

EXHIBIT 1

SCOPE OF WORK

CONTRACT VMSR-16 - VEGETATION MANAGEMENT FOR STREAM RESTORATIONS

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PROJECT SCOPE OF SERVICES

1. Project Overview

The City of Durham has several stream restoration and stormwater quality projects within City limits that serve to restore and protect its urban streams and riparian resources. Conservation easements are granted to the state of North Carolina in order to build or protect these projects. In accordance with the conservation easements, it is the City's responsibility to ensure continued protection and maintenance of the conservation easement areas associated with these projects. The City has identified that control of invasive and/or nuisance vegetation within these area is needed in order to preserve the riparian resources and to ensure that the water quality aspects of the stream restoration function properly. Proliferation of these plants can degrade the quality of the wetland and riparian resources in the easement areas, alter their natural condition, and interfere with the ecological functions of the easement areas. The contract will address this need through the management of invasive and/or nuisance vegetation within the conservation easement areas of these stream restoration projects.

The City requires the removal and chemical treatment ("Vegetation Management") of specified invasive and/or nuisance vegetation species ("Target Species") from within the conservation easement areas of several stream restoration projects ("Project Areas"). Vegetation Management also includes "Vegetation Planting" work of furnishing, installing, and maintaining vegetation. Vegetation Planting involves planting bed and seedbed preparation, initial planting, plant establishment, seed dispersal, mulching, and replacement planting, as needed. Project Areas are located on City-owned property inside the City limits of Durham. Vegetation Management services are expected to occur bi-annually ("Treatment Seasons") for three consecutive years from the date of the contract for a total of six (6) Treatment Seasons.

Under Items 1 – 6 the contractor shall provide Vegetation Management of specified Target Species (Table 1) in the Project Areas as described and as depicted in Figures 1 - 6. Contractor shall accurately identify all Target Species and non-Target Species of similar appearance, including native species. Contractor shall employ approved methods for vegetation management, including mechanical and hand-clearing, as well as the legal, appropriate, and sufficient application of chemical herbicides in order to achieve the performance level. Item 7 is for Vegetation Planting within the riparian buffer along approximately 800 feet (0.6 acres) of the Ellerbe Creek stream restoration project at the Hillandale Golf Course. Planting specifications are included in Appendix C. Vegetation Planting work does not reoccur annually. The location of Vegetation Planting is subject to change; site-specific conditions will be considered and modifications to the specifications may be authorized by the City Project Manager in the event of such changes.

2. Project Areas

The Project Areas are the conservation easements of several stream restoration projects within the City of Durham. The conservation easement areas are generally within the vegetated riparian buffer of the stream. Several of the areas are adjacent or in the vicinity of stream restoration projects.

The maps provided as Figures 1, 2, 3, 4a, 4b, 5 and 6 are representations based on GIS data, not certified survey data; ground-based reference features must be utilized to confirm project limits and boundaries. The specified acreages below are estimates of the Project Areas where Vegetation Management services are to be rendered (approximately 35.3 acres total). The City of Durham assumes no

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responsibility for errors arising from use or misuse of these maps. Ground-based reference features include "No Mow" and "Conservation Easement" signs, posts, and/or colored bollards which demark the Project Areas covered by this contract. Some areas are not marked by signs; other features and methods may be required to identify project limits.

- i. *Forest Hills Park* - 1639 University Drive, Durham, NC 27707 - Approximately 8.0 acres. Vegetation Management to occur within conservation easement areas along Third Fork Creek. Figure 1.
- ii. *Long Meadow Park* - 917 Liberty Street, Durham, NC 27701 - Approximately 1.8 acres. Vegetation Management to occur within conservation easement areas along Goose Creek. Figure 2.
- iii. *Indian Trail Park* – 1701 Albany Street, Durham, NC 27705 - Approximately 1.3 acres. Vegetation Management to occur within conservation easement areas along Ellerbe Creek. Figure 3.
- iv. *Hillandale Golf Course* - 1600 Hillandale Road, Durham, NC 27705 - Approximately 15 acres. Vegetation Management to occur within conservation easement areas along Ellerbe Creek. Vegetation Planting within riparian area of conservation easements along stream restoration project (approximate length 800 feet ; approximate area 1.6 acre). Figures 4a and 4b.
- v. *Westover Park & Guess Road Tract* – 1900 Maryland Avenue, Durham, NC 27705 - Approximately 1.7 acres. Vegetation Management to occur within conservation easement areas along Ellerbe Creek. Figure 5.
- vi. *Northgate Park* – 300 West Club Blvd, Durham, NC 27704 – Approximately 7.6 acres. Vegetation Management to occur within conservation easement areas and pocket wetlands along Ellerbe Creek.

The City may choose to include additional locations for Vegetation Management services, Vegetation Planting services, or other environmental restoration work.

3. Target Species

The list of species in Table 1 represents the invasive and/or nuisance vegetation to be targeted for Vegetation Management under this contract. **Priority Target Species are listed in bold font.** These are species known to be present and/or dominant at project sites. Not all species have been observed at each Project Area. Non-priority target species may be treated if observed at a project site. The intent of differentiating between Priority and non-priority target species is to provide the Contractor with flexibility to treat non-priority species, if observed, to help prevent their establishment. The Contractor is to inform the City Project Manager if non-priority species are observed to be increasing in numbers or dominance within the Project Area.

4. Performance Level and Treatment Seasons

Contractor shall achieve a performance level for Vegetation Management within the Project Areas in which at least 80% removal, herbicide coverage (as evidenced through observation during inspection of

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blue dye), and/or mortality of Priority Target Species is realized by the end of the Treatment Season as determined by the City. Contractor shall conduct Vegetation Management in each Project Area during two Treatment Seasons in a year; **“Spring” Vegetation Management is to occur between the months of March and June and “Fall” Vegetation Management is to occur between the months of August and October.** Several months are provided for each Treatment Season in order to accommodate the inherently variable weather in this region during vernal and autumnal equinoxes. The number of discrete treatment service events required and/or the number of personnel necessary to achieve the performance level for each Project Area per Treatment Season may vary but will not incur additional costs to City. The City Project Manager will work with the Contractor to schedule Vegetation Planting work upon notice of award. The amount and location of Vegetation Planting will be determined prior to initiation of this Task. Performance of Vegetation Planting will be based on adherence to the specifications included in Appendix C. Site-specific conditions at the time of planting will be considered and modifications to the specifications may be authorized by the City Project Manager.

5. Inspections

All Work shall be subject to inspection by the City Project Manager, a representative of the Stormwater and GIS Services Division of the Public Works Department, and/or a representative of the General Services Department – Urban Forestry Division at any time. All Work shall be inspected to verify achievement of performance level after submittal of reporting documentation and prior to invoicing. Observations made during field inspection and professional judgment will be used to complete Inspection Reports to document the level of performance for a Treatment Season. Inspection Reports for a Project Area will be signed by the City upon acceptance of Contractor’s work for a Treatment Season in the Project Area. The Contractor is authorized to invoice the City for Work upon receipt of the signed Inspection Report. Contractor shall furnish the inspectors with the necessary facilities and assistance for carrying out their duties.

6. Reporting Requirement

Contractor shall utilize an “Herbicide Daily Log Form” after Vegetation Management services are rendered at each Project Area. Contractor shall use as many forms as necessary to describe daily activities within each Project Area. Contractor shall provide maps, sketches, and/or descriptions identifying locations of Target Species treated at each Project Area and additional documentation and photography as necessary to demonstrate Work performed. Contractor shall submit the documentation to the City Project Manager after achievement of the specified performance level for a Project Area. Contractor is to complete the Herbicide Daily Log Form which includes, dates of activity, species treated, type of treatment method, type and amount of herbicide used (if any), weather conditions present at the time of the treatment, and any additional relevant notes. Contractor may use a different format of the Herbicide Daily Log Form only if it is preapproved by the City Project Manager. Reporting for Vegetation Planting services will include submittal of a bill of lading for material and ‘as-built’ sketch of plants in the Project Area. The City Project Manager reserves the right to request additional information and materials including but not limited to payroll records, receipts for materials used, and additional field records or maps. Payments to Contractor will not be made until after all report and requested information has been received and approved by the City Project Manager.

