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The East Greenwich Greenway Plan: A Strategy for the Commons

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The East Greenwich Greenway Plan:

A Strategy for the Commons



Master of Community Planning
Research Project
of
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ABSTRACT

This Greenway Plan has been prepared in response to increasing development pressure and a heightened local awareness of the need to conserve East Greenwich's open spaces, protect natural resources and water supplies, increase opportunities for passive outdoor recreation, and protect the town's historic rural and scenic characteristics. Changes are recommended to the Zoning Ordinance and the Development and Subdivision Review Regulations that will enhance the town's ability to preserve open space, including farms and ecologically significant corridors, and to incorporate interconnected trail networks between new subdivisions. Rapid changes to the town's character caused by residential growth have led to escalating public concern about the future of the community, the rising costs of community services, and the desire to preserve the town's natural and cultural resources. In light of these concerns and the town's recognition that protecting community resources is in everyone's best interest, it is the intent of this plan to propose means to circumvent the tragedy *of* the commons, by developing a strategy *for* the commons. Through initiative and planning for the protection of the town's undeveloped lands, this plan aims to ensure that future generations will benefit from and enjoy the same natural resources and scenic streetscapes residents do today.

The East Greenwich Greenways Plan: A Strategy for the Commons

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A STRATEGY FOR THE COMMONS

A 'commons' is a resource for which there are multiple owners, or persons who derive some form of benefit from its use, and where one or more users can have adverse effects upon the interests of other users (Baden, 1998). A commons can be natural, such as a city's water reserve, the regional atmosphere, or undeveloped open space, or it can be artificially constructed, like highways or the Internet. Garrett Hardin's classic 1968 paper entitled "The Tragedy of the Commons" discusses the difficulties involved in managing the commons. The tragedy can occur when people are compelled to actions that are individually rational, but become cumulatively disastrous as more persons make the same decisions. In other words, an individual will overuse other people's resources when it is in his or her best interest.

The classic example of this tragedy, described in Hardin's paper, involves a pasture that is open to all herdsmen. The tragedy begins when a herdsman, making an individually rational decision to maximize his gain, decides to add one more animal to his herd. The herdsman will generate additional proceeds from the new animal with the only negative component being the overgrazing created by one more animal – a



factor that will be shared by all the herdsmen. Therefore the sensible conclusion for the herdsman is to add another animal. The tragedy occurs as each herdsman sharing the

commons comes to the same conclusion and adds an additional animal of their own, in the process destroying the vitality and productivity of the commons. As Hardin states: “Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons.”

Placed in a modern context, another example of such a tragedy could be the proliferation of sprawl development patterns occurring throughout the United States. Suburban sprawl is generally characterized by low-density scattered patterns of residential development, considerably more land-consumptive than the more village-like development patterns of the past. The common in this case is the vast amount of land, which can be open farm fields or dense forest, consumed to develop new subdivisions. Prior to development these lands, or commons, contribute to the community in numerous ways: as habitat for wildlife, for passive and/or active recreational purposes, to enhance community character and, as numerous studies have indicated, to reduce the cost of community services and to keep property taxes down. (For example, the 1999 *Costs of Suburban Sprawl and Urban Decay in Rhode Island* report found that from 1988 to 1998 property tax rates increased 44% in urban core, 31% in urban ring, 19% in suburban, and 15% in rural communities due largely to sprawl development.) Individual landowners faced with the option of subdividing and selling their land for substantial profit make the rational decision to sell, but in the process contribute to the tragedy by decreasing the common pool resource of available wildlife habitat and recreation land, and contributing to the increasing tax burden and other associated problems of sprawl.

East Greenwich has been no stranger to this process. As people have left the state's urban centers during the past twenty years, they have relocated to suburban and rural areas thereby causing the town's population to grow. Much of this growth has been focused in the western portion of the town in the form of large lot subdivisions, forever changing the nature of the once rural atmosphere of farms and forests to a more suburban type environment. These rapid changes have led to escalating public concern about the future of the community, the rising costs of community services, and the desire to preserve the town's natural and cultural resources. In light of these concerns and the town's recognition that protecting community resources is in everyone's best interest, it is the intent of this plan to propose means to circumvent the tragedy *of* the commons, by developing a strategy *for* the commons. Through initiative and planning for the protection of the town's undeveloped lands, we can ensure that future generations will benefit from and enjoy the same natural resources and scenic streetscapes we do today.

INTRODUCTION & BACKGROUND

This Greenway Plan has been prepared in response to increasing development pressure and a heightened local awareness of the need to conserve East Greenwich's open spaces, protect natural resources and water supplies, increase opportunities for passive outdoor recreation, and protect the town's historic rural and scenic characteristics. The plan recommends changes to ordinances that will enhance the town's ability to preserve open space, including farms and ecologically significant corridors, and to incorporate interconnected trail networks between new subdivisions. The following section outlines the history of the town's open space protection efforts as exemplified through its plans and regulations, and summarizes the results of these efforts.

Policy Background

The 1991 *Comprehensive Community Plan* set the foundation for open space protection by making preservation of natural resources a priority. The plan ranked open space and natural resource protection third on its list of prioritized issues (after water quality/supply and pollution). Coordination of development and open space preservation also ranked highly as an issue.

As a result the town made it an objective to:

“Encourage development patterns that conserve, protect and maintain access to natural resources in order to preserve water quality; retain open character and protect the natural environment and ecological systems; minimize

impacts of existing and future development on water resources, wetlands, agriculturally productive soils, and other natural resources; and to ensure the preservation of natural resources for current and future residents.”

As one way to achieve this goal the plan proposed that the town develop an open space network to preserve natural resources, scenic and historic areas, and provide opportunities for passive and active recreation, especially in areas where open space overlaps with natural resource protection. This network was also referred to as the Linear Park or Linked Open Space Network and a generalized map was produced showing where the network might be created.

The Plan Implementation Program recommended that land acquisition for open space and recreation uses be a priority and suggested three approaches be used: 1) through the Land Trust, 2) through required dedications of land in subdivision approval, and 3) through acquisition of easements, bequests and tax title land.

In 1998 the East Greenwich *Open Space and Recreation Plan* (EGORP) was updated and adopted as an element of the Comprehensive Community Plan. One of the objectives of this plan is to provide protected open space for passive recreation and enjoyment of the residents of the community. The plan emphasizes that “passive recreation or open space opportunities must continue to be pursued in order for East Greenwich to protect environmentally sensitive or otherwise resource significant parcels of land while

protecting and preserving the town's character and quality of life" (p. 63). To support these broad goals a series of sub-goals were identified, including:

- Continue to extend and expand the town-wide linear park network through land acquisition and conservation easements.
- Improve land acquired or designated for the linear park network to allow pedestrian access and, where possible, access for the physically challenged.
- Work with the East Greenwich Land Trust to pursue the acquisition of conservation easements and/or development rights on farmland and upland woodlands in the western part of East Greenwich.
- Continue to acquire conservation easements along waterways in the community.
- Work closely with and support the efforts of the East Greenwich Land Trust to educate the general public about the need for additional and the availability of existing passive recreation areas.

The plan specifically mentions that the town should preserve and protect as much land as possible along Frenchtown, Mawney, and Bleachery Brooks, Frenchtown Park Pond and the marshlands of the East Greenwich Cove. It emphasizes that land development controls and land dedications be used whenever possible to aid in the preservation and protection of open space. When land is not donated as part of the subdivision approval,

an impact fee of \$1850.00 per new residential lot is assessed for recreation facility development.

The Linear Park Plan is presented as being a town-wide strategy to ensure that in the future there will be passive recreation opportunities throughout the town and the natural environment will be protected. It states that integration with other plan elements such as active recreation areas, residential areas and a bike path system should be a central objective of creating an interconnected network of passive recreation and open space land (p. 66). A list of candidate parcels for acquisition was developed to focus the efforts of the town in deciding how to promote the linear network.

Regulatory Background

As regulatory support of the EGORP policies Section 26 of the *Development and Subdivision Review Regulations* prescribes the requirements for dedication of public land, public improvements, and fees. The ordinance requires that all land developments and subdivisions dedicate a portion of the land to provide open space, conservation, and park and recreation facilities based on the EGORP policies.

Conveyance of land for recreation is in an amount that will be suitable for its intended use. As a general guideline, land is dedicated minimally at a ratio of one acre for each twenty lots for all zones requiring minimum lot sizes of one acre or less, or two acres for each twenty lots for subdivisions in all other zones. If there are less than twenty lots, the requirements will be tailored to the circumstances and location of the proposal. The

ordinance also allows for a fee in lieu of land donation if a parcel that is suitable and useful for recreational purposes cannot be accommodated. Ownership of dedicated land can be made by transfer of fee simple ownership to any of the following: 1) the Town of East Greenwich, 2) A private Homeowner's Association, and 3) the Municipal Land Trust.

Article IX of the *Zoning Ordinance* is the Cluster Ordinance. The purpose of the Cluster Ordinance is to regulate the establishment of detached single-family cluster subdivisions while maintaining the rural, natural and scenic character of the town. The ordinance intends to achieve the following goals:

- To promote the efficient and economical use of land in harmony with its natural features and surrounding areas.
- To encourage the preservation of valuable open space and protection of the water supply, water bodies, wetlands, floodplains, agricultural lands, wildlife and other natural resources.
- To promote diverse and efficient housing through creative and environmentally responsible site design.
- To preserve the rural, natural and scenic character of the Town through the protection of site amenities, natural and cultural features and historic resources.

This ordinance states that a cluster development shall have a minimum of 30 percent common open space, exclusive of utility easements, roads, parcels in individual

ownership and wetlands. It also states that up to 20 percent of the common open space may be devoted to paved areas or structures used to provide recreational or cultural facilities for residents of the development. The “Design Guidelines and Requirements” include provisions to preserve existing fields, pastures, scenic views and vistas, habitats of endangered or threatened species, historic and/or archeological sites, stone walls (where possible), and old growth trees.

