

PART II NATURAL AND CULTURAL RESOURCES

“Access to the water is the number one attraction for my family.... I love Pawtuxet Village, City Park, and Conimicut Point Park. These are areas I often visit [...] and feel like I’m on a mini vacation.”—WARWICK RESIDENT

Nature and Parks

An integrated “Green Systems Plan” that encompasses natural resources, open space, greenways, waterfronts, parks and recreation, and sustainability.

> GREEN SYSTEMS:

- “Green corridors” to connect open space and recreation land with walking and biking routes.
- A goal of a park within walking distance of every resident.
- Parks and open space maintenance guidelines, new funding options, and improved facilities and maintenance.
- Policies and programs that protect, enhance and increase the city’s tree canopy.

> BLUE SYSTEMS:

- Natural resource areas and water bodies—including our 39 miles of coastline and five coves—protected by appropriate zoning and land use management.
- Better water quality and habitat in freshwater and saltwater resources—Buckeye Brook, Warwick Pond, Greenwich Bay.
- Protected coastal and fresh-water public access points.
- A recreational “blueway” trail system on local waters.

History and Culture

- Incentives for historic preservation.
- Enhanced review process in historic districts with more focused design guidelines.
- A demolition-delay ordinance to promote reuse of historic buildings.
- Promotion of arts and cultural activities and initiatives in City Centre Warwick and elsewhere as part of the city’s economic development strategy.





Natural Resources

FROM A WARWICK RESIDENT

“There is a whole community of people committed to improving the quality and treatment of our natural resources, the bay, the watersheds, [and] open lands.”



A GOALS AND POLICIES

GOALS

Warwick’s natural resource systems, sensitive water resources and natural habitat are preserved and protected for future generations.

Warwick’s urban forest is healthy and provides maximum environmental and economic benefits .

Agriculture will remain an important use in historically farmed areas.

POLICIES FOR DECISION MAKERS

- Support integrated strategies to protect and restore natural systems with desirable land use practices and management programs.
 - Implement programs to protect and restore Warwick’s coastal and freshwater wetlands and improve water quality.
 - Support policies and measures to protect shellfish resources.
 - Support continued initiatives to improve water quality and habitat quality in the Pawtuxet River and its watershed.
 - Promote and protect the long-term viability and sustainability of Greenwich Bay, its coves and tributaries.
 - Protect Warwick’s critical wildlife and wildlife habitat.
 - Implement mandatory tie-in to the sewer system for all future developed properties.
 - Protect Warwick Pond, Buckeye Brook and Tuscatucket Brook from pollutant loading associated with the nearby airport land use.
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- Promote public and private efforts to protect and enhance tree resources.
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- Support community organizations to increase access to locally grown agricultural products

B FINDINGS AND CHALLENGES

findings

Warwick has 39 miles of coastline.

There are two major watersheds and five sub-watersheds in Warwick.

Ten ponds and numerous streams are in Warwick.

Warwick shares the Hunt River Aquifer with North Kingstown and East Greenwich.

Warwick has nine saltwater coves and two bays.

Commercial finfishing is not allowed in Warwick's waters, but it remains an important shellfish area.

Warwick has over 1,000 acres of freshwater wetlands, and over 2,000 acres of coastal wetlands.

Water pollution from stormwater nonpoint sources is a significant problem for both freshwater and saltwater resources.

The Greenwich Bay Special Area Management Plan (SAMP), an integrated coastal management plan, provides recommendations and priorities for Warwick.

Warwick needs to improve stormwater management and wastewater management in order to improve inland and coastal water quality.

Repetitive flooding of the Pawtuxet River is an increasing problem, as evidenced by the 2010 flood.

Warwick has an estimated 54,000 public trees and 107,000 privately-owned trees, including 10 "Champion Trees". This constitutes approximately 30% tree canopy cover.

challenges

Implementing the Greenwich Bay SAMP.

Establishing buffers along waterways.

Preserving remaining wildlife habitat.

Raising public awareness about improving private landscape practices.

Restoring degraded environments.

Reducing nonpoint source pollution of water bodies and waterways.

Implementing legally sustainable methods of prohibiting undersized lot or dimensionally deficient development within critical resource areas.

Raising public awareness about the advantages of low impact development practices, stormwater and wastewater management.



WHAT THE COMMUNITY SAID

- Many residents are concerned about flooding.
- Education programs on best landscape practices for private landowners are needed so they understand the connection to cleaner water.
- Sewering of areas without sewers is needed but there is also a concern that sewer service could make some small lots buildable, resulting in increased impervious surfaces, stormwater and pollution increases.
- Policies to reduce impervious surfaces are needed.
- No-build buffer zones along streams are needed.
- When asked to choose their top two environmental investments from a list of seven (of which 5 were water-related and one was “other”), the top two choices were air quality monitoring and improved river and coastal flooding protections. However, water quality monitoring, stormwater improvements for improved water quality, sewer expansion for improved water quality, and wetland preservation and restoration were almost equally important.



CURRENT CONDITIONS

1. Topography and Landscape Character

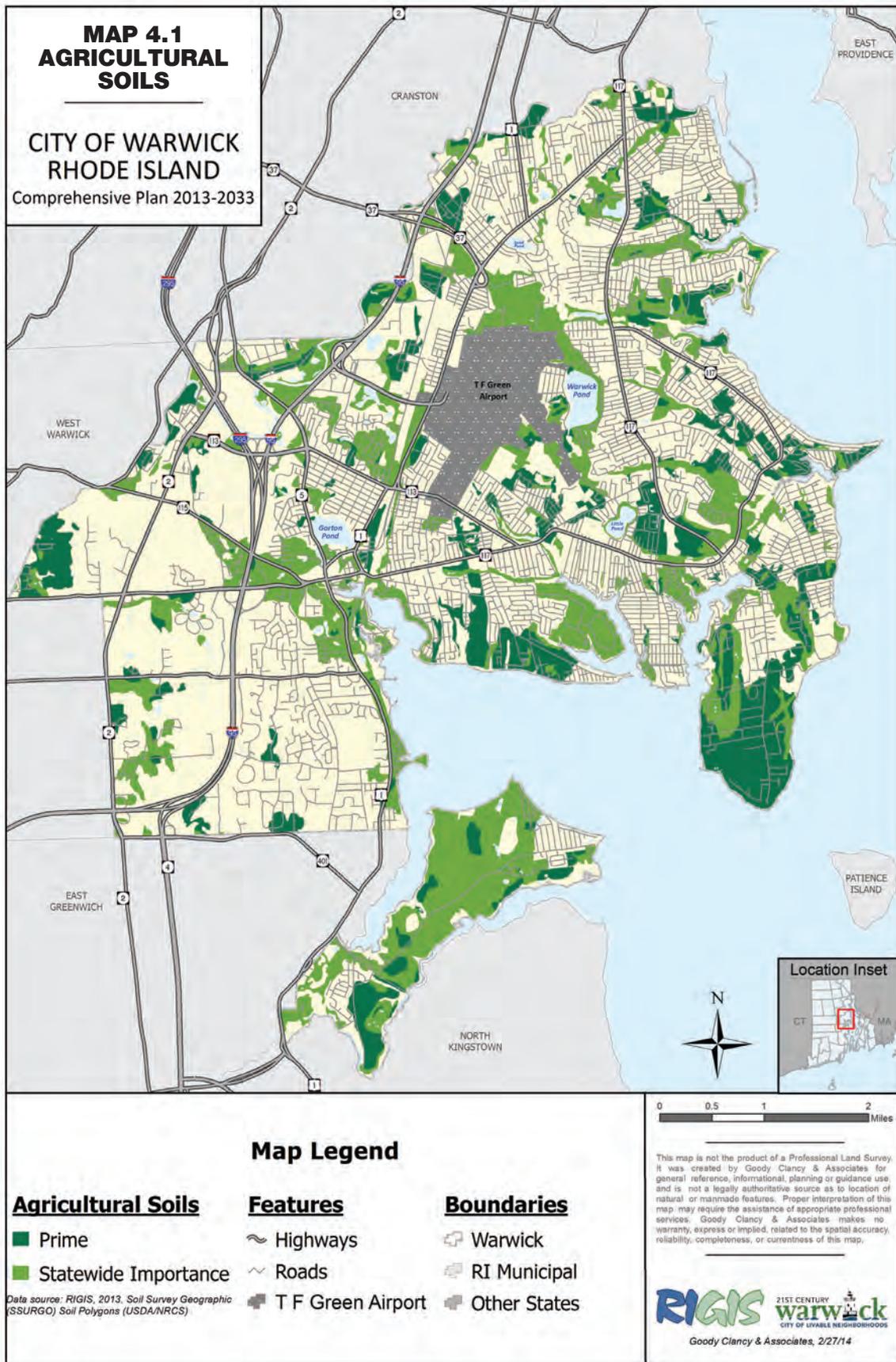
Topography. Warwick is divided into two topographically distinct areas, a seaboard lowland area comprising all of the north and central areas and Potowomut, and an upland area which covers the western and southwestern areas, principally Cowesett. A rather pronounced escarpment separates the lowland from the upland. The lowland is generally flat ranging in altitude from sea level to 100 feet, with isolated hills such as Warwick Neck, and

scattered depressions and ponds of varying size dotting the plain. The upland area consists of several hilly areas separated by stream valleys. The hilly areas are characterized by smooth, wooded slopes, areas of excessive slope, and generally rough topography and high elevation. At 350 feet, Spencer Hill, located off Quaker Lane near Major Potter Road, is the highest point in the city.

Slope conditions in Warwick are for the most part gentle and moderate. Areas which may be considered in excessive slope, meaning a deterrent to normal building procedures and generally above 15 percent, are found in western areas of the city, particularly in the Cowesett area, along the Pawtuxet River and on Warwick Neck.

Soil and Groundwater Conditions. A soil survey published for Rhode Island in 1981 by the US Department of Agriculture, Soil Conservation Service, identified over fifty soil classifications within Warwick’s city limits. Subsequent surveys have been made of the bedrock and surficial geology and of the ground water resources. In general, there are two distinct areas separated by the previously mentioned escarpment. The eastern lowland is underlain by glacial outwash atop sedimentary rocks of Pennsylvanian age, and the western upland is underlain by glacial till atop igneous and metamorphic rock of pre-Pennsylvanian age.

Glacial outwash is composed of soils which are fairly well sorted, permeable and the most productive water bearing soils in the city. Glacial till is generally unstratified, unsorted and compact. They are relatively impermeable. Sandy, loosely packed soils such as outwash have a higher permeability than dense soils such as glacial till and are better suited for on-site wastewater disposal. They also are a better source of groundwater. Conversely, high permeability can be undesirable if the rate of percolation is so fast that on-site sewage disposal causes groundwater contamination. Additionally, good permeability can be adversely affected by the presence of a high water table. Areas of Warwick in which the water table is close to the surface (high groundwater areas) are found along the shoreline in the north and northwest sections and also in the western parts of the city.





Agricultural Soils. The USDA/NRCS soil survey estimates that approximately 12% of Warwick is considered to have prime farmland soils. The City of Warwick is proud of its rich farming history and today has several privately operating farms including Morris Farm, Rocky Point Blueberry Farm, and Confreda Farm. From an economic standpoint, however, agriculture is no longer a large generator of local economic activity. The City of Warwick has taken steps in recent years to protect and preserve the remaining farmland within the municipal boundaries. The City partnered with the Rhode Island Department of Environmental Management (RIDEM) to purchase development rights to Morris Farm, Rocky Point Farm and acquired fee simple rights to both Barton Farm and Dawley Farm. Barton Farm is currently being utilized as open space and is home to a community farm providing fresh produce to low income families.

2. Watersheds, Water Bodies and Waterways

Watersheds. Warwick's surface waters are contained within two main watersheds: the Pawtuxet River Watershed, and the Narragansett Bay Watershed. Within the two watersheds, there are five subwatersheds. Surface waters within each watershed lead to a series of rivers, streams, brooks and tributaries that eventually empty into Narragansett Bay.

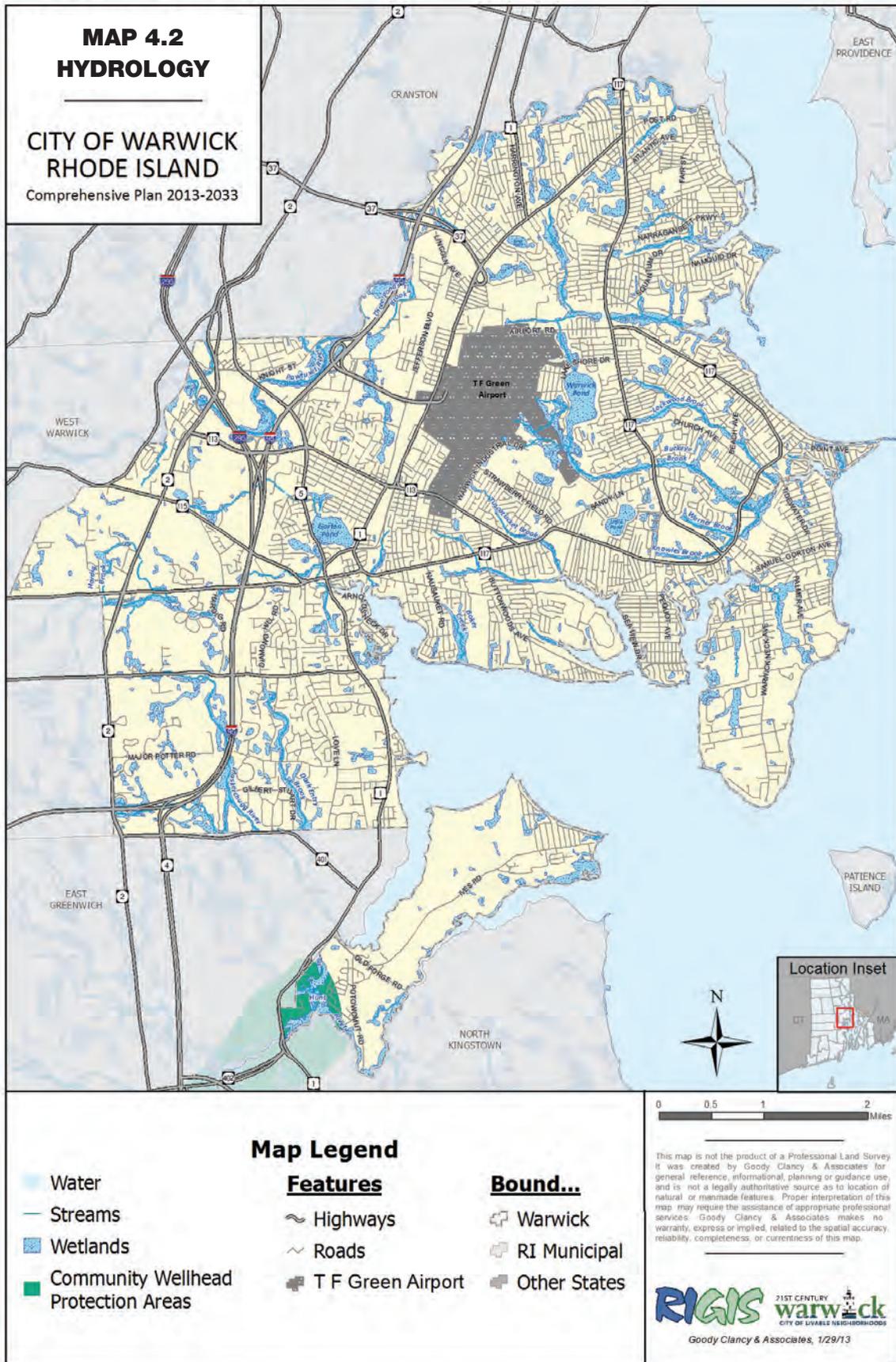
- The **Pawtuxet River Mainstem Subwatershed** encompasses portions of Wards 1, 2, 3, and 8. It includes a portion of the Pawtuxet River, its many tributaries

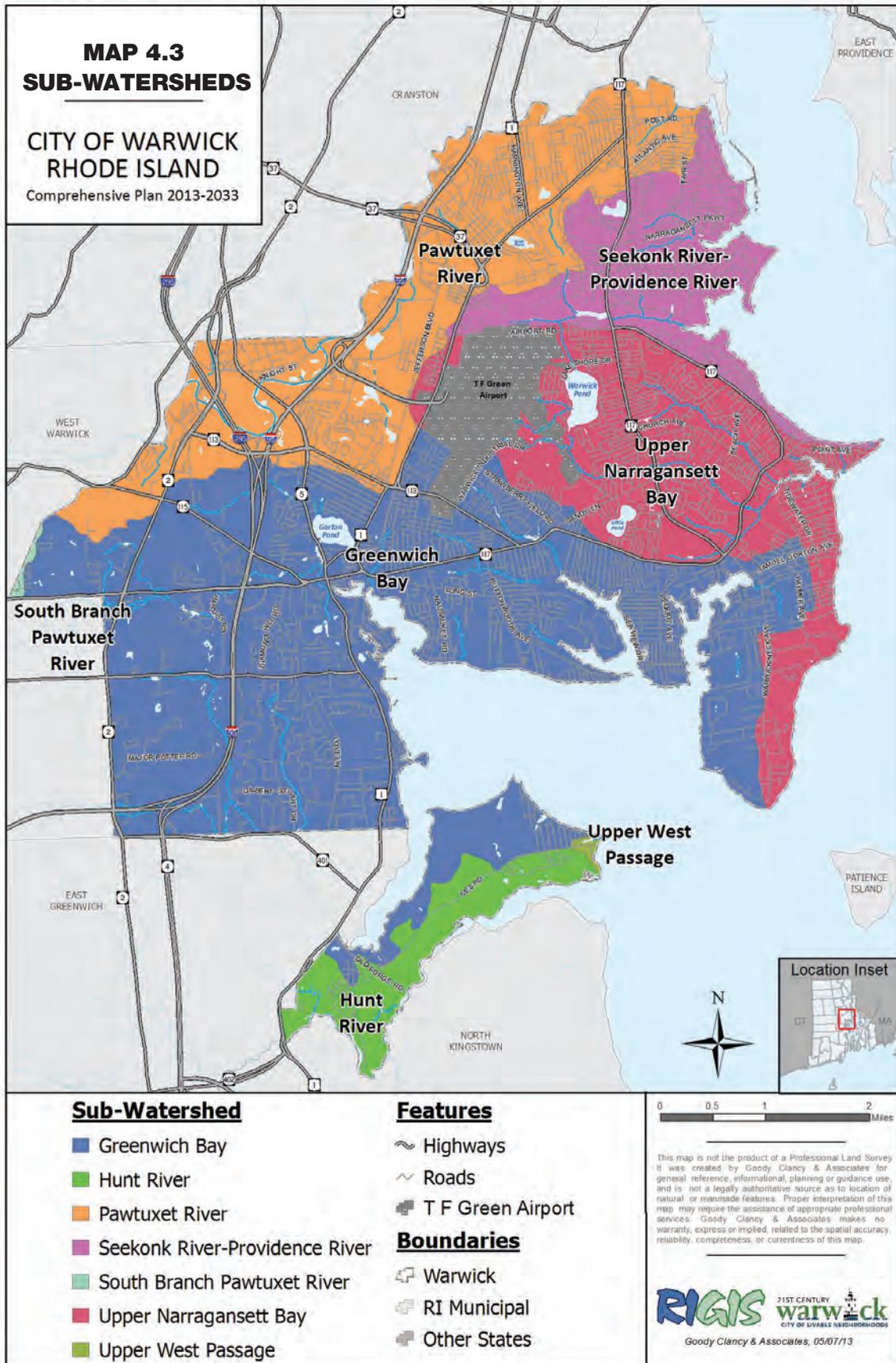
including Lakewood Brook, Three Ponds Brook and Meshanticut Brook, and it outlets into Pawtuxet Cove.

- The **Greenwich Bay Subwatershed** is the largest subwatershed in Warwick, and it encompasses all of Ward 7 and most of Ward 9, as well as portions of Wards 3, 5, 6, and 8. It includes Gorton Pond, and its many tributaries include Baker Creek, Greenwood Creek, Mill Brook, Pierce Brook, Dark Entry Brook, Tuskatucket Brook, and Saddle Brook. The subwatershed outlets into Greenwich Cove, Apponaug Cove, Buttonwoods Cove, Brushneck Cove, and Warwick Cove.
- The **Upper Narragansett Bay Subwatershed** encompasses portions of Wards 3, 4, and 5. It includes Warwick Pond, and its many tributaries include Knowles Brook, Warner Brook, Buckeye Brook, and Lockwood Brook. The subwatershed outlets into Mill Cove. T.F. Green State Airport is located within this subwatershed, and as such it contains some of the most environmentally sensitive areas in all of Warwick, including Buckeye Brook and Mill Cove.
- The **Hunt River Subwatershed** encompasses the southernmost portion of Ward 9. It includes Hunt River and Potowomut Pond, and the subwatershed outlets into the Potowomut River.
- The **Seekonk and Providence Rivers Subwatershed** is one of the state's largest and most sensitive subwatersheds, encompassing a portion of northern Warwick in Wards 1, 2, 3 and 4. It includes Spring Green Pond and its tributaries, and outlets into Passeonkquis Cove and Occupasstuxet Cove.

