APPENDIX G

Landscape Master Plan

July 22, 2016

Dover Greens

Dover, New York

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INTRODUCTION

The Dover Greens landscape is a mix of native wetland and woodland vegetation, mown lawns laced with large mature shade trees and mix of some ornamental plantings creating a framework for a memorable campus landscape environment. There are very clear distinctions of landscape types from the maintained lawns to the wild and unmaintained woodlands. The mix of landscape types invokes an impression of a historic campus park, with woodlands juxtaposed to a manmade landscape environment rich in history; but lost to a fallow and poorly maintained site for over 20 years. But yet, the campus is a jewel in the waiting. With the proposed conversion of the hospital into an active University campus, the revitalization of future campus buildings, expanded programs and site improvements will make the existing campus landscape become an important catalyst for creating a tangible sense of renewal and long term campus investment.

A full range and hierarchy of vegetation already exists on the site and is vital to shaping the character of the campus landscape. A rich canopy of woodlands and large shade trees around development areas are punctuated with a variety of understory trees and provide a minimal level of backdrop for buildings and outdoor function spaces. Small trees and shrubs also add to the landscapes verdant quality, but tend to be overgrown and disjointed in their placement. The vast sweeps of mown grass and large shade trees are the 'memorable touchstone' today and a very important armature of the future campus landscape image.

Beyond the vegetation, other landscape elements are important to shaping the character of the campus ensuring that it is a dynamic and engaging landscape environment. While often subtle, the hardscape elements lend themselves to reinforcing wayfinding and can enrich the pedestrian experiences. The development of an effective landscape management strategy will require an appreciation, integration and reinforcement of the variations of these key landscape elements with specific and appropriate planting and site design strategies based upon program and use. The philosophy and policy framework put forth in this Landscape Master Plan will be instrumental in guiding the future landscape development and ongoing management of this campus landscape,

ensuring that it can become an oasis in the community that balances aesthetics, respect for the environment, and the campus history.

Site aerial

Purpose

The purpose of this Landscape Master Plan is to take an overview of the existing campus landscape, proposed programs, and opportunities for landscape improvement strategies that help develop a plan that:

- Strengthens existing campus organizational patterns
- Clearly redefines appropriate relationships between campus programs/ buildings and shared common lands.
- Integrates and articulates architectural and site design in conjunction with landscape architectural design in the planning process to ensure that attractive settings and open space are provided.
- Celebrates the common lands and heritage of the landscape.
- Reduces conflicts between pedestrian, bicycle and vehicular traffic.
- Provides clarity to identification of facilities, transitions and entrance points.
- Develops new significant landscape features in association with campus expansion.

- Establishes a framework for short and long term landscape improvements and management strategies.
- Ensures that the landscape treatments over time utilize a consistent set of elements in terms of style, materials, and quality.

Goals

The campus landscape Master Plan element must correlate with the overall campus Master Plan taking into account the existing conditions, site opportunities, use and building programs, implementation phases. In order to create a comprehensive approach the integration of site conditions: slope and topography, geology, vegetation (wetlands, woodlands, grasslands), pedestrian and vehicular circulation, and building program are critical framing elements to help define the landscape approach. Dover Greens should:

Create a common 'vision' for landscape development and set priorities for:

- Preservation
- Redevelopment
- Enhancement
- Sustainability
- Guide for the future

Organize and enhance the outdoor environment of the campus as a specific framework towards implementation including the following objectives:

- Respect existing landscape heritage and use it as a basis for landscape enhancement and execution of a unified landscape image for the campus open space system.
- Create a unified image for common campus lands, public edges, natural areas
- Clearly define pedestrian, vehicular and service circulation routes
- Identify and celebrate entrances to academic, residential, and operations facilities
- Support and develop a variety of outdoor spaces which can be used by students, staff and larger community.
- Develop a rich variety of plant material that provides seasonal interest and visual enhancement yet is simple and bold working with native and xeriscape species.
- Provide a long term maintenance framework that maximizes resources and is sustainable.

Landscape Character

The creation of a landscape development philosophy and subsequent policy goals will be the result of multiple factors: including consideration of the landscape's existing character, the cataloging of its component parts, program demands and how they sum up to a 'larger whole'. The issue of diverse vegetation types and species is important, but what makes a campus landscape unique is the way in which the plantings are used to shape space and give the campus a "sense of place". As with most landscape management philosophies, once the character of "place" is identified this then sets the framework for specific landscape decisions.

Many elements within the existing campus landscape contribute to the 'park' like feel of the historic hospital campus, most importantly the change in topography, open lawns defined by large shade trees and the native woodlands. The open areas consist of ground plane of lawn that are framed by a canopy of trees, roads and parking, buildings and woodlands. They are mainly located in the center of the campus property along Route 22/55. These open areas and the elements within provide some of the greatest opportunity for development of new memorable landscape areas for campus users.

In addition to the open grass areas, smaller spaces are also vital to the character of the campus landscape. These small spaces have the potential to provide a level of richness and personality whether they be plazas, courtyard gardens, landscape edges, gateways to campus program improvements. Often located at the perimeter of the building systems these important landscape spaces can reinforce the architectural character of the campus. The smaller courtyards and open spaces can infuse the general landscape with color, texture, fragrance, movement, and other forms of visual and tactile appeal. These elements in combination with the open lawn areas combine to create a distinct campus landscape - a tangible "sense of place" that distinguishes Dover Greens as a special place that is a landscape jewel in the community.

The Existing Landscape

The Landscape Master Plan element is intended to retain and support historic and current landscape practices while seeking to identify new opportunities to enhance, expand and redefine the landscape character of the campus where appropriate within the context of long term sustainability. The campus today is made up of 7 main landscape zones:

1. Woodlands
2. Wetlands and wetland setbacks
3. Open Lawns and Open Lawns with large canopy trees

4. Athletic and Recreation Areas
5. Roads and Parking
6. Pedestrian Walkways
7. Courtyards
8. Edges and Gateways

These zone distinctions will help organize and concentrate future planning efforts into sections of the campus that share common program, design and operations. *(See Exhibits 1-6.)*

Landscape Components

Open Lawns

There are primarily two conditions for lawn areas on the campus: mown and seasonally un-mown grass areas. Each of these are important plantings that support the unique "sense of place" for the campus. The mown areas are more commonly related to the development area around buildings, program space and along circulation routes; while the tall grass areas are found running along the woodland and wetland edges and roads. Mowing and manicured lawn maintenance is a major part of the daily operation for the campus horticultural team and should be evaluated.

Wetlands

There are multiple wetland areas on campus each with a different level of management or quality. Each of these areas require some improved levels of maintenance (removal of dead and over grown plantings, reduction of invasive species and in some cases excavation to create better holding capacities and enhanced for habitat experience opportunities).

Trees

There are a variety of tree types on campus including canopy trees (shade and flowering types); understory trees (flowering and evergreen) and woodland trees. The tree canopy is a vital thread in the larger landscape fabric of the landscape by benefitting ecological, social and functional standpoints. Ecologically a strong tree canopy improves the air quality and directs movement (or wind protection), mitigates storm water events and runoff, provides valuable habitat for birds and animals and reduces the heat gain affect through shade canopy. Socially, tree canopies are important to identifying key program spaces (gathering areas, pedestrian nodes, circulation nodes) and functionally by creating identification of edges, framing views, adding seasonal color and change, food production, and wildlife habitat.

Canopy Trees – those mature trees that tend to be 20 – 40 feet in height and tend to provide overhead cover and protection.

Understory Trees – those trees that differ from canopy trees in form and function. They may provide a small amount of overhead canopy, but tend to be smaller 10-20 feet in height and are more likely to be flowering and fruit bearing. These trees are often massed in plantings to delineate space, screen distinct areas, and used as backdrops (almost like a large shrub).

Woodland Trees – These trees are natives and naturalized vegetation which tend to grow in clumps or perhaps as single trees after a thinning out process. The natural trees tend to be taller and broad in stature and create an overhead canopy for understory vegetation and grasses.

Generally the trees on campus appear to be in good health and some of the many specimen trees have become important elements in the history of the campus landscape as key identity markers. Many of the existing larger (older) trees on campus do however require some significant maintenance and a program of yearly work by an arborist should be developed to enhance the health of the plants and help mitigate potential loss in a storm if canopies are correctly pruned. An increase of new and expanded understory tree plantings would help improve some of the connections to future academic and residential areas to the natural or open grass areas.

Shrub Plantings

The use of a shrub planting is minimal and tends to be a palette of both native and ornamental species. One of the great benefits of the strong shrub layer is the introduction of color and texture at the pedestrian level. Use of simple mass plantings of same species and plant palettes with compatible color relationships is critical to creating a level of continuity and appearance to background plantings. Much of the existing campus shrub layer is the use of hedge material which requires a significant amount of staff maintenance and manicure. As new plantings occur use of drought tolerant natives and plants suitable in scale and form to their condition should be a priority to help reduce staff maintenance needs.

Groundcover

Groundcover plants can add another layer to the transition from lawn to shrubs. Few groundcover areas are found around the existing buildings and program areas and entries. The ability to introduce color and texture seasonally and annually is one of the important assets of ground cover materials. A good palette of ground cover can also mitigate need for mulch placement and management.

Circulation

The current campus circulation system is a network of roads and pathways shared and used by pedestrians, carts, and service vehicles. Pathways tend to be asphalt. There has been little effort to create a hierarchy of use through design detail which can cause confusion to the various campus users.

The current pathway system appears to have been historically laid out as the historic hospital campus developed. The pathway network supports direct access to key function areas and services the scattered residences. Consideration could be given to realign some of the paths at some time in the future to better enhance the functionality and visual quality of the campus core. Service vehicles (small trucks and carts) should be supported by the road and pedestrian path network as a shared use.

Pedestrian ways are found to be built from concrete and asphalt. They tend to be minimally landscaped and have some lighting along their edges. A clarity to the

hierarchy for pedestrian pathways is needed as the campus evolves to a University program.

