

Atlantic County, New Jersey Master Plan



May 2018

Prepared by Heyer, Gruel & Associates and Michael Baker International

Atlantic County Master Plan

Atlantic County, New Jersey

May 2018


Prepared By:

Heyer, Gruel & Associates
Community Planning Consultants
236 Broad Street, Red Bank, NJ 07701
(732) 741-2900

Michael Baker International
Engineering Consultant
300 American Metro Boulevard
Hamilton Township, NJ 08619
(609) 807-9500

The original of this report was signed and sealed in accordance with N.J.S.A. 45:14A-12


Susan S. Gruel, P.P. #1955


Fred Heyer, AICP, P.P. #3581


John Barree, AICP, P.P. #6270



ACKNOWLEDGMENTS

Atlantic County Executive

Dennis Levinson, County Executive
Gerald DelRosso, County Administrator

Atlantic County Department of Law

James F. Ferguson, County Counsel
Anthony J. Pagano, Assistant County Counsel

Atlantic County Board of Chosen Freeholders

Frank D. Formica, Chairman
Maureen Kern, Vice Chairwoman
Ashley R. Bennett
James A. Bertino
Ernest D. Coursey
Richard R. Dase
Caren L. Fitzpatrick
Amy L. Gatto
John W. Risley

Atlantic County Planning Advisory Board

Amjad Rehman, Chairman
Charles Pritchard, Vice Chairman
Chris Mularz, Secretary Board / Commission
Charles "Skip" Broomall
Timothy O. Carew
Freeholder Frank Formica
George H. Kyle
Dennis McDonough
Alexander P. Mercado
John Peterson
Mark Shourds

Atlantic County Department of Regional Planning and Development

John Peterson, PP, AICP, Director and Department Head
Robert Lindaw, PP, AICP, Assistant Planning Director
Brian Walters, PP, AICP, Supervising Planner
Ranae Fehr, PP, AICP, Principal Planner
Everest John, PP, AICP, Senior Planner
Frances Brown, PP, AICP, Senior Planner
Christopher Mularz, Secretary Board/Commission
Anthony Esochaghi, Assistant Administrative Analyst
Andrea Slusher, Contract Administrator
Matthew Duffy, GISP, GIS Specialist
Sarah Taylor-Deak, GISP, GIS Specialist
Cindy Schaefer, Keyboarding Clerk
Suzanne Walter, Administrative Analyst

Heyer, Gruel and Associates

Susan Gruel, PP, Principal
Fred Heyer, PP, AICP CUD, LEED-AP ND, CNUa, Principal
John Barree, PP, AICP, Project Manager and Senior Planner
Elena Gable, PP, AICP, Associate Planner and GIS Specialist
M. McKinley Mertz, PP, AICP, Associate Planner and Graphic Layout

Michael Baker International

Daniel Barone, PhD, GISP, CFM, Department Manager, Environmental & Water Resources
Steven Wong, AICP, PTP, PMP, Project Manager
Andrew Lappitt, PP, AICP, Planner
Michael Flynn, Coastal Scientist
Ebony Washington, Environmental Specialist
Lex Powers, Planner

TABLE OF CONTENTS

Executive Summary	viii
I. Background and Land Use	1
Statutory Authority	2
Intent and Purpose of Master Plan Elements	2
Historic and Geographic Setting	4
County Regions	4
2016 Planning Context	7
Superstorm Sandy	7
Demographic Trends Since 2000 Master Plan	10
Total Population	10
Seasonal Population	10
Aging Population	10
Race and Hispanic Origin	11
Municipal Population Changes	11
Major Industries	14
Atlantic County Comprehensive Economic Development Strategy and Action Plan	14
The Federal Aviation Administration William J. Hughes Technical Center	15
Regulatory Environment	16
State Development and Redevelopment Plan (2001)	16
Draft State Strategic Plan	18
New Jersey Pinelands	18
Coastal Area Facilities Review Act	22
Sewer Service Areas/Public Water Supply Service Areas	23
Current Land Use & Trends	23
Municipal Master Plans and Zoning	29
Development Trends	31
Brownfields & Redevelopment Opportunities	31
Urban Enterprise Zone	32
Educational Institutions	32
Goals and Objectives	33
Overall Planning Goals	33
Land Use Goals and Objectives	33
Region Specific Land Use Goals & Objectives	34
Strategic Action Plan	35

II. Housing Element	37
Introduction	38
County Summary	38
Population	38
Households	38
Poverty Status	40
Household Costs	40
Existing Housing Conditions	40
Housing Unit Data	40
Housing Type and Size	40
Housing Values and Contract Rents	41
Housing Conditions	41
Accredited Affordable Units	42
Federal Affordable Housing Programs	42
State Affordable Housing Programs	43
Atlantic County Improvement Authority	43
Conclusion	43
III. Transportation	47
Transportation System Overview	48
County Road Network	49
Annual Trip Summaries of Travel Modes	52
SJTPO Transportation Improvement Program	52
SJTPO Capital Improvements FY 2016-2025	52
Public Transit	56
Bus Transportation	56
Shuttle Services	57
Rail Service	58
Employment Centers & Transportation	58
Transit Village Initiative	59
Freight Rail	59
Aviation	59
Air Quality	59
Complete Streets	62
Bicycle Facilities	62
Potential Improvements	64
Policy Recommendations	66

IV. Infrastructure	72
Solid Waste Management	73
<i>New Jersey Historical Perspective</i>	73
<i>Atlantic County Historical Background</i>	73
<i>Atlantic County Solid Waste Management Operations</i>	73
<i>Inventory of Solid Waste and Recycling Facilities</i>	73
<i>Recycling Outreach</i>	75
<i>Municipal Recycling Plans</i>	75
<i>Solid Waste Management Infrastructure Recommendations</i>	77
Wastewater Management	77
<i>Overview of Current Wastewater Service</i>	77
<i>Reclaimed Water for Beneficial Reuse (RWBR)</i>	78
<i>Resiliency</i>	78
<i>Wastewater Management Infrastructure Recommendations</i>	78
Water Supply	80
<i>Natural Resources</i>	80
<i>Water Sources</i>	87
<i>Water Use</i>	87
<i>Water Quality</i>	92
<i>Groundwater Monitoring and Quality</i>	93
<i>Water Supply Infrastructure Recommendations</i>	94
V. Sustainability and Resiliency	98
Sustainability and Resiliency	99
<i>Post-Sandy Conditions</i>	99
<i>Vulnerabilities</i>	103
<i>Asset Inventory</i>	105
<i>Land Use</i>	107
<i>Strategic Recovery Planning Report</i>	107
<i>Significant Issues and Hazards</i>	108
<i>Sustainability and Resiliency Initiatives in Atlantic County</i>	109
<i>Municipal Initiatives</i>	110
<i>Resiliency Strategies</i>	111
<i>Sustainability Strategies</i>	113
<i>Sustainability and Resiliency Goals and Objectives</i>	115
<i>Implementation</i>	116

TABLES

I. Background and Land Use **1**

Table 1.1 Population Trends	10
Table 1.2 Barrier Island Communities Second Homes	10
Table 1.3 Population by Age 2000 and 2010, Atlantic County	10
Table 1.4 Population by Race and Hispanic Origin	11
Table 1.5 Municipal Population Changes	12
Table 1.6 Atlantic County Employment and Residential Labor Force (2000 – 2015)	13
Table 1.7 Employment by Industry, Atlantic County, 2014	14
Table 1.8 SDRP and CAFRA Corresponding Planning Areas	22
Table 1.9 Land Use Land Cover (2002 to 2012)	23
Table 1.10 Atlantic County Zoning	29
Table 1.11 Municipal Zoning Summaries	29
Table 1.12 Known Contaminated Sites	32
Table 1.13 Superfund Sites	32
Table 1.14 Strategic Action Plan Implementation	35

II. Housing Element **37**

Table 2.1 Population Trends 1930 - 2014	38
Table 2.2 Population by Age 2000 and 2010, Atlantic County	39
Table 2.3 Household Size- Occupied Housing Units - 2010, Atlantic County and State of New Jersey	39
Table 2.4 Household Size and Type, 2010, Atlantic County	39
Table 2.5 Per Capita and Household Income	39
Table 2.6 Household Income, Atlantic County, 2014	40
Table 2.7 Poverty Status, Atlantic County and New Jersey, 2014	40
Table 2.8 Selected Monthly Owner Costs as a Percentage of Household Income, 2014	40
Table 2.9 Gross Rent as a Percentage of Household Income 2014	40
Table 2.10 Year Structure Built Atlantic County, NJ	41
Table 2.11 Housing Units Authorized by Building Permits: 2000 – 2015 Atlantic County	41
Table 2.12 Housing Data Atlantic County, 2010	41
Table 2.13 Housing Type and Size Atlantic County, 2014	41
Table 2.14 Value for Owner-Occupied Housing Units	42
Table 2.15: Mortgage Status	42
Table 2.16 Contract Rent	42
Table 2.17 Housing Conditions Atlantic County, 2014	42
Table 2.18 Affordable Housing Developments and Programs, Atlantic County	43

III. Transportation **47**

Table 3.1 New Jersey Department of Transportation Road Mileage by Municipality and Jurisdiction within Atlantic County	48
Table 3.2 Annual Statistical Summary – 2010 to 2015	48
Table 3.3 Annual Visit-Trips to Atlantic City (in thousands)	49
Table 3.4 NJ Transit Bus Routes Service Atlantic County	57
Table 3.5 NJ Transit Rail Stations Service Atlantic County	58
Table 3.6 Resident Locations of Workers Employed in Atlantic County	58
Table 3.7 Employment Locations of Atlantic County Residents	59
Table 3.8 Air Quality Monitoring Locations in Atlantic County (2014)	62
Table 3.9 Existing Bicycle Facilities in Atlantic County	64

IV. Infrastructure **72**

Table 4.1 Solid Waste and Recycling Facilities within Atlantic County	74
Table 4.2 Generation, Disposal and Recycling Rates in Atlantic County	75
Table 4.3 Coastal Region Sewer Service Areas	77
Table 4.4 Atlantic County Utilities Authority, City Island Sewage Treatment Plan	78
Table 4.5 HUC-8 Watersheds	80
Table 4.6 Historic Climate Data	80
Table 4.7 Municipal Locations within Water Regions and Watershed Management Areas	81
Table 4.8 Major and Minor Tributaries of the Mullica River	83
Table 4.9 Major and Minor Tributaries of the Great Egg Harbor River	83
Table 4.10 Major Tributaries of the Tuckahoe River	87
Table 4.11 Average Annual Freshwater Withdrawal by Source in Millions of Gallon	87
Table 4.12 Average Annual Freshwater Withdrawal by Use and Source in Millions of Gallons	87
Table 4.13 USGS Estimates of Water Use in Atlantic County. Water-use values are in million gallons per day	87
Table 4.14 Active Community Safe Drinking Water Systems	88
Table 4.15 Public Water Systems	89
Table 4.16 Impaired Sites in Atlantic County	93
Table 4.17 Known Contaminated Sites by Class	93

