

WORCESTER CONSERVATION COMMISSION

Wayside Conservation Area

Conservation Property Baseline Assessment

July 2024



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Section One: Introduction

Property Information

Property Name: Wayside Road Conservation Area

Address: 105 Wayside Road; 1 Country Club Boulevard; 55 White Avenue

MBL: 46-026-0000A; 46-026-0000B; 46-026-00559

Date of Visits: 6/17/2024; 7/2/2024

Visits conducted by: Lori Carlos and Patti Burns, PWS, CERP

Property Background and Setting

The approximately 4.69-acre Wayside Conservation Area provides several ecosystem services including shade from the dense forest, a natural drainage area that can absorb stormwater runoff from the region and potentially mitigate regional flooding, and a variety of plant species with edge habitats for wildlife. The property has no trails or public access points. The property boundaries abut several city roads, a condominium complex and some residential house lots, with Erie Avenue to the north; Country Club Boulevard and Gettysburg Road (and condominiums) to the west; and White Avenue (and one residential property) along the eastern boundary. A paved portion of Wayside Road and a few residential properties extend to the southern boundary. Wayside Road continues to the north as an undeveloped “paper street” through the conservation area and ends near the intersection of White and Erie Avenues, with power lines and poles that run through the “paper street”. There is no obvious way to access the power line to make repairs. There are some unmapped trails on a small, triangular-shaped, non-contiguous parcel along Country Club Boulevard, but none within the main portion of the conservation area.

The conservation area is defined by steep hills that slope from southeast to northwest from 610 above mean sea level (AMSL) to 530 feet AMSL. An intermittent stream flows along the northern property boundary, entering through pipes and a culvert at Country Club Boulevard and Gettysburg Road and exiting at Erie Avenue where it discharges to pipes were blocked from view by thick vegetation. Map sources show that the intermittent stream flows east to west for about ½ mile to Poor Farms Brook and eventually drains to the Quinsigamond River. The field observations section provides more detail on site hydrology.

Statement of Purpose

The purpose of this baseline report is to provide useful information for park planning and management; identify areas of conservation value, areas impacted by non-native plants, encroachments from abutting properties, public accessibility, and regulated areas such as wetlands, perennial rivers, certified vernal pools, and rare habitat. The observations and management recommendations provided in this report will aid the Worcester Conservation Commission in maintaining and improving their conservation properties, tracking changes in the properties over time, and securing funding to support necessary park management activities.

Equipment Used for Data Collection

- Apple Iphone 11 MHCA3LL/A phone (photos)
- Panasonic FZ-G1 Toughpad (polygons and notes)
- Notepad (notes)
- Google Pixel 8 phone (photos)

Acknowledgements

This project was funded in part by the USDA Forest Service through the Massachusetts Department of Conservation and Recreation Urban and Community Forestry Program. All elements of the project were completed by Davey Resource Group, Inc. with support from the Worcester Conservation Commission. Both institutions are equal opportunity employers.



Section Two: Findings

Forest Structure & Health

Field Observations

Wayside Conservation Area has no formal trails or public access points and is bordered on all sides by steep slopes leading down from surrounding roads and residential areas. No signage or markings indicating a conservation area boundary were observed during the assessment. Dumping of yard waste was observed in many locations around the property boundaries, particularly at the end of Wayside Road and along White Street. These yard waste piles appear to be suppressing native vegetation, introducing invasive species, particularly Japanese knotweed (*Reynoutria japonica*), and may be contributing to erosion on the steep slopes of the property. In addition to yard waste, some construction debris was also observed dumped along White Street, including asphalt and palettes, along with some garbage such as window screens and plastic.

The interior of the property sits at a lower elevation than surrounding areas and is periodically wet, with numerous culverts draining into the property from surrounding areas. The banks around the property are very stony with many small springs coming up through the rocks. Intermittent wetlands and waterways are common. There is a utility easement that runs through the middle of the property along the northern end of Wayside Road which was never built and is a “paper road” (i.e. a road which exists only on paper).