COMMON THEMES

A summary of the various observation and comments based upon site photos and discussions with staff are provided. This list of recurrent themes came to light regarding the overall open space landscape framework and will be part of the basis for recommendations for landscape development opportunities:

- Celebrate the history of the campus
- Identify significant and important trees
- Plant more shade trees along walks and roads for shade
- Group trees in the open lawn areas and avoid scattered individual plantings
- Create nodes at intersections that will better identify circulation, wayfinding, and lighting at night
- Redevelop the landscape around the existing buildings and celebrate the opportunity for development of courtyard plantings that are distinct and unique from each other
- Introduce a stronger understory of flowering trees to bring scale to edges and buildings
- Simplify the ornamental and shrub plantings
- Expand the plant palette with native shrubs, trees and perennials that are tolerant of Harlem Valley limestone soils and climate
- Better blend the use of plant color whether flowering or ornamental leaf color
- Introduce another layer to many of the edges with use of small trees and shrubs
- Separate and Screen the service areas better
- Improve lighting especially along roads and pedestrian pathways
- Improve wayfinding

Site specific observations and thoughts have been identified on the accompanying site plans for further clarity and review.

5.0 GUIDELINES and RECOMMENDATIONS

The following guidelines have been developed to assist Dover Greens with both short and long term landscape development and management strategies.

Vehicular circulation

The circulation system on the campus is one of the major framing elements for open space and landscape development along with building massing and woodland patterns (edges). The existing roads and pedestrian walk network services all areas of the campus in a simple and cohesive network. Looking at existing road/path systems and identifying key changes or reinforcements to circulation patterns on the campus will help improve safety and help set up a framework for a strong and integrated landscape plan.

Guideline:
Maintain a logical network of roads, service cart paths, along with consistent pattern of paving materials, site furnishings, landscape and lighting should be used to establish an reinforce a cohesive circulation network and identity.

Recommendation

- Continue to make necessary changes to existing roads to ensure that the campus is a pedestrian friendly environment in which vehicular circulation is secondary to the patterns of pedestrian movement and bicyclists.
- Separate users where conflicts are identified and safety issues arise.

See Exhibit 7.

Pedestrian System

The existing pedestrian access and walkways are too few and need to be expanded to connect program elements. Paths need to be simple and clear. Continued improvements to clarify pedestrian zones in each building program phase should be established.

Guideline:
A logical network of pathways, along with setting a consistent pattern of paving materials, supporting site furnishings, landscape and lighting should be used to establish and reinforce a cohesive pedestrian network and identity.

Recommendation:

- Identify areas where pedestrian connections will be needed as building uses change or new buildings are introduced.
- Look at the introduction of different paving materials and/or pavement detailing to improve clarity of use intent based upon program, location, and clarity of identity.
- Pedestrian ways should be well lit and provide for pedestrian safety at night. Using low angle - ground level lighting strategies will minimalize impacts of lights on the night sky and residential environments. New solar equipment may be a consideration --these units are getting better and more efficient all the time.
- Consider development of a 'cross campus trail' as a way to provide access and introduce other landscape environments to campus users.

See Exhibits 9 and 12.

Gateways

Creating a sense of arrival and passage is an important part of creating a great campus landscape experience. A hierarchy of enhanced gateways at perimeter road nodes, entrances to buildings or at the entry to key program spaces is important and can be accomplished using architecture (walls), planting, paving, public art, signage, and lighting. Gateways should be designed to create a welcoming and safe arrival and transition, clarity of use, and celebration of passage.

Guideline:

Provide a hierarchy of enhanced gateways along the road system that strengthens the identification of campus, circulation transition nodes and reinforces way finding.
Expand plant palette and lighting at gateways to enrich experience and visual quality.

Recommendation:

- Establish a common theme that will help create a sense of continuity and community standard for gateways.
- Use architectural elements (walls and large stone blocks) to reinforce the gateway or node.
- Develop a uniform paving pattern using patterns, unit pavers and color.

See Exhibits 7, 10 and 11.

Parking

There are parts of the campus and open space network that have designated parking areas off the road system as well as pathways; in other areas vehicles are just dropped at the path edges or left on the adjacent lawns. Development of new consolidated

parking areas should be investigated to minimize parking areas scattered around the campus. Paving materials should be porous and create a character of a courtyard / pedestrian environment.

Guideline:
Minimize the conflicts between surface parking areas/service areas and pedestrian circulation. Evaluate each lot and reduce or redesign them as needed to improve aesthetics and minimize conflicts with pedestrians and bicyclists. Provide appropriate landscape development, site furniture, and lighting to provide safe, accessible and attractive screened parking areas.

Recommendation:

- Relocate car parking away from pedestrian walkways and screen them visually from the general open space network and buildings.
- Restrict service parking on pedestrian areas, lawns and plantings.
- Provide appropriate number of spaces for each locale based on program and use.
- Use unit pavers for service parking areas and establish a common paving pattern to feel like a courtyard when no vehicles are present.
- Provide 1-2 electrical charging stations at key parking areas.
- Install bicycle racks to mitigate congestion of pedestrian areas and entries.
- Provide generous landscape buffers around parking areas with shade trees and screen plantings.

See Exhibit 7.

Accessibility

The grades on the campus are a mix of ranges that support access for disabled campus users. All new and existing entrances and walkways linking buildings and activity areas should provide one route minimum at a gradient of less that 5% to ensure accessible access for all.

Guideline:
Ensure that all primary pedestrian routes are accessible and barrier free. Strive to ensure that accessible routes are designed as primary routes where possible and not as separated paths if possible.

Recommendation:

- Paths that are less than 5% are encouraged wherever possible and should be accessible and barrier free. If a path is greater than 5% it should at least be barrier free where possible.

- Curb ramps should be located at all crossing points and a visual detectable warning strip provide that is consistent and compatible with the adjacent paving.
- Handrails for stairs, steps and ramps should be a consistent design throughout the property.
- Signage of major pedestrian crossings and "share the road" should be considered.

Cross Campus Trail

Another important and significant feature could be the introduction of a supplemental pedestrian trail system linking the north end and more developed south end aligned along the wetlands and playfield area. ~~An opportunity to link the major wetlands and woodlands of the campus as a pedestrian bicycle path only using a boardwalk system should be explored. This facility could coincide with the development of an interpretative wildlife and landscape program.~~ Trail connections over the hill to the pond and recreation areas should also be upgraded to encourage recreation activity and connect landscape improvements.

Guideline:

Improve existing trails connecting program elements throughout the campus recognizing the importance of integrating appropriate grading, paving, lighting and plantings.

Recommendation:

- Use crushed stone rock from local sources.
- Minimize vehicular use on the trails and preserve them for pedestrians and bicyclists.
- Provide signage and visual warning at points of intersections.
- Provide for proper drainages.
- Add understory flowering trees and shrubs in appropriate places as accent and transition plantings to woodland edges.

See Exhibits 9 and 12.

Bicycle System

As the campus transitions to a more academic and residential campus a greater dependence upon bicycle transportation throughout should be encouraged. Bicyclist safety and interaction with pedestrians and vehicular traffic is a priority and current unwritten courtesies regarding mode priority are supported.

Guideline:
Identify and provide a paved, unobstructed bicycle system that ties all areas of the campus.

Recommendation:

- Where bicycle traffic share pathways and roads, encourage a "share the road" policy and supplement with signage as appropriate.
- Shared paths should be a minimum of eight feet wide.
- Consider consolidation of bicycle parking areas including potential for covered parking in some locations.
- Install bike racks on paved areas and/or in association with service parking.
- Bike parking areas should be separated from walkways and screen planted.
- Provide appropriate lighting on bikes and in parking areas for evening use.

Service Access and Trash/Recycling Collection System

Service zones can have a negative aesthetic implication on the visual quality of the campus landscape; but are necessary. The trash collection nodes will likely be set along the main path network at key building service areas.

Guideline:
Minimize the aesthetic and functional impact that service areas have on the pedestrian experience. Consolidate and/or design service and trash zones and reduce conflicts with bicyclist and pedestrian activity to improve the overall aesthetic of the campus open space systems.

Recommendation:

- Consolidate trash and recycling collection points to less visible areas where possible.
- Relocate and/or screen collection areas that are adjacent to the main vehicular and pedestrian path.
- Screen all visual trash collection areas with wall structures with gates or heavy screen plantings.

LANDSCAPE ELEMENT

The Dover Greens commitment to providing a quality landscape environment is apparent throughout the campus in both maintenance of existing areas and renewed

efforts to recapture historic landscape character. As the campus continues to redevelop and mature, special attention will need to be paid to the integrating of new landscape treatments with historical landscape character and practices to ensure a cohesive landscape framework across the campus punctuated by key points of interest or celebration. The landscape is composed of several layers – canopy, small tree, shrub, ground plane. A successful landscape environment is one that balances the scale, plant character, form, texture and color of these layers in a way to complete an integrated and balanced ensemble of plantings. An overarching theme of any new plantings is the use of only native trees, shrubs, and perennials, emphasizing species that are tolerant of Harlem Valley limestone soils and climate.
See Exhibits 10 and 11.

Trees

It is the pattern of trees on the campus that really frames the open space system and integrates the buildings and program uses throughout the campus. Most commonly, people identify the differences in the existing tree canopy as *street trees* – those that run parallel to the circulation network; *shade trees* – those that provide a canopy over a programed use or circulation system elements; *screen trees* – those that direct or reduce views from one space to another; *flowering trees*- those trees that tend to be smaller in scale and provide a seasonal display of color; and *woodland trees* – those native groupings of trees seen in the more wild areas of the campus. The campus tree inventory is rich in diversity and character that provides a foundation for development of a botanical arboretum approach for long term management documentation; but also an invaluable educational tool to campus residents and guests.

Guideline:
Implement a tree plan that will give identity to, enhance, and maintain existing tree patterns and uses. Define and enhance a sequence of planting zones to provide a variety of experiences for people moving through, across, and around the campus landscape.

Recommendation:

- The grounds management team should have at least one ISA Certified Arborist to support the management and maintenance of the valuable resource. Tree staff should be mentored to understand ANSI standards and implication on pruning and care of trees.
- Over time develop a tree survey and number each tree or clump of native trees to be better able to manage care and record history of maintenance. Documentation of location, size, condition, species, and special notes on maintenance issues should be minimal information recorded.
- Existing Legacy Trees should be managed as unique resources, incorporated into new designs but not removed.