V. Sustainability and Resiliency **98**

Table 5.1 Super Storm Sandy Insurance Claims March 2013	99
Table 5.2 FEMA, NFIP Community Rating System Participation	101
Table 5.3 Historic Flood Impacts, Atlantic County	103
Table 5.4 Housing Units for Seasonal, Recreational or Occasional Use	105
Table 5.5 Barrier Island Populations, 2000 and 2010	105
Table 5.6 Critical Facilities in Hazard Areas	105
Table 5.7 Acres of Land in Flood Hazard Areas by Municipality	108
Table 5.8 Sustainable Jersey Participation in Atlantic County	111
Table 5.9 Implementation Matrix	117

MAPS

I. Background and Land Use	1
Context Map	3
County Regions	5
Superstorm Sandy Storm Surge	8
FEMA Floodplains	9
Regulatory Framework	17
Pinelands Management Areas	19
Coastal Area Facilities Review Act Management Areas	21
Sewer Service Areas	24
Land Use Land Cover (2012)	25
Expansion of Urban Areas	26
Existing Land Use (2014)	27
Existing Zoning	28
III. Transportation	47
Pine Barrens Byway	50
Highway Network	51
SJTPO Transportation Improvement Program Projects Completed Since 2012	53
SJTPO Capital Improvements 2016-2025	54
Existing Public Transit Network	55
Existing Public Transit Network Detail	56
Highway Aviation Facilities	60
Existing and Historic Rail Facilities	61
Existing and Proposed Bicycle Facilities Detail	62
Existing and Proposed Bicycle Facilities	63
Potential Rail and Transit Services	64
Municipalities with Complete streets Policies	65
Transit Vision	68
Potential Transportation Improvements	69
Bicycle Facilities and Historic Rail Facilities	70

IV. Infrastructure	71
Solid Waste Management	75
Wastewater Management	78
Watershed Management Areas	81
Elevation	83
Soils	84
Surface Hydrology	85
Transportation & water Utilities	89
Water Purveyor Surface Areas & Aquifers	90
Ground Water Recharge Areas	94
Surface water Quality & Monitoring	95
Soil & Groundwater Contamination	96
V. Sustainability and Resiliency	97
Superstorm Sandy Storm Surge	99
FEMA Floodplains	101
Population Density	103
Community Facilities	105

APPENDICES

Appendix A: Official County Map of Right-of-Way Standards and Functional Classification

Appendix B: Summary of Public Outreach Process and Comments

Appendix C: Under Separate Cover: Open Space and Recreation Plan, Atlantic County, New Jersey (February 2018)

Appendix D: Under Separate Cover: Farmland Preservation Plan, Atlantic County, New Jersey (February 2018)

EXECUTIVE SUMMARY

Introduction

The 2017 Atlantic County Master Plan, Farmland Preservation Plan, and Open Space and Recreation Plan are updates to documents that are more than a decade old. As part of the State's post-Sandy recovery effort, the County received a grant for planning work to prepare a Strategic Recovery Planning Report (SRPR). The SRPR was prepared by Heyer Gruel and Associates and submitted to the County in January 2015. One of the main recommendations in the report is to update the County Master Plan and other planning documents. In order to carry out this recommendation, the County received a second Post-Sandy Planning Assistance Grant. A team comprising Heyer Gruel and Associates and Michael Baker International was selected to prepare the new Plans.

As part of the development of the County Master Plan, Farmland Preservation Plan, and Open Space and Recreation Plan, several meetings were conducted to obtain input from stakeholders and County residents.

Shortly after the inception of the plan development process, a meeting was held on the morning of March 24, 2016 at the Anthony Canale Training Center in Egg Harbor Township. County Planning Staff, municipal planners and planning consultants, and representatives from the Atlantic County Utilities Authority (ACUA), the Atlantic County Investment Authority (ACIA), the Casino Reinvestment Development Authority (CRDA), and other agencies were invited and in attendance. This meeting offered the consultant team the opportunity to present the scope of the project and background information. A lively and productive question and comment session provided a strong base from which to build the planning documents.

A second meeting was conducted at the Anthony Canale Training Center on the evening of July 14, 2016 to present draft information, field questions, and take comments from members of the public. This meeting was advertised digitally and in



print by the County, and was well attended. Several elected officials, County Staff, and a number of residents were on hand to participate. Recommendations and comments presented by attendees at the meeting were incorporated into the drafting of the plan goals, objectives, and strategies.

On January 18, 2017, a working draft of all three plan documents was provided to the County for circulation, review, and comment. The plan was sent to representatives of each constituent municipality, relevant state and regional planning entities including the State Agriculture Development Board, The Pinelands Commission, and the Department of Community Affairs. Comments were solicited and accepted until February 15, 2017. A number of constructive comments were submitted to the consultant team and subsequently incorporated into the final versions of the plan documents.

Context

Since 2000, when the current County Master Plan was adopted, the County's demographics have changed, the economic climate has changed, and the principles of sustainability and resiliency have moved to the forefront of the planning field. Superstorm Sandy served as the impetus to undertake this planning work, but there have been other weather events including Tropical Storm Irene, the Derechos of 2012, nor'easters and snow storms, and nuisance flooding that have forced the County to confront these issues.

The County's economic base, which has long depended on tourism and Atlantic City casinos has been eroded by the national housing crisis and worldwide economic recession and by increased competition for casino gaming dollars in surrounding states. The County's unemployment rate and economic recovery have lagged behind the rest of the state, and the latest trends show that the size of the workforce has diminished. One of the main challenges moving forward is to explore new industry sectors that can boost the County's economy and provide new high quality jobs.

Several demographic trends highlight changes in the County since the last Master Plan. The average age of the county increased by nearly three years between 2000 and 2010. An aging population presents different needs and new set of challenges. In addition, the County's population has shifted geographically. The population of the Barrier Island communities has declined and the more suburban mainland portions of the County have grown. There appears to be an increasing trend toward more second / vacation homes on the Barrier Islands with a decline in permanent population and an even more pronounced shift in seasonal population.

The Housing section of the Plan contains a substantial amount of demographic data, information on housing costs and affordability, and an inventory of affordable housing units within the County that are controlled through a variety of mechanisms. Housing costs in Atlantic County tend to be lower than the state average, but incomes are also lower. A significant portion of the County's population is considered cost burdened by their housing expenses.



Land Use

The Land Use section of the Plan describes the existing regulations that influence land use and development within the County. The Pinelands Comprehensive Management Plan (CMP) covers a large portion of the County. The CMP mandates development densities and land uses and requires municipal zoning to conform to its standards. With the exception of a small section in the western part of the County, the area not controlled by the Pinelands is subject to Coastal Area Facilities Review Act (CAFRA) jurisdiction. CAFRA controls development densities and the amount of impervious cover permitted within certain distances of the coast.

The plan contains a number of maps depicting existing conditions, changes since the 2000 Master Plan, and an overview of how state level policies, including the Pinelands and CAFRA, affect the County's development.

Land Use Goals and Objectives:

- Influence State and Regional master plans to support the land use goals of Atlantic County, particularly with regard to the Pinelands Comprehensive Management Plan.
- Promote quality growth and development in areas where capital facilities are available
- Support efforts to revitalize neighborhoods and rehabilitate older housing stock
- Discourage growth in areas that require unplanned extension of capital facilities
- Promote lands for a diversity of economic development opportunities within the communities of Atlantic County
- Encourage the repurposing of existing infrastructure and a redefinition of economic activity in Atlantic City and the surrounding communities.
- Promote a mix of housing types to support the demands of a changing population

Overall Planning Goals

- Incorporate principles of sustainability and resiliency into all aspects of County planning and policy development.
- Acknowledge the risks associated with climate change, sea level rise, and severe weather events, by applying lessons learned in the aftermath of Hurricane Irene, the Derecho of 2012, and Super Storm Sandy.
- Promote targeted growth and development in areas served by existing infrastructure outside flood prone areas, and encourage redevelopment of under-utilized urban, suburban, and rural sites.
- Coordinate County planning efforts with other entities including municipalities, improvement authorities, economic development agencies, and state agencies.
- Encourage the diversification of the County's economy and job creation by supporting business attraction and development initiatives.
- Promote the location of research and development businesses for mutual benefit of industry; job searchers and the colleges in Atlantic County.
- Capitalize on the Federal Aviation Administration (FAA) William J. Hughes Technical Center and its continued expansion as an asset for industry and job attraction.
- Support the County's status as a tourist destination with a wide array of natural amenities and communities of interest.
- Promote safe and efficient transportation systems for access to the County and within the County, including air, rail and motor vehicle systems.
- Preserve and make more efficient use of existing roadway capacities by encouraging sound land use planning and highway access control.
- Promote sustainable design, management, and education related to the use of potable water and the treatment of wastewater.
- Preserve and enhance the quality of the natural resources of the County.
- Preserve selected critical natural areas supporting endangered species and wildlife habitat.
- Protect farmland within the County and promote the continued economic viability of farming.
- Preserve the historic and cultural resources in the County.
- Advocate for the preservation and protection of important natural resources while working to reevaluate the capacity of growth areas and the scope of permitted uses and activities within the Pinelands.
- Collaborate with constituent municipalities and outside jurisdictional entities to streamline the development process to make the County a more attractive place for investment.
- Continue to expand the County Park System and the recreation opportunities and facilities available to County residents and visitors.

Transportation

The transportation section of the plan provides an inventory and analysis of the County's existing transportation network. It identifies County Roads, public transit facilities, bicycle facilities, and infrastructure that is vulnerable to natural hazards. The plan also contains information about proposed capital improvements identified in the South Jersey Transportation Planning Organization (SJTPO) capital improvement plan. The SJTPO long range plan presents the following goals:

1. Maintain and improve a circulation system that provides for the safe and efficient movement of traffic.
2. Provide an energy-efficient transportation system that minimizes the negative effects of vehicular emissions on air quality.
3. Protect natural and manmade resources from the negative effects of traffic and road improvements.
4. Provide transportation choices for work, recreation and other trips for County residents and visitors.
5. Promote economic development and tourism in the transportation planning process.