The canopy contains a diverse mixture of mature northern red oak (*Quercus rubra*), white oak (*Quercus alba*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), black locust (*Robinia pseudoacacia*), paper birch (*Betula papyrifera*), and red maple (*Acer rubrum*). Midstory species include yellow birch (*Betula alleghaniensis*), gray birch (*Betula populifolia*), black cherry (*Prunus serotina*), shagbark hickory (*Carya ovata*), and some reasonably sized American chestnut (*Castanea dentata*) in the small triangle parcel at the corner of Country Club Boulevard and Erie Avenue measuring up to 4 inches diameter-at-breast-height (DBH). Understory regeneration includes many of these species as well as white ash (*Fraxinus americana*) and small-stature tree species such as mountain ash (*Sorbus americana*) and witch hazel (*Hamamelis virginiana*) in the interior, with winged sumac (*Rhus copallinum*), sassafras (*Sassafras albidum*), and white mulberry (*Morus alba*, non-native) along the edge of White Avenue.. The shrub and herbaceous layers are similarly diverse, including cinnamon fern (*Osmunda cinnamomea*), white wood aster (*Eurybia divaricata*), skunk cabbage (*Symplocarpus foetidus*), Canada mayflower (*Maianthemum canadense*), highbush blueberry (*Vaccinium corymbosum*), bracken fern (*Pteridium aquilinum*), sasparilla (*Aralia nudicaulis*), indian pipes (*Monotropa uniflora*), starflower (*Lysimachia borealis*), viburnum (*Viburnum* spp.), false solomon’s-seal (*Maianthemum racemosum*), jewelweed (*Impatiens capensis*), enchanter’s nightshade (*Circaea lutetiana*), beaked hazelnut (*Corylus cornuta*), winterberry (*Ilex verticillata*), whorled yellow loosestrife (*Lysimachia quadrifolia*), and wintergreen (*Gaultheria procumbens*).

Patches of poor canopy health in the UTC assessment appear to correspond to wet areas of the property where tree roots are periodically submerged under water. Although most trees can tolerate occasional inundation, prolonged periods spent with roots underwater have the potential to cause suffocation and root dieback, leading to declines in overall tree health and even death. The high diversity in tree species observed at the property is likely to contribute to canopy persisting on the landscape even as precipitation regimes change due to climate change, as those better suited to wet conditions will be able to grow into the canopy as those less suited fail.

Potential Impacts of Climate Change

Table 2 includes a summary of the USFS Climate Change Atlas information for tree species commonly found in Patch Pond and Reservoir.

Table 1: Expected response of common Wayside Conservation Area species to climate change.

Species		Model Reliability	Abundance	Habitat Area Change		Capability to Cope with Climate Change	
Common	Scientific			RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Red maple	Acer rubrum	High	Abundant	Small decrease	Small decrease	Good	Good
Yellow birch	Betula alleghaniensis	High	Common	Small increase	Small increase	Good	Good
Paper birch	Betula papyrifera	High	Rare	Large decrease	Large decrease	Very Poor	Very Poor
Gray birch	Betula populifolia	Low	Common	No change	Small increase	Fair	Good
Shagbark hickory	Carya ovata	Medium	Rare	Small decrease	No change	Very Poor	Poor
American chestnut	Castanea dentata	Due to the American chestnut's near-complete eradication from forests due to chestnut blight, data for this species is not available from the USFS Climate Change Atlas.					
White ash	Fraxinus americana	Medium	Common	Small increase	No change	Fair	Poor
Eastern cottonwood	Populus deltoides	Low	Rare	Small decrease	Small decrease	Very Poor	Very Poor
Black cherry	Prunus serotina	Medium	Common	Large increase	Large increase	Good	Good
White oak	Quercus alba	Medium	Common	Small increase	Small increase	Very Good	Very Good
Red oak	Quercus rubra	Medium	Abundant	No change	Small decrease	Very Good	Good
Black locust	Robinia pseudoacacia	Low	Rare	No change	Large increase	Poor	Good
Sassafras	Sassafras albidum	Low	Rare	Large increase	Small increase	Good	Fair

Species		Model Reliability	Abundance	Habitat Area Change		Capability to Cope with Climate Change	
Common	Scientific			RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
American elm	Ulmus americana	Medium	Common	Small decrease	No change	Poor	Fair

Wayside Conservation Area contains a wide variety of tree species with varying predicted responses to climate change. Some, like red maple, black cherry, gray and yellow birch, and oaks are predicted to adapt well to climate change while others including paper birch, shagbark hickory, and eastern cottonwood are predicted to struggle. This property may present additional challenges to its forest as the climate changes and precipitation regimes are affected by climate change - precipitation is predicted to fall in more concentrated bursts in the future, which is likely to lead to significant fluctuations in the water table at this property. However, the forest at this property is highly diverse, which will help it remain resilient in the face of climate change.