While the ordinance does not specifically require developers to build cluster subdivisions, the Planning Board reserves the right to require cluster subdivisions and has done so in most cases. The ordinance also does not offer bonuses for cluster developments.

East Greenwich Municipal Land Trust

Established in 1987, the Land Trust has acquired properties and development rights totaling 203 acres. The parcels range in size from 2.6 acres (Dark Entry Brook) to 74.5 acres (Briggs Farm Development Rights) and most of the parcels are at least 10 acres in size. While these properties have significantly contributed to the amount of protected open space in and are providing large areas of protected wildlife habitat they are not linked together either by protected greenways or by other means. New development threatens to further fragment parcels that contribute to the Town’s green space.

Non-Profit Organizations

Presence of environmentally oriented non-profit organizations is not particularly strong in East Greenwich. The Audubon Society of Rhode Island, however, currently owns two

parcels of land in East Greenwich totaling about fifty acres, both of which border the Hunt River. These are ecologically and environmentally significant parcels that are important contributions to preserved lands in the town.

RESULTS

The town's guidelines have contributed to the pool of protected open space; however, there is still a danger of fragmenting the natural landscape. Therefore there is a need for a plan to link these conservation areas. If this process continues without a plan and specific guidelines it will make many of the preserved areas difficult to access and will reduce the mobility of wildlife. Fragmentation will leave key links between the protected areas vulnerable to development. There is still time to prevent irreversible fragmentation by linking protected open spaces essential for the needs of wildlife habitat and by creating passive use recreational trail networks.

Westwood Farms subdivision located off of Division Road is an example of how conservation areas within subdivisions have been designed in a manner that makes the open space difficult to access. Access to the conservation areas is by narrow strips

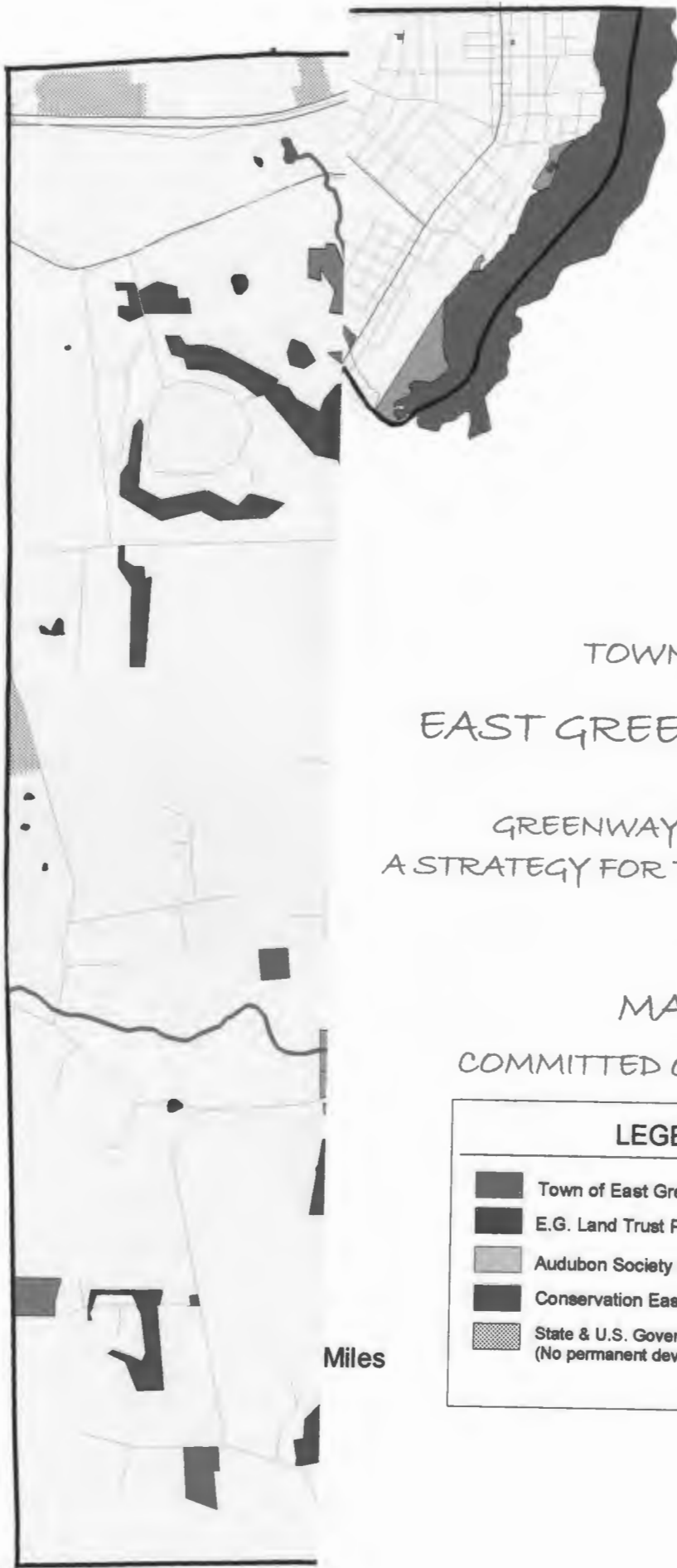


between house lots. No trails are maintained on these strips, and signage indicating the conservation areas is hardly noticeable, creating the feeling that you are trespassing on a

person's private property. Most people probably do not even realize that behind the homes there is protected forest available to the public.

There are two good examples of protected open spaces in town that have been linked. These examples should be emulated and expanded on. The first is the collection of properties located at the Recreation Department on Frenchtown Road. This site has four properties that are linked: Frenchtown Park, Laurel Wood, the Fry Family Nature Preserve, and the Stitt easement. All of these properties, totaling over 125 acres, are linked and provide substantial passive recreation opportunities for town residents. Another example is the efforts of both the East Greenwich Land Trust and the Audubon Society of Rhode Island to protect and preserve valuable wildlife habitat and the sole source water supply aquifer of the Hunt River. At least 62 acres of these valuable resources have been protected while simultaneously providing additional outdoor recreation opportunity. The Audubon Society also owns development rights to abutting lands across the line with North Kingstown that contribute to the amount of protected lands.






Map 1 shows the locations of the different types of committed open space and publicly owned lands in East Greenwich. The majority of protected lands are west of South County Trail, and many, fortunately, are along the town's rivers. Public access is available to most town-owned land, including Land Trust properties, and to land owned by the Audubon Society. The conservation easements are areas within subdivisions that have been dedicated as preserved open space. Ownership of the easements is either



TOWN OF
EAST GREENWICH, RI

GREENWAYS PLAN:
A STRATEGY FOR THE COMMONS

MAP 1
COMMITTED OPEN SPACE

LEGEND	
	Town of East Greenwich Property
	E.G. Land Trust Property
	Audubon Society of Rhode Island Property
	Conservation Easements
	State & U.S. Government Property (No permanent development restrictions)

transferred to the town or to a private Homeowner's Association. Because conservation easements are most commonly transferred to a Homeowner's Association (so the land remains on the tax base), they are not open to the public.

The major significance of conservation easements in East Greenwich is that they contribute to protecting wildlife habitat and provide potential links to other areas that are not yet developed. Conservation easements adjacent to these undeveloped areas present an opportunity for the town to extend protected lands into nearby areas as new developments occur. The map shows that many of these easements, as well as other town owned lands, stand-alone and are disconnected from other protected lands. State and Federal government lands are included in the map because many of them contribute to the network of open spaces. However, these areas are not permanently protected from development, and none are maintained for recreation or habitat needs.

THE GREENWAY NETWORK

Greenway Management Land Categories

The process of suburbanization can forever change the natural landscape and the historic character of a community. East Greenwich development began with a compact village center oriented to the waterfront, and, as the community grew and expanded west, new neighborhoods were less densely developed. West of Route 2 the town has retained much of its rural and scenic characteristics and has been marked by low-density developments interspersed with active farmland, large forested areas, and small brooks.

The variety of development patterns has contributed to the town's character and high quality of life that brings people to East Greenwich and makes it such an attractive place in which to live. The town's open space also significantly contributes to community character. Open space provides visual variety and relief from developed areas, protects the environment, and provides wildlife habitat and outdoor recreation opportunities. It is this quality of life that the town wishes to preserve for future generations to enjoy. This plan aims to assist the town in achieving its goals of land conservation and protection of its scenic and rural qualities by physically and functionally linking open space and recreation lands.

Greenways are linear corridors of protected open space managed for habitat conservation and recreation purposes. Greenways are commonly designed to follow natural landscape

features of land and water, and link nature reserves, parks, and cultural features, such as historic sites, with each other and populated areas.

One benefit of greenways is the positive impact on adjoining land values. Studies have demonstrated that homes in subdivisions adjacent to large tracts of open space used for agriculture, recreation and/or wildlife preservation tend to appreciate in value faster than homes in conventional subdivisions (see Arendt, 1996). These studies also indicate that proximity to greenways can increase marketability, promote faster sales, and decrease overall development costs.

The East Greenwich greenway network is divided into three management classes: natural resources, greenway trail system, and agricultural resources. The focus of the natural resources management class is on preserving the integrity of the town's ecological and groundwater resources in recognition that such resources do not conform to political boundaries and can influence the quality of natural resources at the statewide level – including Narragansett Bay. The greenway trail system is designed to provide increased opportunity for outdoor recreation and greater public access to an expanded interconnected linear trail network by preserving more open space as the town develops. Lastly, the agricultural resources management class treats the town's agricultural uses as an economic, cultural and scenic resource worthy of preserving as a use for future generations to enjoy.

