West Cape May Sustainability Plan 2009

Prepared by
West Cape May Comprehensive Planning Studio Fall 2009
Edward J. Bloustein School of Planning and Public Policy
Rutgers, The State University of New Jersey

Edward J. Bloustein School of Planning and Public Policy

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Studio Instructors

Fred Heyer and Susan Gruel - Heyer, Gruel & Associates, and Adjunct Faculty at Rutgers University
Lyna Wiggins - Associate Professor at Rutgers, The State University of New Jersey

Fall 2009 Comprehensive Planning Studio Members

Sarah Colins, Christa DiLalo, Kate Lawrence, Katharine Otto, Nicole Perez, Chris Plasencia, Deborah Schulze, Matthew Seckler, Matthew Ward

Special Thanks

Borough of West Cape May
Mayor Pam Kaithern, Mayor
Ramsey Geyer, Commissioner
Peter Burke, Deputy Mayor

Kate Kilian, Deputy Clerk
Elaine Wallace, Clerk
Rob Flynn, Public Works Manager
Daniel Rutherford, Emergency Management Coordinator

Paul Mulligan, Planning Board

Diane Flanegan, Business Association and Shade Tree Commission
Loretta Saggiomo, Historic Preservation Committee
Elan Zingman Leith, Historic Preservation Committee Chair

Marie Iaconangelo, President, West Cape May History Committee

Barbara Ernst, Direction, Cape May County Dept of Open Space and Farmland Preservion

Dr. Stephanie Murphy, Director, Rutgers Cooperative Extension Soil Testing Lab

Mike Borst, Environment Protection Agency Watershed Research Division

Bob Allen, Director of Science, Delaware Bayshores Office of The Nature Conservancy

Laurie Pettigrew, Principal Biologist, Bureau of Land Management, NJ Division of Fish and Wildlife

Tracy Shackleton, Park Assistant, Cape May Point State Park

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New development overlooks the marshes to the east of Park Boulevard. Photograph by Katharine Otto (2009)

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

- Brundtland Report, World Commission on Environment and Development

In West Cape May, sustainability is more than just a recently-coined buzzword. The borough's picturesque setting has always contributed to its distinctive character. The borough's coastal and agricultural resources are essential to its livability, attracting and retaining full-time and part-time residents alike. In addition to West Cape May's natural virtues, its heritage also makes it a special place to live and to visit. The Victorian architecture of the Historic District serves as a lasting physical connection to the area's storied past.

Today, 125 years after its founding, the borough must continue to safeguard the natural and historical elements that set it apart. At the same time, the community must take positive steps to use these resources beneficially, efficiently, and responsibly both now and in the future. The initiatives put forth in this Sustainability Element of the West Cape May Master Plan will help the borough remain an excellent place to live for years to come.

Land Development

Incorporate sea level rise projections into all long-term planning

Reduce the risk of flooding by situating new development intelligently. Promote initiatives that retrofit existing development to guard against contemporary hazards.

Set aside more land for open space, agriculture, and parks

Establish a trust fund to acquire and preserve land for these purposes. Pursue the Eco-Park and Greenway concepts, both for the benefit of Borough residents and to attract visitors.

Water

Promote water conservation

Educate households and businesses about common-sense ways to reduce their water usage. Encourage the purchase of water-efficient appliances. Promote landscaping practices that reduce runoff and reuse non-potable water for irrigative purposes.

Maintain the health of the Borough's hydrological systems

Reduce impervious ground coverage, allowing more water to recharge the Borough's aquifers. Protect the groundwater against contamination due to excessive fertilizer use or exposure to other pollutants. Pursue a regional strategy to maintain access to an affordable source of desalinized water.

Energy

Achieve a 20% reduction in the Borough's carbon footprint

Perform an energy audit on all municipal buildings and vehicles. Promote energy efficient practices and purchasing decisions by all of the Borough's households and businesses. Lead a comprehensive educational effort that involves government, schools, and non-profit organizations.

Increase the proportion of energy generated from alternative sources

Encourage solar panel installation. Amend the Borough's turbine ordinance to allow for the construction of small-scale wind farms. Work with other County municipalities to pursue additional opportunities to convert biomass into energy.

Solid Waste and Materials

Reduce, Reuse, and Recycle

Foster a culture of waste reduction and reuse. Make it easier for all residents, businesses, and visitors to recycle a larger portion of their waste. Establish community composting sites and/or regional composting centers. Educate households and businesses on simple ways to reduce their landfill contributions.

Building Practices

Align historic preservation policies with sustainability

Work with technology providers to promote the installation of aesthetically appropriate solar panels and other green technologies. Continue to reuse rather than rebuild whenever possible. Discourage sprawl and develop the core by concentrating growth in the Borough's gateway area.

Promote the adoption of green building practices

Require that materials, systems, and the site specifications of all new buildings conform to their coastal setting. Enhance relationships with contractors who specialize in responsible coastal building.

Food Systems

Support agriculture and encourage the consumption of locally-grown foods

Expand the number and frequency of farmer's markets and festivals to showcase local produce. Promote community-supported agriculture and open new community gardens. Market local produce more aggressively within the region.

Assist local farmers in adopting sustainable and organic methods

Provide information on organizations that certify sustainable agricultural practices. Develop incentives for farmers who subscribe to these standards.

Emergency Management

Enhance emergency communication systems within the community and with neighboring authorities

Distribute emergency radios and develop methods of reaching part-time residents who lack a local support network. Continue to seek opportunities to leverage the Borough's emergency capabilities in cooperation with other municipalities and organizations.

Enhance preparedness and mitigation prior to disasters and improve resilience in their wake

Increase focus on coastal hazards such as flooding, erosion, and storm surges. Provide flood mitigation advice and assistance to residents and business owners whose locations may leave them vulnerable to the effects of sea-level rise. Create an emergency fund to repair or replace vital community resources.

Economic Development

Focus the future growth of the Borough within the downtown core

Develop the area around Wilbraham Park into a more welcoming gateway to the Borough. Consider placing a mixed-use building on Broadway across from the park; this building could incorporate a public space and potentially house the new Borough Hall. Retrofit historic buildings along Broadway to accommodate more commercial uses. Redesign Park Boulevard as a walkable street that will attract tourism while also providing additional residential and employment opportunities. Establish a connectivity route between Cape May City and West Cape May via Myrtle Ave, through the use of mixed-use buildings and pedestrian friendly streetscape design. Develop an Eco-Park east of Park Blvd to capitalizes on the area's abundant natural resources.

West Cape May: The Heart of Cape Island. Photograph by Katharine Otto (2009)

Introduction

What is Sustainability?

Sustainability issues are gaining momentum throughout New Jersey's municipalities, and this topic is becoming more pertinent in light of emerging climate change and renewable energy policies. New Jersey's physical, economic, and cultural diversity requires that sustainable development efforts be customized to each municipality's unique needs. Ultimately, sustainable development aims to "meet the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987:54). In other words, it means "striking a balance between the economic, social, and environmental needs of the community" (Woodbine Borough, 2009:1).

While the Brundlandt Report's definition has proven to be universal, West Cape May also faces coastal challenges that add another layer of complexity to the concept of sustainability. In order to be sustainable, West Cape May must also be resilient; "the resilience of a community can be viewed in terms of the resilience of its physical and built environments - the ability of a coastal community's homes and buildings and built infrastructure to withstand and adapt to natural forces and changing circumstances - and also in terms of the resilience of ecosystems and the natural environment" (Beatley, 2009:10).

In 2009, New Jersey added an additional optional element to municipal comprehensive plans: the green buildings and sustainability plan element. According to the Municipal Land Use Law (MLUL), this plan should "provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on-site; and optimize climatic conditions through site orientation and design." (NJSA 40:55D - 28).

West Cape May

West Cape May Borough is located on Cape Island at the southernmost tip of New Jersey. West Cape May is one of four small municipalities that make up the Island, and is flanked by Lower Township on the west and the City of Cape May on the east. Although West Cape May is not a coastal borough, it lies less than a mile from the Atlantic Ocean to the east and the Delaware Bayshore to the west. On average, the elevation is only six feet above sea level. The Borough is characterized primarily by agriculture, small neighborhood businesses, and historic architecture.

West Cape May, formerly known as Eldredge, was originally inhabited by the Lenni Lenape Indians and then settled by descendants of the Mayflower. It later became a significant part of the Underground Railroad during the Civil War. Much of the municipality's development took place during the Colonial period, and the Victorian architecture is still very

visible throughout the municipality and surrounding areas. West Cape May was incorporated as a borough by an Act of the NJ Legislature on April 1, 1884, from portions of Lower Township. The historic core of the Borough was placed on the National Register of Historic Places along with sections of the City of Cape May in 1976, making West Cape May a part of both the National and State Register of Historic Places.

Today, West Cape May is a well-known seasonal tourist destination. Its year-round population count is the third lowest in Cape May County at 1,026, and rises by as much as 400% during the summer vacation months. As stated in the 2005 Master Plan Reexamination, the municipality's land area is 1.19 square miles, with an off-season population density of 1.17 people per square acre. West Cape May currently has an independent School Board for their K-6 program that operated with an enrollment of 35 students in the 2008-2009 academic school year, and 36 students in the 2009-2010 academic year. Secondary students attend a regional school that is shared with students from Lower Township, Cape May City, and Cape May Point. The borough shares a court system with neighboring Cape May Point.

The Master Plan for the Borough of West Cape May was first adopted in 1978. Periodic reexaminations occurred in 1987, 1994, 2000, and 2005. The Borough's current Zoning Plan and development regulations were adopted in 1978 and have been modified periodically since, with the last change occurring in April 2005.

Goals for a Sustainable Community

A. Land Development
   a. Become involved in local coastal and bayshore management.
   b. Encourage sustainable agriculture.
   c. Conserve environmentally sensitive and non-buildable land.
   d. Encourage naturally functioning ecosystems by planting native vegetation and pursuing sustainable landscaping.

B. Water Resources
   a. Minimize or eliminate the unnecessary use of potable water.
   b. Recharge groundwater supply and prevent surface runoff.
   c. Reduce contamination of water sources by individual landowners.
   d. Pursue a regional approach to manage salinization problems.

C. Energy Resources
   a. Decrease carbon footprint.
   b. Implement energy conservation outreach program.
   c. Encourage inclusive zoning and land use.
   d. Reduce reliance on electrical energy.

D. Solid Waste and Materials
   a. Reduce overall waste and recycle as much waste as possible.
   b. Encourage composting.
   c. Enforce construction and demolition recycling ordinance.

E. Building Practices
   a. Encourage green building practices for both new development and renovation
   b. Maximize Broadway corridor as a commercial hub while retaining its historic character and encouraging green building practices.
   c. Establish regulations that require durable coastal construction.

F. Food systems
   a. Provide access to local produce.
   b. Improve visibility of local produce.
   c. Support sustainable agricultural practices.

G. Emergency management and abatement
   a. Improve communication capabilities with residents and visitors.
   b. Improve collaboration with neighboring municipalities.
   c. Enhance preparedness against coastal risks.
   d. Create an emergency fund to redevelop vital community resources in the event of disaster or disruption.

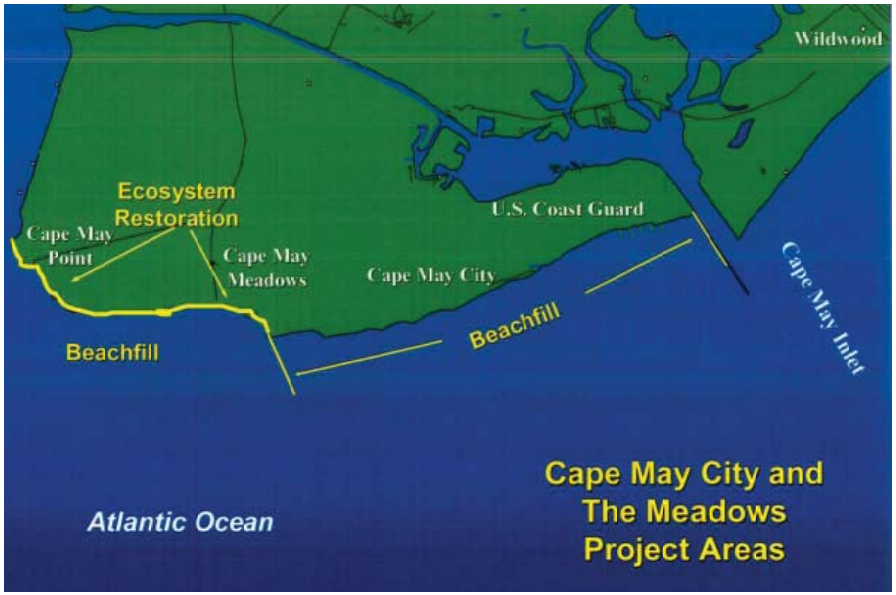
H. Economic Development
   a. Reduce municipal expenditures
   b. Encourage reduction of residential and commercial expenditures
   c. Pursue economic development by strengthening the Broadway and Park Boulevard Commercial Districts and developing a comprehensive open space system that includes an Ecopark

New retail development along Sunset Boulevard. Photograph by Matthew Ward (2009)

A. Land Development Practices

West Cape May is located within a variety of environmental areas where development permits must be obtained not only from the Borough, but the State as well. The entire borough is in the CAFRA zone and portions of it are affected by NJDEP's permit requirements for Waterfront Development, Tidelands Conveyance, Freshwater Wetlands and/or Stream Encroachment Permits. Areas of the Borough with tidal wetlands also require US Army Corps of Engineers (USACE) permits.

West Cape May is situated between two major wildlife breeding and migratory sites – Cape May Meadows and Higbee Beach Wildlife Management Area (WMA) – and also hosts a significant number of endangered and threatened nongame species habitats. Much of the area has been recognized as Natural Heritage Priority Sites (see Natural Heritage Priority Site Map).



Map of the USACE's Cape May City and The Meadows Project Areas. Source: USACE (2008:4)

a. Coastal and Bayshore Environment and Marshlands

While West Cape May has no direct access to the sea, it is bounded by three municipalities with coastlines: Cape May City, Cape May Point and Lower Township. There are three major public or non-profit organizations who manage significant areas of land in and adjacent to West Cape May (see Preserved Lands Map):

- The Nature Conservancy (TNC) (Cape May Migratory Bird Refuge, part of Cape May Meadows)
- NJ Department of Environmental Protection's (NJDEP) Parks and Forestry (Cape May Point State Park, part of Cape May Meadows)
- NJDEP's Bureau of Land Management (BLM) (Higbee Beach WMA).

These landowners and municipalities pursue their own coastal defense, through contracts with the US Army Corps of Engineers (USACE), with a variety of objectives: flood and coastal storm damage reduction in Cape May City, and ecosystem restoration and flood and coastal storm damage in Cape May Meadows (see USACE Project Areas Map). On the Delaware Bayshore, Higbee Beach WMA's management is coordinated by the BLM with the USACE and the Endangered and Nongame Species Program (ENSP) as consultants. Combined with the land in the Borough

of Cape May Point and the City of Cape May, the USACE assesses the shoreline area every year to decide how to proceed with coastal defense (or retreat). In 2007 and 2008, Cape May Meadows underwent significant restoration, with beach replenishment, construction of back ponds, re-engineering of wetlands and removal of invasive phragmites with the help of the USACE. In 2009, beach replenishment was carried out in Cape May Point and Cape May City, but due to good accretion in Cape May Meadows no sand was added to the shoreline of the Migratory Bird Refuge.

The tidal marshlands of Cape Island Creek, Pond Creek and Cape May Meadows act as a coastal defense for the Borough; Pond Creek and Cape May Meadows in particular are currently being managed to retain (Cape May Meadows) and reclaim (Higbee WMA) freshwater marshland for migratory species habitat and to protect local communities (see Marsh Habitat Map).

b. Open Space

The Borough has one park, Wilbraham Park, at the intersection of Broadway, Myrtle and Perry Streets, which is used for local and civic events. As stated in the *West Cape May's Open Space, Recreation and Conservation Plan Element* (2005), the Borough has some active recreation facilities on the Elementary School site, but the majority of active recreation needs are met through intra-local governmental cooperation agreements with the other municipalities on Cape Island.

The Borough also contains a portion of TNC's Cape May Migratory Bird Refuge and the only access to the Refuge is from the Borough (see Preserved Lands Map). This provides potential for creating an open space network that connects and enhances a highly ranked species habitat.

Section of Cape May Migratory Bird Refuge in West Cape May from Sunset Blvd. Photograph by Katharine Otto (2009)

Wilbraham Park. Photograph by Katharine Otto (2009)

Proposed site of the Ecopark. Photograph by Katharine Otto (2009)

The Western third of West Cape May is also part of the Cape May Migratory Bird Refuge Natural Heritage Priority Site (see Natural Heritage Priority Sites Map). The site is ranked B3 – "of high significance on a global level" – recognizing the large area of contiguous forest and wetland habitats used by migratory birds and rare species, and the adjacent agricultural or successional lands that provide buffers for these habitats (Office of Natural Lands Management (ONLM), 2007).

County Open Space Priority Acquisition Area. Source: Cape May County Open Space and Recreation Plan, 2007:12

A significant amount of open space acquisition in West Cape May is carried out by the County following referral by the Borough. West Cape May is located in a priority acquisition area for both open space and farmland preservation (see County Open Space Priority Acquisition Map opposite). The Borough also has plans for open space acquisition in the 2005 Master Plan, including development of the Ocean-to-Bay Greenway, and an Eco-Park.

The open space lands both within and adjacent to the Borough suffer from phragmites, a non-native reed that crowds out native species. Part of the Migratory Bird Refuge and Higbee Beach WMA management involves controlling and reducing the density of phragmites across their sites.

c. Wetlands

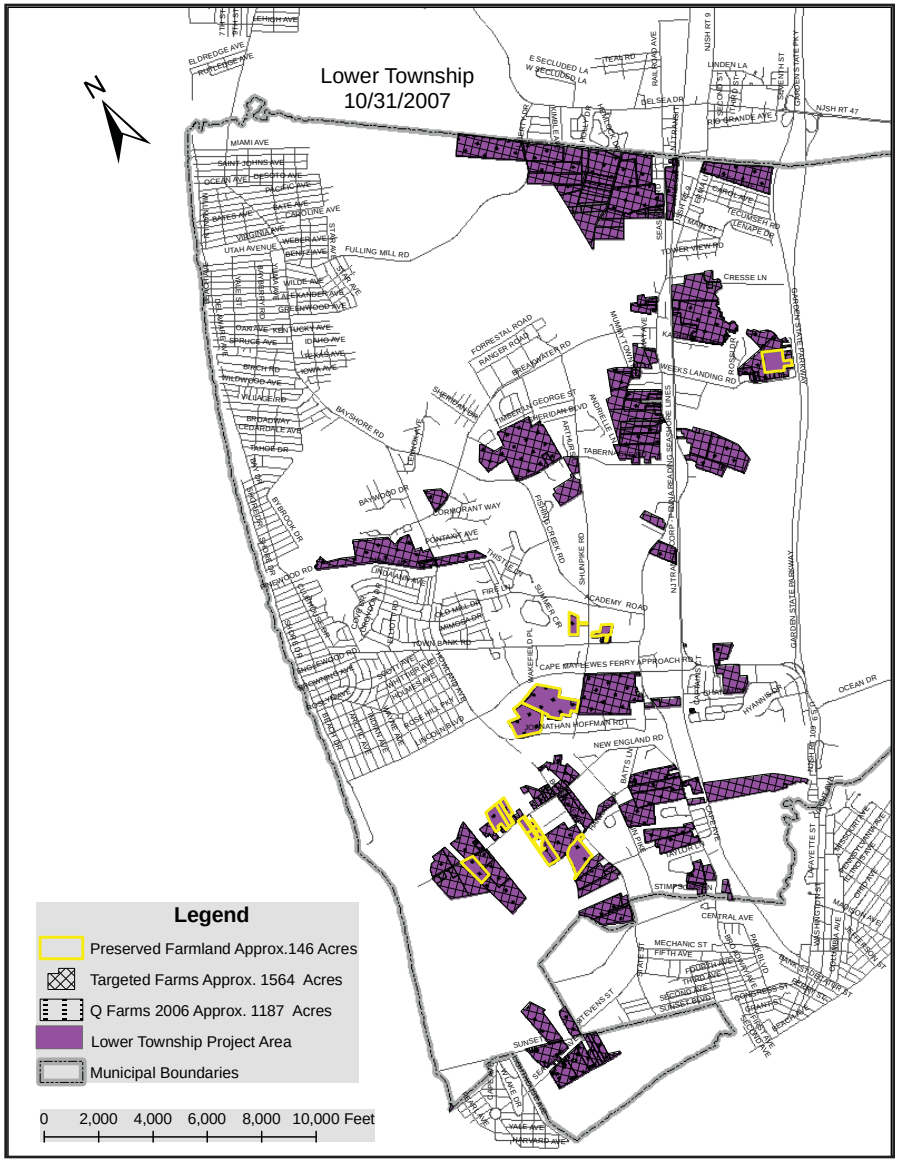
Wetlands are important land features as they provide natural flood protection through water storage, filter sediments and pollutants from water, and provide critical wildlife habitats. Wetlands and their buffers occupy a significant proportion of the borough: 289 acres (38%) of the land area is considered to be wetlands; this rises to as much as 657 acres (86%) when NJDEP wetlands buffers are included (see Wetlands Map and Wetlands Buffer Map).

d. Farmland

Farming is a significant part of the character of this small rural borough, once known as the "Lima Bean Capital East of the Rockies." A significant amount of farmland remains today, with a total of 544 acres of land taxed as farmland in 2009.

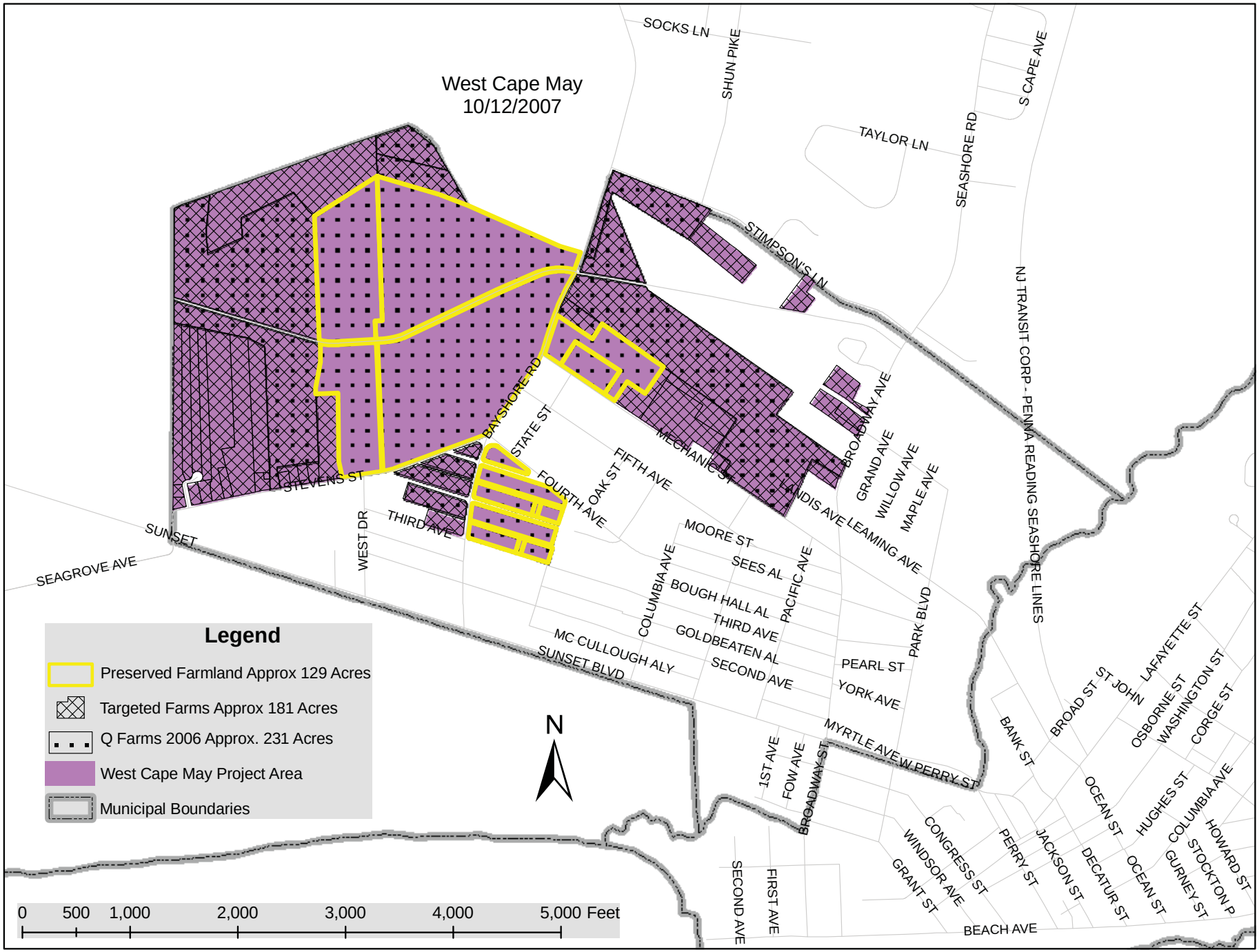
While the Borough does not have a municipal program for preserving farmland, it does participate in the County Farmland Preservation Program. This program is coordinated with the State Agriculture Development Committee's (SADC) County Planning Incentive Grant Program. To date, 129 acres of farmland have been preserved in the Borough and all farmland with suitable soils (according to the SADC) are targeted for preservation (see Targeted Farmland Maps opposite and Preserved Lands Map at the end of the plan).

Willow Creek Farm, a local vineyard owned by Barbara Bray Wilde, balances modern farm practices with sensitivity to the local character (Tischler, 2006). Photograph by Katharine Otto (2009)



Above: Preserved farmland and land targeted by the County for farmland preservation in Lower Township, near West Cape May. Source: Map 12B of the Cape May County Comprehensive Farmland Preservation Plan (2008)

Opposite: Preserved farmland and land targeted by the County for farmland preservation in West Cape May. Source: Map 12A of the Cape May County Comprehensive Farmland Preservation Plan (2008)


West Cape May
10/12/2007
SOCKS LN
SHUN PIKE
S CAPE AVE
TAYLOR LN
SEASHORE RD
STIMPSON'S LN
NJ TRANSIT CORP - PENNA READING SEASHORE LINES
BAYSHORE RD
STATE ST
FIFTH AVE
FOURTH AVE
OAK ST
MECHANIC ST
BROADWAY AVE
GRAND AVE
WILLOW AVE
MAPLE AVE
LEAMING AVE
INDIS AVE
STEVENS ST
THIRD AVE
WEST DR
SUNSET
SEAGROVE AVE
MOORE ST
SEES AL
BOUGH HALL AL
THIRD AVE
GOLDBEATEN AL
SECOND AVE
PACIFIC AVE
COLUMBIA AVE
PARK BLVD
PEARL ST
YORK AVE
MC CULLOUGH ALY
SUNSET BLVD
MYRTLE AVE
W PERRY ST
BANK ST
BROAD ST
ST JOHN
LAFAYETTE ST
OSBORNE ST
WASHINGTON ST
CORGE ST
1ST AVE
FOW AVE
BROADWAY ST
OCEAN ST
HUGHES ST
COLUMBIA AVE
HOWARD ST
STOCKTON P
CONGRESS ST
WINDSOR AVE
GRANT ST
PERRY ST
JACKSON ST
DECATUR ST
OCEAN ST
GURNEY ST
SECOND AVE
FIRST AVE
BEACH AVE
Legend
Preserved Farmland Approx 129 Acres
Targeted Farms Approx 181 Acres
Q Farms 2006 Approx. 231 Acres
West Cape May Project Area
Municipal Boundaries
N
0 500 1,000 2,000 3,000 4,000 5,000 Feet

B. Water Resources

a. Waste Water

As the residential and tourist populations in West Cape May and neighboring municipalities increase, so does the demand on water resources. Cape May County places an emphasis on conservation measures to reduce this demand on water resources. "To reduce the demand on our aquifers, the re-use of treated water shall be encouraged whenever practical" (Cape May County, 2002:13).

When it rains in West Cape May, stormwater runoff travels across the land surface and mixes with pollutants as it goes. This polluted runoff currently receives no treatment. Although West Cape May's current Master Plan does not address stormwater management, many homeowners contribute to the protection of water quality and reduction of runoff by using gravel in their driveways instead of impervious pavement.

Cape May County's recently implemented Stormwater Management Program introduced new regulations to address pollution entering waters from storm drain systems that are owned or operated by government agencies, such as those along public roadways. According to the NJDEP, more than 60% of the pollution in state waterways is caused by such non-point source pollution or stormwater runoff. The Stormwater Management Program requires that municipalities develop plans to address non-point source pollution in their communities by implementing sound management practices.

b. Lawn and Garden

Cape May County notes the importance of its soil and soil quality, specifically when addressing development. As part of its development review process the County has set forth standards regarding soil quality but does not address the protection of soil quality on already-developed land, specifically that of individual homeowners.

c. Aquifer Contamination

Several aquifers service the West Cape May area: Holly Beach Water Bearing Zone; Estuarine Sand Aquifer; Cohansey Aquifer; Rio Grande Water Bearing Zone; and the Atlantic City 800 Foot Sands.

Stormwater drains flow directly in the local waterways.
Photograph by Katharine Otto (2009)

Although a sizeable amount of West Cape May's 42 inches of annual rainfall recharges regional aquifers, global warming is detrimentally affecting the water tables. Problems that are arising and that will continue for the foreseeable future include:

- Shoreline erosion and tidal flooding caused primarily by storms;
- Wider, deeper, and saltier streams;
- Tidal penetration into the interior of Cape Island;
- Migration of salt marshes, replacing swamp forests as trees are killed when saltwater inundates their roots;
- Saltwater intrusion into local aquifers.

The Cohansey Aquifer is West Cape May's main source of water, but is threaten by increasing saltwater intrusion. As a result of water withdrawals by municipalities, a cone of depression has developed in the Cohansey and has caused saltwater contamination to advance inland. If water consumption continues at the present rate, the cone of depression will increase. This will cause the aquifer level to fall below sea level and allow saltwater to encroach. If unaddressed, this development will eventually affect all of the area's wells.

In 1995, the Southern Cape DESAL Water Advisory Commission advised Cape May City to take steps to address the saltwater contamination problem. The chosen solution was the construction of a desalination plant which opened in 1998, with two wells dug into the 800-Food Sands Aquifer, the deepest aquifer yet to be penetrated in Cape May County. This desalination plant—the first in the Northeast—uses reverse osmosis technology to remove salt and other minerals from briny water that has seeped into the City's wells, thus reducing the demand on the Cohansey Aquifer.

Cape May City owns and operates this water system, which currently services West Cape May, Cape May Point, portions of Lower Township, the U.S. Coast Guard Base, and the City of Cape May.

C. Energy Resources

Cape May County currently has an Energy Master Plan directed at securing the future preservation and sustainability of its collective resources. This Plan sets forth goals and objectives that municipalities should work together to achieve. The concepts outlined in the Cape May County Plan take a top-down approach; "Initially, the County intends to concentrate on its own properties and facilities, in order to set a standard of excellence that can be emulated in the future by municipalities and private residences and businesses." Measures outlined in the Cape May County Energy Plan include an increased number of wind farms for both individual and commercial use, increased solar energy efforts, combined heat and power plants (CHP), and the utilization of biomass technology. Although none of the specific projects outlined in the County's plan currently take place in West Cape May, the Borough has passed ordinances allowing limited solar and wind power facilities.

A carbon footprint is the measure of the impact that human activities have on the environment and, in particular, climate change. It relates to the total amount of greenhouse gases an individual or community produces in day-to-day life through the burning of fossil fuels for electricity, heating, and transportation, etc. Carbon footprints are measured in tons (or kg) of carbon dioxide equivalent. West Cape May's carbon dioxide emissions per year, including residential building stock, commercial building stock, electrical transmission, waste management, transportation, and carbon sequestering, is approximately 9,283 metric tons (10,233 tons) per year. This equates to approximately 8.67 metric tons (9.55 tons) per capita, which is relatively low in comparison with the state rate of 15.5 metric tons on an annual basis. See Appendix B for the calculation of carbon dioxide emissions.

The Borough has a Small Wind and Solar Energy Ordinance that states that "wind and solar energy systems shall only be permitted as an accessory use on the same lot as the principal use." This ordinance allows for small wind energy systems in all zones, as an accessory structure on lot sizes ½ acre or larger. This ordinance prohibits them in front yards and on roofs, and limits them to one per property, as well as limiting the height based on lot size. The ordinance does not permit wind energy generation for commercial use or for use on any lot other than the lot where the wind energy system is located. Solar paneling installations are permitted on rooftops (height must be no greater than 8 inches above roofline) and on the ground (with proper setbacks) but are prohibited from front yards.

"While not officially codified, the *assumptions, policies and objectives* of the Borough recognize and support energy conservation" (West Cape May, 2005) Other than a written obligation in the Comprehensive Plan, West Cape May does not have specific policies nor initiatives in place to sustain its energy resources in the future.

D. Solid Waste and Materials

West Cape May's trash is deposited at the Cape May County Municipal Utilities Authority (MUA) sanitary landfill, which is located 25 miles north of the Borough in Woodbine. MUA recently acquired a state-of-the-art compactor to use its space more efficiently and get several more years of use out of the current facility. A gas emissions pipeline collects methane from the decomposing fill and converts it into energy. The energy from this process is sufficient to power both the landfill facility and a nearby school.

The Borough's Department of Public Works (DPW) collects household trash each Tuesday. In order to reduce the pollution and cost of trucking, most trash is brought first to the Middle Township MUA transfer station in Burleigh. Commercial pickup is handled privately by Waste Management and other waste-disposal firms. Household recycling of cans, bottles, and yard waste is required under state law. In West Cape May, household pickup of recyclable cans, bottles, paper, and plastic occurs each Wednesday. Yard waste is collected in a dumpster located behind Borough Hall. In Woodbine, the county operates a Class B Recycling Facility that processes "source separated non-traditional recyclable materials, including stumps, logs, brush, and wood pallets" (MUA, 2009). It then resells some of the resulting products, including leaf compost, mulch, topsoil, and woodchips, through its MUA Landscape Products division. This provides extra income for the county and returns the composted material back to the earth, mostly within the South Jersey community.

The Department of Public Works collects recyclables weekly. Photograph by Chris Plasencia (2009)

The DPW also provides recycling pickup of cans and bottles from commercial sites each Monday. Paper recycling is currently the responsibility of each business. Based on the overall 2007 recycling tonnage brought to the county facility by the DPW, West Cape May earned a $6,000 rebate from the MUA. Reflecting the Borough's improved recycling practices, this is more than double the amount refunded in 2005.

Commercial cardboard, paint, batteries, tires, pallets, scrap metal, large appliances, electronics, and liquid waste must be brought directly to the transfer station. DPW schedules semiannual household hazardous waste and bulk trash collection days.

E. Building Practices

According to the 2005 Comprehensive Plan, West Cape May Borough is predominately comprised of single family detached homes (71%). Many of these housing units were built in the Victorian style, with 62% constructed before 1970 and 33% constructed before 1940. Although the majority of this housing stock is older, many homes have been renovated and are in excellent condition.

West Cape May's seven-member Historic Preservation Commission (HPC) is charged with protecting the character and heritage of the Borough. The historic core, which consists of Broadway south of Leaming Street, Myrtle Avenue between Broadway and Park Boulevard, and several other areas in the Fow Tract and within one block of Broadway, was listed on the National Register of Historic Places in 1976.

Guidelines for the historic district encourage structures to be reused rather than rebuilt whenever possible. The Borough's plans for the economic development of Broadway rely heavily on the reuse of historic residential buildings for commercial uses. This type of conversion has already occurred in several buildings.

The Historic Preservation Commission's guidelines for demolition allow for the possibility that a building within the district boundaries may need to be replaced, but not until every avenue for its retention is explored first.

Preservationists recognize that the greenest buildings are often the ones that are already built, as the materials and energy that would be required to construct new buildings can be saved through the adaptation of existing structures.

Left: LEED Certified Green Home in West Cape May
Center and Right: Solar Panels in West Cape May
Photographs by Sarah Colins (2009)

West Cape May has been open to a wide variety of green building practices, even in the historic district. For example, solar panels are permitted, depending on lot size, and window replacement allows for improved insulation of older buildings.

Therefore, in addition to promoting the unique character of West Cape May, encouraging renovation of existing building rather than new development helps contributes to the sustainability of the community.

F. Food Systems

At present, the municipality has no particular policy on local food production. The County does, however, state that in cooperation with the New Jersey Department of Agriculture and the Cape May County Board of Agriculture, the County Planning Board and staff will "support programs that encourage the use of locally grown farm products and efforts to secure, develop, and retain farm produce markets" (Cape May County, 2002:23).

