udorthents, smoothed (Ub)	--	--
Unadilla silt loam (Ud)	>6.0	0-32": 0.6-2.0 32-60": 2.0 - 20
Wetland Soils		
Fluvaquents, frequently flooded (Ff)	0.5 (above ground) - 1.5, apparent, (Oct. – June) Subject to flooding	0-5": 0.2-20 5-72": 0.06-20
Palms muck (Pc)	1.0 (above ground) - 1.0, apparent (Nov. – May)	0-48": 0.2-6.0 48-60": 0.2-2.0
Carlisle muck (Pc)	0.5 (above ground) - 1.0, apparent (Sept. – June)	0.2-6.0
Udorthents, wet substratum (Uc)	--	--



**Table III.D-3
Soil Depth to Bedrock and Erosion Hazard**

Soil Type and Symbol	Depth to Bedrock (in inches)	Erosion Hazard
Upland Soils		
Charlton loam (Ch), 2-8% slope	>60	slight
Charlton loam (Ch), 8-15% slope	>60	moderate
Charlton loam (Ch), 15-25% slope	>60	Severe
Pompton silt loam, loamy substratum (Pw)	>60	Slight
Riverhead loam (Rh), 0-8% slope	>60	Slight
Riverhead loam (Rh), 8-15% slope	>60	moderate
Riverhead loam (Rh), 15-25% slope	>60	Severe
Udorthents, smoothed (Ub)	--	--
Unadilla silt loam (Ud)	>60	moderate
Wetland Soils		
Fluvaquents, frequently flooded (Ff)	>40	slight - subject to scouring and flooding
Palms muck (Pc)	>60	susceptible to wind
Carlisle muck (Pc)	>60	susceptible to wind
Udorthents, wet substratum (Uc)	--	--



**Table III.D-4
Potential Building and Road Construction Limitations**

Soil Type and Symbol	Dwellings with Basements	Dwellings without Basements	Small Commercial Buildings	Local Roads and Streets
Upland Soils				
Charlton loam (Ch) 2-8% slope	slight	slight	moderate: slope	slight
Charlton loam (Ch) 8-15% slope	moderate: slope	moderate: slope	severe: slope	moderate: slope
Charlton loam (Ch) 15-25% slope	severe: slope	severe: slope	severe: slope	severe: slope
Pompton silt loam, loamy substratum (Pw)	severe: flooding wetness	severe: flooding wetness	severe: flooding wetness	severe: frost action
Riverhead loam (Rh), 0-2 % slope	slight	slight	slight	moderate: frost action
Riverhead loam (Rh), 2-8 % slope	slight	slight	moderate: slope	moderate: frost action
Riverhead loam (Rh), 8-15 % slope	moderate: slope	moderate: slope	severe: slope	moderate: slope frost action
Riverhead loam (Rh), 15-25 % slope	severe: slope	severe: slope	severe: slope	severe: slope
Udorthents, smoothed (Ub)	--	--	--	--
Unadilla silt loam (Ud)	slight	slight	moderate: slope	severe: frost action
Wetland Soils				
Fluvaquents, frequently flooded (Ff)	severe: flooding ponding	severe: flooding ponding	severe: flooding ponding	severe: flooding ponding frost action
Palms muck (Pc)	severe: subsides ponding	severe: subsides ponding low strength	severe: subsides ponding low strength	severe: subsides ponding frost action
Carlisle muck (Pc)	severe: subsides ponding low strength	severe: subsides ponding low strength	severe: subsides ponding low strength	severe: subsides ponding frost action
Udorthents, wet substratum (Uc)	--	--	--	--



**Table III.D-5
Potential Shallow Excavation, Pond, Lawn and Landscaping Limitations**

Soil Type and Symbol	Shallow Excavations	Lawns and Landscaping	Pond Reservoir Areas	Aquifer-fed Excavated Ponds
Upland Soils				
Charlton loam (Ch) 2-8% slope	slight	slight	severe: seepage	severe: no water
Charlton loam (Ch) 8-15% slope	moderate: slope	moderate: slope	severe: slope seepage	severe: no water
Charlton loam (Ch) 15-25% slope	severe: slope	severe: slope	severe: slope seepage	severe: no water
Pompton silt loam, loamy substratum (Pw)	severe: cutbanks cave wetness	moderate: wetness	severe: seepage	severe: slow refill cutbanks cave
Riverhead loam (Rh), 0-2 % slope	severe: cutbanks cave	slight	severe: seepage	severe: no water
Riverhead loam (Rh), 2-8 % slope	severe: cutbanks cave	slight	severe: seepage	severe: no water
Riverhead loam (Rh), 8-15 % slope	severe: cutbanks cave	moderate: slope	severe: seepage slope	severe: no water
Riverhead loam (Rh), 15-25 % slope	severe: slope cutbanks cave	severe: slope	severe: seepage slope	severe: no water
Udorthents, smoothed (Ub)	--	--	--	--
Unadilla silt loam (Ud)	severe: cutbanks cave	slight	moderate: seepage slope	severe: no water
Wetland Soils				
Fluvaquents, frequently flooded (Ff)	severe: cutbanks cave ponding	severe: ponding droughty flooding	severe: seepage	severe: slow refill cutbanks cave
Palms muck (Pc)	severe: excess humus ponding	severe: ponding excess humus	severe: seepage	severe: slow refill
Carlisle muck (Pc)	severe: excess humus ponding	severe: ponding excess humus	severe: seepage	severe: slow refill
Udorthents, wet substratum (Uc)	--	--	--	--

Soil Mottling

Charlton loam, Riverhead loam, and Unadilla silt loam all have a depth to water table of greater than six feet. No soil mottling within six feet (and likely deeper) is expected within these soils. Pompton silt loam is an upland soil that can have a high water table within



one to two feet from the ground surface during portions of the winter months. Mottling could be present within a few feet of the surface for Pompton silt loam. See Exhibit III.D-2a, Soil Mottling.

Redoximorphic features (mottling) were observed within 18 inches of the ground surface in the wetlands and in one other area located in the south-central portion of the property. All of the soils that are designated as wetland soils would be expected to contain mottling at or near their surfaces, or low chroma matrix colors in the absence of mottles (within very wet soils, all of the mottles can be essentially “washed out” of the soils).

Mottling is generally an indication of the presence of water movement within soil. However, once mottles form, they remain in the soil even if the source of the hydrology changes. Mottling was found in the south-central portion of the property in an area that formerly received surface water runoff from off-site, up-gradient areas. This surface water flowed downhill and onto the property, sustaining an area of wetland in the past. In addition, at some point in the past, a large amount of sediment was transferred onto the property along with the water flow. This fine sediment is several inches thick. Below is a description of a typical soil boring in this area:

Surficial leaf cover

0 – 1.5 inches: granular, fine sandy loam to silt loam, 10YR 2/1

1.5 – 7 inches: massive, silt, 2.5Y 4/2 to 4/3, some bright mottles

7 – 18 inches; silt loam to loam; 10YR 4/1 to 4/2 with bright mottles

The source of hydrology for this area was removed when off-site, up-gradient surface water was prevented from flowing onto the property. However, because the soils in this area still maintain their hydric indicators (low chroma matrix and mottling), piezometers were installed (in November 2008) in order to measure current ground water levels to confirm that this and surrounding areas are no longer hydric. Piezometer measurements are shown below on Table III.D-6 and the piezometer locations are shown on Exhibit III.D-2, Soils.

Table III.D-6
Piezometer Groundwater Level Measurements

Piezometer Number	03/20/09	03/31/09	04/08/09	4/28/09	5/8/09	5/12/09	6/2/09	7/15/09
	Depth to Groundwater Level (inches below grade)							
1	23	18	13.5	19.5	1.12	14.2	30.44	24.63
2	dry*	dry	dry	dry	dry	dry	dry	dry
3	33.5	25.5	26.5	30.25	16.1	29.9	dry**	dry

* >34.5 inches below grade to water; ** > 35.25 inches below grade to water



Piezometer measurements were taken by personnel from Evans Associates Environmental Consulting (EAEC) and Leggette, Brashears, & Graham, Inc. (LBG). Water levels in Piezometer 1 fluctuated during the period of measurement. Measurements taken approaching and into the growing season, however, exceeded two feet below grade. Depth to groundwater level measurements taken during the winter and spring, prior to the growing season fluctuated between 1.12 inches and 23 inches below grade. The measurement of 1.12 inches was taken on May 8, 2009, after unusually heavy and prolonged rainfall events. The water table dropped more than 13 inches by the time the piezometer was measured again four days later. These measurements indicate that the area surrounding Piezometer 1 can attain a temporary high water table for short periods of time after rainfall events. The compaction of the silty soils in this area also likely contributes to the retention of the temporary high water table. The groundwater table in the area of Piezometer 1 does not appear to sustain a high water table for a long enough period of time during the growing season to qualify as hydric soils. The relic evidence of wetland hydrology were created in the past and are currently not sustained. Piezometer 2 was dry during the entire period of measurement, indicating the ground water table remains 34.5 inches or more below grade, and confirming that this area does not contain hydric soils. Water levels in Piezometer 3 remained below 18 inches for the majority of the time of measurement, and was dry approaching and into the growing season, confirming that this area does not contain hydric soils.

