City of Warwick
Proposed comprehensive plan amendments
Encouraging solar in the built environment.

River and Coastal Flooding

- Protect and restore wetlands to help with flood water retention
- Prevent development on undersized lots near water

Water/Air Quality

- Airport contaminants
- Public education programs/outreach needed re: home-owner impacts on watershed
- Health of Greenwich Bay is paramount to the city
  - Protect and restore shellfish
- Need for waste water management districts for areas not sewered
- Plant new trees—environmental benefits including air pollution mitigation

Climate Change

- New building codes that anticipate rising water
- Better protect wetlands
- Identify new strategies to address anticipated changes, including potential for more and stronger storm events
  - Plantings, increased culvert sizes, etc.

Coastal and River Access

- Ensure all public rights of way remain public. Need to identify all.
- Identify additional access to areas along coast and Pawtuxet River

Other

- City needs an "Environmental Coordinator"

2. Transportation and Circulation Meeting

TOP ISSUES AND IMPROVEMENTS NEEDED

Roadway Conditions and Congestion

- East/west congestion
- Public safety—Traffic calming in neighborhoods needed
- Improve problem intersections

Infrastructure for New Developments

- Too many curb cuts allowed for businesses. Currently, each one gets two

Preserve existing forests, farmland, and open space from solar development by restricting solar development to developed commercial and industrial areas.

Public Transportation

- Potential ferry service to Rocky Point
- Replace bus fleet with CNG/electric vehicles
- More service within Warwick
- Increase commuter rail frequency

The Airport / Station Area

- Limit parking to promote transit-oriented development
- Work to get an Amtrak station at the Interlink

Other

- Identify locations for electric car charging stations (Rte 2 perhaps)
- Explore and identify a pilot area to implement a variety of connectivity and alternative transportation options.

- 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.

…such as micro-scale solar or wind power…

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 and also create routes of varying length, lending 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, wh
5. W
   re
   Actively pu es and identify opportunities with th g departments in Cranston, West W East Greenwich, and North Kingstown to 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.

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

B FINDINGS AND CHALLENGES

findings

- Warwick is dependent on fossil fuels for energy.
- The municipal government has conducted preliminary feasibility analysis for wind turbines on City properties.
- The City has begun to adopt energy saving technologies in City buildings.
- Solar and wind energy technologies have been installed by some private and non-profit businesses in Warwick.
- The City has a strong recycling program.
- The zoning and building codes need to be updated to incorporate regulations and incentives to encourage energy efficiency and reductions in energy demand.
- Climate change impacts on Rhode Island are documented. In the future, Rhode Island is expected to experience more frequent extreme weather events with potential flooding, more severe hurricanes and noreasters, and an accelerated rise in sea levels.
- With its coastal location and 39 miles of shoreline, Warwick is vulnerable to the impacts of climate change and sea level rise.
- State government has convened the Rhode Island Climate Change Commission to help communities prepare for the impacts of climate change.
- Warwick is already taking steps to protect its wastewater facility from a repetition of the 2010 flood.

challenges

- Raising public awareness of energy efficiency and demand reduction options
- Changing behaviors to conserve energy and reduce greenhouse gas emissions
- Funding for adoption of additional energy efficiency strategies for municipal facilities
- Raising public awareness about the potential future impacts of climate change on Warwick.
- Planning, funding, and implementing programs to adapt City facilities and activities to be resilient to climate change impacts.
- Working with private property owners over time in vulnerable locations.

Developing local solar siting policy that focuses on existing developed commercial & industrial areas with large parking lots and rooftops.

Federal & State tax incentives generate development pressure that favors solar arrays in undeveloped areas, thereby compromising forests, open space, and field areas.

Upon observing three solar facilities which have been installed via the zoning amendment process (RIGL 45-24-51), and through the course of developing solar policy, there is a clear public consensus to focus solar arrays within existing developed commercial & industrial areas –perhaps through accessory use solar canopies and rooftop solar.

Preserving existing, undeveloped forest tracts, whether by open space preservation, or in concert with residential zoning districts parameters, is preferred.

behaviors such as turning off lights and computers when they leave a room. The program is designed as a competition between departments to see which department can save the most energy over a set time period.

In the fall of 2011, National Grid offered all Warwick residents free energy audits, and helped participants identify opportunities for energy efficiency and conservation. Participants were also eligible to receive free energy efficient light bulbs, low-flow showerheads, and energy-efficient faucet aerators. The company also offered assistance paying for weatherization and air sealing costs.

Energy consumption in Warwick municipal buildings increased by just .3% between the FY2008-2010 and FY 2011. The projects described above should result in a decrease in usage in future years.

Renewable Energy

Solar energy. Warwick has not installed solar panels on any of its municipal buildings. No municipal ordinances have been adopted that address solar installations within the city. However, there are several private solar installations. In May 2009, New England Institute of Technology (NEIT) had 135 photovoltaic panels installed on its Electrical Technology Building. Each panel can produce 175 watts of electricity, or 23 watts per hour. Actual output depends on sun angles, cloud cover, length of day, and other variable environmental factors[2]. Any excess energy produced returns to the National Grid system and the school will be credited. The TD Bank branch on West Shore Road includes a solar panel on the drive-through window to provide some of the energy for the facility. In addition, a developer of a private garage at the airport has proposed installing a solar canopy on the facility, and has received city support for the project, which is seeking tariff approval from National Grid.