Home on Pacific Avenue. Photograph by Katharine Otto (2009)

Vineyard on Stevens Road. Photograph by Katharine Otto (2009)

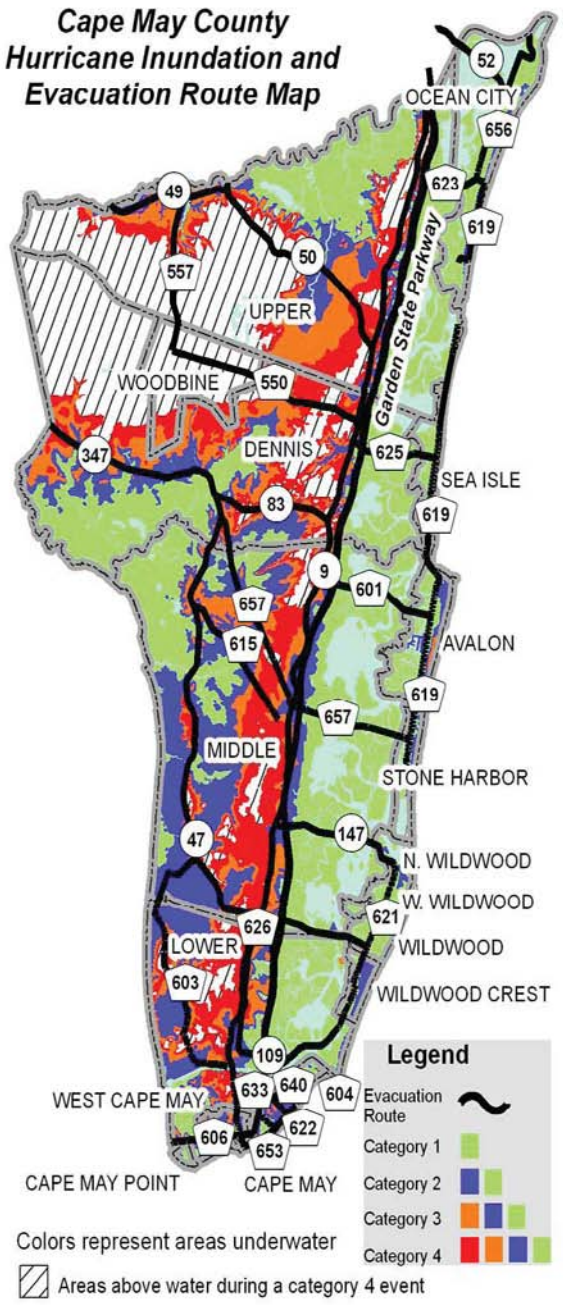
G. Emergency Management and Abatement

Like all New Jersey municipalities, West Cape May has a municipal Emergency Operations and Response Plan (EOP) that is approved on a 5-year basis by both the state and county Offices of Emergency Management. In addition to outlining roles and responsibilities as required by FEMA, EOP plans in Cape May County are required to contain the following functional annexes:

- Alert, Warning, and Communications
- Damage Assessment
- Emergency Medical
- Emergency Operating Center
- Emergency Public Information
- Evacuation
- Fire and Rescue
- Hazardous Materials
- Law Enforcement
- Public Health
- Public Works
- Radiological Protection
- Resource Management
- Shelter, Reception, and Care
- Social Services
- Terrorism Incident

Municipalities must address each of these areas, but are free to adjust the emphases of their plans to reflect the particular needs of their communities. Emergency planners also take into account the limited resources of their municipalities. When a certain type of hazard is more than the community can bear on its own, the Borough should plan how it will coordinate with neighboring municipalities to address the problem. A tension sometimes arises between the needs of the community and its capability of addressing those needs. If a best practice is not possible given West Cape May's resources, it should look to collaborate with organizations or neighboring municipalities before prescribing an inadequate response.

Route 109 is the primary Coastal Evacuation Route off of Cape Island. This route crosses the canal north out of Cape May City and connects with the Garden State Parkway, which is the county's primary evacuation route. Evacuating West Cape May residents would likely cross the canal on County Highway 626 and drive east to reach the Parkway. Route 9 parallels the Parkway and would also be used heavily in the event of an evacuation. The borough's evacuation is dependent mainly on the availability of private vehicles. Additional care must be taken to ensure that residents who are unable to drive or do not own functioning cars also have a means of egress from the island in the event of an emergency. Buses could satisfy some of this demand, but their success would depend largely on the population of the Borough at the time of the emergency. Generally, evacuation would be far more difficult in the summer than in the winter, owing to the increased tourist population during the warm season. On a weekend like that of July 4th, at least a full day's warning would be necessary to fully evacuate the area, assuming that the Parkway remains passable. Areas on both sides of the Parkway are under threat of inundation from even a Category 1 or 2 hurricane, so starting the evacuation



Source: Cape May County.

early enough would be critical. Clearly, collaboration with neighboring municipalities has been necessary in order to develop this plan for how the entire island would be evacuated if required.

The worst flood on record in the area occurred in September 1944, with tides of 8 feet. The Ash Wednesday storm of 1962, a nor'easter, did more damage than any other storm in Cape Island's history. From November 11-14th, 2009, a nor'easter associated with Hurricane Ida caused flood and damages to West Cape May. A State of Emergency was declared by Governor Corzine, which allowed for federal money and resources to be used to help those affected by the storm. Although there were no evacuation orders given, West Cape May had substantial roadway flooding that limited access out of town. "The bridge from Schellingers Landing was inaccessible and back bay flooding on Elmira Street also caused limited access between Cape May City and West Cape May." (Barlow 2009).

In addition to the threat of tropical storms, snow and ice storms are major concerns for West Cape May. Power could be lost for days or weeks and this is particularly dangerous given the elderly population and the Borough's reliance on outside resources.

Erosion and storm surge are not currently a predominant focus of the EOP, as West Cape May has no coastline. This may be an area where increased collaboration with neighboring municipalities would be advisable, particularly given the sea-level rise scenarios that the area may face in years to come.

Collaboration with other municipalities is an economic reality of emergency management on Cape Island. Unfortunately, this means that some services are located outside of the Borough's boundaries. (See Emergency Facilities Map.) Wayfinding signage could indicate where these services are located. This would

be particularly helpful for the borough's visitors and part-time population. (See wayfinding discussion in Economic Development section.)

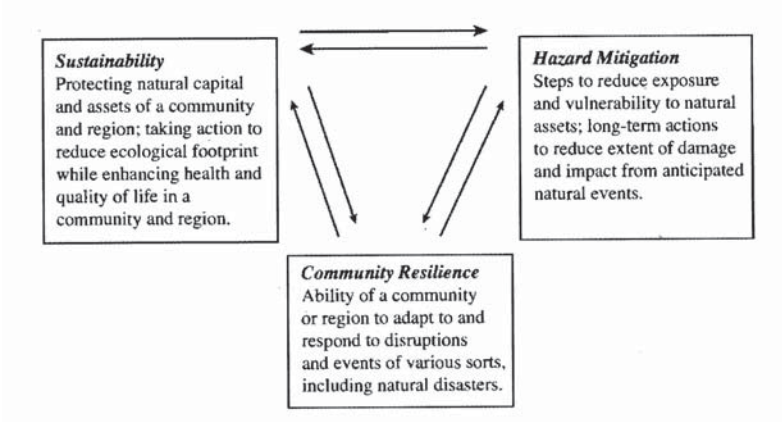
In 2007, West Cape May began to participate in the National Incident Management System (NIMS), which facilitates disaster-related information transfer between local, state, and federal authorities. In the event of an emergency, NIMS gives the Borough faster access to assistance from larger entities with more resources.

Cape May County is preparing a Multi-Jurisdictional All-Hazard Pre-Disaster Mitigation Plan. The goal is to put together a holistic plan for county preparedness by assembling the needs of each of the area's constituent communities. While the focus of the existing Cape May County EOP is emergency response, this new plan will concentrate more on mitigation efforts that could reduce the hazards faced by the county's communities before they are activated to cause a potential disaster. It is voluntary for each municipality to join the multi-jurisdictional plan. West Cape May has agreed to recognize the county as the lead agency for the project.

Creating a sustainable land base does not only involve "meeting the present needs without compromising the ability to meet future needs" (WCED, 1987), but also responding to the changes which naturally occur to the land over time. Timothy Beatley outlines that a careful balance needs to be struck in coastal area areas between sustainability, hazard mitigation and community resilience (see diagram below). This balance between the human and physical environment is particularly important on Cape Island which boasts of some of the best natural environments for migratory birds in the state.

While there are a wide variety of definitions for sustainable agriculture, it is legally defined as "an integrated system of plant and animal production practices having site-specific application that will over the long-term:

i. Satisfy human food and fiber needs.
ii. Enhance environmental quality and the natural resource base upon which the agriculture economy depends.
iii. Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls.
iv. Sustain the economic viability of farm operations.
v. Enhance the quality of life for farmers and society as a whole." (US Code Title 7, Section 3103 cited by the US Department of Agriculture's National Institute of Food and Agriculture, 2009)



The interrelationship between sustainability, mitigation and resilience.
Source: Beatley (2009:11).

1. Become involved in local coastal and bayshore management

The effects of rising sea levels will have a significant impact on the Borough over the next fifty years with relative sea level rise in the Cape May area between two and four feet during this time. To make sure all land use decisions promote sustainable development, the impact of sea level rise should be integrated into land regulations.

As shown in the Historic Shoreline Map, the shoreline of Cape Island is in constant flux. While in general the shoreline has retreated relatively slowly, the map shows the significant impact of a single storm event - the 1944 Great Atlantic Hurricane - which destroyed the Borough of South Cape May beyond repair. While storms of this magnitude are rare on the shores of Cape Island (one or two every hundred years), it is prudent to consider the potential impact of these storms and the storm surges that follow.

This plan includes six maps for the West Cape May area which show the areas of land that are at risk of permanent flooding and those which will be affected by thirty year and one hundred year storm events, as derived from the 2007 LiDAR data (see Sea Level Rise Maps and Appendix A for more information). It should be noted that these maps depict what will happen if current elevations of land remain the same and does not consider any coastal defense strategies undertaken by local coastal land owners and managers, such as TNC, NJDEP's BLM and Parks and Forestry Division, USACE, City of Cape May, Borough of Cape May Point, and the Township of Lower. Over time these coastal defense strategies will become prohibitively expensive and parts of the local land base will have to be left to be governed by the natural coastal systems of erosion and flooding. These maps do not correspond with the 100 Year Flood Map generated from 1993 data for FEMA; the 1993 data uses less accurate topographic information and was derived from an early 1990s shoreline and coastal defense strategies rather than a late 2000s shoreline and topographic information.

If the lowest projections for sea level rise occur, the Borough will lose some of the lands in the easternmost section of the municipality, around the Cape Island Creek. With a thirty year storm surge, the majority of the Borough and its surrounding lands will be under water, leaving patches of land unaffected in a corridor along Stevens Street and in an area roughly bounded by Stevens Street, Fourth Avenue and Broadway. During a one hundred year storm event the remaining land area shrinks even further.

If the highest projections for sea level rise occur, the Borough will have lost the majority of its lowest lying lands, including the large parcels that are currently vacant or farmland in the northwest section near Higbee Beach WMA, the open space and vacant lands between Morrison Avenue and South Bayshore Drive, sections of the two southernmost blocks between Atlantic and Pacific Avenues, and a significant portion of the marshland east of Park Avenue. A thirty year storm event sees a large amount of the remaining land underwater, including the main access routes, and a one hundred year storm event combined with the high sea level rise projections has less than five percent of the Borough's current land area remaining.

a. Consider a regional approach to coastal and bayshore management
At present, coastal and bayshore management is occurring in a piecemeal fashion. All stakeholders on Cape Island should consider coordinating their efforts to create a regional plan for this area. A regional plan could provide a comprehensive vision for coastal defense and potential strategic retreat, which could in the long run save valuable land, resources and funds.

b. Incorporate sea level rise predictions into local land use decision making
The vision for local land use needs to consider the availability and suitability of land for certain functions in future years. The municipality should consider reducing the density of developments or encouraging cluster zoning in the lowest lying areas of the municipality. Building practices that consider the Borough's coastal environment situation should also be encouraged (see Building section).

2. Encourage sustainable agriculture

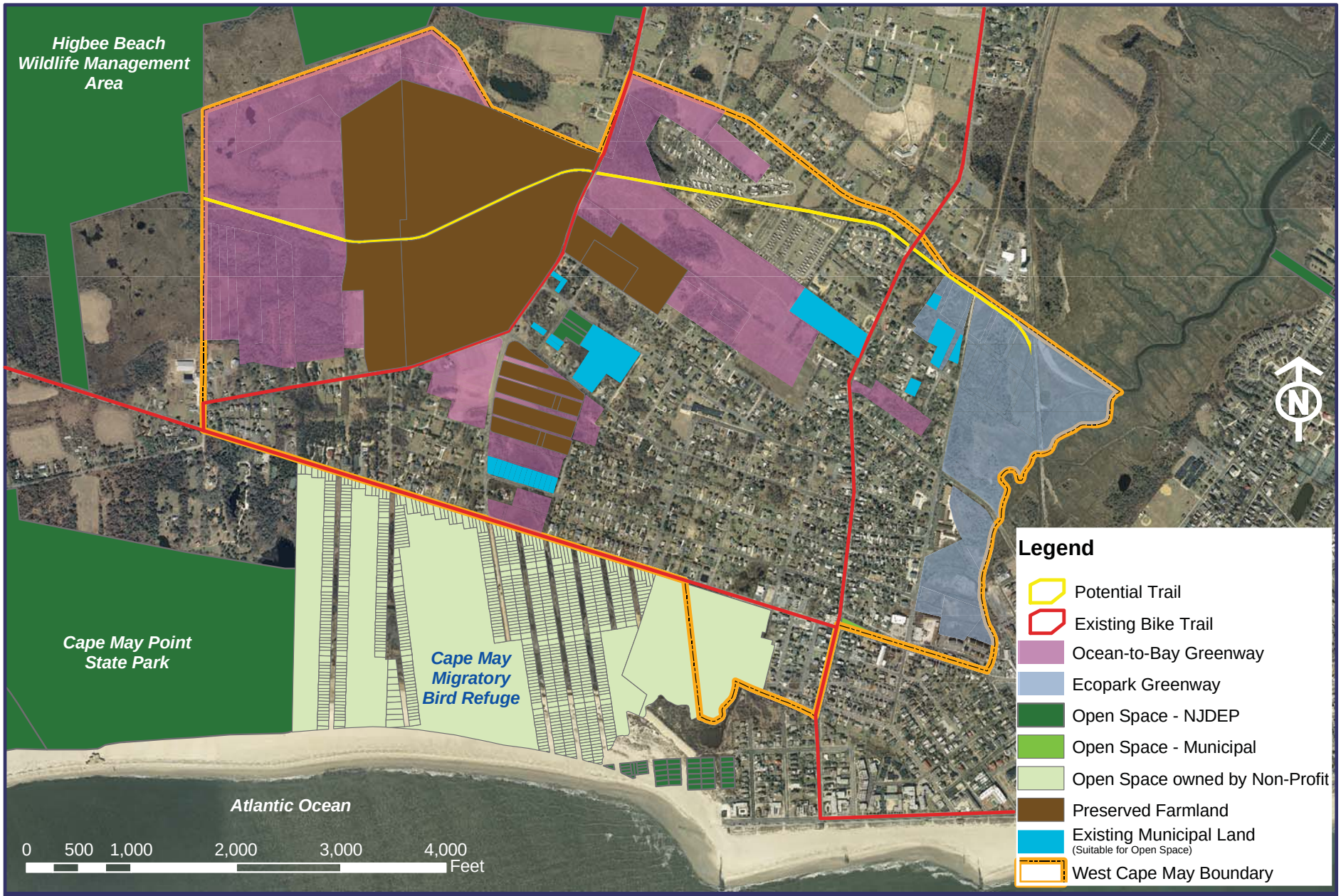
a. Pursue Farmland Preservation
The cost of land is the biggest expense most farmers face, whether they own or lease land. One way to release some capital from the farmland is to sell the development rights and overlay an easement, thereby preserving the land as farmland for future generations. The Borough should continue to support farmland preservation with the assistance of the County and State Farmland Preservation Programs.

b. Promote environmental stewardship
There are many different ways to pursue environmental stewardship as it relates to sustainable agriculture, such as rotational grazing and cropping, using cover crops, water conservation, nutrient management, and integrated pest management. Many of these initiatives can be also be adapted to a smaller scale community garden.

3. Conserve environmentally sensitive and non-buildable land

a. Create a Borough Open Space, Farmland and Historic Preservation Trust Fund
By raising its own funds for preservation, conservation and maintenance of open space, farmland and historic properties, the Borough can not only leverage funds already utilized from the State and County, but also consider pursuing acquisition of properties of more local importance. To fund preservation and maintenance of properties for open space, farmland or historic preservation, the Borough should consider adopting an ordinance that dedicates part of the annual taxes collected to a trust fund. By dedicating a portion of these taxes, the Borough can reduce the need to bond to match funding from County or State Open Space, Farmland or Historic Preservation Trust Funds. This avenue has been pursued by many municipalities across the state, with rates typically ranging from 1 cent to 5 cents per $100 of assessed property value (Association of NJ Environmental Commissions (ANJEC), 2001).

The majority of the open space lands in Cape May County acquired by the County are for community-based active recreation lands, while the State and non-profit groups in



Proposed Greenways Map
West Cape May, NJ

Sources: NJDEP, 2008 and NJACTB, 2009 (Open Space); Cape May County, 2007 (Farmland); NJ DOT, 2008 (Bike Trail)

Map drawn by Katharine Otto
Last Modified on 11.18.09

RUTGERS
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general pursue the more environmentally sensitive areas in the county. The County Open Space and Farmland Preservation Trust Fund is currently levied at 1 cent per 100 dollars of assessed value, with approximately five million dollars collected across the county in 2008 (Ernst, 2009).

The Borough should also consider bonding to provide the funds for preservation of the Eco-Park and other local open space properties.

b. Pursue passive recreation open space opportunities

Open space preservation and critical habitat protection are best carried out in corridors of land allowing for easy passage between spaces. These corridors of open space are often known as greenways, and they often center on continuous walkways and trails, natural features, and can act as connectors between different destinations within a community. Open space is also useful as a natural water storage area, which can reduce the vulnerability of other areas to flooding.

The Borough currently has a large amount of vacant or underutilized land, particularly in its northern and eastern locations. To encourage optimum utilization of this land, the Borough should consider the subdivision of some of the larger lots, with the area closest to the roadways dedicated to residential and commercial development, and the back portions of the lots (which are often already constrained by wetlands) dedicated to open space. This would assist in the development of both the Ocean-to-Bay Greenway and Eco-Park plans for the Borough that were outlined in the 2005 Master Plan, and allow for an expanded area of the Township to be considered as potential open space (see Proposed Greenways Map opposite).

c. Support an environmentally sensitive approach to future development

The following recommendations should be followed for the review, approval and construction of the future development projects detailed in section 9.2.3. of the *Open Space and Recreation Element* (2005:113):

i. Strictly limit or discourage disturbance of environmentally sensitive lands such as freshwater wetlands, coastal wetlands, central corridor wetlands and flood plains.
ii. Require identification and mapping of all environmentally sensitive lands at time of development application.
iii. Encourage enforcement of existing federal and state floodplain and wetlands regulation.
iv. Encourage early review of development plans by the Planning Board to achieve site designs which recognize and respect the sensitive character of the land.
v. Encourage the use of the residential cluster provisions where appropriate.
vi. Protect water supplies from non regenerative uses.
vii. Protect the quality of groundwater and surface water to safeguard its use as drinking water and within natural habitats.
viii. Require Best Management Practices to control the use of pesticides and fertilizers on properties that drain into waters.
ix. Encourage new practices in stormwater management to increase water quality and minimize environmental

disturbances.

x. Preserve natural vegetation including woodlands, fields, and wetland communities. Also preserve specimen vegetation.

4. Encourage naturally functioning ecosystems

a. Plant native vegetation

A New Jersey native plant is one that grew in the area before the arrival of the colonists. There are many advantages to planting native plants in public and private gardens, particularly a lesser need for watering and maintenance than non-native plants because they are more suited to the climate and soil type. Native plants are also more attractive to the migratory bird and butterfly species that frequent the area. West Cape May's Shade Tree Commission has published a variety of information on native plant and tree species suitable for the local area. Also see the Water Resources section of this plan for native vegetation applications and efficient soil use measures.

b. Encourage sustainable landscaping

Each individual site has different topography, soils, light levels, and water levels—differences that require a responsive approach to landscaping. Altering the design of a landscape, small or large, can have significant effects on nearby ecosystems, groundwater recharge rates, and wildlife. Reducing impervious surface coverage, setting up rain barrels, or establishing a rain garden can help recharge local water tables. Using native vegetation allows for low maintenance landscaping and promotes efficient and harmonious local ecosystems for plants and wildlife.

Efficient water use depends on the understanding of current water resources, availability, uses, and steps taken to improve both quality and quantity. Water resources are largely renewable. There are three critical issues, however, that must be addressed to ensure sustainability: surface water, groundwater, and storm water. Surface water is water collected on the ground, in a wetland, or in a stream, river, or lake. When surface water from precipitation and bodies of water seeps sub-surface, it recharges the water table, thus naturally replenishing the groundwater. Groundwater consists of soil moisture and the water flowing through shallow aquifers. Storm water is water that originates from precipitation events or another source that enters the storm water system. Storm water that does not soak into the ground becomes surface runoff, which flows into surface waterways or storm sewers. These three water sources closely intersect, as the presence, quality, or quantity of one heavily affects the status of another.

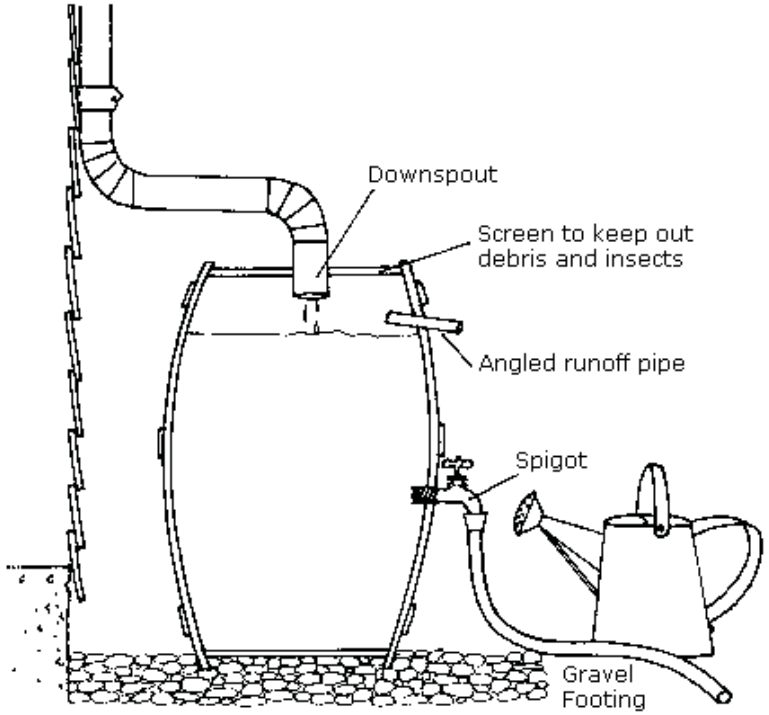
Raingardens
Source: USDA-NRCS, Des Moines, IA

1. Minimize or eliminate the unnecessary use of potable water.

a. Educate and encourage residents to use rain barrels for outdoor water use to eliminate potable water use for landscape irrigation.

Landowners should be encouraged to use rain barrels to collect and reuse water. This device collects and stores rainwater from a home or building's roof that would otherwise become runoff. A rain barrel is typically a large drum with an attached vinyl hose, and it sits beneath a gutter downspout. The rainwater that is collected can then be slowly infiltrated back into the soil as groundwater or be used for watering a garden, lawn, potted plants, or cars. Using water collected in rain barrels reduces potable water usage. For the individual, the use of rain barrels will lower the cost of water usage and provide fresher, natural soft water for their plants. In the summer, a rain barrel will save the average US homeowner 1,300 gallons of water (EPA 2009). These individualized actions will also greatly benefit the Borough and region; the use of rain barrels has a dramatic affect on the surrounding environment, as the diversion of water from storm drains or streets significantly decreases the impact of runoff: "one inch of rain on 1,000 square feet of rooftop creates over 600 gallons of stormwater," so the diversion and storage of this water allows for the reduction of sewer system overflow and street and basement flooding (DC Greenworks, 2009).

Rain Barrels collect water to be reused for landscaping
Sources: Metropolitan Council (2007); and Town of Menasha (2009)



b. Improve water efficiency by encouraging indoor water reduction.
Companies, small businesses, and homeowners should install low-flow, water-efficient appliances, which will both reduce water usage and decrease costs.

- Organize a "Stop The Leak" campaign to educate residents and encourage them to check for and repair leaky pipes and faucets. Fixing a leaky faucet can save an average of 140 gallons a week.
- Residents should be encouraged to install low-flow shower heads and sink spigots. A water-efficient shower head can save up to 750 gallons a month.
- Homeowners and businesses should be encouraged to purchase low-flow toilets. When this is not possible, a displacement device should be placed in the tank to reduce the amount of water used per flush.
- Homeowners should be encouraged to purchase front-loading washing machines, which use 40-60% less water than top-loading machines.
- Restaurants and homeowners should only run dishwashers when they are full. If the machine is fairly new, items do not need to be pre-rinsed before being loaded.
- Residents and businesses should be encouraged to upgrade to air-cooled appliances if they currently have refrigerators, air conditioners, or ice makers that are cooled with water flow rather than air.
- When water from rain barrels cannot be used, vehicles should be taken to a car wash instead of washed by individuals. Washing a car on one's own can use up to 500 gallons of water, while a car wash uses roughly 32 gallons per vehicle.

2. Recharge groundwater supply and prevent surface runoff

a. Educate and encourage residents to use rain gardens in their outdoor landscaping.
Landowners should be encouraged to create rain gardens on their properties to allow rainwater to be collected and to seep naturally into the ground. A rain garden is a shallow depression landscaped with native plants, which are tolerant of the local climate and conditions and consequently do not require fertilizer, heavy watering, or significant maintenance. These gardens allow storm water to soak into the ground, thus minimizing runoff by preventing water from flowing into storm drains and surface waters. As the water captured in a rain garden moves into the ground, nutrients are used by the plants, pollutants are filtered out, and pesticides are broken down by microorganisms. Redirecting this water back into local aquifers helps buffer well water supplies

Rain garden in full bloom intercepts runoff before it reaches impervious surfaces. Source: Obropta (2006:1)

from saltwater intrusion. Rain gardens are landscaped, so they are visually appealing, and they also create a habitat for birds, butterflies, and beneficial insects. Just 40 rain gardens will treat and recharge 1,000,000 gallons of water per year (Obropta, 2006:4). Incentives should be established for the creation of these gardens, which will significantly impact the amount of both potable water and stormwater.

b. Develop and implement initiatives to use alternative pavement forms to assist in both groundwater and stormwater management.
Pervious pavers are typically made from a variety of materials ranging from concrete to stone, and are placed within a rigid frame on top of a sand bed or an under drain system. Sand or gravel fills the gaps between pavers, allowing water to pass to the underlying subgrade and then infiltrate into the ground. Pavers help reduce the rate and volume of stormwater runoff. They may also even eliminate the need for an underground storm drain system completely.

Turf block driveway of current West Cape May resident.
Photograph by Katharine Otto (2009)

Pervious pavement is different from traditional concrete or asphalt in that it has more air spaces that allow water to pass through the pavement into a reservoir base of crushed aggregate, then infiltrate into the ground. This pavement only accepts precipitation. It has many of the same benefits as pervious pavers.

Turf block consists of interlocking concrete or plastic cells filled with soil and planted with turf grass or a low-maintenance groundcover. Water passes through the turf block into a reservoir base of crushed aggregate, then infiltrates into the subgrade. Turf block is best suited for areas of low traffic and infrequent parking, such as patios, walkways, and terraces, residential driveways, overflow parking areas, emergency access roads, and street shoulders. In addition to the benefits posed by pervious pavers and pavement, turf block helps in recharging groundwater and controls erosion.

c. Implement the usage of bioswales on a municipal level.
The Borough of West Cape May should implement an initiative to create bioswales along streets and around parking lots in order to filter runoff on a larger scale. Swales are gently sloping depressions planted with dense vegetation or grass that treat stormwater runoff from rooftops, streets, and parking lots. As the runoff flows along the length of the swale, the vegetation slows and filters it, allowing it to infiltrate into the ground. It is imperative to plant native

Above: Current flooding conditions on Bayshore Road. Photograph by Katharine Otto (2009)

Below: Development of bioswales optimize water absorption, thereby reducing road flooding. Source: www.flickr.com/photos/jollyroberts/2578682788/sizes/l/in/set- 7215760 5613814233/

vegetation in these swales because of West Cape May's sandy soil. These native plants will aid in the removal of pollutants from the water as it filters back into the ground.

3. Reduce contamination of water sources by individual landowners.

a. Eliminate the application of excessive fertilizer through soil testing. Land owners should be encouraged to have their soil tested by Rutgers University's New Jersey Agricultural Experiment Station (NJAES). Recommendations are given by a soil scientist on how much fertilizer should be used to maximize growing conditions. For the individual, a soil test is extremely cost effective and takes the guess-work out of fertilization: it will tell a homeowner what plants will grow best in current soil conditions, and what should be done to optimize fertility for a desired plant by making specific changes to the soil. On a larger scale, having soil tested eliminates over-usage of fertilizers and consequently decreases nutrient runoff into surface or groundwater supplies. Pesticides should not be used, as they contaminate soil and water. NJAES will give landowners specified results for their property's soil pH, resistance to pH change (soil buffering capacity), and nutrient levels. These pieces of information are necessary to determine whether soil amendments should be made in a certain planting area.

4. Pursue a regional approach to manage salinization problems.

As West Cape May currently purchases its water from outside of the borough, it must consider that it has both a local and regional responsibility; not only does West Cape May need to develop sustainability measures to treat and preserve water

on a local level, it must also work regionally to address the effects of salt water intrusion into their water supply and to create a regional plan for the desalination facility.

At present, if the region does not meet the threshold amount of water consumption from the desalination plant, the unit price of the water increases to cover the basic running costs of the facility. To some extent, this encourages water conservation practices as residents try to reduce their dependence and spending on the desalinized water. However, the increased water prices increase basic living expenses for residents, thereby reducing affordability and sustainability.

C. Energy Resources

"Sustainable energy is the provision of energy such that it meets the needs of the present without compromising the ability of future generations to meet their needs" (REEP, 2008). It refers to proactive and preventative measures that incrementally preserve available energy resources for future use, with the least amount of energy output and environmental disturbances. Sustainable energy refers particularly to technologies and methodologies that improve overall energy efficiency.

Alternative energy producers on a residential scale. From left to right: solar panels (source: groSolar, 2009), geothermal heating (source: Geo-Pro Design, 2009) roof-mounted wind turbines (source: Energy-Evolution, 2008 and Sierra Club Green Home.com, 2009), solar panels paired with wind turbine (source: NOMADiQ Shelter Solutions, 2008).

1. Decrease Carbon Footprint of West Cape May by 20%

a. Maintain high carbon sequestering land uses .

Carbon sequestering is the process of storing carbon dioxide in different forms of carbon, and preventing it from entering the atmosphere through biological, chemical, and physical processes. This can be done through a variety of actions that West Cape May can implement.

The deposition of urea, high in its nitrogen level, into the ocean would promote and stimulate the growth of phytoplankton. Phytoplankton is a form of vegetation that absorbs carbon dioxide, and its accelerated growth in the bodies of water that surround Cape May Island could significantly reduce the amount of carbon dioxide being released into the atmosphere.

The alteration of agricultural practices could have a significant effect on the amount of carbon dioxide being released annually. Ideally, any efficiency improvement in farming will result in lowered carbon emissions, due to larger amounts of crops being produced using the same amount of energy.

The enhancement of bogs or wetlands in West Cape May is another method of sequestration. The wetland environment typically produces a high level of dead vegetation in the form of moss and algae, which can absorb carbon emissions from the atmosphere and store it indefinitely.

b. Perform energy audit for municipal buildings.

In accordance with the NJ Sustainability Certification guidelines, West Cape May can conduct a full energy audit and assessment of municipal resources, energy output and carbon emissions. An energy audit of all facilities owned and operated by the municipality can be conducted to establish where and how energy is being used, and to identify opportunities for cost and energy savings. An audit will identify buildings that are in need of new heating/cooling systems and show which buildings should be retrofitted with high-efficiency lighting.

c. Convert Borough's vehicle fleet to biodiesel fuel.

Biodiesel is a fuel that can be used in any diesel powered vehicle. It is biodegradable and non-toxic. Biodiesel is a method of reducing carbon footprint as it only releases the carbon dioxide that the plants absorbed while growing; therefore, there is no negative impact on the carbon cycle. Through the use of wasted vegetable and cooking oils, biodiesel fuel can be generated on a small scale level which would be ideal for West Cape May's small municipal fleet.

d. Weatherize municipal buildings.

Buildings identified in the energy audit as exhibiting large amounts of energy loss and inefficiency during the winter months should be looked at as candidates in need of weatherization. Areas with poor insulation such as around old or large windows can be retrofitted with ones that are more efficient in the winter. Since West Cape May experiences such a large decrease in population and therefore municipal services during the winter months, winterization is a key to being more energy efficient.

e. Encourage the use of energy efficient appliances and practices.
New Jersey has begun to push the introduction of energy efficient practices. By renovating residences, businesses and municipal and county operated structures to make them more energy efficient, the Borough will slowly make the incremental changes needed for future sustainability. Several small steps can be taken to significantly reduce the overall energy consumption, carbon footprint, and energy cost per household.

- *CFL light bulbs* offer substantial energy savings over extended periods of time. They can last 6,000-15,000 hours, as compared to traditional incandescent bulbs, which fade after 1,000 hours. Replacing a normal bulb with an energy saving bulb could potentially cut energy waste by three quarters and save residents up to $108 a year on their electricity bills. In 2009, West Cape May allocated $23,500 for the maintenance of their street lamps (West Cape May Budget, 2009). If every home in West Cape May changed just 5 light bulbs, enough energy would be saved to light the Borough's street lamps for the entire year. A CFL will use a mere 33% of the power used by an incandescent light bulb. Lighting accounts for 9% of US household expenditure on energy. The price of CFL bulbs range from 3 to 10 times the average incandescent bulb (approx $1 - $6).
- *Loft insulation* is one of the most cost efficient ways of reducing heating bills. The ideal thickness of loft insulation is about 200mm (8 inches). A quarter of the heat used to heat a structure is lost through the loft, and 270 mm is the minimum depth of insulation recommended by the government to combat this (E-On, 2008). Industry standards now require that all new developments have at least this amount of insulation built into loft areas. This saves one metric ton of carbon dioxide a year, or $205 in heating costs. The median year built for all structures in West Cape is 1959. An upgrade to the insulation of the older structures could significantly reduce the overall community carbon footprint.
- *Cavity wall insulation* is another cost effective way of reducing heat loss. It is a simple measure that reduces heat loss in walls by up to 60%. Walls must be inspected for suitability. Cavity walls are typically at least 12 inches thick and are comprised of an outer and inner wall separated by an air gap. Government grants are available to offset the cost of cavity wall insulation. The installation could save up to $350 per household, per year on heating bills. In total, West Cape May residents could save $177,000 a year in heating costs.

2. Implement an Energy Conservation Outreach Program

Measures to increase the overall awareness of energy efficiency and the need for future sustainability will aid West Cape May in securing a viable and well received plan that people will support.

a. Continue to educate the community through displays at local fairs showing cost and energy savings.
This has been done with great success at recent borough fairs in West Cape May.

b. Partner with local schools and non profit organizations to promote energy efficiency.
Organizations such as Greenmarket Fundraising and Project Porchlight collaborate with schools and the Board of Public Utilities to educate citizens about the benefits of energy efficient light bulbs.

c. Solicit donations from local and national organizations.
Partnering with environmentally conscious corporations will expand West Cape May's resource base and secure the municipality as a forerunner in a fast-paced nationwide initiative. Obtaining a Sustainable Jersey certification will provide the necessary tools to identify potential partners and solicit funding from a diverse resource base (see Partnership Opportunities section).

3. Encourage inclusive zoning and land use

a. Introduce multifamily, mixed-use buildings.
Apartments in buildings with 2 to 4 units typically use 20% less pounds of carbon per year due to shared resources such as walls and insulation (Andrews 2008). West Cape May is currently characterized primarily by single family units. Shifting new development in the direction of multifamily, mixed-use structures could potentially sustain fluctuating future growth patterns while maintaining the Borough's mission of preserving open space, as well as aid in the provision of mandated affordable units. These development patterns should be constrained to key downtown commercial areas to create a thriving mixed-use core, thus sustaining the historic character of the surrounding residential areas.