- Tree pruning and maintenance should be done on an as needed basis. Tree canopies of larger shade and street trees should be kept above 12′ paved roadways to allow for clearance of trucks and support vehicles. A 6′ minimum over plantings.
- Prune existing trees to resemble and express their natural form and character - do not shear plants.
- Develop a woodland management program to open wooded areas creating canopy and open understory for grasses, shrubs or flowering trees.
- Plant new street trees along pathways and pedestrian area to provide shade.
- Plant new shade and flowering trees along existing shrub plantings at buildings and mass buffer plantings to enhance scale and texture of the larger shrub levels.
- Trees should be placed in areas outside of heavy foot and or vehicular traffic to avoid compaction.
- Use flowering and small shade trees at nodes along pedestrian paths and key gathering areas.

Recommended Species Compatible with Region:

For development of landscape planting plans for each phase, species should be selected that are native to the area and tolerant with the regional climate. The following trees have been selected as appropriate for the site:

- Acer rubrum – Red Maple
- Amelanchier sp. – Serviceberry *
- Betula nigra – River Birch *
- Carpinus caroliniana – American Hornbeam
- Cornus alternifolia – Alternate Leaf Dogwood
- Cornus florida – Flowering Dogwood
- Crataegus crusgalli var. inermis – Thornless Cockspur Hawthorn
- Juniperus virginiana – Eastern Redcedar
- Magnolia virginiana – Sweetbay Magnolia *
- Nyssa sylvatica – Black Gum
- Populus tremuloides – Quaking Aspen
- Prunus Virginiana 'Canada Red' – Choke Cherry
- Quercus bicolor – Swamp White Oak
- Tilia americana - Basswood

Shrubs

Many of the few shrub beds on the campus are overgrown, overly pruned, or in need of refreshing. Typically shrub beds do become overgrown and tired and in need of

replacement every five to seven years. They must be renovated periodically by removing older plants and adding new fresh plants to maintain the aesthetic value of the landscape. A mix of shrub plantings is currently found, but can be spotty in their massing that leads to an incoherent landscape image.

Guideline:

Implement a shrub planting program that relies upon simplicity of form, mass, color, texture and orientation as the framework for shrub selections. Establish clear layers of plant species and form and balance characteristics of one plant to the other to avoid redundancy or disjointed visual expressions. Use native shrubs for ease of maintenance and to enhance the historic nature of the campus.

Recommendation:

- Keep plantings simple and appropriately scaled in relationship.
- Consider the ultimate size of plant material and choose plants that are native species and will not require a great deal of maintenance annually.
- Remove, trim, or limb up overgrown shrubs that cover windows, block architectural details, or create security issues.
- Use plants that focus on evergreen foliage, long seasonal flowering displays, texture, and appropriate scale.
- Develop plant palettes that account for the microclimates of the campus affected by full sun, shade, partial shade, wind, salt; and adjacent activities – pedestrian or vehicular environments.
- Consider the effects of planting around existing trees and root zones; avoid expansive areas of mulch.
- Consider the use of evergreen hedges in certain locations on the inside edge of walkways and parking areas to control traffic.
- Design shrub plantings as simple mass plantings with a juxtaposition of a mix of texture, form and color accents.
- Use shrub plantings to bring down the scale of large and small tree plantings especially around buildings and long bordered edges.
- Provide accent plantings to identify and enhance building entrances, walkways, and other focal program areas.
- Expand pavement areas where narrow to avoid damage to shrub, ground cover and floral displays.

Recommended Species Compatible with Region:

For development of landscape planting plans for each phase, species should be selected that are native to the area and tolerant with the regional climate. The following shrubs have been selected as appropriate for the site:

- Aronia arbutifolia – Red Chokeberry
- Aronia melanocarpa – Black Chokeberry

- Comptonia peregrina – Sweet Fern
- Cornus racemosa – Gray Dogwood
- Cornus sericea – Red-Osier Dogwood
- Diervilla lonicera – Bush Honeysuckle
- Ilex glabra – Inkberry *
- Ilex verticillata – Common Winterberry
- Lindera benzoin – Spice Bush
- Morella pensylvanica 'Morton' – Northern Bayberry
- Physocarpus opulifolius 'Little Devil' – Dwarf Ninebark
- Rhus aromatica 'Gro-Low' – Dwarf Fragrant Sumac
- Rhus typhina – Staghorn Sumac
- Sambucus canadensis – Elderberry
- Vaccinium angustifolium – Lowbush Blueberry

Groundcovers and Floral Displays

In general, traditional low growing groundcovers are not commonly planted on the campus. Low growing ground covers are defined as plants that grow to a maximum height of 6-12 inches and are aggressive spreading plants. Using groundcover in locations where there is desire to mitigate mulching, adding a ground plane layer to the planting, or creating a definable edge to lawn areas can benefit some of the existing plantings especially around the buildings or pedestrian plaza areas.

Guideline:

Use groundcover plantings to expand the layering of plantings, create definable edges to lawn areas, reduce the use of mulch and add color and texture to shrub beds.

Recommendation:

- Use accent plantings to identify and enhance building areas and broaden seasonal color display.
- Use native annuals and perennials as part of a larger composition in order to create 'rich' year-round plantings.
- Coordinate accent plantings with established plant palette and building / program architecture.
- Identify opportunities for introduction of a garden area that might support event use or educational programs for campus users.
- Careful consideration should be given to the location of any freestanding planters with annuals as irrigation and drainage are critical to plant care.
- Identify areas of mown lawn that can be replaced with other groundcover that would require less maintenance and/or irrigation. Such groundcover must include hardy native species. These areas should be located in the interior of the campus so as not to disrupt the overall historic campus aesthetic.

Recommended Species Compatible with Region:

For development of landscape planting plans for each phase, species should be selected that are native to the area and tolerant with the regional climate. The following plantings have been selected as appropriate for the site:

Perennials / Groundcovers:

- Achillea millefolium – Yarrow
- Anemone canadensis – Meadow Anemone
- Aquilegia canadensis – Wild Columbine
- Asclepias tuberosa – Butterflyweed *
- Dennstaedtia punctilobula – Hayscented Fern
- Dryopteris marginalis – Marginal Woodfern
- Helenium autumnale – Common Sneezeweed
- Heliopsis helianthoides 'Summer Sun' – Summer Sun Smooth Oxeye
- Liatris scariosa var. novae-angliae – New England Blazing-Star
- Monarda fistulosa – Wild Bergamot *
- Packera aurea – Golden Ragwort
- Physostegia virginiana 'Pink Manners' – Obedient Plant
- Pycnanthemum muticum – Short-toothed Mountain Mint *
- Symphyotrichum novae-angliae 'Purple Dome' – Dwarf New England Aster
- Zizia aurea – Golden Alexanders

Ornamental Grasses:

- Andropogon virginicus – Broomsedge
- Muhlenbergia capillaris – Pink Muhly Grass *
- Panicum virgatum – Switchgrass *
- Schizachyrium scoparium – Little Bluestem
- Sporobolus heterolepis – Prairie Dropseed *

Lawns

One of the most memorable parts of the campus landscape today is the open grass areas – both mown and tall grass edges. The lawns are the core armature of the landscape supported by strong planted edges and dotted with individual canopy trees and tree groupings.

Guideline:
Continue to use the lawn areas as the primary framework element to the overall landscape development and character.

Recommendation:

- Expand the open area on the campus through tree and shrub removal, pruning, and tree transplanting.
- Identify priority mown grass lawn areas and enhance maintenance and irrigation year-round.
- Mown lawn areas should be part of a complete integrate pest management system.
- Identify areas of mown lawns that can be replaced with easily maintained native groundcover in a manner which does not disrupt the campus aesthetic.

HARDSCAPE ELEMENTS

Pavement

Hardscape is a vital component in the landscape of the campus as it helps reinforces program spaces. The pedestrian circulation system is the major system that ties the public open space system together and thus deserves specific attention to design and implementation of pavement systems. It is important that the paving systems be carefully conceived and detailed to reflect use, speed and intersection of users through materials, layout and dimension as a way to reinforce the hierarchy of the circulation system.

Guideline:
Establish a palette of materials that responds to the program and creates a consistent and coherent network of paths and spaces and common design theme for similar program areas (walks, terraces, nodes, etc.)

Recommendation:
- Use broom finish concrete for main pathways with tooled edge.
- Develop and hierarchy to pathways and pattern pedestrian circulation differently than roads, bikeways or trails to reinforce clarity of use.
- Standardize materials for similar uses and create a set of detailed patterns.
- Create a policy of using paving patterns as warning to pedestrians of transition points and shared circulation areas.
- Use unit pavers or stone paving for specialty program areas related to the building entrances; as well as circulation nodes throughout the campus.

Site Furnishing

Site furnishings not only add function to the landscape, they play an important part of describing the 'place'. A consistent use of site furnishings across the common open space and campus areas should serve as a unifying element setting a consistent style, materials, scale and proportion, and general appearance.

Guideline:
Develop a comprehensive standard palette of site furnishings and integrate them into the pedestrian system, gathering areas / terraces and building entryways. Arrange furnishings to support program requirements for specific spaces and reinforce the overall character of the campus environment and building aesthetic.

Recommendation:

- Catalogue existing site furnishings and re-establish a family of furniture for standardization and distribution throughout the open space system.
  Catalog should include:
  - Benches
  - Chairs and lounges
  - Beach and pool furnishings
  - Tables
  - Trash receptacles
  - Bike racks
  - Shelters and Umbrellas

Infrastructure Element

Utility Corridors

Utilities above and below grade are an essential part of the function of a campus environment, and the planning and coordination of locations for utility services is important for both functional and aesthetic reasons.

Guideline:
Minimize the impact to above and below grade utilities have on the landscape and hardscape areas. Identify current 'corridors' and review planting strategies and programs to work around these existing conditions. Should new utilities or upgrades occur review opportunities to relocate the infrastructure in a way that better fits the open space plan and landscape concepts.

Recommendation:

- Locate utilities underground when given the opportunity for visual improvement, reduction of storm damage potential and improved maintenance.
- Consolidate utilities in to common corridors where possible to reduce footprint of disturbed area.
- Locate utilities away from primary entryways, pedestrian routes, view corridors and recreation areas.
- Locate manholes, electrical hand holes and irrigation equipment in areas that can be screened and does not impact management of turf or paving systems.
- Where existing access areas are above grade seek to lower covers / boxes to improve visual quality of the open space system.