The transportation element proposes the following policy recommendations:

- Encourage the creation of a second track on NJ Transit's Atlantic City Line to provide improved freight rail and passenger rail service between Atlantic City and Hammonton and points between Atlantic County and Philadelphia.
- Encourage municipalities in Atlantic County with existing bus stations and/or rail terminals to apply for NJ Transit's Transit Village designation.
- Encourage the development of Transit Villages along the Atlantic City Line.
- Seek feasibility of additional public transit routes and more frequent service in areas of need.
- Continue to partner with Cross County Connection Transportation Management Association on shuttle services and any other technical and marketing support this organization can provide.
- Encourage and promote the usage of Atlantic City International Airport for passengers traveling to and from Philadelphia and the surrounding area.
- Explore possibilities for more frequent and convenient north-south transit connections along the coast.
- Adopt a county-wide Complete Streets Policy to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.
- Encourage all municipalities in Atlantic County to adopt Complete Streets policies to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.
- Continue to strengthen policies that create on and off-street pedestrian and bicycle infrastructure in line with the County's goal of promoting its natural environment.
- Encourage preservation of active rail facilities, historic rail facilities and other



rail facility right-of-way for future rail and/or non-rail use.

- Encourage the preparation of a Bicycle and Pedestrian Master Plan for Atlantic County.

Infrastructure

The infrastructure element of the plan contains information and statistics about the County’s solid waste management, water supply, and wastewater management.

The Solid Waste section discusses the background and development of the County’s Solid Waste Management Plan, which was originally adopted in 1980 and has been updated a number of times, most recently in 2012. The Atlantic County Utilities Authority (ACUA) operates the only active landfill and transfer station in the County, and operates the only Class A recycling facility. There are a number of Class B recycling facilities, compost facilities, and convenience centers distributed throughout the County.

The Wastewater Management section discusses the statutory requirements of the New Jersey Water Quality Planning Act and Section 208 of the Federal Clean Water Act. The County is in compliance with these standards and has a Wastewater Management Plan (WMP) that conforms to NJ DEP’s Water Quality Rules. The ACUA City Island Sewage Treatment Plant is the largest such facility in the County and will be undergoing upgrades to enhance resiliency. These include the installation of sumps, the acquisition of portable flood barriers, and the construction of a seawall around low lying portions of the Plant.

The Water Supply section of the plan describes the regional divisions and aquifers from which the County draws its water. There are some long-term concerns about potential salt water intrusion in the coastal area, and declines in the Atlantic City 800-foot Sand Aquifer and Piney Point aquifer have been noted. Finally, this section inventories areas of ground water concern known as Currently Known Extents (CKEs), which are areas where the local ground water has concentrations of contaminants beyond a safe threshold, and Classification Exception Areas (CEAs), which are areas where water quality standards are not met, and where uses such as wells are not permitted without certain safeguards.

Sustainability and Resiliency

In 2011 and 2012, the back-to-back impacts of Hurricane Irene and Superstorm Sandy exposed the vulnerability of communities throughout the northeast. Since those landmark storms, additional weather events, particularly Winter Storm Jonas in early 2016, have impacted communities in coastal New Jersey. In the wake of these storms, it became apparent that there is a dramatic need to focus planning and investment efforts on resiliency and sustainability measures.

Atlantic County sustained a substantial amount of damage during Sandy, particularly in its barrier island communities. This event, spurred a great deal of investment in planning and developing a more resilient and sustainable vision for the future.



Through the development of this plan element, Atlantic County has an opportunity to promote and support the implementation of a variety of actions to boost the resiliency and sustainability of the County.

Resiliency has become a focus of planning as the effects of climate change and the impacts associated with severe weather events have become more costly and profound. In the broadest sense, a resilient community is able to absorb shocks of outside events (such as storms and natural disasters) in a way that accrues minimal impact to its built environment and social fabric.

Sustainability entails making decisions and taking actions in the present that do not negatively impact a community or population’s future ability to thrive. Sustainability encompasses a range of environmental, economic, and social factors that contribute to making high quality places to live, work, and invest.

The county is faced with a number of vulnerabilities:

- Flooding, Severe Storm, Wave Action, and Coastal Erosion
- Population and Infrastructure is densely concentrated on Barrier Islands
- There is a high percentage of “second” homes in flood prone areas
- Important community facilities and assets are in hazard areas

The SRPR identified a number of issues that are also included here to show areas of focus for the development of local and County plans.

- Ensuring that officials are knowledgeable and well trained
- Dissemination of public information in an efficient manner
- Accessibility of evacuation routes and location of refuge areas outside hazard areas
- Issues with utility and cell phone service

- Uneven and inconsistent bulkhead locations
- Cost of insurance as a burden to housing affordability
- Outdated or undersized storm water management infrastructure
- Dune construction and property rights debates
- Neighborhood character with elevated homes
- Storm debris removal
- Maintenance of high hazard dams, particularly Lake Lenape Dam.
- Wildfires
- Drought

There are a number of sustainability and resiliency initiatives underway in Atlantic County. The ACUA has taken the lead on many of these measures, and several municipalities are doing a significant amount of work as well. The ACUA upgrades include improvements to the City Island Treatment Plant, upgraded pump stations, and other efforts to improve resiliency. The ACUA has also pursued energy efficiency and renewable energy installations to make its facilities more sustainable. These include the 7.5 megawatt wind farm and solar panel arrays at the City Island Treatment Plant, as well as the landfill gas to electric facility at the ACUA landfill.

The plan recommends a host of strategies that the County can pursue on its own or in partnership with its constituent municipalities or other entities. These strategies seek to make the County a more resilient place in the face of sea level rise, climate change, and increased intensity and frequency of hazardous weather events. The sustainability strategies consider the economic, environmental, and social aspects of planning and development in the County. Lastly, there is an implementation section with suggestions for steps that the County can take to bring the vision of the plan.







I. *Background and Land Use*



STATUTORY AUTHORITY

An ongoing responsibility of the Atlantic County Department of Regional Planning and Development is to prepare and adopt a Master Plan to guide the physical development of the County. Pursuant to the requirements in the County Planning Act, N.J.S.A. 40:27-2 et seq:

“The county planning board (Atlantic County Planning Advisory Board) shall make and adopt a master plan for the physical development of the county. The master plan of the county, with the accompanying maps, plans, charts, and descriptive and explanatory matter, shall show the county planning board’s (Atlantic County Planning Advisory Board) recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board (Atlantic County Planning Advisory Board) shall encourage the cooperation of local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures.”

The role of planning in the County is primarily the responsibility of the Atlantic County Planning Advisory Board. The Planning Advisory Board is a nine-member body that was created in lieu of a County Planning Board, pursuant to N.J.S.A.40:27-1. Land use



planning by county government has as its basis three key New Jersey statutes. These statutes are as follows:

- N.J.S.A 40:27-6.2 - Review and approval of all subdivisions of land; procedures; engineering and planning, and
- N.J.S.A. 40:26-6.6 - Review and approval of site plans for land development along county roads or which affect County drainage, and
- N.J.S.A. 40:27-6.8 - Resolution vesting power to review and approve subdivisions and site plans with director.

These three statutes provide that most land development by subdivisions and site plans require County approval. A key subcommittee of the Planning Advisory Board is the Atlantic County Development Review Committee, created pursuant to N.J.S.A 40:27-6.8. The Development Review Committee is primarily responsible for review of subdivisions and site plans in accordance with the other aforementioned statutes.

While the County only retains development review jurisdiction over subdivisions of land and site plans impacting County facilities, the County Master Plan can provide guidance and support to the planning and development of its constituent municipalities.

INTENT AND PURPOSE OF MASTER PLAN ELEMENTS

The County Master Plan is a comprehensive planning document that provides goals, recommendations, and implementation actions to guide growth, development, preservation, resiliency, and sustainability within the County. Atlantic County’s role in planning is to provide a regional perspective that takes into account the diverse desires and needs of its twenty-three constituent municipalities. These municipalities are spread over 561 square miles and range in population from just under 500 residents to over 43,000 residents. As a result, these communities will have different objectives and face different challenges when dealing with their geographical, economic, and environmental realities.

This update to Atlantic County’s Master Plan elements, along with the development of a new Resiliency and Sustainability Element, was identified as an important project in the 2015 Atlantic County Strategic Recovery Planning Report (SRPR) prepared in response to the impacts of Super-Storm Sandy. The update of the County master plan elements represents the second phase of the planning recovery process. These elements will build on the work begun with the SRPR in order to create a user-friendly planning document of recommendations to guide land use and development in a sustainable and resilient manner within the County.

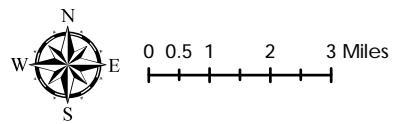


Resiliency and sustainability have become a major focus of the post-Sandy planning environment. The worsening impacts of intense storm systems due to both frequency and intensity, and the consensus that reliable data and modeling efforts show that sea levels are rising and temperatures are increasing, makes the need for a reasoned evaluation of future impacts and needs all the more pressing. This Master Plan update includes a stand-alone Resiliency and Sustainability element for Atlantic County for the first time. The purpose of this element is to expand on the concepts outlined in the Strategic Recovery Planning Report to provide goals, recommendations, and implementation strategies for the short and long term development of Atlantic County. The concepts that underlie the resiliency and sustainability element do not exist as a new standalone sector of planning thought and action. In order to illustrate the connections between the traditional plan elements and the emerging resiliency and sustainability concepts, these concepts will appear throughout the plan elements as they relate to land use, transportation, infrastructure, open space, farmland, and recreation. None of these concepts or plans is meant to exist in a vacuum. There is interplay between each, and a holistic view of sustainable and resilient planning efforts stands to provide the greatest benefit to future decision and policymaking within the County.

The post-Sandy and post-Great Recession climate has left Atlantic County facing a complex set of planning challenges. The County is searching for a way to balance the preservation and protection of the natural and built environment in the face of climate change and environmental catastrophes and the desire to promote a more diverse and sustainable economy to ensure the prosperity of the County and its residents moving forward.