4. Reduce reliance on electrical energy

New Jersey's Energy Master Plan is dedicated to having 30% of the state's energy generated from renewable resources by 2020. In order to assist individuals and municipalities in collectively achieving this goal, the New Jersey Clean Energy Fund has designed the Renewable Energy Incentive Program (REIP), which provides rebates for installation and maintenance.

a. Promote solar panel installations.
Work with the historical district committee to create a code that would maintain the historical nature of the area and still provide the opportunity for solar panel installation. Solar panels can be used to generate electricity for a home using small panels that are specifically designed for domestic use.

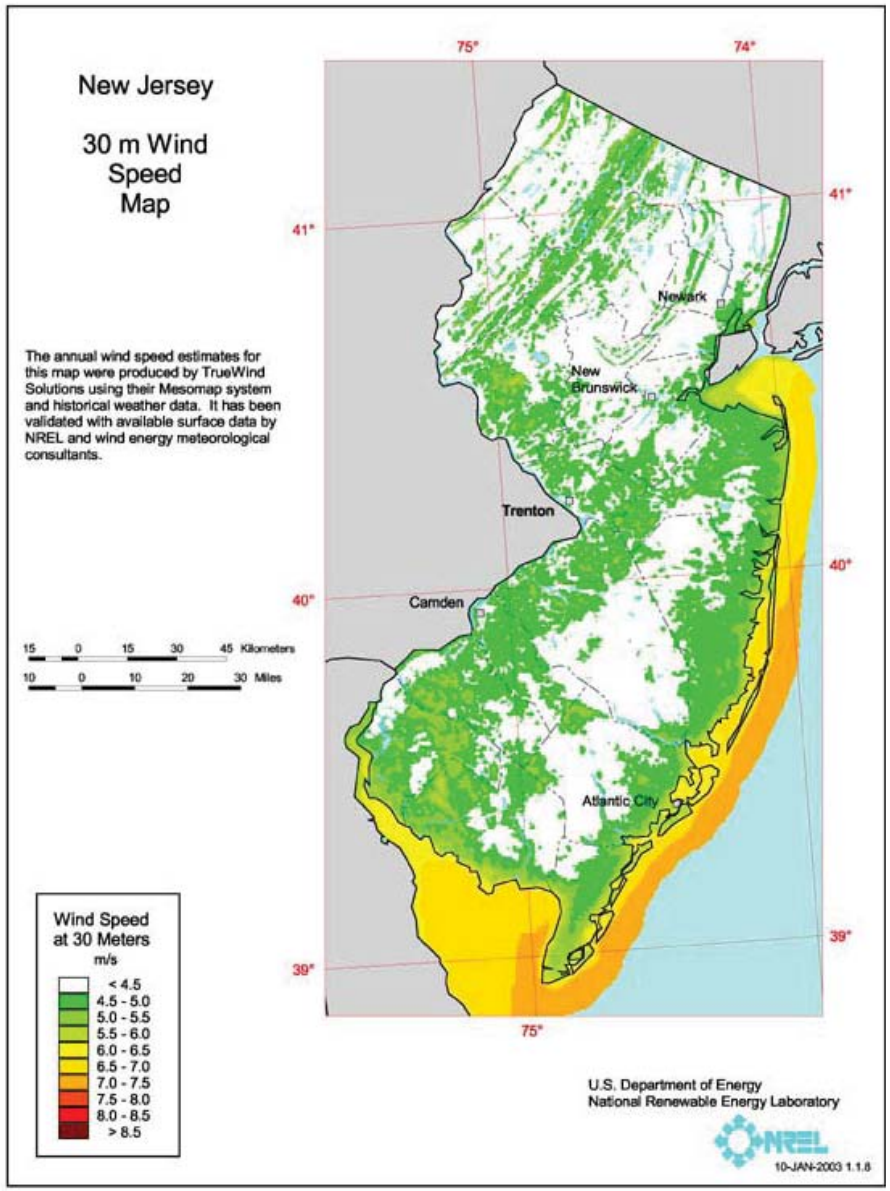
Solar Electric System of West Cape May's Municipal Building
Photograph by Matthew Ward (2009)

The capacity of these panels vary, but a typical system is usually in the range of 2.5-6 kilowatts. Solar panels can be installed on or off the grid. A special inverter will convert "DC" electricity to "AC" electricity that the grid will read. Any excess electricity that goes unused can be monitored and sold back to the electric companies, a process referred to as "net metering'. In September 2007, the New Jersey Board of Public Utilities (BPU) approved an order regarding the redesign of the state solar energy program. As a result, the Office of Clean Energy (OCE) has been working collaboratively with various electric supply companies throughout the state to develop regulations regarding the net metering process. Atlantic Electric, which supplies energy to West Cape May, is one of those companies. As of 2009, there has been no cap placed on the amount of energy that is permitted to be sold back to the electrical companies, which means that properties that install panels could systematically generate additional income with their Renewable Energy Credits (REC's).

b. Encourage wind farms.

Wind power can also be used to generate electricity for a home using small turbines. Like with solar panels, any excess electricity that goes unused can be monitored and sold back to the electric companies. A current ordinance passed February 2009 prohibits the use of large scale wind energy generation facilities within West Cape May. Wind turbines are limited by lot size and energy must not be used for commercial purposes or off-site distribution. This does not support the County's mission of using large agricultural land in high wind areas for large scale wind farms.

Cape May County has a goal of being New Jersey's leader in land-based wind power plant development. An in-depth analysis shows that the cultivation of Cape May County's agricultural land for wind farms could satisfy the New Jersey



Source: www.bergey.com/Maps/nj_30m.pdf

Energy Master Plan's goal of both onshore and offshore winds (3,200 MW), even when potential sites are restricted to agricultural parcels of 3 acres or more. The recommended average wind speed for all sites being considered for large scale wind turbine placement is 15.7 miles per hour (7.01 meters per second) (Cape May County, 2009). As shown in the New Jersey Wind Speed Map (see previous page), West Cape May has an average wind speed of 12.30 - 13.42 miles per hour (5.5-6.0 meters per second). Although less than ideal for large scale wind farms, these wind speeds are optimal for the introduction of smaller turbines that could provide power for a portion of the Borough. West Cape May possesses a unique advantage over the rest of the state and county in regards to its suitability for smaller scale agricultural wind farms. As shown in the Map of Lands Suitable for Wind Farms, the agricultural lands that lie northwest of Highway Rd 607 consist of 8 parcels above 3 acres in size, and the area that lies northeast of 6th Avenue consists of another 3 parcels that are 3 acres or more. West Cape May possesses adequate agricultural lands to provide dual economies to its farmers who choose to partner with wind developers to capitalize on their natural resources. Revising the current turbine ordinance to allow for multiple turbines on a given parcel could ideally serve the owner with additional revenue, as well as provide power for the surrounding area without tapping into increasingly scarce resources.

c. Promote biomass conversion.

Biomass is a leading technology that allows the use of existing organic matter to be converted to usable fuel or electricity. The Cape May County Municipal Utilities Authority (MUA) has successfully developed power plants from the existing landfill and currently exports additional landfill methane gas to the NJ Department Treasury at Woodbine Development Center. Other forms of biomass such as waste wood burning, degasifying organic matter, sewage plant digester gas, and the refining of waste cooking oils from local kitchens, restaurants and food processing plants should be expanded.

Improving waste management is among the easiest and fastest ways for a community to make progress toward a more sustainable future. Programs to increase reuse and recycling have grown more common in recent years. The New Jersey Statewide Mandatory Source Separation and Recycling Act (N.J.S.A. 13:1E-99.11 et seq.) requires that 50% of municipal solid waste and 60% of all waste is recycled. NJDEP offers the following strategies to help counties and municipalities achieve and surpass this goal:

- Maintain a recycling program in all municipal facilities
- Adopt a recycling ordinance that covers as many classes of material as possible
- Offer curbside recycling to residents and businesses alike
- Establish a recycling depot and a composting center
- Include recycling strategies in the municipality's master plan
- Adopt a construction & demolition waste recycling ordinance
- Publicize the municipal recycling program more than semiannually, as required by law
- Establish a municipal recycling enforcement program
- Ensure that all appropriate businesses provide containers for recyclable waste

1. Reduce overall waste and recycle as much municipal, business, and household waste as possible

a. Promote recycling.

Increase the visibility and number of recycling containers in municipal facilities and in public areas. Consider an educational campaign for full-time residents, and provide the owners of rental properties with materials to help renters participate in the Borough's recycling efforts.

b. Recycle a wider range of materials.

Some counties in New Jersey have programs in place to recycle asphalt, bricks, concrete, fluorescent bulbs, polystyrene, and plastic containers with a Resin Identification Code higher than 2; however, the recycling of these materials is not mandated in Cape May County.

c. Prioritize source reduction.

The Borough should advocate and provide incentives to reduce the materials and energy needed to make and deliver products. For example, they should seek out local goods that come in responsible packaging. Businesses should be encouraged to package their goods in a more sustainable manner. Residents should be encouraged to buy local whenever possible.

d. Educate residents about smart consumption and waste reduction.

Examples of this can include:

- Encourage residents to reduce their consumption of products containing excess packaging.
- Encourage residents to use more environmentally friendly packaging products.
- Encourage residents to also recycle materials that are not currently picked up by the DPW. These materials can be dropped off at designated areas.
- Encourage composting and educate residents about proper composting practices. Composted materials could be used in either residential gardens or local farms, or outsourced to nearby municipalities. A community garden could also benefit from the products of local composting efforts.
- Properly dispose of hazardous items, such as paints, cleaning agents, anti-freeze, old appliances, pesticides, and computers.
- Work with neighbors to reduce waste by exchanging

Businesses in particular should be encouraged to reduce the packaging of their goods. Source: Treehugger.com.

and re-using goods, holding yard sales, etc.

- Encourage homeowners to purchase household products (e.g. cleaning products, environmentally friendly paints) that are better for the environment. Post a list of suggested environmentally safe household products on the municipality's website.

In an effort to encourage the adoption of these practices, it is essential for the municipality to educate its residents about the importance of smart waste reduction. Proper education and encouragement should be used to get homeowners out of their familiar waste disposal practices and to get them thinking conscientiously about ways to reduce unnecessary consumption. This education should come in the form of public seminars, workshops, promotional material, an interactive website, etc. Small incentives could be offered to homeowners who take initiative to consciously follow these practices. Perhaps a collective goal could be established by the community, and if this is achieved, a reward is allocated (e.g. a borough-wide barbeque party, a temporary reduction of some sort of local tax, etc). On a greater scale, possibly work with the County to establish some sort of incentive program to promote further waste reduction.

Community compost piles for food and other waste would be worthwhile supplements to the countywide landscape waste composting program. Source: OrganicGardenInfo.com.

2. Encourage composting

a. Increase contribution of non-traditional materials to MUA composting efforts.

Tree stumps and other materials that are otherwise difficult to dispose of are sought after by the County's wood products division. Property owners should be made aware of DPW's willingness to pick up these materials and deliver them to the county for composting.

b. Promote development of independent borough and regional compost centers.

Either within West Cape May or in coordination with other Cape Island municipalities, establish a local compost pile site. This would allow residents who do not or cannot have a compost bin on their own property to dispose of their compostable waste properly. It would also increase the amount of finished compost that may be used by the community as a result of the process. A site outside a floodplain would be ideal, but locations above the 25-year inundation level would also be acceptable.

3. Enforce the construction and demolition recycling ordinance

The historic district and the limits on growth in the outlying areas of the Borough limit the amount of construction and demolition that occurs in West Cape May. However, new subdivisions, coastal adaptations, and the potential for an enhanced commercial district on Park Boulevard make it important for the Borough to verify that waste associated with these activities is disposed of as efficiently as possible.

E. Building Practices

As an area rich in charm and history, West Cape May should focus on creating a sustainable building inventory through the redevelopment/reuse of existing historic structures, as well as the development of new mixed-use buildings throughout the center of the Borough. Reuse instead of rebuild should become the preferred building practice. Restrictions on the appropriateness for demolition and an attempt to maintain public opinion in favor of preserving the core should be considered by the municipality. Growth should be discouraged in the outlying portions of the Borough and incentives should be provided for the successful adaptation of historic buildings for commercial use. These practices will preserve unique architectural elements and ensure that the variety and scale of structures remain unchanged. Green building practices should be used in all new renovations, aligning historic preservation efforts with sustainability. When it comes to encouraging sustainable coastal development, the municipality must take a leadership role in ensuring that appropriate practices will be executed. The municipality should also require that all new development is to be completed using materials and practices that will withstand coastal conditions. It would be in the municipality's best interest to provide its residents with the necessary resources and guidelines for the practices mentioned throughout this section.

The Albert Stevens Inn, West Cape May. Photograph by Katharine Otto (2009)

1. Encourage green building practices within new developments as well as renovations

As the many older, Victorian-style homes in West Cape May continue to age, further renovations will be necessary. It is in the best interest of the municipality to regulate both new construction and renovation in a way that adheres to green building standards. Because many of these buildings are older than 30 years, it would be beneficial to both the homeowners and the municipality to regulate standards when it comes to residential housing development and redevelopment.

According to the EPA, green building provides significant environmental, economic, and social benefits:

- Environmental benefits
  - Enhance and protect biodiversity and ecosystems
  - Improve air and water quality
  - Reduce waste streams
  - Conserve and restore natural resources
- Economic benefits
  - Reduce operating costs
  - Create, expand, and shape markets for green products and services
  - Improve occupant productivity
  - Optimize life-cycle economic performances
- Social benefits
  - Enhance occupant comfort and health
  - Heighten aesthetic qualities
  - Minimize strain on local infrastructure
  - Improve overall quality of life

The EPA offers basic guidelines for the construction and operation of green buildings:

i. Careful site selection to reduce negative environmental impacts
   - Execute proper soil and erosion testing to ensure structural stability

ii. Energy conservation
   - Conduct a home energy audit
   - Use environmentally friendly insulation materials
   - Use ENERGYSTAR appliances
   - Determine eligibility for Clean Energy programs (solar, wind, biomass)

iii. Water conservation
   - Conduct a home water audit

Raingarden
Source: USDA-NRCS, Des Moines, IA

- Replace old appliances and fixtures with new water conserving products
- Use water saving techniques at home such as washing clothes and dishes only in full loads, turning off the faucet while brushing teeth, collecting rain water in rain barrels for watering plants, landscape with native plants, etc.

iv. Responsible storm water management
- Incorporate rain gardens
- Construct bioswales
- Install pervious pavement

v. Waste reduction, recycling, and reuse of green building materials
- Use scraps from third party users
- Reuse materials already on site
- Recycle construction waste
- Enforce onsite grinding of engineered lumber and cellulosic materials
- Compost when feasible
- Focus on environmentally preferred products

vi. Improved indoor air quality
- Minimize the use of heavy chemical-laden products like certain paints, sealants, treated woods, and cleaning materials.

vii. Reduce heat islands
- Increase tree and vegetative cover
- Install green roofs
- Install cool, reflective roofs
- Install cool pavements

viii. Allow ecosystems to function naturally
- Use native plants and trees to enhance water drainage and

To encourage its residents to build green, West Cape May could adopt its own building standards or develop its own municipal criteria for the evaluation and promotion of new development and renovation. Zoning incentives can be used to further foster resident participation as well as various tax abatement programs, cash incentives, educational initiatives, and expedited permit incentives.

The municipality can take the role as lead promoter when it comes to educating its residents about green building practices. Effective and interactive promotional materials can be distributed to residents. For larger projects such as solar and wind power, residents and business owners should be provided with a step by step outline of the entire process; this process should be made as straightforward and accessible as possible to all interested parties. A website can be established as a comprehensive source for gathering information. A section of this website could provide estimated cost calculations for solar and wind projects for a variety of different sized homes, coming directly from certified contractors. The public should be given a summary of potential funding subsidies for these projects and how to go about applying for them.

2. Maximize Broadway corridor as a commercial hub while retaining its historic character and encouraging green building practices

The Pocantico Proclamation on Sustainability and Historic Preservation was created in 2008 by the National Trust for Historic Preservation (NTHP), Friends of the National Center for Preservation Training and Technology, and a group of preservationists, architects, green builders,

and energy experts. Through their discussion of how to carry out the sustainability imperatives of climate change, economics, and equity in the field of historic preservation, the following principles were developed to define what sustainability entails in this area:

- Foster a Culture of Reuse
- Reinvest at a Community Scale
- Value Heritage
- Capitalize on the Potential of the Green Economy
- Realign Historic Preservation Policies with Sustainability

West Cape May should capitalize on the historic elements of Broadway by providing retail space for businesses in retrofitted historic buildings. Currently, Broadway blends historic elements with retail establishments. The Westside Market, Panico's Pizza, Weddings by the Sea, and Mangia Mangia are examples of current business establishments housed in historic buildings. While these historically housed commercial establishments do exist, additional steps should be taken to further enhance the viability of this unique area.

People gravitate to historically defined areas because these places hold: "1) a variety of spaces, building types, sizes and uses, 2) interesting architectural features, 3) architectural beauty and local character, 4) association with the past, 5) human scale buildings and streetscapes, 6) richness and warmth in design, 7) physical manifestation of a city's reinvention, 8) social interaction, a sense of place and quality of life" (English Heritage, 2008:6). The overall ambience of an area can hold more importance than individual buildings; the whole public realm is greater than the sum of the parts.

Visitors are attracted to small town destinations because these places hold a quaint historic charm that is difficult for many to find on a daily basis. These town centers provoke a sense of relaxation and old world character that many newly developed regions lack. Two good examples of

Left: Home on Broadway. Center: Westside Market, a Broadway Historic building. Right: Panico's Pizza Historic Retrofit Photographs by Sarah Colins (2009)

historic business districts are that of Frenchtown, NJ and Lambertville, NJ. As seen in the images to the right, both Frenchtown and Lambertville have effectively transformed their historic business corridors into walkable and pedestrian friendly areas. These areas provide an eclectic mix of retail, dining, and office space, mixed with occasional main street residential units, that all unite coherently as a result of effective design and retrofitting that capitalizes on the historic elements while establishing modern-day convenience. Although the physical layout of the Broadway historic corridor does differ from Frenchtown and Lambertville due to the fact that the buildings along main streets in Frenchtown and Lambertville are mostly connected storefronts, much can be done to the Broadway area to improve its visitor appeal.

a) Make enhancements to current historic business establishments

Current businesses should consider making their storefront façades more appealing and accessible to the general public. Uniform yet interesting storefront design can dramatically increase the curb appeal of a building. Larger, more architecturally interesting and well-lit front windows can create an inviting atmosphere, while helping the business to establish itself as a professional entity within the historic district. Retail signage should be prominent and well-organized, adhering to the required regulations while maintaining some sense of stylistic uniformity with other businesses along the corridor. Ease of public access is something that may prove difficult for historic buildings (particularly residential) that have been converted to retail or dining. The entrances to these buildings need to be retrofitted to assume the feeling of a more inviting space

Above Left: Decorative and Inviting Storefront Facade, Burlington City, NJ. Source: MS Desgin (2004)
Above Right: Main Street, Lambertville, NJ. Source: Herb Spiegel (2004) www.city-data.com
Below: Historic Commercial District, Frenchtown, NJ. Source: BigBushy (2007) www.panoramio.com/photo/5752619

with increased visibility from the street. Attention to handicap accessibility is important, as well as to the ability of an entranceway to cater to visitors that will be both entering and leaving the establishment at the same time. Adhering to required building codes and ordinances is of utmost importance when using historic buildings as commercial space.

b) Establish Proper Maintenance Procedures

Maintenance of these historic buildings is imperative. Wear and tear from public use will cause an increased need to maintain regular upkeep to both the interior and exterior of these buildings. The front façade should be well-maintained to appeal to the public as an inviting place to visit. A thorough maintenance schedule should be developed, outlining both the regular maintenance efforts as well as the major improvements and repairs that should be completed in the future.

c) Create a close-knit community feeling

As previously stated, unlike the business districts of both Frenchtown and Lambertville, West Cape May's historic retail buildings are more spread out along Broadway. Many steps can be taken in an effort to visually link these buildings together to create a closer community feel. Creating signage and façade elements that link all of these buildings together stylistically is an important step. A potentially more difficult and time-consuming task would be to consider building additions to already existing historic commercial buildings. Although these building additions would need to be evaluated and approved as an overall benefit to the area, additions could be great assets because they allow more space for retail and would create the feeling that these establishments are closer together. These additions would need to be constructed in ways that adhere to the overall historic design of the area.

A long-term effort that would increase commercial vitality in this historic district is for the Borough to purchase for-sale historic residential properties along Broadway. As these buildings come up for sale, the Borough could purchase these properties and then acquire funding through grants, and government incentives to retrofit them into mixed-use retail properties; retail on the first floor and either housing or offices above. This retrofitting would have to be done in ways that maintain the buildings' historic architectural character. These buildings can then be put up for sale or lease. Over time, this would increase the commercial space along Broadway, while further preserving historical properties as sustainable assets to the community.

d) Design Effective Streetscape

Streetscape design is imperative to creating an attractive and cohesive historic business district. The following design elements should be considered:

- Sidewalks should be wide and include decorative elements such as brick or stone pavers
- Ample areas should be allocated for street trees or plantings, decorative street lighting should be consistent and abundant
- Property landscaping should be uniform and well-maintained
- Access to businesses should be visible and unobstructed

- Both storefront and wayfindng signage should be easy to read

e) Use Form Based Code to Regulate Building and Design Layout Practices

A Form Based Code with effective visual elements should be incorporated into the overall planning implementation for the redevelopment of the Broadway district, as well as other commercial districts throughout the Borough. Form Based Code is an alternative to conventional zoning, and focuses on physical form as the main principle of organization behind the code. "Form Based Codes address the relationship between the public realm and building facades, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks." (Form Based Code Institute website)

Downtown streetscape, Village of Alden, NY
Source: Alden NY Public Works Department

According the Form Based Code Institute website, Form Based Codes generally include the following elements:

- Regulating Plan: A plan or map of the regulated area designating the locations where different building form standards apply; based on clear community intentions regarding the physical character of the area.
- Public Space Standards: Specifications for the elements within the public realm, such as sidewalks, travel lanes, on-street parking, street trees, and street furniture.
- Building Form Standards: Regulations controlling the configuration, features, and functions of buildings that define and shape the public realm.
- Administration: A clearly defined application and project review process.
- Definitions: A glossary to ensure the precise use of technical terms.

f) Blend historical elements with green building practices

For the enhancement of the Broadway commercial district, it is imperative for the Borough to bridge the gap between historical preservation and environmental design. As the Broadway commercial district will need to become more pedestrian friendly to enhance future economic viability, alterations will inevitably need to be made to historic buildings. Historical preservation efforts in West Cape May actively work to maintain the traditional elements of this quaint borough. In order to effectively establish an attractive and usable downtown commercial corridor, new development must blend with the historical establishments in the area, while at the same time adhering to modern design codes and environmentally responsible building practices.

It is imperative that older historical establishments be renovated for physical upkeep purposes, compliance with new safety and code regulations, and maximization of a building's potential to conserve energy. Historical buildings in this district can be efficiently renovated through the reuse of existing materials, without taking away from the overall historic character of the building.

Historic buildings are sustainable in their own right. By preserving historic structures, many elements of sustainability are maximized such as the use of existing materials and infrastructure, waste reduction, and preservation of the historic character of towns and cities. "Energy embedded in an existing historic building can be 39% of the embedded energy of maintenance and operations of the entire life of that building"(Sustainable Historic Preservation (2009:1).

Although many modern advances to energy efficient building have been made, historic buildings do contain traditional design elements that, when restored and reused can bring about energy efficiency. For example, old construction standards tend to be more durable than newer ones and old windows tend to last longer than new ones. Thus, effective rehabilitation can be done to existing windows to improve energy efficiency. When properly maintained, old wooden windows can function indefinitely. With the use of efficient storm windows, caulk and weather stripping, energy efficiency can be bolstered dramatically without changing the architectural structure of the windows or their frames.

Solar Power Victorian Spring Lake Inn, Spring Lake, NJ. Source: Jackie Craven

Green Roof atop multi-family residential, Illinois. Source: Marcus de la Fleur (2004)

Through the reuse of existing shell and interior components the energy required to harvest, transport, and process the raw materials is conserved.

When looking to improve the sustainability and energy efficiency of historic buildings, attention should also be paid to the building envelope. Many historic structures should not have insulation practices executed on the façade of the building, but rather on the immediate interior of the exterior walls. Sprayed open-cell urethane foam is an effective form of sustainable insulation. It is important that exterior walls be kept as dry as possible through the use of flashing, windows, and parapets to reduce the chances of concentrated wetting which could damage the exterior. Rigid foam insulation can be used across low-sloping roofs to further insulate the building envelope.

Many older construction techniques maximized natural materials, natural ventilation, and daylight – all sustainable elements in building. Many modern methods of energy efficient building can be incorporated into renovations, while maintaining the historic integrity of the building. Geothermal systems can replace conventional heating elements – initial costs of geothermal systems can be comparable to that of conventional systems in sensitive restoration projects, but over time will provide paybacks in energy costs. Photovoltaic panels, green roofs, steam backpressure turbines, water-recovery systems, titanium dioxide window coatings, solar panels, and fuel cells are all sustainable green building techniques that can be explored when renovating historic buildings. If existing lighting and bathroom and kitchen fixtures are in good working order, proper maintenance can prolong their longevity. In order to enhance lightening of an area, modern, unobtrusive lighting fixtures can be installed next to traditional ones. Kitchen and bathroom retrofits can be used to reduce water usage.

3. Establish regulations that require durable coastal construction for new development and renovations.

FEMA has published two documents that provide a thorough outline of appropriate building criteria for coastal conditions: the Coastal Construction Manual and the 499 Fact Sheet documents. These documents should be used as guidelines for proper coastal development. Taking these building requirements one step further is the Institute of Business and Home Safety's Fortified or Safer Living program for residential single family construction. This process involves the use of materials and practices that currently exceed the requirements for coastal development, making these certified homes the most durable structures on the market.

According to FEMA, coastal construction is considered a success if it adheres to the following criteria:

- buildings must be designed to withstand coastal forces and conditions
- buildings must be sited so that erosion does not undermine the building or render it uninhabitable
- buildings must be constructed as designed and that design must adhere to appropriate coastal building requirements
- buildings must be properly and regularly maintained/ repaired

FEMA also states that successful coastal construction should result in the following:

- resistance to damage over a period of decades
- the foundation must remain intact and functional
- the building envelope must remain structurally sound and effective at minimizing the damage caused by wind, rain, and debris. Any glass used in the structure, such as in windows and doors, should be capable of withstanding increased pressures. Tools such as flashing and the use of a weather barrier are essential to preserve the structure of the building.
- the lowest floor elevation must be sufficient enough to prevent flood waters from entering the building; therefore, raised floor systems should be put to use
- utility connections must remain intact or be restored easily
- the building must be accessible and usable after a hazardous event
- damage to enclosures below the Design Flood Elevation (DFE) level must not damage the foundation, utility connections or elevated portion of the building
- regular maintenance and proper quality control

a. Adapt building construction for potential coastal flooding

Although West Cape May does not sit directly on the coast, hurricane and tropical storm effects are prevalent and as climate change patterns increase in severity, these threats will become even more of a reality. Therefore, successful coastal construction is imperative to ensure the longevity of West Cape May's built environment. As previously stated, much of the municipality's housing stock is older; it is likely that unless recent renovations have taken place, many of these homes and buildings do not contain the latest advancements

Above and opposite: West Cape May Elevated Homes. Photographs by S. Colins (2009)

to withstand increasingly hazardous coastal conditions.

Given the increasing risk of severe weather effects as a result of rising sea levels and the heightened severity of hurricanes and tropical storms, it is in the municipality's best interest to encourage residents and business owners to invest in building construction that is durable enough for the coastal environment. The U.S. Department of Housing and Urban Development defines durability as "the ability of a material, product, or building to maintain its intended function for its intended life-expectancy with intended levels of maintenance in intended conditions of use."(HUD, 2009:3). The municipality should reach out to well respected coastal contractors and developers and maintain an ongoing relationship with these companies in an effort to promote these practices to interested businesses and residents.

Jersey Fresh from the Garden State. Photograph by Katharine Otto (2009)

F. Food Systems

The University of California's Sustainable Agriculture Research and Education Program (SAREP) defines a sustainable food system as "a collaborative network that integrates sustainable food production, processing, distribution, consumption and waste management in order to enhance the environmental, economic and social health of a particular place. Farmers, consumers and communities partner to create a more locally based, self-reliant food economy" (SAREP, 2001 in Feenstra, 2002:100). SAREP suggests the following goals for a sustainable food system:

i. "A stable base of family farms that use sustainable production practices and emphasizes local inputs;
ii. Marketing and processing practices that create more direct links between farmers and consumers;
iii. Improved access by all community members to an adequate, affordable, nutritious diet;
iv. Food and agriculture-related businesses that create jobs and recirculate financial capital within the community;
v. Improved living and working conditions for farm and food system labor;
vi. Creation of food and agriculture policies that promote local or sustainable food production, processing and consumption, and;
vii. Adoption of dietary behaviors that reflect concern about individual, environmental and community health." (SAREP, 2001 in Feenstra, 2002:100)

The key to establishing sustainable food systems is creating a close relationship between food producers and consumers. This would ultimately reduce the number of "middle-men" in the food production cycle and increase resident participation in food production. There are several ways to do this, including farmers markets, education programs for children, community gardens and cooperatives, community supported agriculture (CSA) programs, community events, and restaurants and food markets using and promoting local farms and their produce. The idea of a sustainable food system is closely connected to the concept of sustainable agriculture which is explored in the Land Management section.

Creating a sustainable food system

Due to the nature of food systems and the size of the borough, a more regional approach to fostering a sustainable food system is necessary to match sufficient variety of food producers with food consumers on this more localized scale. Most sustainable food system goals should be pursued in conjunction with local municipalities and the County in general.

1. Provide access to local produce

Providing access to local produce is a key aspect of sustainable food systems. There are a wide variety of networks and groups that seek to highlight local opportunities and share ideas about how these local food systems can be established, including the Food Routes Network and Jersey Fresh.

a. Continue to promote local farmers selling produce directly to the local community.

By enabling local farmers to sell their produce locally, the number of steps between the producer and consumer in the food system is reduced. The distance food travels is also reduced, thereby reducing the total carbon footprint of the food. West Cape May hosts one of three Farmer's Markets in Cape May County. West Cape May is also host to Rea's Farm Market and Duckie's Farm Market which sell produce from local farms.

b. Promote and expand West Cape May's community garden

Community gardens are pieces of land that are gardened by a group people. There are many benefits to community gardens, including producing food, reducing family food budgets and fostering community interaction. West Cape May currently has a small community garden on the elementary school grounds, started by the Parent Teacher Association. Several community groups and organizations

Left: West Cape May hosts a weekly Farmer's Market during the summer.
Below: Rea's Farm Market on Stevens Street.
Right: Duckie's Farm Market on Broadway.
Photographs by Katharine Otto (2009)

are working together to expand this small community garden for a variety of reasons: reducing greenhouse gas emissions, reducing need for landscaping on school property, and getting children more involved with learning about the food they eat. Community gardens can be incorporated into school curriculum in a variety of ways including applications for Math, Science, Art and Language classes (See Princeton Schools Garden Cooperative, 2007).

c. Encourage Community Supported Agriculture.
Community Supported Agriculture (CSA) is a process whereby a community of individuals supports a farm operation through the purchasing of an annual "share" of the farm produce to cover the costs of the farm operation and the farmer's salary. These "share-holders" receive shares of the farm's produce throughout the growing season, and thus foster a direct relationship with the food producers. The farmers have a greater financial security through receiving money up front for their produce, receive better prices for their food (no intermediaries), and share the risk of bad harvests with shareholders.

There is currently one CSA scheme in Cape May County. West Cape May should consider hosting a distribution site for a CSA farm to reduce the impact of transportation to CSA farms.

2. Improve visibility of local produce

As recognized in the Cape May County Comprehensive Plan, one of the contributing factors to the decline in agriculture in the County as a whole is the "absence of a marketing system enabling County farmers to reach County consumers" (2002:22). By improving the visibility of local produce, consumers have the choice to support local farm operations, creating a more responsive food system between consumer and producer.

a. Encourage local food suppliers and restaurants to use and label local produce.
New Jersey's Department of Agriculture has several initiatives to promote local produce, including Jersey Fresh, Jersey Grown (trees and plants), and Jersey Seafood. Many big chain supermarkets in New Jersey already label their produce "Jersey Fresh." Local food suppliers can go further

AgroEco Coffee™
Sustainability Facts
Serving Size: 1 Container (16 oz.)

Community - Agua Buena, Costa Rica	
CoopePueblos Cooperative - (founded in 2006)	54 families
Environmental	**average per acre**
Tree Abundance on Farm	417 trees
Tree Species on Farm	7 species
Avg. size of Farm	7.4 acres
Social	**cooperative avg.**
Size of household on Farm	4.6 members
Percentage of Children in School (5-18 yrs. old)	97%
Economic	**cooperative avg.**
Portion of Household Food Consumption Produced on Farm	55%
Farmer Coffee Production ----------	2,200 lbs./yr.
Price paid to the farmer cooperative	Conventional - $0.81/lb. Fair Trade - $1.18/lb. AgroEco™ - $2.00/lb

AgroEco Sustainability Community Projects
Increasing Shade-Tree Diversity through Tree Incorporation/Renovation
Worm Composting Project
Biodigestor Building
Community-based Biodiversity Monitoring

** Research data collected by CAN researcher, Nick Babin, PhD candidate at Univ. of CA, Santa Cruz **

Left: West Cape May's Annual Lima Bean Festival, held in Wilbraham Park, celebrates the Borough's history as the "Lima Bean Capital East of the Rockies". Photograph by Katharine Otto (2009)
Right: Idea for local food labelling; the Community Agroecology Network's innovative system for labeling AgoEco Coffee. Source: Gleissman (2009:61)

to identify the local farms from which they receive their produce. By labeling it as locally grown, consumers are given the choice to support local agricultural systems.

b. Continue to support local food festivals.
Local food festivals not only connect local producers with local consumers, but also bring in many people from outside the community, thus increasing business. West Cape May hosts three major festivals each year: the Strawberry Festival (June), Tomato Festival (September) and Lima Bean Festival (October). One of the local farms, Rea's Farm, also hosts their Annual Harvest Country Fair in October.

3. Support sustainable agriculture

There are many ways to promote sustainable agriculture. In addition to the objectives listed in the Land Management Section, West Cape May should also consider the following objective:

a. Support organic and other products with certified growing and production methods.
Advocates of sustainable agriculture support adapted food production systems that recognize the inefficiencies and the environmental impact of conventional food production methods. Farmers can have their efforts toward sustainable food production practices recognized through a variety of certification programs, including the USDA's National Organic Program and the Food Alliance (Sustainable Agriculture) certification.

G. Emergency Management and Abatement

Due to its location on Cape May Island, coastal threats including hurricanes, tropical storms, flooding, and sea-level rise pose a particular challenge to West Cape May. The community must continue to plan its development with these threats in mind, protecting itself both by taking certain positive actions such as elevating houses above the 100-year flood level, and refraining from others such as building in areas susceptible to more frequent floods. The community must also be prepared to face additional hazards that may arise, such as other natural disasters, acts of terrorism, or infectious disease outbreaks. A comprehensive emergency management plan addresses the following three goals:

- *Sustainability* – preserving quality of life and natural assets while reducing the community's ecological footprint
- *Mitigation* – long-term steps taken to reduce the vulnerability of the community's people and natural assets to identifiable threats
- *Resilience* – a community's ability to rebound after a natural disaster or other disruption, expected or unexpected

Cape May Flooding, November 2009.
Source: Jack Fichter, Cape May County Herald (2009)

1. Improve communication capabilities with residents and visitors

During an emergency, the most important piece of equipment may be a battery-powered radio. These can be distributed at a moderate cost, and are important to place in rental homes. Renters likely will not have regular contact with other community residents and might otherwise be unaware of warnings or other emergency information.

2. Improve collaboration with neighboring municipalities

Offset gaps in resources by improving collaboration with nearby municipalities. This outlook is already well-cultivated in certain aspects of the emergency plan. It should be expanded to as many facets of emergency response as possible so that the Borough's limited resources, and those of its neighbors, can be used in as efficient a manner as possible.

3. Enhance preparedness against coastal risks

Focus more closely on coastal hazards, including storm surge, erosion or subsidence, and flooding. A mitigation program could be developed that targets residents in areas particularly vulnerable to floods. The program would increase overall awareness of flood risks, and could suggest structural improvements or changes in use patterns that owners could make to safeguard their property. Also, sea-level rise should be taken into account in all long-term land-use plans for the Borough.

4. Create an emergency fund to redevelop vital community resources in the event of disaster or disruption

A resilient community is one that can rebuild after unavoidable disasters. A fund can be created to help redevelop vital community resources in case of disaster or disruption. The Borough should be selective when disbursing this fund so as not to encourage the rebuilding of unsustainable locations or uses.