7. Methods

This section contains approved methods for manual or mechanical removal and chemical treatment of Target Species under this contract. The Contractor shall furnish equipment and labor necessary to

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complete the work, including but not limited to grubbers, pruners, loppers, saws, rakes, chippers, backpack sprayers, personal protective equipment, chemical containment, signage, and transportation. Contractor shall not be permitted to blade, doze, or slice the soil surface to remove vegetation. Soil disturbance shall be minimized and prevented to the extent possible.

- i. Manual methods may include pulling, cutting, grubbing, and other mechanical means of removing the roots, seeds, corms, or other propagules of Target Species. All fruits, seeds, and severed plant parts that have the ability to regenerate shall be bagged and disposed of offsite in a sanitary landfill to prevent seed dispersal. Cut vines that do not have fruit or have not gone to seed may be left hanging in trees. Treatment debris that does not contain mature fruits or other regenerative plant materials may be left within the Project Area in small, scattered piles not to exceed 40 square feet each. The stockpile should not block access paths, roads, sidewalks, etc. Any offsite disposal of material must be done in a lawful manner. Chipping onsite is allowed for material that has not gone to seed. Chipped materials may be disposed onsite at locations approved by the City Project Manager.
- ii. Chemical treatments must include blue-tinted water-soluble dye. Failure to use dye may result in re-treatment since visual inspection of treated areas will be critical for determining performance level and treatment coverage if and when mortality or removal of Target Species is not evident.
- iii. Approved chemical herbicide treatment methods include foliar spray, cut-stump treatment, and basal bark treatment. Alternative methods must be approved by the City Project Manager in writing, prior to use. Contractor shall use professional grade backpack sprayers to selectively apply herbicides in accordance with the manufacturer specifications and application rates, label directions, and the specifications listed in this document. The choice of chemical shall be based on the application method and specific Target Species. Contractor shall use aquatic safe formulations whenever possible. Contractor shall adhere to specific product label for limiting meteorological or weather factors, such as ambient temperature, wind, or precipitation, which may prohibit applications during certain conditions.
- iv. For foliar spray method, herbicide is to be applied until the leaf is wet but not dripping onto the ground. Wind precautions are to be observed to prevent drift onto non-Target Species. For cut-stump treatment method, stems and stumps must be cut to a stubble height of 6 inches. Once cut, an appropriate herbicide shall be applied immediately.
- v. Contractor shall take measures to avoid and minimize the removal, injury, or damage to any non-target vegetation and adjacent property by selection of the appropriate method of vegetation management for site conditions. In accordance with arboriculture standards, collateral damage of non-Target Species shall be minimized by pruning or removal of affected portions to prevent damage to the root system.

8. Schedule Coordination

Contractor's operations shall be planned in a manner that avoids conflicting with scheduled events at the Project Areas. Contractor is to coordinate with the City Project Manager for scheduling operations and to ensure access to locked gates, drop chains, or bollards as needed. Access to potable water may

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not be available at every project site; the contractor must plan accordingly. Contractor shall provide a written schedule of daily activities (including days and times of operations) to the City Project Manager at least two weeks prior to beginning work. All activities shall be performed in accordance with the approved schedule, changes to scheduling must be made in writing to the City Project Manager. Scheduling may vary due to meteorological conditions or other unforeseen events, but it is the responsibility of Contractor to adhere to this contract, to North Carolina Department of Agriculture and Consumer Services and United States Environmental Protection Agency regulations, and to the manufacturer's instruction at all times to ensure safe and effective application of herbicides. Operations shall be scheduled and conducted to minimize erosion of soils to prevent siltation and/or excessive discharge of sediment into streams, rivers, and impoundments.

9. Licenses, Permits, and Certifications

Contractor shall utilize a North Carolina licensed and registered pesticide applicator with current and valid certification in Category A (Aquatic Pest Control) and Category L (Ornamental and Turf Pest Control). Any fees or charges for licenses, permits, registrations, and/or certifications required for the project shall be paid by Contractor.

10. Environmental Safety

Ensuring the safety of the public is critical during Contractor operations. The Contractor shall be responsible for all applicable safety and environmental considerations with regards to the application of any herbicides and operation of equipment under this contract. The Contractor shall be responsible for any act or omission by it or its employees or agents causing any injuries to persons or any damages to public or private property.

- i. Contractor is responsible for the safe transportation and handling of all chemicals and is expected to comply with label instructions and Best Management Practices. Contractor shall adhere to the principals of Integrated Pest Management and is to use appropriate herbicide application Best Management Practices. The Contractor is responsible for the prevention of pollution, contamination, and spillage into streams and adjacent property of fuel, oil, chemicals, debris, sediment, or other material. Precautions shall be taken by the Contractor to prevent spills, accidents, and injury including appropriate secondary containment of chemicals and protection of chemicals and equipment from theft or tampering. Herbicides used on this contract may not be left unattended or stored at the site overnight. Every effort shall be made to prevent and contain spills from contaminating water bodies and off-site areas. Any chemical spills are to be cleaned immediately. Contractor must notify the City Project Manager and appropriate Park- or Golf Course-staff immediately in the case of chemical spills or any significant pollution. Appropriate state and local officials are to be notified if necessary. Chemical spills shall be reported to the City's Stormwater Quality Hotline (919) 560-SWIM immediately.
- ii. Contractor shall conduct operations so as to minimize physical and chemical damage to all turf, roads, road banks, trails, cart paths, bridges, ditches, storm drains, culverts, other infrastructure and other improvements, landscaping, etc. in the Project Area. Any damage to Project Areas, adjacent property, infrastructure, and landscaping caused by Contractor, other than normal wear, shall be repaired at Contractor's expense. Remediation shall include but is not limited to removal of contamination and material, removal and

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- replacement of contaminated soil, replanting of vegetation, and payment of any associated fees, fines or other costs incurred. Any treatment that leads to damaged material or standing dead trees must be removed and properly disposed of as soon as is reasonably practicable at no additional cost to the City. Hazardous conditions shall be remediated immediately and the City Project Manager and appropriate Park- or Golf Course-staff are to be notified immediately.
- iii. Contractor shall adhere strictly to all OSHA regulations and chemical label requirements. Safety equipment and personal protective equipment appropriate for given site conditions must be used. Material Safety Data Sheets (MSDS) and labels for all chemicals in use shall be present in all work vehicles on site.
 - iv. No section of any street, cart-path, trail or access point shall be entirely blocked to traffic unless absolutely necessary. Access to fire hydrants shall not be hindered and fire hydrants must be kept free of obstructions at all times. Temporary crossings shall be provided by the Contractor as needed at no additional cost to the City. Temporary placement or storage of equipment is to be coordinated with the City Project Manager or Hillandale Golf Course Superintendent.
 - v. In the event of damage to significant areas of non-Target Species and/or land disturbances within the Project Areas, Contractor will work to restore vegetation, grade, and drainage patterns, as necessary. Specifications for seeding and planting restoration work will be based on those described in Appendix C. Site specific substitutions may be authorized by the City Project Manager, as appropriate.

11. Quality Assurance / Quality Control Plan

A Quality Assurance/Quality Control (QA/QC) plan shall be submitted to the City Project prior to any Work beginning for this contract. Proof of current North Carolina Pesticide Licensing and compliance with any other local, state, and federal regulations shall be included for staff conducting the work under this contract. Also provide a description of experience, education, and additional certifications of staff to demonstrate the ability to identify Target Species and to implement Best Management Practices of Integrated Pest Management. The QA/QC plan must describe general removal methods and chemical treatment methods proposed for use by the Contractor, including chemicals anticipated to be used. The QA/QC plan shall document communication procedures and describe on-site responsibility.