Drainage

Stormwater management is currently handled on a building 'site by site' basis with discharge going to the closest open area as sheet flow runoff or percolation beds. Paved areas in and around the campus are drained to sheet flow or occasionally inlets that flow to collection system for percolation. Overall drainage for the campus is accommodated in the low areas / wetlands which are potential amenity areas; as well as potential water reserves and wildlife habitat.

Guideline:

Develop a comprehensive drainage plan/collection system which can support sustainable water collection; but also becomes an important part of the overall landscape program.

Recommendation:

- Implement low impact and green practices into the project design including bio-retention basins, permeable pavers, and rain gardens where applicable.
- Look for long term opportunities to harvest rainwater from roof and pavement.
- Consider a cistern collection system on a zoned basis for irrigation support in key areas.
- Review sheet flow of water from pathways and terraces and identify any areas of wash out to determine need to re-grade or add collection devices.
- Use permeable pavers for all new pavement in pedestrian areas to capture water and recharge ground water.

Irrigation

In order to maintain a healthy landscape on the campus most ornamental plantings and heavy use turf areas require irrigation in the summer season. Capturing storm water is critical to minimizing potable water consumption.

Guideline:
Update and expand a comprehensive irrigation management strategy that builds upon efforts to collect rain water for reuse through a series of cisterns on the campus in support of planting irrigation.

Recommendation:

- Investigate rainwater collection systems around the campus to support adjacent landscape.
- Expand use of drip irrigation over sprinklers.
- Use more native and xeriscape plant materials to reduce water need and demand.

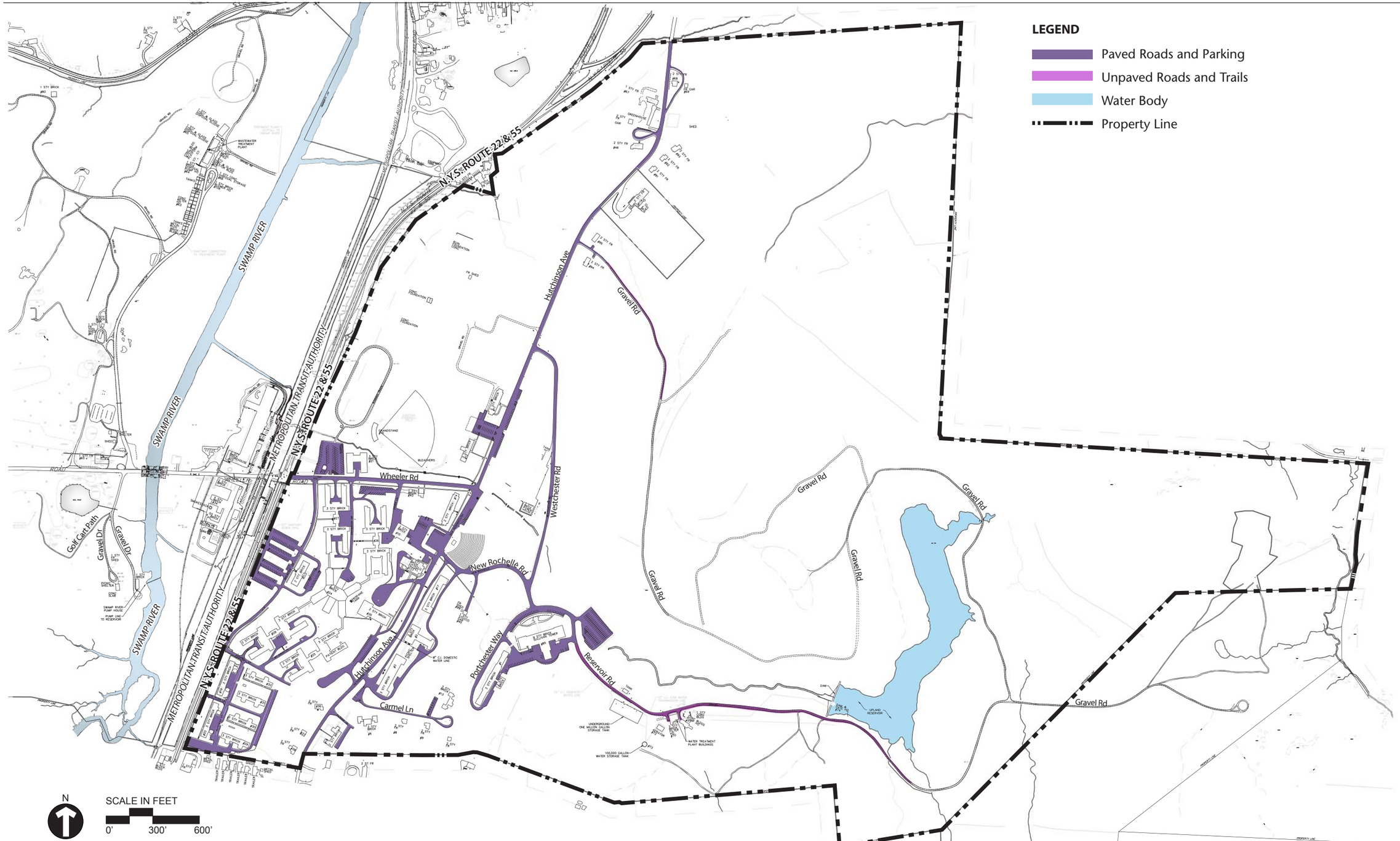
Lighting

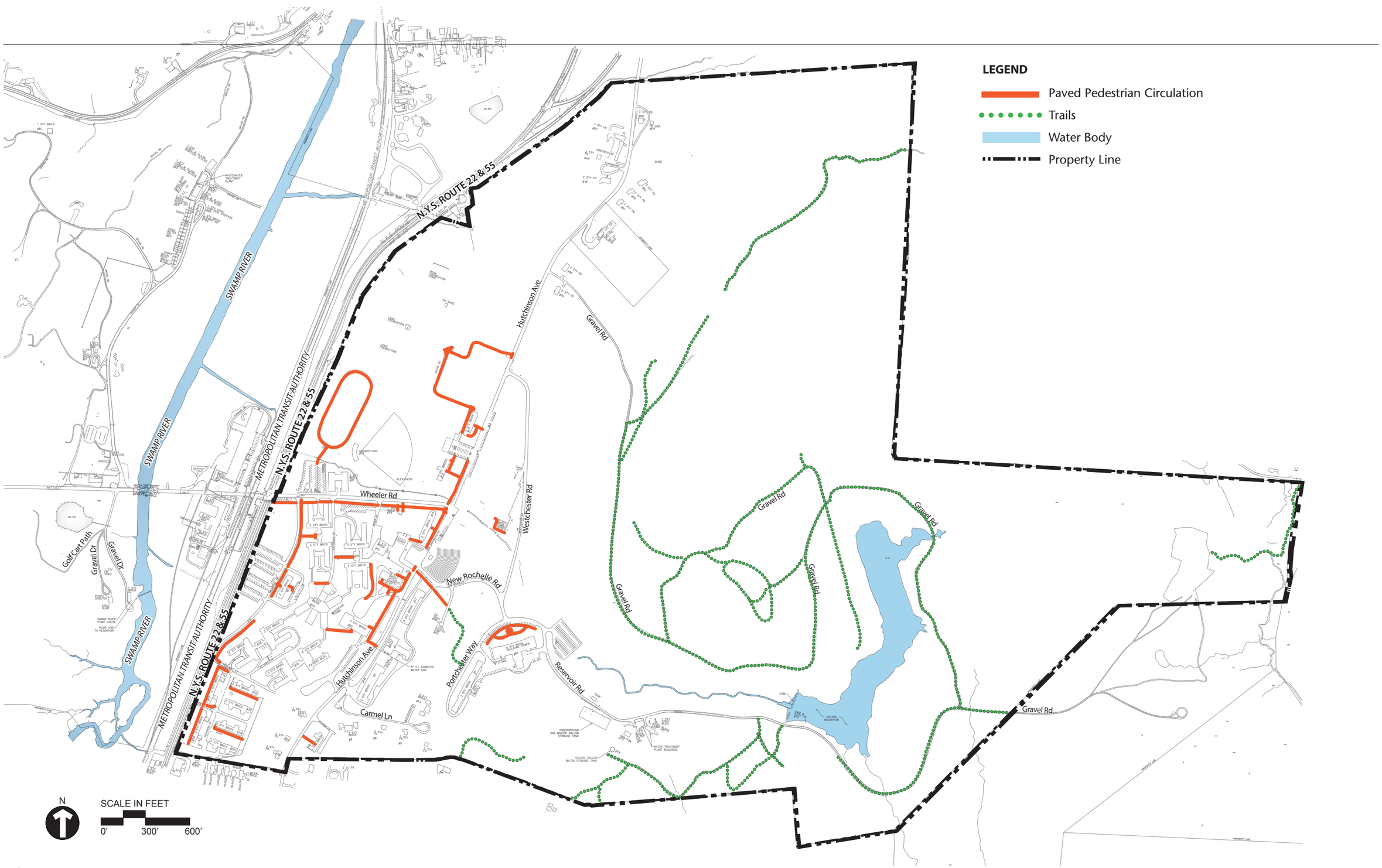
Lighting plays an important role in the security of the campus as well as an influence upon the aesthetic quality of the landscape – both in fixture style and lighting characteristics. There are multiple lighting fixture types on the campus which provide a basic element of lite connections. However, there is some concern that lighting in and around the campus will require upgrades and expansion.