NATURAL RESOURCES

Over twenty percent of the land area in East Greenwich is undeveloped forests and farmland predominantly in large tracts. The total undeveloped land is greater than 2,100 acres, and more than 50 percent of this acreage is comprised of only 20 properties that are 30 acres or more in size. Based on current zoning, it is estimated that 1,000 or more new homes could be built on these properties alone, forever changing the character of East Greenwich. And given the current economics of land, it is a certainty that over time most if not all of these properties will be developed for home sites.

Residential development pressure in East Greenwich is relatively intense in a state that has seen land consumption increase by 147 percent between 1961 and 1995 while population increased only 16 percent. Since 1990, East Greenwich has grown at an average of 49.1 new single-family homes per year. Since January 1998, 218 new single-family house lots and 129 new condominium units have been approved, assuring a steady stream of new home development.

As noted earlier, while the town inventory of committed greenspace has been steadily growing, many of these lands are separated from other protected areas. As development continues to threaten the remaining undeveloped areas of town, wildlife can be forced out of its natural habitat and into residential neighborhoods, and the remaining habitat quality will be degraded. It is therefore becoming increasingly important to link together the larger, protected natural areas in town to at least maintain the availability of existing wildlife habitat corridors and to avoid fragmentation of natural spaces.

RIVER CORRIDORS

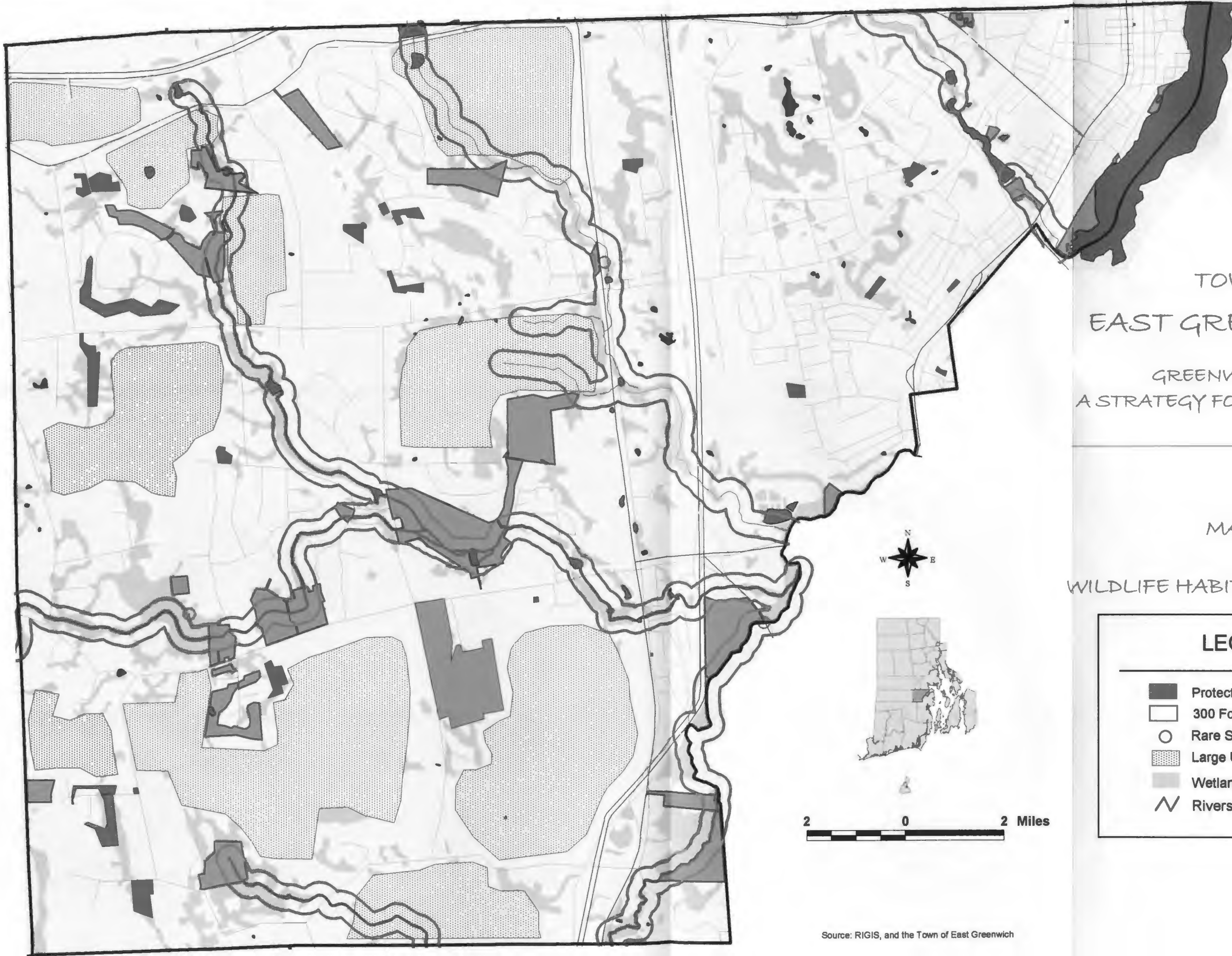
As depicted on Map 2 (Habitat Corridors Map), rivers and their associated tributaries and wetlands serve as the foundation for the wildlife habitat corridors. These areas form naturally linked corridors, and provide water and a variety of habitats for wildlife. In



Hunt River Wildlife Corridor

In addition, the Rhode Island Department of Environmental Management already provides a degree of protection of these resources. The recommendations of this plan place a higher degree of protection on the land surrounding these corridors to protect the mobility of wildlife and to further protect water quality.

Wetlands provide numerous functions. One of the primary functions of wetlands is as habitat for numerous plant and animal species. The few areas in town that contain rare and endangered species are located alongside the town's rivers and wetlands. Wetlands act as filters of pollutants that enter the environment (which aids in maintaining the quality of downstream coastal receiving waters), and also as stormwater retention areas that help alleviate flooding during storm events. There are already numerous protected open space properties along the rivers in East Greenwich, as well as additional properties in the adjacent communities of West Greenwich and North Kingstown. By preserving more land and controlling development adjacent to the town's rivers, the size of existing



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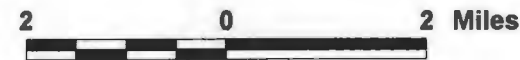
GREENWAY PLAN:
A STRATEGY FOR THE COMMONS

MAP 2

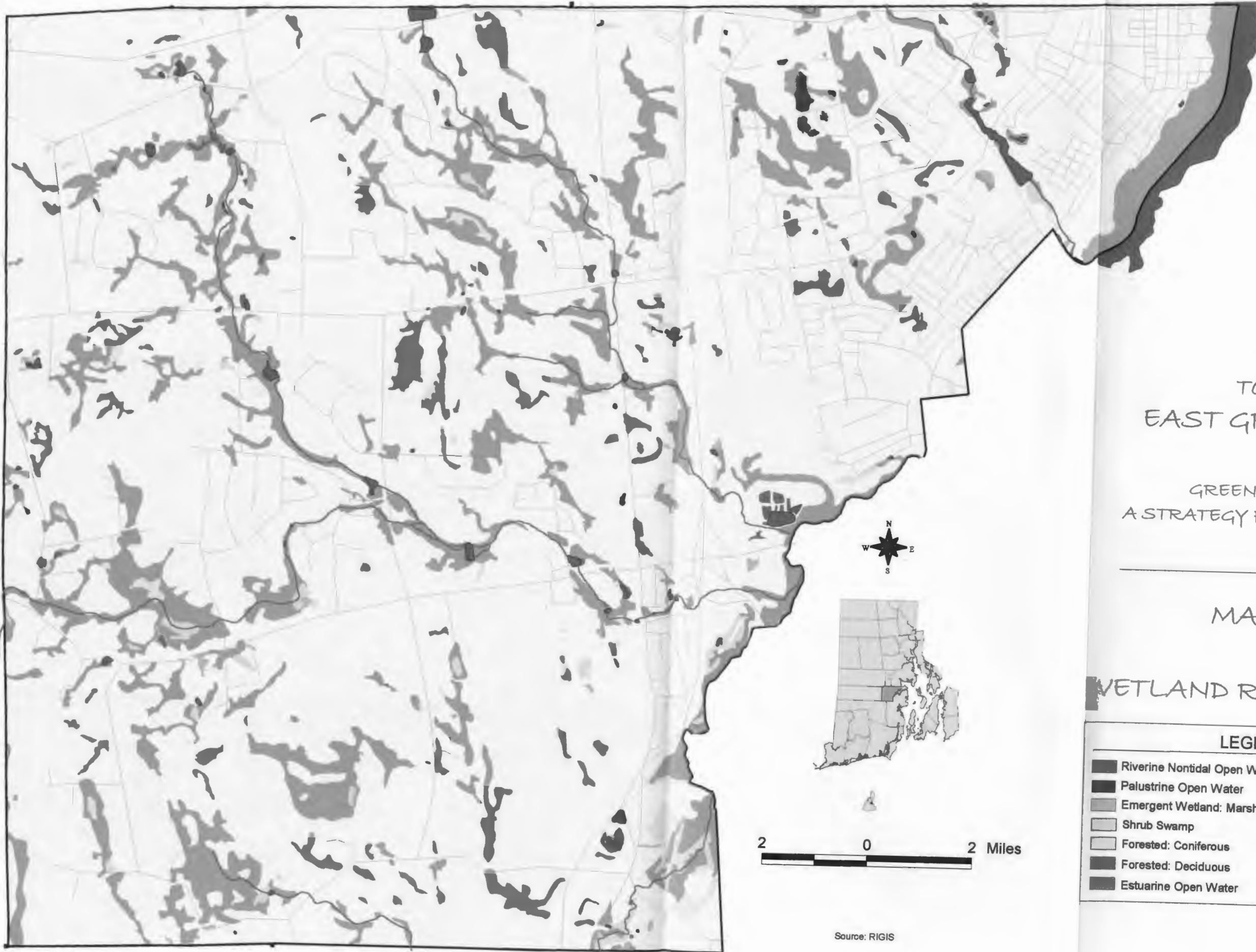
WILDLIFE HABITAT CORRIDORS

LEGEND

-  Protected Open Space
-  300 Foot River Buffer
-  Rare Species Habitats
-  Large Undeveloped Areas
-  Wetlands
-  Rivers



Source: RIGIS, and the Town of East Greenwich










TOWN OF
EAST GREENWICH, RI

GREENWAYS PLAN:
A STRATEGY FOR THE COMMONS

MAP 3

WETLAND RESOURCES

LEGEND

-  Riverine Nontidal Open Water
-  Palustrine Open Water
-  Emergent Wetland: Marsh/Wet Meadow, Fen or Bog
-  Shrub Swamp
-  Forested: Coniferous
-  Forested: Deciduous
-  Estuarine Open Water

Source: RIGIS

protected wildlife habitat will increase along these ecological corridors and water quality will be better protected.