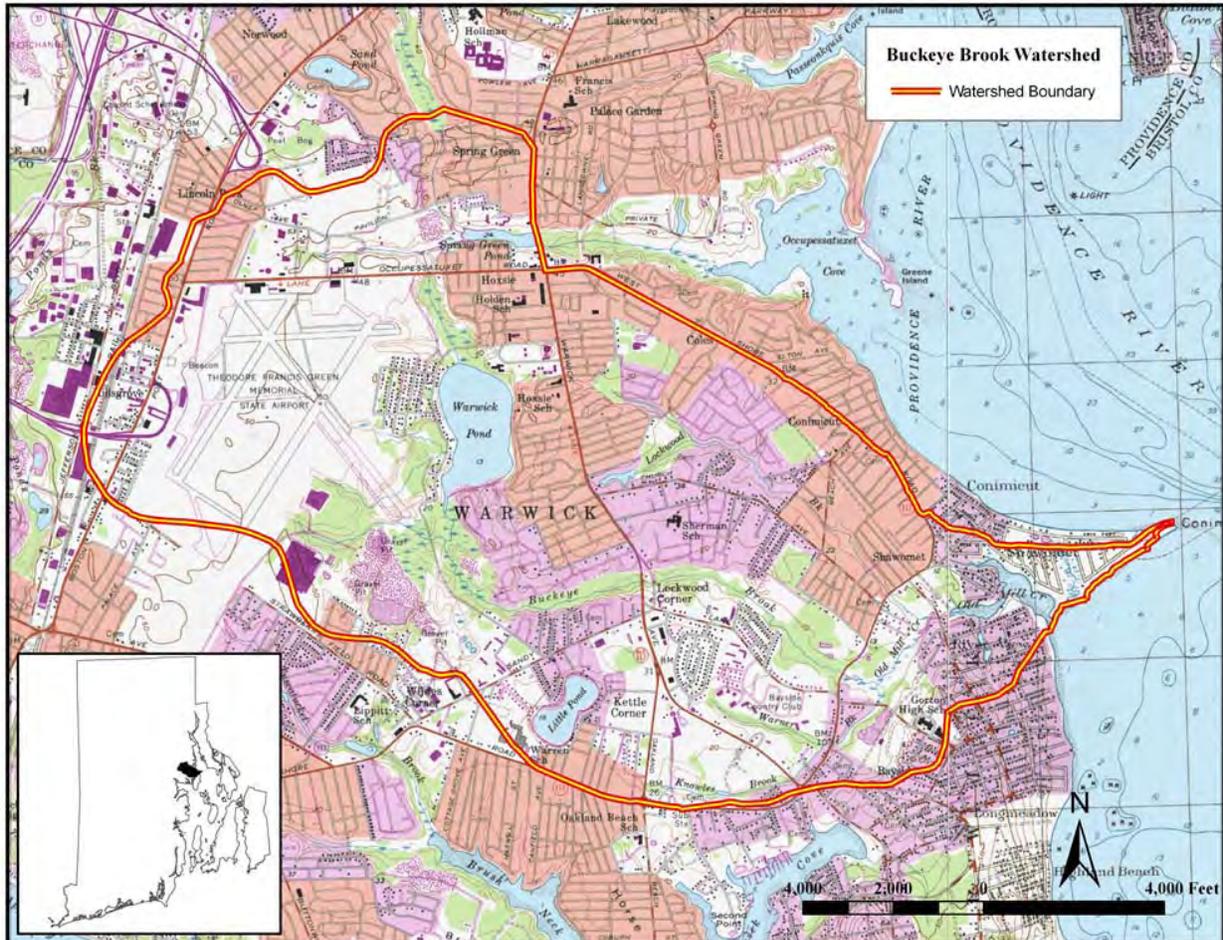
Table 4.1: **Water Bodies and Waterways by Ward**

WARD	PONDS	RIVERS, CREEKS AND STREAMS
Ward 1		Lakewood Brook
Ward 2	Posnegansett Pond, Sand Pond, Cranberry Pond	
Ward 3	Warwick Pond, Three Ponds	Three Pond Brook, Buckeye Brook, Tuskatucket Brook
Ward 4	Spring Green Pond, Smith Pond	Lockwood Brook
Ward 5		Buckeye Brook, Oakside Brook, Parsonage Brook, Warner Brook, Meadowview Creek, Foster Brook
Ward 6	Little Pond	Tuskatucket Brook, Carpenter Brook
Ward 7	Gorton Pond, Mary's Pond	Baker's Creek, Mary's Creek, Greenwood Creek, Mill Brook
Ward 8		Meshanticut Brook, Hardig Brook, Pawtuxet River
Ward 9		Pierce Brook, Dark Entry Brook Saddle Brook





Map 4.3: Buckeye Brook Watershed



The Pawtuxet River

The health of the Pawtuxet River is a high priority for Warwick and the State of Rhode Island. After centuries of pollutants entering its waters and modifications to the river's path and natural flow, plans to restore the river and provide improved public access to its shoreline are underway or completed.

Water Quality. The water quality classification for the segment of the river bordering Warwick is currently B1, which means waters are designated for primary (swimming) and secondary (boating) contact recreational activities and fish and wildlife habitat, but primary contact may be impacted due to pathogens from approved wastewater discharges. The Rhode Island Department of Environmental Management (RIDEM) has entered into an agreement with the USGS (US Geological Survey) to conduct monthly water quality monitoring on the Pawtuxet to enable long-term trend assessments, including ongoing analysis of pollutant loadings to Narragansett Bay.

Pawtuxet River Authority and Watershed Council (PRAWC).

In addition to efforts by RIDEM, the PRAWC, a non-profit agency created by the Rhode Island state legislature in 1972, coordinates efforts within the Pawtuxet River Watershed to improve the water and land quality of the entire Pawtuxet River system and render its waters fishable and swimmable. The PRAWC has cleaned hundreds of tons of debris from the Pawtuxet, built river access and trails, and worked to preserve open space. Currently, the PRA is engaged in a major project to restore migratory shad and herring to the Pawtuxet River system. The PRAWC was also responsible for funds being made available to

the three sewage treatment plants on the Pawtuxet River to upgrade their river discharges to tertiary treatment levels. Discharge water in this category is nearly drinkable.

Restoration of Pawtuxet Falls.

In August 2011, the waters of the Pawtuxet River entered the Narragansett Bay unimpeded for the first time in 300 years. The restoration of the free-flowing river resulted from the largest ecological dam-removal project yet undertaken in Rhode Island. The project was led by the PRAWC and Narragansett Bay Estuary Program (NBEP), with funding and technical assistance from more than a dozen federal, state and private organizations. The purpose of the project was to improve the ecosystems of the Pawtuxet River watershed and Narragansett Bay by restoring populations of native migratory fish, such as river herring and American shad, which were blocked from their natural spawning habitat for hundreds of years. In the spring of 2012, RIDEM began a multiyear stocking program for river herring and American shad to help re-establish their migratory cycle. The dam removal will also provide modest flood reduction for homes and businesses, and improve water quality in the lower Pawtuxet River. In developing the restoration project, the PRAWC and its partners completed major engineering, environmental and cultural studies of the Pawtuxet River, examining

river flow, sediments, wetlands, and historic resources in order to ensure that the dam removal will improve the environment of the Pawtuxet River and Narragansett Bay while avoiding adverse impacts to human health or economic uses. In order to begin construction, extensive permitting was necessary, including approvals by RIDEM, RICRMC, and the U.S. Army Corps of Engineers.

The Great Flood of 2010.

During February and March of 2010, the City of Warwick endured a series of rain events which culminated in the greatest river flooding in the State of Rhode Island's history. The flooding caused many hydrological alterations along portions of the river, including altered channeling, sediment mobilization and deposition, embankment erosion and collapse, as well as mature tree uprooting, mobilization and deposition. A complete assessment of the full impact of the flood on the well-being of the Pawtuxet River and the immediate community is ongoing. River assessments are being conducted, and mapping strategies to identify the most significant problems which need immediate attention are continuing as well. They will be used in the future to provide a more detailed river analysis of the consequences of the March 2010 flood. (For more on the flood, see Chapter 11: Sustainability and Resilience)

Table 4.2: **Freshwater Wetlands by Type in Warwick**

WETLAND TYPE	APPROXIMATE ACRES
Riverain Nontidal Open Water (rivers)	118.17
Lacustrine Open Water (lakes)	162.65
Palustrine Open Water (marsh/swamp)	207.69
Emergent Wetland: Marsh/Wet Meadow	162.81
Scrub-shrub Wetland: Shrub Swamp	336.37
Forested Wetland: Coniferous	12.43
Forested Wetland: Deciduous	154.81
Total Inland Wetland Area:	1,217.94

Source: RIGIS, University of Rhode Island Environmental Data Center, 1993

Land uses vary within these subwatersheds but generally consist of a mixture of residential and commercial uses, as well as some undeveloped tracts and farmlands, all overlain by the city's surface transportation network. The Pawtuxet River, Greenwich Bay, and Buckeye Brook (Upper Narragansett Bay) subwatersheds in particular have seen significant increases in impervious cover over the past several decades, resulting in increases in the volume and rate of runoff discharging to receiving waters, which in turn has contributed to the degradation of water quality.

Water Bodies and Waterways. Ten ponds and portions of five rivers can be found in Warwick, including the Pawtuxet, Hunt, Maskerchugg, Potowomut and Apponaug, as well as nearly two dozen brooks.

Freshwater Wetlands. Approximately one third of the total wetland area in Warwick is classified as freshwater wetlands. (See Map 4.2) Wetlands, which include riverbank and perimeter areas, ponds, marshes, bogs, and swamps, are important areas for water retention and filtration, for plant and wildlife habitat, and help to protect life and property from flooding. Table 4.1 lists the approximate acreage of freshwater wetlands in Warwick. These include wetlands of at least $\frac{1}{4}$ acre in area, and wetlands with salinity of less than 0.5 parts per thousand. Freshwater wetlands of particular importance include the resource area along the Three Ponds Brook system, Peat Bog, and the wetland resource areas along Warwick Neck.

Regulation of freshwater wetlands is the responsibility of RIDEM. Development activities which may alter any freshwater wetland area, or activities in close proximity to wetlands that may cause any alteration to the natural character of a freshwater wetland are not allowed without first receiving a permit from the department. Projects that impact surface run-off or divert groundwater away from the wetland, or modify the water quality in any way are included.¹

Aquifers. Aquifers are subsurface geological formations that contain significant amounts of groundwater. Water drawn from these formations can be replaced by surface water that filters downward through permeable surface soils, thereby "recharging" the aquifer. Aquifers are vital natural resources that require protection from contamination as they provide drinking water. Warwick shares the Hunt River Aquifer system with the Towns of North Kingstown and East Greenwich. The Kent County Water Authority and North Kingstown Water Department both maintain wells that draw from the aquifer. Land development practices pose a serious threat to this resource due to the proliferation of on-site septic systems, incompatible land uses, use of herbicides, insecticides and chemical fertilizers in residential landscaping, and the presence of underground storage tanks (USTs). Wellhead protection areas (WHPAs) have been established around all public wells in the state to help prevent and mitigate contamination from entering the critical portion of the aquifer where groundwater moves to and reaches the well. While there are no WHPAs in Warwick, the southernmost portion of Potowomut falls within the East Greenwich WHPA (WHPA #2051728-01).

3. Coastal Water Resources

Warwick has approximately 39 miles of shoreline, divided among a variety of conditions and ownership patterns. The majority of the City's shoreline is privately owned. Approximately 12 miles of shoreline are publicly owned, divided among City, state and federal proper-

¹ Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act, RI Department of Environmental Management, December 2010.

ties, with the City holding the most frontage. Most of Warwick’s shoreline is classified as salt marsh, mud flats, and unconsolidated sand, gravel or cobble beaches. However, there are also limited areas of headland bluffs. To illustrate the differences, Oakland Beach’s shoreline type is classified as a beach, while the south side of Conimicut Point is classified as a barrier spit, and both Buttonwoods and Occupassatuxet Neck are classified as headland bluffs of glacial outwash. Bluff areas are those shoreline areas elevated significantly above water level offering scenic vistas of the Bay and adjacent shoreline. Bluff areas also provide good protection from storms and erosion, and excellent recreational opportunities.

Table 4.3: **Warwick Coves**

WARD	COVES
1	Pawtuxet Cove, Pas-seonkquis Cove, Occupassatuxet Cove
4	Mill Cove
5	Warwick Cove
6	Brushneck Cove, Buttonwoods Cove
7	Apponaug Cove
9	Greenwich Cove

Barrier Beaches.

Barrier beaches serve as buffers against storms and offer a unique and valuable coastal environment. Undeveloped barrier beaches in Warwick

include Marsh Point, Baker’s Creek, Buttonwoods Cove, Gaspee Point and Conimicut Point. Development along barrier beaches can degrade the natural functions of these resources. These areas should be preserved for recreational use by residents, and for their value as scenic resources and storm control. The Coastal Barrier Resources Act (COBRA) of 1982 and later amendments, removed the Federal government from financial involvement associated with building and development in undeveloped portions of designated coastal barriers (including the Great Lakes). These areas were mapped and designated as Coastal Barrier Resources System units or “otherwise” protected areas. They are colloquially called COBRA zones. COBRA banned the sale of NFIP flood insurance for structures built or substantially improved on or after a specified date. For the initial COBRA designation, this date is October 1, 1983. For all subsequent designations, this date is the date the COBRA zone was identified. COBRA zones and their identification dates are shown on Flood Insurance Rate Maps (FIRMs).

Table 4.4: **Coastal Wetlands In Warwick**

WETLAND TYPE	APPROXIMATE ACRES
Riverine Tidal Open Water (RTW)	1,319
Estuarine Open Water (EOW)	395
Marine/Estuarine Rocky Shore (ERS)	8
Marine/Estuarine Unconsolidated Shore (EUS)	104
Estuarine Emergent Wetland (EEM)	208
Estuarine Scrub-shrub wetland (ESS)	1
Total Coastal Wetland Area:	2,034

Sources: RTW and EOW, 1990 Comprehensive Plan; ERS, EUS, EEM, ESS RIGIS 1993

Communities may permit development in these areas even though no Federal assistance is available, provided that the development meets NFIP requirements.

Coves and Bays. Warwick’s ten saltwater coves and two bays provide ample habitat for finfish and shellfish, the most significant of which is the winter flounder. However, Warwick’s waters have been off limits to commercial finfishing for more than 20 years. Commercial fishing is limited to restricted seasonal trawl fishery in the “Upper Bay” (Narragansett Bay between Warwick Neck and Conimicut Point) and seasonal baitfishery for menhaden. The “Upper Bay” and Greenwich Bay are two of the State’s most important shellfishing areas, producing most of the quahogs harvested from Narragansett Bay. These areas are regulated by RIDEM, which designates them as approved shellfishing areas or polluted, conditional or seasonal closure areas.

Coastal Wetlands. Warwick has approximately 2,034 acres of designated coastal wetlands. Table 4.4 lists the approximate acreage by wetland type as identified by the Rhode Island Geographic Information System (RIGIS). These include wetlands of at least 1/4 acre in size, and wetlands with salinity greater than or equal to 0.5 parts per thousand. The vast majority of this area included in this acreage is open water in Greenwich Bay and the “Upper Bay.” However, wetland areas along the shoreline account for 321 acres, of which nearly 260 acres are considered salt marshes.² These areas provide food and

2 "208" Water Quality Management Plan for Rhode Island



shelter for juvenile fish, shellfish habitat, shorebird and waterfowl habitat and serve as natural erosion and flood control mechanisms. Coastal wetlands of particular importance include Mary's Creek, Capron Farm Creek, Mill Cove, Greenwich Cove, Marsh Point, Buttonwoods Cove, Baker's Creek, Brush Neck Cove, Conimicut Point, Gaspee Point, and Passeonkquis Cove.

Greenwich Bay. With five square miles of shallow water and five protected coves (Greenwich Cove, Apponaug Cove, Buttonwoods Cove, Brush Neck Cove, and Warwick Cove), Greenwich Bay is an estuary—a mixing basin for salt and fresh water—that has provided people with food, shelter, transportation, trade, and recreational opportunities for centuries. Greenwich Bay remains a valuable commercial fishing area and recreational harbor surrounded by a 21-square-mile suburban watershed encompassing portions of three municipalities: Warwick, East Greenwich, and, to a smaller degree, West Warwick. Greenwich Bay experiences many of the problems common to growing suburban coastal communities, such as poor water quality, the loss of natural habitats, displacement of traditional commercial fisheries, privatization of the shoreline, and a lack of coordination between neighboring communities.

4. Water Quality and Protection

In accordance with the environmental protection objectives of the federal Clean Water Act, the State of Rhode Island is required to:

- Establish water quality standards for its surface waters (lakes, ponds, rivers, streams, estuaries and other marine waters)
- Monitor and assess water quality conditions within these waters (with respect to their ability to support fish and wildlife habitat; fish/shellfish consumption; and human recreation activities)
- Identify and inventory those waterbodies that do not meet water quality standards due to impairments caused by one or more pollutants (e.g., bacteria, nutrients, metals, temperature, low dissolved oxygen)

- Establish a prioritized schedule for total maximum daily load (TMDL) studies and the implementation of pollutant load restrictions / target reductions for the source(s) identified as the cause of the impairment.

RIDEM's Office of Water Resources regularly publishes updates of their Water Quality Regulations. The latest regulations were amended in December 2010, and the Water Quality Classification Descriptions were amended in May, 2009. In addition to the Water Quality Regulations, RIDEM has also issued a new RI Pollutant Discharge Elimination System (RIPDES) permit to the RI Airport Corporation (RIAC) for T.F. Green State Airport. The permit went into effect on September 1, 2012 and expires on September 1, 2017.

The majority of Warwick's fresh waters are classified as either A or B, which means they are suitable for primary and secondary contact recreational activities (A and B) and fish and wildlife habitat (B). The majority of Warwick's salt waters are Classification SA, which allows shellfish harvesting for direct human consumption, primary and secondary recreational activities and fish and wildlife habitat; or SB, which meets all SA criteria, with some exceptions for shellfish. (See the Appendix for more detailed water quality classification explanations.)

Ponds. "Eutrophic" ponds have excess nutrients that promote growth of algae and vegetation. In an urbanized location, the excess nutrients typically come from fertilizer runoff, waterfowl fecal matter, and similar sources. In Warwick, deicing and anti-icing fluids used at T.F. Green Airport also contribute to this issue. Gorton Pond, Warwick Pond, and Sand Pond are among nine eutrophic ponds studied in a RIDEM TMDL 2007 study.³ The water quality issues in these ponds exemplify the varied conditions and challenges of improving water quality in highly urbanized areas like Warwick.

- Gorton Pond, in the Greenwich Bay watershed, has a surface area of 59 acres, a maximum depth of 45 feet, and an average depth of 16 feet. The pond is fed by groundwater, surface water runoff, stormwater runoff,

³ Total Maximum Daily Loads for Phosphorus To Address 9 Eutrophic Ponds in Rhode Island, RIDEM Office of Water Resources, September 2007, <http://www.dem.ri.gov/programs/benviron/water/quality/rest/pdfs/eutropnd.pdf>

tributary inflow, and direct precipitation. The Gorton Pond watershed is highly urbanized and encompasses approximately 398 acres. A city park and beach with a wheelchair accessible fishing pier and boardwalk is located on the eastern side of the pond. Hundreds of gulls and waterfowl are attracted to residential lawns near the pond. Except for a small marsh at the northwest corner of the pond, there are no vegetative wetlands contiguous to the shore. There is significant growth of aquatic vegetation in the shallows of this deep pond and in some areas it forms a continuous mat on the surface.

- Sand Pond, also in the Pawtuxet watershed, has a surface area of approximately 12 acres. As a kettle hole pond, it has no streams discharging into or draining from the pond, nor are there any contiguous wetlands. Inflow to the pond consists primarily of groundwater, surface water runoff, stormwater runoff, and direct precipitation. The pond's watershed is highly urbanized and encompasses approximately 62 acres. There is a narrow forested buffer around most of the pond, but several lawns extend to the water's edge. Sand Pond is made up of two basins separated by a low narrow earthen berm. The smaller basin has extremely dense growth of aquatic vegetation. Hundreds of geese have periodically over-wintered on the pond. There are six identified storm drains and one area of concentrated surface water flow discharging to Sand Pond.
- Warwick Pond is located in the Buckeye Brook watershed, east of the airport. This 85-acre pond has an average depth of 14 feet and a maximum depth of 26 feet. Inflow to the pond consists of groundwater, surface water runoff, stormwater runoff, tributary inflow, and direct precipitation. The Warwick Pond watershed is approximately 855 acres in area and much of it is highly urbanized. Located just east and within the watershed is T.F. Green Airport, which occupies 1,100 acres of land. However, there are some forested areas and vegetated, wetland buffers along the main stream that feeds the pond. Lawns typically extend to the water's edge along the western and southern shore, attracting waterfowl. The northern shore of the pond is undeveloped and is dominated by a swamp. The pond supports an andronomous fish population and does

not have the aquatic vegetation growth found in the other ponds. Two drainage ditches from the airport area discharge into the stream and the pond. Warwick Pond is drained by Buckeye Brook at its southwestern end. There are forty four (44) identified storm drains and sixteen (16) areas of concentrated surface water flow discharging to Warwick Pond, its tributaries, and hydrologically connected wetlands.

The RIPDES Permit issued to RIAC by RIDEM addresses stormwater discharges from the airport facility. The discharges flow into Tuscatucket Brook and several small tributaries leading to Warwick Pond and Buckeye Brook. The permit addresses impacts from stormwater, primarily the water quality impacts pertaining to dissolved oxygen, aquatic toxicity, foaming, nuisance odors, and nuisance bacteria growths caused by deicing and anti-icing fluids used at the airport (Glycol Collection and Treatment Facility under construction).