Soils Unsuitable for Development

Development limitations, including erosion hazard, wetness, ponding, and high water table, for the on-site soils are described in the potential development limitation tables provided earlier in this chapter. In general, all of the wetland soils (Fluvaquents, Palms and Carlisle mucks, and Udorthents, wet substratum) are identified as poorly drained and hydric soils and are unsuitable for most construction activities. All of the wetland soils also have high water tables. One upland soil, Pompton silt loam, is moderately well drained to somewhat poorly drained and has a seasonally-high groundwater table that ranges from approximately one to two feet below grade from October through May during most years, which may limit its ability to support some types of development. Overall, most of the upland soils are suited for development of structures and roads, with some limitations due to slope and the potential for frost action. Most of the soils on the property have limited abilities to support a pond, with slope, seepage, no water, and caving the major limitations which may be able to be overcome. The approximate locations and acreages of erosion-prone soils, poorly drained/hydric soils, and soils with high or seasonally-high water tables are shown on Exhibits III.D-2b, III.D-2c, and III.D-2d, respectively.

Exhibit III.D-2e, Potential Development Limitations, depicts the approximate areas and acreage of soils that contain potential development limitations. These areas are



estimated, and should be used as a generalization of on-site soil limitations. Other geotechnical data, along with boring logs, slope analyses and constraints maps should be used to assess the specific capabilities of an area to support development activities.

Shallow depth to bedrock is not expected to be found on the property, based on the borings, soil types and testing that has been done there.

Cross Sections

Two site cross sections have been developed (Section A-A and Section B-B, provided with the engineering plans) showing the estimated groundwater levels and the bedrock levels, existing and proposed grades, stormwater treatment facilities, buildings and site soils. Groundwater and bedrock levels were determined using the deep test pit logs which were performed by Bibbo Associates, LLP in September 2009. In the case of the absence of groundwater and bedrock; the Bibbo deep test pits' deepest elevations are shown as the level. The piezometer readings which were performed during 2009 wet season have not been used due to their influenced water levels from the excess precipitation during that season. Furthermore, the Brown Brook outlet was plugged during this time not allowing drainage to flow freely. It is the professional opinion of the Project Engineer (Bibbo Associates) that the piezometer readings were compromised to reflect the actual site conditions. Instead, the deep test pit information has been used to develop the groundwater and bedrock levels for the site cross sections.

Test Borings

Subsurface investigations were conducted by Soiltesting, Inc. in November 1994 and again in November 2008. Thirteen test borings were taken in 1994, and eighteen test borings were completed in 2008. In addition, three piezometers were installed, as described previously. The 2008 Soiltesting, Inc. report also contains a geotechnical report completed by Maser Consulting, P.A. and laboratory testing completed by Skylands Testing, LLC (see Appendix D for reports). The laboratory testing included particle size distribution of the upper few feet of soil in eight of the soil borings using sieve analyses based on the Unified Soil Classification System (USCS). The approximate locations of all of the soil borings are shown within their respective reports. Finally, deep hole test pits which were done to confirm soil conditions for the stormwater management areas were observed in late September, 2009 to confirm the most recent soil mapping.

Lead in Soil/Soil Contamination Review

As required in the scoping document, Appendix D includes written confirmation from a licensed environmental consultant that there is no evidence of levels of lead on the Site above naturally occurring background concentrations based upon the historical uses of the Site. This is contained in a letter from Sidney Neer and Don Porterfield, URS



Corporation-New York to Joseph Torg, Somers Woods Development LLC (dated June 24, 2009). (See Appendix D). The letter states that based on results of the **Phase I Environmental Site Assessment** and **Limited Phase II Investigations** prepared by URS (dated 8/10/06), and on the history of the property, “indicated that there was no previous use of the property (e.g., smelting, plating, firing range, etc) to suggest contamination by lead.”

Identification of any soil contamination on the Site is also referred to in the URS Corporation AES engineering Phase I report (August 10, 2006), which concludes that there are no known areas of soil contamination on the Site. Since that report, there has been no physical change on the parcel, therefore the report is applicable, according to the Project Engineer.

Reference is made to a structural assessment report of the site subsurface soils by Maser Consulting, P.A. (December 2008) determining structural strength properties of the subsurface soils at the site. This report shall be used for the design and it is accepted by the Project Engineer (See Appendix D).

A written confirmation from the URS Corporation AES letter dated June 24, 2009 states that there is no evidence of elevated levels of lead on the Site. This letter is also certified by the Project Engineer (See Appendix D).

Two Geologic Cross Sections through the site are provided in the set of engineering plans.

Stability Analysis

As per the Geotechnical Report prepared by Maser Consulting, P.A. dated December 9, 2008, which is part of Appendix D, the soil bearing capacity is determined as 4,000 psf for the Site, which applies to all foundations. The previous study area relates very closely with the current project area. There are no retaining walls proposed for the development.

See LBG Report in DEIS Appendix D and engineering plan set for geologic cross sections.

A general note regarding these prior reports:

- Soil Testing, Inc. and Maser Consulting Reports
- URS letter re: Lead
- URS Phase I ESA
- Leggette Brashears & Graham, Inc. Hydrogeologic Assessment

The above referenced reports have been reviewed and accepted as referenced throughout the DEIS, except as modified by the Project Engineer site specific to the Somers Crossing Project DEIS.



Earthquake Potential

The largest earthquake in Westchester County (recorded in 1985) had a magnitude of 4.0 on the Richter scale. According to the 2008 USGS Seismic Hazard Map, Westchester County has a peak ground acceleration (PGA) between 3% and 4%.¹ PGA expresses the severity of an earthquake and is a measure of how hard the earth shakes (or accelerates) as experienced by a particle on the ground. A PGA of 3%-4% would experience light to moderate shaking with no to very light potential damage.

The New York State Division of Homeland Security and Emergency Services prepared a Hazard Mitigation Plan in January 2014 containing an assessment of the earthquake potential in New York State. This report also looked at Spectral Acceleration (SA), which is the impact experienced by a building, and found that most of Westchester County has a SA (%g) of 35% to 45%, after adjusting USGS data to reflect local soils.²

Earthquake potential at the site has been determined using USGS Seismic Hazard 2008. The anticipated peak ground acceleration (%g) for 2,500 year return period is approximately 14. The peak Ground Acceleration with 2% probability of exceedance in 50 years as shown in Exhibit III.D-7 Earthquake Potential. In other words, maximum ground acceleration for the site is $0.14 \times 32.2 \text{ ft/sec/sec} = 4.50 \text{ ft/sec/sec}$. for the 2,500 year return period³.

2. Anticipated Impacts

Disturbance to Site Soils:

The proposed action is estimated to impact 16.1 acres (approximately 60%) of the soils on site, as shown on Exhibit III.D-3, Preliminary Grading Plan, indicated by a limit of disturbance line (see also Exhibit III.D-4, Soils Impacts). Clearing of vegetation can lead to increased potential for soil erosion, particularly on steeply sloping areas (15 -25% grade or higher). Table III.D-3 above lists the erosion potential for the soils on the Site. Clearing of vegetation can also lead to increases in seasonal groundwater levels through loss of evapotranspiration during the growing season.

Based on site evaluation, site soils will be impacted by the development as noted in Table III.D-7. As per Maser Consulting, P.A.'s engineering report (December 2008), the silt layer that exists at the Site shall be removed under the building slabs, foundations and roadways. The remaining soils are adequate to carry building loads up to 4,000 lbs/SF soil

¹ These maps are based on PGA (%g) with a 10% chance of being exceeded over 50 years.

² 2014 New York State Hazard Mitigation Plan, prepared by the New York State Division of Homeland Security and Emergency Services, <http://www.dhSES.ny.gov/oem/mitigation/documents/2014-shmp/Section-3-7-Earthquake.pdf>.

³ <http://earthquake.usgs.gov/hazards/apps/map>



bearing capacity. Deep foundations are not necessary, 4 feet minimum frost coverage for the foundations and 2 feet cover for the slabs are recommended. Based on the site cross sections provided as part of the Engineering Plans, the groundwater and bedrock do not interfere with the stormwater treatment areas, buildings, utilities or roadways.

The topsoil will be stripped and stockpiled during construction as per the proposed Sediment and Erosion Control Plan. Topsoil loss will be minimized by stockpiling for future use and protecting with seeding, mulching and covering with plastic if necessary. Topsoil quantities and silt volumes are specified in the Cut-Fill calculations by phase (see Table III.D-8).