In addition to linking together the town's protected areas, the rivers also run through or near many of the undeveloped areas in town. As these areas develop it is important that the land acquired by the town through conservation easements and other means be contiguous to maintain the continuity of the open space network and to allow for the movement of wildlife without intrusion into residential neighborhoods.

WATER QUALITY

Surface Waters. Another benefit of using rivers as natural corridors is the protection of the river's water quality and the quality of the coastal receiving waters – Greenwich Cove and Narragansett Bay. All of the town's rivers drain into Narragansett Bay and influence its water quality and ability to support marine life. The Bay is one of the state's most treasured natural resources and its largest tourist attraction, so it is in the best interest of the town and the state to protect river water quality.

Ground Water. Protecting open space areas is also crucial to preserving the quality of local and regional groundwater resources by acting as natural filters of harmful contaminants. Currently, the Hunt River, Fry Brook, and Scrabbletown Brook (all part of the Hunt River watershed) are identified on Rhode Island's 303(d) List of Impaired Waters for not meeting water quality standards for fecal coliform. Fecal coliform is an indicator of the presence of disease-causing organisms, including bacteria, viruses, and

other micro-organisms that pose a threat to people who use water for swimming, canoeing, kayaking, and/or fishing. The Hunt River watershed and its associated wetlands serve as important fish and wildlife habitats and provide a variety of recreational options. The Hunt Aquifer is a U.S. EPA designated sole source drinking water supply for the Town of North Kingstown. The quality of the water within the Hunt River watershed (including groundwater) is crucial to both the needs of wildlife and to providing drinking water for regional residents. It needs improvement.

The town's rivers also provide benefits for outdoor recreation. The Hunt River, for example, is used by many for canoeing and fishing. Most other rivers and streams in East Greenwich, however, are too shallow for canoeing but offer an opportunity for fishing.

Natural Resource Areas Development Recommendations

- The town should identify and approach resource-land owners within the wildlife habitat corridor to cooperate and work with them to acquire conservation easements. Informational brochures should be made available that fully explains the financial benefits of donating or selling development rights, and explains the environmental and community consequences of developing the land.
- Establish policies within town ordinances that require developers to incorporate greenways and trail corridors into development plans in accordance with the wildlife habitat corridor plan. (See the *Strategies for Implementation* section for suggested policies.)

- As development of parcels within the corridor occurs, the town should identify the desired land to be acquired or protected at an early stage in the subdivision and development approval process. Only after the conservation lands have been identified should house lots, streets, drainage areas, and utilities be laid out.
- Priority should be given to protecting lands that abut other protected lands and that relate to the regional network of open space and habitat corridors as presented in the State Guide Plan Element 155, *A Greener Path*.
- The town should continue to cooperate with efforts of the Rhode Island Department of Environmental Management to develop water quality restoration plans that address the water quality concerns of the Hunt River watershed.

The following additional proposals are intended to further address the protection of streams, wetlands and their associated buffer zones:

- As depicted in the Critical Biodiversity Resources map produced at the University of Rhode Island, a 300-foot greenway buffer zone should be established on each side of all town rivers and streams to provide for the movement of wildlife and the development of low impact recreation trails. The greenway zone shall be designated as a conservation easement subject to potential public access at the time of subdivision approval.
- Proposed developments should be located as far away as possible from rivers, wetlands and buffer areas and be designed to minimize impacts to wetlands.
- Streams, wetlands and their associated buffer areas should be placed under conservation easements as a condition of site plan and subdivision approval.

- Measures to protect wetlands and buffer areas from post development disturbance should also be a requirement of subdivision approval. This should include notifying home purchasers of the conditions established in the conservation easement and installing adequate signage identifying the conservation easement boundaries.
- In instances where wetlands and/or stream banks have been degraded by prior property usage, measures to restore these areas should be included in the development plans. Degradation can be in the form of erosion, pollution, unauthorized fill, or alterations of the natural watercourse.

GREENWAY TRAIL SYSTEM

The intent of the trail system component of the Greenway Plan is to provide increased opportunity for outdoor recreation and greater public access to an expanded interconnected trail network. The use of these outdoor recreation facilities can be passive and/or active, encompassing a variety of activities, including hiking, bird watching, canoeing, cross-country skiing, natural history and environmental education, jogging, and, in some areas, bicycling and in-line skating. Throughout the country, greenways are increasingly becoming a means for local residents to become more physically active. Greenways are a safe and inexpensive avenue for promoting regular exercise for persons living in all types of communities – rural, suburban, or urban. As the use of greenways grows, the trails will also hopefully increase peoples understanding of the dynamics and importance of natural systems.

The greenway trail network (see Map 4) will link existing protected open spaces in East Greenwich to populated areas in an effort to increase accessibility to the greenway, and will eventually form an interconnected trail system as new developments link to existing ones. Some portions of the trail network will extend into the wildlife habitat corridors, and should be designed to be sensitive to the unique natural conditions of these areas. The nature of development patterns in East Greenwich is such that the western portion of town contains more



Trail at Frenchtown Park



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 GREENWAYS PLAN:
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MAP 4
 GREENWAY TRAIL SYSTEM
 CONCEPTUAL MAP

LEGEND

- Protected Open Space
- Large Tracts of Undeveloped Land
- Conceptual Trail Network
- Active Recreation Facilities
- Opportunities For Connections

2 0 2 Miles

Source: RIGIS, and the Town of East Greenwich

undeveloped land that could potentially provide links to the trail network. The undeveloped areas of town, if properly developed, present a significant opportunity for linking and expanding the trail network. As these areas develop the town should require that trails be incorporated into the site plans and constructed by the developers, just as they are required to make other infrastructure improvements. To ensure an interconnected greenway network, the trails should also be designed to link to existing trails on adjacent parcels, and/or terminate at locations where there is strong potential for future expansion.

Greenway Trail System Development Recommendations

The following strategies should be considered as the trail network is developed over time:

- The trails should be designed to blend in with the natural landscape and complement unique natural features (and other features, such as stone walls, where applicable) to minimize impacts on scenic views and wildlife mobility.
- East Greenwich currently has no prohibitions against the use of non-motorized mountain bikes on trails. However, the use of trails that extend into the wildlife habitat corridors should be limited to travel on foot to be sensitive to the fragile natural landscapes. In less ecologically sensitive areas (dry, higher elevations) other modes of travel, such as mountain biking, may continue to be permitted. The determination whether a particular area contains these fragile landscapes should be made as the trails are developed.
- The town should develop management plans for the planning of operations, maintenance, and special events on the greenway trails.

- The town should identify the desired land to be acquired for trail easements at an early stage in the subdivision and development approval process.
- The town should actively pursue acquiring public access easements from property owners where there are gaps in the trail network.
- Establish policies within town ordinances that require developers to incorporate greenways and trail corridors into development plans in accordance with the trail system plan. (See the *Strategies for Implementation* section for suggested policies.)
- Design standards should be developed to define how park trails are to be built. Trails should have permeable surface materials that minimize soil erosion and disruption of vegetation, and trail width should be narrow (except at entrance points) to lessen its impact. The standards should comply with ADA (Americans with Disabilities Act) design criteria.
- Where trails are located close to rivers, measures should be taken to protect the banks to prevent erosion and degradation of the rivers' edges.
- An attractive greenway signage system should be designed to guide users through the network. Signage could also be used for environmental educational purposes in areas of ecological significance.
- Where biking and walking trails are extended along roadways a separate lane should be designated and accompanied by greenway signage.

The Rhode Island Department of Environmental Management's Symms Trails Grants could provide a significant source of funding for the development of trails. For the town

to be eligible to receive the grant money the following additional development guidelines and trail types should be considered (as adapted from RIDEM grant application instructions):

- *Handicap Access Trail* – includes the acquisition, design, and construction of new (or substantial reconstruction of existing) trails or trail facilities that feature expanded access and usage by persons with disabilities.
- *New Community Trail* – acquisition, design, and construction of:
 - a) A new trail that is wholly contained within a single outdoor recreation, conservation, or open space area, and is primarily intended to connect and or complement other recreational facilities within the areas; or
 - b) A new trail that is primarily intended to provide linear recreation opportunities to adjoining neighborhoods and/or links to recreational (and other) destinations within a single municipality.
- *New Regional Greenway Connection* – includes projects that provide for the acquisition, design, and construction of:
 - a) A new trail that is primarily intended to provide linear recreational opportunities for two or more municipalities, or sub-state region, or the entire state;
 - b) A new trail that is primarily intended to provide a link in a interstate (regional or national) trail;
 - c) A new trail segment that is an integral component of, or a spur connection to an existing or proposed trail meeting the definition of (a) and (b).