Impaired Waters and TMDL Studies. A number of streams, ponds, and coastal waters in Warwick are on the state's 303(d) list of waters impaired for certain uses by pollutants, issued in August 2012. The state is required under the federal Clean Water Act to develop Total Maximum Daily Load (TMDL) plans for waters not meeting one or more water quality criteria. TMDL plans for the following water bodies in Warwick have been approved by the US Environmental Protection Agency:

- Buckeye Brook Watershed for fecal coliform and enterococci, including Buckeye Brook, Lockwood Brook, Parsonage Brook, Warner Brook, Old Mill Creek estuary, tributaries to Warwick Pond
- Gorton Pond for phosphorus
- Warwick Pond for phosphorus
- Greenwich Bay for fecal coliform, including Apponaug Cove, Brush Neck Cove, Buttonwoods Cove, Warwick Cove, Greenwich Cove, Gorton Pond tributary, Southern Creek, Tuscatucket Brook, Hardig Brook and tributaries, Maskerchugg River
- Sand Pond for phosphorus

As an example, the TMDL study for Greenwich Bay, which focused on fecal coliform, found that the sources

Table 4.5: **303(d) List of Impaired Waters (2010)**

WATERSHED	WATER BODY	TMDL SCHEDULE	USES NOT SUPPORTED
Narragansett Basin	Providence River	2016; 2022	fish/wildlife habitat; contact recreation
	Upper Narragansett Bay	2016; 2022	fish/wildlife habitat; shellfish consumption
	Sandy Pond	2014	contact recreation
	Buckeye Brook and tributaries	2012	fish/wildlife habitat; contact recreation
	Apponaug Cove	2016	fish/wildlife habitat; contact recreation
	Brushneck Cove	2016	fish/wildlife habitat; shellfish consumption
	Buttonwoods Cove	2016	fish/wildlife habitat; shellfish consumption
	Greenwich Bay	2016	fish/wildlife habitat; shellfish consumption
	Greenwich Cove	2016	fish/wildlife habitat; contact recreation
	Warwick Cove	2016	fish/wildlife habitat; contact recreational shellfish consumption
	Hardig Brook & tributaries	2016	fish/wildlife habitat; fish consumption; contact recreation
	Maskerchugg River	2016	fish/wildlife habitat; contact recreation
	West Passage	2016	fish/wildlife habitat
Pawtuxet River Basin	Pawtuxet River South Branch	2011; 2016	fish/wildlife habitat; contact recreation
	Three Ponds	2014; 2016	fish/wildlife habitat
	Meshanticut Brook and tributaries	2011	contact recreation
	Pawtuxet River Main Stem	2016; 2022	fish/wildlife habitat; fish consumption; contact recreation
	Three Pond Brook	2016	fish/wildlife habitat

Source: State of Rhode Island 2010 303(d) List of Impaired Waters Final, July 2011 (<http://www.dem.ri.gov/pubs/303d/303d10.pdf>)

of bacteria were humans, domestic pets, waterfowl and wildlife, and the pathways to water were the storm sewer network, stormwater sheet flow over land, seepage from septic tanks and cesspools and directly into the water. Stormwater and wastewater management are critical aspects of the plan. Stormwater Best Management Practices (BMPs) include infiltration of roof runoff, landscape management to promote infiltration, and end of pipe treatment. Stormwater BMP priority locations for Warwick are Brush Neck Cove, Apponaug Cove, and Narragansett Bay via contribution from Buckeye Brook. Warwick is also extending its sewer system. Other best practices focus on managing pet and waterfowl waste, managing activities at beaches to reduce bacteria and boat pump out stations.

Greenwich Bay Special Area Management Plan (SAMP). The Greenwich Bay SAMP is an integrated

coastal management plan developed by the R.I. Coastal Resources Management Council (CRMC), along with municipalities, federal and state agencies, and concerned citizens. This plan provides recommendations on addressing and balancing environmental and economic issues including poor water quality, loss of natural habitats, displacement of traditional commercial fisheries (including shellfishing), and privatization of the shoreline. The goals of the Greenwich Bay SAMP are as follows:

- Develop leaders and stewards to coordinate and implement actions that protect the unique resources of Greenwich Bay.
- Improve Greenwich Bay’s water quality so that it is a safe place to fish and swim.
- Maintain high quality fish and wildlife habitat in the Greenwich Bay watershed.



- Improve recreational opportunities on Greenwich Bay and its shoreline.
- Enhance water-dependent economic development on Greenwich Bay and its shoreline to maintain the areas unique sense of place.

Specific recommendations for Warwick include stormwater management recommendations that are consistent with the requirements for municipalities (MS4 operators) under the state’s stormwater management regulations: mapping stormwater outfalls; identifying, eliminating and preventing illicit discharges; planning and implementing structural Best Management Practices (BMPs) to improve water quality and reduce runoff; and updating ordinances to enforce proper stormwater management. Structural BMPs include detention ponds, swales, rain gardens, and similar physical interventions to increase infiltration of stormwater into the ground. Priority areas for BMPS are Brush Neck Cove, Apponaug Cove, areas with large impervious drainage areas and areas with direct stormwater discharges. (See Chapter 10, Public Facilities and Services, for additional discussion.)

Stormwater. Before 1987, water pollution programs focused on “point” sources of pollution (such as industrial sources, and other identifiable pipes and outfalls). With better controls over point sources, it became evident that pollution from “nonpoint” sources of pollution (i.e., stormwater runoff from agricultural lands, construction sites, and urban areas) remained a serious problem. As runoff flows over impervious surfaces and other areas altered by development, it can capture pollutants that end up in the receiving waters. The 1987 amendments to the federal Clean Water Act addressed nonpoint pollution sources by directing states to develop and implement nonpoint pollution management programs, which in Rhode Island are administered by RIDEM under the Rhode Island Pollutant Discharge Elimination System (RIPDES).⁴

Sewerage. Programs to improve sewerage within Warwick to protect the health of its waterways have been ongoing, primarily addressed through the Warwick

TABLE 4.6: **LOCATIONS OF HIGH VALUE WILDLIFE HABITAT IN WARWICK**

NAME	WILDLIFE VALUE
Buckeye Brook/ Mill Cove	Herring run, aquatic life, Wood and Black Ducks
Warwick Pond	Various fish, snapping turtles
Potowomut River	Herring run
Rock Island	Fossil site, birds
Passeonkquis Cove	Ducks, scaup, widgeon
Gorton Pond	Herring, alewife and American eel run, freshwater fish (various types)
Occupasstuxet Cove	Waterfowl, shell and finfish, upland birds
Marsh Point, Baker's Creek	Upland birds, shell and finfish
Mary's Creek	Shellfish, waterfowl, finfish
Conimicut Point	Shellfish, saltwater fish, (Narragansett Bay)
Tuscatucket Brook & Pond, Sand Pond, Three Pond Brook, City Park	Waterfowl, freshwater fish
Pawtuxet River (especially lower reaches)	Waterfowl, birds

Sewer Authority’s 1992 Facilities Plan and 1996 and 2004 amendments. This has included a \$32 million upgrade to the Warwick wastewater treatment facility, numerous sewer service extensions, as well as ongoing maintenance and operational improvements. (For more information on stormwater and sewer systems, see Chapter 10, Public Facilities and Services.)

5. Wildlife Habitat

In a mature suburban city such as Warwick, most of the native wildlife has disappeared or has dwindled to very low populations. There are, however, several areas in the City which support wildlife, primarily birds and aquatic life. The most important of these are the coastal and freshwater wetlands, salt and fresh water marshes, and other water sources. All of Warwick’s wetland areas provide valuable wildlife habitat, especially excellent sources of food for aquatic life, birds and waterfowl. Among the city’s most notable habitat areas are Buckeye Brook and its marshlands, where herring run upstream each spring to spawn in Warwick Pond. Gorton Pond and Hardig Brook contain high value habitat for alewives, blueback

⁴ <http://www.dem.ri.gov/programs/benviron/water/permits/ripdes/stwater/index.htm>



herring, and American eels. The marshlands along Mill Cove support a large amount of aquatic life and are one of the city's best shelters for ducks. Mary's Creek is one of the premier shellfish habitat areas in the state. Brushneck Cove and Baker's Creek Marsh provide significant areas for waterfowl feeding, resting and cover. The Potowomut River and environs also provide a large estuarine habitat for a wide variety of marine and upland wildlife. In addition to wetland areas, upland woodland, particularly in the less developed southwestern sections of the city provide valuable habitat for fox, deer and a wide variety of more commonly observed mammals and birds.

Rare and Endangered Species and Habitats.

Approximately thirty five rare and endangered species of plants and animals in Warwick have been identified by the Rhode Island Natural Heritage Program. Species are assigned to one of six status categories: FE (Federally Endangered); FT (Federally Threatened); SE (State Endangered); ST (State Threatened); C (Concern); and SH (State Historical). The Federally Endangered and Federally Threatened species are given the highest status in regard to protection, followed by State Endangered, State Threatened, Species of Concern and State Historical species. There are no known Federally Endangered or Federally Threatened species in Warwick. However, there are a number of state status species in the city, a list of which is maintained at the NHP office at RIDEM. The NHP has inventoried habitats where rare species are found and have made management recommendations to ensure their continued survival in those habitats. Sites of particular interest in Warwick include the following:

- Greene Farm, located on the Potowomut River, includes approximately 150 acres of open fields and farmland, and dry oak/mixed woodlands. With frontage on the Potowomut River and several small streams, and four small ponds Greene Farm provides varied riparian and lacustrine habitats. The farm has been protected through purchase of development rights by the State.
- In the lower reaches of the Pawtuxet River floodplain forests and associated river stretches are critical but unprotected habitat for waterfowl, songbirds, other aquatic mammals and various reptiles and amphibians. Protection would involve establishing river buffer zones and control of pollutants entering the river system.
- Wetlands adjacent to the Three Ponds complex provide habitat for the State-listed Sora Rail (*Porzana carolina*). Fewer than 10 populations of this species are known statewide and its numbers are continuing to decline, primarily due to habitat destruction. The present configuration of the cattail marsh along with open water at this site favors the presence of not only the Sora, but other noteworthy species, including the Virginia Rail (*Rallus limicola*). The site has already been subjected to repeated alteration.
- Gorton Pond is an example of a rare community type, the coastal plain pondshore. The sandy shorelines support rare flora adapted to the naturally fluctuating water levels. More inventory work is needed in this area, as many of the rare pondshore plants are only seen in years of low water levels, when the shorelines are exposed.
- Apponaug Cove and Occupastuxet Cove are known to be significant wintering areas for black ducks and other species of waterfowl. Of particular importance are the marshes and extensive mudflats in the back areas of the coves.

All of the sites listed above could benefit from additional protection such as protective zoning, placement of conservation restrictions, redirecting intensive development, establishment of buffer zones and other activities.

6. Trees and the Urban Forest

Urban forestry encompasses the planning, protection, and management of trees and associated plants in cities. Trees provide a wide range of environmental and aesthetic benefits and are among the most valuable and important landscape features in any community.

Trees function collectively in the urban forest, forming a “green infrastructure” within their communities.

The benefits of trees in the urban environment include:

- Reduction of surface water runoff/reduction of flood risks
- Reduction of soil erosion and sedimentation of water bodies
- Absorption of water and air pollution
- Sequestration of atmospheric carbon
- Mitigation of the “urban heat island effect”
- Micro-climate control and reduction of energy costs
- Abatement and buffering of noise
- Enhancement of property values
- Enhancement of community aesthetic character, links to the past, and contribution to “sense of place”
- Psychological and social impacts, including stress relief and crime reduction
- Health benefits associated with air quality improvements and physical exercise.

Since the early 1990’s, the City of Warwick has worked closely with the Rhode Island Tree Council (RITC) to promote efforts on behalf of the city’s urban forest. The Rhode Island Tree Council is a non-profit organization dedicated to the improvement of Rhode Island’s tree resources by providing technical expertise to cities and towns as well as creating and presenting public education programs designed to promote public awareness regarding the value of trees and proper tree planting and maintenance techniques. In 1995, the City created a full time position within the planning department to plan and manage the city’s expanding tree planting program. This staff person is dedicated to urban forestry issues, including managing the tree planting program and reviewing landscape plans for both commercial and subdivision development, as well as all other aspects of landscape design for the city. The staff member also serves as a city liaison, working in partnership with RIDEM and the RITC to improve and strengthen urban forestry initiatives with the city.

Thousands of trees have been planted on city streets, in parks, at schools and other public properties, along the Warwick segments of state arterial roads and in the parking lots and frontages of all new commercial development. The City has a process to track compliance with landscape regulations and the permitting process of the Building Department. A fee in lieu of landscaping is required if a particular development is unable to fulfill the requirements of the City’s Zoning Code. The Warwick Tree Trust account was established to hold these funds in a separate account to be used for city tree planting projects.

Barton Tree Farm. The City has developed a pot-in-pot tree farm operation on approximately 1 acre of land at the city owned Barton Farm, a former dairy farm acquired by the city as open space in 2001. By ordering young, 1” caliper trees from nurseries at a low cost, the city was able to increase the seasonal availability of trees and increase the diversity of species, as well as significantly lower the cost of trees. Hundreds of trees from the tree farm have been planted throughout city neighborhoods, schools, parks and recreational facilities. The former dairy farm well is used to water the trees as well as a community farm operated by Westbay Community Action located at Barton Farm, eliminating the need to use water from the Kent County Water Authority.

The two-acre community farm, Westbay Farm, was founded in 2005 as Westbay Community Garden. The farm supplies the Westbay Marketplace food pantry in Buttonwoods and operates a farm stand at Kent Hospital.

Rhode Island Urban and Community Forest Plan.

In May of 1999, the Rhode Island Statewide Planning Program published the first Rhode Island Urban and Community Forest Plan, Element 156 of the Rhode Island State Guide Plan. Developed in collaboration with RIDEM’s Division of Forest Environment and the RITC, this plan “establishes a vision, goal, and policies and provides recommendations focused on the manage-

TABLE 4.7: **Warwick’s Public Viewshed (PVT) Tree Population**

PUBLIC	PRIVATE	TOTAL
53,554 (±8,552)	106,451 (±10,302)	160,006 (±5,184)



ment of tree resources within the built environment.” It also states: “As an element of the State Guide Plan, the Urban and Community Forest Plan sets forth goals and policies that must, under State law, be reflected in future updates of local comprehensive plans.” Therefore, the goals and policies of Element 156 must, under state law, be reflected in Warwick’s Comprehensive Plan, and ultimately the zoning ordinances and land development regulations.

Recent Developments. During the summer and fall of 2010, the City of Warwick was chosen to be included in a large urban forestry study that was conducted along with 5 other communities throughout urbanized Rhode Island. This study, called the Forest Sustainability Project, was conducted by the RITC in conjunction with the USDA Forest Service, and was funded by the 2009 American Recovery and Reinvestment Act (ARRA). Members of the Rhode Island Tree Council’s “Green Team” conducted a Tree Inventory Assessment on a 6% sampling of the entire city’s streets, a sample size of 32.93 miles of street segments out of a total 593.57 linear street miles. In total, 495 street segments were surveyed. Data was collected on all trees that were found to be within the public view shed corridor, which includes street trees located within the public right of way as well as trees located on private property in front and side yards. Every tree that could be viewed from the roadway was included in this survey. A total of 7,550 trees were counted, 2,527 (33.5%) of which were publicly owned. The remaining 5,023 (64.5%) trees were observed on private property. Utilizing the data collected in the Warwick Tree Inventory Assessment, the “Green Team” members were able to use the i-Tree software program to extrapolate the number of trees in the entire city planted within both the public right of way and the viewshed corridor.

The Warwick Tree Inventory Assessment provides the City with the estimated economic value derived from Warwick’s urban forest:

- Citywide, each tree in Warwick contributes \$32.93 per year in energy savings.

- Warwick trees intercept a total of 249,827,422 gallons of stormwater annually, providing \$1,998,758 in derived stormwater mitigation benefits.
- Warwick’s tree resources sequester a net amount of 38,146,045 pounds of CO₂ annually.
- Warwick trees also house a significant amount of carbon stored over a life time of growth, 750,713,031 pounds in all. This provides a total of \$2,477,353 in related savings.

Warwick’s total tree-derived economic benefit is calculated to be \$12,852,683 per year.

While Warwick’s tree population is split between 66.5% private ownership and 33.5% public trees, the proportion of economic benefit derived from public property is 40.4%. This shows greater benefit from trees in public space than on private land. This is because homeowners tend to choose smaller flowering trees, displayed for sale when they are in bloom, which provide correspondingly smaller environmental and economic benefits. A planting program combined with a public outreach program regarding species choices and proper placement would serve to ensure the future vitality of this valuable resource.

7. Natural Resources Organizations

The organizations in Warwick charged with protecting, preserving and enriching the city’s landscape and natural resources include the Warwick Wildlife and Conservation Commission, the Pawtuxet River Authority and Watershed Council, the Warwick Land Trust, the Mill Brook Conservancy, and the Buckeye Brook Coalition.

Warwick Wildlife and Conservation Commission.

The Warwick Wildlife and Conservation Commission was established in 1974 by the Warwick City Council. The Warwick Wildlife and Conservation Commission is constantly striving to sustain a balance between residential and commercial development while maintaining the integrity of the City’s wildlife and other natural resources.



The purpose of the Warwick Wildlife and Conservation Commission is to preserve the City's natural resources while promoting development of the environment in an orderly responsible fashion; to protect the watershed resources; to preserve and enhance natural aesthetics and wildlife habitat; and to promote an ecological balance between preservation of the natural landscape and the man-made environment.

The Warwick Land Trust. The mission of the Warwick Land Trust, which was formed by the city government, is to preserve open space; protect wetlands, water bodies, ground and surface water resources; protect farm lands, historical or cultural places of interest, scenic views, unusual, exceptional or exemplary natural habitats; provide opportunities for research and education on natural resources on land trust held properties; and to secure for the city the goals and objectives established in the Comprehensive Plan. The nine member commission is responsible for reviewing requests for land transfers, and for making land acquisition and open space designation recommendations to the city council.

Pawtuxet River Authority & Watershed Council (PRAWC). The PRAWC is a non-profit agency created by the RI state legislature in 1972. It is continually striving to improve the water and land quality of the entire Pawtuxet River system and render its waters fishable and swimmable. The PRAWC has cleaned hundreds of tons of debris from the Pawtuxet, built river access and trails, obtained funds to upgrade sewage treatment plants, and worked to preserve open space. Currently, the PRAWC is engaged in a major project to restore migratory shad and herring to the Pawtuxet River system.

Mill Brook Conservancy. The Mill Cove Conservancy (MCC) seeks to preserve the historic, cultural and environmental qualities of the Mill Cove neighborhood. Through cooperation with responsible agencies and officials, the MCC seeks to ensure that the Warwick Comprehensive Plan and regulations are implemented and enforced so as to provide adequate protection of public safety (especially from storm damage), the environment (especially from erosion, runoff and pollution), the character of the Mill Cove neighborhood (from overly dense

or oversized development) and the fiscal health of both the neighborhood and the City (from unnecessary fiscal impacts relating to flood management and/or cleanup of pollution).

The Buckeye Brook Coalition. The Buckeye Brook Coalition (BBC), a state designated Watershed Council, was formed to focus attention on Buckeye Brook and its watershed. Buckeye Brook and Warwick Lake are the spawning grounds of the blue back herring and alewives. The major goal of the BBC is to protect and preserve the brook and its watershed, as well as the future of blue back herring and alewives who annually spawn in these waters. The BBC supports activities that work to clean-up debris in the brook and surrounding areas and promote good water quality. The BBC also advocates for protection of the brook and its wetlands from destruction, and focuses attention on situations and policies that endanger its well being.

8. Soils and Agriculture

The City of Warwick is proud of its rich farming history and has in recent years taken steps to protect and preserve the remaining farmland within the municipal boundaries. The USDA/NRCS have mapped soils in Warwick and estimates that approximately 12% of Warwick is considered prime farmland. From an economic standpoint agriculture is no longer a large generator of economic activity within the City; however the City is continues to support efforts to support local agriculture. Privately operating farms located in Warwick include Morris Farm, Rocky Point Blueberry Farm, and Confreda Farm. To preserve remaining farmland the City partnered with RIDEM to purchase development rights to Morris Farm (Warwick Ave), Rocky Point Farm (Rocky Point Ave) and acquired fee simple rights to both Barton Farm (Centerville Rd) and Dawley Farm (Cowesett Rd - preserved as open space; agricultural production is idle). Barton Farm is currently being utilized as open space and is home to a community farm (West Bay Farm) providing fresh, locally grown organic produce to the Westbay marketplace food pantry. City land use regulations allow growing of crops in 10 of the 13 zoning districts. Agriculture is not shown as category on the

future land use map, however its future is supported by the Zoning Ordinance.

E RECOMMENDATIONS

GOAL 1

Warwick’s natural resource systems, sensitive water resources and natural habitat are preserved and protected for future generations.

POLICIES

- Support integrated strategies to protect and restore natural systems with desirable land use practices and management programs.
- Implement programs to protect and restore Warwick’s coastal and freshwater wetlands and improve water quality.
- Support policies and measures to protect shellfish resources.
- Support continued initiatives to improve water quality and habitat quality in the Pawtuxet River and its watershed.
- Promote and protect the long-term viability and sustainability of Greenwich Bay, its coves and tributaries.
- Protect Warwick’s critical wildlife and wildlife habitat.
- Implement mandatory tie-in to the sewer system for all future developed properties.
- Protect Warwick Pond, Buckeye Brook, and Tussock Brook from pollutant loading associated with the nearby airport land use.

STRATEGIES

A. Develop an integrated Green Systems Master Plan that includes natural resources.

The Green Systems Master Plan for Warwick would integrate planning for natural resources, open space, greenways, waterfronts, parks and recreation, and sustainability.

Actions

1. Develop the natural resources section for a Warwick Green Systems Plan.

This section should include goals for healthy environmental systems, on land and in the water, and plan for an integrated set of programs and initiatives.