Context Map

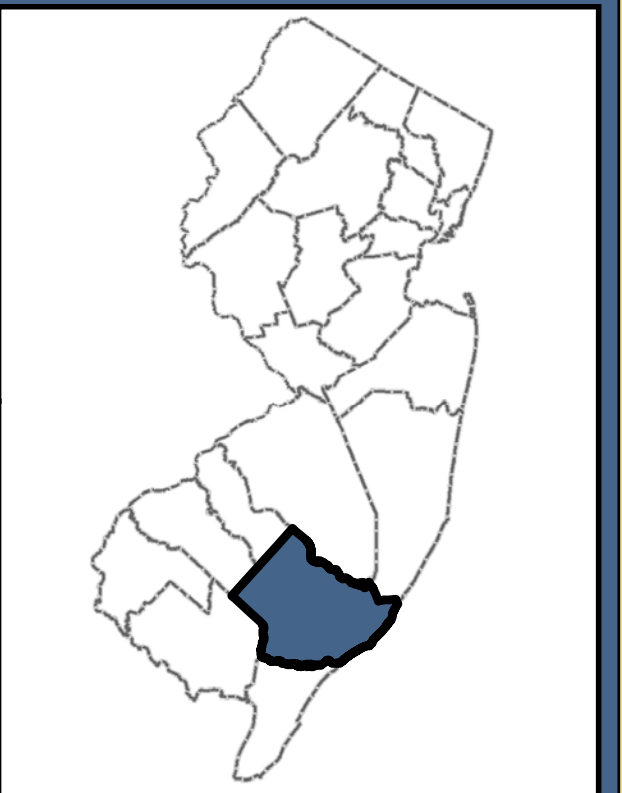
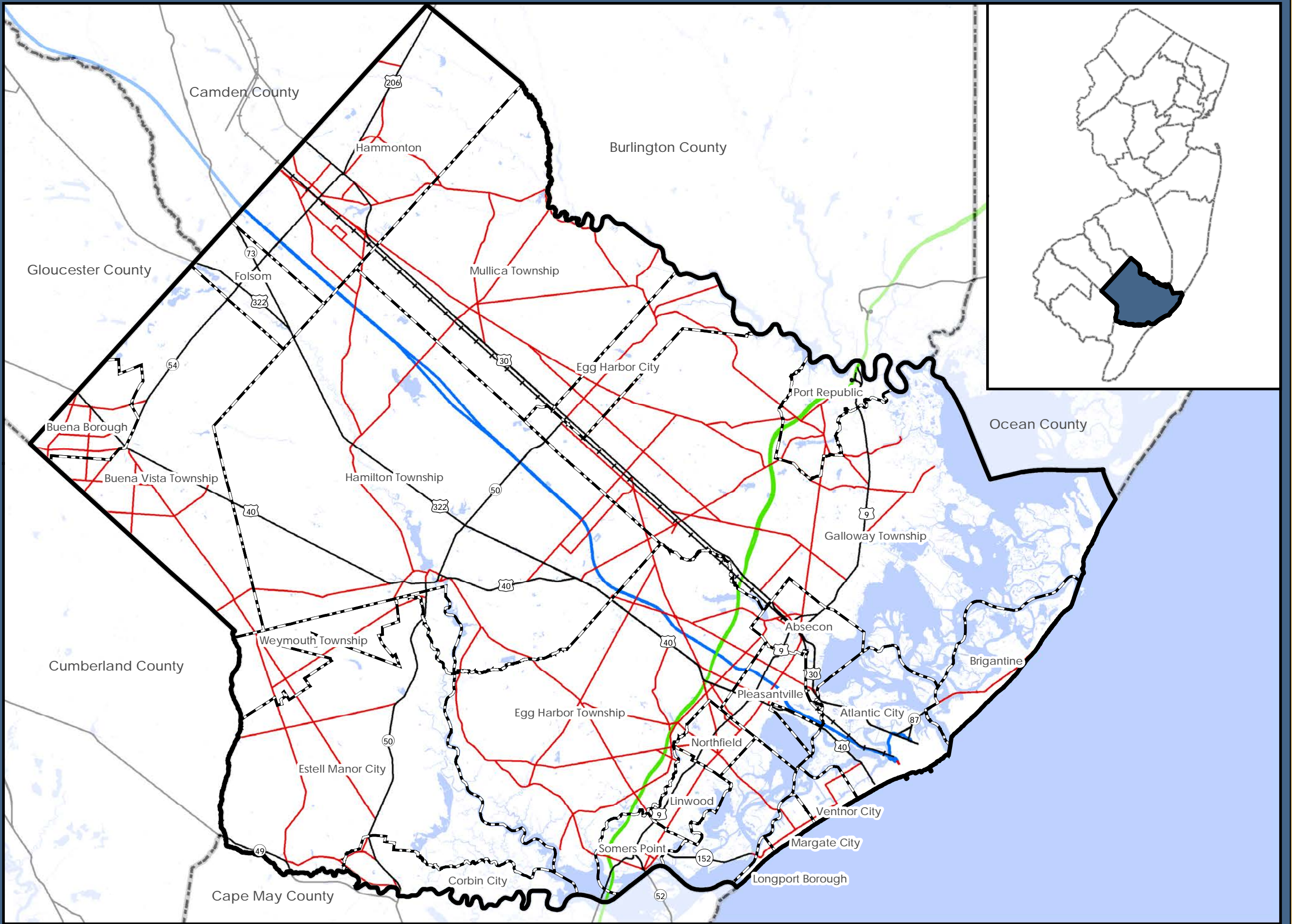
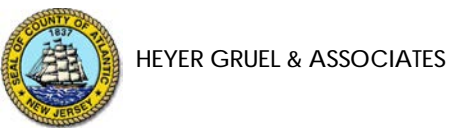
-  Atlantic County
-  Municipalities
- Roadways
 -  U.S. Highway
 -  State Highway
 -  County Routes
 -  Atlantic City Expressway
 -  Garden State Parkway



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

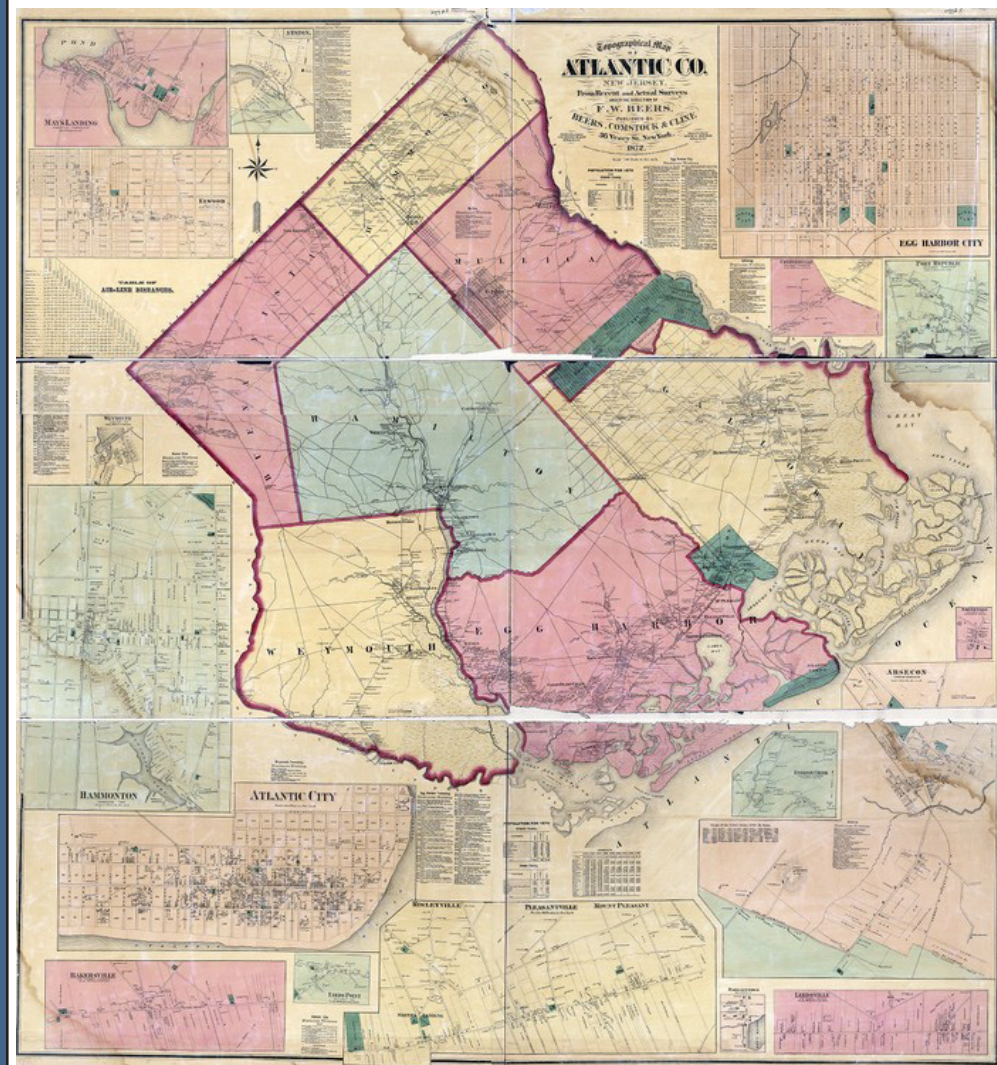
The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HISTORIC AND GEOGRAPHIC SETTING

Prior to the arrival of European explorers and settlers, southern New Jersey, including Atlantic County, was inhabited by the Leni-Lenape tribe of Native Americans. The land that would become Atlantic County was first surveyed by Henry Hudson in 1609. The first permanent European settlement in the County was in Somers Point around 1693.

Atlantic County was formed from the eastern part of Gloucester County in 1837. It is located in southeastern New Jersey along the Atlantic Coast, approximately 100 miles south of New York and 60 miles east of Philadelphia. Throughout its history, the County's proximity to major urban centers has influenced its physical and economic development. Tourism and service industries have dominated the eastern part of the County. In the second half of the 19th Century, Absecon Island, particularly Atlantic City, became a fashionable destination due to the establishment of a rail link with Philadelphia. The City was marketed as a health resort and featured massive and ornate hotels at the height of its popularity.



During the 20th Century, the County has continued to grow. A significant milestone was the legalization of casino gaming in New Jersey. In 1976, legislation was approved by referendum that legalized casinos in Atlantic City. The Resorts Atlantic City casino opened in 1978 and marked the beginning of the modern casino and tourism oriented economy in Atlantic City. The early part of the 21st Century has been marked by a brief period of booming growth and development followed by an economic downturn that coincided with the global recession and the expansion of casino gaming throughout the country and the northeast region.

In western portions of the County, the effects of increased residential and commercial development are evident. However, the rural character of this area has remained relatively intact.

Atlantic County is located on the outer coastal plain of southern New Jersey. The County comprises 23 municipalities within 561 square miles.

To the east, the County borders the Atlantic Ocean with the narrow, flat, barrier beach islands of Brigantine and Absecon. The northern boundary is the Mullica River with the Great Egg Harbor and Tuckahoe Rivers forming the southern border. The estuaries of these rivers and the bays behind the barrier islands encompass wide areas of salt marsh.

Most of the interior of the County is within the Pinelands region, a unique ecological area whose vegetation responds to acidic soil and water conditions. Inland areas within Buena Borough, Buena Vista Township, Egg Harbor City, Hammonton, Galloway Township, and Hamilton Township contain prime agricultural land supporting a significant area of upland agriculture including both row crops and orchards.

The barrier island and bayside communities in the County were impacted by Super Storm Sandy due to their proximity to the ocean, inlets, and rivers. Municipalities along these areas are low lying with many of them entirely within designated flood hazard areas.

County Regions

The 2000 Atlantic County Master Plan presented a view of the County as being made up of three distinct regions. The Plan identified the Shore Area, the Regional Growth Area, and the Rural Area as aggregated places sharing distinct characteristics, challenges, and future goals. This Plan presents an updated, more nuanced version of the regions within Atlantic County. The map on the following page depicts the regional divisions.