- *Land Acquisition Easement* – includes projects that provide only for the acquisition of:
 - a) Fee simple title, or
 - b) A recreational easement of other interest in real property sufficient to enable development and maintenance of a publicly available trail.
- *Existing Trail Infrastructure* – includes projects that provide for substantial reconstruction or restoration of an existing trail to improve or expand linear recreational opportunities; and/or the provision of rehabilitation of ancillary trail features (signs, restrooms, parking areas, etc.) that facilitate safe and enjoyable use of an existing trail.
- *Trail User Education and Safety* – includes projects that develop, reproduce, and/or disseminate printed materials, audio/visual, computer programs, or other media, providing information in trail facility availability and distribution, safe trail usage procedures and rules, and related matters to current and potential trail users.

AGRICULTURAL PRESERVATION

Agricultural uses in East Greenwich add to the town's rural and scenic character, contribute to the diversity of the town's economic base, keep significant portions of land from being subdivided and developed for more housing or other more intense land uses, and present opportunities for linkages in the greenway network. The scenic landscape of farms is a major reason why people are attracted to the area.

As a use, farms also provide economic benefits for the town. Working farms not only provide jobs and cash income for residents, but also have lower service costs and a lower tax burden than residential developments because they do not draw heavily on



Tir Na Nog Farm

traditional municipal services or strain school district facilities. For these reasons it is in the town's best interest to preserve and encourage the use of land for agriculture.

PRIME AGRICULTURAL SOILS

The total amount of suitable agricultural soils in East Greenwich is approximately 675 acres (RIGIS). Most of this land has only moderate constraints to development; the remaining land has seasonally high water tables. Significant portions of suitable

agricultural soil exist east of Route 4 in areas that have developed for residential uses, thereby drastically reducing the amount of suitable soils for agriculture.

TAXATION OF FARM, FOREST, AND OPEN SPACE

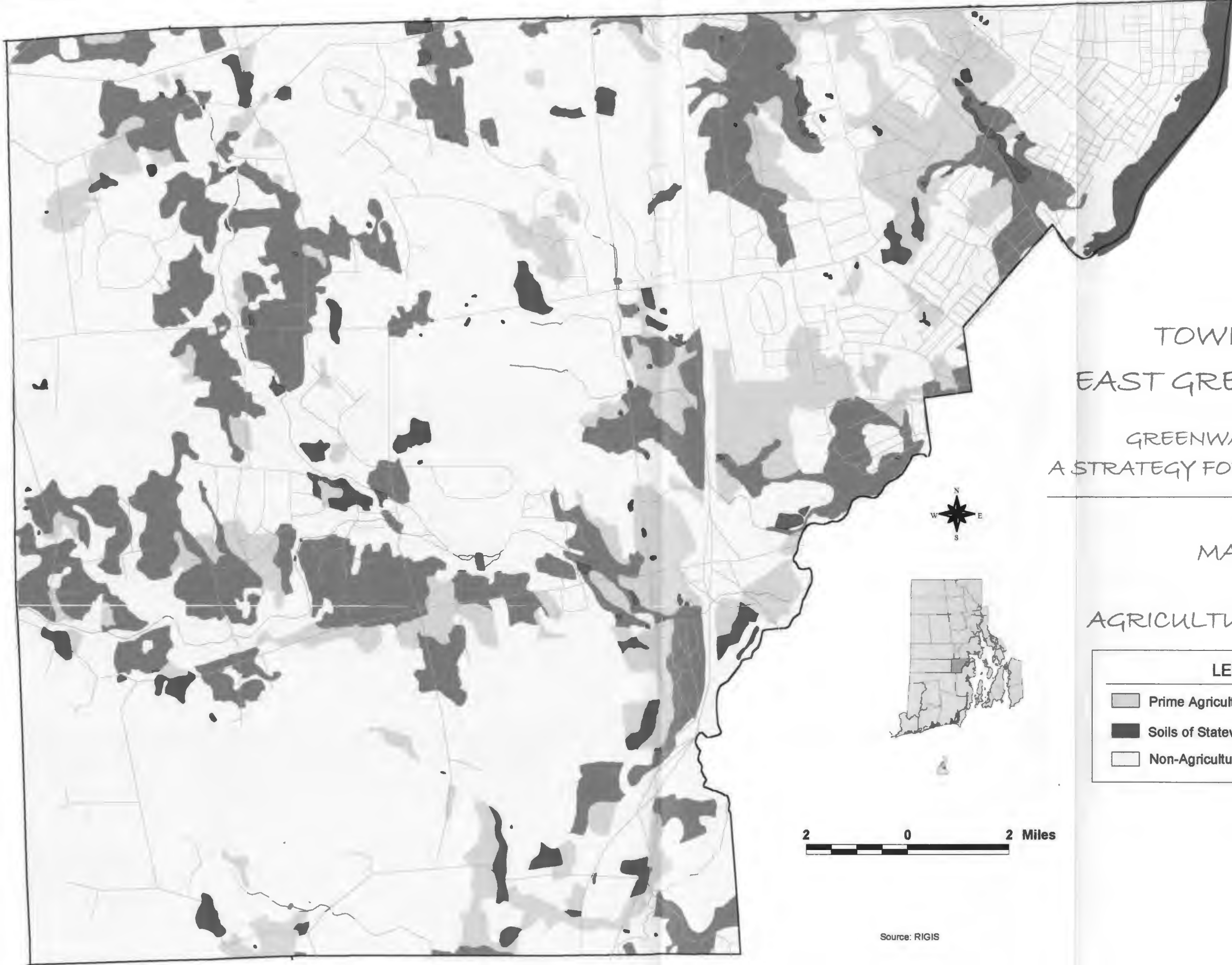
An incentive that many land owners in East Greenwich have taken advantage of is the Farm, Forest and Open Space (FFOS) program that offers tax breaks in return for maintaining the current natural or agricultural use of their land. A total of 110 properties are taxed as FFOS, representing approximately 2,000-acres. Landowners who take part in this program are assessed at only \$1,000 per acre, as opposed to the usual assessment of \$10,000 per acre. The term lasts for fifteen years, during which time if the parcel is developed substantial penalties will be charged. After expiration of the term landowners continue to receive the tax benefits until the lot is sold or developed.

Development Policies

When farmland is proposed for residential development the following policies shall apply:

- Developments on agricultural land should be designed to preserve any existing historic homesteads, and the scenic views and vistas from both the access roads and within the development. This can be accomplished by requiring landscape architects to site house locations, not engineers, in coordination with Planning Department staff and the Planning Board. The Town should also require the Planning Board and town staff to conduct site visits to become better acquainted with the subject property and the development proposal.




- Scenic streetscapes should be preserved intact. A good example of a preserved streetscape is the new “East Greenwich Preserve” condominium development on Division Road.



TOWN OF
EAST GREENWICH, RI
GREENWAYS PLAN:
A STRATEGY FOR THE COMMONS

MAP 5

AGRICULTURAL SOILS

LEGEND	
	Prime Agricultural Soils
	Soils of Statewide Importance
	Non-Agricultural Soil

Source: RIGIS

REGIONAL CONSIDERATIONS

The natural environment does not conform to the political boundaries that are overlaid on the land. Wildlife and natural vegetation survive where there is suitable habitat, and water always flows downstream to coastal receiving waters. Accordingly, when planning for the conservation of local natural resources consideration must be given to the larger region in which those resources interact. This section examines how the greenway of East Greenwich relates to and could compliment greenspace areas of surrounding communities by providing for corridor connections between wildlife habitats and the possible extensions of recreation trails. Many of the brooks and rivers in East Greenwich reach into neighboring towns and provide for natural extensions of the greenway network. Conversely, there may also be physical barriers to extending the greenway into some towns.

WARWICK, WEST WARWICK, AND COVENTRY

Warwick, being the second most populated city in Rhode Island and nearly built out, is a difficult place for the East Greenwich greenway to extend into. Immediately across the town line is the Cowesett neighborhood, a well established and densely settled neighborhood that does not contain many significant areas of open space that could connect to a greenway network. Another more imposing barrier in Warwick is Interstate 95. This highway reduces any likelihood of continuing the greenway north into western sections of Warwick. Across Greenwich Cove is the Potowomut section of Warwick that contains Goddard Memorial State Park, a regionally significant park that is open to the

public. East Greenwich can provide a link to Goddard Park through the former landfill site located on Greenwich Cove. The town currently plans to restore the site as a wildlife preserve, and a bikeway is planned to connect East Greenwich to Potowomut/Goddard Park.

Opportunities for extending the East Greenwich greenway into West Warwick and Coventry are limited due to Interstate 95.

WEST GREENWICH AND EXETER

The Big River Management Area, listed on the Rhode Island Greenways Map as a “Conservation, Watershed, and Protected Farmlands Area” with restricted public access, abuts East Greenwich at the end of Middle Road and along Carrs Pond Road, and effectively extends the greenway into West Greenwich.

As identified on the Greenspace and Greenways Plan Map in State Guide Plan Element 155, *A Greener Path*, the “Mid-State Greenbelt” extends through the southwest corner of East Greenwich and into West Greenwich and Exeter. The Greenbelt is designed to link the Black Hut Management Area, the Scituate Reservoir watershed, the Big River Management Area, and various other greenspace areas via a broad band of open space. The state encourages towns to protect greenspace tracts that add to, consolidate, and link together the greenbelt, therefore making the southwest corner of East Greenwich a target for conservation.

NORTH KINGSTOWN

The State Guide Plan Element 155, *A Greener Path...* identifies the Hunt River as a *primary natural corridor* that contributes to the “fundamental linkages of the unified system.” The Hunt River, serving as a natural boundary between East Greenwich and North Kingstown, defines most of the eastern border of East Greenwich. East Greenwich should make every effort to preserve all land that directly abuts the river, both to preserve land for wildlife habitat, and to protect drinking water supplies. Currently, East Greenwich has three lots along the river that are protected. The Land Trust owns one and two are owned by the Audubon Society of Rhode Island and are part of the Davis Memorial Wildlife Refuge.