2. Empower the Warwick Land Trust to raise revenue and apply for grant funding in order to finance natural resource protection initiatives.

The current activities of the Land Trust, which include reviewing requests for land transfers and recommendations to the City Council for land acquisition and open space designation, should be expanded as necessary to incorporate a funding mechanism for their recommendations.

B. Protect, preserve and enhance natural resource areas adjacent to developed or potentially developed areas.

Actions

1. Preserve open space through the promotion of conservation subdivisions on larger development sites, open space acquisition, and sensitive siting of competing land uses.

Revise zoning as necessary in order to maximize preservation opportunities, and continue to seek funding sources for acquisition.

2. Identify and prioritize specific parcels of land for acquisition, development rights, foreclosing right of redemption (tax sale properties), conservation easements for farmland preservation, and open space purposes that have the great-

est potential for preserving Warwick’s natural resources.

Funding mechanisms for acquisition need to be identified and developed.

- 3. Ensure that all critical natural resource areas with the City are zoned appropriately.**
- 4. Amend the zoning ordinance to include stringent performance standards for development within critical natural resource areas.**
- 5. Continue to prioritize acquisition in areas with the most potential for preserving the city’s natural resources.**
- 6. Enforce the 2012 MOU by and between the City of Warwick and Rhode Island Airport Corporation entitled “water quality” which requires the construction of a glycol collection and treatment facility by December 31, 2015 as well as establishing a water quality liaison, increased water quality testing and training through the University of Rhode Island Watershed Watch. (see 2012 MOU).**

C. Protect freshwater bodies, coastal waters, areas with soil limitations, unique natural features, fish and wildlife habitat, and threatened and endangered species habitat through land use planning and regulatory management programs.

Actions

- 1. Develop a City-wide stormwater management plan and implement Best Management Practices to reduce storm water discharge volume and nitrogen and bacteria concentrations.**
The plan will be an extension of the current Rhode Island Stormwater Design and Installation Standards Manual. (See Chapter 10 for more information on stormwater management.)
- 2. Adopt Low Impact Development Standards for new development, substantial renovations, and undersized properties seeking dimensional variances.**
The standards can be developed with the help of and in conjunction with the Rhode Island Low Impact Development Site Planning and Design Guidance Manual (February 2011).
- 3. Preserve remaining coastal and riparian vegetated buffers, establish them on public lands, and**

promote the establishment of new vegetated buffers at water edges on private lands.

- 4. Seek funding for BMPs and Stormwater Attenuation and Source Reduction Strategies for priority sub-watersheds.**

The US EPA has several funding sources available for these types of projects that the City may be able access.

- 5. Increase public awareness of water quality problems, sources and solutions.**

Homeowners and other property owners need education on the negative water quality impacts of failing septic systems, cesspools, and the improper use of chemical fertilizers, herbicides and insecticides. In addition, they need information on how pets and wildlife contribute to closures of beaches and shellfish areas. The importance of waterside buffers as a best practice should also be publicized. For example, geese, who like to graze on short green grass, are attracted to manicured lawns at the shoreline. Allowing grass to grow to its full height of 10-14 inches helps discourage waterfowl from congregating on lawns.

- 6. Manage wastewater systems to improve water quality.**

Some coastal areas in Warwick are not sewered, with existing and potential pollution effects on coastal waters. The City should continue to work to:

- Ensure all homes and businesses tie-in to available sanitary sewers.
- Cesspool use is phased out, giving priority to the Greenwich Bay watershed and riparian areas.
- Consider implementing wastewater management districts for those areas not scheduled for sewers.

Making loans available to help property owners defray their costs can accelerate the process.

- 7. Acquire land and conservation easements to preserve critical wildlife habitat and protect water quality.**
- 8. Continue to support volunteer water quality monitoring programs.**



- 9. Restore and preserve fish and wildlife habitat, especially in Buckeye Brook, Warwick Pond, and the Mill Cove ecosystem that supports anadromous fish runs of river herring (alewife).**

Restore anadromous fish runs where feasible (such as the recently completed project at Pawtuxet Falls) and use local zoning and land use regulations to assess and mitigate development impacts on rare and endangered species.

- 10. Consider adopting the RI Stormwater Design and Installation Standards Manual through local ordinance.**

D. Support the programs of the Pawtuxet River Authority and Watershed Council that mitigate flood damage to low lying areas of the City.

Actions

- 1. Support the programs of the Pawtuxet River Authority and Watershed Council that promote increased access to the River for Warwick's residents.**

These programs include riverwalks, such as the completion of the Arkwright-Phenix-Harris Riverwalk, and canoe launches, such as the recently completed facility in Pontiac Village.

- 2. Collaborate to enhance or restore wetlands to mitigate flood impacts.**
- 3. Carefully review proposed developments within the Pawtuxet River flood zone to mitigate or eliminate potential additional future flood damage.**

Any new development or construction within the flood zone should be vetted by both the City and the Authority, with proper measures taken to protect the property as well as the natural resources associated with the river.

- 4. Continue to work with FEMA as necessary on flood mitigation.**

E. Continue programs to implement the Greenwich Bay SAMP and all city TMDLs to improve the health of the bay.

Actions

- 1. Identify and protect remaining wetlands, open space and shoreline areas within the Greenwich Bay watershed.**
- 2. Protect, maintain, and where feasible, restore ecological systems, including submerged lands and shore habitat.**
- 3. Support the environmentally-sensitive, water-dependent economic development on the Bay and its shoreline to maintain the area's unique sense of place.**
- 4. Integrate the CRMC Coastal Buffer Zone management guidance into land development and zoning regulations.**

F. Develop protection and management recommendations for sensitive and critical habitat identified by the Rhode Island Natural Heritage Program.

Actions

- 1. Coordinate with the Rhode Island Natural Heritage Program on a regular basis to determine sensitive habitat locations.**

These locations will then be added to critical resource location maps to ensure their protection from future development.

- 2. Consult with the Rhode Island Natural Heritage Program staff for information on identified sites which may potentially be impacted by a development proposal.**

This step should be taken on any development proposal in the City, and initial review should be completed by the project proponent.

- 3. Identify and prioritize acquisition of significant wildlife habitat sites.**

- 4. Develop and enforce cluster development regulations that will preserve known and potential wildlife habitats.**

Revise the city zoning regulations as necessary in order to maximize preservation opportunities, and continue to seek funding sources for acquisition of these known or potential habitats. Review and consider replacing Cluster Subdivision regulations with a Conservation subdivision approach as a means of improving the quantity, quality, and configuration of open space.

G. Protect groundwater resources

Actions

1. **Support programs that protect the Hunt-Annaquatucket-Pettaquamscutt Sole Source Aquifer.**
Programs that aid in the removal of septic systems, restrict the use of herbicides, pesticides and chemical fertilizers in residential lawns, and remove underground storage tanks should be prioritized.
2. **Encourage the use of advanced treatment and denitrification on-site wastewater systems in the Hunt-Annaquatucket-Pettaquamscutt watershed.**
Advanced treatment and denitrification system types include sequencing batch reactors, media filters, and aerobic treatment units. These advanced treatment systems incorporate a treatment step between solids separation and final dispersal of effluent.

3. **Distribute information to residents on the benefits of trees and tree planting, with suggested species suitable for different types of properties.**

GOAL 2

Warwick’s urban forest is healthy and provides maximum environmental and economic benefits.

POLICY

- Promote public and private efforts to protect and enhance tree resources.

GOAL 3

Agriculture will remain an important use in historically farmed areas.

POLICY

- Support community organizations to increase access to locally grown produce

STRATEGIES

A. Continue supporting policies and programs that promote local agriculture

Actions

1. **Continue to make land available for community agriculture at Barton Farm.**

STRATEGIES

A. Continue policies and programs that protect, enhance, and increase the city’s tree canopy.

Actions

1. **Continue to support and expand the City’s tree nursery at Barton Farm and tree planting programs, and create a master plan for Barton Farm.**
2. **Promote tree protection and tree planting through review of proposed new development and redevelopment, including in parking lots.**



Parks, Open Space and Recreation

FROM A WARWICK RESIDENT

“I just love City Park and all it has to offer. The wildlife, the bike path, the ability to view the water.”

“There are lots of friendships being made and maintained around the open space in Warwick.”

A GOALS AND POLICIES

GOALS

A preserved and enhanced parks and open space system.

Recreation facilities that are state-of-the art and meet the needs of all Warwick residents.

POLICIES FOR DECISION MAKERS

- Integrate park , open space, and recreation planning into a broader Green Systems planning framework.
 - Pursue improved connectivity of parks, open space, recreation land, and water resources with neighborhoods and other community destinations.
 - Promote high quality park design and environmental stewardship.
 - Connect, protect, preserve, maintain, and expand Warwick’s coastal public access points.
 - Promote, maintain, and enhance a broad range of city-wide and neighborhood recreational facilities to meet the needs and desires of Warwick’s residents.
-

B FINDINGS AND CHALLENGES

findings

There are 6 State owned parks totaling over 750 acres offering active and passive recreation.

Goddard State Park is the largest park in Warwick.

The recent state purchase of the remaining 82 acres of the former Rocky Point Amusement Park, combined with the 40.9 acres of Rocky Point oceanfront property previously purchased by the City, will combine to create one of the largest new permanent open space parcels in the City.

Over 1,000 acres of City-owned parks offer active and passive recreation opportunities for residents.

City Park, the largest City-owned park, has beaches, playing fields, walking paths, picnic areas and more.

The Mickey Stevens Complex is in need of significant repairs and renovations to most of its facilities.

Airport expansion will require some recreation amenities to be relocated.

Many residents are not within walking distance of a neighborhood playground or athletic field.

Recreational programs are offered by the city as well as private associations.

Bicycle facilities are limited throughout the city, limiting connectivity.

challenges

Budgetary constraints have delayed important improvement projects to the Mickey Stevens Sports Complex, and to neighborhood playgrounds.

Lack of an integrated Recreation Plan and Capital Plan for improvements, maintenance and upgrade of existing open space and recreation space controlled by either the city or the school department.

There is a need for additional recreation fields (baseball, softball, soccer, lacrosse) in areas of the city, but there is little to no land available for development.

Creating a pedestrian and bicycle network, including multi-use paths, to better connect neighborhoods to parks and other recreational amenities.

WHAT THE COMMUNITY SAID

- There are lots of parks in Warwick but they are not connected or easily accessed.
- The Jesse P. Dawley Memorial Woodland was acquired by the City but there is limited parking, making it difficult for people to access.
- Improved maintenance and facilities at existing parks is more important than purchasing land for new parks or developing additional athletic fields.
- Neighborhood volunteers should be encouraged to help maintain parks.
- Athletic fields are always stressed because of use by schools and by private leagues. The City should look into artificial turf for high-use fields.
- An organized program is needed to connect environmental and beautification programs.
- More resources need to be dedicated to the improvement of the existing athletic facilities.
- There should be one point of contact at City Hall for public contact, coordination with non profit and community group improvements, and park maintenance issues.
- Almost all the survey respondents supported the recent state purchase of Rocky Point.
- The majority of respondents prefer that an expanded Rocky Point have community gathering space and a mix of active and passive recreation.

CURRENT CONDITIONS

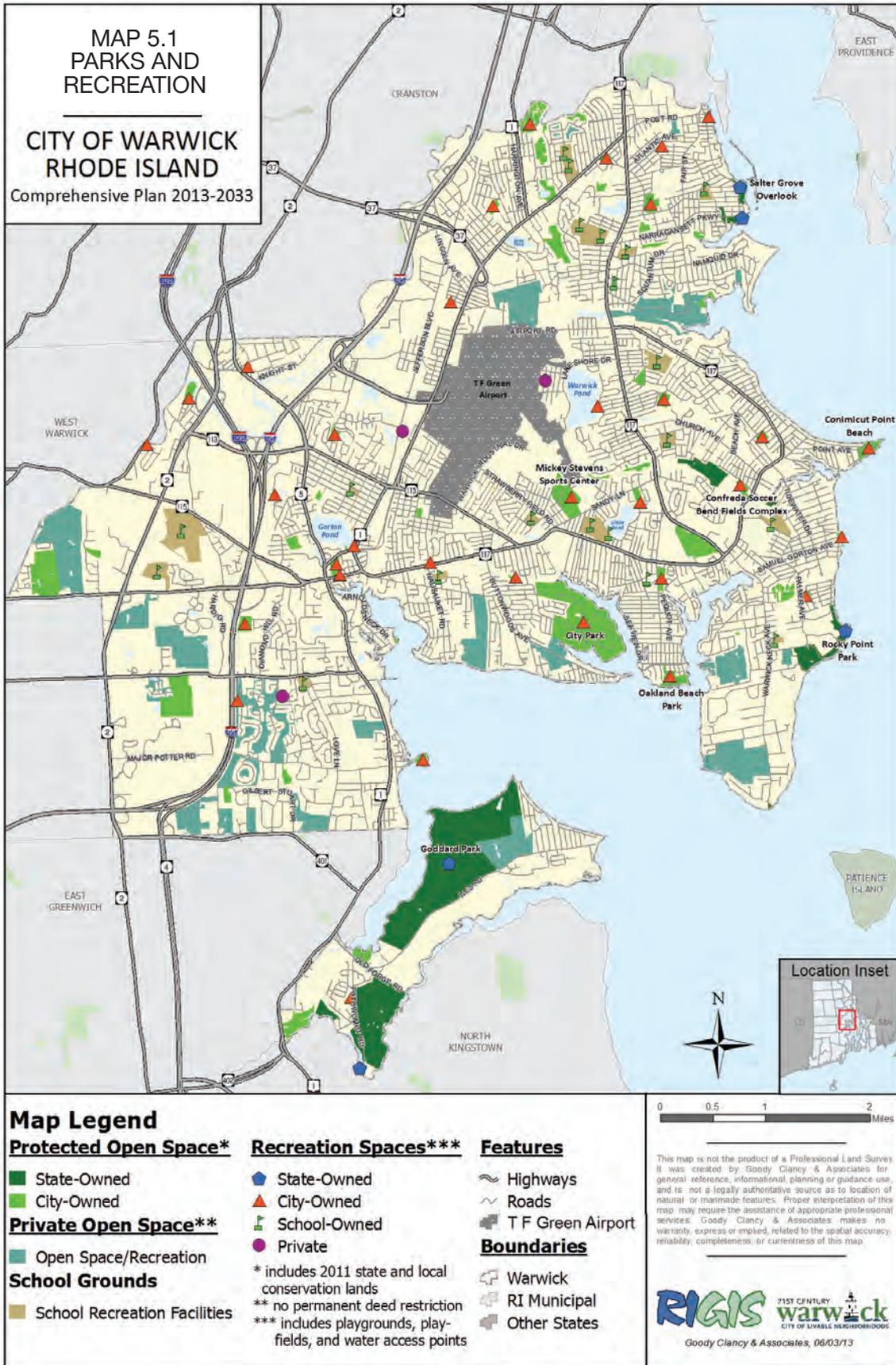
For a city its size, both in terms of population and land area, Warwick has an excellent and extensive system of parks and protected open spaces. Warwick’s parks and open space facilities consist of State-owned parks, City-

owned parks, public school facilities, and private lands and facilities—nearly 2,000 acres. Future expansion of Rocky Point Park may include the addition of 82 acres of interior land of the former amusement park to be combined with the current city-owned shoreline to create a 123-acre state park. Some of these parks and open space facilities are permanently protected from development, some are temporarily protected, and some contain no protections and could potentially be developed in the future. The inventory provided in this chapter includes all existing open space and recreation areas and facilities owned and operated by federal, state, regional, and local agencies, as well as quasi-public and private entities where available for public use. Data from the State of Rhode Island GIS was used to compile parcel information, particularly the Conservation Lands Municipal dataset, which includes parcels that are permanently protected from future development by cities and organizations other than the State of Rhode Island, and by Conservation Lands State of Rhode Island, which compiles those parcels protected by the State through fee title ownership, conservation easements or deed restrictions.

1. State Owned Park Facilities

There are a total of six (6) state owned park facilities in Warwick, with an aggregate size of over 750 acres. The state owned facilities include Goddard Park, Longmeadow Acres, the George B. Salter Memorial Grove, Narragansett Parkway, the Narragansett Parkway Access, and park space at the Knight Campus of the Community College of Rhode Island.

Goddard Park. Goddard Park is a regional park that attracts thousands of visitors each year as Rhode Island’s most popular metropolitan park. The 489-acre park offers active and passive recreational spaces, including spacious lawns, fields, and forested areas with a variety of trees from all over the world, including 62 deciduous and 19 evergreen species. Visitors can make use of a nine hole golf course, an equestrian show area, 11 miles of bridle trails, 355 picnic tables, 11 game fields, the Carousel Performing Arts Center for weddings, concerts and special events, and a saltwater beach on Greenwich Bay that includes bathhouses.





George B. Salter Memorial Grove. Situated along the westerly shoreline of the lower Providence River, George B. Salter Memorial Grove is a public park leased and maintained by the City of Warwick on property owned by the State. A long stone breakwater which runs parallel to the river channel and connects two small barrier islands. Constructed and maintained by the U.S. Army Corps of Engineers, this breakwater is accessed from the park by a narrow causeway and is actively used for fishing along most of its length. In addition to providing fishing access, Salter Grove offers a launch ramp for small boats as well as a landside park.

Narragansett Parkway, the access road to Salter Grove, is home to the annual Gaspee Days Arts and Crafts Festival. In June of 1772, brave colonists from Rhode Island burned the British revenue schooner, *HMS Gaspee*, in what has become recognized as the first overt action leading to the American Revolutionary War. Since 1965 Pawtuxet Village has commemorated this act with the annual Gaspee Days Parade, which begins on Narragansett Parkway. Held annually throughout Memorial Day Weekend, the festival attracts approximately 50,000 people for three days, browsing and purchasing the wares of the 100-150 craft exhibitors along the Parkway. In addition to the arts and crafts festival, there is a food court, free family music entertainment, and other attractions for children located in nearby Pawtuxet Park. A viewing deck provides a view corridor towards the location of the burning of the Gaspee. The proceeds of the annual Arts and Crafts fair benefit the running of the annual Gaspee Days Parade.

The Knight Campus of the Community College of Rhode Island, a state owned higher education facility, has several acres of park and recreation space that is included in the aggregate acreage total listed above.

2. City Owned Park Facilities

There are forty city-owned parks in Warwick (including beaches) totaling over 1,000 acres. Parks and facilities that attract users from around the city include: the Mickey Stevens Sports Complex (Ward 3), Confreda Soccer Complex (Ward 5), Conimicut Point Park (Ward

4), Warwick City Park (Ward 6), Oakland Beach (Ward 6), and Rocky Point Park (Ward 5). The Winslow Softball Fields (Ward 7) will be relocated (Ward 3) because of runway expansion at T.F. Green State Airport.

Mickey Stevens Sports Complex. The Mickey Stevens Sports Complex is the city's central recreational facility. Built on a former landfill, the complex features two bocce courts, three basketball courts, eight tennis courts, three baseball fields, and an indoor pool. The complex is also home to Warwick's two indoor ice rinks for year-round skating, Thayer and Warburton Arenas. Once the "crown jewel" of the city's recreational facilities, the facility is currently in need of major repairs. Although the pool and ice rinks are in good condition, the remainder of the facility is in poor condition. Among the biggest concerns are sinking fields, fields that are too steep, court resurfacing, and outdoor lighting, which requires complete replacement.

Winslow Field Softball Fields. As mentioned above, the Winslow Softball Fields are being relocated to RIAC property located west of Warwick Pond in the Lakeshore Drive area due to airport expansion. This area of land on airport property will not be impacted by current expansion plans, so therefore it was selected to hold these facilities. The City is currently in the process of reviewing field designs at the Lakeshore Drive site. Although leased by the City, this relocation is intended to be a long-term solution. The new park is scheduled to be open early summer 2015.

Confreda Soccer/Bend Fields Complex. This athletic complex contains 3 youth sized and 2 regulation sized lighted soccer fields, with ample parking, as well as baseball and softball fields. It is the home of the Warwick National Little League. The soccer fields are a regional attraction for tournaments. The site also includes a concession building, picnic tables, and a children's tot lot.

Conimicut Park. Located at the end of Point Avenue overlooking Narragansett Bay and the site of the Conimicut Point Lighthouse, the park includes a small beach, and provides some of the best views of Narragansett Bay in the entire city. A boat launch that is ideal for kayaking,

a small tot lot for children, and benches overlooking the ocean complete the park.

City Park. City Park is the largest City-owned park and contains a number of active and passive recreation amenities including a beach along Buttonwoods Cove, 4 softball fields, 1 soccer field, a multi-use field, several picnic areas and shelters, a skate park, a roller hockey rink, 2 dog parks, a model car course, and bathroom facilities. A lacrosse field is planned. Among the park's most popular offerings is nearly 3 miles of paved multi-use paths for walking and bicycling that is used and maintained year-round.

Oakland Beach. Oakland Beach is a Bay inlet beach at the mouth of Warwick Cove, overlooking Greenwich Bay. It contains a public saltwater swimming beach, a boat ramp on Bay Avenue, saltwater fishing, and a small central green space with restrooms, a gazebo, and a small September 11, 2001 Memorial. Several popular restaurants abut the beach, including the Carousel Grille, Top of the Bay, Timmy's Bay One, Marley's on the Beach, and Iggy's Doughboys and Chowder House. Oakland Beach is also home to the very popular and successful Cruise Night every Tuesday evening from June through September.