Key Results

- The Wayside Conservation Area property has no trails or public access. However, it still provides essential benefits to the City of Worcester by providing shade and heat mitigating vegetation, water catchment and flood control, and wildlife habitat.
- This property is low-lying and frequently wet, with culverts bringing water in from surrounding residential areas and natural springs contributing water as well.
- The forest on the property is highly diverse, with many different species of trees, shrubs, and herbaceous plants and a good mixture of age classes. This diversity will help the forest persist despite the challenges climate change poses.
- Yard waste dumping is common along property edges, particularly at the end of Wayside Road and along White Avenue. These dump piles may be introducing invasive species to the property as well as suppressing native vegetation and contributing to bank erosion.
- Japanese knotweed was observed at several locations along the outer edges of the property, primarily in the same areas where yard waste dumping was common.
- Future forest health monitoring should focus on the effects of inundation on tree health and species composition.

UTC Results

Canopy Cover

Table 2. Canopy cover at Wayside Conservation Area.

	Number of Parcels	Total Property Acres	Acres of Canopy Cover	% Canopy Cover
Wayside Conservation Area	3	4.69	4.39	93.70

Canopy Health

Table 3. Canopy Health at Wayside Conservation Area.

	Very Good		Good		Fair		Poor		Dead/Dying		Not Classified	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Wayside Conservation Area	0.03	0.61	1.42	32.43	1.84	41.98	1.03	23.52	0.04	0.81	0.02	0.39

Overall, canopy health in Wayside Conservation Area is fair or better (~75%). Areas with poor or worse canopy health are likely associated with inundated soils causing tree stress and decline.

Benefits

Table 4. Canopy Benefits at Wayside Conservation Area.

Air Pollution Removal (Annual)		Avoided Stormwater Runoff (Annual)		Carbon Sequestration (Annual)		Carbon Storage (Lifetime)	
Pounds	\$	Gallons	\$	Tons	\$	Tons	\$
315.86	71.48	5,916.64	52.87	4.97	848.39	150.50	25,668.17

Please note that the trees at Wayside Conservation Area provide many additional benefits not calculated here. Only benefits for which there are well-supported algorithms were estimated for this project.

Section Three: Management Recommendations

Recommendations in Priority Order

1. Implement a management strategy for the Japanese knotweed infestations around the perimeter of the property.
 - a. Work with other City Departments and the utility owner to ensure that the infestations are managed across property lines into the utility easement and road ROW.
 - b. Use a variety of management methods including herbicide treatment, manual and mechanical cutting/removal, and cultural practices (ex. Reseeding areas cleared of invasive species) to minimize the existing infested areas.
 - c. Spread awareness among abutting homeowners of how yard waste can introduce invasive plant material to the conservation property.
 - d. Monitor treated areas long-term to look for regrowth of invasive species from root or seed.
2. Take steps to reduce or eliminate yard waste dumping along property edges.
 - a. Remove existing yard waste piles and reseed the ground to stabilize the bank and reduce the likelihood of invasive species taking roots in the disturbed areas.
 - b. Post signage to mark the boundary of the conservation property and signs prohibiting dumping at the Wayside Road and along White Avenue.
 - c. Work with abutting residents to provide/educate about alternative options for yard waste disposal and the damage it can cause when dumped in conservation land.
 - d. Periodically remove any new yard waste piles to discourage further yard waste dumping.
3. Monitor forest stands on a regular basis, ideally annually.
 - a. Consider whether regeneration is occurring to replace canopy trees as they fall.
 - b. Look for new or worsening invasive infestations.
 - c. Look for signs and symptoms of tree pests or diseases.
 - d. Track how changing precipitation patterns may be affecting tree canopy health.
4. Determine if the discharge from behind the condominium to the southwest portion of the conservation area is appropriate and if it requires approval or management.