As described in the Existing Conditions discussion, the material which had been deposited in the depressional area on the Site has a very small particle size (aka grain size) relative to the native soils on the site, and there is potential for these soils to be colloidal should they erode or be re-suspended and wash into a surface water body or wetland. Therefore, these soils will be removed from the property and taken off site for disposal prior to the start of construction in this area. No blasting is proposed at the Site. The impact by soil type is listed in the table below, and soils with potential development constraints (seasonally high groundwater table) are noted:

**Table III.D-7
Soil Impacts**

	Area on Site (acre)	Potential impact area (acres)
Charlton loam (Ch)	5.699	5.1
Pompton silt loam, loamy substratum (Pw)	2.051	0.36
Riverhead loam (Rh) and Unadilla silt loam (Ud)	4.979	4.42
Udorthents, smoothed (Ub)	8.753	6.21
Fluvaquents-Udifluents complex, frequently flooded (Ff) and Palms and Carlisle mucks (Pc) ¹	4.882	0
Udorthents, wet substratum (Uc) ¹	0.321	0.01
Totals	26.68	16.1

¹Hydric (wetland) soils with seasonally high groundwater

Earthquake Potential

Generally, seismic analysis is governed by the Uniform Building Code. Structures of the type anticipated at the Somers Crossing Site would be of low exposure type B. This would translate to a factor of safety of 1.1 applied to structural loads for foundations and structure elements of the buildings. This analysis is known as the equivalent static



analysis. All construction will be subject to and meet Building Code requirements for design.

Earthwork:

Earthwork volumes have been calculated by the project engineer using Computer Aided Design (CAD) software and the summary of results are shown in the table below. Project site layout has been planned to minimize the total site disturbance. The planning process involved working with the existing site topography, avoiding excessive cuts and fills by determining the appropriate finished floor elevations for the buildings and elevations for the access roads, while also keeping the proposed impervious surface to a minimum. Areas of disturbance by soils type were described in Table III.D-7 and on Exhibit III.D-4).

Project site layout/grading has been planned to create a balanced cut/fill to the greatest extend practicable (See Table III.D-8).

Table III.D-8
Phase by Phase Earthwork/Site Disturbance

Phase	Total Site Disturbance (acres)	Topsoil (CY)	Total Cuts (CY) *	Total Fill (CY)	Excess Cut (CY)	Import Fill (CY)	Silt Volume (to be removed) (CY)
1A	2.39	1,549	8,713	5,189	0	0	1,583
1B	3.44	2,745	17,567	13,006	0	0	1,816
2	4.26	3,844	35,210	7,727	19,072	0	4,959
3	6.07	4,564	27,328	27,584	0	6,740	1,920
Total	16.1 (**)	12,702	88,818	53,506	19,072	6,740	10,278

(**) Phasing involves disturbance overlaps, therefore the total is not accumulative.

(*) Includes silt to be removed and adjusted accordingly for topsoil.

3. Mitigation Measures

The project site layout has been planned to minimize total site disturbance. The majority of the site disturbance will occur in portions of the Site which have been previously disturbed by historic mining operations and/or agricultural use. The remaining site disturbance will occur in soils which are well suited to development.

Project site layout/grading has been planned to create a balanced cut/fill to the greatest extend practicable. However, due to the stormwater treatment facilities' volumes required and their correlation to the rest of the grading for the site dictates the proposed



elevations. The site grading will be further refined to balance the cut/fill volume in Site Plan process, probably resulting raising the entire site 1-2 feet.

Constrained soil in the site will be avoided; existing silt layer will be removed. All recommendations in the Maser engineering report (Appendix D) will be followed.

The topsoil shall be stripped and stockpiled during construction as per the Sediment and Erosion Control Plan. Topsoil loss will be minimized by stockpiling for future use and protecting with seeding, mulching and covering with plastic if necessary. Topsoil quantities and silt volumes are specified in Cut-Fill calculations by phase (see Table III.D-8). A stockpile management plan, with stockpile volumes and height and details of stockpile formation and removal will be provided on the final Erosion Control Plan, later in the site plan process (closer to the time of construction), when both the Site Plan and the Grading Plan have been more refined based on final layout, earthwork calculations, and engineering review.

Inspection and maintenance requirements for the site erosion and sediment control is included in the Stormwater Pollution Prevention Plan in Appendix E. A detailed summary of these requirements is also included in Chapter III.C.3, Topography and Slopes-Mitigation Measures. These measures include both Temporary Erosion and Sediment Control Practices / Short Term Maintenance and Inspection Requirements as well as Permanent Erosion and Sediment Control Practices / Long Term Maintenance and Inspection Requirements. Inspections performed during construction should verify that all practices are functioning properly, correctly maintained, and that accumulated sediment is removed from all control structures. Once final stabilization is achieved and construction complete, maintenance and inspections will be limited to the infiltration basins (x4), Bioretention and the Pocket Wetland. A copy of the Maintenance and Inspection Checklists from the [NYS Stormwater Management Design Manual](#) are included in Appendix M of the SWPPP to serve as a guide for maintaining and inspecting the infiltration and other SWTAs.

Erosion and Sediment Control

Erosion and Sediment Control Plan is provided to mitigate the impacts to soils to the extent practicable. (See Exhibit III.D-6).

Construction Sequence Plan

Construction Site Management

Throughout project construction, the responsibility for installation, maintenance and repair of erosion controls and stormwater management practices (SMP's) will rest with the site contractor as the owner's representative. Oversight of the preparedness of

erosion controls and SMP's will be conducted by the owner's qualified professional through regular inspections in accordance with NYSDEC SPDES General Permit requirements. On a daily basis, the project superintendent shall check for damaged silt fence, the need to clean mud tracked onto Route 100 and Route 202 or paved roads within the project, and for turbidity in the outflow from temporary sediment basins. Street sweeping shall be conducted as required. A water truck will be maintained on-site for dust control. Construction Phasing and earthwork is indicated on Exhibit III.D-5.

Construction debris, such as sheet metal and wood scrap, paper and insulation products, styrofoam cups and paper wrappers can become windblown litter over and off the Site if neglected. Suitable and ample refuse containers shall be provided on the Site and emptied when full. Any scattered debris shall be picked up and placed in containers on a continuous basis. Heavy equipment will be refueled away from drainage swales. Gasoline and oil for small engine equipment will be stored in construction equipment storage sheds. All refueling will take place at least 100 feet from the drainage swales to preclude any possible escape of spilled fuel to stormwater. In the event of any major spill, its capture and the removal of contaminated soil will be conducted under NYSDEC regulations for spill remediation.

As work progresses in a given phase, the superintendent must ensure that the new work area is first protected with perimeter erosion controls. As important as the need to identify areas requiring protection, is the need to determine disturbed areas that can be stabilized with temporary vegetation. Site management responsibilities will include identification of sections in a work phase where active site work will not occur over the next 7 days. If disturbed earth is present, the superintendent will direct the spreading of rye grass seed for a temporary protective cover.

Some of the water quality basins proposed on the Site are to serve as temporary sediment basins during construction. The outlets for the basins will initially be modified to restrict and filter outflows. Regular monitoring of any outflow will, however, be a routine requirement. Where the turbidity of the outflow obviously contrasts with any receiving water, outflow from the basin must be cut-off and the basin pumped down if necessary. Pumped discharge will be directed away from receiving watercourses to undisturbed vegetated ground for settlement and filtering. The project superintendent will be required to monitor weather forecasts to direct the pump-out of basins for increased capacity prior to storm events, if necessary.

The following phase by phase construction sequence and excavation/earth movement volumes are based on the assumptions outlined below:

- Each truck is 18 cubic yards.
- A portion of the Site assumed to have silt layer.



- Silt layer and excess cut shall be exported to an off-site location.
- Excess cuts assumed to have additional volume of 25% when loaded and trucked off-site, compared to their compact state.
- The entire Site is assumed to have 6" thick topsoil.
- All on-site cut volumes are assumed to be used in fill volumes.
- Silt removal is assumed as per the Geotechnical Engineers Report.
- 4'-0" below the finished grade under buildings.
- 3'-0" below the finished grade under the roadways.
- Silt depths are taken from boring descriptions.
- All volume calculations are subject to change based on actual field conditions.
- Silt volume is included in cut volume.
- Residential units assumed excavation depth 12' below finished floor elevation.
- Grocery store excavation assumed 4' below finished floor.
- Bioretention area assumed 3' additional excavation to allow replacement of bioretention soil/crushed stone.

Construction Sequence – Phase 1A

Phase 1A: Area of Disturbance = 2.39 acres

The work in Phase 1A includes construction of Stormwater Treatment Areas Bioretention #1 and pocket wetland and associated access road. Bioretention #1 and pocket wetland are designed to serve as temporary sediment basins during construction. All the basins and piping backfill are to be fully restored with vegetation prior to the start of earthwork for the road at Phase 1B.

Total silt layer and topsoil volume calculated for this phase is approximately 3,524 cubic yards and the total general cut volume is approximately 5,189 cubic yards totaling 8,713 cubic yards of cut volume. The total required fill for this phase is calculated to be approximately 5,189 cubic yards. Assuming that the cuts volumes shall be used as fill volumes, the required cut volume coming from the Site only will be 1,583 cubic yards of silt. The total exported and imported earth movement will be equivalent to approximately 1,583 cubic yards, which translates to be 1,978 CY of loose material which shall require 110 truck loads for this phase.

Since Phase 1A is short of fill, a borrow area has been established within Phase 2 with dimensions of (80' x 265') which will replenish the needed fill.