12. Signage

Contractor is to erect and maintain sufficient signs and barricades to alert the public and City staff about Vegetation Management Work conducted as part of this contract. Signage and/or barricades are required to remain in place during contractor operations, while equipment is in use, and until there is no longer a risk of physical harm or exposure to chemicals applied under this Contract to the public and City staff. Signs and/or barricades shall be posted with sufficient quantity and placement to demark a safe distance from the Work. In no case shall City of Durham be responsible for any failure of the Contractor to provide such warnings and precautions.

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At a minimum, the signage shall indicate:

“WARNING

HERBICIDE TREATMENT AREA. PLANTS IN THIS AREA HAVE BEEN TREATED WITH AN E.P.A. APPROVED
HERBICIDE TO CONTROL INVASIVE AND NUISANCE VEGETATION. PLEASE AVOID CONTACT.

DATE AND CONTACT INFORMATION OF CONTRACTOR STAFF AND CITY PROJECT MANAGER”

In addition to the City Signage Requirement, the Contractor shall abide by any additional signage and posting requirements as specified by the manufacturer and/or as indicated on the label of the chemical in use.

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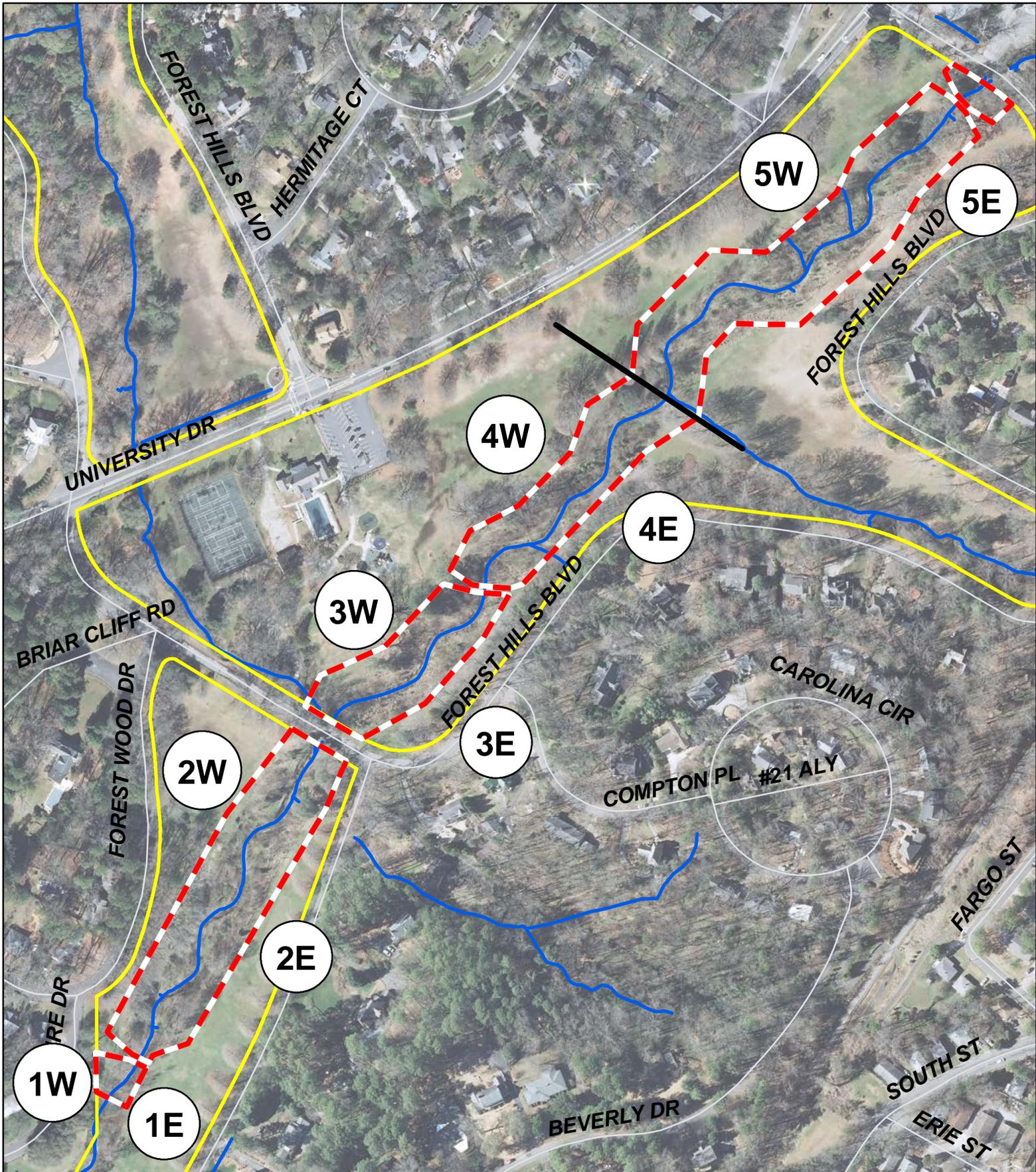
CONTRACT VMSR-16 - VEGETATION MANAGEMENT FOR STREAM RESTORATIONS

Table 1. List of Target Species.

Scientific Name	Common Name	Description
<i>Ailanthus altissima</i>	Tree of heaven	Tree
<i>Albizia julibrissin</i>	Mimosa	Tree, Shrub
<i>Alliaria petiolata</i>	Garlic mustard	Herb
<i>Ampelopsis brevipedunculata</i>	Porcelainberry	Vine
<i>Baccaris halimifolia</i>	Groundsel bush	Shrub
<i>Celastrus orbiculatus</i>	Oriental bittersweet	Vine
<i>Clematis terniflora</i>	Sweet autumn clematis	Shrub
<i>Cytisus scoparius</i>	Scotch broom	Perennial shrub
<i>Disoscorea spp.</i>	Air potato/Chinese yam	Vine
<i>Elaeagnus spp</i>	Autumn olive	Tree, Shrub
<i>Euonymus alatus</i>	Burning bush	Shrub
<i>Euonymus fortunei</i>	Wintercreeper	Perennial vine
<i>Glechoma hederacea</i>	Creeping charlie	Perennial herb
<i>Hedera helix</i>	English ivy	Perennial vine
<i>Hibiscus syriacus</i>	Rose of sharon	Shrub
<i>Humulus japonicus</i>	Japanese hops	Annual vine
<i>Ilex aquifolium</i>	English holly	Shrub, Tree
<i>Ipomoea spp.</i>	Morning glory	Annual vine
<i>Lespedeza bicolor</i>	Bicolor lespedeza	Shrub
<i>Lespedeza cuneata</i>	Chinese lespedeza	Annual herb
<i>Ligustrum lucidum</i>	Glossy privet	Shrub
<i>Ligustrum japonica</i>	Japanese privet	Shrub
<i>Ligustrum sinense</i>	Chinese privet	Shrub
<i>Lonicera japonica</i>	Japanese honeysuckle	Perennial vine
<i>Melia azedarach</i>	Chinaberry	Tree
<i>Microstegium vimineum</i>	Japanese stiltgrass	Annual grass
<i>Miscanthus sinensis</i>	Chinese silvergrass	Grass
<i>Nandina domestica</i>	Nandina	Shrub
<i>Polygonum cuspidatum</i>	Japanese knotweed	Perennial herb
<i>Paulownia tomentosa</i>	Princesstree	Tree
<i>Phyllostachys aurea</i>	Bamboo	Grass
<i>Pueraria montana</i>	Kudzu	Vine
<i>Pyrus calleryana</i>	Callery pear	Tree
<i>Rosa multiflora</i>	Multiflora rose	Shrub
<i>Rubus occidentalis</i>	Blackberry	Vine, Subshrub
<i>Sorghum halepense</i>	Johnson grass	Grass
<i>Triadica sebifera</i>	Chinese tallow	Tree
<i>Toxicodendron radicans</i>	Poison ivy	Perennial vine
<i>Vinca spp.</i>	Periwinkle	Vine
<i>Wisteria spp.</i>	Wisteria	Vine

Priority Target Species appear in bold. These are species that are known to be present or are becoming established at project sites. Not all Target Species are present at each Project Area.