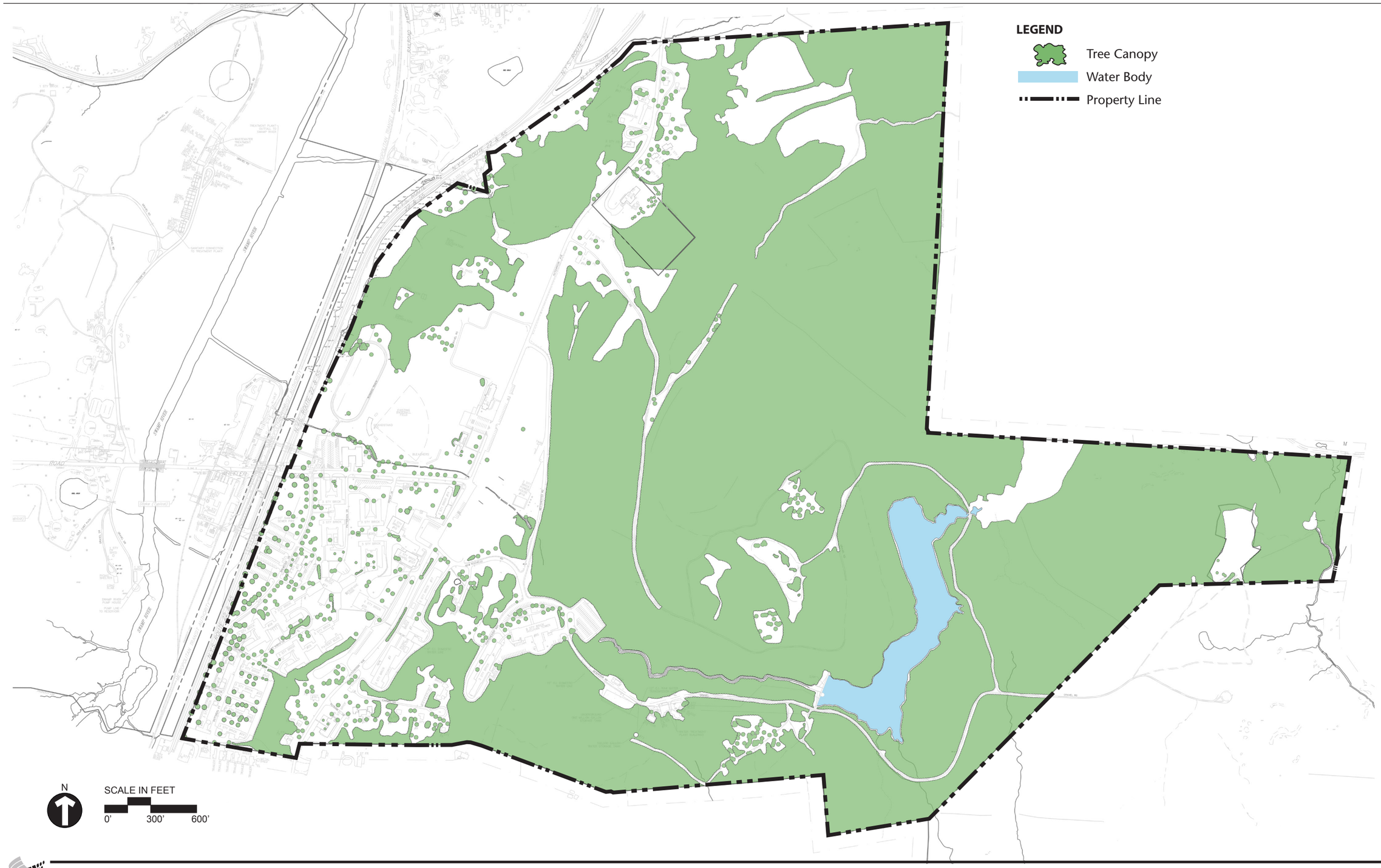
Guideline:
Review current lighting equipment photometrics and incorporate new technologies to upgrade the quality of lighting on the campus and throughout the campus.

Recommendation:

- Identify light levels desired and review equipment options. Identify areas that need improvement in light levels to enhance safety and security as building improvement phasing is implemented.
- Review existing lighting equipment and photometrics. Replace current lighting equipment as opportunity allows to improve aesthetics, photometrics, and technology.
- Identify alternatives to current light fixture types that support night sky strategies and energy conservation (including LED and Solar).


LEGEND
Paved Roads and Parking
Unpaved Roads and Trails
Water Body
Property Line
SWAMP RIVER
N.Y.S. ROUTE 22 & 55
METROPOLITAN TRANSIT AUTHORITY
Hutchinson Ave
Gravel Rd
Wheeler Rd
Westchester Rd
New Rochelle Rd
Portchester Way
Reservoir Rd
Carmel Ln
Golf Cart Path
Gravel Dr
WASTEWATER TREATMENT PLANT
GRANDSTAND
BLEACHERS
GREENHOUSE
SHED
WATER TREATMENT PLANT BUILDING
UNDERGROUND ONE MILLION GALLON STORAGE TANK
100,000 GALLON WATER STORAGE TANK
UPLAND RESERVOIR
DAM
PROPERTY LINE
N
SCALE IN FEET
0'
300'
600'


LEGEND
Paved Pedestrian Circulation
Trails
Water Body
Property Line
N.Y.S. ROUTE 22 & 55
SWAMP RIVER
METROPOLITAN TRANSIT AUTHORITY
Hutchinson Ave
Gravel Rd
Wheeler Rd
Westchester Rd
New Rochelle Rd
Portchester Way
Reservoir Rd
Carmel Ln
Golf Cart Path
Gravel Dr
UPLAND RESERVOIR
N
SCALE IN FEET
0'
300'
600'



vhb

DRAFT DOVER GREENS LANDSCAPE MASTER PLAN
Dover, New York

Existing Tree Canopy

Exhibit
3

Legend

- ACOE WETLANDS
- NYSDEC WETLANDS
- ACOE AND NYSDEC WETLAND
- ISOLATED, POTENTIALLY UNREGULATED WETLANDS
- BOUNDARY OF NYSDEC 100–FOOT ADJACENT AREA

Notes

1. BOLDED FLAGS AND LINES INDICATE WETLANDS AND STREAMS DELINEATED BY VHB ON JULY 24, 2015.
2. ALL OTHER WETLAND/STREAM BOUNDARY DELINEATED BY EVANS ASSOCIATES ENVIRONMENTAL CONSULTING IN NOVEMBER 2006.

N

SCALE IN FEET

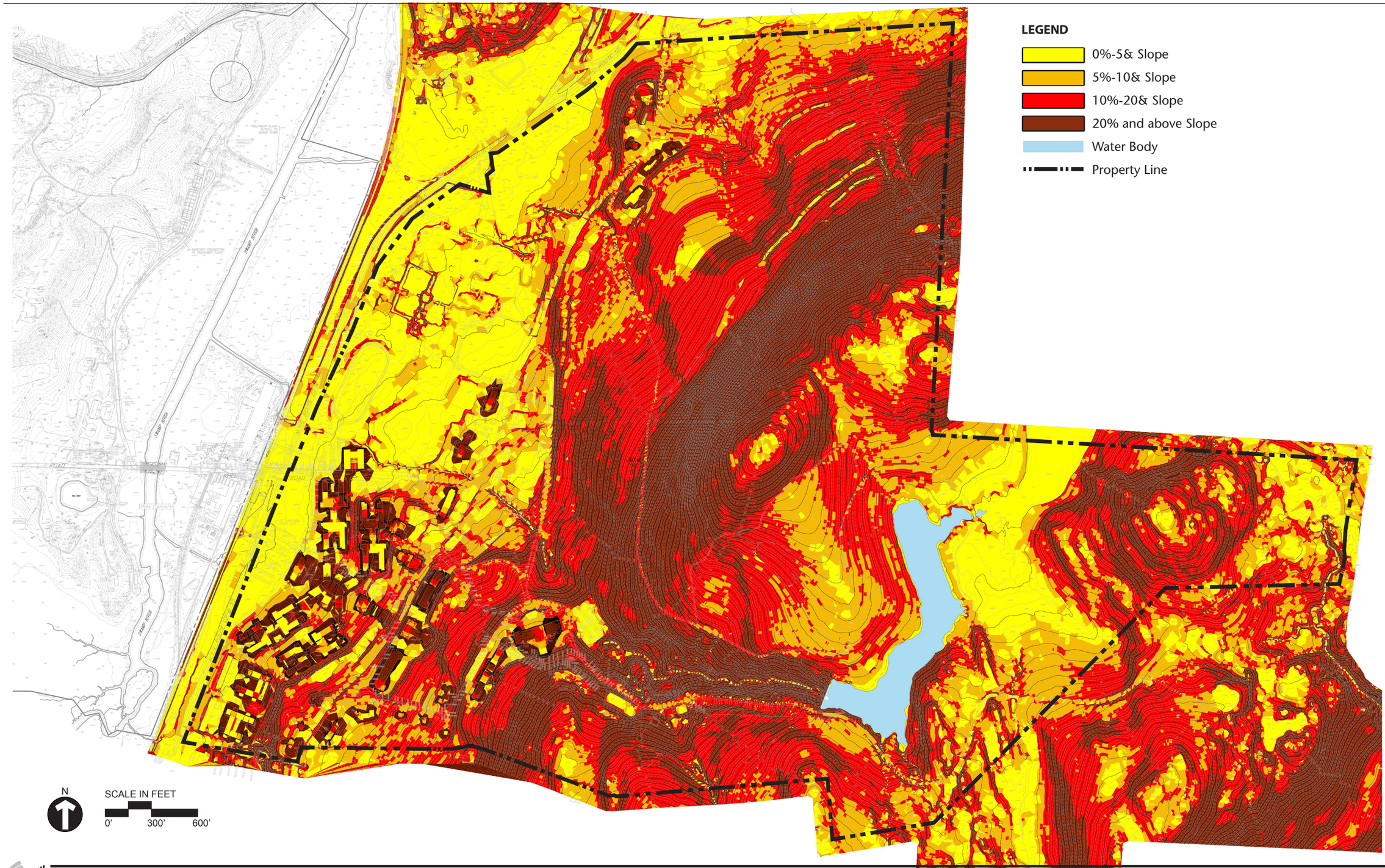
0' 300' 600'