- 1) Install silt fence and all required sediment and erosion control devices with plastic net backing (Mirafi Envirofence) along the access road and the downstream of the SWTA construction areas.
- 2) Install stabilized construction entrance at Route 100 site entrance.
- 3) Set temporary construction trailer.



- 4) Install perimeter erosion controls for temporary silt basins.
- 5) Clear trees and grub roots within SWTA area and access road work limits.
- 6) Construct temporary silt basins (bioretention #1 and pocket wetland areas as temporary silt basins).
- 7) Install berms, forebays, temporary check dams where required, outlet control structures and piping, and riprap outlet protection. Install temporary riser pipes in outlet structures.
- 8) Finish grade SWTA's, spread topsoil, seed, and mulch.
- 9) Construct diversion swales where required. Install topsoil, seed, mulch, netting, and stone check dams.
- 10) Install diversion swale outlet pipes and riprap outlet protection, as required.

Construction Sequence – Phase 1B

Phase 1B: Area of Disturbance = 3.44 acres

The work in Phase 1B includes construction of water distribution and sewer collection systems' connection to the Heritage Hills of Westchester, sewage pump station construction, roadways, stormwater conveying, sewage collections and water distribution systems within the access/loop road. Phase 1B also includes construction of diversion piping from the Route 100 cross piping which discharges to downstream without any treatment.

Total silt layer and topsoil volume calculated for this phase is approximately 4,561 cubic yards and the total general cut volume is approximately 13,006 cubic yards totaling 17,567 cubic yards of cut volume. The total required fill for this phase is calculated to be approximately 13,006 cubic yards. Assuming that the cuts volumes shall be used as fill volumes, the required cut volume coming out of site only will be 1,816 cubic yards of silt. The total exported and imported earth movement will be equivalent to approximately 1,816 cubic yards which translates to be 2,270 CY of loose material which shall require 126 truck loads for this phase.

Since Phase 1B is short of fill, a borrow area has been established within Phase 2 with dimensions of (80' x 265') which will replenish the needed fill.

- 1) Install perimeter silt fence and all other sediment and erosion control devices for roadway and utility construction.
- 2) Rough stake roadway and buildings for clearing limits.



- 3) Identify trees to remain and provide protective fencing. Clear and grub trees from limits of access road and buildings. Maintain existing vegetative ground cover for as long as possible on areas not requiring grading.
- 4) Strip and remove topsoil to an off-site location from road excavation and cut/fill limits. Export topsoil off-site.
- 5) Excavate and fill as required to bring the road surface to subgrade.
- 6) Construct Loop Road to its entirety.
- 7) Install water breaks across the subgrade to temporary sediment basins and any temporary sediment traps necessary.
- 8) Install catch basins, storm drain system, sewer collection and water distribution systems within the phase. The sewer and water lines will be connected to the Heritage Hills of Westchester in this phase as well as construction of the required sewage lift station. Prior to the sewer and water connection, install all required sediment and erosion control devices for this construction at the edge of the wetland setback.
- 9) Install Route 100 by-pass drainage piping as shown on the plans.
- 10) Install Infiltration System #2, its diversion manhole and pretreatment, but do not connect the conveying system which will be connected after complete vegetative stabilization.
- 11) Conduct regular monitoring of sediment basins outflow. If turbid, plug off discharge until clear or pump out basin to undisturbed vegetation.
- 12) As utility installation proceeds, conduct finish grading on road shoulders and embankments and restore with topsoil, seed, and mulch.
- 13) Fine grade road subgrade and install gravel subbase as utility installation allows.
- 14) Install base course of pavement on road and curb. Back-up curb with topsoil and apply seed and mulch.

Construction Sequence – Phase 2

Area of Disturbance = 4.26 acres

The work in Phase 2 includes construction of Building #15 through Building #41, Building #59 through Building #75 and Buildings #79 and 80, associated roadway, storm drain,

sanitary sewer collection and the water distribution system extensions and the building utility services.

Total silt layer and topsoil volume calculated for this phase is approximately 8,411 cubic yards and the total general cut volume is approximately 26,799 cubic yards totaling 35,210 cubic yards of cut volume. The total required fill for this phase is calculated to be approximately 7,727 cubic yards. Assuming that the cuts volumes shall be used as fill volumes, the required cut volume coming out of site will be 19,072 cubic yards. The total exported and imported earth movement will be equivalent to approximately 24,031 cubic yards which translates to be 30,039 cubic yards of loose material which shall require 1,669 truck loads for this phase.

- 1) Install perimeter silt fence and all other sediment and erosion control devices for each work area.
- 2) Clear and grub trees from work limits after identifying trees to be protected and fenced.
- 3) Strip and remove topsoil from road and building work limits where necessary and remove to an off-site location. Maintain existing vegetative ground cover for as long as possible on areas not requiring regarding. Remove topsoil to an off-site storage area for future use.
- 4) Excavate for foundations and bring road to subgrade.
- 5) Install temporary sediment traps as necessary following consultation with owner's erosion control inspector. Construct temporary swales to trap inlets where required.
- 6) Apply temporary seeding, mulching or any other method proposed to stabilize all disturbed areas on which no activity will occur over the next 7 days.
- 7) Install water distribution and sewer collection systems and service lines to the buildings within the phase.
- 8) Finish grade and re-vegetate road shoulders.
- 9) Upon re-vegetation of lawn area around the building foundations, remove perimeter silt fence.

Construction Sequence – Phase 3

Area of Disturbance = 6.07 acres

Phase 3 includes construction of Buildings #1 through 14, Buildings #42 through 58, Buildings #76 through 78, Grocery Store and its access road and parking lot.

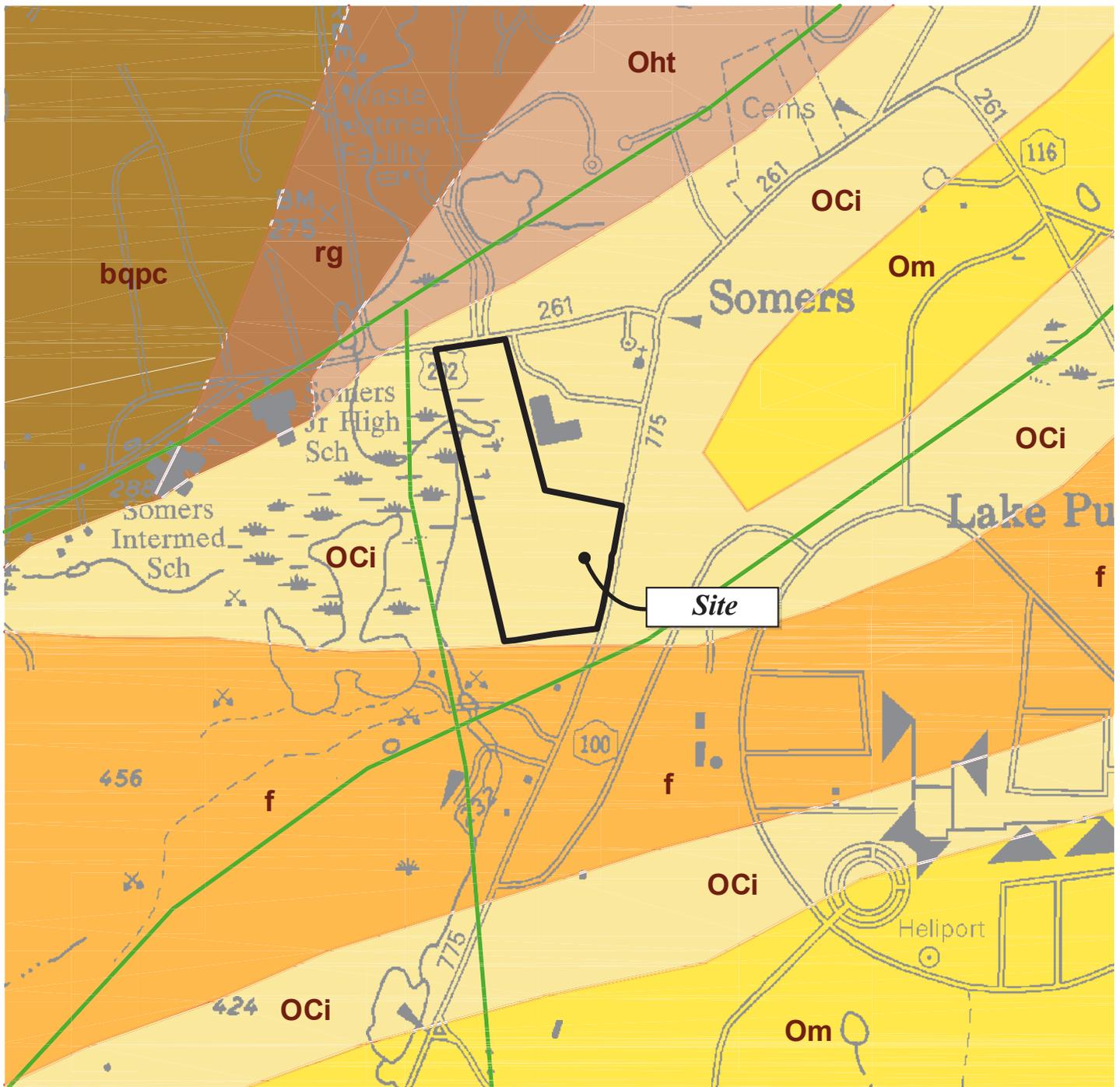
Total silt layer and topsoil volume calculated for this phase is approximately 6,484 cubic yards and the total general cut volume is approximately 20,844 cubic yards totaling



27,328 cubic yards of cut volume. The total required fill for this phase is calculated to be approximately 27,584 cubic yards. Assuming that the cuts volumes shall be used as fill volumes, the required fill volume coming into the site will be 6,740 cubic yards. The total exported and imported earth movement will be equivalent to approximately 8,660 cubic yards which translates to be 10,825 cubic yards of loose material which shall require 601 truck loads for this phase.