They are as follows:

The Barrier Island Region

The Barrier Islands region comprises the two barrier islands in the eastern most portion of the County. It is defined geographically as the municipal boundaries of the five communities that it comprises. Brigantine Island is approximately six miles long, and consists of the City of Brigantine. Across the Absecon Channel from Brigantine Island is Absecon Island, the larger of the two. Absecon Island houses the communities of Atlantic City, Ventnor City, Margate City, and Longport Borough. Both islands are largely built out with the exception of the back bay wetlands areas and the several areas of preserved open space.

The Barrier Islands were the portion of the County most substantially affected by Superstorm Sandy. These areas continue to address the land use and infrastructure challenges associated with rebuilding.



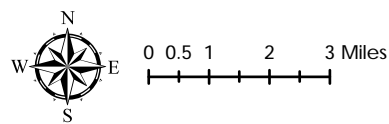
Boardwalk in Ventnor City

Atlantic City represents an outlier among the island communities. It is the most densely urbanized area within the County, and has traditionally been the center of the County's economy. The recent decline of the casino gaming industry in the City has placed a great strain on the City's, as well as the County's, economy and has led to a spike in unemployment.

Brigantine, Ventnor City, Margate City, and Longport feature a significant number of seasonal vacation homes. These communities experience dramatic seasonal fluctuations in their resident and visitor populations. Furthermore, these communities have been experiencing population decline, even before the effects of Superstorm Sandy.

County Regions

- County Regions
-  Barrier Islands
 -  Back Bay Communities
 -  Suburban
 -  Rural



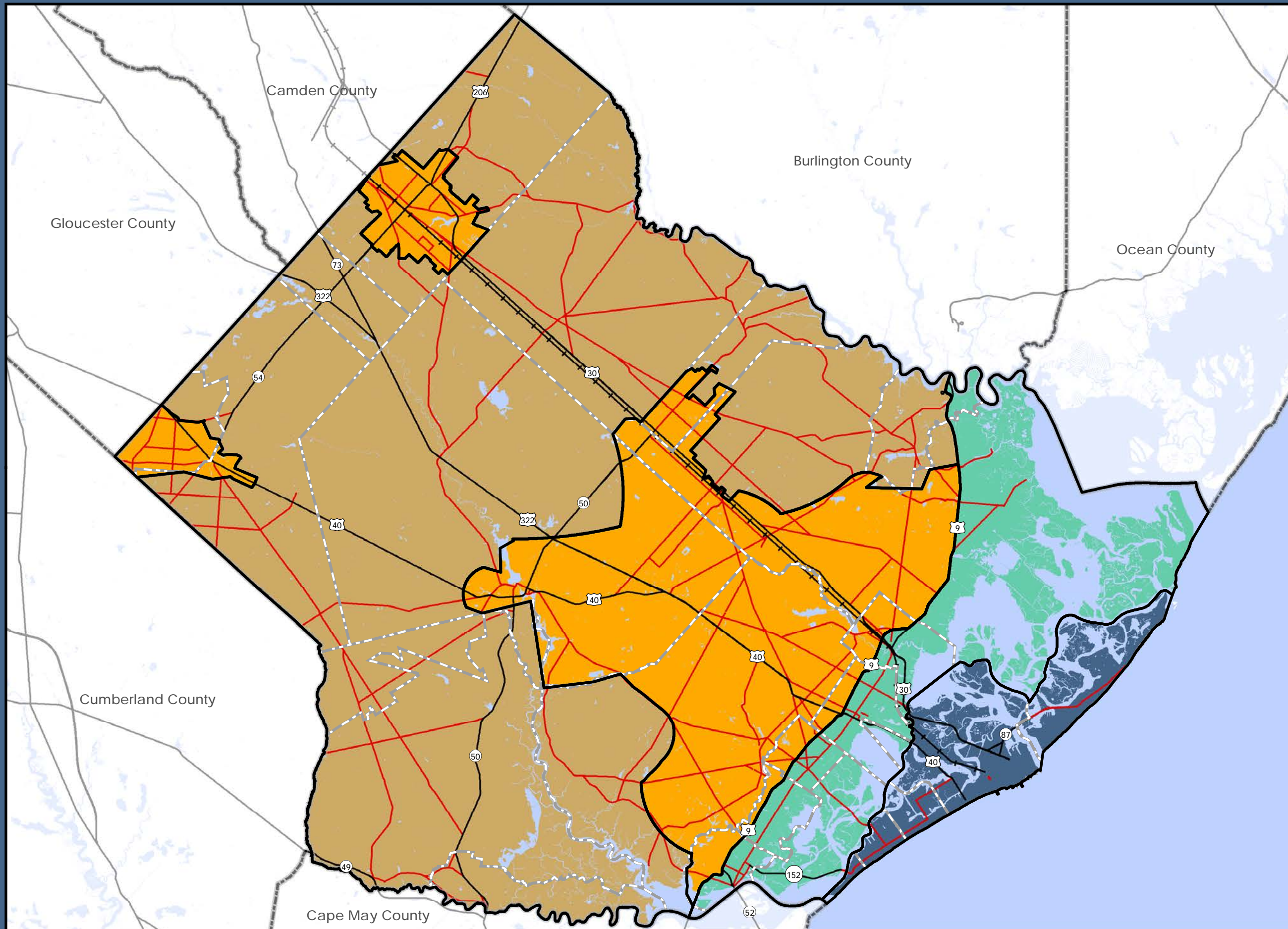
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES





Downtown Hammonton



Atlantic County Court House, Mays Landing



Blueberry Fields in Hammonton

The Back Bay Region

The Back Bay region comprises the portion of the County bound by Route 9 on its western edge, and the Barrier Island Region at its eastern edge. This region consists of portions of seven municipalities: Port Republic City, Galloway Township, Absecon City, Pleasantville City, Northfield City, Linwood City, Somers Point City, and Egg Harbor Township.

The Back Bay region tends to be the more densely built-out and urbanized portion of the County communities along with the undeveloped wetlands areas located within the Absecon Inlet that separate the mainland portion of the County from the Barrier Islands. This portion of the County experienced damage related to Superstorm Sandy, but not to the degree that the Barrier Island Region suffered.

The Suburban Region

The Suburban region is made up of two non-contiguous portions of the County that share similar characteristics. The boundaries to this area were developed by identifying the portions of the County that are encompassed by the districts that accommodate growth within the Coastal Area Facilities Review Act (CAFRA) Zone (Coastal Metropolitan, Coastal Fringe Planning, Coastal Suburban) and the Pinelands Comprehensive Management Plan (CMP) (Regional Growth Area, Pinelands towns, Rural Development Areas, Federal/Military). In addition, the areas identified as ‘Urban’ in the New Jersey Department of Environmental Protection (NJDEP) and the portion of the County in the Sewer Service Area are included in this area.

The communities within the Suburban Region include large sections of Galloway Township, Egg Harbor Township, Hamilton Township, smaller areas within Egg Harbor City, Mullica Township, and Hammonton Township, along with the portions of Absecon City, Pleasantville City, Northfield City, Linwood City, and Somers Point City that are not within the Back Bay Region.

The Suburban Region has been the section of the County that has experienced the greatest population growth and residential development over the last several decades. The regulatory framework of the CAFRA Zone and Pinelands CMP have directed much of the growth to this area. The most recent demographic trends indicate that new construction and development have fallen off since the mid-2000s and population growth trends appear to be plateauing.

This region faces challenges common to many communities throughout the State. There is a need to balance consumer desires and affordability within the housing market with the built environment and land use regulations. Furthermore, general commercial trends have rendered many commercial highway corridors underutilized or obsolete. The revitalization or repurposing of these areas, along with bolstering traditional downtowns and centers is of great importance within the Suburban Region.

The Rural Region

The Rural Region consists of the remainder of the County. These are the portions of the County located within the lower density Pinelands Management Areas and CAFRA Districts. It includes environmentally sensitive areas such as forests and wetlands, along with farmland, low density residential development, and several village centers. The communities located entirely within the Rural Region are Folsom Borough, Buena Vista Township, Buena Borough, Weymouth Township, Estell Manor, and Corbin City. In addition, the Region includes the portions of Hammonton Town, Mullica Township, Egg Harbor City, Port Republic City, Galloway Township, Hamilton Township, and Egg Harbor Township that are not within the other Regions.

Growth potential within the Rural Region is limited by infrastructure limitations, land use regulations, and the presence of environmentally sensitive features. The planning goals and objectives for this region are related to farmland preservation, the provision of open space for conservation and recreation purposes, and the management of low impact growth and development in centers and other targeted areas.



Maple Avenue Station, Linwood, New Jersey

2016 PLANNING CONTEXT

Nearly sixteen years have passed since the adoption of the Atlantic County Master Plan. Since 2000, there has been a substantial shift in the economic, environmental, and social climate in which planning and development take place.

The housing crisis and Great Recession of the late 2000s is still affecting the economy of the County and region. The casino industry, which was projecting continued future growth at the time of the last Master Plan, is collapsing. The tourism and service industries, which revolved around the casinos, continue to be the major industry in Atlantic County. However, these industries have suffered as several casinos have closed and employment has declined.

Stewardship of the land and conservation of important natural resources have been a large part of planning within Atlantic County, particularly since the inception of the Pinelands Comprehensive Management Plan (CMP) and Coastal Area Facilities Review Act (CAFRA). Now, more than ever, the environmental context of development needs to be considered. Superstorm Sandy was the most recent, and profound reminder of the importance of resilient design and development. In the decade and a half since the 2000 Master Plan, the realities of climate change and sea level rise have become more apparent. Sustainable, context sensitive planning and development require consideration of these trends.

The demographics of the County have shifted in several significant ways since 2000. The population of Atlantic County is aging, which has widespread implications for the workforce and labor market, the demand for services, the importance of the healthcare industry, and other considerations that can affect planning and development. In addition, the population is becoming more ethnically diverse as the percentage of residents of Asian origin and Hispanic or Latino origin has risen.

Superstorm Sandy

In late October 2012, Superstorm Sandy struck New Jersey and left a trail of devastation in its wake. The impacts included wide spread power outages, fuel shortages, and property damage from high winds and flooding. In Atlantic County, the storm made landfall just south of Atlantic City at 8 PM on October 29, 2012. The barrier island communities in the County bore the brunt of the storm's effects, leading to mandatory evacuations, severe flooding, and significant property damage.

A number of Atlantic County's communities besides the barrier islands were impacted by flooding and storm surge from Sandy. Within the County 7,385 buildings were affected by the storm as it washed ashore. According to the New Jersey Department of Banking and Insurance, Atlantic County incurred approximately \$265 million worth of damage from the storm. Over 16,000 insurance claims were processed and 70% of those were paid out to property owners. Of the total insurance claims, 4,709 or 28%

were flood related claims, 8,456 or 50.2% were residential related claims, and 751 or 4.5% were commercial related claims. In comparison, New Jersey overall saw 47.2% flood related claims, 23.5 % residential related claims, and 9.6% commercial related claims.