H. Economic development

The options outlined in this section provide West Cape May with initial ideas and resources needed to redesign its commercial corridors in a way that ensures both environmental sustainability and economic vitality. The following proposed projects would greatly enhance the Borough's economy by attracting an increased tourist base, while encouraging more year-round residents to move into the area. It is recommended that the Borough focus on centralized mixed-use development rather than single-unit housing developments in an effort to preserve both the land and its small-town character. Proper sidewalk, street, and parking renovations will make the downtown corridor easily accessible and pedestrian friendly, thus attracting visitors from nearby tourist centers. It would also be in the Borough's best interest to adopt comprehensive form based codes for sidewalks, streets, buildings, etc., and to encourage the public to become involved in the design/implementation process (refer to Building Practices section for form based code overview). West Cape May is a charming and attractive municipality with an abundance of resources at its disposal. Proper and effective economic development initiatives will further enhance the Borough's sustainability and overall longevity.

Economic opportunities and successes in West Cape May. From left to right: storefronts on Sunset Boulevard, Park Center , t-shirts for sale on Sunset Boulevard, the Albert Stevens Inn on Myrtle Avenue, the Westside Market on Broadway (Photos by Matthew Ward and Katharine Otto, 2009).

1. Reduce Municipal Expenditures

Conserving resources and reducing consumption are not only a good way to preserve the environment; but also a good way to save money. Therefore, it should be no surprise that many of the sustainability measures outlined throughout this plan are also useful for reducing municipal expenditures. (For a brief overview of the municipal budget, see Appendix C.) The recommendations offered in this section are meant to work in conjunction with other methods and programs presented in this plan.

a) Cut costs by combining elementary schools with Cape May City. Regionalism is a great tool to reduce strain on residents' pocketbooks. A significant proportion of West Cape May's property taxes go to its local school district. The municipality pays $893,129 of its property tax revenue to operate an K-6 school for 36 students. This works out to be $24,809 per child. Compared with nearby municipalities this cost is noticeably out of proportion (see chart below). For example, Cape May City spends $8,065 per child; Lower Township spends an average of $7,669 per child.

West Cape May's elementary school (K-6) building has 6 classrooms. The student-teacher ratio is 5:2. This ratio is the lowest in the state (ranked 62 out of 62 K-6 districts statewide). It is less than half the median figure for the state, which is 11:2 (NJ Department of Education, 2009).

In order to conserve resources and save money, the municipality should consider the consolidation of its school district with that of a neighboring municipality. This consolidation could take one of two forms:

- The Borough could decide to dissolve its school district and send its students to facilities in either Lower Township or Cape May City. If West Cape May were to follow this path it could then renovate its current school building for another use, such as a senior living center.
- Another option would be for a neighboring municipality to send some of its students to West Cape May's K-6 school in order to the Borough's lower student-teacher ratio and cost per child.

In order to determine which scenario to follow, an assessment should be done of how much student growth is anticipated and which facility is best suited to handle combining students. In either circumstance both municipalities involved would benefit from a more efficient use of resources.

Property Taxes devoted to School District

Elementary (K-6) School District	2008 Effective Tax Rate	2009 Effective Tax Rate	2009 Property Taxes for District School	2009 Estimated # of students	2008-2009 District Cost Per Student	Total Property Taxes 2009	% of Property Taxes Devoted to District
West Cape May	0.983	1.000832	$893,129	36	$24,809	$1,403,693	64%
Cape May City	0.69	0.311823	$1,483,921	184	$8,065	$7,158,426	21%
Lower Township	1.12	1.166266	$14,370,876	1874	$7,669	$17,214,611	83%

b) Utilize new storm water runoff practices to reduce potential flooding. In the Sustainable Water Resources element of this plan, numerous storm water management methods are covered. To reiterate, vegetated swales or bioswales are "gently sloping depressions planted with dense vegetation or grass that treat stormwater runoff from rooftops, streets, and parking lots. As the runoff flows along the length of the swale, the vegetation slows and filters it and allows it to infiltrate into the ground" (Portland Bureau of Environmental Services (PBES), 2009: 26).

A municipal-wide bioswale network could mitigate the cost and occurence of floods. While designed to safeguard the municipality through improving drainage and flood abatement, bioswales are also a low-cost way to provide an aesthetic buffer from the street.

Bioswale on residential Street. Source: http://knol.google.com/k/-/-/17ruw3d8fyl4e/9auamn/bioswale-seattle.jpg

West Cape May soils are sandy and coarse. Sand-based soils drain water at a faster rate than clay soils, but take more maintenance and careful grading to support vegetation. Therefore, plantings should be restricted to only native vegetation and trees that thrive in wet regions. Costs do vary depending on site and dimensions but "swales typically cost less than standard piped, drainage system." (PBES, 2009: 26)

c) Open Space Preservation

It is encouraged that the municipality set aside a portion of its annual taxes to create an Open Space and Farmland Preservation Trust Fund so that it may become more self-sufficient when it comes to funding its own preservation as well as providing matching funds for other grants. (See Section 3, A. Land Development Practices). Continued open space preservation is imperative, particularly outside of the center of the Borough and the proposed commercial districts (Broadway, Park, Sunset). In an effort to foster sustainability for both land development purposes and economic vitality, the Borough should concentrate its development along the central commercial corridors, and not on any potential open space properties that may exist outside of this central region.

An increase in open space preservation could lead to a decrease in municipal expenditures (see ANJEC, 2004). As West Cape May considers itself to be a haven for birders and nature lovers the Borough needs to enhance its sustainability efforts through local land preservation.

2. Encourage reduction of residential and commercial expenditures

In addition to focusing on reducing municipal expenditures, the Borough of West Cape May should encourage residents and business owners to reduce their private expenditures in environmentally friendly ways. Although the effects may be less direct than municipal efforts, supporting efforts like those listed below can lead to important gains in environmental and financial sustainability. The key focus is on the conservation of resources at the household level. If residents and business owners can save money they may be more likely to not only stay in West Cape May, but to invest in the Borough's future as well.

Encouraging these kinds of efforts can take several forms. Most importantly, the Borough should examine its zoning ordinances, building codes, and master plan and make sure that these documents promote rather than prohibit residential actions like those listed below. The municipality should also disseminate information and draw attention to actions that individuals can take to save money. Relevant information could be posted on the municipal website, perhaps on a special page devoted to reducing expenditures and conserving resources. The topic could also be brought up at municipal forums or meetings. The Borough should foster connections with relevant state and county educational resources and programs, such as the Rutgers Cooperative Extension program. If possible, the municipality should allocate resources to promoting a few key actions in order to attract more interest.

a. Energy conservation and home energy production

The Borough should provide incentives for sustainable development that incorporates energy conservation. This could include providing energy efficiency guidelines or standards for new buildings within its zoning ordinances and/or building codes. The municipality should also provide guidelines that allow for the easy incorporation of sustainable on-site energy producers – such as solar power, wind turbines, and geothermal heating – into new or existing homes. Homeowners should be encouraged to appropriately weather their homes (i.e. install better insulation and manage drafts) to make them more energy efficient.

b. Water conservation

Important ways to conserve water include reducing potable water used in irrigation and landscaping, and encouraging greywater systems. The Borough should promote the use of native landscaping by residents and distribute information and resources on rain gardens. The Rutgers Cooperative Extension is an especially good resource for water conservation efforts.

c. Home and community gardening

Another environmentally friendly way to save money is through household production of fruits and vegetables in backyard gardens. Homeowners with their own vegetable gardens will spend less money on groceries and will have better, more healthful produce. In addition, producing food locally reduces the West Cape May's carbon footprint by reducing the total energy used to transport food. The municipality could highlight the benefits of home-grown food by having a small showcase vegetable garden near

borough hall and/or incorporating gardening into the educational curriculum.

d. Ridesharing forums

Ridesharing and carpooling can help residents save money on gas. Additionally, it can help neighbors get to know one another and may promote the sharing of other resources. One way the municipality could promote ridesharing and carpooling would be through an online forum.

e. Using "wastes" as resources

In addition to conserving resources like water and energy, the municipality should encourage the use of abundant but lesser-known resources, especially those generally seen as "waste." Two important resources that are commonly overlooked are vegetative waste and rain water.

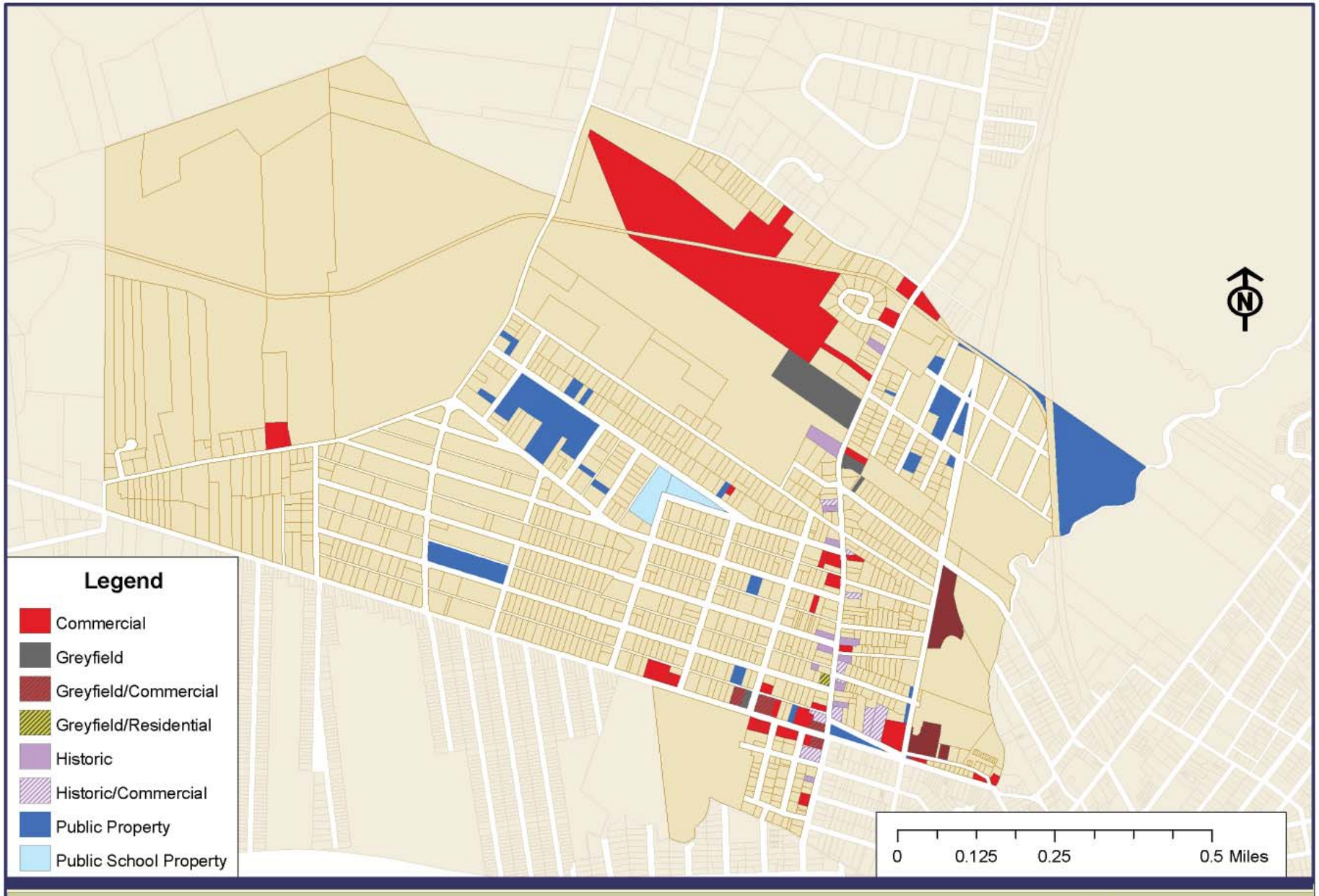
Bella Vida Garden Cafe on Broadway. Source: Cape May Herald (2009)

3. Foster economic development along key corridors.

In order to be economically sustainable, West Cape May should promote economic development along key corridors. The goals of this effort are to create a "community of place" that will encourage tourism and to provide sufficient resources for current and future year-round residents. The municipality should concentrate efforts on "placemaking" through the reuse of existing underutilized, vacant, and/or developed space. It is essential that the municipality of West Cape May take an active role in its own development, leveraging current assets to ensure successful implementation, rather than relying solely on market forces and private interests.

Current assets are not limited to municipal boundaries. One of West Cape May best assets is its proximity to Cape May City's tourist attractions and existing parking lots. By strengthening the visual connectivity and attractiveness in key areas it could attract additional tourists that may not otherwise have visited West Cape May.

At present, West Cape May is encouraging commercial development within its borders. The existing supply of commercial square footage is approximately 240,686 square feet. By evaluating location, site attributes and existing structures, opportunities for additional commercial spaces can be identified. A summary of current and potential commercial space can be seen in the table below. The map on the following page identifies greyfields, historic sites, existing commercial, and public lots, all of which should be considered for redesign initiatives. Existing plans and studies such as the Local Bicycle and Pedestrian Assistance



Areas of Focus
Economic Sustainability Element

Sources: ModIV, Cape May IMS, West Cape May 2005 Reassessment

Map drawn by Matthew Ward
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Study (2007) and the Urban Business Design Plan (2008) are the basis from which the following economic development recommendations are devised.

As indicated by the chart below, there is nearly a 50/50 split between year-round and seasonal residents. West Cape May's economy is highly dependent on seasonal commercial activity. If the municipality increased its year-round population it would bolster its economic sustainability. Population increases should be accomodated through the development of multi-story, mixed-use housing.

While year-round residents sustain economic vitality, tourism drives economic activity. By making West Cape May a more attractive place to live would also increase tourism, thus increasing revenues for the Borough. As stated in the Comprehensive Master Plan Update in 2005, Borough policymakers are concerned by the "increasing prevalence of tear-down development in neighboring communities," as older homes are being demolished to make way for bigger, more modern homes (West Cape May Master Plan, 2005:85). Given West Cape May's strong historical ties, desire to continue to preserve open space, and prominence as a nature and avian attraction, it would be in the Borough's interest to restrict development to the proposed commercial districts.

West Cape May Housing Composition		
	2000 US Census	Percentage
Year-round Housing	507	50.5%
Seasonal Housing	476	44.8%
Vacant Housing	24	4.8%
Total Housing Units	1,007	100%

a. Create a Formal Gateway

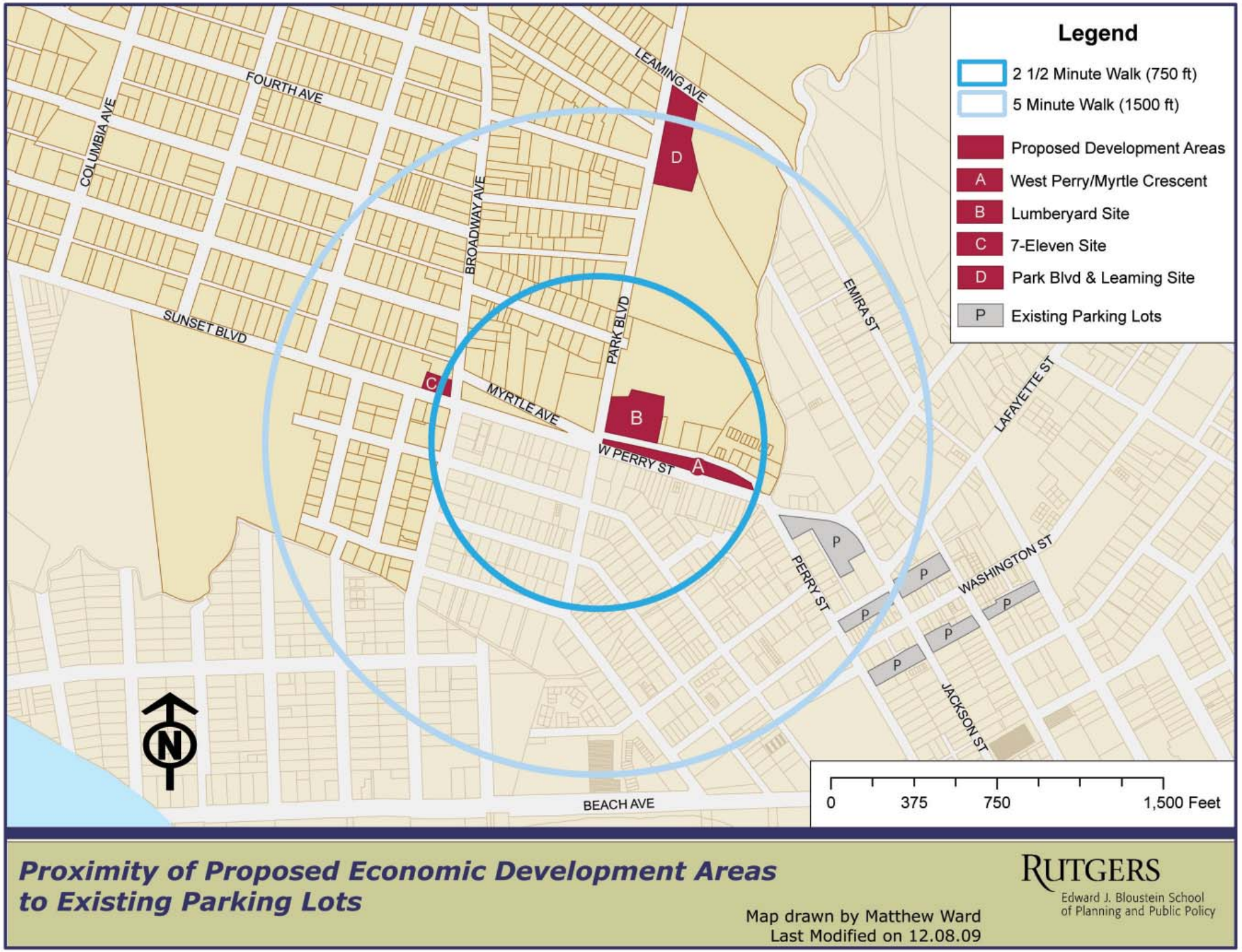
A formal gateway will help delineate the community of West Cape May from its environs and encourage visitors to explore the Borough. This is essential for an economy that depends heavily on tourism. A gateway development will also provide new economic opportunities. Through the creation of retail and office space, new businesses will supply better year-round amenities to residents and tourists. The buildings and facilities that currently border Wilbraham Park do not fully utilize the potential of this public space. Better use of this public space could be achieved through the creation of the following elements:

- A defined link between West Cape May and Cape May City
- A new circulation plan
- A traffic circle
- Additional on-street parking
- A quasi-public facility or new borough hall

i) Define West Perry/Myrtle Crescent as a link between West Cape May and Cape May City

The West Perry/Myrtle Crescent is a small strip of land that sits on the southeast end of West Cape May. It is enclosed by Myrtle to the north and Perry to the south, ending immediately before Perry turns into Jackson Street at the border of Cape May City. Currently this land is zoned C-3 and consists of a mix of single family homes and single-story small businesses. If developed as its zoning allows, this strip provides an excellent opportunity to create a cohesive link between Cape May City and West Cape May.

Visitors who park in the Jackson Street parking lot are only



Proximity of Proposed Economic Development Areas to Existing Parking Lots

Map drawn by Matthew Ward
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a few hundred feet away from West Cape May. With the proper wayfinding signage, tourists could be easily directed toward the visitor center at the corner of Park and Myrtle, and other attractions. Therefore, the commercial corridors of West Cape May can capitalize on the close proximity to the Jackson Street parking lot. This proposed area for development should be turned into 3 story mixed-use facilities, retail on the first floor, housing or office space above with 0' setbacks. Assuming 80% lot coverage, the maximum buildable area allowed is 73,030 sq ft (totaling 3 stories). Effective streetscapes should be implemented along this corridor as well.

Commercial Inventory of West Cape May, NJ (Square Feet)

	Total Existing Commercial	Total Land Area	Existing Ground Floor Commercial Space	Maximum Allowed Lot Coverage	Potential Developable Commerically Zoned Land*
C1 Zone	96,684	1,002,141	53,492	60%	547,793
C2 Zone	52,515	134,731	52,515	60%	28,324
C3 Zone	74,558	216,200	55,890	80%	117,070

*This amount does not account for wetland buffers

Source: ModIV, Cape May County IMS

Proposed Mixed-use Areas

	Total Land Area	Maximum Allowed Lot Coverage	Developable Land Zoned Commercial	Possible Mixed-use Sq. Footage (at 3 Stories)
Park Blvd and Leaming	114,177	60%	68,506	205,519
Current Lumberyard Site	58,053	60%	34,832	104,495
Current Municipal Complex		60%	0	0
Current 7-Eleven Site	9,247	60%	5,548	16,645
Current Lazlo Site	9,551	80%	7,641	22,922
West Perry/Myrtle Crescent	30,429	80%	24,343	73,030

The main focus of the West Perry/Myrtle Crescent should be to attract tourists into the Borough. It is only a 5 minute walk between the Jackson Street parking lot and the intersection of Park Boulevard and West Perry. From here tourists are within walking distance of numerous attractions in West Cape May (see map on previous page).

ii) Implement a new circulation plan for the Gateway that incorporates a traffic circle and on-street parking.

Traffic circulation at intersection of West Perry, Myrtle, and Park Boulevard suffers from a convergence of too many ingress and egress points, causing confusion. Redesigning the intersection with a traffic circle will improve the following:

- Pedestrian and automobile safety
- Aesthetics and commercial character
- Circulation or traffic movement
- On-street parking opportunities

A traffic circle is a great aesthetic device to calm traffic. "Traffic Calming" is a method used to slow auto speeds through road design that enhances pedestrian and automobile thoroughfares. In order to create a comprehensive gateway that appeals to tourism

Temporary rubber barriers to test viability of installing a traffic circle and traffic calming. Photographs from Flickr.com (2009)

On-Street Parking	Existing	Potential*	Difference
W Myrtle	55	85	35
W Perry**	35	70	35
Totals	90	155	70

*9' wide diagonal stalls

**only includes north side of the street

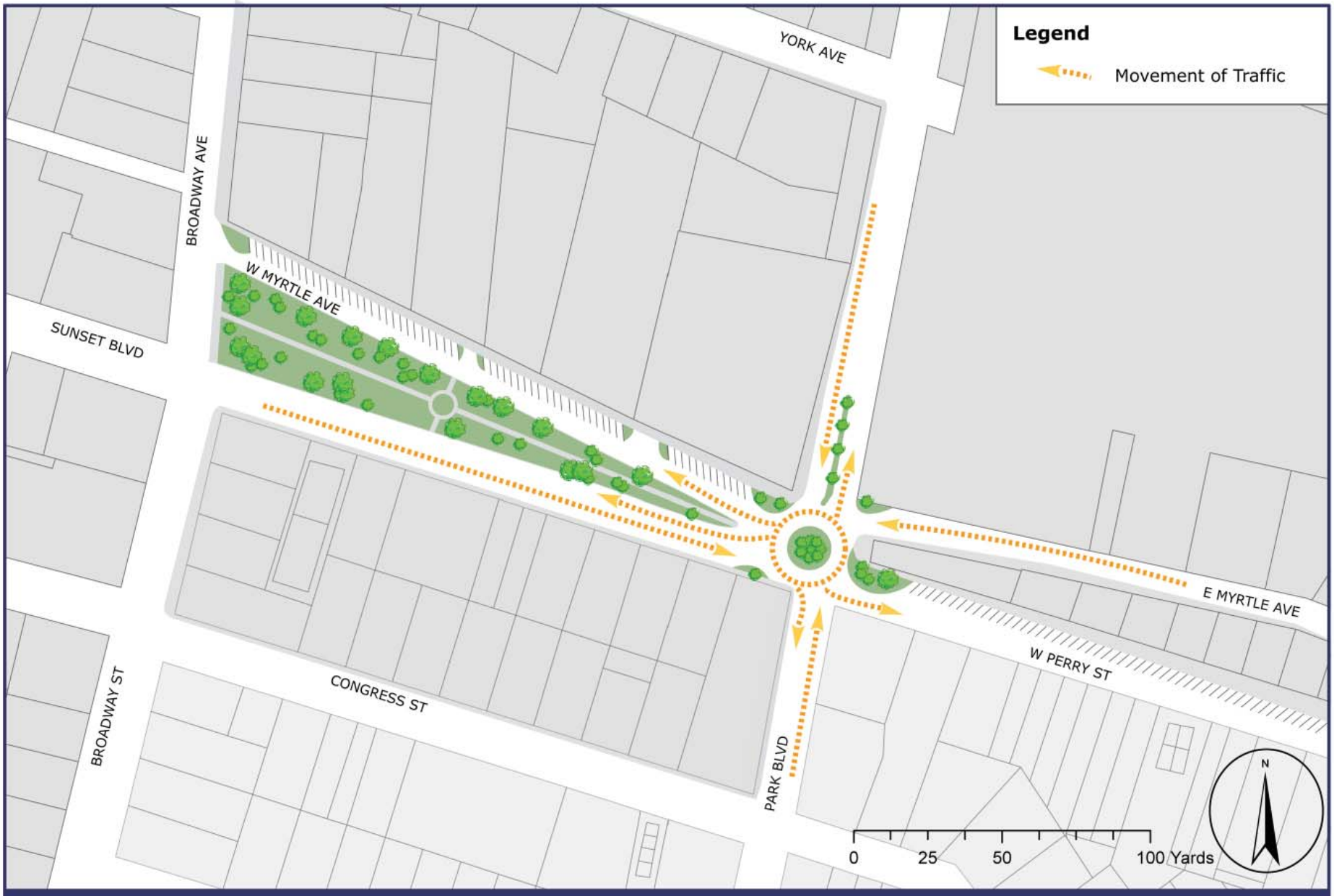
Above: Existing intersection. Below: How the intersection could be re-designed.

and residents alike, safe pedestrian access and mobility is a priority. Along with a traffic circle, sufficient upgrades to pedestrian crosswalks are required.

Pedestrians are not the only ones to benefit from traffic calming. Automobile drivers and local businesses can benefit too. Because cars are moving at slower speeds, drivers and passengers have more time to look out their windows. This improves safety and may entice people to park and shop at local businesses. There are low-cost ways to assess whether a Traffic Circle will work for West Cape May. By installing temporary rubber barriers, a test-run can be easily setup for a fixed period of time. With any change there are is a period of adjustment. Recommended duration for the test trial is from 6 months to a year.

To create additional on-street parking opportunities around the traffic circle, West Perry and East Myrtle could be re-designed into a pair of one-way streets. The area is 0.2 miles, extending from the proposed traffic circle to where West Perry and East Myrtle meet at the border of West Cape May and Cape May City. By utilizing a pair of one-way streets, West Perry could accommodate approximately 70 on-street, diagonal parking spaces. East Myrtle would remain unchanged since it is currently a one-way street and would not sufficiently accommodate additional on-street parking. As this area is in close proximity to Cape May City parking lots, West Cape May would be able to price parking along West Perry appropriately.

As already explored, West Myrtle could be redesigned west of the traffic circle to accommodate 85 on-street parking



Proposed Circulation for West Cape May Gateway Project

Sources: NJDEP, NJGIN

Map drawn by Matthew Ward
Last Modified on 11.03.09

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spaces. Total parking for the West Cape May gateway would then total 145 on-street parking spaces, helping to attract more tourists and commercial activity. However, adding on-street parking is only one component of becoming a defined commercial corridor and a larger regional tourism center (see Proposed Circulation Plan on opposite page).

iii) Develop a public-private facility or new borough hall

Option A: Build a new, mixed-use Borough Hall
Currently, Borough Hall is located at 732 Broadway. It is neither a central nor an ideal location. Set back from the road, it is located behind the fire station and out of sight. Traditionally, a town hall is a focal point exhibiting the character of the community. While there are plans to update the municipal complex with green building practices it may be more sustainable to relocate Borough Hall altogether.

The most ideal setting for a new borough hall is at the intersection of Broadway and Sunset, where 7-Eleven is currently located. The site, which sits across from Wilbraham Park, has great visual termination. It would create a defined boundary, advertising to tourists that they are in West Cape May. This site is approximately 10,000 square feet in area. The existing structure is 2,100 square feet. Currently, the lot provides around 11 surface parking spaces and has three curb cuts - two on Sunset and one on Broadway. As of 2007, the land was assessed at $480,400 and the building was assessed at $310,500, for a total of $790,900. Annual taxes were $9,060 (Mod IV).

For Option A, a mixed-use borough hall would be created on this site. This building would include ground floor retail space for 7-Eleven as well as municipal and private offices above. It would also include a courtroom that doubles as

Left: Gateway site - northwest corner of Sunset Boulevard and Broadway Intersection. Right: Gateway site from Wilbraham Park. Photographs by Matthew Ward (2009)

Proposed Mixed-use Public-Private Facility

Drawn by Matthew Ward
Completed 11.12.09

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convention space, expanding Wilbraham Park's festival area. An appropriate building would be 3.5 stories with 80% lot coverage or a footprint of 8,000 square feet. Parking for the structure would be located on Myrtle Avenue and/or at 107 Sunset Blvd. Parking in these locations could provide a total of up to 85 on-street spaces and 30 off-street spaces, with 9 foot-wide stalls. Ground floor retail space would match or exceed current square footage. Private and public office space would range from 16,000 to 20,000 square feet depending on the layout. Total leasable space would be approximately half of total square footage. Proposed improvements would significantly increase the valuation of the lot, and provide new ratables.

Sea level rise should always be considered when relocating public facilities within West Cape May. Low and high sea level rise scenarios do not impact the current 7-Eleven lot. Nonetheless, the proposed town hall should incorporate green building and low impact design features. A raised elevation should also be considered due to risk of storm surges. The Town Hall should set an example for future development and commercial typologies in West Cape May. Mixed-use town halls already exist. One example is Manasquan, New Jersey. Since 2000, the borough has been leasing approximately 1,900 square feet of commercial and parking space at its mixed-use municipal building. Renewed in 2007, this commercial lease has been a successful source of revenue generation. The leased space equals 19% of a 10,000 square foot building. The proposed ratio for West Cape May's Town Hall would be closer to 45% private leasable space. It could possibly earn $165,000 a year at $15 per square foot.

The Borough Hall option should be considered as a viable investment for West Cape May. Municipal action in a central location may spur private development of the surrounding area in line with visions put forth in the Urban Business Design Plan.

Option B: Develop a Quasi-public Facility

As noted above, West Cape May lacks a centrally-located indoor public space or facility. The municipal complex, which houses Borough Hall and the fire station, is located along Broadway in the northern half of the municipality.
Its location is not obvious nor particularly convenient for visitors, many of which approach the Borough along West Perry Street. Wilbraham Park provides an excellent locale for outdoor municipal-wide events such as the Lima Bean Festival, but as a gathering and event space it suffers from a lack of proximity to facilities like public restrooms, indoor meeting and/or exhibition rooms, and visitor information. West Cape May could greatly benefit from a centrally-located indoor municipal space, ideally adjacent to Wilbraham Park.

If the municipality decides not to relocate Borough Hall, as outlined in Option A, it could pursue the creation of this type of public space through a privately-developed, quasi-public facility. More specifically, the Borough could negotiate a deal with a developer wherein the developer is given incentives to devote a portion of the first floor of a new, centrally-located building to public uses.

This publicly-devoted area, which would be deeded to the Borough, could then serve as "flex-space," i.e.: be used for a variety of uses depending on time of year and demand.

Proposed mixed-use building to be built in the front of the current municipal lot, with retail and business on the bottom floors with housing above.

A visitor center for the proposed Eco-Park could be housed on the corner of Park and Myrtle within a mixed-use building. This building would have a parking lot in the rear with an entrance to elevated boardwalks that lead visitors throughout the Eco-Park. In addition to the visitor center, this mixed-use building could host businesses on the first floor with housing or offices above.

Current commercial space on Park Ave close to Leaming Ave could be transformed into a mixed-use building with retail on the first floor and housing or offices above. By placing buildings close to the street, creates a more inviting atmosphere for the pedestrian.

The current 7-Eleven site could be redesigned into a mixed-use building that could host retail on the first floor with quasi-public space above, or host Borough functions.
This is an ideal location for such a facility due to its close proximity to Wilbraham Park, an already integral community meeting space.

The West Perry Myrtle Crescent could be redesigned into two story mixed-use buildings with retail on the first floor and residential or office space on the second story. Complimentary building facades would enhance the connectivity between nearby public parking lots and the corner of Park and Myrtle; an appealing streetscape design would create an inviting pedestrian atmosphere.

0 375 750 1,500 Feet

Summary of proposed project areas

Sources: Concept 3D (2006-2009)

Drawn by Sarah Colins
Last Modified on 12.05.09

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Potential uses include:

- visitor information and welcome center
- chamber of commerce office
- meeting space
- public restrooms
- exhibition space

As incentives to the developer the Borough could allow a building height beyond that currently zoned and relief from most parking requirements (except for handicap and delivery spaces). In order to promote green building practices, the Borough could also provide a height bonus for the addition of a green roof.

b. Strengthen Broadway Historic Commercial District

The Broadway Historic Commercial District is a half mile long corridor stretching from Wilbraham Park to the Municipal Complex along Broadway. Within this district is a mix of businesses housed in a variety of building types. This corridor lacks a traditional commercial downtown feel.

In West Cape May, 16 of the 22 structures identified by the Borough's historic committee are in the Broadway Historic Commercial District. Under the guidance of the historic committee, regulations have been placed on both historic and non-historic properties within the area. When strengthening a historic and commercial district, measures that promote both sound preservation and economic vitality may be at odds. In order to best accommodate both aspects of the Broadway Historic Commercial District incremental improvements are recommended.

The Borough should start off by focusing on how auto and pedestrian traffic move throughout the corridor. Broadway is a two lane road with parallel parking on both sides. It has approximately two-foot parkways and three- to four-foot wide sidewalks that abruptly end or disappear in places. While the cartway - or driving area - of the road is an appropriate size, the sidewalk is not conducive to high pedestrian activity. Sidewalk widening and continuity should be considered as one of the solutions to improving economic sustainability along Broadway.

If sidewalk widening is publicly supported, the next step would be to assess which properties are encroaching on public right-of-ways. This can be done through an inventory of buildings along the corridor. Other existing buildings may also benefit from sidewalk widening without any redesign.

Bicylists crossing Broadway. Photograph by Matthew Ward (2009)

Proposed Municipal Complex Redesign with Mixed-use Facility

Drawn by Kate Lawrence
Completed 11.16.09

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Another useful tool that can be implemented with minimal change to the right-of-way is traffic calming. Broadway is a major entrance and exit for the Borough. However, it has no stop signs and only one traffic signal. By implementing four-way stop intersections controlled by stop signs, Broadway would become less of a thoroughfare and more of a "main street."

Candidate intersections include:

- Broadway and 4th Avenue
- Broadway and 2nd Avenue
- Broadway and 6th Avenue
- Broadway and Central Avenue

c. Redevelop the Municipal Complex

As noted above, the municipal offices for West Cape May are located on Broadway in a complex that is also home to the fire station and a small park. The two buildings that make up the municipal complex are inefficient and are laid out in a manner that does not take full advantage of the space. The parcel of land is a little over 4.5 acres. Approximately 30,585 square feet of office space are arranged in two single-story buildings. Another 77,530 square feet is taken up by driveways and a parking lot with approximately 180 spaces, each 10 ft wide. Together, the buildings and the parking lot take up approximately 53% of the lot. The fire station is set back about 75 feet from the road and the municipal office building lays beyond a parking lot behind that.

Overall, the municipal lot does not engage with the streetscape and in many ways it detracts from the historical district atmosphere that the borough is trying to promote along Broadway. The buildings are bulky, inefficient, and out of character with the surrounding properties. Too much of the space is dominated by an impervious parking lot which adds to surface runoff. The landscaped area is overwhelmingly dominated by turf grass, which is considered to be almost as bad as pavement in creating surface runoff. The buildings and the lot overall are larger than necessary for the town's needs. There are 180, ten-foot wide parking spaces. The fire house has an attached banquet hall which is rented out for events. The park on the property lies hidden behind the town hall, approximately 630 feet from the road. It is characterized by a paved driveway that encircles a large patch of grass that has a gazebo in the center. No other plantings or furniture exist in the park.

This complex should be redeveloped to be more efficient and environmentally friendly, and to reflect the aesthetics of the surrounding area. This redesign could take several forms, depending on resources and circumstances.

One recommended option is shown on the previous page. In this scenario, a three-story mixed-use building is built in front of the current fire house. A wide sidewalk and parkway has been extended past the municipal lot, making it easily accessible to pedestrian traffic. The building has 0' setbacks and has a pedestrian-friendly façade that fits in with the surrounding streetscape. The bottom floor has 5,200 square feet of leasable commercial and office space.

In order to accommodate this new building, the firehouse has been retrofitted with access to the garage in the back rather than the front of the building. The banquet hall has

also been removed. In order to allow fire trucks access to the garage, the current service road has been expanded and connected to the rear of the building. The second and third floors accommodate 10 apartments with shared, rear-entry parking garages. Even though there is less overall impervious surface in the proposed design, the number of parking space remain at 180, due to the use of diagonal parking and narrower parking stalls.