- 1) Install perimeter silt fence and all other sediment and erosion control devices proposed for each work area.
- 2) Construct temporary access road and tracking pad for commercial parcel construction.
- 3) Clear and grub trees from work limits after identifying trees to be protected and fenced.
- 4) Strip and stockpile topsoil from road and building work limits where necessary. Maintain existing vegetative ground cover for as long as possible on areas not requiring regarding. Remove topsoil to an off-site location for future use.
- 5) Excavate for foundations and bring road and parking lot to subgrade.
- 6) Install temporary sediment traps as necessary following consultation with owner's erosion control inspector. Construct temporary swales to trap inlets where required.
- 7) Apply temporary seeding, mulching or any other method proposed to stabilize all disturbed areas on which no activity will occur over the next 7 days.
- 8) Install Infiltration System #1, its diversion manhole and pretreatment, but do not connect to conveying system which will be connected after complete vegetative stabilization.
- 9) Install utility and service lines to the buildings.
- 10) Install gravel subbase on Grocery Store parking lot and the access road, binder course of pavement and curb.
- 11) Finish grade and revegetate road shoulders.





— Fault Line

— Bedrock Contact

OCi Inwood Marble

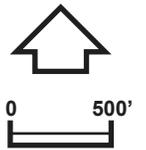
Om Manhattan Formation

f Fordham Gneiss

Oht Hartland Formation

rg Rusty and Gray Biotite-Quartz-Feldspar Paragneiss

bqpc Biotite-Quartz-Plagioclase Paragneiss



Source: New York State Geological Survey "Bedrock Geology-Lower Hudson Sheet"
1999, New York State Museum Map and Chart Services Number 40.

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Bedrock Geology

Exhibit
III.D-1

UPLAND SOILS

- Ch Charlton loam
- Pw Pompton silt loam
- Rh Riverhead loam
- Ud Unadilla silt loam
- Ub Udorthents, smoothed

- ② Piezometer Location (Approximate)
- Site Boundary

WETLAND SOILS

- Ff Fluvaquents
- Pc Palms and Carlisle muck
- Uc Udorthents, wet substratum



Source: Evans Associates Environmental Consulting, Inc.

Signature

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Soils

Exhibit
III.D-2

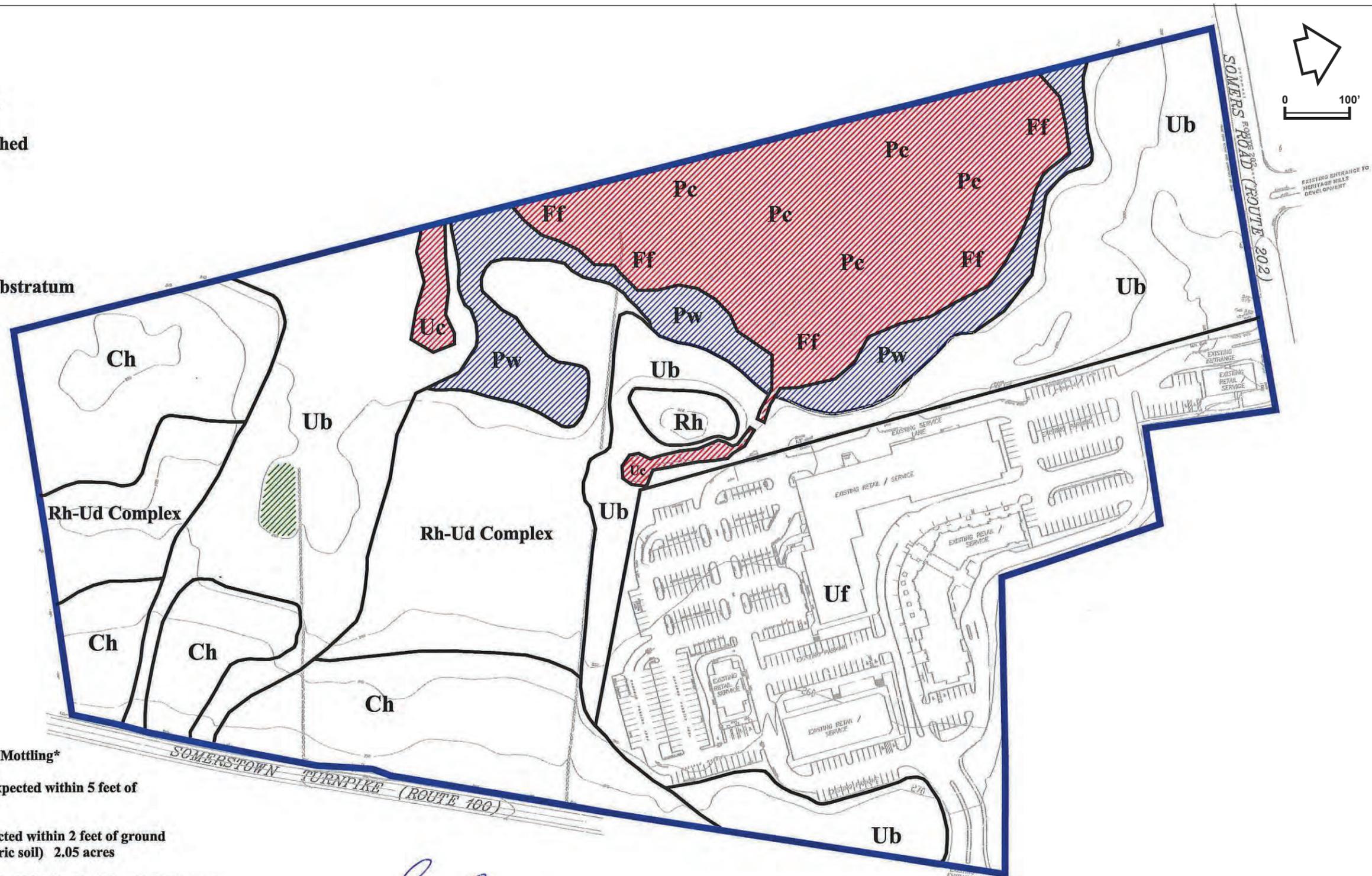
LEGEND

Upland Soils

- Ch - Charlton loam
- Pw - Pompton silt loam
- Rh - Riverhead loam
- Ub - Udorthents, smoothed
- Ud - Unadilla silt loam
- Uf - Urban land

Wetland Soils

- Ff - Fluvaquents
- Pc - Palms muck
- Uc - Udorthents, wet substratum



Approximate Locations of Soil Mottling*

- No color No soil mottling expected within 5 feet of ground surface
- Soil mottling expected within 2 feet of ground surface (not a hydric soil) 2.05 acres
- Soil Mottling within 12 Inches (hydric soil) 5.19 acres
- Soil Mottling within 12 inches (relic hydric soils characteristics) 0.11 acres

* Areas are approximate and are not survey located. Please refer to text, geotechnical data, including soil borings and other references, for more detailed information.

Eva Szigeti
 Eva Szigeti, CPSS

0 75 150 300
 Scale: 1 inch = 150 ft.

Source: Evans Associates Environmental Consulting, Inc.

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Soil Mottling

Exhibit
III.D-2a

LEGEND

Upland Soils

- Ch - Charlton loam
- Pw - Pompton silt loam
- Rh - Riverhead loam
- Ub - Udorthents, smoothed
- Ud - Unadilla silt loam
- Uf - Urban land

Wetland Soils

- Ff - Fluvaquents
- Pc - Palms muck
- Uc - Udorthents, wet substratum



Approximate Locations of Erosion-Prone Soils*

- No color Erosion Hazard is slight or unknown (developed areas) 23.66 acres
- Erosion Hazard is slight to moderate 4.72 acres
- Erosion Hazard is moderate 5.03 acres
- Erosion Hazard is severe 4.06 acres

* Areas are approximate and are not survey located. Please refer to text, geotechnical data, including soil borings and other references, for more detailed information.

Eva Szigeti
 Eva Szigeti, CPSS

Source: Evans Associates Environmental Consulting, Inc.