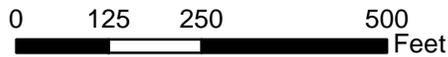
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Imagery from 2013 orthophotography

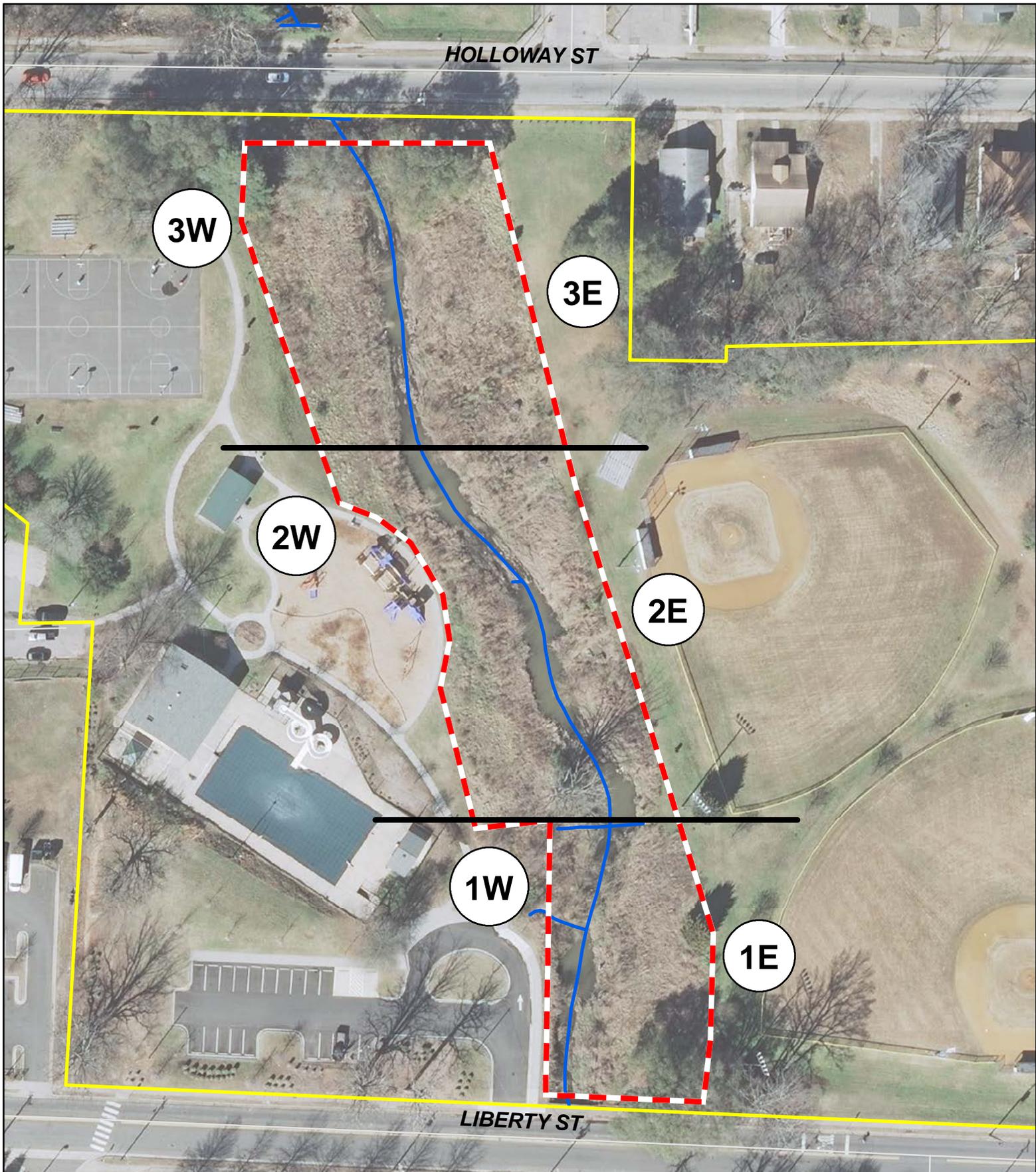


Forest Hills Park -- Project Area
Figure 1



Map prepared by Stormwater Services - Public Works on Tuesday, March 10, 2015. Information depicted hereon is for reference purposes only and is compiled from the best available sources. The City of Durham assumes no responsibility for errors arising from use or misuse of this map.

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Imagery from 2013 orthophotography

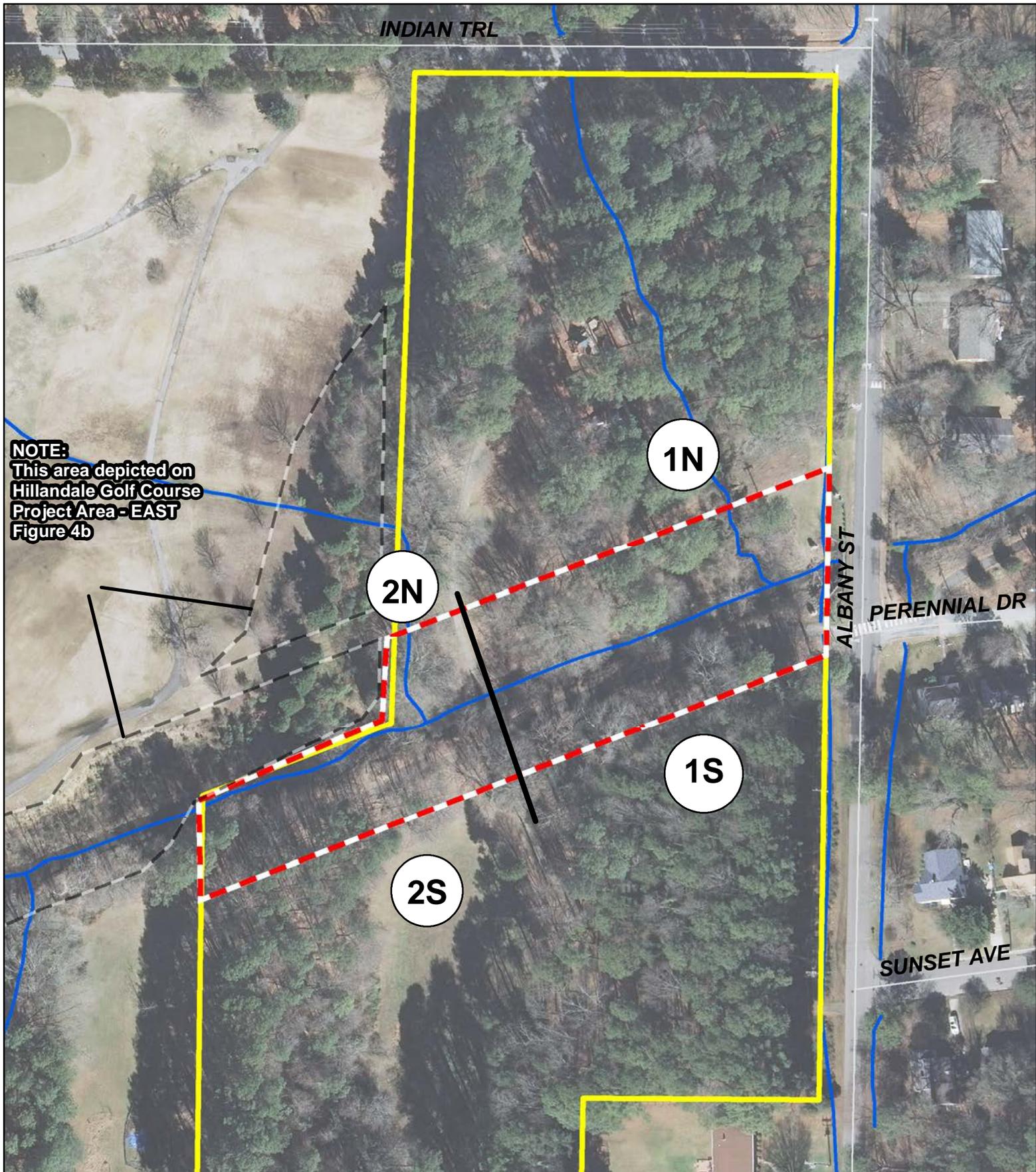
-  Treatment Area / Conservation Easement
-  Parks
-  Stream Channel