Based on insurance claim data, the barrier island communities suffered the greatest loss with Atlantic City reporting \$83.3 million in losses, followed by Brigantine with \$44.2 million in losses, Margate with \$39.1 million in losses, and Ventnor with \$37.4 million in losses. Bayside and inland communities suffered much less damage, with those municipalities only reporting up to 4.5 million in claimed losses with some reporting less than \$10,000 in losses.

The following map shows the extent of the Storm Surge during Superstorm Sandy. The entire Barrier Island Region and the portion of the Back Bay Region along Absecon Inlet were inundated. In addition, the Mullica River along the County's northern border, and the Great Egg Harbor, Middle, and Tuckahoe Rivers in the southern portion of the County experienced storm surges that affected these more inland areas.

Flood Hazard Areas

The current preliminary base flood elevation maps were updated in January, 2015. The final Flood Insurance Rate Maps (FIRMs) have not been adopted. The preliminary maps indicate that much of the Barrier Island Region is located within the areas most affected by flooding, the "AE" and "VE" zones. The "AE" zone indicates where there is a 1% chance of flooding annually (100-year flood). With base flood elevations determined within the zone. The "VE" zone is an extension of the "AE" zone; however, this coastal flood zone is characterized by a velocity hazard with significant wave action.

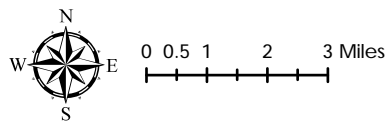
Many of the County's back bay communities are designated in the "AE" zone as well. Several inland portions of the County adjacent to rivers are classified in the "A" zone, which has a 1% chance annual flood hazard (100-year flood), but does not have as much detail as the AE zone since specific base flood elevations are not determined. The maps also show a zone that indicates a 0.2% Annual chance of flood hazard (500-year flood).



Brigantine City - Absecon Wildlife Management Area

Super Storm Sandy Storm Surge

Surge Area



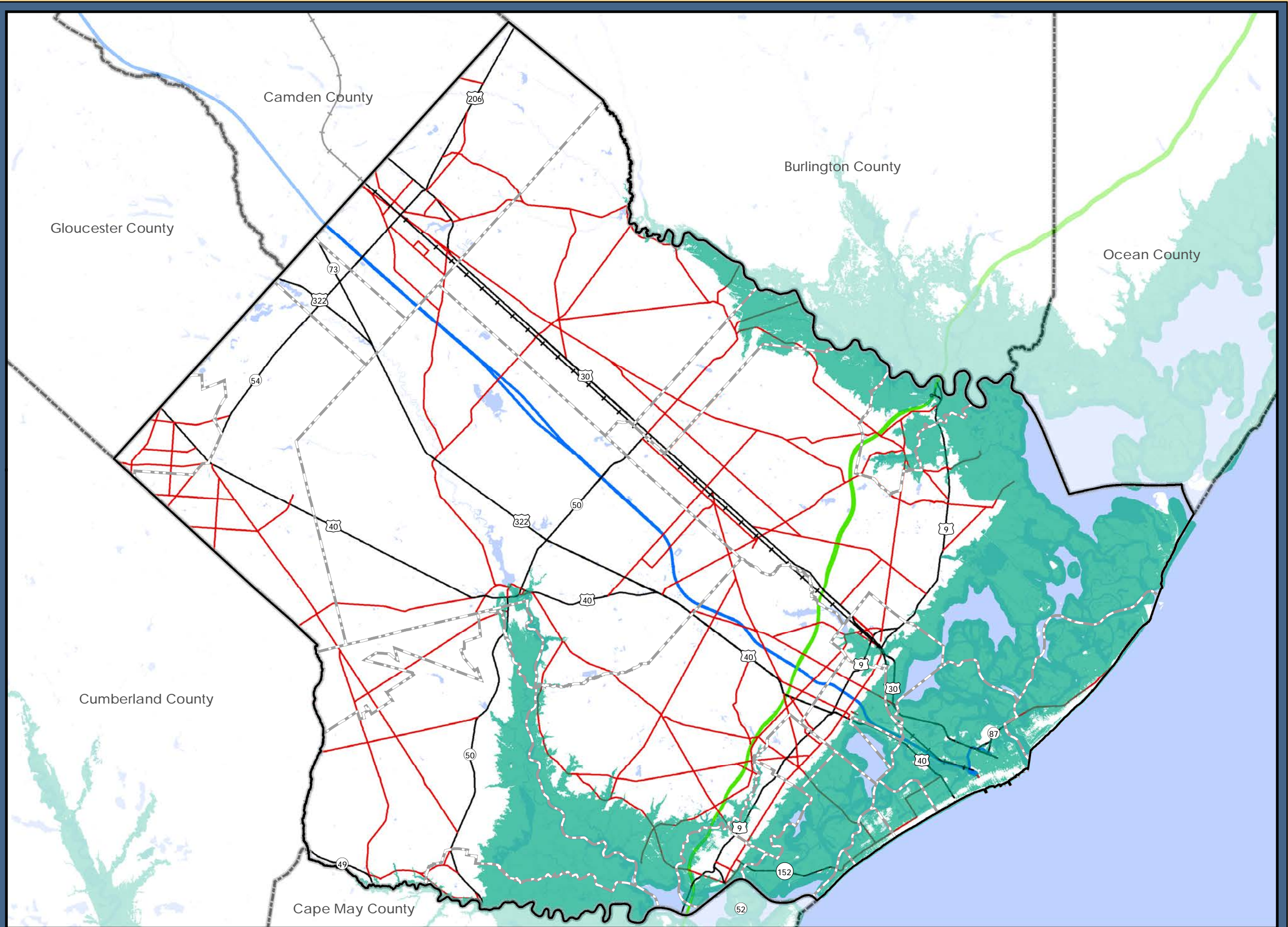
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



FEMA Floodplains

FEMA Floodplains (2015)

Shaded X Zone: Area of moderate flood hazard, usually between the limits of the 100-year and 500-year floods



Zone A: Area subject to inundation by the 100-year flood. No base flood elevations are determined



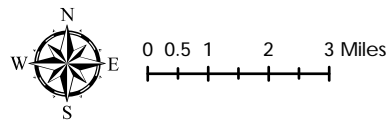
Zone AE: Area subject to inundation by the 100-year flood. Baseflood elevations are determined.



Zone VE: Area subject to inundation by the 100-year flood with additional hazards due to storm-induced velocity wave action. Base flood elevations are determined.



Floodway



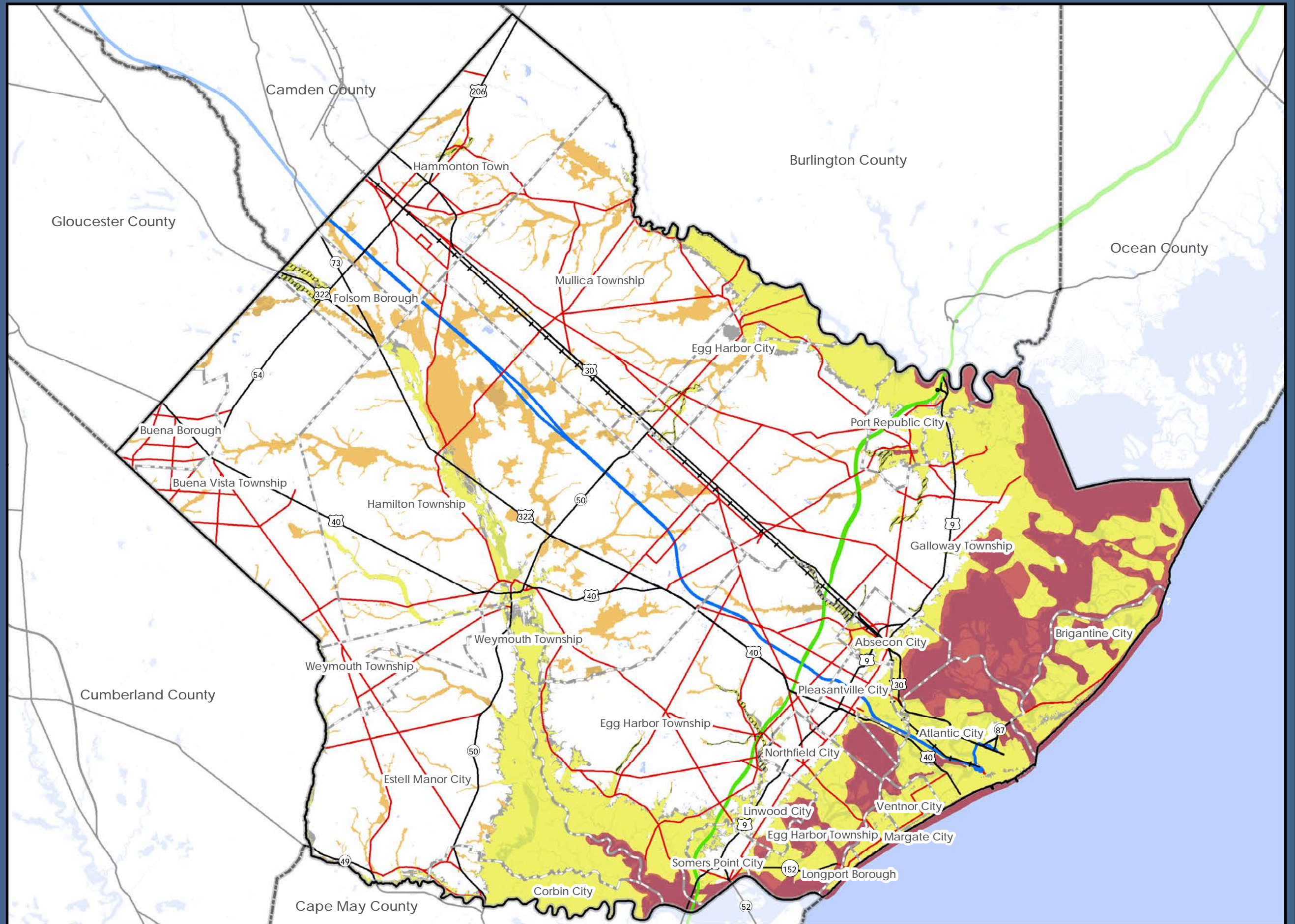
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, FEMA

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



DEMOGRAPHIC TRENDS SINCE 2000 MASTER PLAN

Total Population

Atlantic County has continued to grow since the 2000 Master Plan, with the actual population growth greater than the projections in the 2000 plan. The population growth within the County (by percentage) exceeded that of the State as a whole between 2000 and 2010 (see Table 1.1). However, the trend appears to be leveling off in the half-decade since the 2010 Census, with growth estimated at under 1% between 2010 and 2014 according to the 5-year American Community Survey (ACS) data. The aftermath of Super Storm Sandy contributed to the population leveling off, but the economic climate of the County has impacted the slow population growth. The State of New Jersey has also experienced a decline in growth rate in the short-term since the 2010 census.