Ideally, this building would be "green" with solar panels and native-planted rain gardens to catch roof runoff. In order to insure that the site is developed as desired, the Borough could issue a Request for Proposals. After completion, the mixed-use building could either be leased or sold. Leasing the property would allow the Borough to fully control aesthetics in the future.

Following, or in conjunction with, the construction of this building, West Cape May can pursue several different paths for the redesign of the remainder of the municipal lot. If the Borough decides to relocate its offices to a new building in the center of the town, the current Borough hall can either be renovated for a different use or it could be torn down altogether. One possibility is that the building be retrofitted for a new firehouse that would be accessible via the service road to the right of the firehouse. This would free up the land behind the new mixed-use building for green space or a playground and would offer more privacy for the apartment residents. If the current Borough Hall building were to be torn down, that land could either be set aside as open space or redeveloped with new housing.

Whichever plan is eventually decided upon, the redevelopment of the municipal lot should probably be approached in stages, one building at a time, in order to minimize relocation issues and spread out costs.

b. Strengthen the Park Blvd Commercial District

The area along Park Boulevard, between Leaming and Myrtle, is currently zoned as a C-2 area that houses a diverse collection of businesses and residences, as well as a light industrial lumberyard. The west corner of Park and Myrtle is occupied by CVS. The lumberyard sits directly across Park Boulevard on the East corner of Park and Myrtle, with a small retail building that sits in front of it. Traveling down Park Boulevard towards Leaming, there are a series of shops located on the right-hand side, situated in a series of long and narrow buildings that sit in front of a multi-unit storage facility. Across the street from these shops are multi-unit dwellings. The municipality's current efforts to bring small businesses into the Park Boulevard strip seems to be successful so far, but more needs to be done in order establish a cohesive commercial corridor that is walkable for residents and accessible to both the pedestrian traffic from Broadway as well as from downtown Cape May City.

a) Connectivity to neighboring tourist attractions

Because of the Park Boulevard Commercial District's proximity to the Broadway Historic Commercial District and downtown Cape May City, it has the potential for increased economic and residential activity. As noted above, the Jackson Street public parking lot in Cape May City is approximately a 5 minute walk from Park Boulevard. Appropriate and attractive signage can direct visitors from

Cape May City to West Cape May through this corridor. The area could be redesigned in an aesthetically pleasing way that promotes the historic character of the town.

b) Redesign Lumberyard Site

Due to its central location, the Lumberyard site would be better utilized for a mixed-use, 3-story building. According to current zoning ordinance, the maximum buildable area allowed for this site is 104,495 square feet. Front setbacks could be changed to 0'-5' and parking could be relocated to a lot behind the buildings. This parking lot could be residents, employees, and tourists. The new mixed-use facility could also house a Visitor Center for the proposed Eco-Park located along the east side of Park Blvd.

c) Further Redesign along Park Blvd

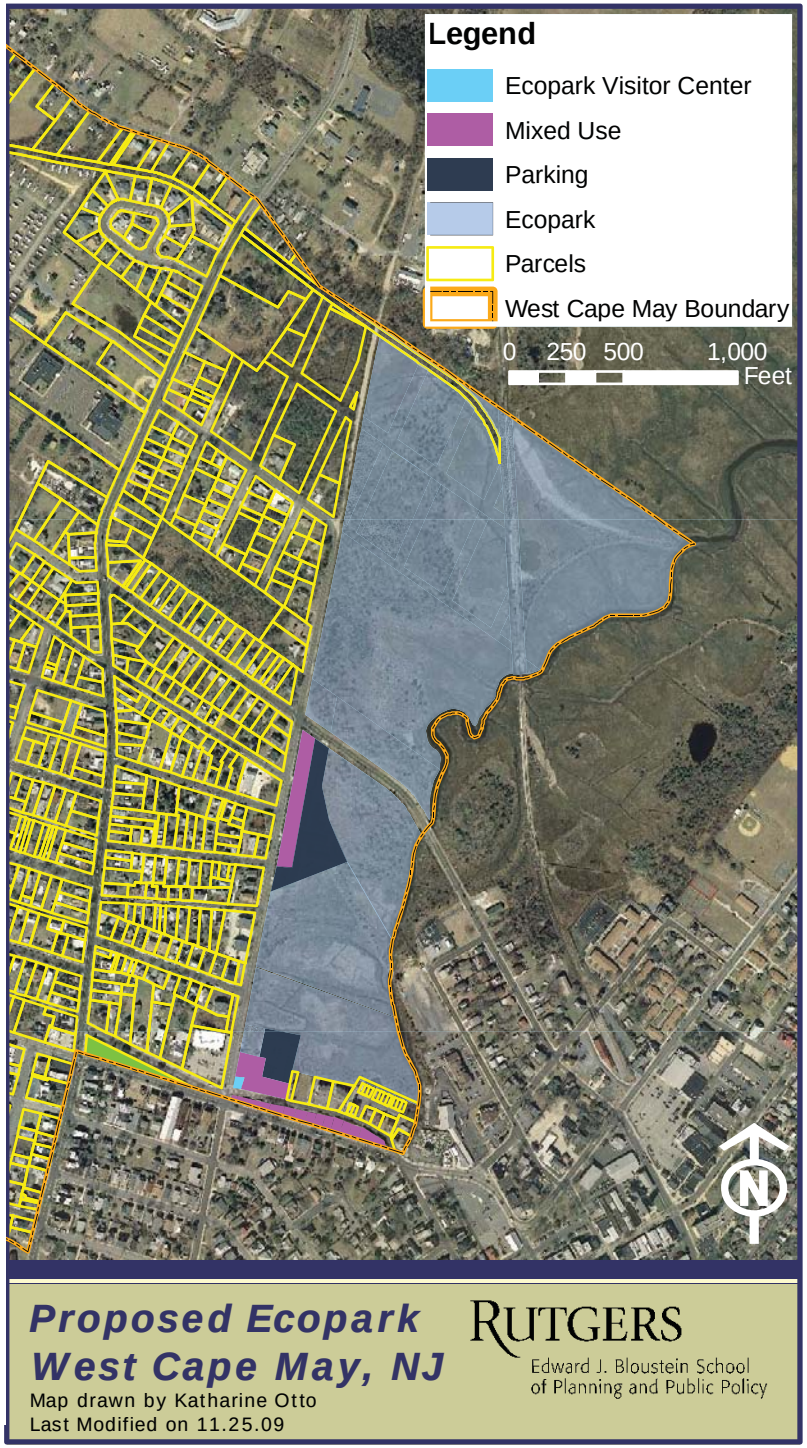
As the Lumberyard site is redesigned, the existing commercial strip further down on Park Boulevard towards Leaming Avenue should be redesigned using the same physical design criteria. The one-story businesses that currently exist should be redesigned into three-story mixed-use buildings. The maximum buildable space at 3 stories is 205,519 square feet. Current and additional businesses would be located on the first floor, with apartments and office space in the stories above. The front setback should be changed to 0'-5' and parking should be moved to the back of the buildings.

c. Proposed Eco-Park

As stated in the 2005 Comprehensive Master Plan, the Municipality would like to create an Eco-Park in the far eastern portion of the municipality, just off Park Boulevard, in an area that was once a municipal landfill. This area of land consists of 46 parcels, owned by 30 separate owners. It would be in the municipality's best interest to work towards acquiring ownership of this land for the development of an Eco-Park. Sufficient funding sources will need to be sought out. The development of this Eco-Park could become a main attraction for visitors, and as a result, local businesses could benefit greatly from increased pedestrian traffic. The establishment of an Eco-Park would further promote West Cape May as a premier natural attraction.

According to the goals outlined in the Eco-Park Plan for the Discovery Green Conservancy in Houston, Texas, Eco-Parks serve the following purposes:

- An area set aside for the experience of natural surroundings and the creatures that live there;
- A regional destination that provides education, preservation, exploration, and recreation of our native environment;
- A place to observe animals in their natural habitats;
- A learning center with new opportunities for understanding and appreciating indigenous wildlife with an enhanced educational/interpretive dimension;
- A demonstration area that showcases the newest in environmentally friendly, energy saving practices and architecture;
- An outdoor classroom where visitors can get a hands-on experience in nature that cannot be replicated



Proposed Ecopark
West Cape May, NJ

Map drawn by Katharine Otto
Last Modified on 11.25.09

RUTGERS
Edward J. Bloustein School
of Planning and Public Policy

indoors; and
- A starting point for hikes and bike rides. (Discovery Green Houston, 2009)

West Cape May's proposed Eco-Park and its surrounding redesigned commercial areas would work together in a symbiotic relationship to attract visitors to this area. Due to the fact that the majority of the proposed Eco-Park land sits on wetlands, boardwalks would have to be built to make it possible for visitors to traverse the area. These wetlands allow for prime bird and wildlife viewing. Therefore, informative kiosks along the boardwalks should be constructed to provide the visitor with an optimal learning experience. Boardwalks could originate close to the Park/Myrtle intersection, near proposed parking at the Lumberyard site. Cape Island Creek rests along the eastern border of the proposed Eco-Park site. Because of the creek's close proximity to the Eco-Park, a boardwalk could be developed that extends out to the bank of the creek (north of Leaming Ave and just north of the small bridge that crosses over the creek). This boardwalk could include a kayak launch site, where visitors could rent kayaks and travel from the creek into Cape May Harbor to sightsee, birdwatch, fish, et cetera.

Photographs on opposite page:
Top: Boardwalk in San Paulo Eco-Park, Brazil Source: Mobile Network (2008)
Center: Living Willow Tunnel above boardwalk in Gulliver's Eco Park, England Source: Water Willows (2000-2009)
Bottom: Boardwalk Bridge, Bashkhali Eco-Park, Bangladesh Source: Azim Al Jabber (2005)

d. Incentivize Context-sensitive Development around Broadway and Sunset Intersection

The commercially zoned area on Sunset Boulevard near Broadway presents an opportunity to create or expand a walkable corridor. Currently, pedestrian access is limited along Sunset Boulevard. Proximity to Willbraham Park and the proposed new facility at the 7-Eleven site make it a logical extension for more concentrated commercial activity. In the Borough's Urban Business Design Plan, excellent recommendations are given. As documented in this plan, the introduction of continuous sidewalks and 0' setbacks would help incorporate this section of Sunset Boulevard - currently zoned C-2 - into the rest of the Borough.

However, wetland and flooding concerns also need to be prioritized when determining how new development along this corridor is structured. To incentivize context-sensitive development the municipality should consider allowing:
- Reduced or zero parking requirements to decrease stormwater runoff.
- Lot coverage bonus for green roof construction and low impact design practices.
- Height or density bonuses for raised developments in flood-prone areas.

Wayfinding Signage Matrix

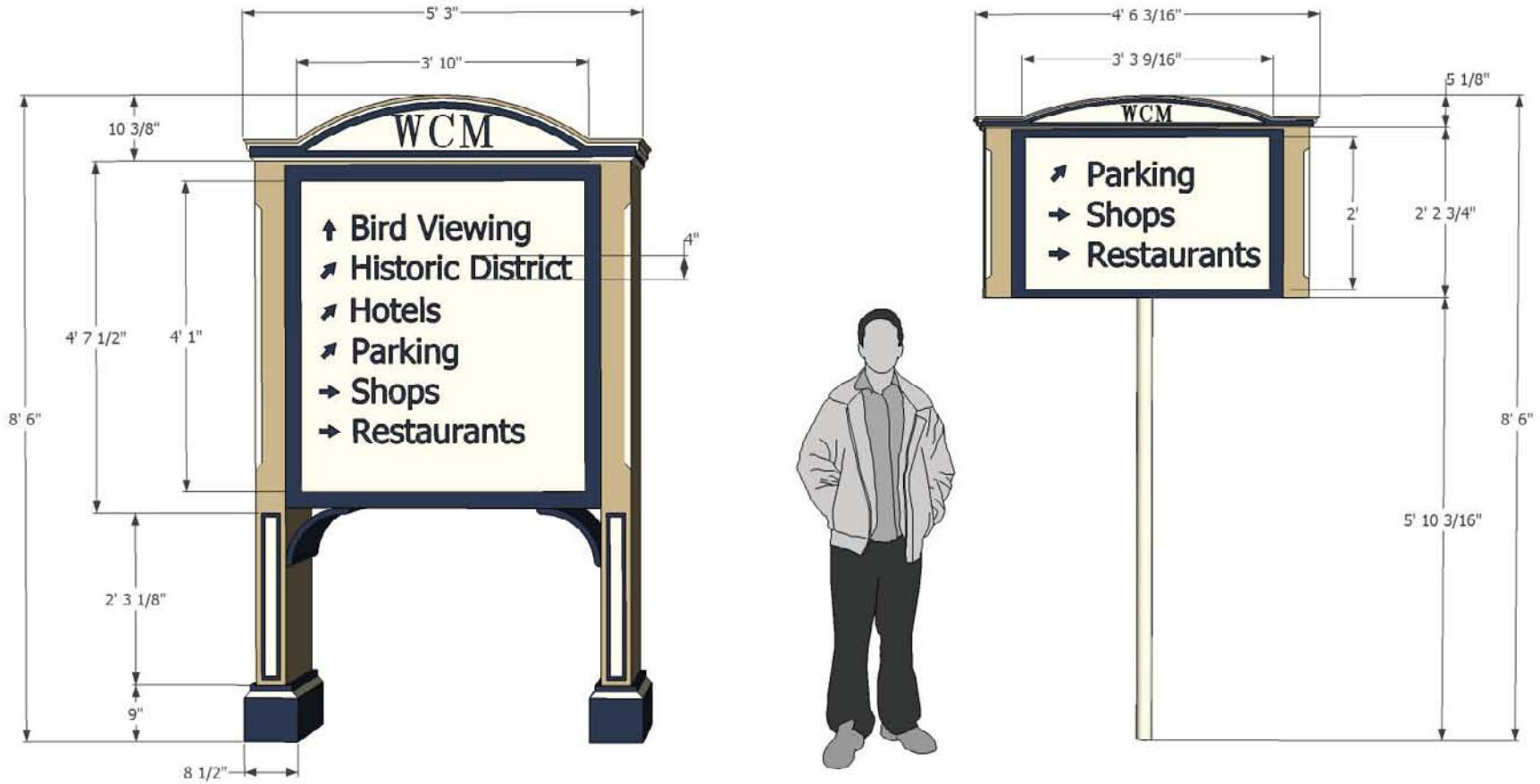
West Cape May, NJ

Sign Type	Sign Priority	Location	Sign Text	Direction	Cost ($)
Primary	High	On W Perry St at Park Blvd (Westbound)	Bird and Wildlife Viewing		TBD
			Broadway Historic District		
			Hotels		
			Parking		
			Shops and Restaurants		
Primary	Medium	On Leaming Ave at Park Blvd (Westbound)	Bird and Wildlife Viewing		TBD
			Shops and Restaurants		
			Broadway Historic District		
			Hotels		
Primary	Medium	On Broadway at Central Ave (Southbound)	Multiple - TBD	TBD	TBD
Primary	Low	On Sunset Blvd at Stevens St (Eastbound)	Multiple - TBD	TBD	TBD
				Subtotal	TBD
Secondary	High	On Broadway at Sunset Blvd (Westbound)	Higbee Wildlife Refuge		TBD
			Cape May Bird Refuge		
			Broadway Historic District		
			Hotels		
Secondary	High	On Broadway at Sunset Blvd (Southbound)	Higbee Wildlife Refuge		TBD
			Cape May Bird Refuge		
			Shops and Restaurants		
			Parking		
Secondary	High	Multiple -TBD	Multiple - TBD	TBD	TBD
Secondary	Medium	Multiple -TBD	Multiple - TBD	TBD	TBD
Secondary	Low	Multiple -TBD	Multiple -TBD	TBD	TBD
				Subtotal	TBD
				Grant Amount	TBD
* This is an example. All information is to be determined upon public participation				**Grand Total**	TBD

e. Devise and Implement a Wayfinding Signage System

Wayfinding signage is an economic tool that helps attract and retain tourists. Effective systems cater to tourist needs by considering every trip from beginning to end. Consistency and legibility are key to creating a comprehensive network that adds to the character of the borough while also successfully giving directions.

Currently, West Cape May uses signs to advertise local festivals and farmer's markets. This is a great way to advertise activities in the municipality. Wayfinding signage would give tourists additional information, serving individual needs and interests. Common destinations can include: restaurants, shops, hotels, the "downtown" area, parking, hospitals, et cetera. More specific destinations can be tailored by location within the municipality. Signage for West Cape May



Primary and Secondary Wayfinding Signage. Drawn by Matthew Ward (2009)

could draw from Victorian architecture present within the Borough. Costs range based on the complexity of design and the amount of signs. A wayfinding system could be implemented on a priority basis to test the success and need for additional signage.

To devise a wayfinding system, it is best to start by assessing where the key entrances and thoroughfares are located within the Borough. A matrix like the one found on the page 92 should be used to construct a network.

For a borough the size of West Cape May, a comprehensive system should consist of primary and secondary wayfinding signage (Colorado Center for Community Development: 7).

- Primary Signage: Large primary signage is located along major circulation routes and intersections. These signs have 5 to 6 directional arrows.
- Secondary Signage: Small secondary signage is located at intersections and minor routes. These signs have 2 to 3 directional arrows.

The sample matrix provided suggests possible wayfinding signs within West Cape May. As an example, this matrix could be used as a foundation for further assessment. A public process should be conducted to approve the project and decide final locations, priorities, sign text, direction, and design.

f. Utilize other resources

Another step that West Cape May can take to become more economically sustainable is to focus on locally produced goods and services. The town should reduce its dependence on outside sources to produce the goods that the municipality and its residents consume. Encouraging businesses and activities that take advantage of resources within West Cape May helps make the area more economically independent. Reducing dependence on outside resources can also shrink the carbon footprint of the town by reducing or eliminating the energy used in transportation of goods and services. Furthermore, focusing on local goods and resources strengthens the town identity and creates a more unique sense of place.

a. Encourage local agriculture

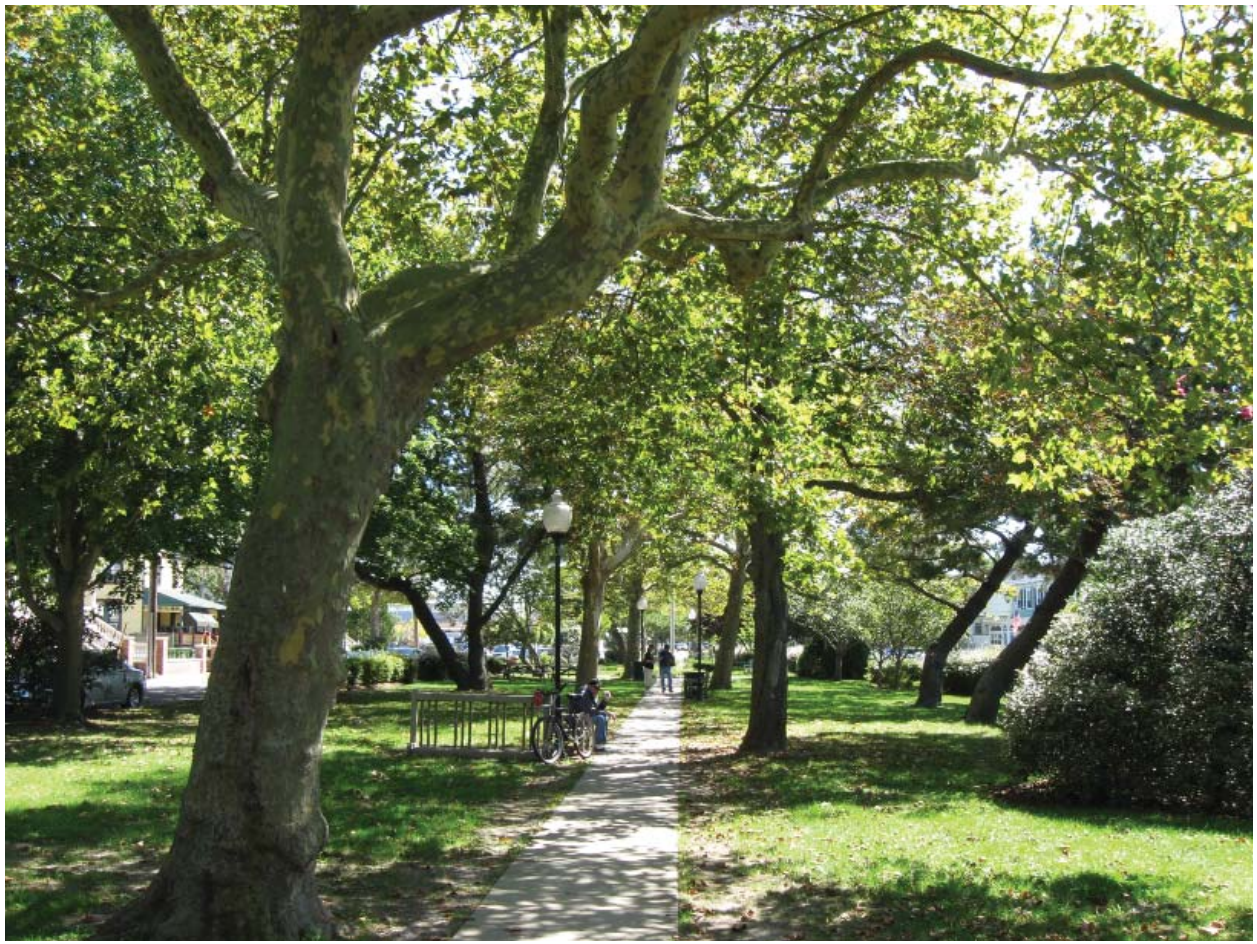
In addition to its open space benefits, the existence of local agriculture helps make rural areas more economically viable. West Cape May already prides itself on having active farmland and has made several efforts to preserve existing farms. Nonetheless, the Borough relies heavily on residential uses for tax revenue and economic activity. What commercial land the town has tends to revolve around the tourist industry. Increasing agricultural productivity could provide a broader economic base to the town. It would also aid in the preservation of open spaces that are crucial to the tourist economy.

Heavy agricultural use of land has the potential of putting a strain on natural resources. Therefore, an emphasis should be placed on organic or low-spray polyculture agricultural practices. Polyculture farms are those that grow many

different crops rather than just one. These types of farms require less fertilizer and pesticide use, are more resistant to drought or disease, and ensure a more varied supply of fresh local produce. In order to be environmentally sustainable, it is vital that local farms use pesticides and petroleum-based fertilizers sparingly or not at all so they do not pollute local water supplies. In its promotion of sustainable local agriculture, West Cape May should use the Rutgers Cooperative Extension as an educational resource.

b. Encourage ecotourism

West Cape May has a lot to offer in natural beauty and access to environmentally important lands. The municipality should capitalize on its natural resources through the pursuit of ecotourism. As noted above, an ecopark has been proposed with this end in mind. The municipality should accelerate efforts to establish itself as a dynamic and environmentally rich destination. As part of this effort, West Cape May should create a comprehensive bike and pedestrian network.



Wilbraham Park is host to many community events. Photograph by Katharine Otto (2009)

A. Action Plan

The Borough of West Cape May will benefit greatly from comprehensive, long-range sustainability planning. This Action Program outlines a general timetable that will help meet the goals set forth in this Sustainability Plan. The Action Program suggests specific measures that the Borough may take to implement the Sustainability Plan. The activities listed for the first two years after the completion of the Plan will further the Borough's sustainability progress immediately. The "five year" recommendations will take more time to complete. The "ten year" projects should take place as opportunities arise within the appropriate time frame.

Creating a Sustainable Environment

Within Two Years:

- Improve collaboration with neighboring municipalities.
- Promote environmental stewardship.
- Create a Borough Open Space, Farmland and Historic Preservation Trust Fund.
- Plant native vegetation as a way to encourage naturally functioning ecosystems.
- Educate and encourage residents to use rain barrels for outdoor water use to eliminate potable water use for landscape irrigation.
- Improve water efficiency by encouraging indoor water reduction.
- Educate and encourage residents to use rain gardens in their outdoor landscaping.
- Continue to educate the community through displays at local fairs showing cost and energy savings.
- Increase the visibility and number of recycling containers in municipal facilities and in public areas.
- Provide incentives for source reduction to both businesses and households.
- Celebrate borough recycling success publicly.
- Develop independent Borough and regional compost centers to supplement the County center.
- Adopt a construction and demolition ordinance to ensure that waste from these activities is disposed of efficiently.
- Continue to preserve unique physical elements of the borough.
- Realign historic preservation policies with green building practices.
- Promote appropriate coastal building practices in light of sea-level rise and flood projections.
- Promote and expand community gardening.
- Encourage local food suppliers and restaurants to use and label local produce.
- Continue to support local food festivals.
- Improve emergency communication capabilities with residents and visitors.

Within Five Years:

- Consider a regional approach to coastal and bayshore management.
- Encourage sustainable landscaping.
- Implement the usage of bioswales on a municipal level.
- Pursue a regional approach to manage salination problems.
- Develop and implement initiatives to use alternative pavement forms to assist in groundwater and stormwater management.
- Perform energy audits for municipal buildings.
- Weatherize municipal buildings.
- Promote solar panel installations.
- Encourage wind farms.
- Recycle and compost a wider range of materials.
- Foster a culture of reuse by adapting existing buildings for commercial use.
- Capitalize on the potential of the green economy by improving the efficiency of existing structures.
- Support sustainable and organic products with certified growing and production methods.
- Enhance preparedness against coastal risks.

Within Ten Years:

- Incorporate sea level rise predictions into local land use decision making.
- Maintain high carbon sequestering land uses.
- Convert Borough's vehicle fleet to biodiesel fuel.
- Introduce multifamily, mixed use buildings, depending on the need for development.
- Promote biomass conversion.
- Reduce the Borough's carbon footprint through education, regulation, and economic incentives.
- Create an emergency fund to redevelop vital communication resources in the event of disaster or disruption.

Economic Sustainability Element Timeline

Priority	Project	Year 1	Year 2	Year 3	Year 4	Year 5	Years 5+
Single-step Scenarios							
Medium	Sidewalk/ Bike Path Development/ Reconstruction	Plans already exists. Implement in key corridors.	Implement in key corridors	Implement in key corridors	Reassess and implement in secondary corridors	Reassess and implement in secondary corridors	Intended completion
High	Bioswales Construction	Seek funding through pre-disaster mitigation grants	Assess applicable streets according to Right of Way widths and flood risk	Implement plan			
High	Eco-Park	Layout and finalize desired land to be designated as Eco-Park. Pursue/obtain funding for development	Begin onsite evaluations to determine most appropriate uses for designated land. Determine feasibility for best locations to build elevated walking boardwalks, information kiosks, etc. RFPs for Eco-Park development/ management	Evaluate and finalizes selected plan. Satisfy any necessary requirements from government affiliated environmental offices. Begin marketing initiatives to establish opening of this facility as a tourist destination.	Begin necessary site construction/redevelopment. Begin necessary refurbishment to natural areas. Establish appropriate location for off-street parking. Continue marketing promotions	Continue construction. Continue marketing promotions.	Complete construction in year 6. Open facility with festive grand opening.
Medium	Wayfinding Signage System	Approve program. Assess location, priority, sign text, direction and design	Implement plan. Start with high priority signage.	Evaluate success and reassess. If successful, complete implementation.			
High	Sunset Blvd Commercial Corridor (green incentives)	Assess benefits versus impacts. Write appropriate incentives into borough ordinance					

Priority	Project	Year 1	Year 2	Year 3	Year 4	Year 5	Years 5+
Multi-step Scenarios							
High	**Create a Formal Municipal Gateway**						
Medium	New Circulation Plan	Seek grant for planning & seek waiver from Cape May DOT to implement	Onsite testing	Evaluate success of testing. If successful, implement plan items			
High	Traffic Circle	Seek funding and evaluate if any applicable appropriations exist in budget	Onsite testing	Evaluate success of testing. If successful, implement plan items			
High	On-street Parking on West Myrtle	Assess what type of diagonal parking is applicable. Paint diagonal parking on one side of street					
Low	Onstreet Parking on West Perry	Seek waiver from Cape May DOT to implement	Assess what type of diagonal parking is applicable. Paint diagonal parking on one side of street				
High	Option A: Quasi-public facility	Establish public outreach process to obtain public input	RFPs/obtain property through deed to Borough	Finalize plans and obtain all necessary building permits	Begin construction	Finish construction and open facility	
Medium	Option B: Relocate Borough Hall	Municipality to internally evaluate requirements for proposed new office space and its viability if moved to new location. Seek out potential funding opportunities	RFPs for redevelopment of new location - adding necessary office space, etc.	Finalize plans and obtain all necessary building permits	Begin construction	Finish construction and open facility	

Priority	Project	Year 1	Year 2	Year 3	Year 4	Year 5	Years 5+
Medium	**Redevelop Municipal Complex**						
Medium	**Redevelop Municipal Complex**	RFPs for mixed-use building and decide whether to sell or lease street frontage lot. RFPs for fire station renovation.	Finalize selected plan for redevelopment. Obtain all necessary building permits	Begin construction	Continue construction	Complete construction in year 5. Acquire both commercial and residential tenants. Open facility	

Priority	Project	Year 1	Year 2	Year 3	Year 4	Year 5	Years 5+
High	**Historic District and Broadway Commercial Corridor**						
Medium	Sidewalk/Bike Path Development/ Reconstruction	Inventory of buildings along corridor to see if/how they would be affected by sidewalk widening. Once determined, begin process to retrofit the sidewalk or these buildings to fit in with the widening plan, while staying in compliance with any building and/or historic regulations.	Implement plan	Implement plan	Complete plan and finish off with landscaping efforts that create a cohesive and welcome pedestrian space.		
Medium	Traffic Calming	Install stop signs at appropriate locations.	Onsite testing to determine best locations for additional traffic calming devices.	Install traffic calming devices and where applicable, paint pedestrian crosswalks and install appropriate safety signage.			
High	Retrofitting applicable buildings	Onsite evaluations to determine what buildings could and need to be retrofitted to create more pedestrian friendly commercial space (e.g. improvements to energy efficiency, handicap accessibility, on-street access) pay particular attention to historic properties and feasibility to retrofit these. meet with building/business owners to address these issues.	Establish step by step plan to retrofit what buildings when. Seek potential funding to assist with these improvements.	Begin construction	Continue construction	Complete construction	

Priority	Project	Year 1	Year 2	Year 3	Year 4	Year 5	Years 5+
High	**Park Blvd Commercial Corridor/West Perry Myrtle Crescent**						
Low	Sidewalk/Bike Path Development/ Reconstruction	Inventory of proposed mixed-use buildings along corridor to see if/how they would be affected by sidewalk widening. Once determined, begin retrofitting applicable sidewalks and/or buildings in compliance with any building regulations.	Implement plan	Implement plan	Complete plan and finish off with landscaping efforts that create a cohesive and welcoming pedestrian space.		
Low	Traffic Calming	Onsite testing to determine best locations for traffic calming devices	Install traffic calming devices and where applicable, paint appropriate pedestrian crosswalks and install appropriate safety signage.				
High	Redevelop existing commercial space into mixed-use facilities	Begin talks with current building owners/business owners. Begin research on funding opportunities to allow for this mixed-use redevelopment	RFPs for building(s) redesign. Have funding sources established.	Begin construction	Continue construction	Continue construction - finalize parking, accessible relationship with Eco Park.	Complete construction and open facilities

B. Partnership Opportunities

West Cape May can engage residents, local groups, and neighboring towns to contribute towards the creation of a more sustainable environment. To further progress in these efforts, there are a number of agencies and organizations that can assist in pursuing the Borough's sustainability objectives.

Government agencies and non-government organizations will help West Cape May by providing opportunities, technical expertise, and assistance in sustainability efforts. A list of potential partners is provided below.

General

Association of New Jersey Environmental Commissions (ANJEC)

ANJEC helps individuals, municipalities and counties preserve natural resources and promote sustainable communities. It has a large resource center with information on open space, water resources and sustainable communities, including policies, sample ordinances, and links to local New Jersey initiatives.

Website: www.anjec.org

Sustainable Jersey Program

Sustainable Jersey is a certification and incentive program that aids New Jersey municipalities in the process of becoming more sustainable. The program is an initiative of the New Jersey State League of Municipalities' Mayors' Committee for a Green Future, the Municipal Land Use Center at the College of New Jersey, and the New Jersey Sustainable State Institute at Rutgers University's Edward J. Bloustein School of Planning and Public Policy. Grants are available to help municipalities in the program to institute new greening and sustainability initiatives. See Appendix D for certification guidelines.

Website: www.sustainablejersey.com/resources.php

Rutgers Cooperative Extension

The Rutgers New Jersey Agricultural Experiment Station (NJAES) Cooperative Extension is designed to help New Jersey populations through science-based educational programs focused on: Economic Growth and Agricultural Sustainability, Healthy Lifestyles, Human and Economic Development, Environment and Natural Resources, and Food Safety and Nutrition. A wide variety of resources, scientists in specialized fields, and potentials for partnership are available through the Cooperative Extension.

Contact: Jenny Carleo, Cape May County Agricultural Agent.
Telephone: 609-465-5115.
Website: http://njaes.rutgers.edu/extension/

Land Development Practices

The Nature Conservancy
Currently manages the Cape May Migratory Bird Refuge located both within and directly adjacent to the Borough. West Cape May is part of the Delaware Bayshores program area.

Contact: Delaware Bayshores Center, 2350 Route 47, Delmont, NJ 08314. Telephone: 609-861-0600
Website: www.nature.org/wherewework/northamerica/states/newjersey/work/art15460.html

NJDEP's Parks and Forestry
Currently manages nearby Cape May Point State Park, the NJDEP's Parks and Forestry division oversees State parks, forests and historic sites.

Website: www.state.nj.us/dep/parksandforests

NJDEP's Bureau of Land Management
Currently manages Higbee Wildlife Management Area immediately west of the Borough, the Bureau of Land Management is responsible for maintaining the Division of Fish and Wildlife's Wildlife Management System. The Wildlife Management System is maintained for a diversity of wildlife species through forest/field manipulation and habitat improvement, as well as public access.

BLM Website: www.state.nj.us/dep/fgw/blmhome.htm
WMA Website: http://www.state.nj.us/dep/fgw/wmas.htm

US Army Corp of Engineers – Philadelphia District
Oversees coastal management projects along the coast and bayshore of Cape Island.

Website: www.nap.usace.army.mil/

Cape May County Open Space and Farmland Preservation Department
Oversees open space and farmland preservation in Cape May County using money from the County Open Space and Farmland Preservation Trust Fund, and also accesses money from the state through the SADC's County Planning Incentive Grant Program. The County has a Comprehensive Farmland Preservation Plan that outlines the current status of agriculture in the county and outlines plans for sustaining agriculture and preserving farmland throughout the County.

Contact: Barbara Ernst, Department Director. Telephone: 609-465-1086.
Website: www.capemaycountygov.net/Cit-e-Access/webpage.cfm?TID=5&TPID=458

NJ Department of Agriculture's State Agriculture Development Committee
Several programs through which individuals, municipalities and counties can preserve farmland. The SADC also defines a standard for Comprehensive Farmland Preservation Plans.

Website: www.nj.gov/agriculture/sadc/

New Jersey Audubon
New Jersey Audubon seeks to encourage environmental awareness throughout New Jersey, protect wildlife and promote the protection of New Jersey's natural habitats.

Website: www.njaudubon.org

New Jersey Conservation Foundation
New Jersey Conservation Foundation seeks to preserve and maintain natural areas and farmland across the state. In addition to land acquisition and stewardship, NJCF also provides support, training and technical assistance to local environmental groups, and advocates new policies and tools to improve land use practice across the state.

Website: www.njconservation.org

The Trust for Public Lands – New Jersey
The Trust for Public Lands assists in the preservation of parks, farms, forests, natural lands, heritage lands and water resources.

Website: www.tpl.org/tier3_loc.cfm?folder_id=629

Rails-to-Trails Conservancy
The Rails-to-Trails Conservancy encourages the re-use of former rail lines as trail networks. The website has a wide range of information ranging from how to acquire the land, to how to design a continuous trail system, tips for management and maintenance.

Website: www.railstotrails.org

Water Resources

Rutgers Soil Testing Laboratory
The Rutgers Soil Testing Laboratory provides soil test results and specified recommendations for optimum plant growth.

Contact: Dr. Stephanie Murphy, Lab Director. Phone: 732-932-7000x4231.
Website: http://njaes.rutgers.edu/soiltestinglab/

Energy Resources

The Green New Jersey Resource Team
Grassroots program created, directed, and funded by the NJ Clean Energy Fund. Community groups across NJ distribute Energy Star appliances and educate residents about how to reduce energy use and help protect the environment.

Website: www.njcleanenergy.com/residential/tools-and-resources/green-new-jersey-resource-team

Food Systems

Farm to School
A program that brings healthy food from local farms to school children, and teaches school children about where the food comes from.

Website: www.farmtoschool.org

FoodRoutes Network
A non-profit network that provides communications tools, technical support, networking and information resources to organizations that are working to rebuild local, community-

based food systems. They have a wide variety of resources and links about the community-based food systems and the importance of buying local.