vhb

DRAFT DOVER GREENS LANDSCAPE MASTER PLAN
Dover, New York

Existing Wetlands and Buffers

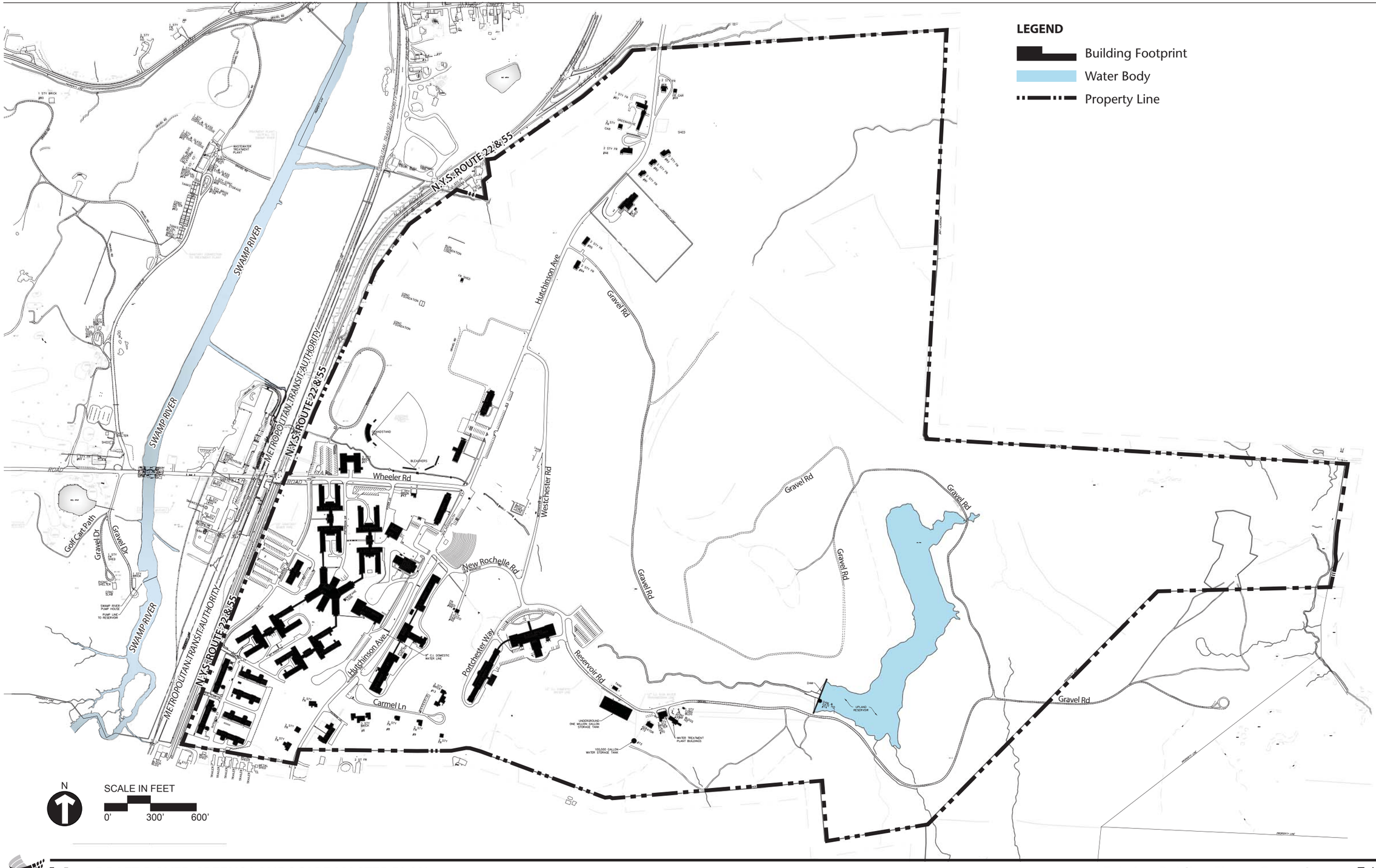
Exhibit
4

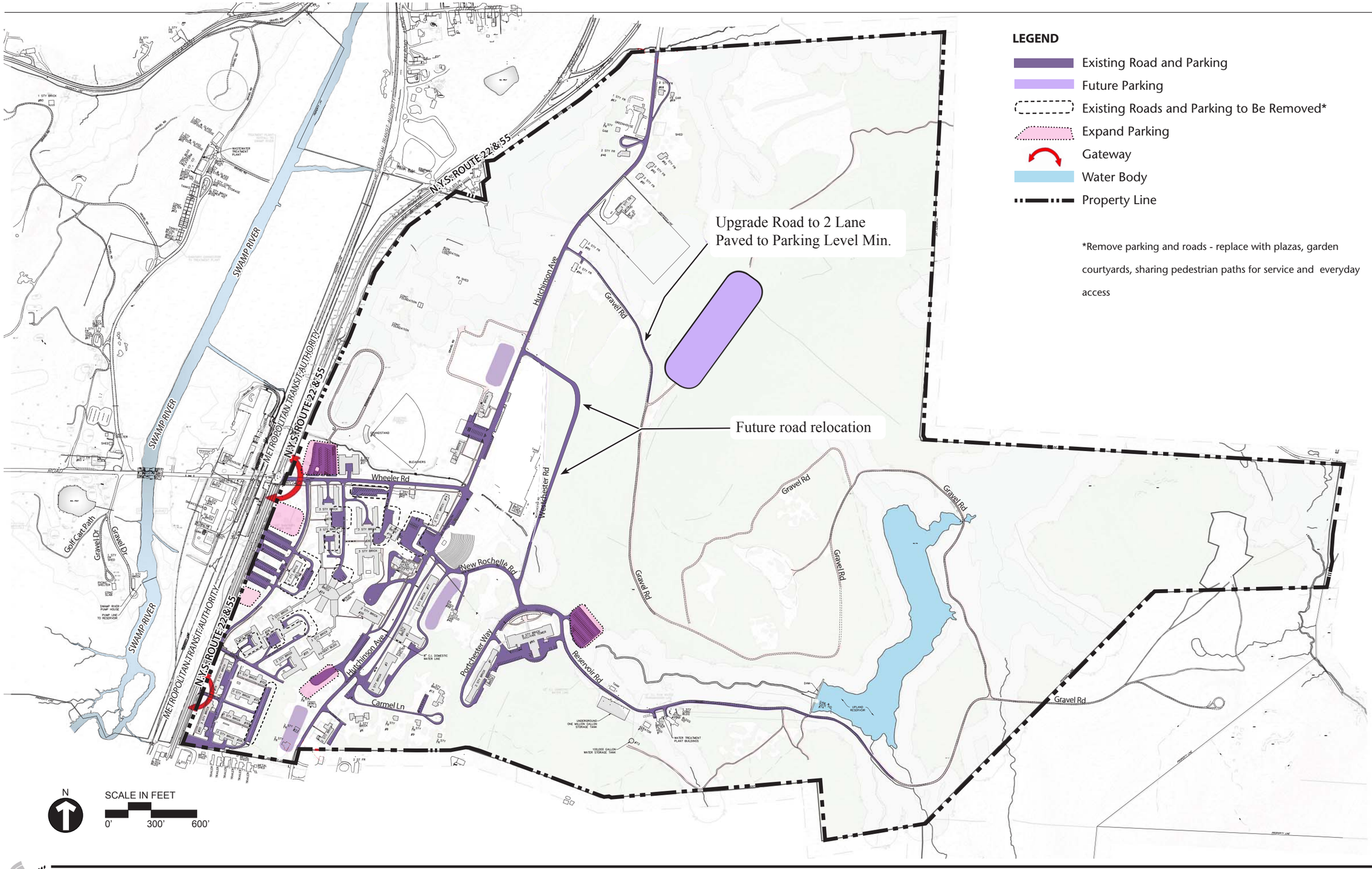


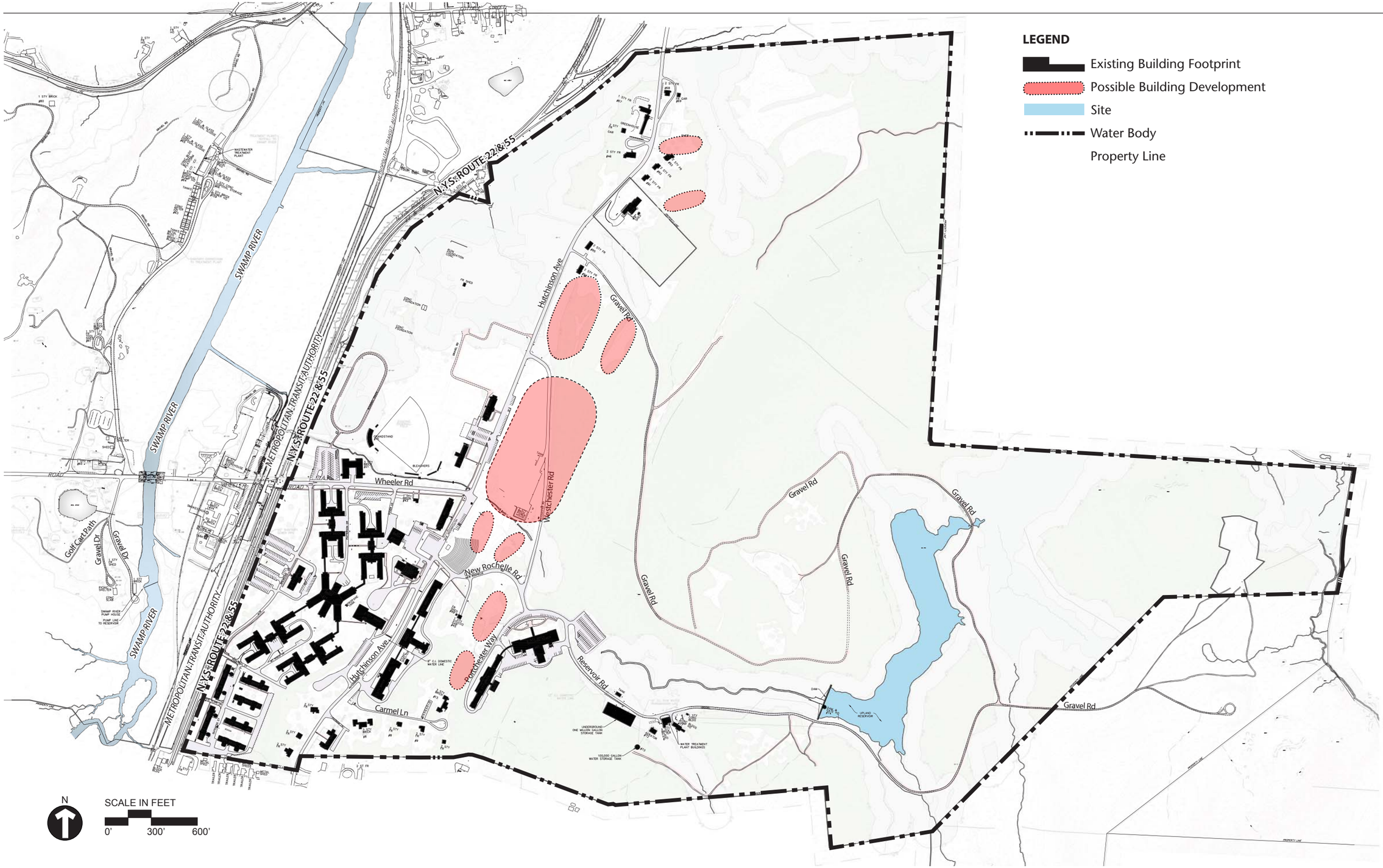
DRAFT DOVER GREENS LANDSCAPE MASTER PLAN
Dover, New York