Long Meadow Park -- Project Area
Figure 2



Map prepared by Stormwater Services - Public Works on Tuesday, March 10, 2015. Information depicted hereon is for reference purposes only and is compiled from the best available sources. The City of Durham assumes no responsibility for errors arising from use or misuse of this map.

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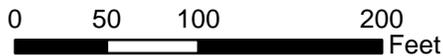


NOTE:
 This area depicted on
 Hillandale Golf Course
 Project Area - EAST
 Figure 4b

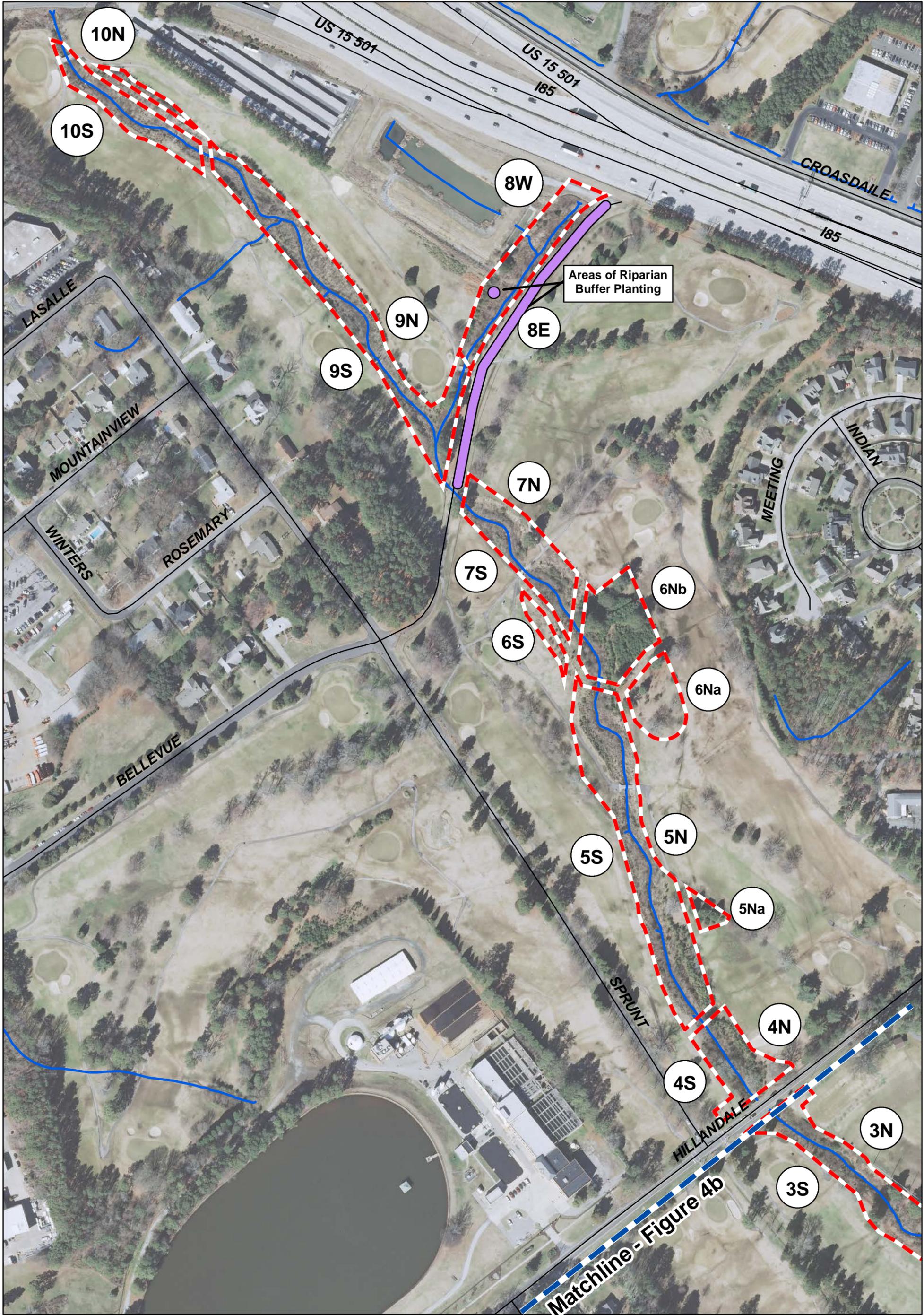
Imagery from 2013 orthophotography

	Treatment Area / Conservation Easement
	Hillandale Golf Course Conservation Easement
	Parks
	Stream Channel

Indian Trail Park -- Project Area
 Figure 3



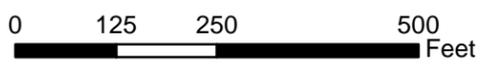
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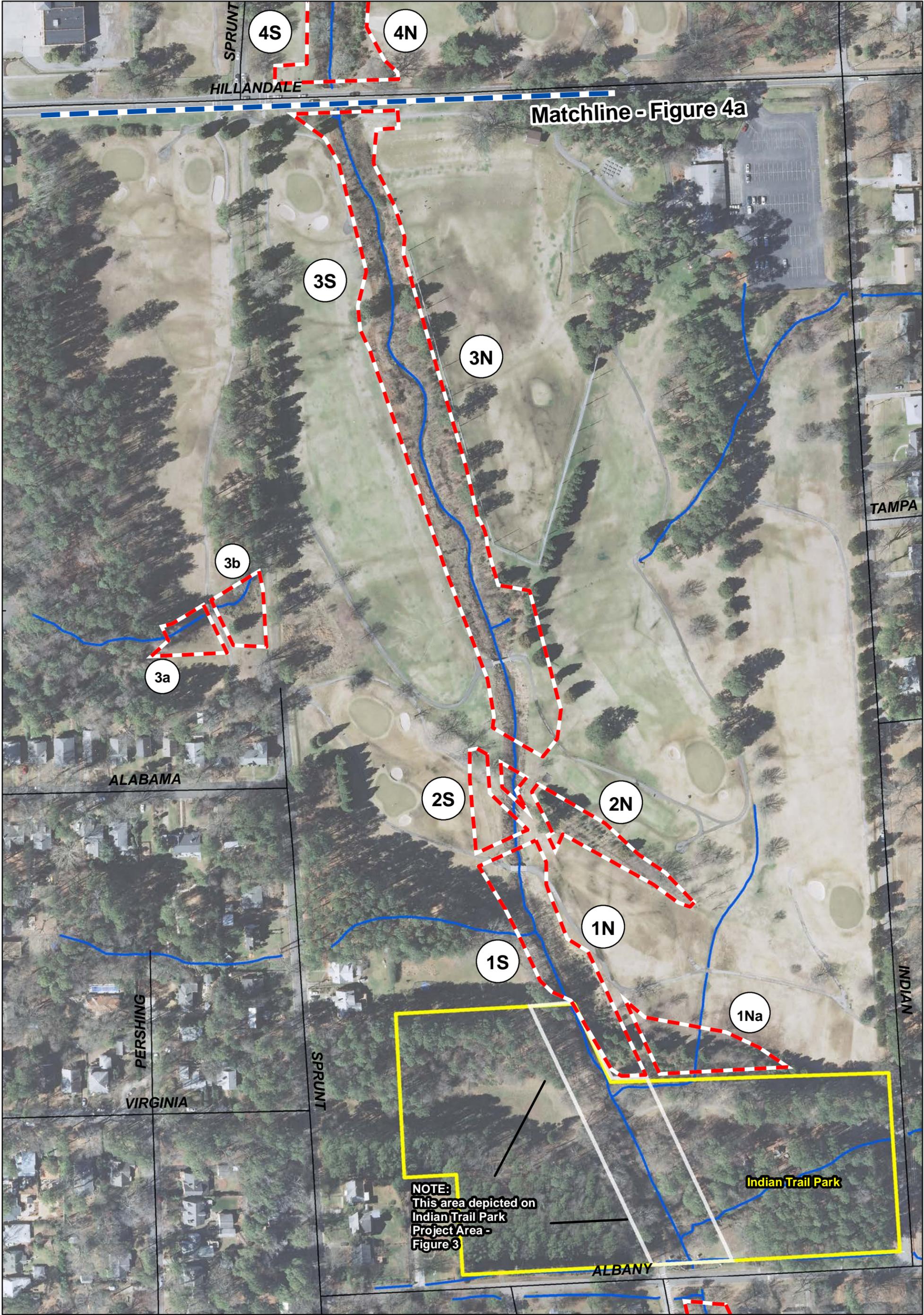