APPENDIX A: MAPS

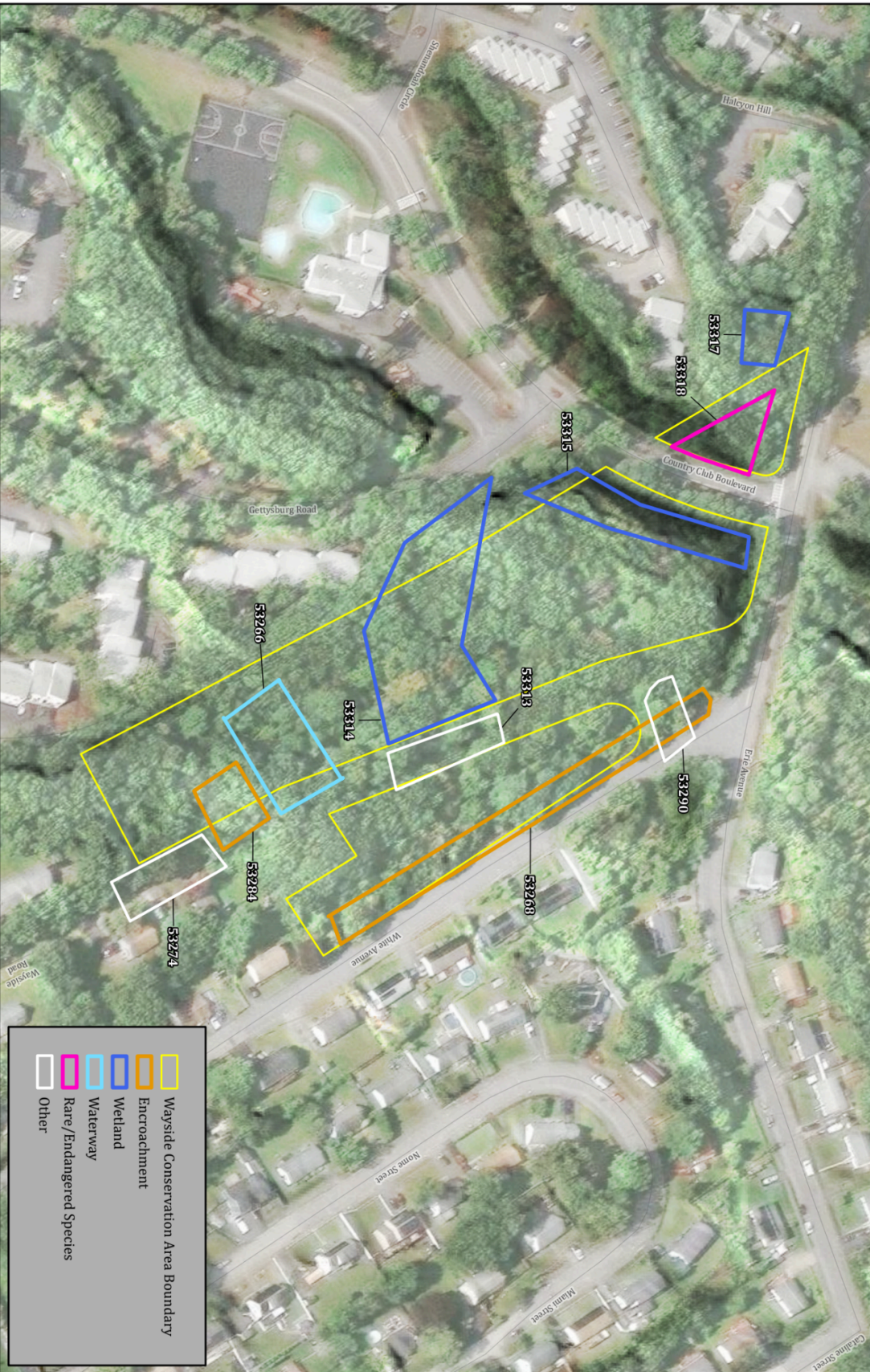




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Figure 2. Existing Resources Summary Map.
Conservation Property Baseline Assessment
Wayside Conservation Area
Worcester, Massachusetts

0 125 250 Feet
N
Date: 7/31/2024
NAD 1983 2011 StatePlane Massachusetts Mifg FIPS 2001 FIPS
71.77392W 42.30201N
Prepared for: Worcester Conservation Commission
Prepared by: N. Singhla
Sources: ESRI World Imagery, MassGIS Data, DRC Site Visits
6/17/2024 and 7/2/2024.