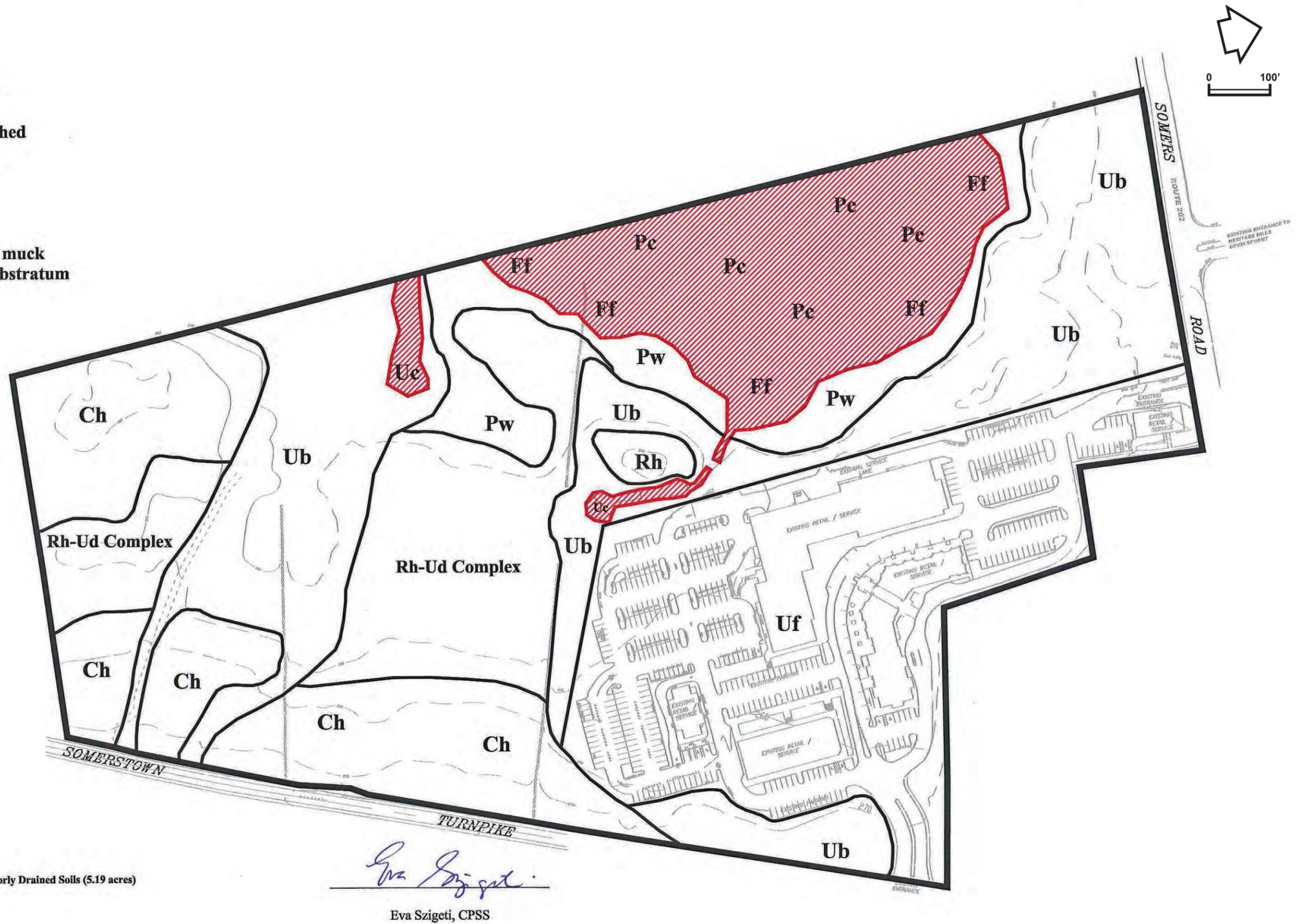
LEGEND

Upland Soils

- Ch - Charlton loam
- Pw - Pompton silt loam
- Rh - Riverhead loam
- Ub - Udorthents, smoothed
- Ud - Unadilla silt loam
- Uf - Urban Land

Wetland Soils

- Ff - Fluvaquents
- Pc - Palms and Carlisle muck
- Uc - Udorthents, wet substratum



 Hydric/Poorly Drained Soils (5.19 acres)

Eva Szigeti
Eva Szigeti, CPSS

Source: Evans Associates Environmental Consulting, Inc.

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Hydric-Poorly Drained Soils

Exhibit
III.D-2c

LEGEND

Upland Soils

- Ch - Charlton loam
- Pw - Pompton silt loam
- Rh - Riverhead loam
- Ub - Udorthents, smoothed
- Ud - Unadilla silt loam
- Uf - Urban land

Wetland Soils

- Ff - Fluvaquents
- Pc - Palms muck
- Uc - Udorthents, wet substratum



Approximate Locations of Soils with Expected High or Seasonally-High Water Tables*

- No color Water table 6 feet or more below grade
- Blue hatched Seasonal high water table between 1 and 2 feet below grade 2.05 acres
- Red hatched Seasonal high water table ranges from above ground to 1.5 feet below grade 4.87 acres
- Green hatched Seasonal water tables (including perched) that may be high within areas of disturbed soils (note: stormwater basin remains ponded) 0.43 acres

* Areas are approximate and are not survey located. Please refer to text, geotechnical data, including soil borings and other references, for more detailed information.

Eva Szigeti

Eva Szigeti, CPSS

Source: Evans Associates Environmental Consulting, Inc.

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Soils with High Water Table

Exhibit
III.D-2d

Upland Soils
Ch - Charlton loam
Pw - Pompton silt loam
Rh - Riverhead loam
Ub - Udorthents, smoothed
Ud - Unadilla silt loam
Uf - Urban Land

Wetland Soils
Ff - Fluvaquents
Pc - Palms and Carlisle muck
Uc - Udorthents, wet substratum

Approximate Locations of Soils with Potential Development Limitations*

- No color Soils with slight limitations
-  Soils with moderate to severe limitations due to wetness (ponding, flooding, low strength, subsidence, and/or seasonal high water table)
-  Soils with moderate limitations due to slope
-  Soils with severe limitations due to slope

NOTE: Pompton silt loam, Riverhead loam, Unadilla silt loam, and all of the wetland soils have moderate to severe limitations for road and street development due to frost action.

* Areas are approximate and are not survey located. Information based on limitations listed in the Soil Survey of Putnam and Westchester Counties, New York, for dwellings, unless noted. Udorthents are not evaluated in the soil survey. Other development activities may have other limitations. Please refer to text, geotechnical data, including soil borings and other references, for more detailed information.

Eva Szigeti
 Eva Szigeti, CPSS



Source: Evans Associates Environmental Consulting, Inc.

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Potential Development Limitation