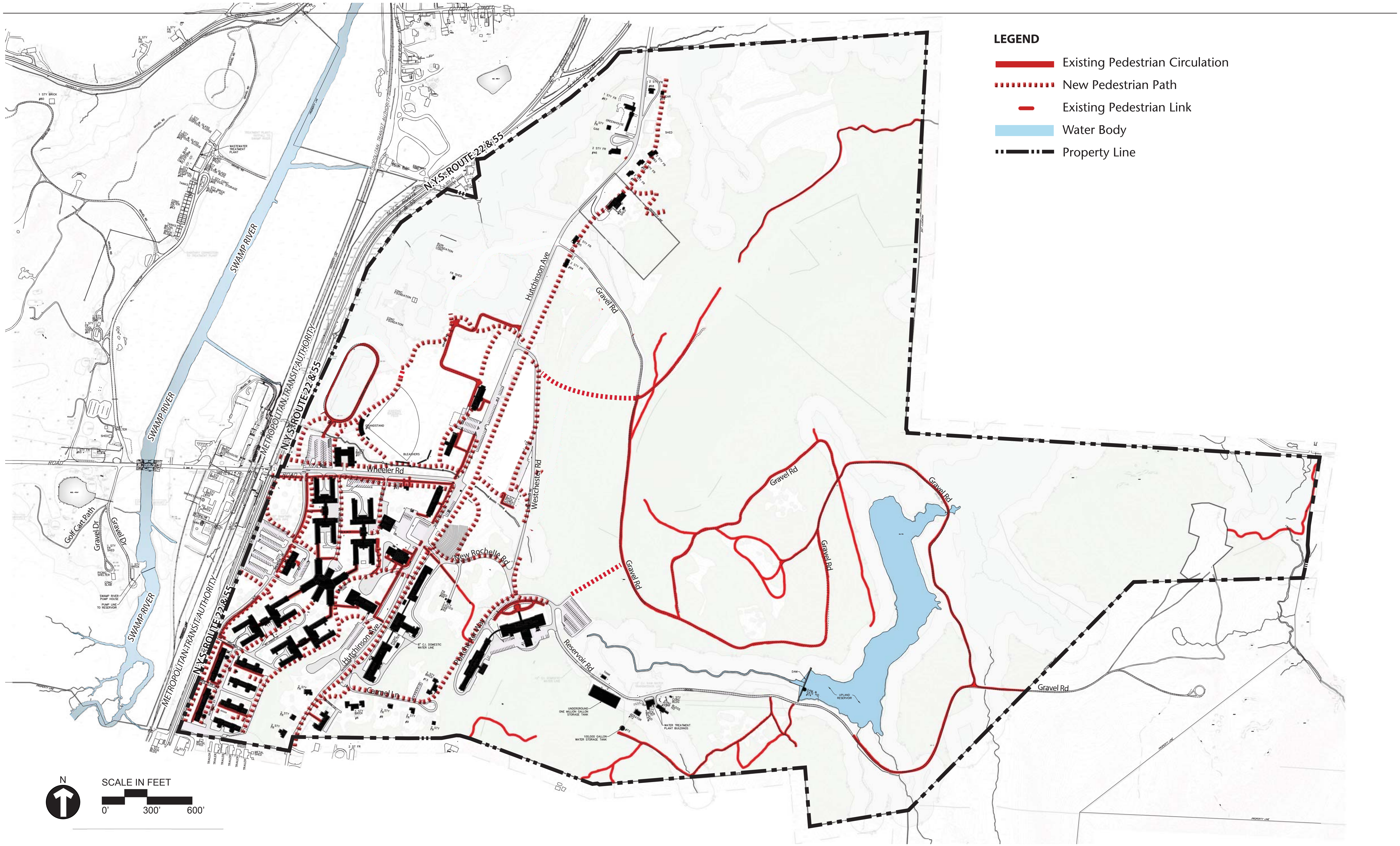
Existing Slope Analysis

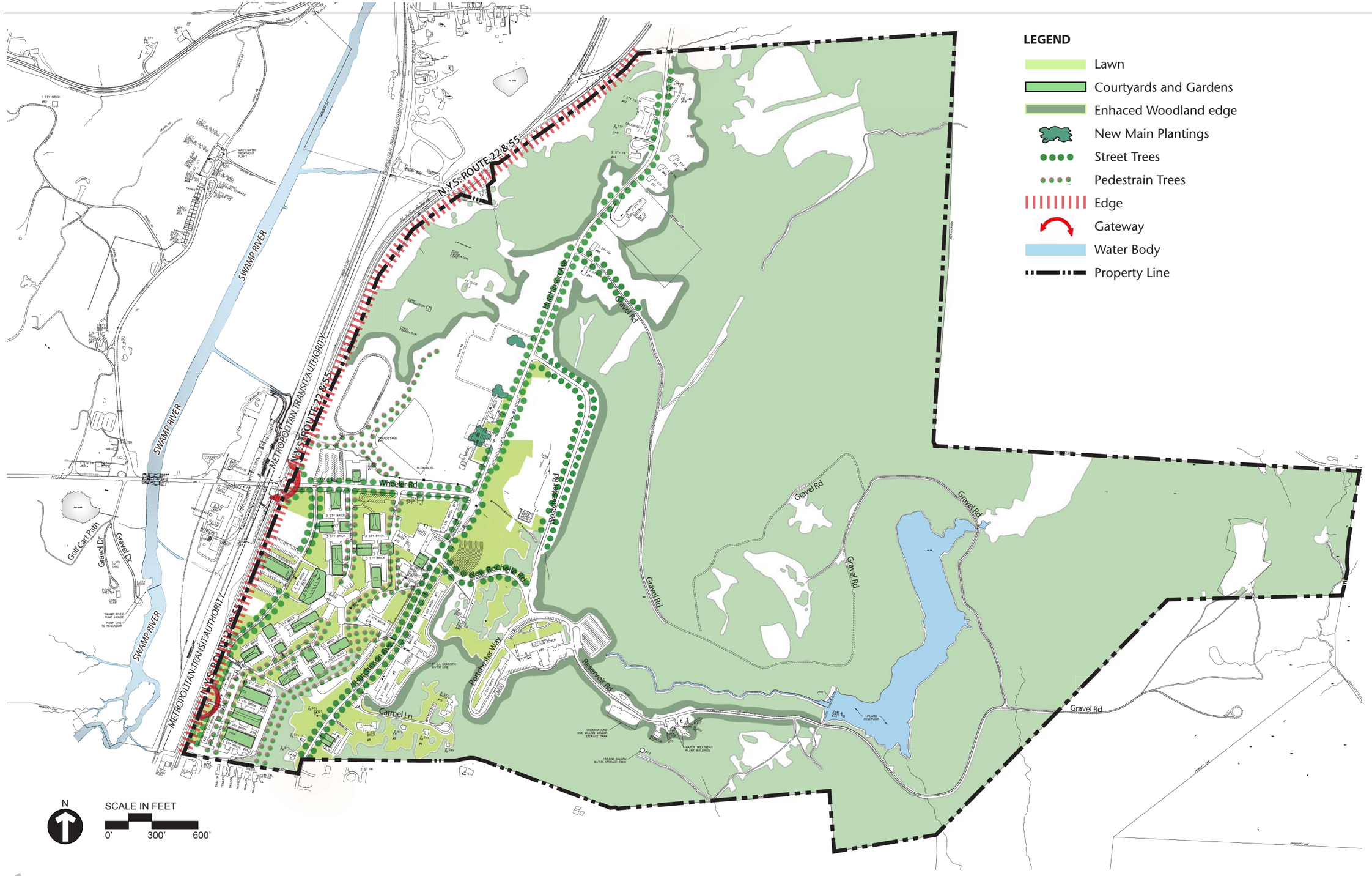
Exhibit
5

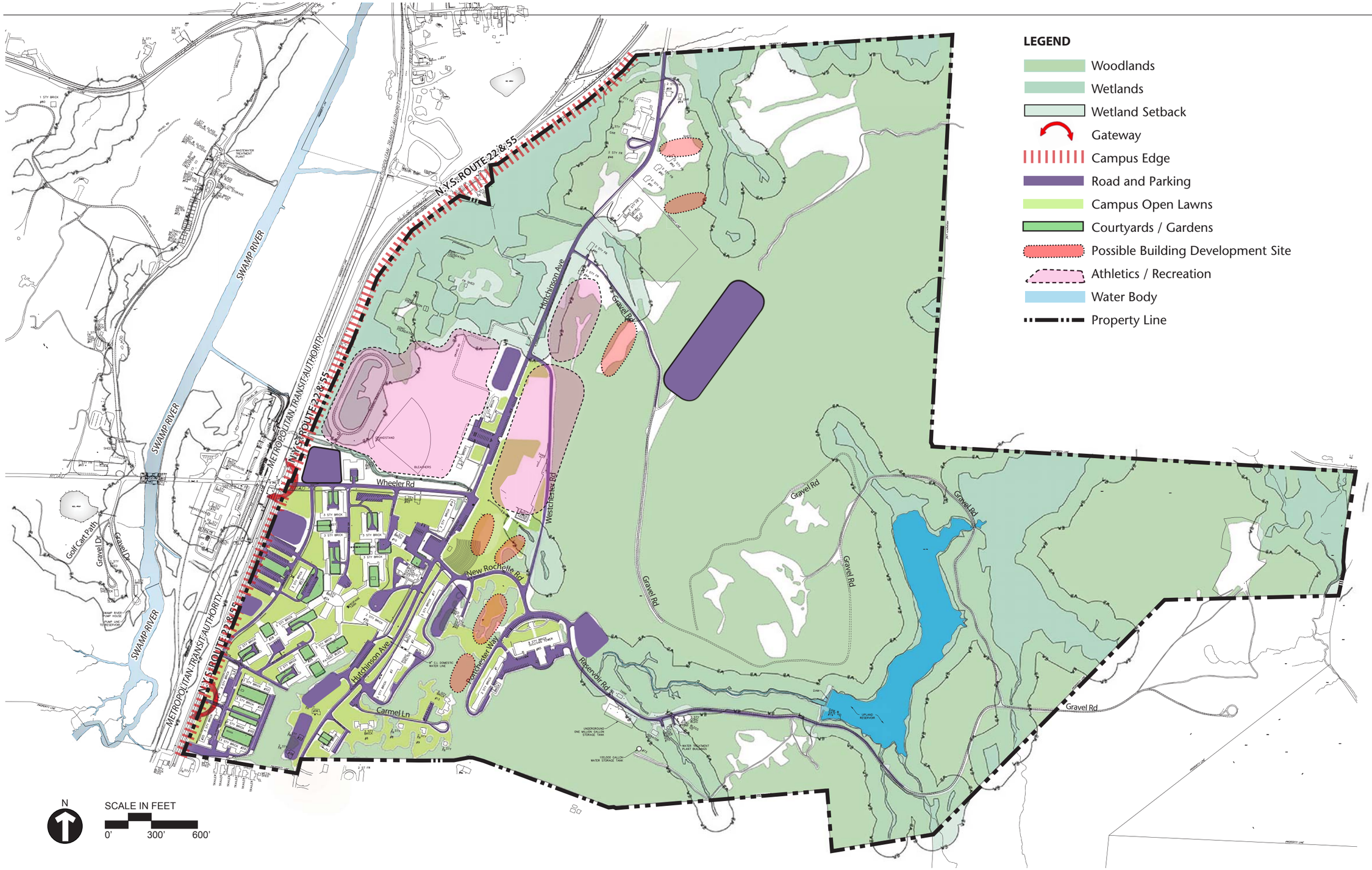

LEGEND
Building Footprint
Water Body
Property Line
N.Y.S. ROUTE 22 & 55
SWAMP RIVER
METROPOLITAN TRANSIT AUTHORITY
Hutchinson Ave
Gravel Rd
Wheeler Rd
Westchester Rd
New Rochelle Rd
Portchester Way
Reservoir Rd
Carmel Ln
Golf Cart Path
Gravel Dr
WASTEWATER TREATMENT PLANT
GRANDSTAND
BLEACHERS
UNDERGROUND ONE MILLION GALLON STORAGE TANK
100,000 GALLON WATER STORAGE TANK
WATER TREATMENT PLANT BUILDINGS
UPLAND RESERVOIR
DAM
PROPERTY LINE
N
SCALE IN FEET
0'
300'
600'


LEGEND
Existing Road and Parking
Future Parking
Existing Roads and Parking to Be Removed*
Expand Parking
Gateway
Water Body
Property Line
*Remove parking and roads - replace with plazas, garden courtyards, sharing pedestrian paths for service and everyday access
Upgrade Road to 2 Lane Paved to Parking Level Min.
Future road relocation
N
SCALE IN FEET
0'
300'
600'
N.Y.S. ROUTE 22 & 55
METROPOLITAN TRANSIT AUTHORITY
SWAMP RIVER
Hutchinson Ave
Gravel Rd
Wheeler Rd
Westchester Rd
New Rochelle Rd
Portchester Way
Reservoir Rd
Carmel Ln
Golf Cart Path
Gravel Dr
WASTEWATER TREATMENT PLANT
WATER TREATMENT PLANT BUILDING
UPLAND RESERVOIR
100,000 GALLON WATER STORAGE TANK
PROPERTY LINE


LEGEND
Existing Building Footprint
Possible Building Development
Site
Water Body
Property Line
N.Y.S. ROUTE 22 & 55
SWAMP RIVER
METROPOLITAN TRANSIT AUTHORITY
Hutchinson Ave
Gravel Rd
Wheeler Rd
Westchester Rd
New Rochelle Rd
Ponchester Way
Reservoir Rd
Carmel Ln
Golf Cart Path
Gravel Dr
UPLAND RESERVOIR
WATER TREATMENT PLANT BUILDINGS
100,000 GALLON WATER STORAGE TANK
UNDERGROUND ONE MILLION GALLON STORAGE TANK