Another possible connection to North Kingstown is located at the Boesch Farm, a 90-acre historic farm with working agricultural fields, forested habitat areas, and Scrabbletown Brook along the property’s western boundary. The Town is currently in the process of putting a funding package together to acquire fee simple ownership of the property for the purpose of preserving its current use. Approximately 14-acres of the parcel is located in North Kingstown and are being donated to the North Kingstown Land Trust. The Boesch Farm therefore represents a good opportunity to link the greenway south into North Kingstown.



TOWN OF
EAST GREENWICH, RI

GREENWAYS PLAN:
A STRATEGY FOR THE COMMONS

MAP 6

REGIONAL MAP

LEGEND	
	Lakes
	Rivers
	Roads
	Regional Open Space Resources

STRATEGIES FOR IMPLEMENTATION

This section outlines the various strategies available to East Greenwich in implementing this plan. Successfully linking open spaces through a greenway network requires that the town take a holistic approach to land conservation. Accordingly, the strategies below encompass a wide variety of techniques aimed at preserving land through acquisition and changes to the development regulations. Equally important are the educational and marketing strategies intended to foster a town-wide land ethic that promotes residents' awareness of the benefits of preserving the town's natural resources.

East Greenwich residents have already demonstrated a commitment to preserving the town's natural heritage, having approved local bonds for open space and recreation and expressing support of statewide open space bonds. Continuing support of the Town Council and other town boards will also be essential in successfully implementing this plan and maintaining and improving the town's quality of life.

FOCUSED LAND ACQUISITION

The first option that the town has in creating the greenway network is to acquire key parcels of land that are significant in linking together protected open spaces. Acquisition of land is a good method of ensuring long-term protection of valuable lands. There are a variety of means available to the town for acquiring and preserving open space. The following options are preferred for land acquisition.

Conservation Easements

Conservation easements can either be acquired during the approval of development plans or voluntarily donated by landowners. Tax incentives could be provided that would reduce the tax rates on the remaining portion of the lot (minus the area of the easement) to entice landowners to donate an easement. Conservation easements are nonpossessory interest in real property imposing limitations or affirmative



obligations, the purposes of which include retaining or protecting natural, scenic, or open space values of real property; assuring its availability for agricultural, forest, recreational, or open space use; protecting natural resources; or maintaining air or water quality (Davidson and Dolnick, 1999). Wherever possible provisions should be made to allow public access and the development of a trail network. However, in environmentally sensitive areas, such as areas that contain rare, threatened, or endangered species, public access should be prohibited so that these natural resources are not disturbed. When a conservation easement is required as part of the development approval process there is no cost to the town, making it the preferred method for acquiring open space. Caution should be exercised when crafting the easement language to ensure adequate future protection of the land. Although most conservation easements are obtained through the subdivision approval process, there is also an opportunity to actively seek to purchase easements on lots that contain significant natural resources and a strong potential to

extend the greenway. This would enable the town to expand the greenway without purchasing an entire parcel while also providing public access to more land.

Purchase of Development Rights

Development rights in East Greenwich are expressed in terms of the density allowed by the zoning designation underlying a land parcel. For example, if a parcel is 10 acres and the zoning allows for a density of one unit per acre, the landowner conceivably has the development rights for not more than ten units (assuming no further restrictions such as wetlands, adequate street frontage, and discounts for roads and drainage requirements etc.). By selling the development rights of their land (cost determined by a certified appraisal), the landowner, and all future owners of the property, forfeit the right to develop the land. This method of acquisition does not take land out of the tax base (although the landowners do usually receive substantial tax benefits), and the town is not responsible for maintenance of the property. Reduced tax rates can be a strong incentive for landowners to preserve their land. However, very few landowners in East Greenwich have sold their development rights. The reason for this may be a lack of awareness about the available land preservation options, suggesting that there is a need to educate landowners about these options. This could be accomplished through a variety of media, including brochures, newsletters, monthly press releases, and/or local cable television programs. Another important factor that limits the purchase of development rights is the lack of sufficient funding. Purchasing development rights is more costly than obtaining conservation easements. Whenever possible and desirable, the town should obtain public access and/or conservation easements to portions of properties that contain strong

potential for passive outdoor recreation and connection to the greenway trail system. In return for granting easements to the town, the town should offer reduced tax rates, or no taxes, for donated easement areas.

Fee Simple Purchase

Fee simple is a form of land ownership that includes all property rights, including the right to develop the land (Davidson and Dolnick, 1999). Acquiring land this way is often very expensive and time-consuming, as it often requires the need for additional funding sources and lengthy negotiations with landowners. As such, this method should be reserved for land that contains outstanding opportunity for habitat conservation and/or recreation uses, or other resource protection values, and is under strong pressures to be developed.

Candidate Parcels for Acquisition

The following tables list parcels that should be targeted for acquisition due to their environmental, recreational, and/or agricultural values. It is not necessarily intended that the town seek to acquire the entire lot. Obtaining easements or another form of protection from development on the portions of the lot that relate to the greenway network would be sufficient in many cases. In addition to these lots, the town should actively seek conservation and public access easements on all other lots that relate to the trail network and that meet the criteria for acquisition below.

Table 1. Priority Parcels for Acquisition.

Plat/Lot	Zoning Designation	Current Owner	Value*	Acres
11/4	F	Fry, Heirs of Marion	3, 4	43.9
16/1	F	Fry, Heirs of Marion	1, 2, 3	142
17/10	F	Brown & Sharp Mfg. Co.	2, 4	20.5
17/190	F	Gordon & Roberta Johnson	3, 4	20.5
15/31	F-2	Louis & Alice Wheeler	2, 5	29.3
18/15	F-1	William Pine III	1, 2, 3, 4	47.4
19/46	F-1	Trust of Teresa Boesch	1, 2, 3, 4, 5	76.3

*1. Recreation Trails, 2. Habitat Corridor, 3. Agriculture, 4. Water Quality, 5. Regional Connections

Criteria for Acquisition

The following characteristics should be emphasized when considering which lots should be given priority for acquisition by the Town:

- *Development Potential:* The more potential there is for development on the property, the greater the impact will be on community services and tax rates. In other words, sites that would yield more house lots have a higher development potential. Sites with an immediate threat of development should also be given high priority.
- *Presence of Nearby Trails and Greenways:* In order to begin linking together the greenway network, candidate parcels adjacent to existing protected open spaces and trail systems should receive preference over non-contiguous parcels.
- *Preservation of Agricultural Land and Forest Resources:* Priority should be given to lands that are used, or have potential use, for agricultural purposes, and forested lands that provide important habitat areas and are located in aquifer recharge zones and sensitive watersheds that directly affect Greenwich Cove and Narragansett Bay water quality.

- *The Property's Contribution to Neighborhood and Town Character:* There are many working farms, open fields, and forested lands in East Greenwich that contribute to the town's historic, scenic, and



cultural characteristics that should be preserved for future generations to enjoy. These areas should be identified for preservation during the development approval process.

DEVELOPMENT REGULATIONS

Although the town has, within its Zoning Ordinance and Development and Subdivision Review Regulations, provided some provisions that promote the protection of open space, there are still considerably more opportunities that the town should consider to enhance the effectiveness of these ordinances. New residential development in East Greenwich may be inevitable, but the manner in which this development takes place will heavily influence the quality of life for present and future residents. Preserving the town's open space resources has been listed as a town priority and one of the most effective means of implementing a strategy for the protection of these resources is through the regulations that govern development. The following changes and additions should be made to these ordinances to make them more effective in controlling the development of land to provide more open space.

Zoning Ordinance

Changes to the zoning ordinance should consider revisions to existing language and the creation of new zoning designations and overlay districts. Article IX of the ordinance provides developers with the option of developing cluster subdivisions. In these subdivisions developers are allowed to propose smaller size lots than allowed under conventional subdivisions provided that thirty percent of the land, not including wetlands or detention/retention basins, are set-aside as protected open space.

Table 2 - Conventional versus Cluster Development Area and Frontage Requirements.

Underlying Zone	Minimum Lot Area		Minimum Frontage	
	Conventional	Cluster	Conventional	Cluster
F-2	2 Acre	1 Acre	150 ft	150 ft
F-1 & F	1 Acre	30,000 sq. ft	150 ft	150 ft
R-30	30,000 sq. ft	20,000 sq. ft	125 ft	125 ft
R-20	20,000 sq. ft	10,000 sq. ft	125 ft	100 ft
R-10	10,000 sq. ft	6,000 sq. ft	100 ft	60 ft
R-6	6,000 sq. ft	4,000 sq. ft	60 ft	65 ft

Table 2 shows the current requirements in land area and street frontage per lot for conventional developments and cluster subdivisions. Because F-2 and F-1 zones require the same frontage (this is where most cluster developments are currently being constructed) cluster developments do not reduce the overall linear feet of roads, sewers, water lines, or electric utilities. Therefore the costs of developing and maintaining infrastructure are also not reduced. Also, by not reducing the amount of roads, less open space can be protected. Table 3 presents three options to consider in revising the cluster ordinance so that a more efficient infrastructure might be created and more open space be preserved.

Table 3 – Alternatives in Revising the Cluster Ordinance Frontage Requirements

F-2 & F-1 Zones	Existing	Option 1	Option 2	Option 3
Conventional Frontage	150 ft	200 ft	150 ft	200 ft
Cluster Frontage	150 ft	150 ft	125 ft	125 ft

There are additional changes that should be considered that would further define exactly which portions of the lot being subdivided should be preserved for habitat or recreation. To promote creation of a connected greenway network the following provisions should be added to the Design Guidelines and Common Open Space Criteria to require that dedicated common open space:

- *Be contiguous* – this will prevent fragmentation of wildlife habitat and trail networks and provide an enhanced outdoors experienced for trail users.
- *Touch two or more borders of the property* – to allow for the future extension and connections to other open spaces and trails and to prevent ‘dead ends’ for wildlife and trails.
- *Abut other dedicated or town-owned open space lands* – wherever possible the dedicated lands should be required to abut other dedicated open spaces to expand the connected network of open spaces.
- *Be developed with a trail network* – developers should be required to construct a trail network within the common spaces, just as they are required to construct other infrastructure improvements such as roads.