Imagery from 2013 orthophotography

Hillandale Golf Course - Project Area - WEST
Figure 4a

 Treatment Area / Conservation Easement
 Stream Channel

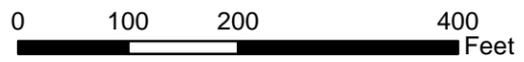




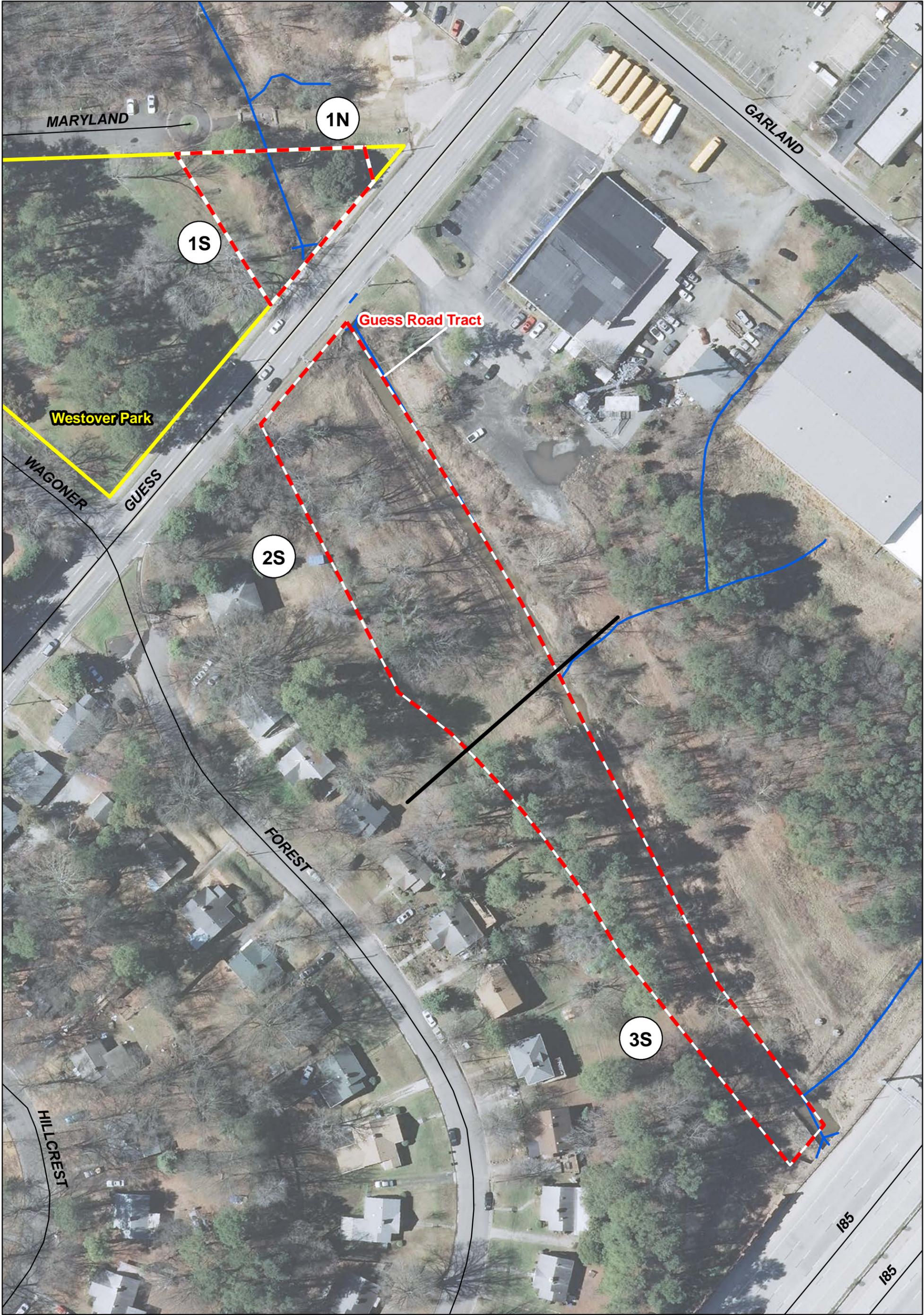
Imagery from 2013 orthophotography

- Treatment Area / Conservation Easement
- Indian Trail Park Conservation Easement
- Parks
- Stream Channel

Hillandale Golf Course - Project Area - EAST
Figure 4b



Map prepared by Stormwater Services - Public Works on Tuesday, March 10, 2015. Information depicted hereon is for reference purposes only and is compiled from the best available sources. The City of Durham assumes no responsibility for errors arising from use or misuse of this map.