Rocky Point Park. The City recently purchased 40.9 acres of property along the waterfront of the former Rocky Point amusement park as the newest of the City's waterfront open spaces. The Rocky Point property had been home to one of New England's largest and most famous amusement parks since the mid-nineteenth century, until bankruptcy forced the parks' closure in the mid 1990s. Since its closure, several scenarios for its redevelopment have been proposed by private developers, mainly involving large lot single family residential development. Because of infrastructure constraints, particularly traffic concerns, strong opposition from the city, state, and community groups who wish the property to remain in the public domain, and a severely weakened housing market, the property still remains vacant today. The 123 acre property had been the largest vacant parcel abutting the Atlantic Ocean on the eastern seaboard.

The City, through volunteerism and grant money, has developed a mile-long waterfront walkway in their pur-

chased property that permanently reclaims the waterfront for the public domain. The remaining 82 acres of the property, which include the former amusement park midway, have been purchased by the state. The Rhode Island Department of Environmental Management has developed a Schematic Master Plan for the combined 123 acres, and a plan is in place to potentially combine the City-owned waterfront parcel and some or all of the state-owned parcel into one large State Park.

Gorton Pond. A public beach is located on the eastern shore of Gorton Pond. A fishing pier and small boat dock, as well as handicap accessible facilities are available.

Additional Park and Recreation Facilities. In addition to these city owned park facilities, there are over 30 playgrounds and tot lots, and over 160 playfields for different uses throughout the city. This includes the twenty-two public school facilities in the city (3 high schools, 3 junior high schools, and 16 elementary schools), all of which include some open space or recreation component, whether athletic facilities, tot lots, or unprogrammed open space. Upkeep and maintenance of these facilities is the responsibility of the School District. A summary of the facilities by Ward, with number by type is listed below.

Access to Recreation. Other than tot lots and school yard playgrounds, most of the playfields above are used on a city-wide basis, not strictly to meet neighborhood needs, which can create issues of access. Many recreational facilities are primarily accessed by auto or by bicycle. However, bicycle amenities providing for safe travel are limited within the city.

Research has repeatedly shown that the most important variable in how much and how often people use a green space is distance—especially walking time—from home. They will travel further distances for larger, unique park facilities, but for everyday use, playgrounds and recreation need to be nearby. As Map 5.2 shows, much of Warwick is not within a 5–10 minute walk (1/3-mile) of a local playground or playfield. Pedestrian facilities are also poor or not provided in many neighborhoods, hin-

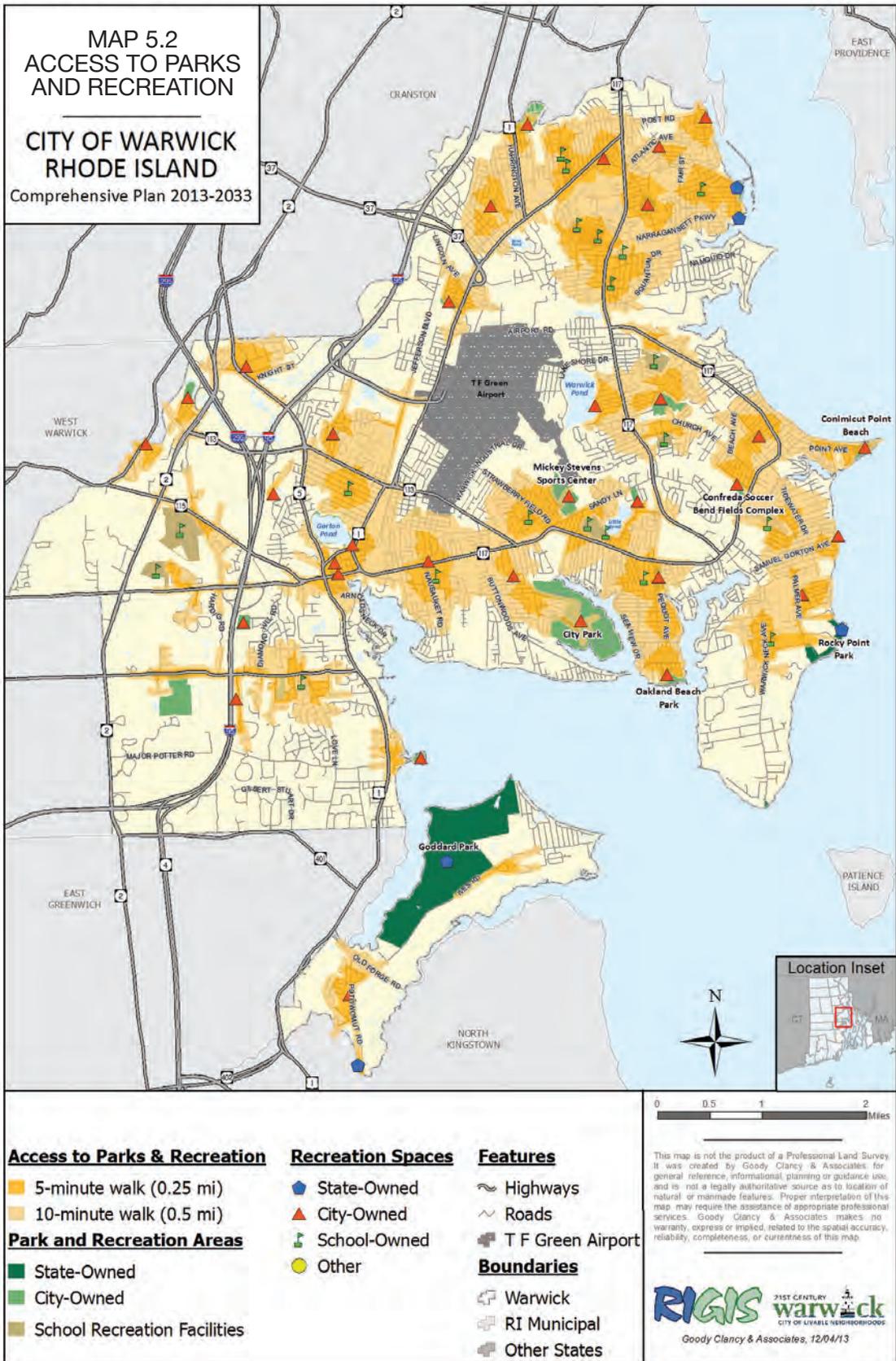


TABLE 5.1: ADDITIONAL PARK AND RECREATION FACILITIES BY WARD

WARD	NUMBER BY TYPE			FACILITIES
	PLAY-GROUNDS	PLAY FIELDS	OTHER*	
1	6	11	5	Pawtuxet Village Park, Adams Playground, Salter Grove, Wyman School, Whitaker Field, John Brown School, Spring Green School
2	3	34	0	Belmont Park, Rhodes School, Aldrich Junior High school, Kitzner Field, Rubery Field, Holliman School, Pilgrim High School
3	2	16	3	Lincoln Park, Lakecrest Park, Lippitt School, Kenney Manufacturing Company Field, Mickey Steven Sports Complex
4	3	5	2	Hoxsie School, Porter Field, Clegg Field, Conimicut Point Park
5	4	18	3	Sherman School, Warwick National Little League, Bend Street Field, Gorton School, Longmeadow Fishing and Boating Access, Palmer Avenue Field, Warwick Neck School, Rocky Point Park
6	4	27	5	G Boyd Field, O'Hara Field, Little Pond Beach, Veteran's High School, Champlin Field, Oakland Beach Park, Warwick City Park, Kerri Lyn Playground
7	3	16	2	Gorton's Pond Beach, O'Brien Field, Apponaug Park, Winslow Playfield, Robertson School Playfield, Normandy Drive, Greenwood School Playfield, Iris Avenue Field
8	4	25	1	Toll Gate School Complex, Scott Elementary School, Pontiac Playground, Father Tirocchi Playground, Natick Dam Overlook, Warwick Continental Little League Fields, Halifax Street Playground
9	2	9	6	Duchess Street Field, Cedar Hill School Ball Field, Sleepy Hollow Tennis Courts, Chepibanoxet, Goddard Park, Potowomut School, Potowomut Pond

*Other includes swimming pools, skating rinks, fishing, boating, skate parks, etc.

dering safe movement by foot. (See Chapter 9: Transportation for more on Bicycle and Pedestrian facilities.)

Department of Parks and Recreation. All programmatic elements at the city's parks and recreation facilities are managed by the Department of Parks and Recreation. The Parks and Recreation Department oversees a wide range of facilities for both recreation and athletics, and also administers and implements harbor rules and regulations as related to the Ordinances of the City of Warwick. A variety of private, nonprofit athletic and sports associations use the city's parks and recreation facilities and offer baseball, softball, football, hockey and soccer throughout the year.

Maintenance. The Field Maintenance Division of the City's Department of Public Works is responsible for the maintenance of all city owned parks and recreation facilities. This includes large parks such as City Park, as well as playgrounds, play fields, other recreation facilities and fields (except school properties), and parking facilities. General maintenance and operations are for the

most part funded through the annual General Fund, but in some cases maintenance is performed by nonprofit athletic leagues and associations. Renovation, redesign and major rehabilitation is funded by the Capital Budget. The budget constraints at the time of writing this plan have reduced capital plans for recreational facilities. Currently, the only project included in fiscal year 2013/2014 is \$250,000 for the redesign of the McDermott Pool locker rooms. There are no funds currently allocated for the field and lighting repairs required at the Mickey Stevens Sports Complex, despite a \$7 million bond measure passed in 2006 to bring the complex facilities up-to-date. Due to budgetary constraints, repairs have been delayed.

Although not currently in the city's current Capital Budget, maintenance of the city's playgrounds is one of the highest priorities. In 2006 the city approved a \$3.5 million bond measure to bring neighborhood playgrounds up-to-date, of which some funds were to be used to identify and construct additional playground locations in areas determined to be underserved. However, similar to



monies allotted for repair of the Mickey Stevens Complex, budgetary constraints have delayed such projects.

3. Shoreline Recreation

Shoreline access in Warwick is provided in three forms: access points designated by the Coastal Resources Management Council (CRMC) as public rights of way, City of Warwick Designated Rights of Way, and platted streets that end at the shoreline. There are approximately 23 CRMC-designated public rights-of-way to the shore; most are simple grass paths off streets and drives that lead to small sandy beaches, cobble beaches, or marsh grass areas. There is a significantly greater amount of right-of-way to the shore extending from platted streets. There are approximately 36 rights-of-way to the shore, mostly in the form of beach ways or passage ways, as well as over 100 public rights-of-way to the shore from dedicated highway access points.

Shoreline Recreation Facilities. Recreation facilities along Warwick's 39 miles of shoreline include major parks such as Chepiwanoxet Park, Salter Memorial Grove, City Park, Pawtuxet Park, Rocky Point Park, and Goddard State Park. Public Beach facilities are located at Conimicut Point, Oakland Beach, Bayside Beach, City Park, and Goddard State Park. Community beaches are located at Gaspee Point, Conimicut, Mill Cove, Buttonwoods, Beachwood Drive, Nausauket, and Potowomut. Private, for-profit facilities include the Warwick Country Club, and private non-profit facilities include Our Lady of Providence Seminary, the Masonic Temple site, and Rocky Hill Country Day School.

4. Warwick Harbor Management Plan and Recreational Boating

The Warwick Harbor Management Plan and the Harbor Ordinance (Chapter 24 of the Warwick City Code) guide the use and development of the City's waters in order to enable access to the shore from the water. The plan also delineates mooring fields within Warwick's waters. These areas are designated as single use areas for commercial and private moorings. Presently, mooring

permits are given on a first come, first served basis. Riparian property owners can, at the discretion of the City, be permitted to place a mooring within reasonable proximity to their property. With numerous protected coves along its shoreline, Warwick is a popular location for recreational boating activities. Within the city, there are approximately 19 boat yards, marinas, and commercial docks currently operating its waters.

Marinas. Marina facilities include Buttonwoods Cove/Brush Neck Cove (The Little Rhody Yacht Club); Warwick Cove (11 marinas, including Angel's Marina, Harbor Light Marina, Bay Marina, Wharf Marina, Winstead's Marina, Aqua Vista Marina, C-Lark Marina, and Warwick Cove Marina); Apponaug Cove (Apponaug Harbor Marina, Ponaug Marina); Greenwich Cove (East Greenwich Yacht Club, Norton's Shipyard and Marina); Greenwich Bay (Brewer Yacht Yard, Greenwich Bay Marina Club); and Pawtuxet Cove (Pettis Marine Boat Yard). These marinas contain over two thousand five hundred (2,500) slips.

Docks. Several docks in the various coves are designated to commercial fishermen, and the City owns public docks in both Apponaug Cove and Warwick Cove. Additionally, there are numerous private docks throughout the City's waters, as well as commercial shellfishing docks that support the historic heritage of Greenwich Bay's commercial fisheries.

Public Boat Ramps. Boat owners in Warwick and surrounding communities who do not have access to moorings or dock space within the city rely on public access ways and launching ramps throughout the city to access to the water. There are approximately 13 boat ramp locations in the City, ranging in condition from good (Oakland Beach, Passeonquis Cove, Goddard Park, Apponaug Cove, Gorton Pond) to fair (Bayside Beach, Arnold's Neck, Edgewater Beach) to poor (Conimicut Point, Pawtuxet Park, Salter Grove, Robert Ave., Waterfront St.).

5. Private Recreation Facilities

There are a number of privately owned open space and recreation facilities within the City limits, including golf courses, marinas, and private school athletic facilities. Marinas are described in the previous section. Private golf course facilities include Warwick Country Club Valley Country Club, Harbor Light Golf Course, and Potowomut Golf Club.

6. Permanently Protected Non-Recreational Open Space

Although all permanently protected open space parcels within the City are designated by the State as conservation land, many fall under the parks and recreation

TABLE 5.2: PERMANENTLY PROTECTED OPEN SPACE BY WARD

WARD	NUMBER OF PARCELS	ACRES	SITES
1	5	15.5	Kingston Street Wetland Occupessatuxet Cove Marsh Passeonkquiss Cove Waterfowl Habitat John Francis Ravine
2	29	22.2	Pawtuxet River Wetland Ring & George Street
3	1	0.2	N/A
4	3	0.4	Spot Park Conimicut Point
5	8	56.3	Morris Farm Warwick Cove Heights Ave Leroy/Paine Rocky Point Blueberry Farm
6	None	n/a	n/a
7	1	2.2	Little Swamp/Sutton
8	None	n/a	n/a
9	11	219.4	Potowomut Farm/Greene Ives Bluff Hunt River Gilbert Stuart Open Space
TOTALS	58	316.0	

Source: RIGIS, 2010

category, which has already been discussed previously in the chapter. The remaining parcels will be discussed in this section.

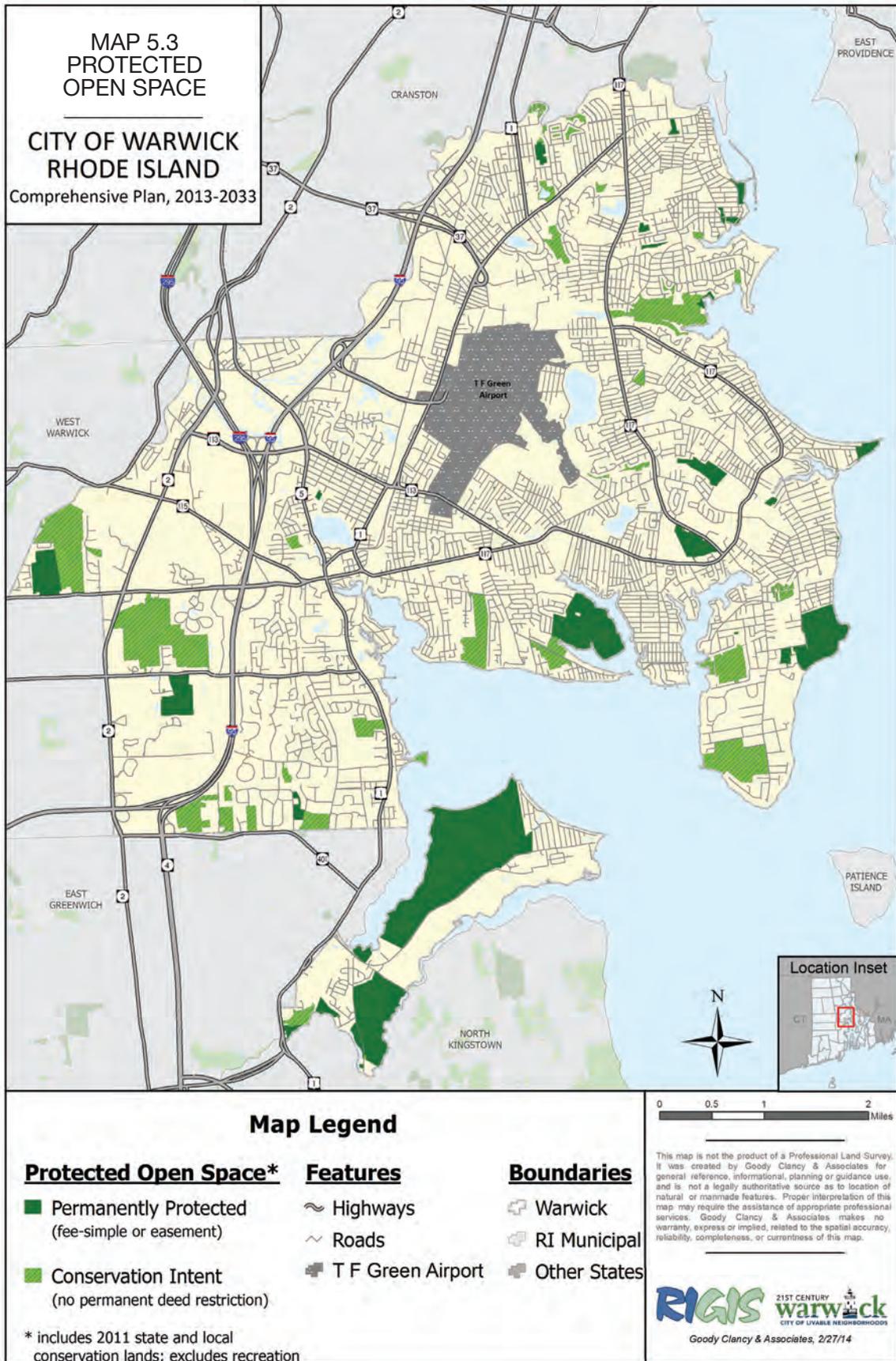
There are approximately 58 parcels of non-recreational, permanently protected open space within the city limits, with a total land area of 316 acres. These parcels are protected either by the State of Rhode Island, the City of Warwick, or non-government land protection organizations through fee title ownership, conservation easements, or deed restrictions. Of the total acreage, 83 percent or 263 acres has gone into permanent protection since the previous comprehensive plan in 1990.

Among the more prominent are Dawley Farm (Ward 9) which includes passive recreation amenities such as walking trails, and Morris Farm (Ward 5) for which the City owns development rights. Barton Farm (Ward 8) is home to the West Bay Community Action Program

TABLE 5.3: CONSERVATION INTENT PARCELS BY WARD

WARD	NUMBER OF PARCELS	ACRES	SITES
1	1	3.8	Passeonkquiss Cove Wetland
2	42	50.7	Pawtuxet River Wetland Belmont Park Cranberry Bog Cushing Road Wetland Dryden Heights
3	5	7.9	Buckeye Brook
4	none	n/a	n/a
5	66	13.7	Bayside Field/Barton Homestead
6	none	n/a	n/a
7	2	72.3	Masonic Youth Center
8			Barton Farm Country Club Estates Little Gorton Pond Wetland
9	11	207.7	Chepiwonoxet Point Dawley Farm Larchwood Estates Hunt River Major Potter Hills Maskerchugg Wetland
TOTALS	135	434.5	

Source: RIGIS, 2010



(WBCAP), a non-profit organization that supplies fresh vegetables for low income families. Also included on the Barton Farm property is the City tree farm, preserved open space, and a conservation easement on the wetlands which was sold to the Natural Resources and Conservation Service (NRCS). In 2013, the City applied for and received a Recreational Trails Grant to design and construct a handicapped-accessible pedestrian path at the Barton Farm. The project will include an overlook deck and parking improvements. Construction is expected to begin in Spring 2014. For a complete listing of conservation parcels, see the Appendix.

Conservation Intent Lands. In addition to permanently protected open space, there are nearly 135 parcels of land totaling 435 acres that are categorized as “Conservation Intent.” These parcels, which include local parks, recreational areas, or parcels within cluster subdivisions, are not permanently protected by fee titles or easements, rather they are protected by good will. Many of these parcels are wetland areas, and are therefore undevelopable. However, several sites, such as Barton Farm in Ward 8, Dawley Farm and Chepiwonoxet Point in Ward 9, and Bayside Field in Ward 5, could be developed if no additional measures are taken.

FUTURE PARK AND RECREATION NEEDS

According to the Deputy Director of Parks and Recreation, there is no current need for additional major parks within the city. With the recent purchase of land at Rocky Point, combined with existing active and passive recreational areas like City Park and Goddard Park, the city is currently well served.