The South Jersey Transportation Organization (SJTPO) has prepared updated demographic forecasts for Atlantic County and the South Jersey region. This demographic report demonstrates that Atlantic County experienced negative net migration between 2005 and 2010. The recession and slow recovery have likely contributed to people being forced to move for employment purposes. The 5-year ACS data from 2010-2014 show that the County's population has not shown signs of resumed growth similar to previous decades.

The SJTPO forecasting model predicts resumed growth with the County population reaching approximately 286,400 residents by 2020. If this forecast comes to pass, it would represent increased growth over the next several years, but a substantial decline in the growth rate from past decades. A contrasting population projection produced by the New Jersey Department of Labor and Workforce Development shows minimal growth with a projected population of only 276,200 by 2019 and minimal growth in the fifteen years thereafter. The discrepancy between these models reflects the uncertainty of projection systems, but reinforces the overall trend that growth in the County has slowed.

Seasonal Population

Acknowledging seasonal population is an important consideration for planning within Atlantic County. The reliance of the economy on tourism and the hospitality industry is

partially tied to the County's coastal location. In addition, the preponderance of second homes in the Barrier Island communities (see Table 1.2) leads to shifts in population as people visit or rent these dwellings during the Summer months.

The SJTPO has prepared seasonal population figures as part of its demographic forecasting. The estimated number of summer weekday residents in Atlantic County in 2015 is 451,073, and the estimated number of summer weekend residents is 466,059. In addition, there are an estimated 113,872 visitors on summer weekdays, and 177,345 visitors on Summer weekends. These figures, even taken with a margin of error, as all forecasts are, demonstrate that there is a significant increase in population on a day-to-day basis within Atlantic County during the summer months.

The seasonal influx of additional residents, and daily visitors increases the demand for services and places additional strain on community infrastructure, particularly in the Barrier Island and Back Bay communities.

Aging Population

According to the Census data, the population of the County is aging. The age cohorts of 45-54 and 55-64 are growing most quickly, which shows that if the current trend continues, the labor force will likely continue to decrease as more residents reach retirement age. The median age of County residents has increased from 37 years old in 2000 to 40 years old in 2010. Table 1.3 shows the steep increase in residents between 45 and 64, while Charts 1.1 and 1.2 demonstrate the shifts in population age cohorts between 2000 and 2010 (see Table 1.3).

An aging population may drive demand for specific types of housing, stimulate the demand for healthcare services and facilities, and create the need for flexible transportation options as people age in place but find their mobility diminished. These, among other factors, should inform public policy and planning decisions throughout the County. The sustainability of a community depends on equitable treatment of its residents, which includes ensuring the needs of senior citizens are met.

Table 1.1 Population Trends

Year	Atlantic County			New Jersey		
	Population	Change		Population	Change	
		Number	Percentage		Number	Percentage
1930	124,823	-	-	4,041,334	-	-
1940	124,066	-757	-0.6%	4,160,165	118,831	2.9%
1950	132,399	8,333	6.7%	4,835,329	675,164	16.2%
1960	160,880	28,481	21.5%	6,066,782	1,231,453	25.5%
1970	175,043	14,163	8.8%	7,171,112	1,104,330	18.2%
1980	194,119	19,076	10.9%	7,365,011	193,899	2.7%
1990	224,327	30,208	15.6%	7,730,188	365,177	5.0%
2000	252,552	28,225	12.6%	8,414,350	684,162	8.9%
2010	274,549	21,997	8.7%	8,791,894	377,544	4.5%
2010-2014	275,209	660	0.2%	8,938,175	146,281	1.7%

Source: U.S. Census Bureau, 2010-2014 ACS 5-Year Estimates

Table 1.2 Barrier Island Communities Second Homes

Municipality	Total Housing Units	Housing Units for Seasonal, Recreational, or Occasional Use	Percentage of Housing Units as Second Homes
Brigantine City	9,222	4,232	45.9%
Longport Borough	1,656	1,119	67.6%
Margate City	7,144	3,616	50.6%
Ventnor City	7,829	2,584	33.0%

Source: 2010 US Census

Table 1.3 Population by Age 2000 and 2010, Atlantic County

Population	2000		2010		Change, 2000 to 2010	
	Number	Percentage	Number	Percentage	Number	Percentage
Total population	252,552	100.0%	274,549	100.0%	21,997	8.7%
Under 5 years	16,483	6.5%	16,484	6.0%	1	0.0%
5 to 14	37,479	14.8%	35,388	12.9%	-2,091	-5.6%
15 to 24	30,260	12.0%	37,505	13.7%	7,245	23.9%
25 to 34	33,626	13.3%	31,243	11.4%	-2,383	-7.1%
35 to 44	43,706	17.3%	36,306	13.2%	-7,400	-16.9%
45 to 54	33,872	13.4%	44,620	16.3%	10,748	31.7%
55 to 64	22,689	9.0%	34,101	12.4%	11,412	50.3%
65 and over	34,437	13.6%	38,902	14.2%	4,465	13.0%

Source: 2000 and 2010 US Census

Chart 1.1 2000 Age

90 years and over
85 to 89 years
80 to 84 years
75 to 79 years
70 to 74 years
65 to 69 years
60 to 64 years
55 to 59 years
50 to 54 years
45 to 49 years
40 to 44 years
35 to 39 years
30 to 34 years
25 to 29 years
20 to 24 years
15 to 19 years
10 to 14 years
5 to 9 years
Under 5 years

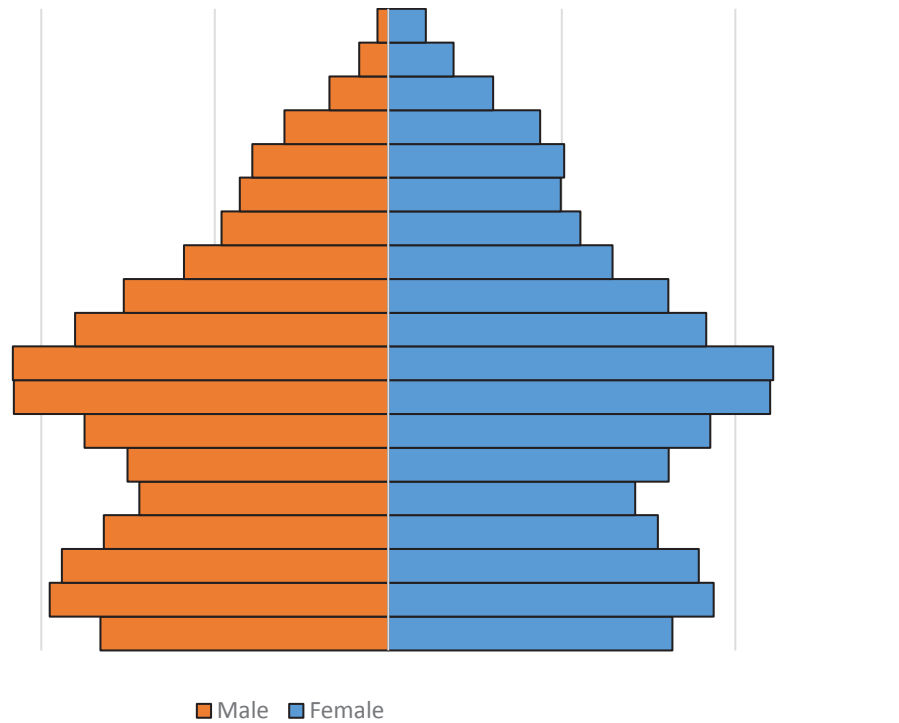
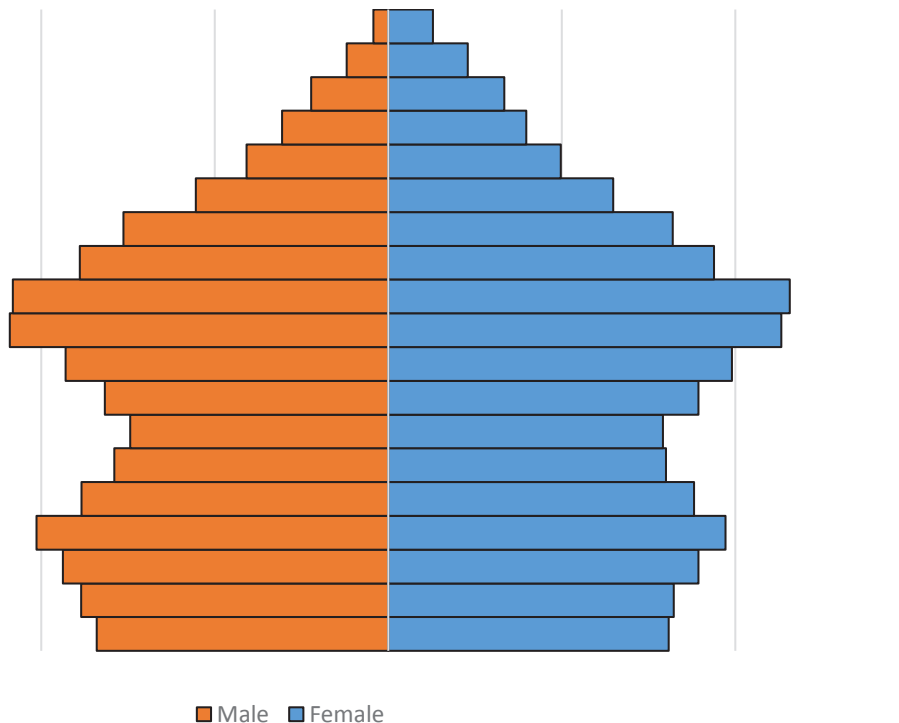


Chart 1.2 2010 Age

90 years and over
85 to 89 years
80 to 84 years
75 to 79 years
70 to 74 years
65 to 69 years
60 to 64 years
55 to 59 years
50 to 54 years
45 to 49 years
40 to 44 years
35 to 39 years
30 to 34 years
25 to 29 years
20 to 24 years
15 to 19 years
10 to 14 years
5 to 9 years
Under 5 years



Race and Hispanic Origin

As illustrated in Table 1.4, the composition of the population by race and Hispanic origin in Atlantic County has shifted slightly since the year 2000. The population of Hispanic or Latino people of any race rose by approximately 50% between 2000 and 2010 and the Asian population rose by about 61%. By percentage, the number of White residents fell, the raw number of Black or African American residents stayed about the same, but the percentage of the population that this group made up fell.