Website: http://foodroutes.org

Northeast Organic Farming Association of New Jersey
Collaboration of farmers, consumers, retailers, processors, educators and researchers who seek to develop a sustainable organic agricultural system in New Jersey.

Website: www.nofanj.org

Jersey Fresh Information Exchange
A distribution and merchandising project run by Rutgers Cooperative Extension that aims to raise consumer awareness about New Jersey produce

Website: www.njfarmfresh.rutgers.edu/

NJ Department of Agriculture Jersey Fresh, Jersey Seafood and Jersey Grown
Program designed to highlight New Jersey's products – produce (JerseyFresh), seafood (JerseySeafood) and trees and plants (JerseyGrown). Website includes a directory of roadside markets, pick-your-own farms, community farmers markets, recipes, gardens and arboretums, retailers with JerseyGrown products, and restaurants with JerseyFresh products.

JerseyFresh website: www.state.nj.us/jerseyfresh/
JerseySeafood website: www.jerseyseafood.nj.gov/
JerseyGrown website: www.jerseygrown.nj.gov/

Slow Food Network of South Jersey
Slow Food connects farmers, producers, chefs, restaurants, and consumers, recognizing the importance of local efforts in food production and local culinary traditions.

Website: http://slowfood.cape-may.net/
Email: slowfood@cape-may.net

Princeton School Gardens
A group of individuals that sought to establish community gardens in all public schools in Princeton, and share good practices and ideas for garden-based lessons in a wide variety of subjects.

Website: www.prs.k12.nj.us/GardenCoop
Garden Planning and Lesson Plans document: www.prs.k12.nj.us/GardenCoop/GardenCoopGuideNov07.pdf

New Jersey Agricultural Society
A non-profit that seeks to preserve and enhance agriculture, farming and related activities, and businesses in New Jersey through educational, informational, and promotional programs. They sponsor a variety of programs including Learning Through Gardening, which has a variety of educational programs and includes a grant for establishing garden-based learning activities.

NJAS website: www.njagsociety.org
Learning Through Gardening Grant: More information available from www.njagsociety.org/aitc/ltg.htm or contact

Suzanne Macauley, Program Director, njagsociety@optonline.net

Food Alliance
The Food Alliance is a nonprofit organization that certifies farms and food handlers for sustainable agricultural and facility management practices.

Website: www.foodalliance.org

Emergency Management and Abatement
Cape May County All-Hazards Mitigation Plan
This multi-jurisdictional effort, funded by a FEMA grant and consulted on by TetraTech, aims to reduce the effects of potential hazards across the peninsula. West Cape May has already signed on to the project.

Website: www.capemaycountyhmp.com/

C. Funding Opportunities

West Cape May's efforts to achieve its sustainability goals will require funding support from a variety of sources. A list of potential funding sources is provided below.

Land Development Practices

Cape May County Open Space and Farmland Preservation Trust Fund

Dealing only with willing sellers, the program purchases open space in fee simple. Farmland is preserved through the purchase of development rights. All purchases are made by the Board of Chosen Freeholders on recommendations from the County Open Space Board or the County Agricultural Development Board.

Contact: Barbara Ernst, Department Director. Telephone: 609-465-1086.
Website: www.capemaycountygov.net/Cit-e-Access/webpage.cfm?TID=5&TPID=458

NJDEP's Green Acres Program

The Green Acres program funds acquisition of local parkland and open space. To be eligible for Green Acres' Planning Incentive program, which can provide up to 50% of the land acquisition costs, the municipality must complete a Recreation and Open Space Inventory (ROSI), establish an open space trust fund, and adopt an Open Space and Recreation Plan as part of their Master Plan.

Website: www.nj.gov/dep/greenacres/

NJDEP's New Jersey Trails Program

New Jersey administers the money it receives from the Federal Highway Administration's Recreation Trails Program through its New Jersey Trails Program, with $1 million available for projects in 2009, with a maximum grant of $25,000 available for a project. A variety of factors are used to evaluate the application, including the NJ Trails Plan, length of trail, trail connectivity, trail access, compatibility with surrounding landscape.

Website: www.state.nj.us/dep/parksandforests/natural/trail_grants.htm

Association of New Jersey Environmental Commissions (ANJEC)

In addition to the wide range of examples and resources provided by ANJEC on their website, ANJEC as has a Smart Growth Planning Grant Program that provides matching reimbursement funds for a variety of projects involving the development of plans, ordinances and studies that lead to a more sustainable use of natural resources. These uses include Open Space and Farmland Preservation Plans, Natural/Environmental Resource Inventories (NRI/ERI), land use ordinances for energy efficiency, renewable energy and green building, and trails plans.

Website: www.anjec.org
2009 Smart Growth Planning Grant Information: www.anjec.org/pdfs/SmartGrowthGrants2009Facts.pdf

Native Plant Conservation Initiative (NPCI)
NPCI grants focus on the conservation of native plants and pollinators under any of the following areas: conservation, education, restoration, research, sustainability, and data linkages.

Contact: Ellen Gabel, Program Director, National Wildlife Refuge Programs. E-mail: Ellen.Gabel@nfwf.org
Website: www.nfwf.org/AM/Template.cfm?Section=Charter_Programs_List&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=13423

Water Resources

Environmental Infrastructure Financing Program (Clean Water Financing)
This program provides low-interest loans for the construction of a variety of water quality protection measures, including wastewater treatment facilities and stormwater and nonpoint source management facilities. Also eligible for funding are open space land purchase and conservation projects and remedial action measures such as brownfield projects that provide a water quality benefit. Financing is provided by NJDEP and the New Jersey Environmental Infrastructure Trust.

Contact: Stanley V. Cach, Jr., Municipal Finance and Construction Element. Telephone: (609) 292-8961. E-mail: stanley.cach@dep.state.nj.us.
Website: www.state.nj.us/dep/dwg/mface.htm.

Contact: New Jersey Environmental Infrastructure Trust. Telephone: (609) 219-8600.
Website: www.njeit.org.

Soil and Water Grants
The State Agriculture Development Committee (SADC) provides grants to help fund up to 50 percent of the costs of approved soil and water conservation projects on farms enrolled in permanent or eight-year farmland preservation programs.

Website: www.nj.gov/agriculture/sadc/farmpreserve/grants/soil&watergrants.pdf

Energy Resources

Energy Efficiency and Conservation Block Grant Program
The Program provides funding to States, U.S. territories, counties, cities and Indian Tribes with the purpose of reducing energy use and fossil fuel emissions and improving energy efficiency in transportation, the construction of new developments, and other appropriate sectors.

Website: www.eecbg.energy.gov/

Renewable Energy Manufacturing Incentive (REMI)
The New Jersey's Renewable Energy Manufacturing Incentive (REMI) program provides rebates to New Jersey residents, businesses, local governments, and non-profit organizations that purchase and install solar panels, inverters,

and racking systems manufactured in New Jersey.

Website: www.njcleanenergy.com/renewable-energy/programs/renewable-energy-manufacturing-incentive
Guidebook: www.njcleanenergy.com/renewable-energy/programs/renewable-energy-incentive-program

The Renewable Energy Incentive Program (REIP)
The Renewable Energy Incentive Program (REIP) provides rebates that reduce the upfront cost of installing renewable energy systems like solar, wind, and sustainable biomass projects. The REIP is part of New Jersey's efforts to reach its Energy Master Plan goals of striving to use 30 percent of electricity from renewable sources by 2020. The program includes financial incentives to system owners who install qualified clean energy generation systems in New Jersey.

Website: www.njcleanenergy.com/files/file/Renewable_Programs/CORE/REIPGuidebookfinal0202mq.pdf

Net Metering and Interconnection
New Jersey's Net Metering and Interconnection Program facilitate investments in renewable energy in conjunction with other incentives. The provisions offer credits for energy generation (REC's) at retail rates over an annualized period. The rules enable customer-generators to obtain full retail credit on their utility bill for each kilowatt hour (kWh) of electricity their renewable system produces within a billing period.

Website: www.njcleanenergy.com/renewable-energy/programs/net-metering-and-interconnection

Biomass Energy Production Funding
Grants that work to promote biomass energy production technology as defined in Executive Order No. 13134.

Website: www.njcleanenergy.com/files/file/program_updates/Renewable%20Energy%20Grid%20Connected%20Solicitation%20Updated%2011_10_09.pdf

Anemometer Loan Program
This program is funded by the United States Department of Energy Wind Powering America Program and is provided by the NJ Board of Public Utilities Office of Clean Energy Program.

Website: www.njcleanenergy.com/renewable-energy/technologies/wind/small-wind-systems/anemometer-loan-program

PSE&G Solar Panel Installation Funding
PSE&G will finance approximately 40% to 60% of the cost of solar photovoltaic (PV) system installations. Loans can be repaid over a ten year period with Solar Renewable Energy Certificates (SRECs), which are earned by the energy generated by the solar PV system.

Website: www.pseg.com/customer/solar/pdf/loan_brochure-residential.pdf

Home Performance with ENERGY STAR Program
The program offers financial incentives on energy efficient improvement initiatives.

Website: www.njcleanenergy.com/residential/programs/home-performance-energy-star/benefits-and-incentives

NJBPU Utility Financing Programs
The New Jersey Board of Public Utilities (BPU) provides financing programs at three of the state's electric utilities to support the installation of solar photovoltaic systems that produce renewable electricity.

Website: www.njcleanenergy.com/renewable-energy/programs/utility-financing-programs/utility-financing-programs

WARM Advantage Program
The Warm Advantage Program provides rebates for high efficiency natural gas home heating systems and water heaters.

Website: www.njcleanenergy.com/residential/programs/warmadvantage/warmadvantage

COOL Advantage Program
The Cool Advantage Program provides rebates for energy-efficient central air conditioners or heat pumps, as well as proper system sizing and installation "best practices" that affect operating efficiency.

Website: www.njcleanenergy.com/residential/programs/cooladvantage/cooladvantage-program

Community Partners Initiative
Community Partners receive support in their efforts to set clean energy goals, develop outreach plans, and educate residents about the economic and environmental benefits of clean energy and simple climate change solutions.

Website: www.njcleanenergy.com/residential/programs/community-partners-initiative-0

EPA Environmental Justice Small Grants Program
Grant provided to local communities that are working on solutions to local environmental and/or public health issues. For example, the fiscal year's 2010 focus will be on the following priorities: improving air quality, managing chemical risks, cleaning up hazardous waste disposal sites, reducing greenhouse gas emissions and protecting America's water. Eligible applicants are non-profit institutions and local or county governments.

Contact: Sheila Lewis, lewis.sheila@epa.gov

Energy Efficiency Conservation Block Grant Program
Provides funding to local and state governments to develop and implement projects that promote energy efficiency and reduce overall energy use within targeted communities.

Website: www.eecbg.energy.gov/

New Jersey Greenhouse Gas Reduction Program
Although the application period was closed in late 2009 for 2010 funding, funding for the future may be possible. This grant provides funding for local municipalities' proposed

efforts to plan, develop and implement measures that reduce greenhouse gas emissions through programs that result in energy efficiency, renewable energy, distributed energy and sustainable land use planning.

Contact: GHGGrants@dep.state.nj.us
Website: http://74.125.93.132/search?q=cache:GR7b5me8pGMJ:www.state.nj.us/dep/opsc/ghggrant.html+NJDEP+Greenhouse+Gas+Reduction+Grant+Program&cd=1&hl=en&ct=clnk&gl=us

Solid Waste and Materials

New Jersey Solid Waste Services Grants

Eligibility is for County governments only and the purpose of the grant is to prepare, revise, or implement solid waste management plans and/or recycling plans. Grants are made on an annual basis and no county approve for a grant will receive less that 2% of the available statewide funding.

Contact: Guy J. Watson, Chief. NJDEP-Division of Solid and Hazardous Waste. Bureau of Recycling and Planning. Telephone: (609) 984-3438. Email: ed.nieliwocki@dep.state.nj.us
Website: www.nj.gov/dep/grantandloanprograms/er_swsg.htm

Local Recycling Grants through the NJ Recycling Enhancement Act

The state offers various grants through the NJ Recycling Enhancement Act.

Contact: Guy J. Watson, Chief. NJDEP-Division of Solid and Hazardous Waste. Bureau of Recycling and Planning. Telephone: (609) 984-3438. Email: ed.nieliwocki@dep.state.nj.us
Website: www.nj.gov/dep/dshw/recycling/

NJ Municipal Recycling Tonnage Grant Program

This program provides incentives to counties and municipalities to increase their recycling programs. Funding comes from annual state budget appropriation.

Contact: Joseph Davis. Bureau of Recycling and Planning. Telephone: (609) 984-3438. E-mail: joseph.davis@dep.state.nj.us

Building Practices

New Jersey Municipal Local Government Audit Program

An energy audit program completed by the municipality which then makes municipality eligible for two energy related grants: Smart Start, a Clean Energy Program that offers technical assistance and rebates for facility and equipment renovations and upgrades, and the 2008 New Jersey Clean Energy program, which includes $400,000 to fund grants in the range of $5,000 to $15,000 to community-based organizations for outreach and education about clean energy and energy saving initiatives.

Contact: New Jersey State League of Municipalities. Telephone: 609-695-3481.
Website: http://74.125.93.132/search?q=cache:E_ZczdtJnAJ:www.njslom.com/magart_0308_pg14.html+New+Jersey+BPU+Energy+Audit+Grant+Program&cd=1&hl=en&ct=clnk&gl=us

Food Systems

US Department of Agriculture's National Organic Program

The National Organic Program develops, implements, and administers national production, handling, and labeling standards for organic agricultural products. The program also certifies operations that meet USDA standards.

Website: www.ams.usda.gov/AMSv1.0/NOP

New Jersey Agricultural Society

New Jersey Agricultural Society sponsors a variety of programs including Learning Through Gardening, which has a variety of educational programs and includes a grant for establishing garden-based learning activities.

Contact: Suzanne Macauley, Program Director. E-mail: njagsociety@optonline.net.
Website: www.njagsociety.org/aitc/ltg.htm

Emergency Management and Abatement

Emergency Management Section of New Jersey State Police (NJSP)

In the event of a Presidentially-declared disaster, the Public Assistance Unit of the NJSP manages monies from the Public Assistance Grant Program. The NJSP's Mitigation Unit administers a number of grant-based FEMA programs to prevent against disasters. These programs include:
-Flood Mitigation Assistance
-Pre-Disaster Mitigation & Pre-Disaster Mitigation-Competitive
-Hazard Mitigation Grant Program

Communities may coordinate with the Mitigation Unit to learn about and apply for these programs, with the NJ Office of Emergency Management (OEM) making the final determination of which applications to send to Washington.

Website: www.state.nj.us/njsp/divorg/homelandsec/ems.html

Federal Emergency Management Agency (FEMA)

FEMA coordinates a variety of Hazard Mitigation Assistance (HMA) grant programs. Grants are awarded to states, and the funds are then distributed to projects via subapplications or to counties and municipalities via subgrants.

Website: www.fema.gov/government/grant/hma/index.shtm

Flood Mitigation Assistance (FMA) Program

FMA is given funds by FEMA to help implement initiatives to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program.

Website: www.fema.gov/government/grant/fma/index.shtm

SECTION V: ABBREVIATIONS

ANJEC – Association of New Jersey Environmental Commissions
BLM – New Jersey Division of Fish and Wildlife's Bureau of Land Management
BPU – Board of Public Utilities
CFL – Compact Florescent Lightbulbs
CHP – Combined Heat and Power
CRSSA – Rutgers Center for Remote Sensing and Spatial Analysis
CSA – Community Supported Agriculture
DEM – Digital Elevation Model
DPW – West Cape May Department of Public Works
DSIRE – Database of State Incentives for Renewables and Efficiency
ENSP – New Jersey Division of Fish and Wildlife's Endangered and Nongame Species Program
EOP – Emergency Operations Plan
FEMA – Federal Emergency Management Agency (a division of the U.S. Department of Homeland Security)
HMP – Multi-Jurisdictional All-Hazard Pre-Disaster Mitigation Plan (a project of Cape May County in collaboration with FEMA and TetraTech)
HPC – West Cape May Historic Preservation Commission
IPCC – Intergovernmental Panel on Climate Change
LiDAR – Light Detection And Ranging
m – meters
Migratory Bird Refuge – Cape May Migratory Bird Refuge
MUA – Cape May County Municipal Utilities Authority
NGVD – National Geodetic Vertical Datum
NIFA – USDA's National Institute of Food and Agriculture
NJAES – Rutgers' New Jersey Agricultural Experiment Station
NJCEF – New Jersey Clean Energy Fund
NJDCA – New Jersey Department of Community Affairs
NJDEP – New Jersey Department of Environmental Protection
NJDFW – New Jersey Division of Fish and Wildlife
NJDHSS – New Jersey Department of Health and Senior Services
NJDSTPF – New Jersey Domestic Security Preparedness Task Force

NJEMP – New Jersey Energy Master Plan
NJOEM – New Jersey Office of Emergency Management (a division of the State Police)
NJOHSP – New Jersey Office of Homeland Security and Preparedness
NOFA – Northeast Organic Farming Association
NRCS – Natural Resources Conservation Service
NTHP – National Trust for Historic Preservation
OCE – Office of Clean Energy
ONLM – New Jersey Division of Parks and Forestry's Office of Natural Lands Management
PBES – Portland Bureau of Environmental Services
REC – Renewable Energy Credits
REIP – Renewable Energy Incentive Program
RSIS – Residential Site Improvement Standards
RSPR – Relative Sea Level Rise
SARE – Sustainable Agriculture Research and Education program
SAREP – University of California's Sustainable Agriculture Research and Education Program
TNC – The Nature Conservancy
USACE – United States Army Corps of Engineers Philadelphia District
USDA – United States Department of Agriculture
USGS – United States Geological Survey
WCED – United Nations World Commission on Environment and Development
WCMCP – West Cape May Comprehensive Plan
WMA – Wildlife Management Area

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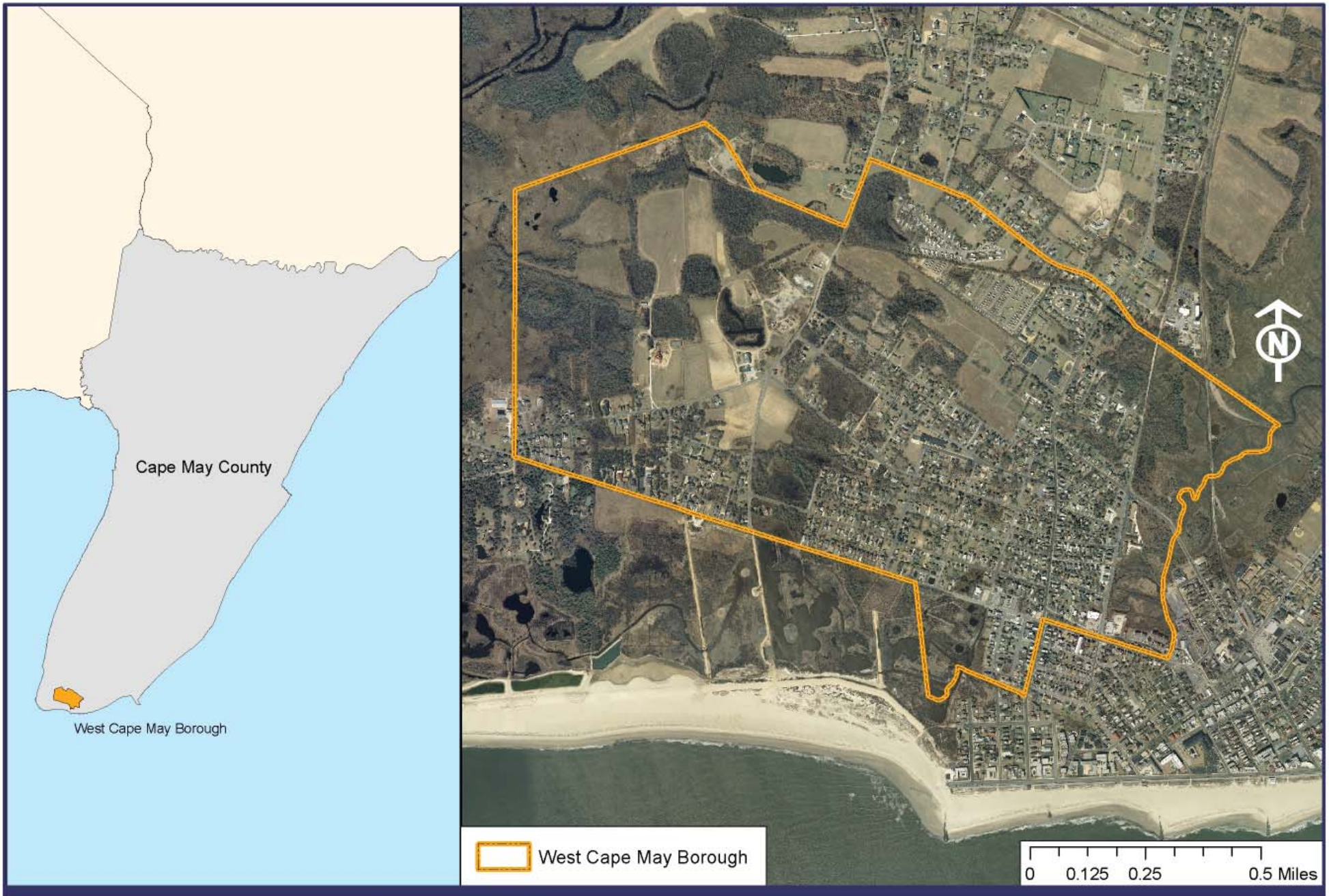
Freshwater wetlands of the Cape May Migratory Bird Refuge. Photograph by Katharine Otto (2009)

Existing Conditions Maps

A. West Cape May in Cape May County
B. West Cape May Land Use Map by Tax Parcel
C. Land Suitable for Wind Farms (Parcels over three acres)
D. NJDEP Areas of 100 Year Flooding
E. Marshland Habitats
F. NJDEP Classified Wetlands
G. NJDEP Classified Wetlands with 300 ft buffer
H. Natural Heritage Priority Sites
I. Preserved Lands - Open Space and Farmland
J. Historic Shoreline
K. Cape May Island Facilities

Future Land Elevation Maps

K. Low Sea Level Rise Scenario
L. High Sea Level Rise Scenario
M. Low Sea Level Rise Scenario with 30 year storm event
N. Low Sea Level Rise Scenario with 100 year storm event
O. High Sea Level Rise Scenario with 30 year storm event
P. High Sea Level Rise Scenario with 100 year storm event



Cape May County and West Cape May Borough

Sources: NJ DEP

Map drawn by Kate Lawrence
Last Modified on 10.24.09

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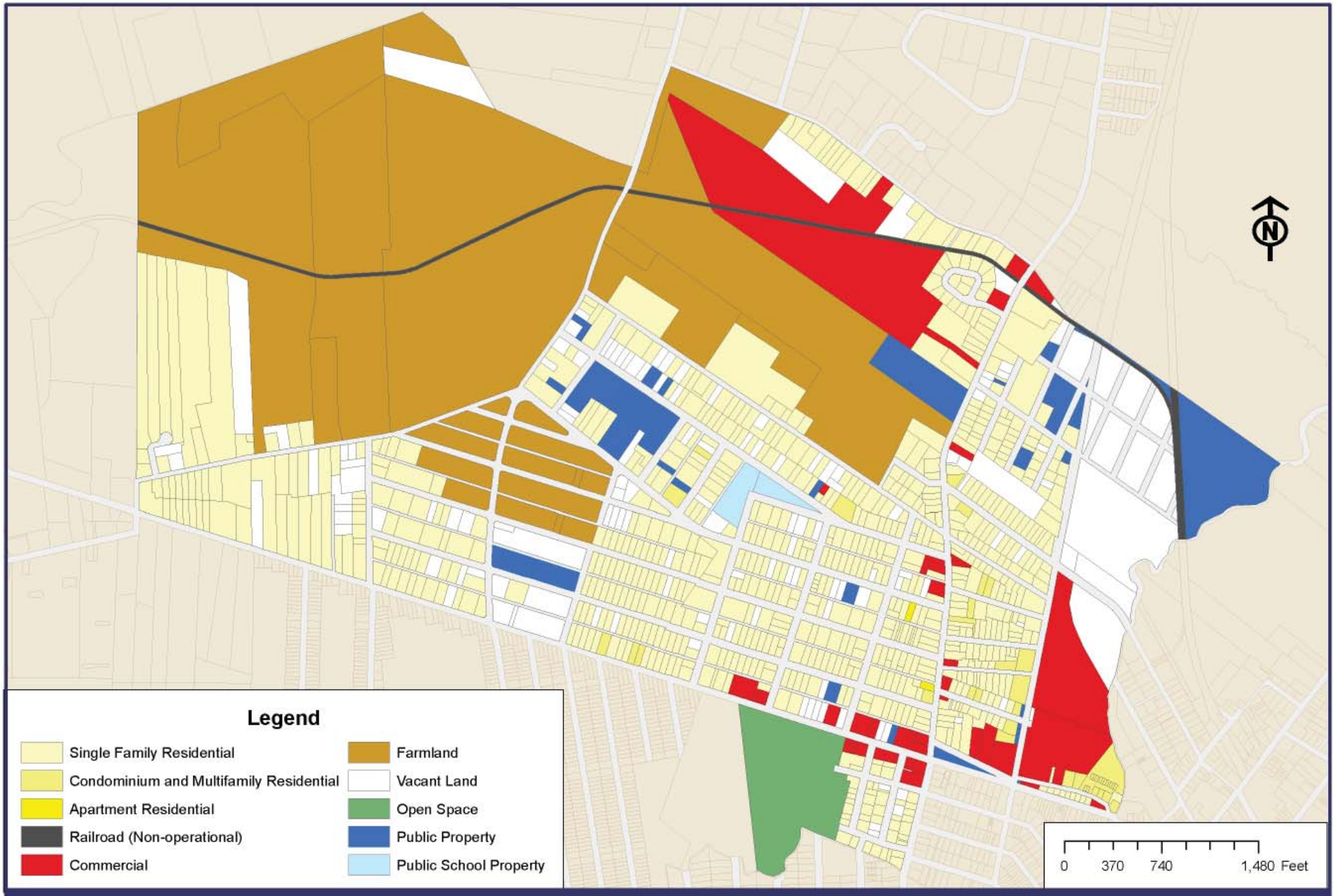
MAP A



Land Use Map by Tax Parcel
West Cape May, NJ

Sources: NJDEP, ModIV, Cape May CMS

Map drawn by Matthew Ward
Last Modified on 12.06.09

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MAP B

Land Suitable for Wind Farms (parcels over three acres) West Cape May, NJ

Sources: NJDEP, ModIV, Cape May IMS

Map drawn by Matthew Ward
Last Modified on 11.11.09

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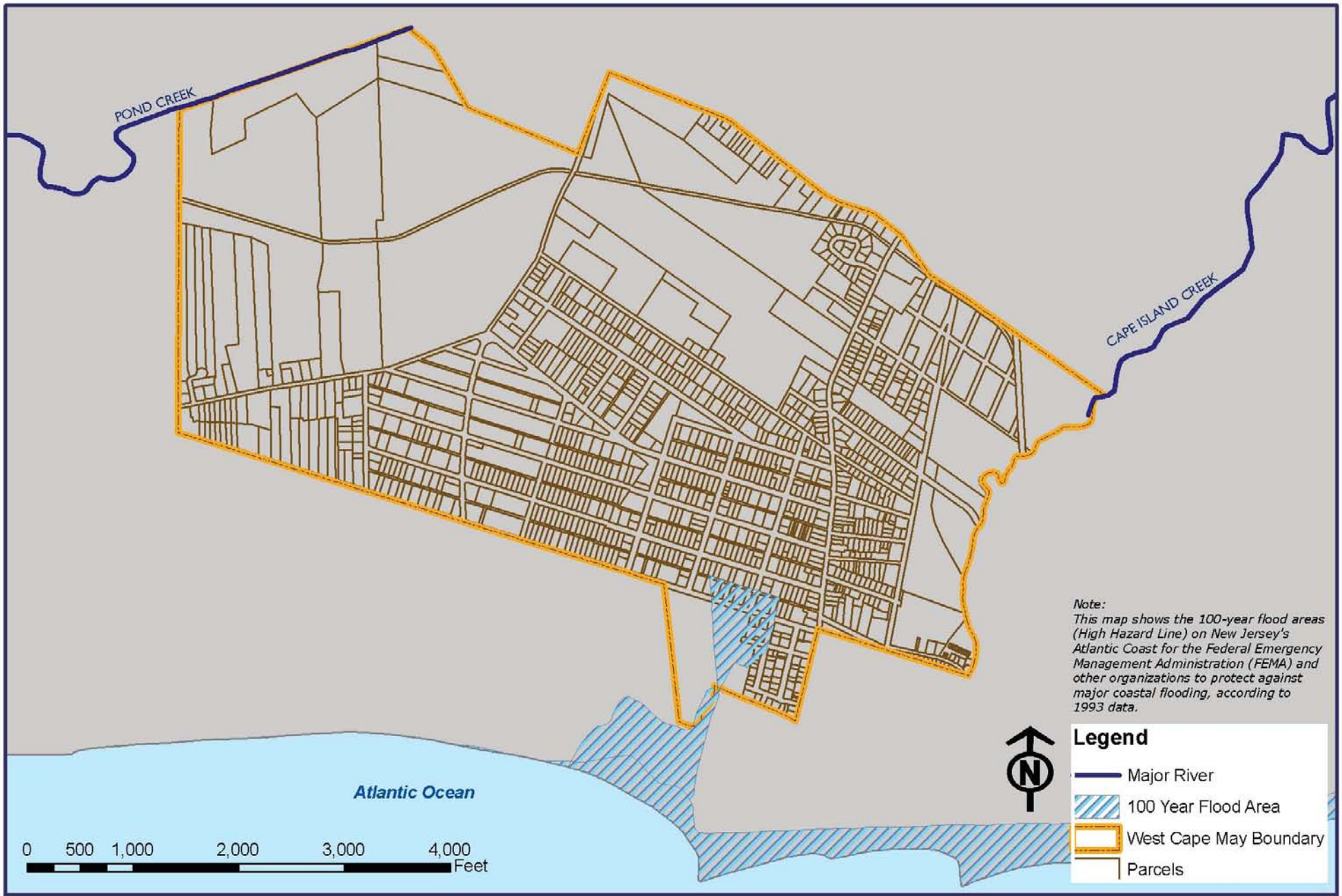
MAP C



NJDEP Areas of 100 Year Flooding
West Cape May, NJ

Sources: NJDEP, 1993 (100 Year Flood Areas); NJDEP, 2009

Map drawn by Katharine Otto
Last Modified on 11.11.09

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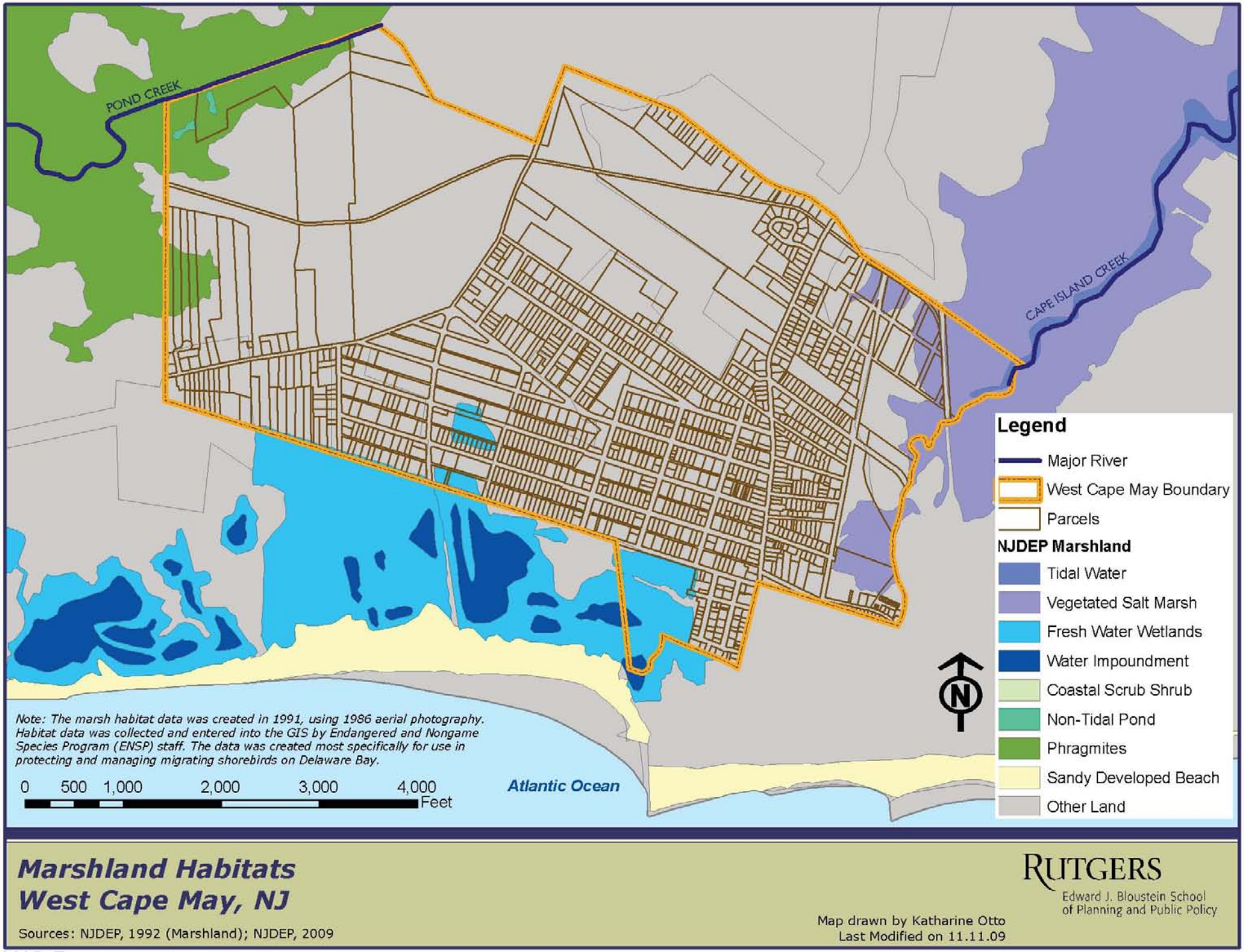
MAP D



Marshland Habitats
West Cape May, NJ

Sources: NJDEP, 1992 (Marshland); NJDEP, 2009

Map drawn by Katharine Otto
Last Modified on 11.11.09

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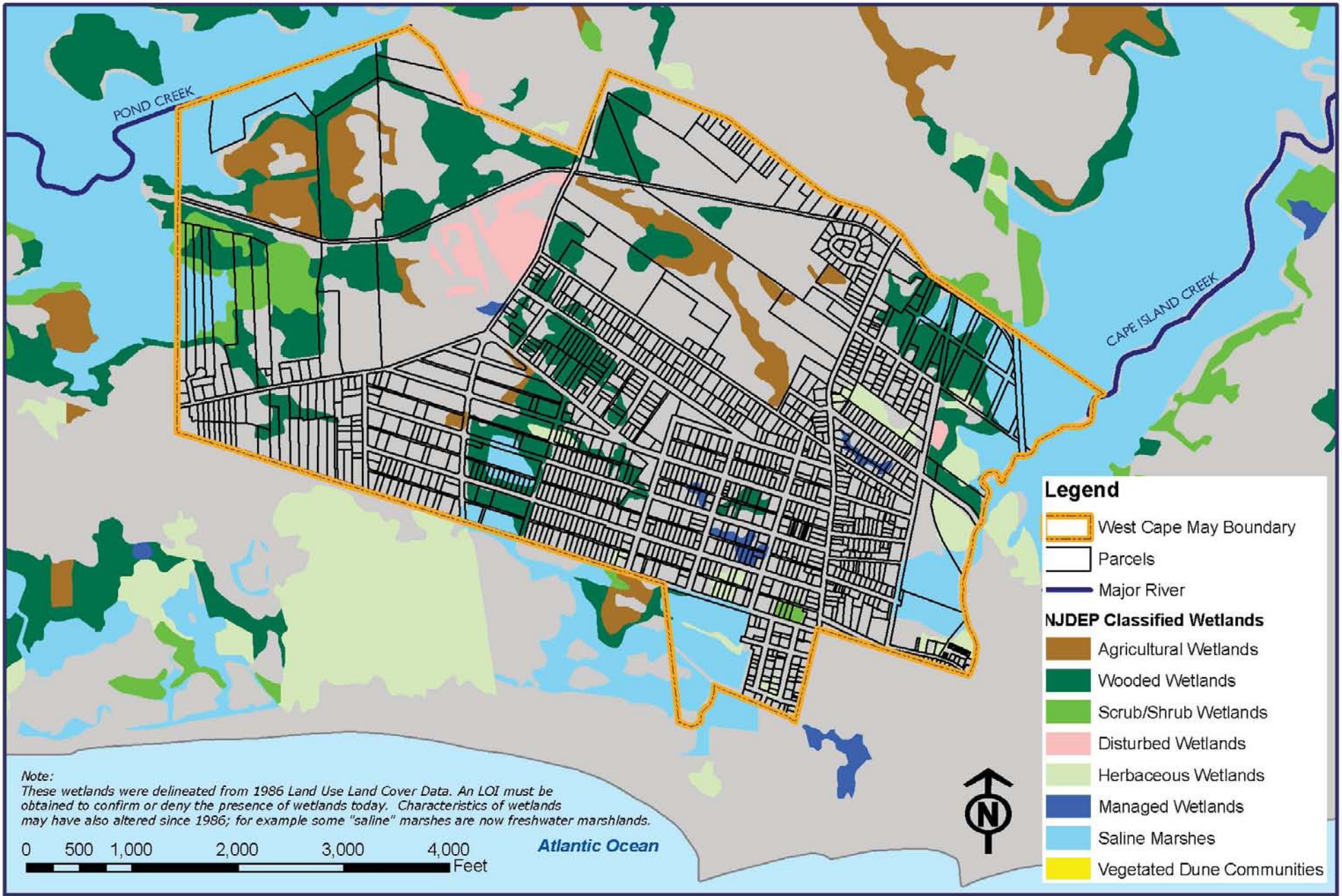
MAP E