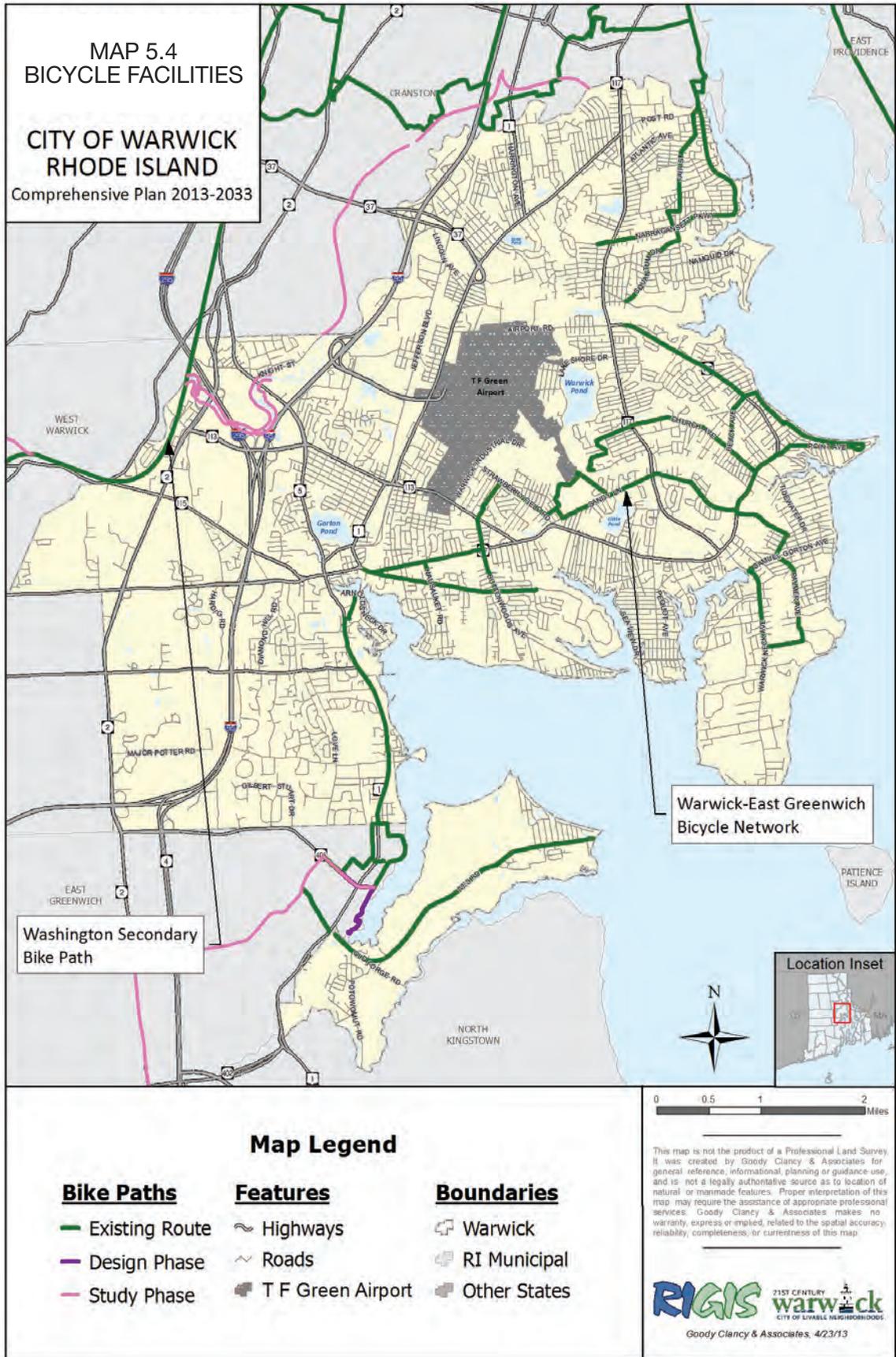
However, planners for urban and mature suburban park systems are increasingly emphasizing the importance of “walk-to” parks—access within a safe, barrier-free, five to ten-minute walk. At the same time, Warwick residents are expressing great interest in being able to walk more and to walk more safely, and in having city destinations connected for walking and biking. More parks may be

needed to expand the network to provide a park within a ten minute walk of every resident, with improved physical connectivity such as walking or biking trails. The city appears to be underserved by tot-lots (which have been shown to have low utilization and should be candidates for replacement with new, small “walk-to” parks). Because backyards are so widespread in Warwick—and the population is aging—this may not be a significant issue in 2012, when this plan is being written. However, if a successful generational transition occurs in the next several decades and walkability continues to be a desired characteristic, the lack of small neighborhood parks or civic spaces serving as nodes in a larger connected system could become a problem.

The need for play fields and playgrounds (and bicycle facilities) was a common theme throughout the planning process. Although Warwick tends to have ample playgrounds, playfields and recreation facilities in areas such as Apponaug, Sandy Lane, Pawtuxet, and Wildes Corner, underserved areas include Hillsgrove, Norwood, Lakewood, much of Cowesett and residential areas in Ward 8. In any case, the Department of Parks and Recreation should survey residents and park users every five to ten years to identify changing needs. It is important to include people who do not, at present, use parks or recreation programs to find out why.

Winslow Field will be permanently relocated to the Lakeshore Drive area. Installing artificial turf at many of the City’s worn recreation facilities should be considered. Artificial turf allows fields to be used intensively, without the resting needed on natural turf, and it needs less maintenance. In the right location, artificial turf fields could become well-used centers for team sports, and could attract tournaments that could establish a consistent income stream for field development and maintenance.

Bicycle Recreation. Warwick has seen a renewed interest in providing dedicated bicycle / multi-use facilities and more bicycle-friendly thoroughfares. Existing, designated state and local bicycle facilities within the City of Warwick consist of two principal elements: the Washington Secondary Bike Path and the Warwick-East Greenwich Bicycle Network. The Washington Second-



ary Bike Path is a 14.2-mile dedicated multi-use path constructed along a former railroad corridor that runs through Warwick, West Warwick, Cranston and Coventry. The 1.6-mile Warwick Bike Path, which is part of the larger system, is largely limited to those residing in Ward 8 neighborhoods in close proximity to the path.

The **Warwick-East Greenwich Bicycle Network** includes 28 miles of signed routes including loops and spurs to Conimicut Point, Warwick Neck / Rocky Point, City Park in the Buttonwoods neighborhood, and Potowomut Neck / Goddard State Park. Other segments link with signed bike lanes in Cranston and continue north into Providence. The Apponaug By-Pass will link the Network through Apponaug Village by way of a 6 foot dedicated bicycle lane in Post Road between Apponaug Four Corners and Williams Corner.

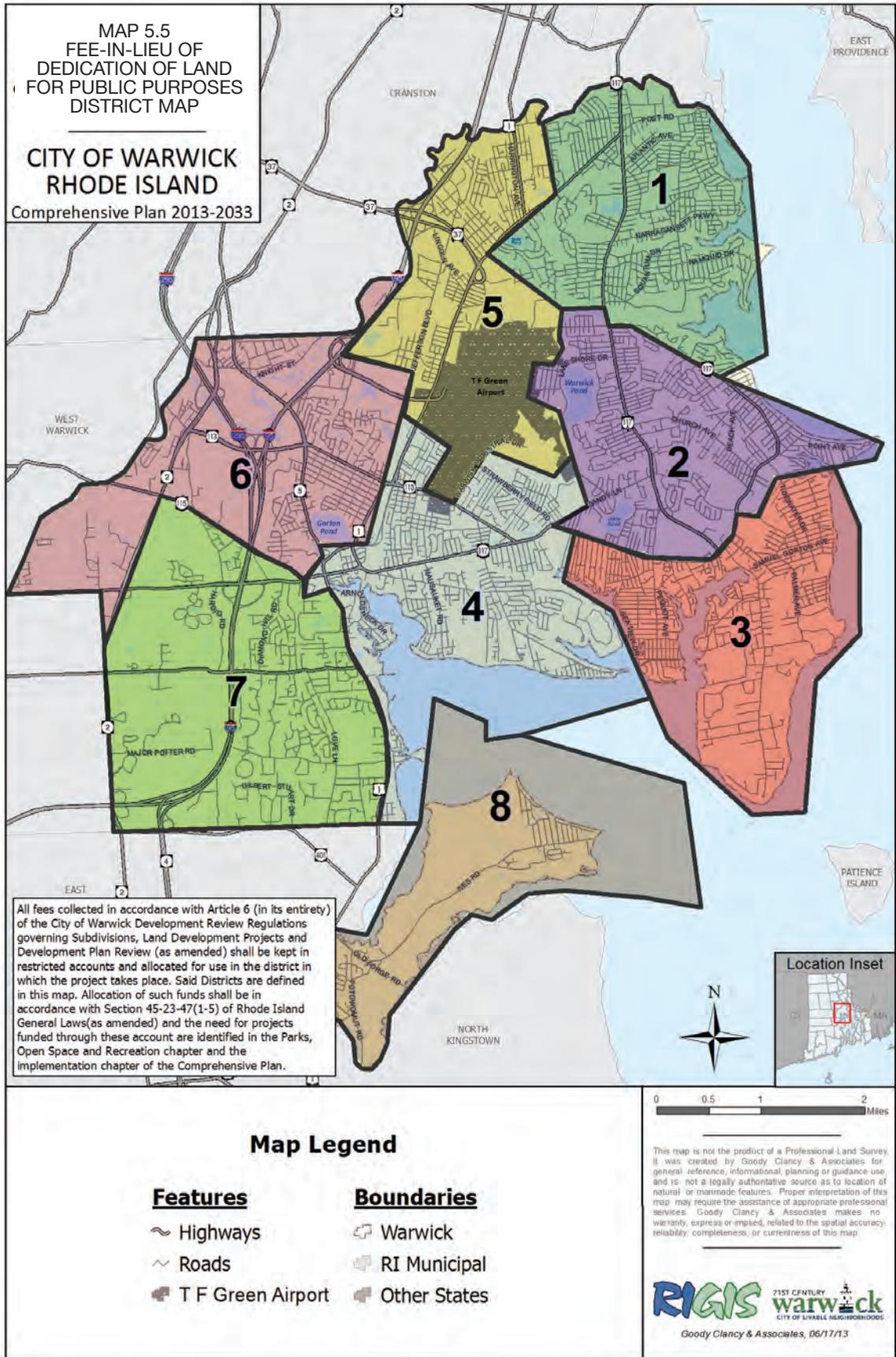
Proposed Facilities. A number of proposed improvements to the Warwick-East Greenwich Bicycle Network will provide circulation, safety, and recreational benefits for cyclists. Projects include:

- The **Hoxsie Multi-Use Path/Connector**, which will shortcut the Hoxsie Four Corners intersection by linking the currently disconnected West Shore Road and Squantum Drive segments across the Spring Green Pond stream via the Landsdowne Road right-of-way
- The **Buckeye Brook Multi-Use Path**, which will link portions of the existing network in the vicinity of the Mickey Stevens Sports Complex through the provision of a new path over a brook crossing to Rodney road
- An **Oakland Beach loop**, which would connect to the existing network at the public library along Sandy Lane and run south, crossing West Shore Road and continuing to Oakland Beach.
- The **Rocky Point Walkway Extension**, which is an extension of Meadow View Avenue (the former trolley right of way) from Young Avenue to Palmer Avenue.

Future recreation improvements under consideration. While major renovation of the Mickey Stevens Sports Complex is the top priority for recreation staff, the City is also working with the U.S. Army to take over the former Cooper Army Reserve Center, which is adjacent to Mickey Stevens, to transform it into a teen and

recreation center. The proposed program would provide a gymnasium, an exercise room, a teen center with activities led by teens, a dance and exercise studio, an art room, a theater, music rooms, a woodworking space, a commercial kitchen, and general classroom space. The \$3.5 million recreation improvements bond passed in 2006, but as yet not activated, could be a source of funding for this project. In addition to the recreation opportunities at the Cooper Center, recreation staff also note possible need for lacrosse fields, as this is the fastest growing sport in the country, and that the City's two skate parks have obsolete, first-generation design and will need upgrading. As noted earlier, however, it is advisable to survey the population (and not just current users of parks and recreation facilities and programs) about their recreation needs and preferences on a regular schedule, so that these quality of life investments are responsive to the needs of city residents.

Fee-in-lieu of dedication of land for public purposes. The City of Warwick's Development Review Regulations give the Planning Board the power to determine whether a proposed subdivision or development project is required to dedicate a portion of the land area to preserve unique natural characteristics or to provide open space for residents and users. The Planning Board may also determine that a fee-in-lieu of this dedication is beneficial to the goals of the City. These fees can only be used in the district in which the project is located, as identified on the following map.



F RECOMMENDATIONS

GOAL 1

A preserved and enhanced parks and open space system.

POLICIES

- Integrate park, open space, waterfront, and recreation planning into a broader “Green Systems” planning framework.
- Pursue improved connectivity of park, open space, waterfront, and recreation land with neighborhoods and other community destinations.
- Pursue improved accessibility to all park, open space, waterfront, and recreational land.
- Improve trail access on open space lands.
- Promote high quality park design and environmental stewardship.
- Protect, preserve, mark, map, maintain, and expand Warwick’s coastal public access points.

STRATEGIES

- A. Develop a Parks, Open Space, Waterfront, and Recreation section of a Green Systems Master Plan that provides a roadmap for current and future needs at both the neighborhood and city-wide levels.

The Green Systems Master Plan for Warwick would integrate planning for natural resources, open space, greenways, the waterfront, parks and recreation, and sustainability.

Actions:

1. Inventory and evaluate the condition of all parks, open spaces and recreation facilities available for public use, including those not owned by the city.
Although the City is not responsible for facilities that are not city-owned, from a resident’s point of

view, it does not matter who owns the park. Understanding how all public park resources fit together as an integrated system is essential.

2. Use the planning process to develop a schedule of regular meetings for all park and recreation managers in the city so they can easily collaborate.
Improved communication between managers is a key element in developing a framework for identifying user needs patterns and ensuring that usage between the park facilities is better balanced. This could lead to decreased wear and tear on certain facilities, helping the City realize reduced maintenance costs in the future.
3. Survey park users to determine changing needs and interests, including post-program surveys to gauge satisfaction with programs and events.
Understanding the needs of the park users will help the park managers and the City better utilize and program the park space and activities. This aids in identifying the programs that will attract the most users, and could potentially lead to fee-based programs to defray maintenance costs.
4. Identify measures to use existing facilities more efficiently.
These measures could be incorporated with the programming measures outlined above to manage the use of each park in a more sustainable and cost effective manner.
5. Identify the potential for revenue-producing activities that could help fund higher levels of maintenance, enhanced facilities, more events, and other benefits.
Those aspects of park and recreation facilities and programs that provide a benefit to the entire community should be free to all. Programs that provide more benefit to the individual than to the community as a whole may be suitable to be fee-based.
6. Identify how the parks and recreation system can be effectively integrated with an overall green system of environmental health and sustainability.

B. Work towards a goal of a park within walking distance of every resident of Warwick.

Research has shown that people are more likely to use parks if they can easily walk to them. Older park system standards based on a certain number of park acres per 1,000 people were developed for expanding suburbs, when a lot of greenfield opportunities were available. This is not the case for mature suburbs like Warwick. The Trust for Public Land (TPL) Center for City Park Excellence has recently released a scoring system for cities called ParkScore.¹ Access is an important aspect of this system. TPL’s standard is a safe, barrier-free ten-minute walk from home to a park, which is approximately one-half mile.

Actions:

1. Work with residents to identify the appropriate time and geographic measure for walking distance from home to a park.
Once this measure is adopted, it should be kept in mind in developing initiatives to connect community destinations with walking and biking routes.
2. Identify both existing municipally owned and privately owned parcels for conversion to parks or permanently protected open space in underserved areas.
This work can also be done as part of the identification and prioritization of specific parcels of land for acquisition, development rights, foreclosing right of redemption (tax sale properties), conservation easements for farmland preservation, and open space purposes that have the greatest potential for preserving Warwick’s natural resources.
3. Identify and create “walk-to” neighborhood park spaces (playgrounds/playfields), where feasible, in underserved areas.
A priority list of parcels for acquisition or conversion should be developed as part of the overall planning process that identifies the areas of biggest need within the City.

C. Focus on improving facilities and programming at existing parks and develop parks and open space

maintenance guidelines that include a scalable annual maintenance budget and identify alternative sources of maintenance income and responsibility.

Actions:

1. Create a system of maintenance standards to meet public expectations and give guidance to workers.
Meet with residents to develop a set of maintenance standards accompanied by photographs, as in the example below, to guide maintenance workers on acceptable and unacceptable maintenance levels.²
2. Partner with businesses, nonprofits, and neighborhood groups to enhance park maintenance through an Adopt-



a-Park program or development of “Friends” groups. The City should actively seek participants in the program and develop an outreach program that targets businesses in close proximity to the parks and open space parcels.

3. Incorporate low-maintenance design and sustainable practices in park and recreation maintenance.
Because parks are long-term assets, sustainable management practices will enhance benefits to future generations. Sustainable management in the park system can also provide an educational example to private property owners of how to manage their landscapes. On a life-cycle basis, green systems can bring significant savings, and it may be possible to obtain grants and other assistance to plan and begin implementing the program. Best practices include:

¹ <http://parkscore.tpl.org/>

² http://sf-recpark.org/ftp/uploadedfiles/wcm_recpark/Mowing_Schedule/SFParkMSManual.pdf

- Choose turf varieties that require lesser amounts of fertilization, irrigation, and mowing
- Explore the use of artificial turf for intensively used athletic fields because the fields can be used without resting and do not require the water and other inputs that natural turf does. Grants may be available to install artificial turf.
- Recommend employing integrated pest management and natural alternatives for management of private golf courses and other areas.
- Design new recreation buildings to take advantage of natural lighting and ventilation during some parts of the year, in order to reduce the need for air conditioning and lighting.
- Seek to use recycled and recyclable materials for walls, paving and recreational equipment.
- Explore alternative energy sources, such as solar or wind power, to reduce electricity costs over time in recreational structures.

and also create routes of varying length, leading to increased use based on ability, age, etc.

4. Develop improvements for increased neighborhood connections to parks, such as new sidewalks or multi-use paths.
Incorporating these improvements into the individual Village Master Plans that are updated every five years makes those neighborhoods eligible for Community Development Block Grant (CDBG) funds, which can be used to develop these connections.
5. Work with neighboring communities to form links to regional trails and open space systems.
Actively pursue strategies and identify opportunities with the planning departments in Cranston, West Warwick, East Greenwich, and North Kingstown to take advantage of funds, available land, and purchase or swap opportunities.
6. Create an easy to use trail/bike/greenspace map that can be accessed from the City’s website.
The map should be developed so that it is legible when printed on letter size paper from a home printer.

D. Pursue improved connectivity of open space and recreation land through the development of “green corridors” consisting of new and existing bicycle and pedestrian trails and on-street routes.

Actions:

1. Identify opportunities for “land swaps” to develop systems of contiguous permanently protected open space. The City can actively seek these opportunities once a “master list” of properties has been developed and available City land has also been identified.
2. Develop further refinements to the existing bicycle and pedestrian trail system in locations that currently connect major open space parcels.
Improvements such as pavement maintenance, signage, and increased visibility all contribute to a safer and more accessible bicycle and train system.
3. Develop new enhancements to the bicycle and pedestrian trail system by identifying potential new routes that can connect major open space parcels.
These new routes, such as the Meadow View Avenue spur at Rocky Point, increase connectivity

E. Maintain high standards of urban design, environmental stewardship, and aesthetics in public open spaces to preserve and further enhance the character of the City.

Actions:

1. Continue and expand the development of the municipal tree farm at Barton Farm.
Focus on species that are proven to be urban tolerant. Keep a diversity of small, medium, and large deciduous trees in stock. Develop a maintenance plan for the tree farm to keep it free of invasive weeds, and encourage volunteer stewardship of the Barton Farm.
2. Continue and expand the City’s street tree planting program, and seek innovative funding methods.
Street trees are proven to sequester carbon, aid in stormwater filtration, reduce heat island effects, and

aid in noise and wind buffering. Street trees lead to healthier cities.

3. Continue “Adopt-a-Spot” and similar programs to encourage private funding of beautification of the public realm, such as in street medians.
Because aesthetic and maintenance standards can vary, the City should accept the donations in money and then contract with a landscape designer and firm to design and maintain all the plantings in the program around the city. Similarly, signage giving credit to the donors should be visible but not obtrusive.
4. Enact necessary regulations for sufficient review of development plans for both private and public improvements to ensure that neighborhood and municipal urban character is preserved and enhanced
Neighborhood and municipal character is something that should be outlined and articulated in Village Master Plans. Regulations that require development plans to adhere to the Village Master Plans would ensure their compliance.

F. Protect, preserve, maintain, and expand Warwick’s coastal and fresh water public access points.

Actions:

1. Promote inclusion of recreational and community meeting space uses in the State’s portion of the Rocky Point parcel.
Respondents to the Comprehensive Plan survey preferred a mix of passive and active recreation and favored a community meeting place on the site.
2. Maintain and consistently update the inventory of all public rights-of-way to the coastline found in the Warwick Harbor Management Plan.
An updated Harbor Management Plan that is accessible to all residents is the best tool for understanding where public points of entry to the coastline can be found.
3. Clearly demarcate and maintain, wherever feasible and practicable, the public rights-of-way identified in the inventories.

The public rights of way should be clearly marked at their points of entry to ensure access for all residents.

4. Discourage the abandonment or sale of public rights of way to coastal and inland water access points.
These access points are critical to maintaining access to Warwick’s coastline to the greatest extent practicable.
5. Identify, retain, and foreclose rights of redemption on all tax title properties within 200 feet of the shoreline and all inland water bodies that provide potential access points and scenic vistas to the shore, freshwater ponds, and rivers.
A master list of potential properties should be developed, prioritized by most critical areas necessary for increased access and most readily attainable properties for foreclosure.
6. Develop a recreational Blueway Trail Initiative to map and enhance recreational opportunities in local waterways and adjacent open space and create an interactive water trail map that can be accessed from the City’s website.
See www.exploreri.org for more information on blueways. As with the trail/bike/greenspace map, the map should be developed so that it is legible when printed on letter size paper from a home printer.
7. Improve existing and create new access points for canoeing, kayaking, and boating on both rivers and ponds and in the coves and the bay.
Increasing opportunities for water access is another method to creating healthier, livable cities.

GOAL 2

Recreation facilities that are state-of-the-art and that meet the needs of all Warwick residents.