- *Preserve natural and cultural features* – when the street network and locations of homes are being determined, the ordinance should require developers to preserve large trees, mature tree stands, stone walls and any other noteworthy features determined worthy of preservation by the Planning staff and Town Council and Boards.
- *Subdivision Approvals* – applicants for subdivision approval should be required at Pre-application and Master Plan stages to provide an analysis/evaluation of open space opportunities in the subject property and within ¼ mile of the site. The Development and Subdivision Review Regulations should be amended with this condition.

Open Space Zoning

Another addition that should be made to the Zoning Ordinance is the creation of a new Open Space Zone. The intent of this zone is to protect state and federally owned lands within East Greenwich that are undeveloped but have the potential to be developed based on its underlying zoning designation. The zone should allow both passive recreation uses and active recreation facilities. Preferably, properties in this zone would relate to the greenway network.

Agricultural Zoning

The purpose of establishing an agricultural zone within the zoning ordinance would be to restrict land uses to agricultural activities and other open space uses, and to limit home building. The zone should be applied to areas of East Greenwich that have historically

been used for agricultural purposes to preserve that history and its contribution to community character. Consideration should also be given to areas of town that contain prime agricultural soils (see Map 5, Agricultural Soils Map) for the possible future use of these areas for agriculture. The minimum lot size in the agricultural zone should be *at least* five acres, large enough to maintain a viable farming operation, and special consideration should be given to ensure that necessary accessory structures (barns, stables, silos, etc.) are permitted. Owners of existing farms that do not meet the minimum lot size requirements but wish to be zoned for agriculture may apply for a change of zone if they meet all other requirements of the agricultural zone and are not located in residential developments. In conjunction with establishing the agricultural zone, the “F” zones (F, F-1, and F-2) should be eliminated from the zoning ordinance as they are essentially a residential zone and do not allow agricultural uses in recorded subdivisions. They should be changed to R-40 and R-80 districts, and the agricultural zone should be identified as “AG” in the zoning ordinance.

Reconsider Large-Lot Zoning Districts

Large-lot zoning districts (such as the F, F-1 and F-2 district in East Greenwich) in areas subjected to high development pressure causes the depletion of open space at very high rates, and greatly diminishes rural character. It is also more costly to provide basic municipal services to these areas because of their sprawling, land-consumptive nature. To provide more cost-effective services while simultaneously preserving more open space, the practical alternative to large lot zoning is small to medium sized lots where growth can be managed, larger amounts of open space can be permanently protected, and

open space remains accessible to the public for passive and active recreational uses, as opposed to only preserving unusable wetlands, steep slopes, etc.

It is not that the one or two acre *zoning* necessarily is the problem, the problem lies in the one and two (and larger) acre *lot sizes*. Lots in these *zoning* districts should be greatly reduced in size (either through modifications to the existing cluster ordinance or by implementing a conservation subdivisions ordinance) to about one half acres. In these *zoning* districts the town should mandate a maximum lot size, with the underlying *zoning* district only serving to provide a yield plan.

If properly designed, subdivisions developed with smaller lots are still marketable by accentuating their proximity to open spaces and recreation opportunities. The Hill and Harbour District, for example, is one of the most desirable neighborhoods in the state and has lot sizes from less than 4,000 square feet to about 30,000 square feet. By shrinking the lot sizes and preserving more open space, the desirable character of this area could be recreated west of South County Trail *and* provide greater access to outdoor recreation opportunities. Allowing for a slightly larger building envelope should also be considered on the smaller lots to allow for continued construction of the types of homes currently being built in the western areas of town. Smaller lots that require less frontage would create a more compact development form that results in lowered infrastructure costs.

Homebuyers are not one dimensional and only looking for large lots. Subdivisions developed in this manner will contain more than just house lots and streets, additional

elements can also be provided such as walking trails, tot lots for neighborhood children, tennis and/or basketball courts, etc. These types of amenities provide homeowners with more than simply their house lot and street, and residents will gain access to much more land than their own lot provides.

Another option the town should consider, in concurrence with requiring smaller lot sizes, is restricting new developments and home construction by limiting the number of new ISDS permits granted and the number of wells drilled each year, and give preferential treatment to homes developed in conjunction with planned sewer extensions *and* extensions of Kent County Water Authority waterlines. The following section on Conservation Subdivisions further describes how alternatives to large lots can lead to more preserved open space and increased recreation opportunities.

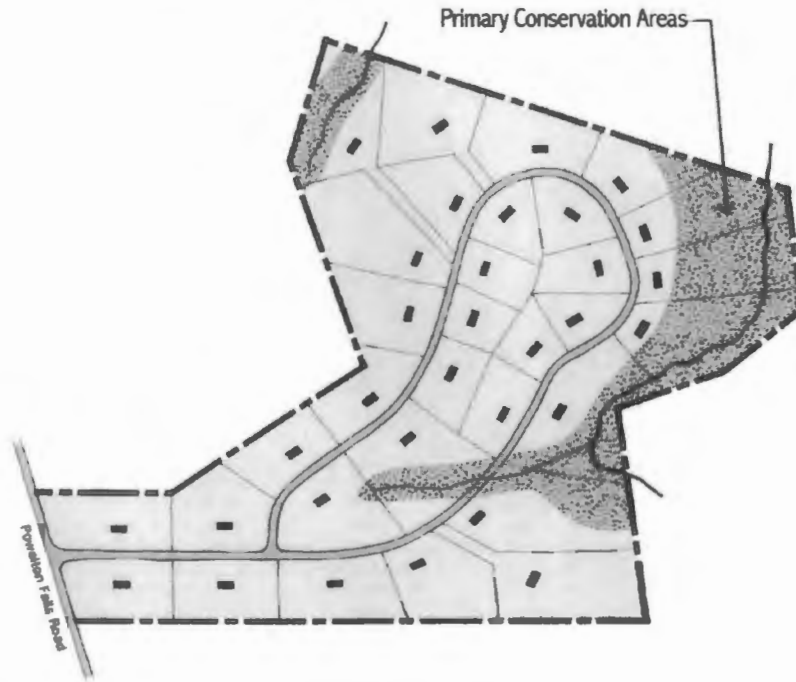
Conservation Subdivisions

Conservation subdivisions, similar to but arguably more effective than cluster subdivisions, are an alternative to large-lots. As described by Randall Arendt (1996) a conservation subdivision “refers to residential developments where, as in golf course communities, half or more of the buildable land area is designated as undivided, permanent open space.” The central principle of conservation subdivision design is the preservation of natural lands as the building block in community-wide open space and greenway networks. The same number of dwelling units would be permitted as in a conventional layout, except with smaller lots. The town and the developers would first determine the land that is to be preserved. The unbuildable, “Primary Conservation

Areas,” are first delineated and consist of such areas as wetlands and wetland buffers, and steep slopes. Calculations, based on the underlying zoning district, are then made to determine the number of lots allowed on the remaining portions of the site – including “Secondary Conservation Areas.” Secondary conservation areas are additional areas worthy of preservation and can consist of significant wildlife habitats, woodland, farmland, historic, archaeological, and cultural features, views into and out from the site, and groundwater recharge areas. The locations of homes are then laid out by a landscape architect around, but not within, the Primary and Secondary Conservation Areas, resulting in significant amounts of upland open space, about half of which should be available for passive and active recreation. The final step is for professional engineers to design the street and utility layouts according to the placement of homes.

There are numerous advantages to conservation subdivisions. Economic advantages include reduced infrastructure engineering and construction costs due to narrower house lots and shorter streets, marketing and sales advantages that can highlight the benefits of living adjacent to protected recreational and wildlife habitat lands, the accelerated value appreciation of homes located in conservation subdivisions, and reduced demand on local government for new public parkland. Conservation subdivisions also have the environmental and ecological advantages of protecting water quality, and providing a greater diversity in wildlife habitats. There are also social and recreational advantages associated with the passive and active recreational amenities that offer opportunities for neighborhood residents to meet and exercise outside of their own isolated backyards but in places near their homes.

Figure 1. Typical Plan for a Conventional Subdivision.



Source: Arendt. 1996. *Conservation Design for Subdivisions*.