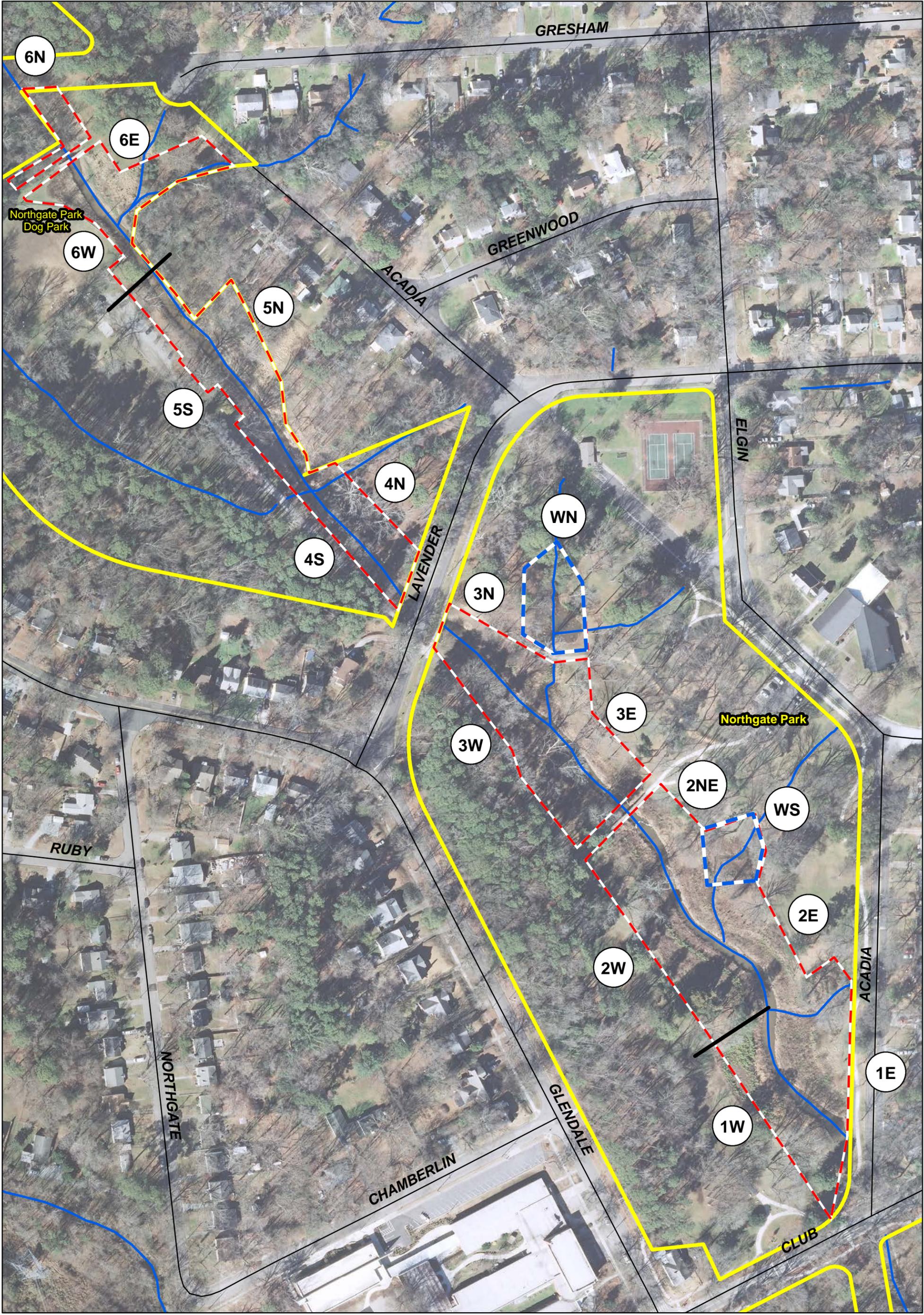
Imagery from 2013 orthophotography

 Treatment Area / Conservation Easement
 Park Boundary
 Stream Channel

Westover Park & Guess Road Tract -- Project Area
Figure 5



Map prepared by Stormwater Services - Public Works on Tuesday, August 11, 2015. Information depicted hereon is for reference purposes only and is compiled from the best available sources. The City of Durham assumes no responsibility for errors arising from use or misuse of this map.



Imagery from 2013 orthophotography

- Pocket Wetland
- Northgate Park Treatment Area
- Park Boundary
- Stream

Northgate Park -- Project Area
Figure 6

0 100 200 400
Feet



Appendix A – Inspection Report

Inspection Report

Location: _____

Date(s) of Treatment: _____

Date of Inspection: _____ Name of Inspector(s): _____

If species is present, indicate specific Section ID and percent mortality below:

Section ID	Scientific Name	Common Name	Section ID	Scientific Name	Common Name
	<i>Ailanthus altissima</i>	Tree of heaven		<i>Ligustrum japonica</i>	Japanese privet
	<i>Albizia julibrissin</i>	Mimosa		<i>Ligustrum sinense</i>	Chinese privet
	<i>Alliaria petiolata</i>	Garlic mustard		<i>Lonicera japonica</i>	Japanese honeysuckle
	<i>Ampelopsis brevipedunculata</i>	Porcelainberry		<i>Melia azedarach</i>	Chinaberry
	<i>Baccaris halimifolia</i>	Groundsel bush		<i>Microstegium vimineum</i>	Japanese stiltgrass
	<i>Celastrus orbiculatus</i>	Oriental bittersweet		<i>Miscanthus sinensis</i>	Chinese silvergrass
	<i>Clematis terniflora</i>	Sweet autumn clematis		<i>Nandina domestica</i>	Nandina
	<i>Cytisus scoparius</i>	Scotch Broom		<i>Polygonum cuspidatum</i>	Japanese knotweed
	<i>Disocorea spp.</i>	Air potato/Chinese Yam		<i>Paulownia tomentosa</i>	Princesstree
	<i>Elaeagnus pungens</i>	Thorny Olive		<i>Phyllostachys aurea</i>	Bamboo
	<i>Elaeagnus umbellata</i>	Autumn Olive		<i>Pueraria montana</i>	Kudzu
	<i>Euonymus alatus</i>	Burning Bush		<i>Pyrus calleryana</i>	Callery pear
	<i>Euonymus fortunei</i>	Wintercreeper		<i>Rosa multiflora</i>	Multiflora rose
	<i>Glechoma hederacea</i>	Creeping Charlie		<i>Rubus occidentalis</i>	blackberry
	<i>Hedera helix</i>	English ivy		<i>Sorghum halepense</i>	Johnson grass
	<i>Hibiscus syriacus</i>	Rose of Sharon		<i>Triadica sebifera</i>	Chinese Tallow Tree
	<i>Humulus japonicus</i>	Japanese Hops		<i>Toxicodendron radicans</i>	poison ivy
	<i>Ilex aquifolium</i>	English holly		<i>Vinca spp.</i>	Periwinkle
	<i>Ipomoea spp.</i>	Morning Glory		<i>Wisteria floribunda</i>	Japanese wisteria
	<i>Lespedeza bicolor</i>	Bicolor lespedeza		<i>Wisteria sinensis</i>	Chinese wisteria
	<i>Lespedeza cuneata</i>	Chinese lespedeza			
	<i>Ligustrum lucidum</i>	Glossy privet			

Notes (refer to maps and sections as necessary)

For City of Durham Use Only: _____ Approved _____ Not Approved _____ Approval Pending (Note reason above)
 _____ General Services Department _____ Public Works Department

Appendix B – Herbicide Daily Log Form

Herbicide Daily Log Form

Location/Section ID: _____ Date of Treatment: _____

Example: Forest Hills Park – Sections 1W – 3E
(Use multiple sheets and include map/sketch to identify area, if necessary)

Name of Personnel	Hours

Herbicide/Adjuvant	Method	Amount Used

Notes
<u>Weather Conditions</u>
<u>Species Treated, Method Used</u>
<u>Map, Sketch, Additional Notes, Observations</u>

Approved By:
NC Pesticide License #:

Appendix C – Planting Specifications

General Conditions and Specifications for Vegetation Planting

- 1) The Vegetation Planting work covered by this section consists of furnishing, installing, and maintaining tree and shrub container vegetation and seed. Vegetation Planting includes planting bed and seedbed preparation, initial planting, plant establishment, seed dispersal, mulching, and replacement planting, as needed.
- 2) Tree and shrub species, quantities, and placement are to be based on the Container Vegetation Specifications provided. All material is to be planted in the appropriate Planting Zones as depicted on the Hillandale Golf Course Planting Zones plansheet.
- 3) Species and broadcast application rates for seeding are provided in Seed Mix Specifications. Both Permanent and Temporary seed mixes are to be applied to project areas A, B, and C as depicted on the included map, Hillandale Golf Course Planting Zones.
- 4) All tree, shrub, and seed planting shall be performed in accordance with the specifications of the Landscape Manual for Durham, North Carolina (Revised April 3, 2013; <http://durhamnc.gov/DocumentCenter/View/1363>) and as described in the Container Vegetation Specifications and Seed Mix Specifications of this Appendix.
- 5) The planting stock for container vegetation should be sourced and grown in nurseries within 200 miles of the city. Plant stock may be obtained from nurseries beyond the 200-mile limit with approval by the City Project Manager.
- 6) Substitutions to specified plant species may only be used with prior approval by the City. Any alternative vegetation must be native North Carolina piedmont species of tree, shrub, fern, and graminod appropriate for the target habitat.
- 7) Contractor shall warrant a 1-year, 80% survival rate against defects including mortality and poor growth, except for defects resulting from abuse by other parties and abnormal weather conditions.
- 8) The planting of any species of fescue grass on site is prohibited.
- 9) Seedbed preparation: The seedbed shall be comprised of loose soil and not compacted. This may require light mechanical loosening of the soil.
- 10) Mulching: Seeded areas are to be protected by spreading straw mulch uniformly to form a continuous blanket (75% coverage) over seeded areas.