POLICY

- Promote, maintain, and enhance a broad range of city-wide and neighborhood recreational facilities which meet the needs and desires of Warwick’s residents.

STRATEGIES

A. Evaluate park and recreation needs regularly.

Actions:

1. Survey Warwick residents periodically to identify changing needs for recreation programs and facilities for youth, adults and seniors.
Surveys should be taken approximately every 5 years and be sure to include residents who are not active in team sports or other organized programs, as well as those who are heavy users of recreation programs.

B. Seek a variety of funding sources for operational and capital improvements to the park and recreation system.

Actions:

1. Identify additional funding sources for programs through channels such as higher user fees and private sources. Ensure that lower-income residents have access to recreational programs through the development of a recreation department scholarship fund or a similar mechanism.

2. Encourage neighborhood associations to adopt and maintain neighborhood recreational facilities and open spaces.
This also encourages community “buy-in” that helps in long term maintenance and upkeep.
3. Provide funding for capital improvements to the Mickey Stevens Athletic Complex.
Establish a public-private partnership to fund improvements (i.e. naming rights, branding etc.).

C. Ensure the availability of park and recreation resources to persons of different abilities and different preferences.

Actions:

1. Establish and implement a plan to make all of Warwick’s public recreational facilities fully accessible to persons with disabilities.
Many of these improvements can be funded through Community Development Block Grants, as well as other Federal funding sources.
2. Ensure that spaces for both active and passive uses are available in all parks.
Program requirements for all parks should be reviewed and revised as necessary based on the demographics of the neighborhood they serve.



Historic and Cultural Resources

FROM A WARWICK RESIDENT

“One thing I enjoy about other towns in RI that Warwick doesn’t have much of is a historical downtown area. Apponaug is small, but the same general idea.”



GOALS AND POLICIES

GOALS

POLICIES FOR DECISION MAKERS

HISTORIC PRESERVATION

The city's historic resources, including structures, natural features, and character areas, are protected and preserved.

- Support a coordinated historic preservation program encompassing resources outside as well as inside local historic districts.

Residents' and visitors' experience of Warwick is enhanced by a sense of the city's history.

- Increase public awareness of Warwick's historical legacy including buildings, village centers and cemeteries.
- Enhance public awareness of the economic benefits of historic preservation in Warwick.
- Promote educational efforts in the schools and engender a preservation ethic among Warwick residents.

ARTS AND CULTURE

Warwick's arts community is vibrant and growing.

- Enhance access to resources for arts and cultural organizations.
- Improve promotion of arts and cultural activities and initiatives as part of the city's economic development strategy.

B FINDINGS AND CHALLENGES

findings

Warwick has significant Native American archeological resources and is rich in revolutionary war civil war, agricultural and industrial history.

Three local historic districts require design review through zoning overlays: Pawtuxet Village (1989), Apponaug Village (1993) and Pontiac Village (1995).

The Secretary of the Interior's Standards for historic rehabilitation are the only historic design standards used by the City in local historic districts. There are no standards specific to each area.

Historic overlay zoning was replaced by Village District Zoning for properties located along the Post Road commercial core of Apponaug Village in 2011.

There are 7 National Register historic districts, 29 National Register properties, 323 properties are listed in the Rhode Island State Register of historic properties, and there are approximately 150 historic cemeteries.

Outside of the local historic districts, historic structures or sites are not protected from alteration or demolition.

Many historic resources have been lost to development in the last 50 years.

Warwick's development pattern is characterized by small villages of historic homes and structures that date back hundreds of years, rather than by a central downtown.

The City's historic resources include landscapes, natural sites and varied structures such as bridges, stone walls, streetscapes, Mark Rock, Drum Rock, and Rocky Point.

As we advance into the 21st century, it is important to recognize that Warwick has a considerable legacy of mid-20th century buildings and placed that warrant fresh consideration for their historical significance

challenges

Promoting more public awareness of the value of Warwick's remaining historic resources.

Promoting more understanding about the economic and "quality of life" benefits of historic preservation.

Establishing programs to better identify, celebrate, and promote protection of Warwick's historic resources located outside the local historic districts.

Mitigating the impact of new development on historic resources.

Identifying and protecting archeological resources.

Providing incentives for historic preservation

Funding historic awareness and historic preservation activities



WHAT THE COMMUNITY SAID

- 89% of survey respondents said that “preservation of historic buildings and traditional neighborhoods” was “very important” (53%) or “somewhat important” to the future of Warwick
- 80% of survey respondents said that the “availability of arts and cultural opportunities” was very important (38%) or somewhat important to the future of Warwick



EXISTING CONDITIONS

Communities that have a strong historic and cultural identity are not only important to existing residents; they often attract new residents, visitors and investment. Individual historic buildings, structures, landmarks and larger historic districts tell the story of a place, providing a unique character that can impart a place with a strong identity that is greater than the sum of its parts. It is this unique, historic “sense of place” that enhances economic competitiveness, attracting residents who want to live in distinctive neighborhoods; visitors who seek interesting, vibrant places to work, shop or spend leisure time; and investors who view stable and unique locations as attractive opportunities for investment. Historic preservation is also a resource-efficient component of sustainable practices. Using historic structures, whether for an original purpose or a new adaptive reuse, conserves natural resources needed to build replacement structures, while taking advantage of past building practices that used natural light and ventilation features.

While the City of Warwick has three local historic districts where structures are protected from historically inappropriate exterior changes—Pawtuxet Village, Apponaug Village, and Pontiac Mills—many historic sites lack protection. Much of the ensemble—the historic context—to the remaining historic buildings has been

lost over the years, and those assets that remain are often surrounded by incompatible, post WWII sprawling residential and commercial strip development. Listing on the National Register of Historic Places and the State Register does not protect a structure from alterations or even demolition, unless it is being affected by federal or state projects.

1. Archeological and Historic Resources

Archeological resources. Archaeological remains from pre-colonial farming and hunting communities demonstrate that Warwick was the home of Native American communities for millennia before the advent of European colonists. Some known archaeological sites that exist from the prehistoric period are Mark Rock and Drum Rock. Mark Rock, located in Conimicut on the south shore of Occupasstuxet Cove, is a large flat rock outcropping with carvings probably dating to between 1630 and 1650. Drum Rock, located behind the Cowesett Hills apartment complex south of Apponaug, is composed of two boulders which were once balanced in a manner that one could strike the other and produce a sound that reputedly could be heard for miles. The best-known example of Native American archeological resources in Warwick was the discovery of a prehistoric settlement and ceremonial features at the Lambert Farm Site in Cowesett. When development of this site was imminent, the owner and members of the Historic District Commission made a mutually beneficial agreement whereby development would be delayed until such time as significant data could be removed from this site. This salvage of an important archaeological resource came about without the benefit of regulation, and relied solely on the goodwill and cooperation of the owner. Other sites include the Sweet Meadow Brook site near Apponaug, where stone tools were discovered, and the Potowomut site which included the remains of postholes, a rare find.

Archeological resources from 17th and 18th century European settlement can also be found. Since 2004, Brown University archeologists and other specialists have been working at Greene Farm. In addition to archeological resources on land, there are also remains under coastal waters.

The arrival of the Europeans marked the end of the earliest native settlements as strife and disease obliterated much of the native population. Though relatively few Native Americans remain, the tribes’ names have continued in Warwick neighborhoods such as Pawtuxet, Cowesett, and Potowomut. Native trails evolved into Warwick’s current road pattern, including Post Road, which follows the alignment of the Pequot Path, a major trail that in colonial times became the main highway from Boston to New York.

The land was appealing to the first English colonists who found much of it already cleared for farming by natives. These earliest Europeans were helped by the natives who shared their land and harvests before disease and warfare with the colonists disrupted the native settlements. By 1616 and 1617, diseases had depopulated whole native villages. Any archaeological remains that have survived to the present may provide important scientific data on the life ways of Warwick’s most ancient inhabitants.

At present, state and federal projects must evaluate the likelihood of archeological resources at proposed projects, and the resources must be investigated and pro-

tected if found. Private development is not subject to any requirements. Archeologists at the state’s Historic and Heritage Commission have experience with more than 2,000 sites across the state. As a result, they can predict where archaeological resources are likely to be found.

Sites on the National Register of Historic Places. The National Register of Historic Places, also known as the “National Register,” is the federal government’s list of properties or sites that are at least 50 years old, that are seen to be significant to the history of America, and that are worthy of preservation. Individual buildings, districts or archaeological sites are included. Designation requires documentation, typically by a trained consultant, but the listing provides no protection for the historic property or site except in the case of federal projects, which must avoid or mitigate impacts on National Register properties. Designation does not prevent owners from altering or tearing down the property. In fact, no design review or penalties for altering a National Register property are associated with the listing. In Warwick, there are 29 individual sites, and 7 districts listed on the National Register of Historic Places. According to RIH-PhC, no additional properties or districts are currently under review for designation.

Table 6.1: National Register Historic Sites, Districts and Individual Sites in the City of Warwick

SITE	ADDRESS	DATE LISTED
DISTRICTS		
Apponaug Historic District	Post Road	2/23/84
Buttonwoods Beach Historic District	Buttonwoods, Cove, Cooper and Promenade Avenues and Greenwich Bay	2/23/84
East Greenwich Historic District	Majority of district is located in East Greenwich	4/24/73
Forge Road Historic District	Forge Rd from Ives Rd to Potowomut River	2/23/84
Meadows Archaeological District	790 Ives Rd	11/3/83
Pawtuxet Village Historic District	Bounded by easterly on Narragansett Bay, southerly on the Pawtuxet Cove, Bayside Avenue and South Fair Street, westerly on South Atlantic Avenue, and northerly on the Pawtuxet River and Ocean Avenue (Warwick and Cranston)	4/24/73
Warwick Civic Center Historic District	Post Rd	6/27/80
INDIVIDUAL SITES		
Budlong Farm	595 Buttonwoods Avenue	8/18/83
Greene-Bowen House	698 Buttonwoods Avenue	5/2/74
Caleb Green House	15 Centerville Road	11/28/78
Cowesett Pound	Cowesett Road	9/4/87
Lambert Farm Site	287 Cowesett Road	11/3/83
Knight Estate	486 East Avenue	2/23/84

Table 6.1: National Register Historic Sites, Districts and Individual Sites in the City of Warwick

SITE	ADDRESS	DATE LISTED
Moses Greene House	11 Economy Avenue	8/18/83
Trafalgar Site	Southeast corner of Forge Road and Route 1	11/3/83
Forge [Greene] Farm	40 Forge Road	1/11/74
Elizabeth Spring	Off Forge Road near railroad viaduct	8/18/83
Caleb Gorton House	987 Greenwich Avenue	8/18/83
Richard Wickes Greene House	27 Homestead Avenue	8/18/83
Greenwich Cove Site	Ives Road	1/4/80
Pontiac Mills	Knight Street	6/5/72
Greenwich Mills	42 Ladd Street	n/a
Oliver Wickes House	794 Major Potter Road	8/18/83
Gaspee Point/Namquid Point	End of Namquid Drive	6/8/72
Terminal Building, R.I. State Airport	572 Occupasstuxet Road	8/18/83
John R. Waterman House	100 Old Homestead Avenue	8/18/83
Christopher Rhodes House	25 Post Road	3/31/71
Captain Oliver Gardiner House	4451 Post Road	8/18/83
Conimicut Lighthouse	Providence River (east end of Conimicut Point)	3/30/88
John Waterman Arnold House	11 Roger Williams Avenue	9/10/71
Hopelands/Rocky Hill School	Wampanoag Road	8/18/83
Indian Oaks/Senator Nelson W. Aldrich Estate/Our Lady of Providence Seminary	836 Warwick Neck Avenue	8/18/83
Warwick Lighthouse	1350 Warwick Neck Avenue	3/30/83
Peter Greene House	1124 West Shore Road	8/18/83
Greene-Durfee House	1272 West Shore Road	8/18/83
District Four School	1515 West Shore Road	4/14/97

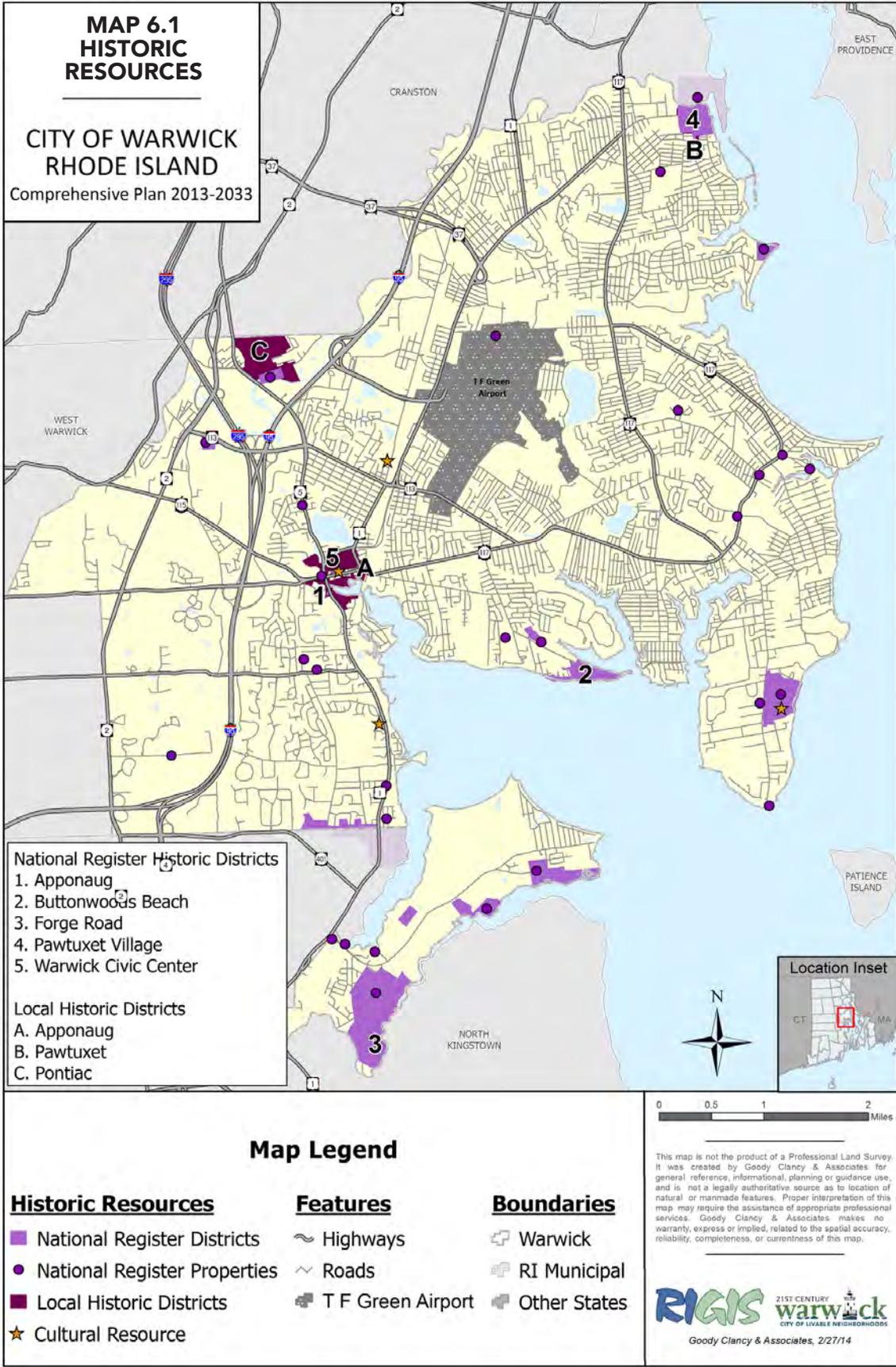
Sites on the Rhode Island State Register of Historic Places. The Rhode Island Historical Preservation Commission (RIHPC) locates, records and evaluates historic places within Rhode Island for inclusion on the State Register of Historic Places. The state uses the same criteria as that used for the National Register of Historic Places, but the structures do not need to hold national significance. Inclusion on the National Register automatically places the property on the State Register. There are 399 sites listed on the State Register within the city of Warwick. The majority of these are not listed on the National Register. (A listing of all State Register properties is in the Appendix.)

City Register of Historically Zoned Properties. When the Historical Commission was established in 1975, properties could be placed under the jurisdiction of the Commission only with permission of the owners. Between 1975 and 1989, when the first local historic district was created, ten owners requested historic designa-

tion and they were identified in the zoning ordinance as “historically zoned properties.”

Local Historic Districts. As noted earlier, there are three local historic districts in Warwick with historic district overlay zoning that regulates the construction, alteration, repair, removal or demolition of structures and sites in the overlay district.

- **Pawtuxet Village.** The first historic district overlay was approved in 1989 for the Village of Pawtuxet to include 184 parcels. This is the largest concentration of eighteenth and nineteenth century structures in the city, and is part of the larger Pawtuxet Village National Register Historic District that extends into neighboring Cranston.
- **Apponaug Village.** Created in 1993 as a local historic district, Apponaug extends from Apponaug Cove to Gorton’s Pond including Williams Corner, Apponaug Four Corners at Post Road and Centerville Road and





Veteran's Memorial Drive. Key structures include the Apponaug Mill and the Tanner Avenue graveyard, Caleb Green House, Warwick Civic Center (City Hall, Library, and Museum), Henry Remington House, and the Harrison House. Although historic district zoning was established, there are a limited number of historic resources in the district and many structures have been significantly altered over the years. In fall of 2011, numerous properties fronting Post Road were removed from the historic district overlay zone, and placed in a Village Overlay District. Although the new zoning designation encourages a mix of uses and traditional Main Street development and is subject to design standards, alterations to the properties no longer require the Historic Commission review.

- **Pontiac Village.** As recommended in the 1990 Comprehensive Plan process, Pontiac Village became a local historic district in 1995. Once home to prosperous textile industries, the area is home to several mill and housing structures, of which the majority of houses remain occupied. Although reuse of the vacant mill structures is desired, no plans are currently in the works.

Historic Plaque Program. First started by a volunteer a historic plaque program continues to be supported by the City of Warwick.

1990 Comprehensive Plan Historic Survey. During the 1990 Comprehensive Plan process, a survey of historic properties was conducted in May and June of 1990. The survey was not comprehensive, but was intended to identify neighborhoods and additional historic resources, with the intent to recommend further study to possibly expand the City's Register of Historic Places, and then adopt systems to protect them. None of the recommended studies have been carried out. The historic resources identified include the following listed by neighborhood:

- **Greenwood:** The area was not eligible for historic district status. Establishment of a neighborhood conservation area to recognize and further secure the stability of the neighborhood was recommended.
- **Hillsgrove/Jefferson Boulevard:** Home to the former Leviton Manufacturing property and Elizabeth Mill structures, the Hillsgrove Mill District should be established. Additionally, nineteenth century mill housing north of Kilvert Street could anchor a separate district, and some structures could be added to the city listing or National Register.
- **Norwood:** Established in the 1880s, the area north of Pettaconsett Bridge up to Budlong Street holds promise for historic district designation or for individual properties. A survey of the remaining areas to identify additional structures worthy of historic designation was recommended.
- **Lakewood:** Lakewood Town Hall was identified and recommended for historic designation.
- **River View/Longmeadow:** The concentration of historic properties along Hope Avenue was identified as a potential historic district. Further evaluation is required for the district, but individual structures are likely eligible for the City register.
- **Spring Green/Governor Francis Farms:** The 1917 school, which replaced an 1881 school house, which replaced an 1820 one-room school house, along with two-acre Spring Green, should be considered for historic district designation.
- **Conimicut Village:** Although signage designates the area as the Conimicut Historic District, the commercial district and surrounding homes are not officially recognized by the city with the historic zoning designation. The 1990 study however, recommended an inventory be undertaken. Village District zoning with design standards was approved for the area in 2011.
- **Oakland Beach:** Early twentieth-century summer-houses not destroyed by the 1938 and 1954 hurricanes, including the former train station, should be surveyed and entered into the City inventory.
- **Warwick Neck:** Numerous structures on the Bishop Hendricken High School campus, and the former Our Lady of Providence Seminary were recommended to be surveyed and entered into the City's Inventory of Historic Places.
- **Cowesett:** Numerous structures along Valentine Circle, including the Sprague Mansion, should be considered for individual designation on the City's inventory as examples of late 19th and early 20th Century

Secretary of the Interior Standards for Rehabilitation

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in a such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

styles. Additionally, two areas including 19th century mill buildings and housing in the area bordered by Post Road, Division Street, Williams Street and the shoreline along Greenwich Cove; and the area of 19th and 20th century residential structures bounded by Division Street, Spencer Avenue, Post Road and Cedar Street holds should be considered for historic district designation.

- **Potowomut:** The historic sites are predominantly located within state owned properties and are protected. Structures outside hold potential for individual listings, not districts.
- **Buttonwoods:** A portion of Buttonwoods has been designated under the State and National Register designations, but the City could extend local zoning protections to better protect the properties.
- **Natick/East Natick:** The area should be surveyed to see if 1890's duplexes should be placed on the City list or create a district.

2. Historic Preservation Organizations

Warwick Historic District Commission. The Warwick Historic District Commission has responsibility for historic preservation in local historic districts. Created by City Ordinance (O-73-19) in 1973, the Commission has 7 members appointed for staggered 3-year terms. The primary role of the Commission is to review proposed development and rehabilitation projects in local historic districts and issue Certificates of Appropriateness. Property owners must receive the certificate from the Commission prior to receiving a building permit for any



work including alteration, repair, removal or demolition to the exterior appearance of a historic structure. Certificates of Appropriateness are granted if the proposed rehabilitation meets the United States Secretary of the Interior's Standards for Rehabilitation. There are no special standards for particular districts. The commission has no authority over interior changes to these structures. The Commission also issues Certificates of Appropriateness for any alterations to stone walls within the city constructed prior to 1900. Stone walls in disrepair or neglected may not be removed, but must be repaired or left in the existing state.