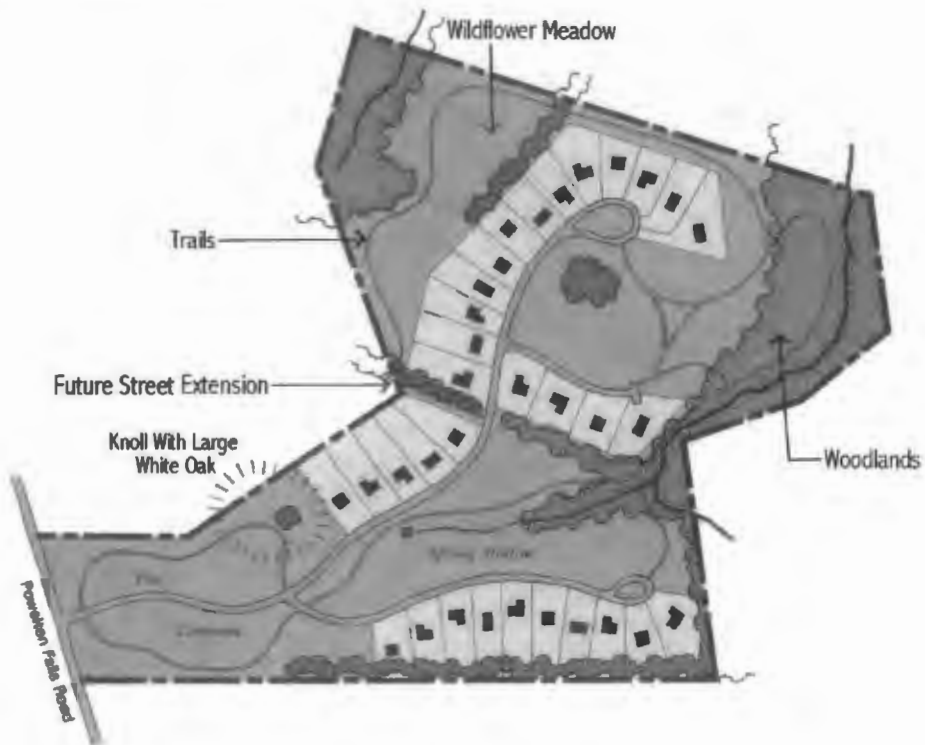
Figures 1 and 3 demonstrate the differences between how lot lines are drawn in conventional subdivisions versus conservation subdivisions. Both development scenarios offer a total of 32 house lots. However, the conservation design also offers prospective residents with significantly improved opportunities for outdoor recreation by providing trails and open meadows. The open spaces are permanently protected from development, which also makes it more attractive to potential buyers. Additionally, environmental resources are afforded better protection; more wildlife habitat is preserved and smaller privately owned lawn spaces will mean less pesticide and fertilizer pollutants that could enter the groundwater supply. Conventional subdivisions should serve only one purpose in East Greenwich – to provide a yield plan showing the number of allowable lots for major subdivisions.

Figure 2. Conventional Development.



Source: Arendt. 1996. *Conservation Design for Subdivisions*.

Figure 3. Lot Lines in a Conservation Subdivision.



Source: Arendt. 1996. *Conservation Design for Subdivisions*.

Figure 4. Conservation Design Development



Source: Arendt. 1996. Conservation Design for Subdivisions.

The Zoning Ordinance should be amended to include conservation subdivisions as the preferred method of residential development, especially west of South County Trail. Conventional subdivisions that typify suburban sprawl development should not be allowed to continue in East Greenwich. Such a provision would, over time, add significant amounts of protected open space and recreational opportunities throughout the Town.

Development and Subdivision Review Regulations

Open Space Dedications. The Development and Subdivision Review Regulations should be revised to more precisely define where in a development dedicated lands should be located. To be consistent with the proposed changes in the Cluster Ordinance, the

Development and Subdivision Review Regulations should incorporate the following requirements for dedicated open space:

- *Be contiguous* – this will prevent fragmentation of wildlife habitat and trail networks and provide an enhanced outdoors experienced for trail users.
- *Touch two or more borders of the property* – to allow for the future extension and connections to other open spaces and trails and to prevent ‘dead ends’ for wildlife and trails.
- *Abut other dedicated or Town-owned open space lands* – wherever applicable the dedicated lands should be required to abut other dedicated open spaces to expand the connected network of open spaces.
- *Be developed with a trail network* – developers should be required to construct a trail network within the common spaces, just as they are required to construct other infrastructure improvements such as roads. The trails should be developed in accordance with the “Greenway Trail System” component of this plan.
- *Preserve natural and cultural features* – when the road street network and locations of homes are being determined, the following features should be preserved: large trees, mature tree stands, stone walls, significant wildlife habitat areas, and any other noteworthy features determined worthy of preservation by the Planning Department staff and the Planning Board.

Affordable Housing. The town should consider requiring all new major residential developments to provide a minimum of ten percent of the units for low and moderate-income residents. Over time this provision would substantially increase the town’s stock

of affordable housing units and would provide more access to open space and outdoor recreation for a greater portion of the population.

OTHER IMPLEMENTATION TOOLS

Geographic Information Systems. There are additional steps that the town can take to better implement the above recommendations. The most immediate need is for the town to increase its geographic information systems (GIS) capabilities. The town currently uses ArcView GIS software that enables it to access the Rhode Island Geographic Information System (RIGIS) that contain numerous coverages, such as wetlands, rivers, streets, land use, etc. East Greenwich needs to have its assessor's plat and lot maps digitized, including such coverages as streets, conservation, drainage and public access easements, water and sewer lines, building footprints, and other data as necessary, and the data should be made accessible to more town offices and departments. This would be an invaluable resource for working with developers to design subdivisions that preserve critical environmental resources and tie into the greenway network and would enable the town to maintain more accurate records of all aspects land within the town (e.g. lot dimensions, ownership, etc.).

Role of the East Greenwich Land Trust. The East Greenwich Municipal Land Trust was established to promote preservation of the Town's natural environment and historic character. As stated in the Trust's Rules and Regulations, the Trust seeks to accomplish this by preserving suitable open spaces for recreation, forestry and wildlife; promoting responsible development of real estate and sound conservation practices; protecting

environmentally sensitive or threatened existing and/or future fresh-water well-fields, aquifer recharge areas, and wetlands; and by promoting public access and views of harbors, ponds, marshes, farmland and forest. Land Trust properties have provided East Greenwich residents with improved opportunities for passive recreation and general enjoyment of the natural environment by making trails accessible to the public.

As development pressures have continued to threaten the landscape of the town it is becoming increasingly important for the Land Trust to stay actively involved in land preservation, and to expand its presence within the community to generate more awareness of related issues. The Trust can accomplish this by developing materials such as brochures to distribute town-wide, and by writing a monthly article to submit to local and regional newspapers. The Trust could also establish a series of local “Environmental Awareness Days” in which environmental professionals are invited to speak to school groups, and students are asked to assist in cleaning and clearing trails. The Land Trust could offer a yearly award in recognition of an East Greenwich resident and a student who demonstrate an outstanding commitment to a clean, safe, and protected environment. Such endeavors would require little effort on the part of the Land Trust but would significantly enhance its presence throughout the community and foster a land ethic that respects the fragility and importance of the town’s natural resources.

The Land Trust needs to be provided a revenue stream that will assist in future acquisitions. They should continue their efforts in seeking new funding sources for land

acquisition as well as seek new properties to acquire in accordance with the Greenway Plan. This should remain the fundamental mission of the Trust's activities.

Environmental Education

Additional benefits can be derived from portions of the corridor that are made accessible to the public. The Recreation Department currently offers occasional opportunities for school groups to learn about the local environment. These efforts could be expanded to offer greenway users environmental education opportunities that present concepts of wetlands ecology and other topics that relate to the local environment. The following list is just a few such environmental education opportunities that exist in Rhode Island.

- *Norman Bird Sanctuary, Aquidneck Island* – The sanctuary offers educational tours to school various school groups.
- *URI Learning Landscape* – This program offers elementary school groups hands-on activities to learn about soils, water, plants, birds and other wildlife. The children visit URI's goldfish pond, flowerbeds, mini-orchard, and greenhouses.
- *URI Eco-Exploration* – This program offers 5th – 8th graders an interactive exploration of the adaptations of plant life in desert, tropical and aquatic ecosystems.
- *Audubon Society of Rhode Island's Environmental Education Center* – This new facility in Bristol offers a 10,000 square foot state-of-the-art Center with interactive exhibits, a life-size Right Whale, aquariums and a tide-pool tank, a nature gift shop, and environmental workshops for school groups. It is situated on

a 28-acre wildlife refuge where people can experience first-hand the delicate intricacies of wetland ecosystems.

Municipal Tree Farm. An additional opportunity that would benefit the town and possibly tie into an environmental education program is to establish a tree farm on town-owned property. The tree farm would provide all park and street trees, resulting in substantial long-term savings and greener streets. The farm would also provide another site for school groups to learn about local flora, and, depending on its location, it could be incorporated into the greenway trail network.

IMPLEMENTATION RESOURCES

Below is a list of potential sources of funding for land acquisition, greenway and trail development, and habitat restoration.

1. Rhode Island Department of Environmental Management Open Space Grants, Greenway Grants, and Recreation Development Grants.
2. Forest Legacy Program Grants
3. Agricultural Land Preservation Commission Grants
4. American Greenways Kodak Awards Program - This program is administered by The Conservation Fund and provides grants of \$500 to \$2,500 to local greenway projects involving planning, design, or development. Contact: American Greenways Program at The Conservation Fund, 1800 North Kent Street, Suite 1120, Arlington, VA 22209 or e-mail at dswol@conservationfund.org

5. Recreational Equipment Incorporated - awards seed grants of \$200 to \$2,000 to state and local conservation groups for projects that enhance river protection. Contact: National Rivers Coalition, American Rivers, Inc., 801 Pennsylvania Ave., Washington, DC 20003.
6. Fish America Foundation - funds public and private organizations for projects that enhance or conserve water and fisheries resources. The grant award is approximately \$10,000. Contact: Fish America Foundation, 1033 N. Fairfax Street, Suite 200, Alexandria, VA 22314.
7. The Global Relief Heritage Forest Program, American Forestry Association - Provides funding for planting tree seedlings on public lands placing emphasis on diversifying species, regenerating the optimal ecosystem, and implementing the best forest management practices. Contact: American Forestry Association, P.O. Box 2000, Washington, DC 20013.

CONCLUSION

Through its support of statewide open space protection efforts, and its local development regulations, East Greenwich has demonstrated its desire to preserve open spaces and natural resources, protect ground water supplies, and to preserve farmland. This plan proposes a strategy for the commons that involves numerous changes to town ordinances and suggests other implementation tools that will enhance the ability of the town to meet its conservation goals.

Pro-active planning is key to the success of preserving open space and natural resources. By implementing the recommendations of this plan developers will be better able to adapt their projects to the overall vision of the town's greenway, and will be able to highlight the greenway as an amenity when marketing residential house lots and homes. Developments that meet the objectives of the Greenway Plan and incorporate environmentally conscious site design are encouraged and can expect faster site plan approval.

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