Container Vegetation Specifications

Overall Minimum Spacing for plantings: 12 feet with random species placement
Minimum Spacing between individuals of the same species: 24 feet
Quantity per acre: 300
Minimum Tree Container size: 5 gallons (no seedlings allowed)
Minimum Shrub Container Size: 5 gallons
Total Area for Container Vegetation Planting as depicted in Areas A, B, & C on included map
Hillandale Golf Course Planting Zones: 0.6 acres

ZONE 1 – Floodplain Shrubs

Area of Zone 1: 0.25 acre

Must contain at least 4 of the following species. Substitutions are allowed pending City approval.

<u>Species Name</u>	<u>Common Name</u>
<i>Salix sericea</i>	Silky willow
<i>Viburnum nudum</i>	Possumhaw
<i>Carpinus carolineana</i>	Ironwood
<i>Itea virginica</i>	Virginia willow
<i>Cephalanthus occidentalis</i>	Buttonbush
<i>Cornus amomum</i>	Silky dogwood
<i>Alnus serrulata</i>	Tag alder

ZONE 4 – Upland Shrubs

Area of Zone 4: 0.1 acre

Must contain at least 4 of the following species. Substitutions are allowed pending City approval.

<u>Species Name</u>	<u>Common Name</u>
<i>Ceanothus americanus</i>	New Jersey tea
<i>Callicarpa americana</i>	Beautyberry
<i>Ilex verticillata</i>	Winterberry
<i>Lindera benzoin</i>	Spicebush
<i>Vaccinium corymbosum</i>	Highbush blueberry

ZONE 5 – Upland Forest

Area of Zone 5: 0.75 acre

Must contain at least 5 of the following species. Substitutions are allowed pending City approval.

<u>Species Name</u>	<u>Common Name</u>
<i>Myrica cerifera</i>	Wax myrtle
<i>Cornus florida</i>	Dogwood
<i>Cercis canadensis</i>	Eastern redbud
<i>Juniperus virginiana</i>	Eastern red cedar
<i>Ilex opaca</i>	American holly
<i>Oxydendrum arboreum</i>	Sourwood
<i>Quercus coccinea</i>	Scarlet Oak
<i>Ulmus americana</i>	American elm
<i>Sambucus canadensis</i>	Elderberry

Seed Mix Specifications

Both Temporary and Permanent Seed Mix must be applied to Areas A, B, & C as depicted on included map Hillandale Golf Course Planting Zones

Seed Mix – Temporary

Area requiring Temporary Seed: 1.6 acres

Winter Mix (August 16 – April 14) – 60 – 100 pounds/acre broadcast application rate

Must contain 50:50 ratio of the following species. Substitutions are allowed pending City approval.

<u>Species Name</u>	<u>Common Name</u>
<i>Secale cereale</i> spp.	Winter rye/rye grain
<i>Hordeum vulgare</i> , or <i>H. pusillum</i>	Barley

Summer Mix (April 15 – August 15) – 25 pounds/acre broadcast application rate

Must contain 50:50 ratio of the following species. Substitutions are allowed pending City approval.

<u>Species Name</u>	<u>Common Name</u>
<i>Pennisetum glaucum</i>	Browntop/Pearl Millet
<i>Elymus virginicus</i>	Virginia wild rye

Seed Mix – Permanent

Area requiring Permanent Seed: 1.6 acres

25 pounds/acre broadcast application rate total (Grass portion + Herbaceous portion)

Grass portion – 12.5 lbs/acre

Must contain at least 4 of the following species. Substitutions are allowed pending City approval.

<u>Species Name</u>	<u>Common Name</u>
<i>Elymus virginicus</i>	Virginia wild rye
<i>Panicum virgatum</i>	Switchgrass
<i>Andropogon gerardii</i>	Big bluestem
<i>Chasmanthium latifolium</i>	Inland river oats
<i>Sorghastrum nutans</i>	Indian grass
<i>Schizachyrium scoparium</i>	Little bluestem

Herbaceous portion – 12.5 lbs/acre

Must contain at least 6 of the following species. Substitutions are allowed pending City approval.

<u>Species Name</u>	<u>Common Name</u>
<i>Rudbeckia hirta</i>	Blackeyed susan
<i>Coreopsis lanceolata</i>	Lance leaf tickseed
<i>Chamaecrista fasciculata</i>	Partridge pea
<i>Asclepias tuberosa</i>	Butterfly weed
<i>Monarda punctata</i>	Spotted beebalm
<i>Helianthus angustifolius</i>	Swamp sunflower
<i>Echinacea purpurea</i>	Cone flower
<i>Helianthus maximilianii</i>	Maximilian's sunflower
<i>Gaillardia pulchella</i>	Indian blanket
<i>Juncus effusus</i>	Soft rush
<i>Rudbeckia laciniata</i>	Cutleaf coneflower

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EXHIBIT 2

**ESTIMATED FEE SCHEDULE
CONTRACT VMSR-16 - VEGETATION MANAGEMENT FOR STREAM RESTORATIONS**

Table 1. Estimated Fee Schedule by Task.

Item #	Description of Vegetation Management Services	Unit	Quantity	Unit Price			Subtotal	
					2016	2017		2018
1	Vegetation Management Forest Hills Park	Acres	8.0	Spring:	\$4,235	\$2,933	\$2,933	\$18,900
				Fall:	\$2,933	\$2,933	\$2,933	
2	Vegetation Management Long Meadow Park	Acres	1.8	Spring:	\$3,008	\$2,305	\$2,305	\$14,533
				Fall:	\$2,305	\$2,305	\$2,305	
3	Vegetation Management Indian Trail Park	Acres	1.3	Spring:	\$2,130	\$1,128	\$1,128	\$7,770
				Fall:	\$1,128	\$1,128	\$1,128	
4	Vegetation Management Hillandale Golf Course	Acres	15.0	Spring:	\$4,235	\$4,235	\$4,235	\$25,410
				Fall:	\$4,235	\$4,235	\$4,235	
5	Vegetation Management Westover Park & Guess Rd Tract	Acres	1.7	Spring:	\$4,410	\$2,405	\$2,405	\$16,435
				Fall:	\$2,405	\$2,405	\$2,405	
6	Vegetation Management Northgate Park	Acres	7.5	Spring:	\$2,588	\$2,588	\$2,588	\$15,528
				Fall:	\$2,588	\$2,588	\$2,588	
7	Vegetation Planting at Hillandale Golf Course	Acres	1.6	Spring:	\$6,280	N/A	N/A	\$12,560
				Fall:	\$6,280			
				Cost per acre (items 1 – 6) =			\$ 2792.52/ac	
				Cost per acre (item 7) =			\$ 7,850/ac	
				Subtotal for items 1 – 6 =			\$ 98,576.00	
				Subtotal for item 7 =			\$ 12,560.00	
Total area for Vegetation Management = 35.3 acres							Total Contract Cost = \$111,136.00	
Total area for Vegetation Planting = 1.6 acres								

Note: The Fee Schedule by Task is provided only for the purpose of determining the value of Vegetation Management for each location and the unit cost per acre to the City. The Fee Schedule by Task does not represent any limitation of schedule, hours, or effort that may be required by the Contractor to perform and complete the Scope of Work.