Map 2: Existing resources summary map.



Map 3: Existing tree health rank summary map.



Map 4: Representative photo locations summary map.

APPENDIX B: FINDINGS BY PHOTO & POLYGON

Table 5. Summary of Field observations by photo and/or polygon ID.

Photo ID	Polygon ID	Type	Comments
1	53274	Sign/Marking	There is no signage indicating a conservation property or prohibited uses at the end of Wayside Road.
2	53284	Encroachment	Large pile of dumped yard waste at the end of Wayside Road.
3	53316	Waterway	Stormwater contribution to Wayside from condos to the west. The wetland can be viewed from the end of Wayside Road.
4	53313	Other	Overhead utility lines run between Wayside parcels along the route of the northern end of Wayside Road, which is a “paper road”.
5	53314	Wetland	A wetland area is present in the interior of the property and seems to originate from outflow from culverts and natural springs.
6	53315	Wetland	Streambed fed by large culvert which flows west to east along Country Club Boulevard, existing the property under Erie Avenue.
7	53318	Rare/Endangered Species	American chestnuts (<i>Castanea dentata</i>) of good size, up to 4 inches in diameter at breast height (DBH) and 20 feet tall, are present in the small triangle of land at the corner of Erie Avenue and Country Club Boulevard.
8	53317	Wetland	Lowland area with a drainage pipe for outflow but no clear inflow that appears to collect water. Some garbage has collected in the depression.
No photo	53290	Other	The location where the overhead electric utility lines enter into the property.
9-11	53268	Encroachment	(Photos 9-11) Yard waste dumping is very common along White Street. Some of the dump piles have additional refuse, including pallets, window screens, and construction debris.



Photo 1

Polygon ID: 53274

Type: Sign/Marking

Comments: There is no signage indicating a conservation property or prohibited uses at the end of Wayside Road.



Photo 2

Polygon ID: 53284

Type: Encroachment

Comments: Large pile of dumped yard waste at the end of Wayside Road.



Photo 3

Polygon ID: 53316

Type: Waterway

Comments: Stormwater contribution to Wayside from condos to the west. The wetland can be viewed from the end of Wayside Road.



Photo 4

Polygon ID: 43313

Type: Other

Comments: Overhead utility lines run between Wayside parcels along the route of the northern end of Wayside Road, which is a “paper road”.



Photo 5

Polygon ID: 53314

Type: Wetland

Comments: A wetland area is present in the interior of the property and seems to originate from outflow from culverts and natural springs.



Photo 6

Polygon ID: 53315

Type: Wetland

Comments: Streambed fed by large culvert which flows west to east along Country Club Boulevard, existing the property under Erie Avenue.



Photo 7

Polygon ID: 53318

Type: Rare/Endangered Species

Comments: American chestnuts (*Castanea dentata*) of good size, up to 4 inches in diameter at breast height (DBH) and 20 feet tall, are present in the small triangle of land at the corner of Erie Avenue and Country Club Boulevard.



Photo 8

Polygon ID: 53317

Type: Wetland

Comments: Lowland area with a drainage pipe for outflow but no clear inflow that appears to collect water. Some garbage has collected in the depression.



Photo 9

Polygon ID: 53268

Type: Encroachment

Comments: Yard waste dumping is very common along White Street. Some of the dump piles have additional refuse, including pallets, window screens, and construction debris.



Photo 10

Polygon ID: 53268

Type: Encroachment

Comments: Yard waste dumping is very common along White Street. Some of the dump piles have additional refuse, including pallets, window screens, and construction debris.



Photo 11

Polygon ID: 53268

Type: Encroachment

Comments: Yard waste dumping is very common along White Street. Some of the dump piles have additional refuse, including pallets, window screens, and construction debris.