Warwick Cemetery Commission. Established by City Council, the Warwick Historical Cemetery Commission is responsible for inventorying the city's 150 historical cemeteries; developing programs to restore, rehabilitate and maintain them; raising money through fundraising, grants and sponsorships for programs and projects; and making recommendations to the Mayor and City Council. Programs run by the Commission include Adopt a Cemetery, where a citizen or group agrees to clean and preserve a cemetery for three year period. They also work with Warwick high schools to encourage students to help with clean-up activities.

Warwick Historical Society. The Warwick Historical Society is a private membership group whose mission is to "preserve whatever relates to the topography, antiquity and natural, civil and ecclesiastical history of the City of Warwick." The Society collects, preserves and displays historical artifacts and advocates for the preservation of buildings and sites of historical and archaeological significance. The society is located in the John Waterman Arnold House, which houses the organization's library. The library includes historical documents, textiles and photographs, and is open to the public on Wednesdays. Much of the collection can be viewed online.¹ The Historical Society distributes a quarterly online newsletter, sponsors activities such as historic cemetery clean-up days, holds seminars at the library, and offers a small scholarship to graduating high school seniors who have shown exemplary academic achievement and community service, along with an interest in history and technology.

¹ <http://warwickhistoricalsocietyonline.org>

State of Rhode Island Historical Preservation and Heritage Commission. The State of Rhode Island Historical Preservation and Heritage Commission (RIHPHC) is responsible for the state's historical preservation and heritage programs. The State Historic Preservation Plan outlines existing preservation programs and sets out priorities and goals for the RIHPHC. A new, revised draft State Historic Preservation Plan was released in summer 2011, and is available for public review and comment.

RIHPHC is responsible for the State Register of Historic Places, which identifies historic buildings, structures, districts and archaeological sites and for programs to document and celebrate the state's historic and cultural heritage. RIHPHC also provides financial and technical assistance to communities for preservation efforts, and works with private and public groups and other agencies to meet the cultural needs of the state and its communities. In addition to historic preservation efforts, the agency coordinates heritage festivals, sponsors studies and works to create educational programs and materials highlighting ethnic traditions and culture within the state.

3. Historic Preservation Resources and Initiatives

State and Federal Programs and Resources. Both the federal and the state governments promote historic preservation through tax credits and other programs.

- **State programs:**
 - **Historic Homeowner State Tax Credit** – eliminated in 2011, but future reinstatement of the credit is likely with improved economic conditions.
 - **Historic Preservation Investment Tax Credit** – 30% tax credit for historic rehabilitation of income-producing historic buildings (typically including mixed-use buildings).
 - **Historic Preservation Loan Program:** Available to individual owners looking to preserve properties listed on the State of Rhode Island's Register of Historic Places, the program provides low-interest loans to public, non-profit, or private owners for restoration work or, in some cases, for acquiring and rehabilitat-

ing an endangered historic property. All work to be done must meet the Secretary of the Interior’s Standards for Rehabilitation, and work that has already been completed is not eligible. Proposed projects are evaluated based on architectural and historical significance of the property, on relative need and the public benefit. Geographic distribution, financial need, and conformance to community planning issues are also considered. The maximum loan is \$200,000, and must typically be repaid within five years

- **Loans to municipalities.** RIHPHC may also loan funds to municipalities to operate a local revolving loan program. Usually, the community targets a few historic areas or neighborhoods and uses RIHPHC funds to make a number of smaller loans to individual owners.
- **Federal programs:**
 - **Historic Preservation Tax Credit** – 30% tax credit for historic rehabilitation of income-producing historic buildings (typically including mixed-use buildings). The 20 percent federal tax credit can be taken on the owner’s income tax that is equal to 20 percent of the total rehabilitation costs on approved projects. The structure must be listed on the National Register as an individual structure or as part of a district.

Preservation Easements. Property owners can donate a preservation easement to RIHPHC, which is a legal agreement that ensures that the historic and architectural character of a property will be preserved and that the property will not be altered without the Commission’s approval. In exchange, owners receive tax benefits for federal income, estate, and gift taxes. Under federal law, a preservation easement is treated as a charitable contribution. Owners retain the use of the property and are responsible for all maintenance costs. The RIHPHC requires grantors to donate an endowment equal to 5 percent of the appraised value of the easement. The RIHPHC uses the income from the endowment to defray the costs of monitoring the easements it receives. Commission staff will visit properties and are available for consultation regarding preservation plans.

Certified Local Government (CLG) Grant Program. RIHPHC administers this grant program for municipal historical preservation activities. Warwick and other communities with a historic district ordinance and historic district commission are eligible for the program. CLG grants can be used for a wide range of projects, including National Register nominations, historic preservation plans and other education-related activities.

Local Programs. Initiatives to promote historic preservation and raise public awareness about the city’s historic resources include the historic plaque program, booklets for self-guided tours, and a digital history project with a dedicated website launched in 2012. The City lacks a demolition delay ordinance which could be used to seek opportunities for adaptive reuse for a specified period (typically six months to a year) when a demolition permit is pulled for a property of historic significance. No digital database of protected properties exists. All records are held in a loose leaf binder at the Planning Department.

The Warwick, Rhode Island, Digital History Project at www.WarwickHistory.com, contains articles on Warwick History, online exhibits, the heritage tour booklets, videos, and will include oral history recordings.

4. Cultural Resources

An important contributor to a community’s overall quality of life is the availability and access to various cultural activities and facilities.

State Arts Initiatives. Rhode Island has prioritized the enhancement of the arts and culture sector as part of economic development. As of December 1, 2013, the purchase and sale of all original works of art will be exempt of state sales tax throughout Rhode Island. The legislature also established the Rhode Island State of the Arts Planning Task Force which will develop a strategic plan for the arts and associated creative industries in the state.

Warwick Department of Tourism Culture and Development. The Warwick Department of Tourism Culture and Development is the city department charged with



culture, tourism and economic development. The three-person department works with numerous public and private groups to support and promote cultural activities and events throughout the city, and manages the Visit Warwick Rhode Island website (www.visitwarwickri.com) which not only provides information about tourism, but hosts a comprehensive list of cultural activities taking place within the City of Warwick, including festivals and events, arts and entertainment events, and special events.

Festivals. Hundreds of festivals and events are held each year within Warwick, bringing city residents and visitors together to celebrate their communities in various ways. Most festivals are organized by neighborhood associations with support from the Warwick Department of Tourism, Culture and Development, whereas other events are held by various private or non-profit entities. The Gaspee Days Celebration, organized by the Gaspee Days Committee, is the city's largest festival, taking place over several weeks from May to June in Pawtuxet Village. The festival attracts over 50,000 visitors, and commemorates the burning of the Gaspee, the "first blow for freedom" in the American Revolution. The festival includes a costume contests, a crafts fair, the Gaspee Parade, a mock battle culminating with the symbolic burning of the Gaspee, and fireworks display funded by the city.

Arts, Entertainment and Special Events. Many arts and entertainment events are held in Warwick throughout the year, from art shows to concert series and comedy showcases, including art shows and retrospectives at the Warwick Museum; comedy and improv shows at the Showcase Cinemas Warwick or Warwick Museum; concert series at the Warwick Mall; concerts at local restaurants and venues; Apponaug Tree Lighting at Christmas.

Ocean State Theater Company. The Ocean State Theatre Group moved into a new performing arts theater in a renovated commercial building at on Jefferson Boulevard in 2012. The company offers year-round programming, classes, and children's programming.



Clouds Hill Victorian House Museum

Warwick Museum of Art. Founded in 1976, the Warwick Museum of Art (WMOA) is the city's largest non-profit arts organization and in many ways serves as the cultural center for Warwick. The museum provides performance and exhibition space to artists, writers and performers and hosts cultural events including live theatre, music performances, poetry and literature readings and monthly visual exhibitions. The museum operations are supported in part by the Rhode Island State Council on the Arts, the City of Warwick, the State of Rhode Island, the Champlin Foundation, WMOA members and sponsors.

Clouds Hill Victorian House Museum. Clouds Hill Victorian House Museum is a house museum open to the public that has remained in the same family since it was built. The house is considered one of the best examples of Victoriana in Rhode Island, "surpassing even the Bellevue Avenue [Newport] manors in terms of authenticity of its contents." In addition to its architecture and interiors, textiles, family articles, carriages and more are displayed. The property on which the house sits has been referred to as the West Bay arboretum.

Aldrich Mansion and Estate. The Aldrich Mansion, listed on the National Register, is a seventy-five acre estate on Narragansett Bay built by Senator Nelson W. Aldrich at the turn of the 20th century. The property includes the 75-room mansion, a carriage house, caretaker’s cottage and boathouse. Tours of the property can be arranged, but the facility is primarily used for special events, large receptions and for conferences, meetings and seminars. It also serves as a motion picture filming location, most notably 1998s “Meet Joe Black.”

historic resources. Local versions of the National Register basic criteria can be refined for Warwick:

- The property is associated with a major historical event.
- The property is associated with a significant historic person.
- The property has distinctive architectural or construction characteristics, including great artistic value or design by an important designer.
- The property has provided or may be likely to provide information important to prehistory or history.

RECOMMENDATIONS

GOAL 1

The City’s historic resources, including structures, natural features, and character areas, are protected and preserved.

POLICY

- Support a coordinated historic preservation program encompassing resources outside as well as inside local historic districts.

STRATEGIES

A. Maintain an accurate inventory of historic resources in the city, including photographs, and make it publicly accessible.

Actions:

1. Determine eligibility criteria for inclusion in the inventory of historic resources.

Local historic resources inventories are generally based on resources listed in the national and state registers, with additions for locally-important resources. In many cities, resources must be at least 50 years old to be considered historic. This is simply the first threshold or filter for consideration as a historic resource—not all properties or places over 50 years old will merit inclusion in an inventory of

2. Create a rating system to identify priority properties for preservation.

Preservation priorities should be established by means of a rating system to help identify the best use of preservation resources and to identify target properties or areas for preservation initiatives. For instance, a point system could be adopted whereby historic resources are given points for: age, integrity of original structure/architectural style, contribution to a historic fabric or ensemble, uniqueness, and so on. The Historic Preservation Master Plan for Arlington County, Virginia, is a good model of a preservation master plan that integrates historic preservation into broader goals with a priority ranking for historic resources. (<http://www.arlingtonva.us/Departments/CPHD/Documents/77768-15-06%20HP-Policy%20Rev.pdf>)

3. Identify additional historic and archaeological resources.

The inventory may include structures such as stone walls, bridges, lighthouses, and landscapes as well as buildings. Where a structure is eligible for nomination to the National Register, the City should work with the property owner to prepare the nomination. The City can also actively solicit the aid of individuals and organizations, such as the Warwick Historic Society, who possess knowledge of local history in locating potentially significant sites, cataloging private artifact collections and any other appropriate activities relating to the inventory of historic resources.



Identification of archaeological resources requires a delicate balance. While the City should work with the RIHPHC to identify areas likely to have resources, they should not be publicly identified except in the most general terms in order not to create situations where the resources may be destroyed.

4. Make the inventory available to the public on the City website.

The inventory, accompanied by photos and historic images, should be put on the City website as part of a broader data warehouse program to make data and information available to the public.

B. Provide incentives for historic preservation.

Actions:

1. Advocate for reinstatement of the State Historic Tax Credit.

The state tax credit was suspended because of the economic and fiscal crisis of 2007-9. It was very successful in the past, providing support for historic rehabilitation in communities throughout Rhode Island, and should be reinstated as soon as possible.

2. Consider a city tax credit or property tax abatement for approved work to high-priority historically significant properties.

With establishment of the rating system recommended above, the City could make available tax credits, or a property tax abatement for a specified number of years, to properties where historic rehabilitation has high importance and/or would help the city meet other goals, such as revitalization of village districts. Because many Warwick historic resources are dispersed around the city, the impact of tax credits or property tax abatements applied anywhere in the City may be dissipated. Restricting the availability to properties that meet certain criteria of importance will provide greater likelihood that the City's investment will promote and leverage private investment.

C. Enhance the review process in local historic districts with more focused design guidelines.

Actions:

1. Create more detailed design guidelines for local historic districts.

Warwick uses the Secretary of the Interior's guidelines as its only design standards in local historic districts. Although useful, these guidelines are very general and applicable to a wide array of circumstances. Design guidelines or standards for the specific circumstances of each of Warwick's local historic districts will sharpen the City's ability to preserve the distinctive historic character of each area. Pawtuxet Village, for example, is quite different from Pontiac Mill. As important as their impact on changes to historic structures would be a more nuanced approach to review of changes to the non-historic structures or to new construction in the historic districts.

D. Promote adaptive reuse of historic buildings.

Action:

1. Establish a demolition-delay ordinance.

When an owner of a historic property applies for a demolition permit, a demolition-delay ordinance requires a waiting period during which an effort is made to find a use for the property that will not require demolition of its historic elements. Historic significance can be defined according to various criteria—for example, all structures over 50 years old or on the National or State Registers could be eligible for a demolition delay. This tool is used by many communities, where the delay period typically ranges from 60 days to one year. Demolition delay does not guarantee that a property will be spared from demolition if no other viable use can be found for it, but it has been shown to reduce demolition of historic properties. If demolition proceeds after the delay period, the property owner should be asked to provide photos and other documentation, if available, in order to provide a record for the City, and to provide information in on-site signage and in a digital format

E. Promote protection of historic resources outside local historic districts

Actions:

1. Explore creating neighborhood conservation districts.

Neighborhood conservation districts (NCDs) provide a mechanism for differing levels of review—from advisory to fully regulatory—for demolition and exterior changes to buildings within a defined area that has a recognized character. Typically, conservation districts are defined by a study of the area that highlights an identifiable neighborhood character and recommends which kinds of changes should be subject to review. Review standards are tailored to the special character of each district. Conservation districts can be administered by a local historic preservation commission, planning commission, municipal staff members, or a special neighborhood conservation district commission. They are sometimes included in zoning ordinances and sometimes enacted as separate ordinances for each conservation district.

Neighborhoods in Warwick that might be suitable for NCDs include Greenwood, Norwood, Cowesett, Valentine Circle, Spencer Avenue, Oakland Beach, Riverview and Longmeadow. Conservation districts based on neighborhood action and that encourage voluntary compliance—rather than mandatory review—may be better suited to Warwick than a more formal approach with mandatory design reviews, which require more staff, funding, time, and capacity. (A voluntary approach could still issue certificates or other indications that a given project has met the established standards.) In the future, neighborhoods or districts where there is an increased threat of deterioration of neighborhood character that is not adequately addressed through voluntary design guidelines may consider the more stringent approach of mandatory standards.

A number of cities have conservation districts under various names, including Cambridge, Wellesley, and Northampton in Massachusetts; San Antonio, Dallas, and Austin in Texas; Memphis and Nashville in

Voluntary Design Guidelines: Naperville, Illinois

An example of voluntary design guideline initiatives is a workbook created by Community First, a citizens' group in the Chicago suburb of Naperville, which experienced inappropriate additions and teardowns. The organization was founded as an educational nonprofit by builders, architects and citizens and is supported by both the City of Naperville and the local Chamber of Commerce. The group prepared a booklet with simple illustrations to guide builders, property owners, designers and citizens through the process of understanding the character of a particular neighborhood and street—with special attention to what constitutes harmonious relationships among buildings—and provides advice on ways to design additions and new buildings to contribute to overall neighborhood character. Even though compliance is entirely voluntary, the booklet influenced some 250 projects in its first four years. (www.communityfirstinc.org)

Tennessee; Roanoke, Virginia; and Atlanta, Georgia. Elements of a neighborhood conservation district system that would be suitable for Warwick include:

- Nomination by a neighborhood group, with a process to get majority property-owner approval for the nomination and to start the process.
 - Neighborhood study to identify key aspects of neighborhood character.
 - Neighborhood meetings and discussion to identify what building or site elements, if any, should be subject to review, advisory or mandatory standards.
2. **Create design principles or guidelines for areas with high-priority unprotected historic resources.** Design guidelines for development in areas where there are high-priority unprotected historic resources can have a positive effect on alterations to the unprotected resources and on new construction in the vicinity of the historic resources. In special permit processes, the design principles or guidelines could be included as criteria that the Planning and Zon-



ing Board must consider in deliberating on special permits. If the principles/guidelines are voluntary, zoning and building permit staff can provide them to property owners and contractors in the case of by-right construction.

3. **Continue to advocate for the preservation of historical cemeteries through the continued efforts of the Warwick Historical Cemetery Commission.**
4. **Work with the Rhode Island Historic Preservation and Heritage Commission (RIHPHC) to develop procedures to protect hidden archaeological resources.**
5. **Establish a program to accept and acquire historic easements.**

Historic preservation easements are voluntary agreements between owners of a National Registered property and a historic preservation organization recognized by the IRS. The easement restricts specified changes to the property and the donor conveys certain rights over the property to the

easement-holding organization, which then has the legal authority to enforce the terms of the easement. Terms of the easement can include interior or exterior changes in a building, and they are tailored to each situation. In exchange for the tax break, the property owner agrees to provide public access to the property. In Rhode Island, the RIHPHC holds preservation easements.

F. Provide resources for information and guidance to property owners on historic preservation issues.

Actions:

1. **Make the historic preservation office a “one-stop shop,” in person and online, for information on historic preservation.**

Property-owners who are interested in historic restoration, rehabilitation, or compatible renovation need to be able to find practical information about local historic building types, sources of materials, tax credit opportunities, preservation easements and other information. This information could be made available on the City’s web site. Some functions of this resource could include:

- Tax credit assistance: information for property owners on obtaining federal, state and other tax credits, when available, for renovation.
- Information on historical appropriateness for typical Warwick architectural types for use by property owners in renovation projects: A number of cities have created pamphlets explaining common historic architectural types in the community and how to preserve character while doing renovations.
- Technical assistance on historic preservation easements.
- Information on affordable materials and options for preservation.



GOAL 2

Residents’ and visitors’ experience of Warwick is enhanced by a sense of the City’s history.

POLICIES

- Increase public awareness of Warwick’s historical legacy including buildings, village centers and cemeteries.
- Enhance public awareness of the economic benefits of historic preservation in Warwick.
- Promote educational efforts in the schools and engender a preservation ethic among Warwick residents.

STRATEGIES

A. Provide user-friendly information on historic and cultural assets.

Isolated sites of historic importance can be given new vitality through increased public awareness, such as by linking these sites with other places of interest and with one another, or by providing resources such as self-guided tours and information to make isolated sites more accessible and attractive. Synergies and physical connections can also be encouraged through guides and easy-to-use information. In addition to providing information on Warwick-focused websites, the City can also enhance its presence on websites such as the Warwick Heritage Trail section of Visit Rhode Island and interest group websites focused on colonial, revolutionary, and civil war era.

Actions:

1. **Inventory, improve, standardize, and expand existing interpretative signage for historic resources.**
An inventory of the existing signage, along with identification of additional sites that merit signs, should be prepared. At a minimum, all National Register-listed sites and districts should be appropriately signed, with first priority to the local historic

districts. The inventory could be an appropriate task for volunteers such as the Warwick Historical Society or college or high school groups. Identification of additional sites for historic signage should occur in the context of a broader survey of historic people, activities and sites that should be recognized. A consistent design and materials for historic signage should be developed and implemented over time. The signage program could become the foundation for a heritage tour program.

2. **Create self-guided digital tours and make them digitally available.**

Downloadable podcasts, maps and narratives that connect sites according to geographic and thematic content are cost-effective. These guides should correspond to interpretive historic signage. In addition to making the podcasts available online at www.WarwickHistory.com and other websites, flyers with QR codes promoting downloads of the tours could be distributed to city locations to encourage both locals and visitors to become more conscious of Warwick’s history.

3. **Continue to promote awareness of residential historic preservation including strengthening the Historic Plaque program and establishing events like historic house tours.**

The Historic Plaque program could be funded through a fee-based program, as it is in Providence. The Providence Preservation Society Historic Property Marker Program provides plaques for buildings at least 50 years old that meet criteria for retaining historic integrity. In return for a fee, the Society provides a history of the building and a historic plaque.

Historic house tours have become popular in many communities and fees can be collected to help support historic preservation activities. They are typically organized by historic societies rather than government historical commissions.

4. **Make local history a part of the school curriculum and offer programs for children and adults at the library and elsewhere.**

Lively programs to whet the interest of children, youth and adults in local history will build a constituency for historic preservation. Programs that



provide opportunities for hands-on connection with history and historic places, as well as volunteer opportunities to support historic preservation, can be very effective.

GOAL 3

Warwick's art community is vibrant and growing.

POLICY

- Promote Warwick's arts and cultural organizations, events and individual artists.

STRATEGIES

A. Improve promotion of arts and cultural activities and initiatives as part of the city's economic development strategy.

When Ocean State Theatre announced its move to Warwick in 2012, the Mayor noted that many studies have shown the positive economic impact of arts and cultural organizations. Clustering of arts and culture activities in a walkable environment can help create vibrant urban or village environment. In Warwick, the two cultural anchors are the Ocean State Theatre in City Centre and the Warwick Art Museum in Apponaug Village.

Actions:

- 1. Use the arrival of Ocean State Theatre to attract other arts organizations to City Centre Warwick area and create an Arts and Culture District there.**
The Warwick Station Development District Plan for City Centre Warwick provides for a walkable environment. It could become a cultural center for Warwick.
- 2. Explore the opportunities for arts-oriented housing, studio spaces, and retail spaces in Warwick's closed school buildings, in Village environments, and in vacant or underutilized industrial space.**