NJDEP Classified Wetlands
West Cape May, NJ

Sources: NJDEP, 1986 (Wetlands); NJDEP, 2009

Map drawn by Katharine Otto
Last Modified on 11.11.09

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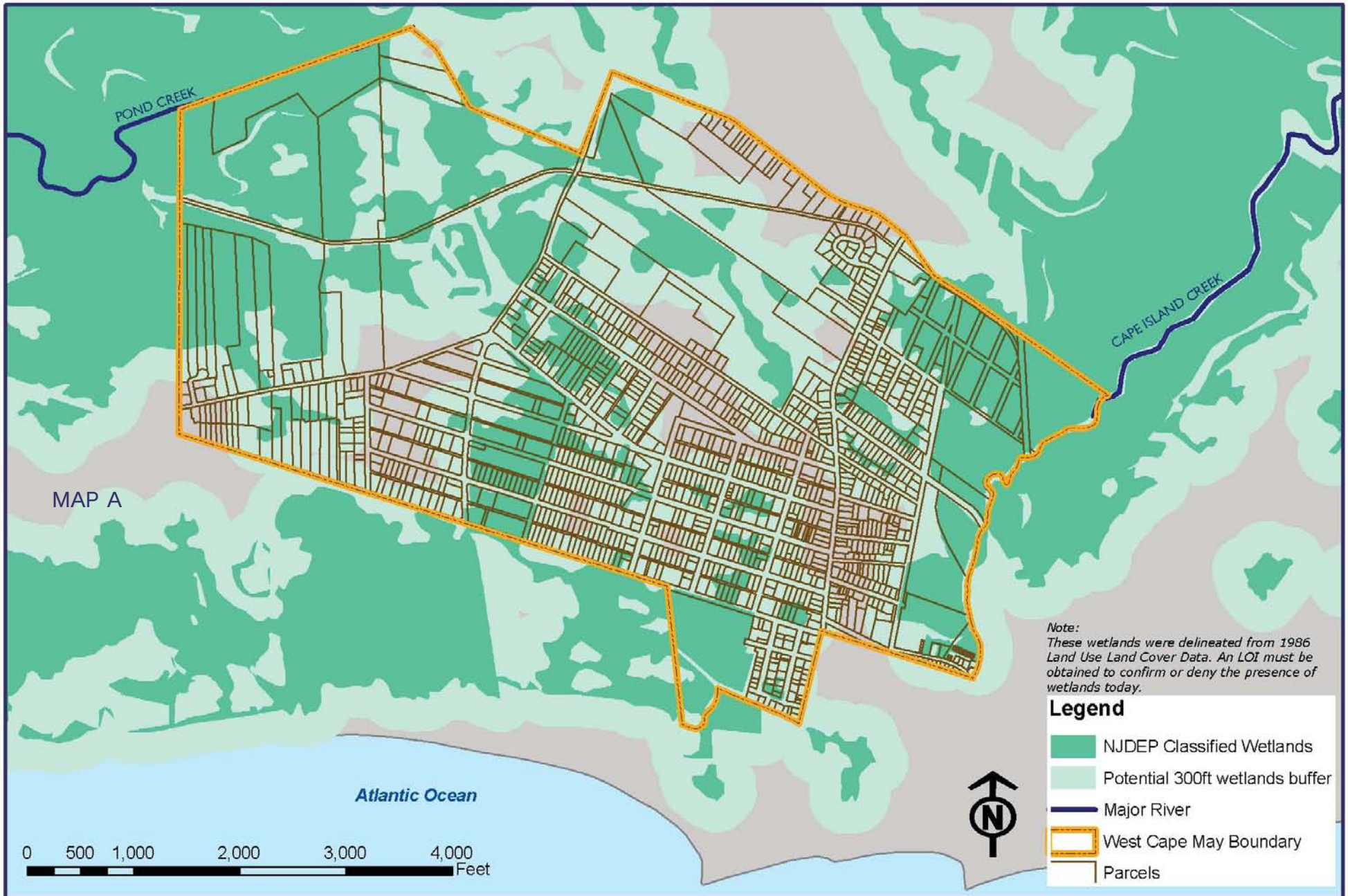
MAP F



NJDEP Classified Wetlands with 300 ft buffer
West Cape May, NJ

Sources: NJDEP, 1986 (Wetlands); NJDEP, 2009

Map drawn by Katharine Otto
Last Modified on 11.11.09

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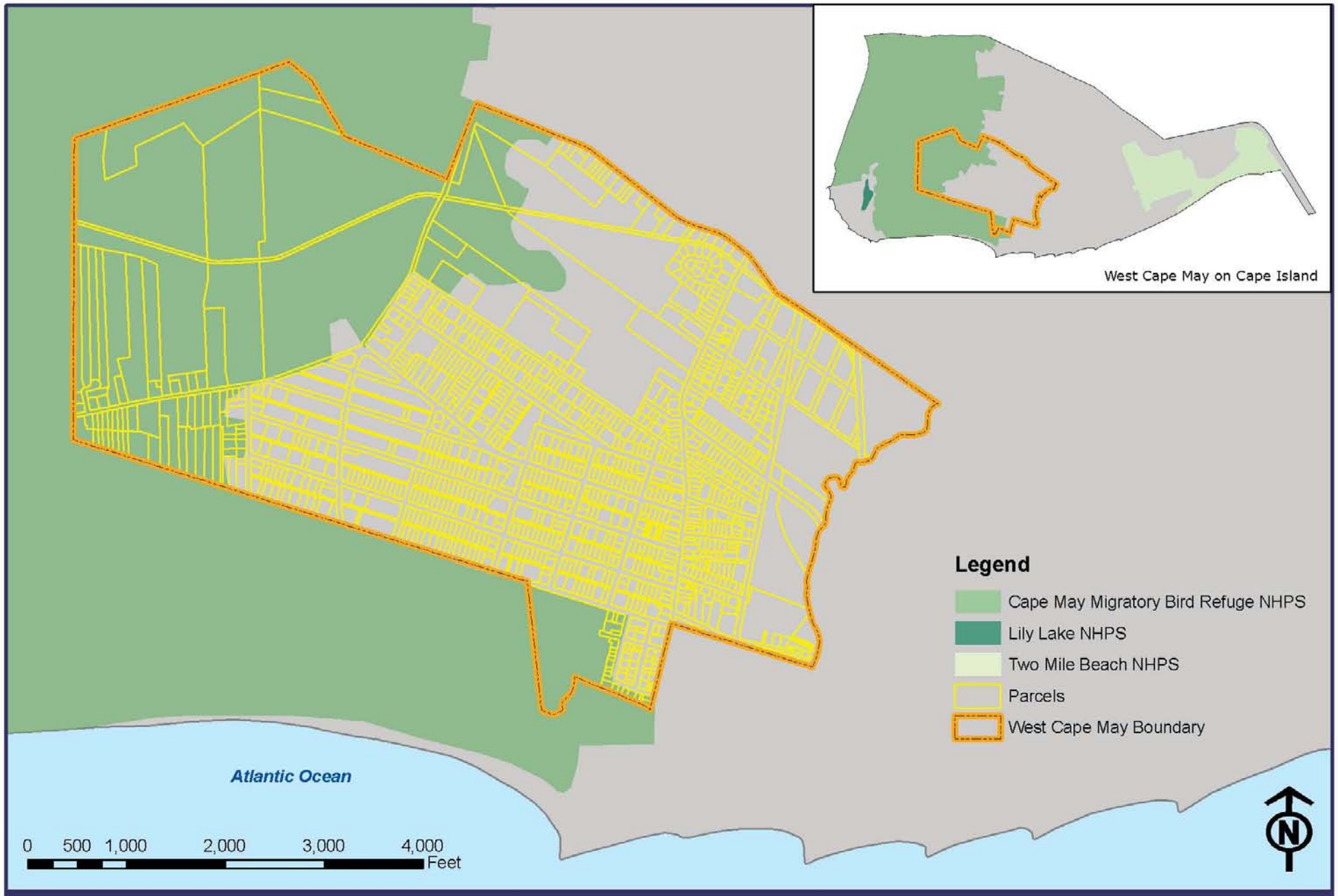
MAP G



Natural Heritage Priority Sites
Cape May Island, NJ

Sources: NJDEP and Office of Natural Lands Management, 2007 (Natural Heritage Priority Sites); NJDEP, 2009.

Map drawn by Katharine Otto
Last Modified on 11.09.09

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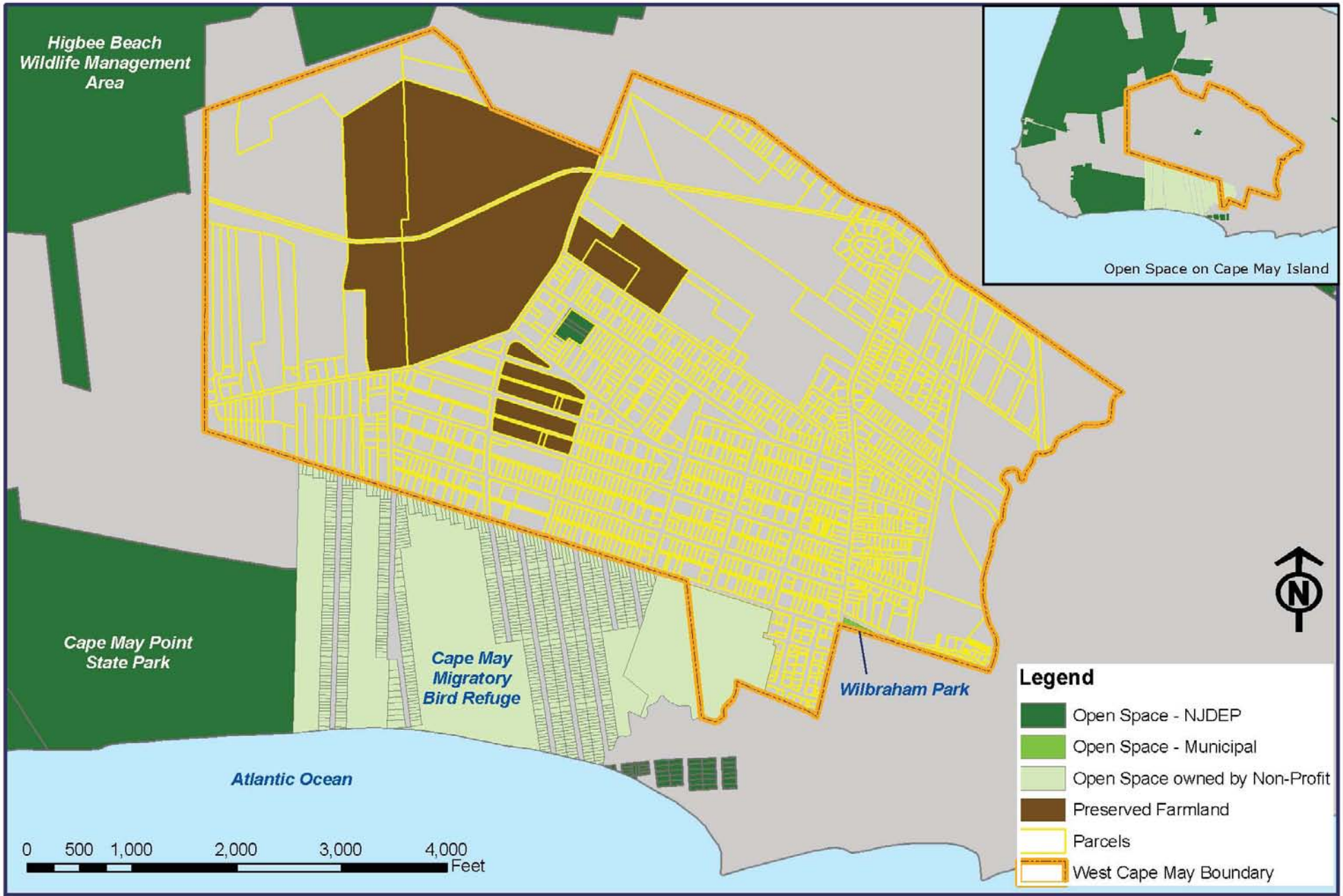
MAP H



Preserved Lands Map - Open Space and Farmland
Cape May Island, NJ

Sources: NJDEP, 2008; NJACTB, 2009 (Non-profit Open Space); County Farmland Preservation Plan, 2007

Map drawn by Katharine Otto
Last Modified on 11.18.09

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MAP I

Historic Shoreline
Cape Island, NJ

Sources: NJDEP, 1991 (Historic Shorelines); NJDEP, 2009

Map drawn by Katharine Otto
Last Modified on 11.11.09

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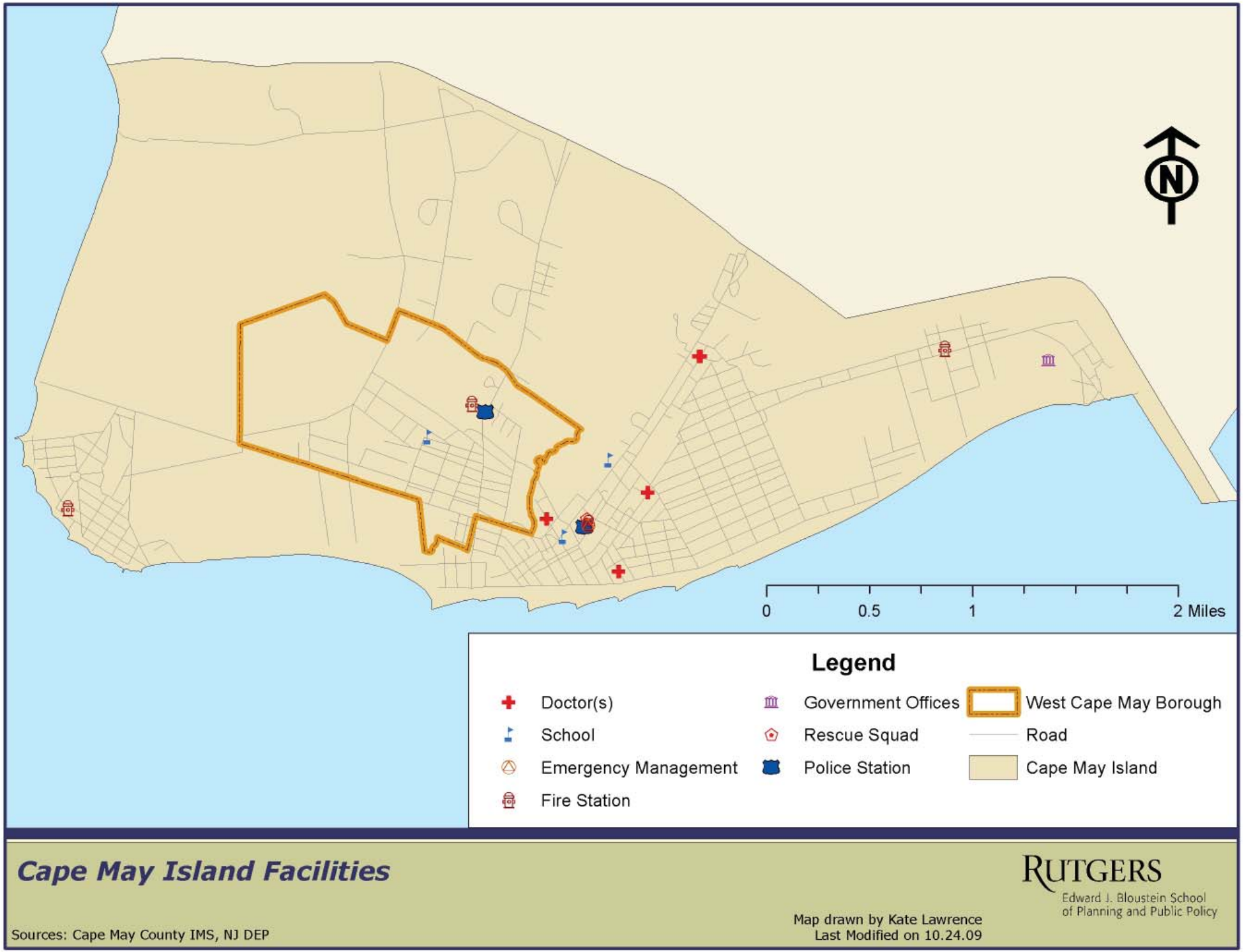
MAP J



Cape May Island Facilities

Sources: Cape May County IMS, NJ DEP

Map drawn by Kate Lawrence
Last Modified on 10.24.09

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MAP K

Potential Low Sea Level Rise Scenario
West Cape May, NJ

Sources: Cape May County CMC, CRSSI

Map drawn by Lyna Wiggins & Matthew Ward
Last Modified on 12.08.09

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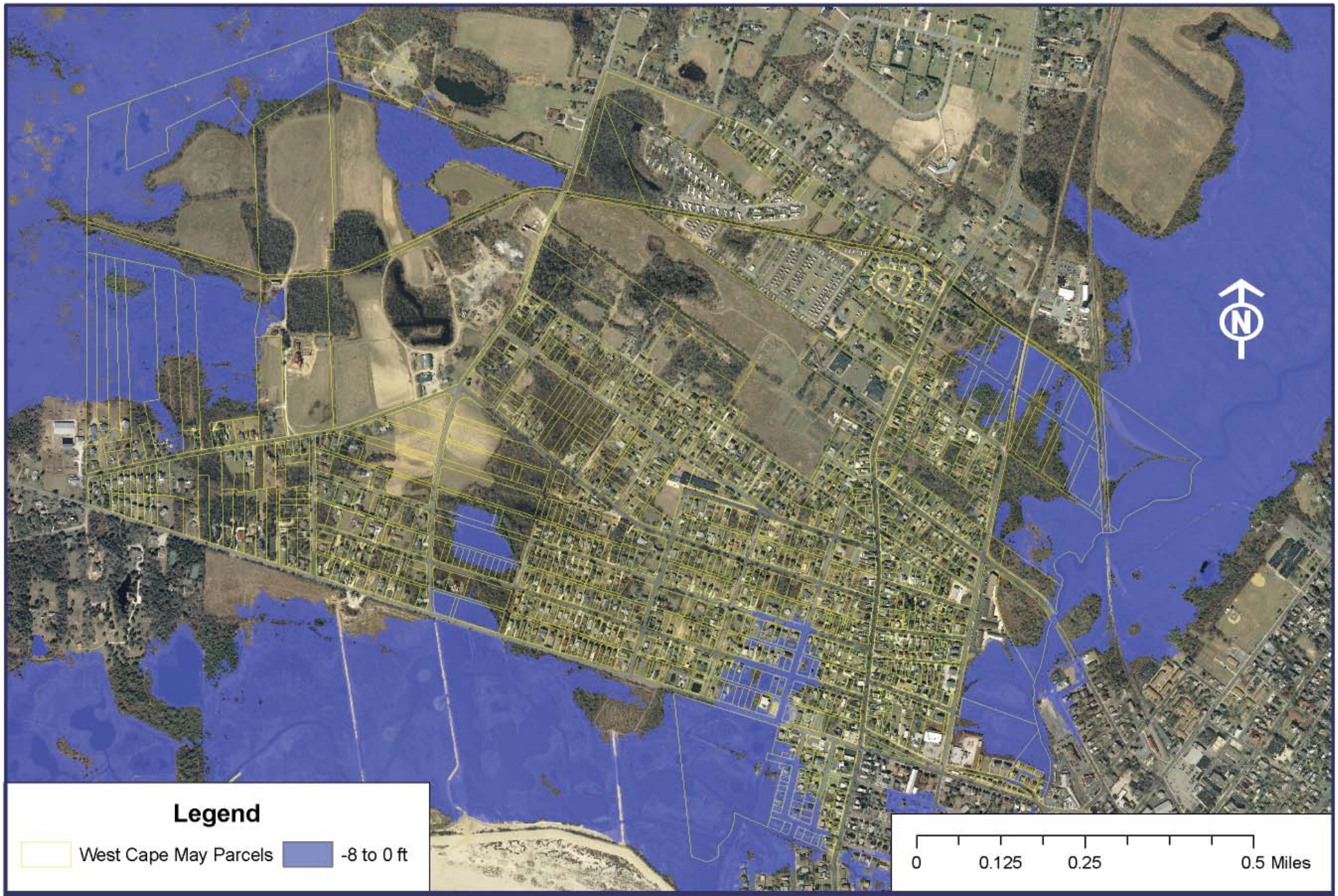
MAP L



Potential High Sea Level Rise Scenario West Cape May, NJ

Sources: Cape May County CMC, CRSSI

Map drawn by Lyna Wiggins & Matthew Ward
Last Modified on 12.08.09

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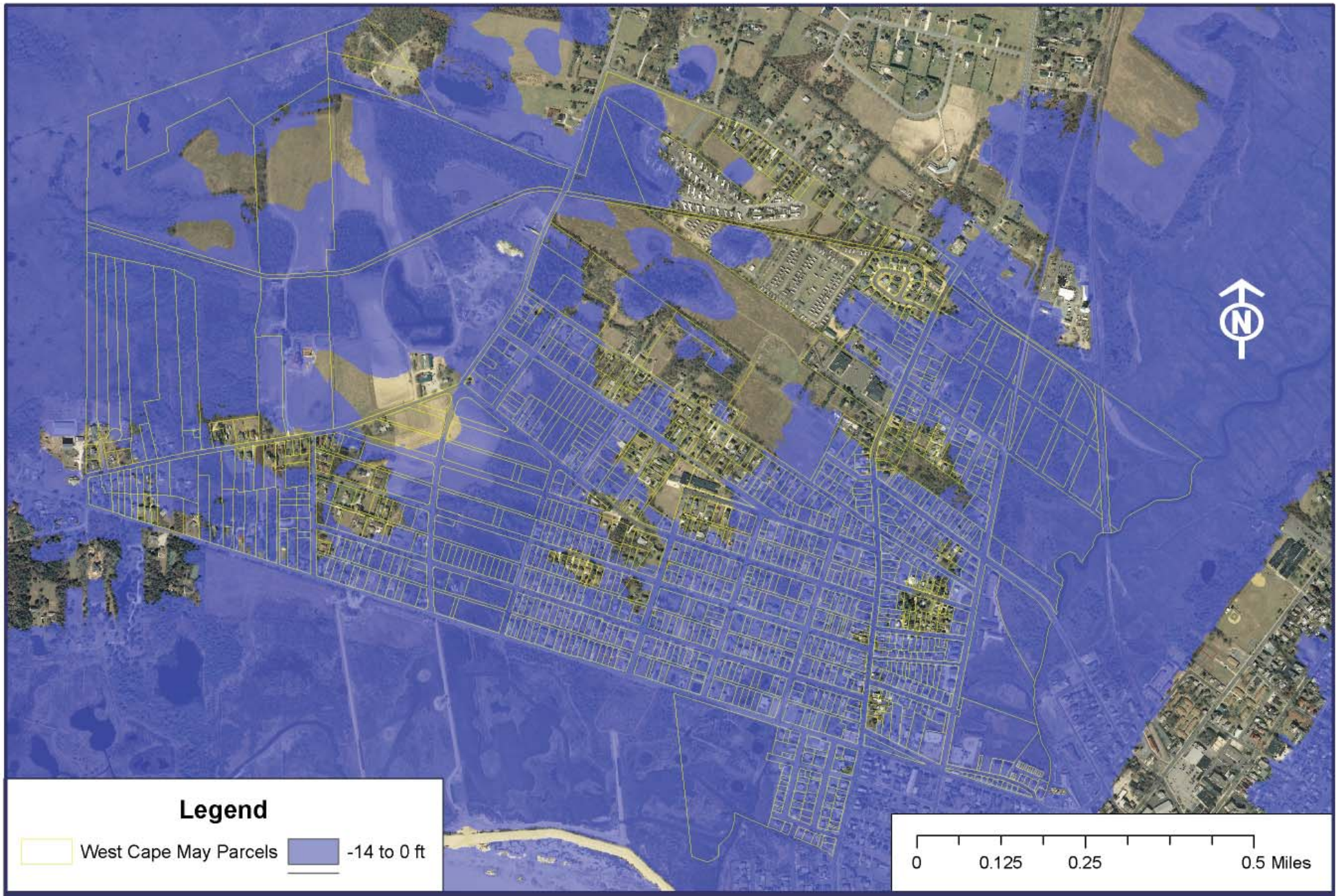
MAP M



Potential Low Sea Level Rise & 30-year Storm Scenario West Cape May, NJ

Sources: Cape May County CMC, CRSSI

Map drawn by Lyna Wiggins & Matthew Ward
Last Modified on 12.08.09

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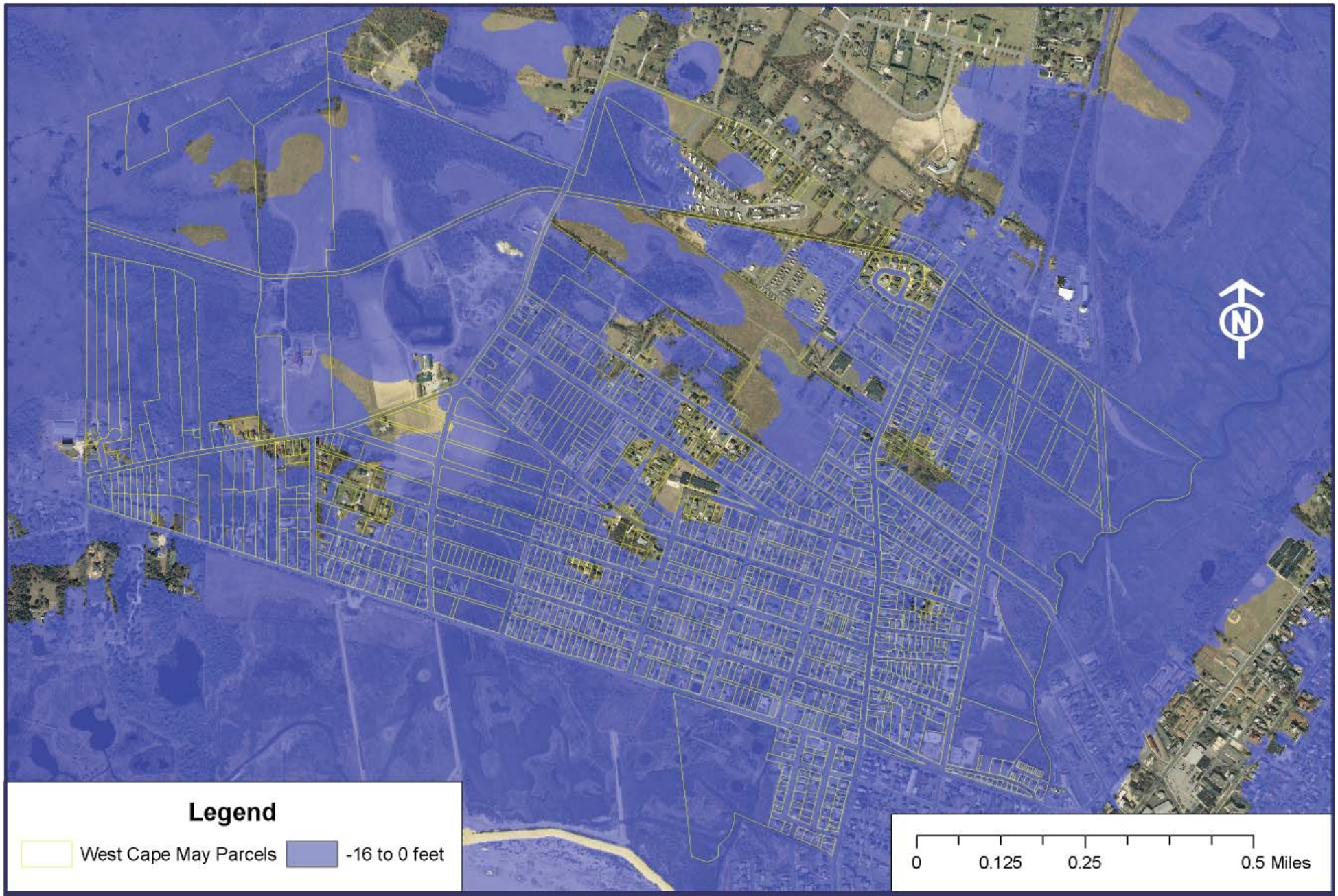
MAP N



Potential Low Sea Level Rise & 100-year Storm Scenario
West Cape May, NJ

Sources: Cape May County CMC, CRSSI

Map drawn by Lyna Wiggins & Matthew Ward
Last Modified on 12.08.09

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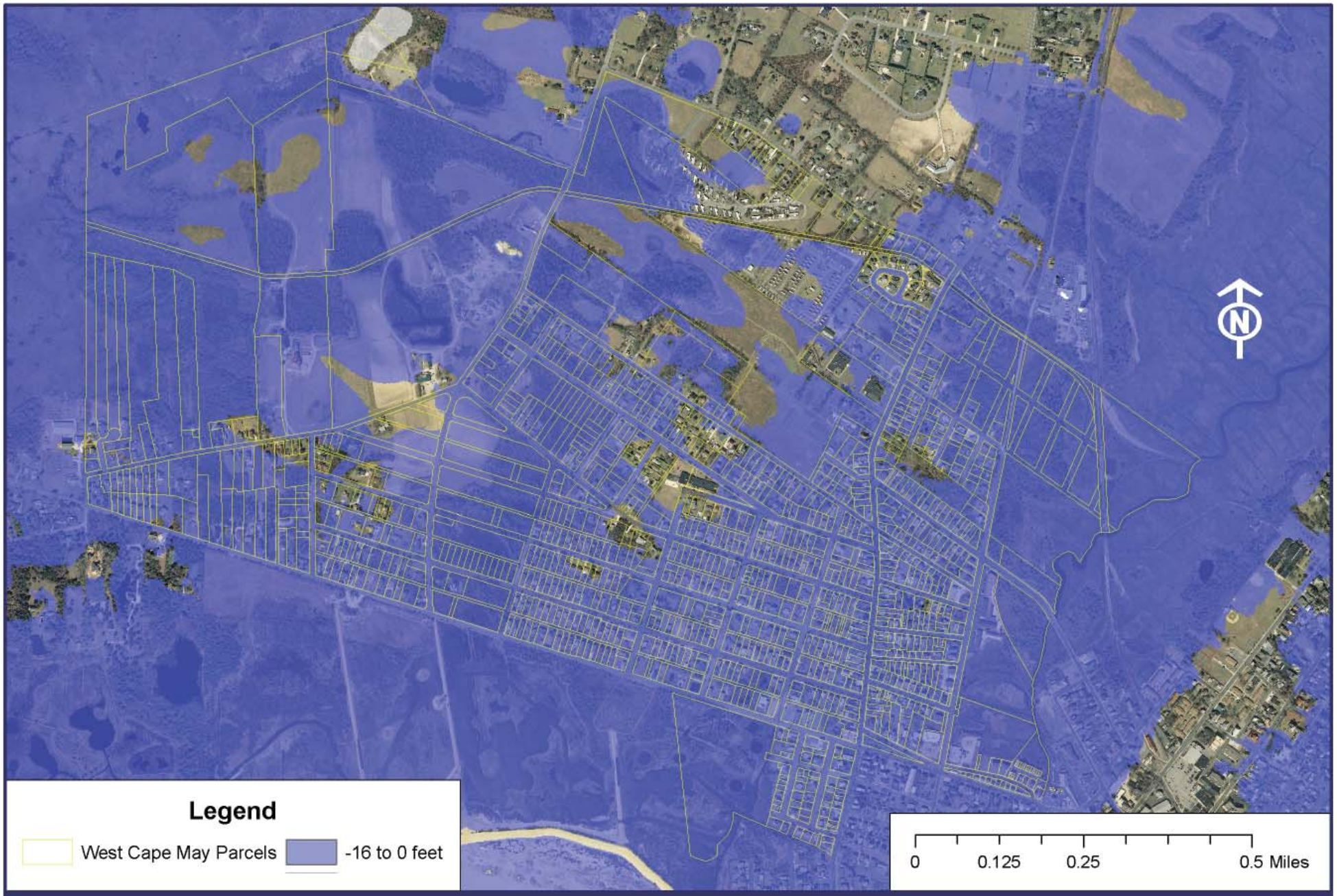
MAP O



Potential High Sea Level Rise & 30-year Storm Scenario
West Cape May, NJ

Sources: Cape May County CMC, CRSSI

Map drawn by Lyna Wiggins & Matthew Ward
Last Modified on 12.08.09

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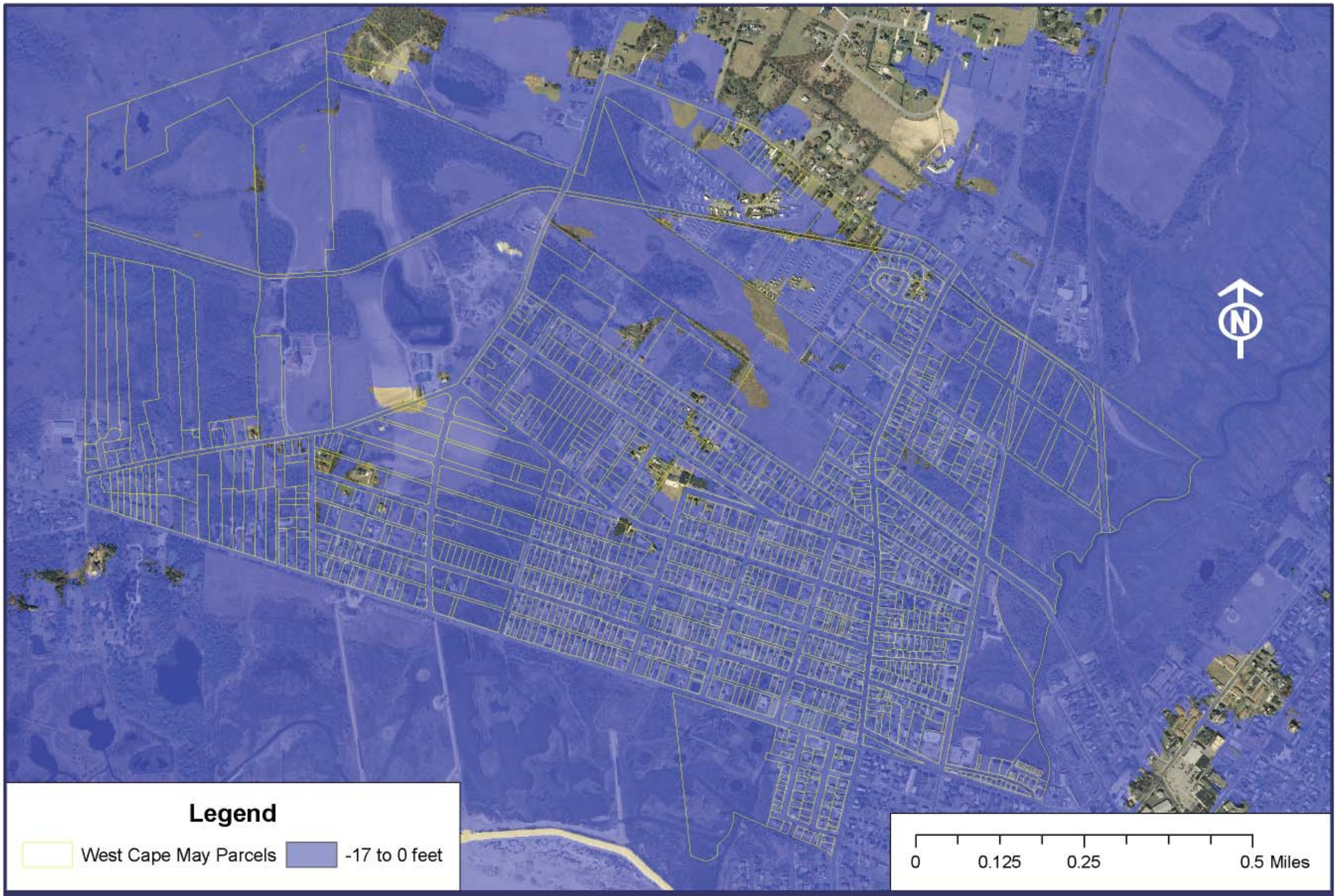

Potential High Sea Level Rise & 100-year Storm Scenario
West Cape May, NJ

Sources: Cape May County CMC, CRSSI

Map drawn by Lyna Wiggins & Matthew Ward
Last Modified on 12.08.09

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MAP Q

APPENDIX A: SEA LEVEL CHANGE IN CAPE MAY COUNTY

Coastal Environment in New Jersey and Cape May County

As a very low lying coastal county (highest point just 60 feet above sea level), Cape May County is highly influenced by the coastal environment. The majority of the county's tourism centers around this coastal environment, with long beaches and bird-friendly wetlands and marshes.