Wind energy. The City of Warwick completed a Wind Turbine Screening Study in July 2011 as a preliminary step in assessing the feasibility of the possible future installation of a large-scale (+100kW) wind turbine on City-owned property[3]. The study consultants, in conjunction with the City of Warwick Planning Department, identified five city-owned sites, as listed in Table 11.2, that would potentially be suitable for a large-scale turbine. These sites were screened based on wind speeds, availability of sufficient land to construct the turbine and

2 New England Institute of Technology web page. Accessed on September 26, 2012. http://technet.neit.edu/files/TechNews200908.pdf

3 Weston and Sampson, City of Warwick Rhode Island Wind Turbine Screening Study Site Suitability Assessment, prepared for Crossman Engineering, July 2011.

light bulbs, wrapping pipes, installing insulation, using draft blocks, replacing aged heating and cooling systems, replacing single pane windows, and so on.

2. **Use state, federal and non-profit sources to promote energy efficiency.**
   Support and promote weatherization programs offered through state and federal agencies (W… ization Assistance Program of US … ergy).

Consider allowing solar canopies as an accessory use in commercial and industrial zones by building permit without extensive Planning or Zoning Board Review.

… ers who incorporate energy efficient technologies, designs, and landscaping in their projects.

2. **Support policies in other elements of this plan that promote efficiency through compact growth patterns, improved road connectivity and alternative transportation modes.**

3. **Create a program to recognize businesses that adopt energy efficient/conservation techniques.**

D. Replace fossil fuels with renewable energy sources.

Actions

1. **Review the findings on wind energy on municipal properties to consider next steps and investigate installing solar panels on municipal buildings.**

2. **Provide regulations for renewable energy installations on private property in zoning and other ordinances, as appropriate.**
   This includes reviewing the building code to identify and eliminate regulatory barriers or deterrents to renewable energy generation; ensuring that electric vehicle charging stations are an allowable use; and providing for installation of small scale wind turbines and solar panels. Guidelines for how these technologies can be incorporated into building design should be included.

3. **Streamline and reduce regulatory barriers to green buildings, and develop incentives to encourage green construction.**

4. **Provide more convenient parking and/or free parking for energy efficient vehicles in municipal parking facilities and encourage similar practices by commercial property owners.**

GOAL 2
The City implements and promotes resource conservation and waste reduction.

POLICY
- Reuse materials, facilities and structures when possible.

STRATEGIES

A. Continue the City's high performance in recycling.

Actions

1. **Develop a program to include multi-family developments and commercial properties in recycling programs, either through the City or through private companies**

GOAL 3
City facilities and practices are a model of sustainability.

POLICY
- Choose sustainable materials, methods and practices when possible.

Chapter 11—Sustainability and Resilience

High Priority | Short-term actions (2013–2018) | Medium-term actions (2019–2023) | Long-term actions (2024 and beyond)

GOAL	WHAT	HOW	WHO	WHEN	RESOURCES
1. The City implements practices to conserve energy and use renewable energy.	A. Develop a five year capital plan for adopting energy efficient systems and practices for municipal buildings and equipment to aim for a 25% reduction in energy use by 2033.	HIGH PRIORITY 1. Prioritize recommendations from the Whole Building Assessment Initiative reports for the pool and arenas and the Honeywell Energy Audit based on energy efficiency benefits and capital costs.	Parks and Recreation; Mayor's office	Short term	Staff time; capital program
		2. Develop a timeline for implementing the recommendations included in these plans.	Mayor's office; Parks and Recreation	Short term	Staff time
		3. Develop a plan for converting the municipal fleet to fuel efficient and alternative fuel vehicles.	Mayor's office; DPW	Medium term	Staff time
		4. Identify an appropriate location for electric vehicle charging stations.	Planning; DPW; Police Dept; Fire Dept; Building Dept	Short term	Staff time
	B. Develop and implement an energy demand reduction campaign.	1. Develop an energy efficiency campaign for the public in conjunction with National Grid.	Mayor's office	Medium term	Staff time
		2. Use state, federal and non-profit sources to promote energy efficiency.	Mayor's office	Ongoing	Staff time; grants
		3. Create a program to recognize businesses that adopt energy efficient/conservation techniques	Mayor's office	Medium term	Staff time
	t land use policies and lations that encourage tions in energy nd.	1. Encourage, incentivize and incorporate, as appropriate, use of energy efficient technologies in building and landscape projects.	Planning; Building Dept	Short term	Staff time
		2. Support policies in other elements of this plan that promote efficiency through compact growth patterns, improved road connectivity and alternative transportation modes.	Planning	Short term	Staff time
		3. Create a program to recognize businesses that adopt energy efficient/conservation techniques.	Planning; Tourism		
	D. Replace fossil fuels with renewable energy sources.	1. Review the findings on wind energy on municipal properties to consider next steps and investigate installing solar panels on municipal buildings	Mayor's office; DP Statewide Plannin		
		2. Provide regulations for renewable energy installations on private property in zoning and other ordinances, as appropriate.	Planning; City Council; consultant	Medium term	Staff time; grant

Encourage private sector to augment fossil fuels with solar power on sites that are already developed. environment.

Provide regulations that encourage solar canopies and rooftop solar in existing commercial areas.