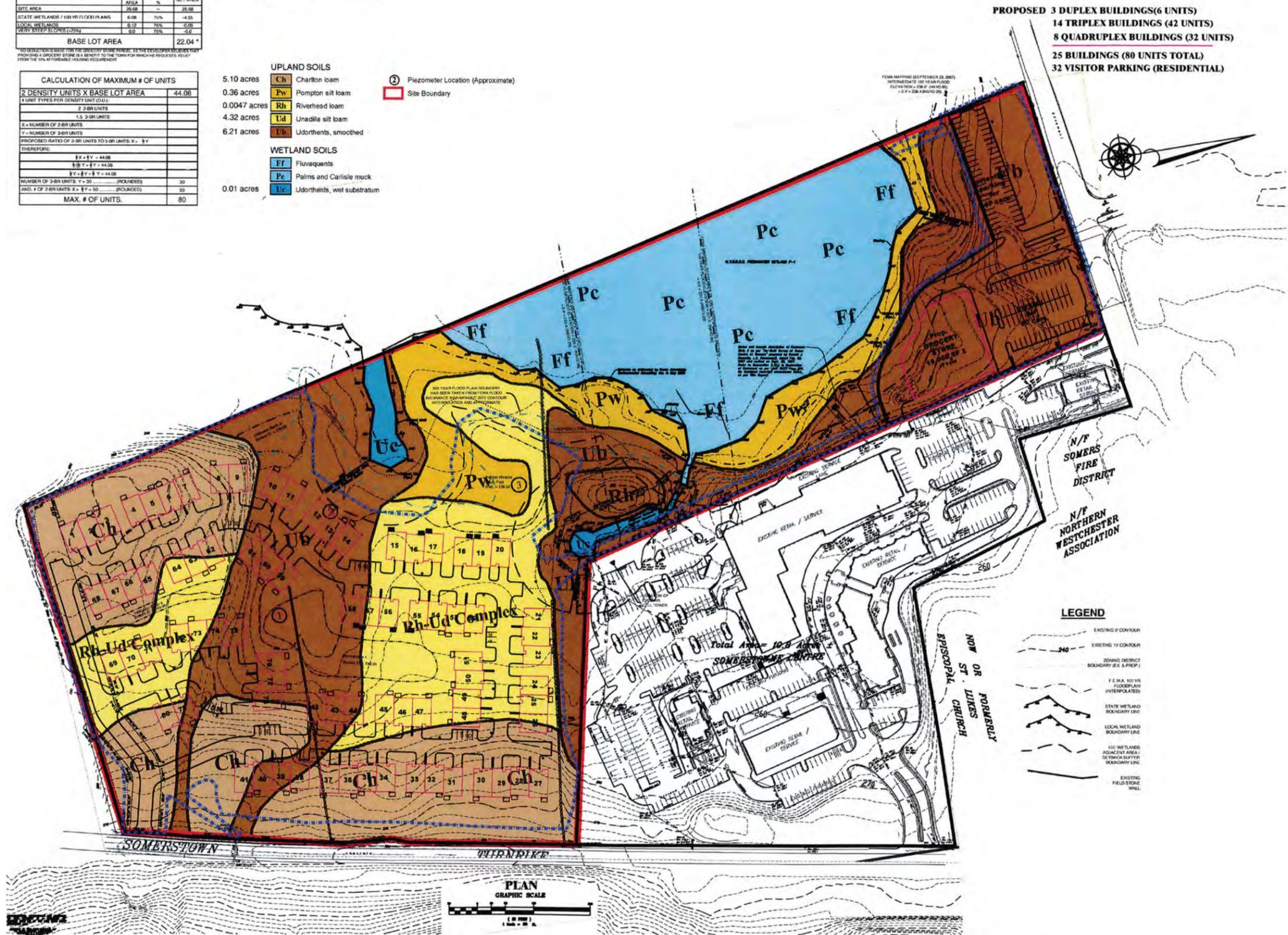
Exhibit
III.D-2e

CALCULATION OF BASE LOT AREA (W/ OR W/O GROCERY STORE)		
SITE AREA	GROSS AREA	NET AREA
	26.58	26.58
STATE WETLANDS / 100 YR FLOOD PLANS	6.08	-4.55
LOCAL WETLANDS	0.12	-0.09
VERY STEEP SLOPES (>25%)	0.0	-0.0
BASE LOT AREA		22.04 *

CALCULATION OF MAXIMUM # OF UNITS	
2 DENSITY UNITS X BASE LOT AREA	44.08
4 UNIT TYPES PER DENSITY UNIT (D.U.):	
2 2-BR UNITS	
1.5 3-BR UNITS	
E = NUMBER OF 2-BR UNITS	
F = NUMBER OF 3-BR UNITS	
PROPOSED RATIO OF 3-BR UNITS TO 2-BR UNITS: X = Y	
THEREFORE:	
$2E + 1.5F = 44.08$	
$2E + 1.5Y = 44.08$	
$2E + 1.5Y = 44.08$	
NUMBER OF 2-BR UNITS: Y = 30 (ROUNDED)	30
AND # OF 3-BR UNITS: X = 50 (ROUNDED)	50
MAX. # OF UNITS:	80

TOTAL NEW IMPERVIOUS AREA = 7.28
OVERALL SITE % IMPERVIOUSNESS = 7.28/26.58 = 27.29%

- UPLAND SOILS**
- 5.10 acres **Ch** Charlton loam
 - 0.36 acres **Pv** Pompton silt loam
 - 0.0047 acres **Rh** Riverhead loam
 - 4.32 acres **Ud** Unadilla silt loam
 - 6.21 acres **Uu** Udorthents, smoothed
- WETLAND SOILS**
- 0.01 acres **Ff** Fluvaquents
 - Pc** Palms and Carlisle muck
 - Uc** Udorthents, wet substratum
- ② Piezometer Location (Approximate)
□ Site Boundary



Source: Bibbo Associates, LLP.

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Soils Impacts

Exhibit
III.D-4



Source: Bibbo Associates, LLP.

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Construction Phasing

Exhibit
III.D-5

EROSION CONTROL GUIDELINES

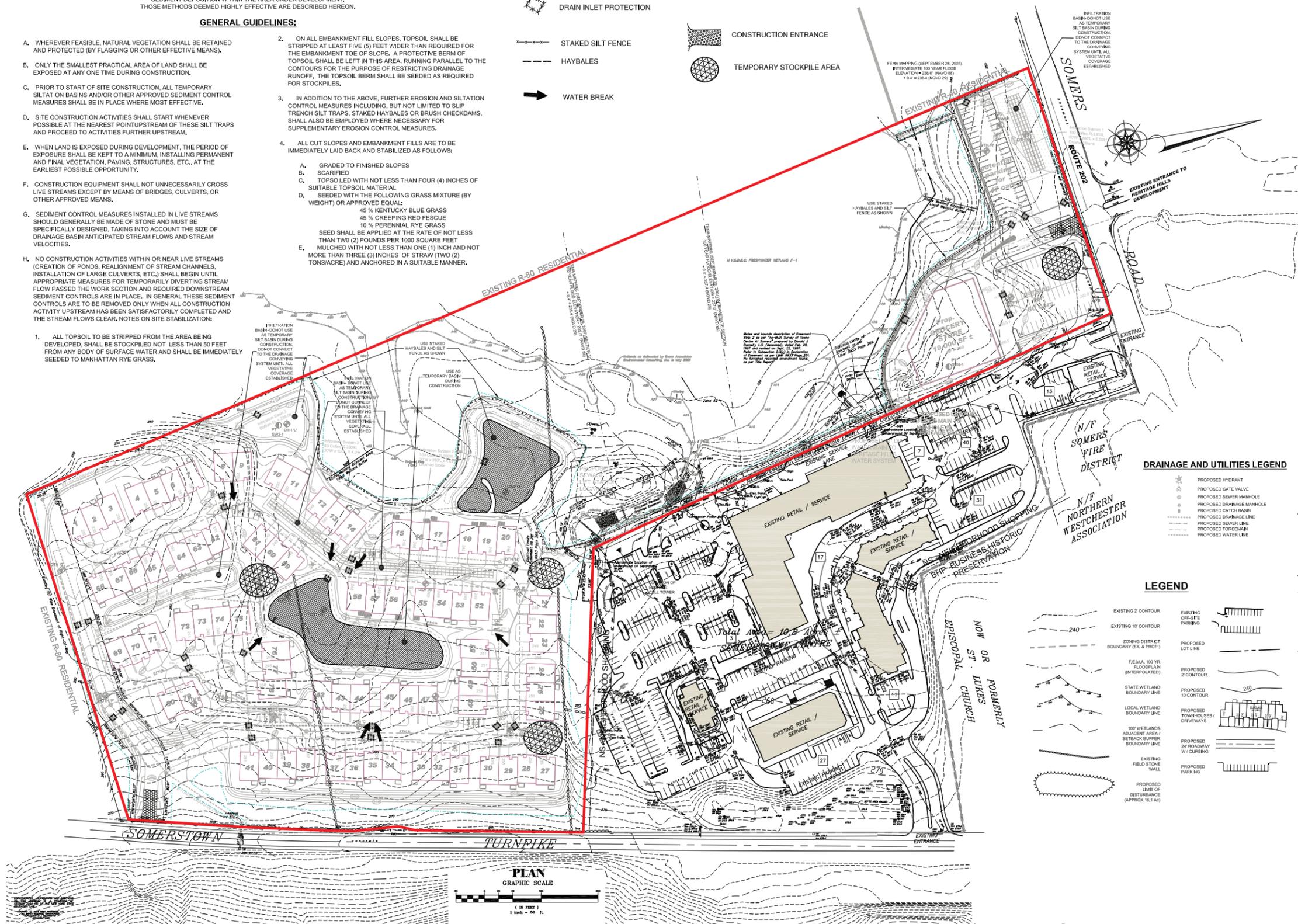
PURPOSE: ALL CONSTRUCTION ACTIVITIES INVOLVING THE REMOVAL OR DEPOSITION OF SOILS ARE TO BE PROVIDED WITH APPROPRIATE PROTECTIVE MEASURES TO INHIBIT EROSION OF AND TO CONTAIN SEDIMENT DEPOSITION WITHIN THE AREA UNDER DEVELOPMENT. THOSE METHODS DEEMED HIGHLY EFFECTIVE ARE DESCRIBED HEREON.