Over the past century, the New Jersey coastline has experienced an average relative sea level rise (RSLR) of 39cm (15.3 inches) (Psuty and Ofiara, 2002:155). This is due to a combination of factors, most notably isostatic rebound of the land, ice melt and thermal expansion of water. In 2007 the Intergovernmental Panel on Climate Change (IPCC) released its most recent estimates on the amount of sea level rise to be expected over the coming century. Even the most conservative scenarios estimate the sea level to rise by a minimum of 18 cm by 2100, with more severe climate change estimates resulting in sea level rises of up to 59 cm (IPCC, 2007:13).

The Federal Emergency Management Agency (FEMA) estimates a 100-year tidal storm surge (1% yearly likelihood) of approximately 2.89 meters above National Geodetic Vertical Datum (NGVD) for the Atlantic coast of New Jersey (Psuty and Ofiara, 2002). Similarly, the 30-year FEMA tidal surge is estimated at 2.34m. Cooper *et al.* (2005) used a projected median sea level rise by 2100 of 0.61m and a high end projection of 1.22m for the New Jersey coast. Following a 0.61m rise in sea level, they go on to estimate that the current 30-year storm will produce a flood water level of 2.96m and a 100-year storm will produce a flood water level of 3.5m. Based on these analyzes, we choose a 3m threshold elevation value to represent the coastal land area that would be affected by the approximately 3m tidal surge that is estimated for a 100-year storm surge event for the present day.

While West Cape May Borough does not have its own beach, the borough is situated on the edge of several large areas of wetlands that can be found directly behind the dunes. With the maximum elevation of the borough at just 20 feet, it is particular vulnerable to coastal processes, particularly flooding and saline intrusion. There is an obvious change in the continuity of the coastline between the City of Cape May and the South Cape May Meadows, where the County lost a whole municipality to the sea (South Cape May Borough) in the 50-year flood event of the 1944 Great Atlantic Hurricane (Psuty and Ofiara, 2002).

LiDAR Topographic Data

In 2007LiDAR (Light Detection And Ranging) data was coordinated and disseminated by the US Geological Survey (USGS). The LiDAR elevation data for Cape May County was obtained for the terrestrial zone and bathymetry for the nearshore zone. This data has a vertical accuracy of 13cm and horizontal resolution of 2m. The LiDAR data was then processed to create a digital elevation model (DEM) in ArcGIS. The maps showing the impact of sea level rise

on West Cape May Borough in this plan assume a static coastline, where dunes and beaches do not shift due to normal coastal processes and storm events.

Financial assistance for the acquisition of LiDAR data was provided by the New Jersey Coastal Management Program through CZM Grant Awards #NA06NOS4190228 and NA07NOS4190186 awarded through the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration. Additional funding was provided by the New Jersey State Police through the FY2007 EMPG Program, the Natural Resource Conservation Service of the U.S. Department of Agriculture, the U.S. Army Corps of Engineers, Philadelphia, PA, the United States Geological Survey, and the New Jersey Department of Environmental Protection, Office of Information Resources Management.

Rutgers Geomatics Project

This plan utilizes the data processed by the Advanced Environmental Geomatics students at Rutgers University completed in Spring 2009. The project, which sought to utilize the new LiDAR data to carry out simulations of sea level rise scenarios, was commissioned by the New Jersey Chapter of the American Society of Landscape Architects, and carried out under the direction of Dr. Richard Lathrop at the Rutgers Center for Remote Sensing and Spatial Analysis (CRSSA).

Total Carbon Dioxide Use Per Year

Total Carbon Dioxide Use Per Year

	CO_2 Emissions in West Cape May (metric tons/year)
Residential Stock	7,973
Commerical Stock	146
Electrical Transmission	360
Waste Management	866
Transportation	8
Landscape	-70
Total CO2 Emissions	**9,283**

Residential Uses

Total Fuel Use By Housing Type, Mid-Atlantic Census Division, 2001						
Housing Unit Type	**Units**	**Kerosene (gal)**	**Electricity (kWh)**	**Natural Gas (100 Cubic Feet)**	**Fuel Oil (gal)**	**Liquified Petroleum Gas (gal)**
Mobile Homes	487,669	91,051,345	4,411,782,975	69,014,330	11,806,845	89,417,540
Single-Family Detached	6,114,069	9,067,728	66,883,237,850	3,445,740,440	1,507,395,909	203,719,352
Single-Family Attached	2,403,792	n/a	14,833,021,301	1,942,206,338	159,421,163	n/a
Apartments with 2 to 4 Units	2,026,419	405,675	11,373,110,976	1,369,325,253	210,850,993	714,071
Apartments with 5 or More Units	3,814,649	22,562	18,290,581,993	898,613,670	306,886,635	2,503,002

Total Fuel Use By Housing Type Per Housing Unit, Mid-Atlantic Census Division, 2001					
Housing Unit Type	**Kerosene (gal)**	**Electricity (kWh)**	**Natural Gas (100 Cubic Feet)**	**Fuel Oil (gal)**	**Liquified Petroleum Gas (gal)**
Mobile Homes	186.71	9,046.68	141.52	24.21	183.36
Single-Family Detached	1.48	10,939.24	563.58	246.55	33.32
Single-Family Attached	n/a	6,170.68	807.98	66.32	n/a
Apartments with 2 to 4 Units	0.20	5,612.42	675.74	104.05	0.35
Apartments with 5 or More Units	0.01	4,794.83	235.57	80.45	0.66

Total Fuel Use By Housing Type Per Housing Unit in Pounds of CO_2, Mid-Atlantic Census Division, 2001						
Housing Unit Type	**Kerosene**	**Electricity**	**Natural Gas**	**Fuel Oil**	**Liquified Petroleum Gas**	**Total Pounds CO_2**
Conversion to Pounds of CO_2	*21.54*	*0.85*	*12.06*	*22.38*	*12.81*	*n/a*
Mobile Homes	4,021.67	7,689.67	1,706.72	541.84	2,348.80	16,309
Single-Family Detached	31.95	9,298.35	6,796.72	5,517.69	426.83	22,072
Single-Family Attached	n/a	5,245.07	9,744.19	1,484.26	n/a	16,474
Apartments with 2 to 4 Units	4.31	4,770.56	8,149.38	2,328.66	4.51	15,257
Apartments with 5 or More Units	0.13	4,075.60	2,840.96	1,800.46	8.41	8,726

Total Fuel Use By Housing Type Per Housing Unit in Pounds of CO_2, West Cape May, 2000					
Housing Unit Type	**CO_2 Emissions Per Household Type (lb/yr)**	**CO_2 Emissions Per Household Type (metric tons/yr)**	**Units in Jurisdiction**	**Residental CO_2 Emissions in West Cape May (metric tons/year)**	**Residental CO_2 Emissions in West Cape May (tons/year)**
Mobile Homes	16,309	7.413	344	2550	2805
Single-Family Detached	22,072	10.033	460	4612	5074
Single-Family Attached	16,474	7.488	12	90	99
Apartments in Buildings with 2 to 4 Units	15,257	6.935	97	671	738
Apartments in Buildings with 5 or More Units	8,726	3.966	13	50	55
Total Residential CO_2 Emissions				**7973**	**8770**

Assumption: Vacant Units are occupied for 4 months out of the year and their total is of housing is mulitiplied by .25 to account for seasonal units

Sources:

Andrews, C.J. (2008) *Greenhouse Gas Emissions along the Rural-Gradiant: Forthcoming in the Journal of Environmental Planning and Management* .
July 23, 2008. Cited November 11, 2009 at http://policy.rutgers.edu/faculty/andrews/Andrews20080724.pdf

U.S. Census 2000, SF3, Housing, Structural Characteristics, Units in Structure

Commercial Uses

Total Fuel Use Commercial Stock, Mid-Atlantic Census Division, 2001			
Employees	Electricity (kWh)	Natural Gas (100 CF)	Fuel Oil (gal)
11,750,679	115,738,566,587	3,426,240,557	763,647,568

Total Fuel Use Commercial Stock Per Employee, Mid-Atlantic Census Division, 2001		
Electricity (kWh)	Natural Gas (100 CF)	Fuel Oil (gal)
9,850	292	65

Total Fuel Use Per Employee in Unit in Pounds of CO_2, Mid-Atlantic Census Division, 2001		
8,372	3,516	1,454

Total Fuel Use in Pounds of CO_2 for Commercial Buildings, West Cape May, 2001					
Employees	Total Emissions (lb/ CO_2 per employee)	Total Emissions (metric ton/ CO_2 per employee)	Total Emissions (lb/ CO_2)	Total Emissions (metric tons of CO_2)	Total Emissions (metric tons of CO_2)
24	13,347	6	320,328	**146**	**160**

Sources:

Andrews, C.J. (2008) *Greenhouse Gas Emissions along the Rural-Gradiant: Forthcoming in the Journal of Environmental Planning and Management* . July 23, 2008. Cited November 11, 2009 at http://policy.rutgers.edu/faculty/andrews/Andrews20080724.pdf

Reference USA, Accessed November 1, 2009 at http://www.referenceusa.com/UsBusiness/Download

Land Use

Carbon Sequestration For Land Use Categories for West Cape May, 2001					
Land Cover Category	**Acres**	**Sequestration Rate (lbs CO_2/yr)**	**CO_2 Sequestered (lb/yr)**	**CO_2 Sequestered (metric tons/yr)**	**CO_2 Sequestered (tons/yr)**
Deciduous Forest 10-50% Crown Closure	8.02	1760	-14109.15	-6.41	-7.05
Deciduous Brush/Shrubland	7.77	1760	-13669.60	-6.21	-6.83
Mixed Forest (>50% Deciduous with 10-50% Crown Cover)	0.00	1760	0.00	0.00	0.00
Deciduous Forest >50% Crown Closure	14.69	3909	-57432.47	-26.11	-28.72
Mixed Forest (>50% Deciduous with >50% Crown Cover)	1.12	3909	-4368.93	-1.99	-2.18
Coniferous Forest 10-50% Crown Closure	3.86	9826	-37973.98	-17.26	-18.99
Coniferous Brush/Shrubland	0.00	9826	0.00	0.00	0.00
Mixed Forest (>50% Coniferous with 10-50% Crown Closure)	0.00	9826	0.00	0.00	0.00
Coniferous Forest >50% Crown Closure	1.11	7516	-8323.97	-3.78	-4.16
Mixed Forest (>50% Coniferous with >50% Crown Closure)	2.53	7516	-19043.55	-8.66	-9.52
Freshwater Wetlands	0.00	4275	0.00	0.00	0.00
Urban	0.00	3919	0.00	0.00	0.00
Total CO_2 Sequestered				**-70.42**	**-77.46**

Sources:

Andrews, C.J. (2008) *Greenhouse Gas Emissions along the Rural-Gradiant: Forthcoming in the Journal of Environmental Planning and Management* . X
July 23, 2008. Cited November 11, 2009 at http://policy.rutgers.edu/faculty/andrews/Andrews20080724.pdf

NJDEP 2002 Land use/Land cover Update, Cape May Watershed Management Area, WMA-16, Edition 20080304

Transportation

Transportation Emissions for Work Trips To and From West Cape May, 2000				
Annual VMT for Work For all Workers (Miles)	Weighted MPG	CO_2 Emissions Rate (lb/mile)	CO_2 Emissions (lb)	**CO_2 Emissions (metric tons)**
18798	20.48	0.95	17806.70	**8.08**

Trips Originating From West Cape May

Res State	Res County	Res MCD	Res (C)MSA	Res PMSA	Residence State-County-MCD Name	Work State	Work County	Work MCD	Work (C)MSA	Work PMSA	Workplace State-County-MCD Name	Count	Approx Miles	Total Miles
34	009	78530	6162	0560	West Cape May bor. Cape May	034	001	02080	6162	0560	Atlantic City city Atlantic Co. NJ	19	49	931
34	009	78530	6162	0560	West Cape May bor. Cape May	034	001	25560	6162	0560	Galloway Twp. Atlantic Co. NJ	2	51	102
34	009	78530	6162	0560	West Cape May bor. Cape May	034	001	29280	6162	0560	Hamilton Twp. Atlantic Co. NJ	4	54	216
34	009	78530	6162	0560	West Cape May bor. Cape May	034	001	40530	6162	0560	Linwood city Atlantic Co. NJ	2	36	72
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	10270	6162	0560	Cape May city Cape May Co. NJ	154	3	462
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	17560	6162	0560	Dennis Twp. Cape May Co. NJ	3	22	66
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	41610	6162	0560	Lower Twp. Cape May Co. NJ	50	5	250
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	45810	6162	0560	Middle Twp. Cape May Co. NJ	75	16	1200
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	53490	6162	0560	North Wildwood city Cape May Co. NJ	5	12	60
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	54360	6162	0560	Ocean City city Cape May Co. NJ	4	34	136
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	71010	6162	0560	Stone Harbor bor. Cape May Co. NJ	9	17	153
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	74810	6162	0560	Upper Twp. Cape May Co. NJ	6	26	156
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	76	2	152
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	81170	6162	0560	Wildwood city Cape May Co. NJ	10	10	100
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	81200	6162	0560	Wildwood Crest bor. Cape May Co. NJ	3	8	24
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	81890	6162	0560	Woodbine bor. Cape May Co. NJ	15	27	405
34	009	78530	6162	0560	West Cape May bor. Cape May	034	011	07600	6162	8760	Bridgeton city Cumberland Co. NJ	4	53	212
34	009	78530	6162	0560	West Cape May bor. Cape May	034	011	46680	6162	8760	Millville city Cumberland Co. NJ	5	41	205
34	009	78530	6162	0560	West Cape May bor. Cape May	034	011	76070	6162	8760	Vineland city Cumberland Co. NJ	6	48	288
34	009	78530	6162	0560	West Cape May bor. Cape May	034	017	36000	5602	3640	Jersey City city Hudson Co. NJ	2	150	300
34	009	78530	6162	0560	West Cape May bor. Cape May	034	031	73140	5602	0875	Totowa bor. Passaic Co. NJ	2	141	282
34	009	78530	6162	0560	West Cape May bor. Cape May	036	047	10022	5602	5600	Brooklyn bor. Kings Co. NY	2	160	320
34	009	78530	6162	0560	West Cape May bor. Cape May	036	061	44919	5602	5600	Manhattan bor. New York Co. NY	2	155	310
34	009	78530	6162	0560	West Cape May bor. Cape May	042	029	79480	6162	6160	Uwchlan Twp. Chester Co. PA	2	125	250
34	009	78530	6162	0560	West Cape May bor. Cape May	042	029	83080	6162	6160	West Goshen Twp. Chester Co. PA	2	130	260
34	009	78530	6162	0560	West Cape May bor. Cape May	042	101	60000	6162	6160	Philadelphia city Philadelphia Co. PA	7	95	665
												Subtotal		**7,577**

West Cape May As A Destination

Res State	Res County	Res MCD	Res (C)MSA	Res PMSA	Residence State-County-MCD Name	Work State	Work County	Work MCD	Work (C)MSA	Work PMSA	Workplace State-County-MCD Name	Count	Approx Miles	Total Miles
34	009	10270	6162	0560	Cape May city Cape May Co. N	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	25	3	75
34	009	10330	6162	0560	Cape May Point bor. Cape May	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	2	2	4
34	009	17560	6162	0560	Dennis Twp. Cape May Co. NJ	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	16	22	352
34	009	41610	6162	0560	Lower Twp. Cape May Co. NJ	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	106	5	530
34	009	45810	6162	0560	Middle Twp. Cape May Co. NJ	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	39	16	624
34	009	78530	6162	0560	West Cape May bor. Cape May	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	76	2	152
34	009	80210	6162	0560	West Wildwood bor. Cape Ma	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	1	11	11
34	009	81170	6162	0560	Wildwood city Cape May Co. N	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	5	10	50
34	009	81200	6162	0560	Wildwood Crest bor. Cape Ma	034	009	78530	6162	0560	West Cape May bor. Cape May Co. NJ	3	8	24
												Subtotal		**1,822**

Sources:

Andrews, C.J. (2008) *Greenhouse Gas Emissions along the Rural-Gradiant: Forthcoming in the Journal of Environmental Planning and Management* .
July 23, 2008. Cited November 11, 2009 at http://policy.rutgers.edu/faculty/andrews/Andrews20080724.pdf

U.S. Census 2000 MCD/County-To-MCD/County Worker Flow Files at http://www.census.gov/population/www/cen2000/commuting/mcdworkerflow.html

Electric Transmission

Electric Transmission for New Jersey, 2000		
New Jersey Electricity Use (kWh/yr)	State Population	kWh/capita for NJ
79,680,947,000	8,414,350	9470

Electric Transmission for West Cape May, 2000						
West Cape May Residents	West Cape May Electricity Use (kWh)	Transmission & Distribution Loss Rate	T&D Losses (kWh/yr)	CO_2 Emissions Rate (lb/kWh)	CO_2 emissions (lb)	CO_2 emissions (metric tons)
1,095	10,369,650	0.09	933,269	0.85	793,278	**360**

Sources:

Andrews, C.J. (2008) *Greenhouse Gas Emissions along the Rural-Gradiant: Forthcoming in the Journal of Environmental Planning and Management* .
July 23, 2008. Cited November 11, 2009 at http://policy.rutgers.edu/faculty/andrews/Andrews20080724.pdf

Waste Management

Waste Management Related CO_2 Emissions for New Jersey, 2000		
New Jersey Waste Management CO_2 Emissions (kWh/yr)	State Population	kWh/capita for NJ
14,674,000,000	8,414,350	1,744

Waste Management Related CO_2 Emissions for West Cape May, 2000			
Waste Management Emissions for NJ (lb CO_2/capita)	West Cape May Residents	CO_2 emissions (lb)	CO_2 emissions (metric tons)
1,744	1,095	1,909,598	**866**

Sources:

Andrews, C.J. (2008) *Greenhouse Gas Emissions along the Rural-Gradiant: Forthcoming in the Journal of Environmental Planning and Management* .
July 23, 2008. Cited November 11, 2009 at http://policy.rutgers.edu/faculty/andrews/Andrews20080724.pdf

West Cape May Key Statistics	
Year Round Population	1095
Estimated Summer Population	6270
2000 US Census Housing Units	507
Seasonal Housing Units	451
Vacant Housing Units	46
Municipal Appropriations	$2,231,212.53
2009 District School (from property taxes)	$893,129.00
2009 Regional Consolidated & Joint School	$1,724,843.47
Total Revenues from Property Taxes	$1,403,692.73
Anticipated Revenues other than Current Prop Tax	$827,519.80
Surplus Anticipated	$362,000.00
Local Revenues	$107,700.00
State Aid	$115,138.36
Public/Private Revenues	$25,419.44
Cape May City Lease	$31,362.00
Total of all Misc Revenues	$279,619.80
Receipts from Delinquent Taxes	$185,900.00

	2008 Effective Rate			2009 Effective Rate		
	general tax rate per $100	County equalization ratio	a*b	general tax rate per $100	County equalization ratio	a*b
Cape May City	0.833	0.8286	0.690224	0.3853	0.8093	0.311823
Cape May Point	0.791	0.5252	0.415433	0.3465	0.9166	0.317602
Avalon	0.368	0.9992	0.367706	0.393	0.9889	0.388638
Stone Harbor	0.529	0.756	0.399924	0.463	0.9088	0.420774
Sea Isle City	0.518	0.973	0.504014	0.546	0.9897	0.540376
Ocean City	0.676	0.943	0.637468	0.706	0.9635	0.680231
N Wildwood City	0.785	1.12	0.8792	0.816	1.0832	0.883891
Wildwood Crest	1.373	0.5985	0.821741	0.961	0.9664	0.92871
West Wildwood	1.452	0.705	1.02366	1.171	0.8458	0.990432
West Cape May	0.945	1.03	0.97335	0.979	1.0223	1.000832
Dennis Twp	0.1096	1	0.1096	1.135	0.9869	1.120132
Woodbine Boro	1.099	1.06	1.16494	1.146	1.0058	1.152647
Lower Twp	1.061	1.03	1.09283	1.112	1.0488	1.166266
Upper Twp	1.158	1.03	1.19274	1.172	1.0123	1.186416
Middle Twp	1.185	1.05	1.24425	1.238	1	1.238
Wildwood City	1.657	0.893	1.479701	1.831	0.9074	1.661449
average			0.812299			0.874264

Source: www.sustainablejersey.com

The following outlines an action plan for West Cape May to become a certified sustainable community through NJSSI's Sustainable Jersey Program which was launched in February 2009.

Action 1 - Create a Green Team (10 points)

Overview

The Mayor and City Council should form a Green Team and appoint members by resolution, ordinance, or proclamation. Members of the Green Team would be appointed from municipal staff and departments, elected officials, and volunteer members of community boards and commissions. The formation of the team is a prime opportunity to expand inclusion. Aspiring to create a Green Team that reflects the overall demographics of the town would be ideal.

Time Frame

The time frame for the implementation of action is one to three months. This involves identification, recruitment, and appointment of members to serve on the community Green Team.

Implementation

Step 1 - Selection

Create a list of potential Green Team members. Members of West Cape May's Environmental Commission and Shade Tree Commission, as well as residents, business owners and municipal employees would be ideal candidates. Team members should have both the influence to build the program and have the time, skills, and motivation to serve on the project. Team members should represent an appropriate cross section of the community. It is recommended that that a percentage of the team is comprised of municipal members, and consideration should be given to representatives from relevant departments such as facilities, maintenance, purchasing, planning, engineering, health/social services, and recreation.

Step 2 – Put it in writing

By resolution, ordinance, or proclamation, officially establish a Green Team. The purpose, roles, and responsibilities of the Green Team should be clearly defined.

Step 3 - Preliminary meeting

Organize a "kick off" meeting with the intent of outlining the goals and objectives of the Green Team

Costs

The initial costs to establish a Green Team are minimal. Municipal governments may incur costs for municipal staff time needed to recruit team members and create the appointment resolution. The Mayor and Council should specify the amount of municipal staff time available to support the work of the Green Team The Council should identify funding available to support the work of the Green Team if possible.

Required Submission for Points

The team is formally established by a municiapl resolution, ordinance or proclamation. Provide a list of the names and affiliations of members serving on the Green Team. Submit a summary of activities undertaken by the Green Team. This can include meetings, events, or plans.

Action 2 – Community Education and Outreach

Overview

Community outreach and education provides community members with an understanding of sustainability as it relates to their everyday lives. A ful understanding of these choices can lead residents to a more sustainable future. Through community education and outreach , the Green Team and other partners will offer opportunities for various stakeholders to learn about sustainability initiatives and to implement sustainable practices.

Implementation

Step 1 – Prioritize Efforts

The established Green Team should prioritize the objectives of their community outreach campaign and solidify environmental education plan.

Step 2 – Define restraints and deadlines

Identify funding available for outreach. Identify potential events, venues and speakers.

Step 3 - Advertise

Use the local newspaper, local media, schools and community organizations (churches, non profits) to promote the municipality's outreach event of choice.

Step 4 – Evaluation

Evaluate the impact of the event on the community and target audience to further inform and design future events.

Timeframe

The allocated timeframe for completion is completely dependent on the outreach methodology that is proposed. *Community sponsored events and activities* require 3 to12 months; *film festivals* require 3 to 9 months; *lecture series* require 1 to 4 months; *media/outreach* campaigns that include direct mailings to residents require 4 to 12 months; *newsletter article series* require 1 to 3 months; community sustainability website creation requires 3 to 9 months; formation of *study or reading circles* requires 2 to 6 months; organizing workshops and tours requires 3 to 6 months.

Costs

The amount of staff and volunteer time needed to implement programs will depend on the activities pursued. Many activities have low direct costs for materials and services but require high levels of volunteer or municipal staff support time to implement.

- Activities with lower direct costs can include:
  - tours and workshops – varies but costs can be inexpensive if speakers provide their time for little or no cost. This could be realized through partnerships with universities, non profits, and environmental agencies.
  - School fundraisers – Green Market Fundraising - environmentally based NJ non profit organization that offers fundraisers for schools to administer, where 50% of the proceeds are given back to the school for selling CFL light bulbs.

Required Submission for Points

The municipality can receive up to 10 points per activity that is successfully carried out, for a maximum of 20 points total (for two events) a sample of program outreach materials or educational materials that were used in the event. They must also provide background information regarding the project, including description, identification of partners, project costs, and a final evaluation that explains what could be done to better their outreach campaign in the future based on what was observed at the activity.

Action 3 – Green fairs (10 points)

Overview

Green Fairs are community or regional events that educate, promote and celebrate the ideas and concepts behind 'Green' Initiatives. Green fairs allow community residents to fully grasp the effect that they have on their environment, and what the State is (and what they should be) currently doing to enhance environmental sustainability and combat climate change.

Implementation

Step 1 – Organize oversight

Organize a group of community volunteers and municipal employees to get the message out for the municipality. These volunteers will serve as the Steering Committee for the coordination of the event. They must create a statement solidifying the fairs goals and objectives, as well as the message that they want their fair to convey.

Step 2 – Plan

The steering committee should lay out a concrete time and place, while taking into account national holidays and accessibility to transportation.

Step 3 – Define restraints
Develop a realistic budget, as well as alternate funding sources.
Step 3 – Get approval
Contact the Municipal Council for approval and support of the event.
Step 4 – Staff the event
Recruit volunteers through local school, churches, municipal meetings, and advertising
Step 5 – Involve the community
Acquire the support and assistance from local businesses (restaurants to donate food, clothing stores to print t shirts, etc). Contact local environmental agencies and give them a spot at the fair as an educational vendors.

Timeframe
The timeframe necessary to plan a Green Fair will vary depending on the level of support given by the Municipal Council and volunteers. It is best to begin planning a Green Fair 9-12 months prior to the event date to provide an adequate amount of planning time

Costs
Organizing a Green Fair requires significant time and real dedication from the Green Fair Committee. Funding can be raised from event sponsorships and vendor fees. Green Fairs can easily be incorporated to West Cape May's annual farmers market

Required Submission for Points
Submit a short (1-2 page) event evaluation summary providing basic information on strengths of the event, and challenges encountered while organizing and executing the event. Provide at least two examples of event flyers, press releases, or newspaper articles developed for the event.

Action 4 - Environmental Justice and Planning in Zoning (10 points)

Overview
"Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies….. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies" (EPA 2009) Environmental justice training will provide the municipal employees of West Cape May with the understanding that enhanced sustainability practices are a necessary undertaking for the municipality. Each and every resident/employee must do their part in preserving for the future.

Implementation
Step 1 – Form an environmental justice Task Force to evaluate municipal and environmental planning within the municipality, and how it corresponds with environmental justice. This committee should be appointed by the Mayor.
Step 2 - The Task Force should develop and implement an education and outreach program on environmental justice issues. Training and outreach could be directed at municipal planning and zoning boards, the Environmental Commission, the Green Team, and the Town Council, as well as at municipal staff.

Timeframe
The timeframe depends on the tasks undertaken. The time to establish a Task Force to evaluate issues and provide recommendations could be 9-12 months. Shorter-term actions could be completed in 6-9 months.

Costs
Municipal staff time

Required Submission for Points

Submit materials addressing the following: describe project, identify community Task Force members; describe efforts to incorporate and respond to community input, assess what worked and what could be improved, and identify next steps for incorporating environmental justice into land use planning and zoning. Provide copies of any studies, reports, ordinances, master plan updates, education, or outreach materials prepared as part of the project activity.

Action 5 – Municipal Energy Audit (30 points)

Overview

A municipal energy audit shows annual energy use and costs associated with particular facilities, costs of suggested improvements, and potential energy and cost savings. It also provides guidance on cost-effective practices and technologies that can improve energy efficiency.

Timeframe

In order to accurately understand the energy output of a municipality, the municipality will need to have 12 months of data showing monthly expenditures on energy related devices. Once that data is obtained, the analysis and entire audit can be done in the matter of a few weeks.

Implementation

Step 1 - Create an energy audit team made up of the municipal business administrator as well as facilities, environmental, and maintenance staff.
Step 2 - Apply for funding from the NJ Board of Public Utilities (BPU) Municipal/Local Government Energy Audit Program.
Step 3 - Hire an Energy Service Company (ESCO) and conducting a municipal energy audit on eligible facilities owned and operated by the municipality.
Step 4 - Collect facility information and 12 consecutive months of utility data for electricity, natural gas, heating fuel, and water/sewer accounts.
Step 5 - Apply for funding from the NJ Clean Energy Program to partially coverthe costs of implementing recommendations.
Step 6 - Submit documentation to secure remaining funding from the BPU municipal energy audit program to cover the costs of the audit.

Costs

A typical energy audit price tag ranges from18 to 50 cents per square foot for facilities with less than 50,000 square feet of conditioned area, to about 12 cents per square foot for larger facilities (greater than 250,000 square feet), to 10 cents per square foot for very large facilities (greater than 1,000,000 square feet). However, up to 75% of the audit can be funded through the BPU, and is one of the most important and beneficial steps on the road to sustainability.

Required Submission for Points

If West Cape May receives funding through the Board of Public Utilities, it must submit an energy performance summary report from the BPU approved Energy Service Company . This statement will include summary data for each facility as well as recommendations on how to improve a facility's performance. It is also recommended that the municipality submit a summary of your plans for implementing the recommendation in the audit.

Action 6 - Municipal carbon footprint/ Greenhouse Gas Inventory (10 points)

Overview

A Municipal Carbon Footprint measures the amount of greenhouse gas (GHG) emissions produced by local government operations in a given year. Creating a footprint is the first step to reducing municipal GHG emissions.

Timeframe

The calculation of a municipal and/or a community carbon footprint can take anywhere from one month to one year depending on the availability of data.

Implementation

The municipality will be required to measure certain indicators that measure greenhouse gas emissions.

Step 1 - Establish a Baseline Year
Step 2 - Calculate emissions from "Scope 1" which are described as direct emissions from stationary combustion of fuels like natural gas, heating oil, coal, and diesel.
Step 3 - Calculate emissions from "Scope 2 which are described as indirect emissions from consumption of purchased or acquired electricity.
Step 4 - Calculate emissions from "Scope 1" which are described as direct emissions from mobile combustion of fuels in vehicle fleet (e.g., cars, trucks, off-road equipment).
Step 5 - Calculate emissions from waste related activities**.**

***A spreadsheet is provided to assist with calculations for those municipalities opting for self assessment and can be found at www.sustainablejersey.com/editor/doc/act4tb1sa52.xls.**

It includes the following three worksheets:
Worksheet 1, "Municipal Carbon Footprint," is used to enter your data on usage totals and then calculate emissions. It will produce the total carbon footprint from local government activities.
Worksheet 2, "Electric, Gas & Heating Oil," should be reproduced for each municipal facility to determine usage of electricity, natural gas, and heating oil during the selected baseline year.
Worksheet 3, "Vehicle CH4 & N20," should be used to calculate the emissions of methane and nitrous oxide from all vehicles in the municipal fleet.

Costs

The cost of developing a Carbon Footprint varies significantly. The footprint can be accomplished by municipal staff and/or volunteers at minimal cost.

Required Submission for Points

In order to receive the points for calculating their municipal carbon footprint, West Cape May must complete all worksheets in the provided file above and submit to Sustainable New Jersey.

Action 7 – Climate action plan (20 points)

Overview

A Climate Action Plan (CAP) is a set of strategies and actions designed to lower the greenhouse gas emissions of a municipality. A CAP establishes a timeline for achieving specific emission reduction goals, identifies key strategies for achieving these goals, and tracks progress through the use of measures or indicators. A CAP can also help prioritize the allocation of funding and resources, and analyzes the costs and benefits that result from implementing new strategies. Fortunately, the first step for this particular action has already been taken through the establishment of the municipal carbon footprint (Action6). What follows is the strategic planning process that will aid in West Cape May's long term goals in alliance with the Kyoto Protocol. The process will consist of devising two separate but integrated strategies, with one focused on the reduction of municipal emissions, and the other focused on the reduction of overall community emissions.

Timeframe

The development of the plan could potentially be completed within two months depending on municipal capacity as well as community dedication.

Implementation

Step 1 – Assign the Green Team the responsibility of developing the plan. The team should promote the initiative and involve stakeholders and volunteers.
Step 2 – Using the carbon footprints calculated through Action 5, produce a realistic target regarding emission reductions, as well as a realistic time frame to realize those targets. (The targets should be reflective of other credible targets such as those contained in State of

New Jersey Executive Order #54 (www.state.nj.us/infobank/circular/eojsc54.htm), or set by the Intergovernmental Panel on Climate Change (www.ipcc.ch/).

Step 3 – Set concrete goals and methods of achieving those goals regarding greenhouse gas reduction. Some easy ways to reduce both municipal and community footprints are:

- Transportation and Land Use
  - Mixed use development
  - Pedestrian and bike oriented development
  - Anti Idling Ordinance
- Energy Efficiency
  - Green Building
  - Retrofits
  - Energy audits
  - Energy efficient appliances

Step 4 – Hold community meetings and get direct citizen input on the contents and goals of the CAP.

Step 5 – The municipal board must formally adopt the CAP

Costs

Costs for creating a CAP can range from a few thousand for small, basic plan requests. However, larger cities can accrue CAP development costs up to $1 million. However, a CAP can be produced at the hands of the municipal staff as well. Simple knowledge of spreadsheets and formulas would more than likely be needed.

Required Submission for Points

A copy of the finalized CAP along with proof of adoption by the municipality should be submitted for review. Materials should include how the municipality intends to evaluate the plan and adapt it in the future to ensure implementation achieves the plan's goals.

Action 8 - Mayors Wellness Campaign (10-20 points)

Overview

The Mayors Wellness Campaign is a statewide preventative program designed to discourage inactivity and promote healthy and active lifestyles. The obesity epidemic (which is highly targeted in the Wellness Campaigns), causes long term heart disease and diabetes issues in the community and heightens the cost of city wide health insurance.

Timeframe

The Mayors Wellness Campaign is an ongoing project. The beginning stages of adoption would only take 1 to 2 months. The implementation of the programs themselves could take upwards of 18 months.

Implementation

Ten points will be awarded for each of two steps that will help municipalities become healthy towns. To earn 10 points, municipalities must appoint a team to lead the wellness campaign, develop possible actions or programs for addressing each of four strategy areas (Youth in Motion, Seniors in Motion, Employees in Motion, and Communities in Motion), and adopt a Statement of Support in one of the following three ways:

• Mayor must sign the Mayors Wellness Campaign Pledge.
• Complete a Council Resolution supporting the Mayors Wellness Campaign.
• Complete the Mayors Wellness Campaign Mayoral Proclamation.

- **Youth in Motion** - designed to help communities implement programs for children that promote wellness through good nutrition and physical activity as outlined by the US Department of Health and Human Services
- **Seniors in Motion** - aimed at improving senior citizens' health, with a particular emphasis on physical activity. It is designed to help communities implement programs for seniors that promote wellness through physical activity.

- **Employees in Motion -** designed to help employers implement programs that promote wellness through physical activity.
- **Communities in Motion -** designed to help communities promote wellness through the planning and design of the built environment and through programs that encourage physical activity and healthy lifestyles.

To earn 10 additional points, municipalities can collect baseline Measurements (existing conditions) , implement programs in each of the four strategy areas (Youth in Motion, Seniors in Motion, Employees in Motion, and Communities in Motion), and evaluate their impact. By implementing these programs, municipalities can earn the title of "New Jersey Healthy Town".

Costs

The cost to implement the Mayors Wellness Campaign is very low.

- Statement of support (very little time) .
- Document how, where, and when a program addressing each strategy area will be introduced and implemented.
- Develop, document, and conduct an evaluation strategy.
- Implement programs.

Required Submission for Points

To earn 10 points, submit a pledge, resolution, or mayoral proclamation. Also submit meeting details and planning documents for addressing each of the four strategy areas. To earn an additional 10 points, submit documentation of baseline measurements and an evaluation strategy for program impacts. Submit proof of earning the designation of "New Jersey Healthy Community" from the Mayors Wellness Campaign or documentation of program implementation in each of the four strategy areas. Submit evaluations of the programs implemented.