WASTEWATER TREATMENT PLANT
N
SCALE IN FEET
0'
300'
600'


LEGEND
Existing Pedestrian Circulation
New Pedestrian Path
Existing Pedestrian Link
Water Body
Property Line
N.Y.S. ROUTE 22 & 55
METROPOLITAN TRANSIT AUTHORITY
SWAMP RIVER
Hutchinson Ave
Gravel Rd
Westchester Rd
Wheeler Rd
New Rochelle Rd
Reservoir Rd
Carmel Ln
Golf Cart Path
Gravel Dr
SCALE IN FEET
0'
300'
600'
N


LEGEND
Lawn
Courtyards and Gardens
Enhaced Woodland edge
New Main Plantings
Street Trees
Pedestrain Trees
Edge
Gateway
Water Body
Property Line
N.Y.S. ROUTE 22 & 55
METROPOLITAN TRANSIT AUTHORITY
SWAMP RIVER
Wheeler Rd
Gravel Rd
Golf Cart Path
Gravel Dr
New Rochelle Rd
Carmel Ln
Reservoir Rd
Porchester Way
Robinson Dr
N
SCALE IN FEET
0'
300'
600'


LEGEND
Woodlands
Wetlands
Wetland Setback
Gateway
Campus Edge
Road and Parking
Campus Open Lawns
Courtyards / Gardens
Possible Building Development Site
Athletics / Recreation
Water Body
Property Line
N.Y.S. ROUTE 22 & 55
SWAMP RIVER
METROPOLITAN TRANSIT AUTHORITY
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Gravel Rd
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Westchester Rd
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Portchester Way
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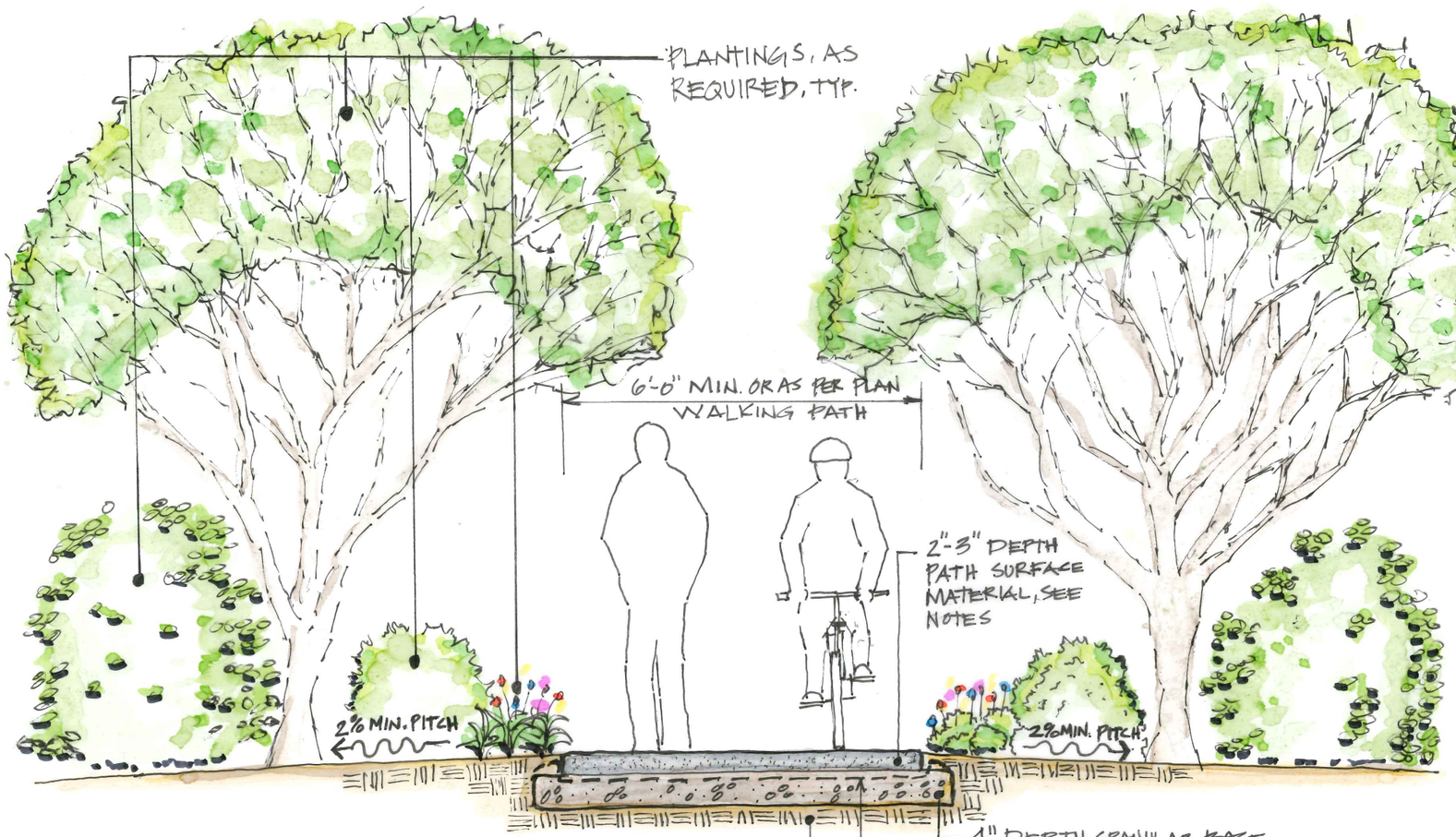

NOTES:

1. WALKING PATH SURFACE MATERIAL SHALL BE EITHER:
   - A. COARSE WOOD CHIP MULCH, FREE OF PLANT DEBRIS (I.E. LEAVES, ROOTS, SOIL, ETC.)
   - B. ENGINEERED WOOD FIBER PRODUCT, INSTALLED AS PER MANUFACTURERS SPECIFICATIONS
   - C. STONE DUST, WETTED & MACHINE-COMPACTED
2. GRANULAR BASE REQUIRED AS PER SUB SOIL DRAINAGE CONDITIONS.
3) LANDSCAPE PLANTINGS AS PER PLANTING PLAN

TYPICAL WALKING PATH

07/16

NTS