GENERAL GUIDELINES:

- A. WHEREVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED (BY FLAGGING OR OTHER EFFECTIVE MEANS).
 - B. ONLY THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION.
 - C. PRIOR TO START OF SITE CONSTRUCTION, ALL TEMPORARY SILTATION BASINS AND/OR OTHER APPROVED SEDIMENT CONTROL MEASURES SHALL BE IN PLACE WHERE MOST EFFECTIVE.
 - D. SITE CONSTRUCTION ACTIVITIES SHALL START WHENEVER POSSIBLE AT THE NEAREST POINTUPSTREAM OF THESE SILT TRAPS AND PROCEED TO ACTIVITIES FURTHER UPSTREAM.
 - E. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE PERIOD OF EXPOSURE SHALL BE KEPT TO A MINIMUM, INSTALLING PERMANENT AND FINAL VEGETATION, PAVING, STRUCTURES, ETC., AT THE EARLIEST POSSIBLE OPPORTUNITY.
 - F. CONSTRUCTION EQUIPMENT SHALL NOT UNNECESSARILY CROSS LIVE STREAMS EXCEPT BY MEANS OF BRIDGES, CULVERTS, OR OTHER APPROVED MEANS.
 - G. SEDIMENT CONTROL MEASURES INSTALLED IN LIVE STREAMS SHOULD GENERALLY BE MADE OF STONE AND MUST BE SPECIFICALLY DESIGNED, TAKING INTO ACCOUNT THE SIZE OF DRAINAGE BASIN ANTICIPATED STREAM FLOWS AND STREAM VELOCITIES.
 - H. NO CONSTRUCTION ACTIVITIES WITHIN OR NEAR LIVE STREAMS (CREATION OF PONDS, REALIGNMENT OF STREAM CHANNELS, INSTALLATION OF LARGE CULVERTS, ETC.) SHALL BEGIN UNTIL APPROPRIATE MEASURES FOR TEMPORARILY DIVERTING STREAM FLOW PASSED THE WORK SECTION AND REQUIRED DOWNSTREAM SEDIMENT CONTROLS ARE IN PLACE. IN GENERAL THESE SEDIMENT CONTROLS ARE TO BE REMOVED ONLY WHEN ALL CONSTRUCTION ACTIVITY UPSTREAM HAS BEEN SATISFACTORILY COMPLETED AND THE STREAM FLOWS CLEAR. NOTES ON SITE STABILIZATION:
 1. ALL TOPSOIL TO BE STRIPPED FROM THE AREA BEING DEVELOPED, SHALL BE STOCKPILED NOT LESS THAN 50 FEET FROM ANY BODY OF SURFACE WATER AND SHALL BE IMMEDIATELY SEEDED TO MANHATTAN RYE GRASS.
2. ON ALL EMBANKMENT FILL SLOPES, TOPSOIL SHALL BE STRIPPED AT LEAST FIVE (5) FEET WIDER THAN REQUIRED FOR THE EMBANKMENT TOE OF SLOPE. A PROTECTIVE BERM OF TOPSOIL SHALL BE LEFT IN THIS AREA, RUNNING PARALLEL TO THE CONTOURS FOR THE PURPOSE OF RESTRICTING DRAINAGE RUNOFF. THE TOPSOIL BERM SHALL BE SEEDED AS REQUIRED FOR STOCKPILES.
 3. IN ADDITION TO THE ABOVE, FURTHER EROSION AND SILTATION CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO SLIP TRENCH SILT TRAPS, STAKED HAYBALES OR BRUSH CHECKDAMS, SHALL ALSO BE EMPLOYED WHERE NECESSARY FOR SUPPLEMENTARY EROSION CONTROL MEASURES.
 4. ALL CUT SLOPES AND EMBANKMENT FILLS ARE TO BE IMMEDIATELY LAID BACK AND STABILIZED AS FOLLOWS:
 - A. GRADED TO FINISHED SLOPES
 - B. SCARIFIED
 - C. TOPSOILED WITH NOT LESS THAN FOUR (4) INCHES OF SUITABLE TOPSOIL MATERIAL
 - D. SEEDED WITH THE FOLLOWING GRASS MIXTURE (BY WEIGHT) OR APPROVED EQUAL:
 - 45 % KENTUCKY BLUE GRASS
 - 45 % CREEPING RED FESCUE
 - 10 % PERENNIAL RYE GRASS
 - E. SEED SHALL BE APPLIED AT THE RATE OF NOT LESS THAN TWO (2) POUNDS PER 1000 SQUARE FEET
 - F. MULCHED WITH NOT LESS THAN ONE (1) INCH AND NOT MORE THAN THREE (3) INCHES OF STRAW (TWO (2) TONS/ACRE) AND ANCHORED IN A SUITABLE MANNER.

EROSION AND SEDIMENTATION CONTROL LEGEND

- DRAIN INLET PROTECTION
- STAKED SILT FENCE
- HAYBALES
- WATER BREAK
- CONSTRUCTION ENTRANCE
- TEMPORARY STOCKPILE AREA



- DRAINAGE AND UTILITIES LEGEND**
- PROPOSED HYDRANT
 - PROPOSED GATE VALVE
 - PROPOSED SEWER MANHOLE
 - PROPOSED DRAINAGE MANHOLE
 - PROPOSED CATCH BASIN
 - PROPOSED DRAINAGE LINE
 - PROPOSED SEWER LINE
 - PROPOSED FORECMAIN
 - PROPOSED WATER LINE

- LEGEND**
- EXISTING 2' CONTOUR
 - EXISTING 10' CONTOUR
 - ZONING DISTRICT BOUNDARY (EX. & PROP.)
 - F.E.M.A. 100 YR FLOODPLAIN (INTERPOLATED)
 - STATE WETLAND BOUNDARY LINE
 - LOCAL WETLAND BOUNDARY LINE
 - 100' WETLANDS ADJACENT AREA / SETBACK BUFFER BOUNDARY LINE
 - EXISTING FIELD STONE WALL
 - PROPOSED LOT LINE
 - PROPOSED 2' CONTOUR
 - PROPOSED 10' CONTOUR
 - PROPOSED TOWNHOUSES / DRIVEWAYS
 - PROPOSED 24' ROADWAY W/ CURBING
 - PROPOSED PARKING
 - PROPOSED LIMIT OF DISTURBANCE (APPROX. 16.1 AC)



Source: Bibbo Associates, LLP.

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Erosion Control Plan

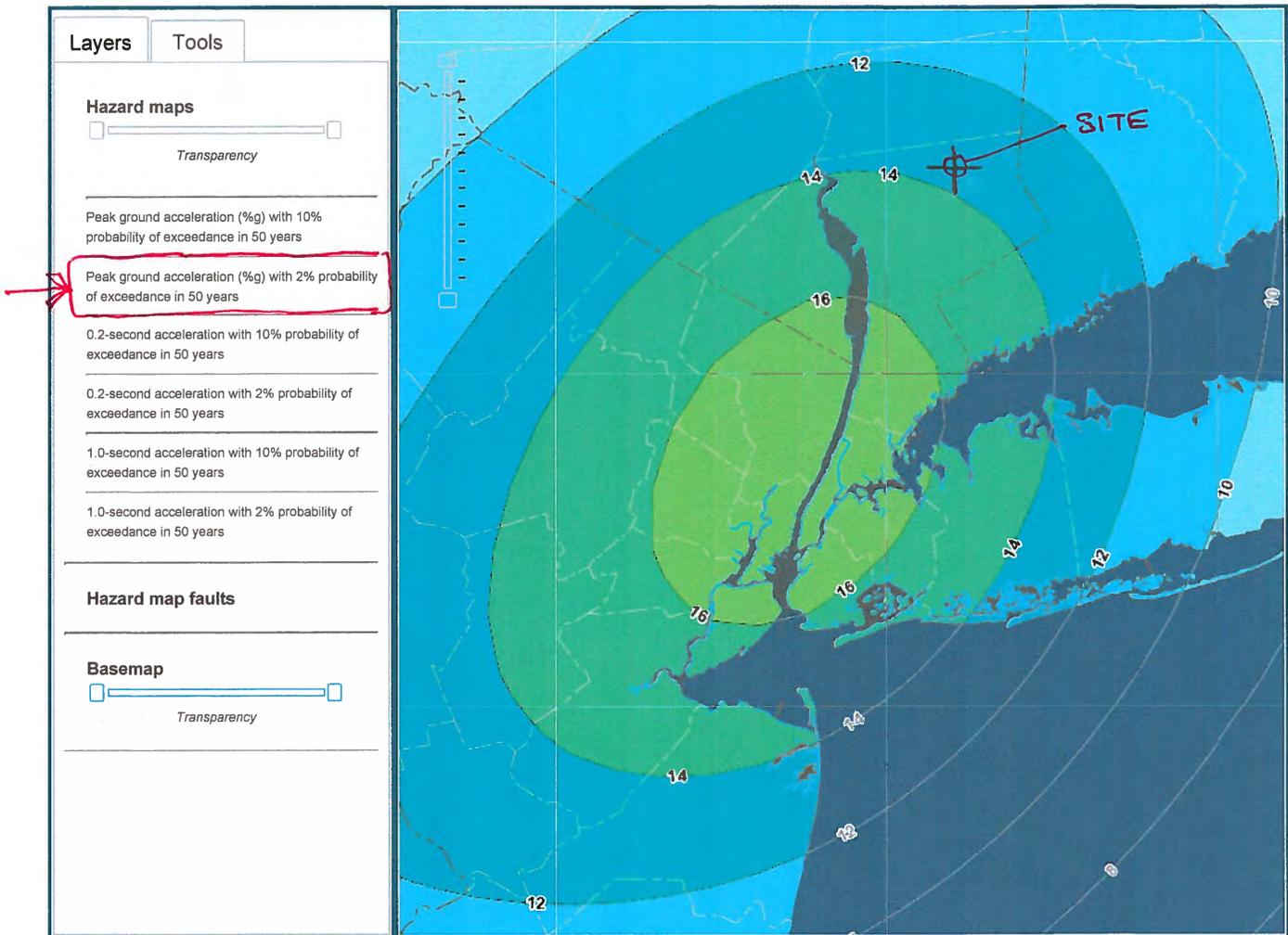
Exhibit
III.D-6

US Seismic Hazard 2008



Earthquake Hazards Program

US Seismic Hazard 2008



<http://earthquake.usgs.gov/hazards/apps/map/>