The shifting racial composition of the County reflects a statewide trend. The proportional changes between 2000 and 2010 are very similar to the changes at the statewide level. The population is becoming more diverse, which can be attributed mainly to the increases in the Hispanic or Latino population.

Municipal Population Changes

The changes in population within the County's constituent municipalities show that the major growth areas during the 1990s in the years leading up to the 2000 County Master Plan have remained the major drivers of population growth during the decade of the 2000s (see Table 1.5 on page 12). The Barrier Island Region has shown a marked decline in population. As illustrated above, a significant percentage of the homes in the Barrier Island Region are not primary homes. This factor, along with the struggling casino industry, stagnant job market, and declining labor force illustrates factors that have contributed to the population decline in these municipalities. The 2010 Census data does not reflect the impacts that Superstorm Sandy may have had on the County, but the 2010-2014 American Community Survey estimates show that the population of the County has been essentially flat since the 2010 Census.

Table 1.4 Population by Race and Hispanic Origin

Race	Atlantic County				New Jersey	
	2000		2010		2000	2010
	Number	Percent	Number	Percent	Percent	Percent
Total population	252,552	100.0	274,549	100.00	100.00	100.0
One race	246,027	97.4	265,659	96.8	97.5	97.3
White	172,632	68.4	179,566	65.4	72.6	68.6
Black or African American	44,534	17.6	44,138	16.1	13.6	13.7
American Indian and Alaska Native	669	0.3	1,050	0.4	0.2	0.3
Asian	12,771	5.1	20,595	7.5	5.7	8.3
Native Hawaiian and Other Pacific Islander	114	0.0	92	0.0	0.0	0.0
Some Other Race	15,307	6.1	20,218	7.4	5.4	6.4
Two or More Races	6,525	2.6	8,890	3.2	2.5	2.7
Hispanic or Latino						
Total population	252,552	100.0	274,549	100.0	100.0	100.0
Hispanic or Latino (of any race)	30,729	12.2	46,241	16.8	13.3	17.7
Mexican	4,972	2.0	10,879	4.0	1.2	2.5
Puerto Rican	14,580	5.8	18,160	6.6	4.4	4.9
Cuban	628	0.2	785	0.3	0.9	0.9
Other Hispanic or Latino	10,549	4.2	16,417	6.0	6.8	9.3
Not Hispanic or Latino	221,823	87.8	228,308	83.2	86.7	82.3

Source: 2000 and 2010 US Census

Table 1.5 Municipal Population Changes

Municipality	1990 Population	2000 Population	% Change 1990-2000	2010 Population	% Change 2000-2010	% Change 1990-2010
Absecon City	7,298	7,638	4.7%	8,411	10.1%	15.3%
Atlantic City	37,986	40,517	6.7%	39,558	-2.4%	4.1%
Brigantine City	11,354	12,594	10.9%	9,450	-25.0%	-16.8%
Buena Borough	4,441	3,873	-12.8%	4,603	18.8%	3.6%
Buena Vista Township	7,655	7,436	-2.9%	7,570	1.8%	-1.1%
Corbin City	412	468	13.6%	492	5.1%	19.4%
Egg Harbor City	4,583	4,545	-0.8%	4,243	-6.6%	-7.4%
Egg Harbor Township	24,544	30,726	25.2%	43,323	41.0%	76.5%
Estell Manor City	1,404	1,585	12.9%	1,735	9.5%	23.6%
Folsom Borough	2,181	1,972	-9.6%	1,885	-4.4%	-13.6%
Galloway Township	23,330	31,209	33.8%	37,349	19.7%	60.1%
Hamilton Township	16,012	20,499	28.0%	26,503	29.3%	65.5%
Hammonton Town	12,208	12,604	3.2%	14,791	17.4%	21.2%
Linwood City	6,866	7,172	4.5%	7,092	-1.1%	3.3%
Longport Borough	1,224	1,054	-13.9%	895	-15.1%	-26.9%
Margate City	8,431	8,193	-2.8%	6,354	-22.4%	-24.6%
Mullica Township	5,896	5,912	0.3%	6,147	4.0%	4.3%
Northfield City	7,305	7,725	5.7%	8,624	11.6%	18.1%
Pleasantville City	16,027	19,012	18.6%	20,249	6.5%	26.3%
Port Republic City	992	1,037	4.5%	1,115	7.5%	12.4%
Somers Point City	11,216	11,614	3.5%	10,795	-7.1%	-3.8%
Ventnor City	11,005	12,910	17.3%	10,650	-17.5%	-3.2%
Weymouth Township	1,957	2,257	15.3%	2,715	20.3%	38.7%
Atlantic County	224,327	252,552	12.6%	274,549	8.7%	22.4%
New Jersey	7,730,188	8,414,350	8.9%	8,791,894	4.5%	13.7%
USA	248,709,873	281,421,906	13.2%	308,745,538	9.7%	24.1%

Source: US Census Bureau



Downtown Hammonton



Richland General Store, Buena Vista Township

ECONOMIC TRENDS

The decade and a half since the 2000 County Master Plan has been a tumultuous period for the County economically. The decade began with a low unemployment rate buoyed by the strong national economy and primacy of Atlantic City within the east-coast casino gaming industry.

Unemployment rates in Atlantic County increased slightly between 2001 and 2002, and then remained relatively steady until 2008. A significant spike took place between 2008 and 2009 as the global recession began in earnest, and continued to climb before peaking in 2012. The unemployment rate has dipped below 10% as of 2015, although it remains significantly higher than the state rate, which is, in turn, higher than the national rate.

The economic downturn and slow moving recovery have been particularly bad in Atlantic County. The Atlantic City-Hammonton metropolitan statistical area comprises the entirety of Atlantic County. Between July 2009 (after the end of the Great Recession) and November 2011, the metro area showed 29 consecutive months of year-on-year job loss. The County more recently dealt with a separate 24 consecutive month streak of year-on-year job loss, which ended in November 2015.⁴ The consistent rate of job loss has kept unemployment rates high and contributed to the negative net migration of County residents.

A closer look at the employment and labor force statistics show that the labor force has been contracting since a high-water mark in 2012. This decline in the number of people participating in the labor force has continued through 2015. The current labor force is approximately equal to that of the 2002-2003 period, albeit with fewer jobs and a higher unemployment rate (see Table 1.6).

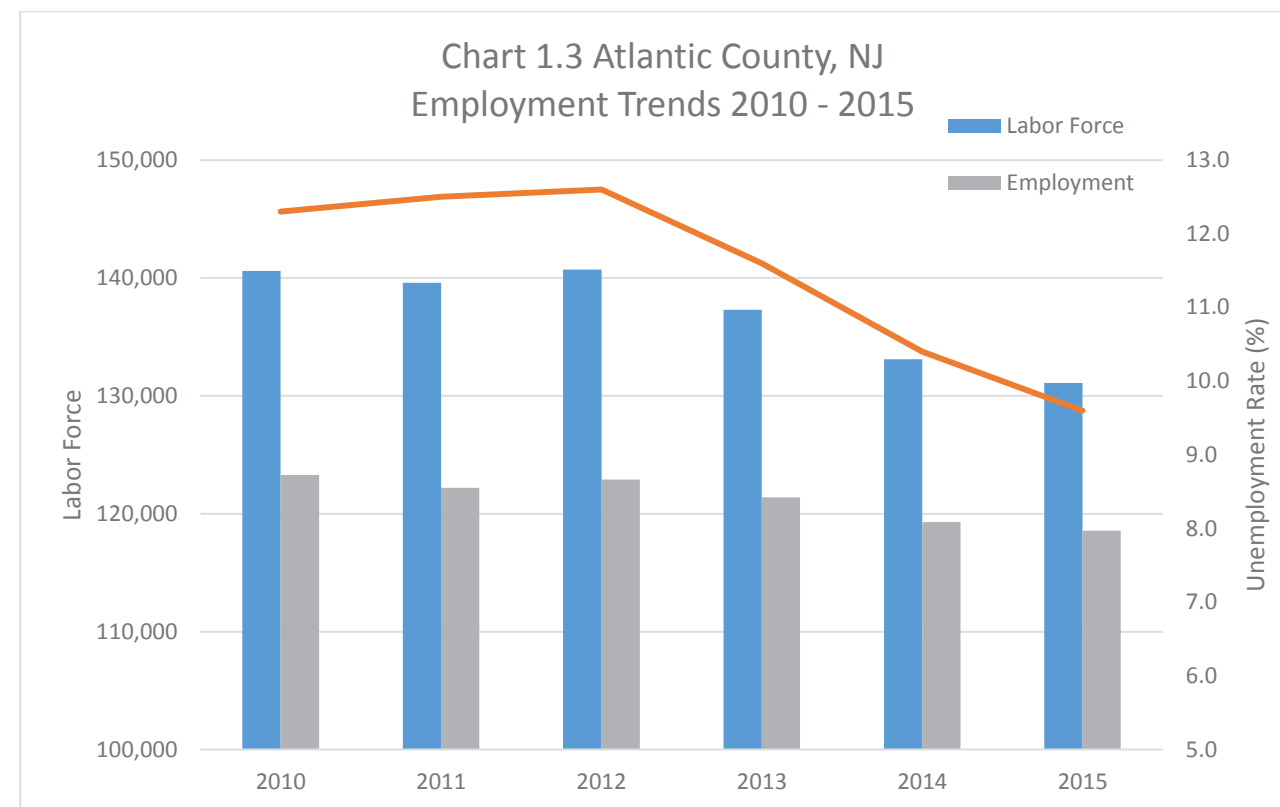
There are several factors at play in the declining labor force within the County. The growth attributable to the tourism and gaming industry in Atlantic City during the decades of the 1990s and 2000s has disappeared with the high profile closure of several casinos and the inability of the region to significantly diversify its economic base. This economic stagnation, and in some sectors decline, accounts for a portion of the decrease. Another critical factor is that the population of the County is aging. The population of people 55 and older in the County increased dramatically between 2000 and 2010, and the population between the ages of 45 and 54 has grown significantly as well.

The SJTPO economic and demographic forecasts assume that total employment within Atlantic County and the region will continue to decline over the next decade. These forecasts anticipate that growth will resume by 2025, but pre-recession numbers of jobs may not return for several decades assuming current trends continue and the forecasts are accurate.

Table 1.6 Atlantic County Employment and Residential Labor Force (2000 – 2015)

Year	Labor Force	Employment	Unemployment	Unemployment Rate
2000	128,800	122,800	6,050	4.7%
2001	129,250	123,150	6,100	4.7%
2002	131,100	123,300	7,850	6.0%
2003	132,300	124,050	8,200	6.2%
2004	134,100	126,700	7,400	5.5%
2005	136,300	129,000	7,300	5.4%
2006	138,550	130,550	8,000	5.8%
2007	135,100	127,200	7,950	5.9%
2008	135,750	126,500	9,250	6.8%
2009	137,100	120,800	16,300	11.9%
2010	140,600	123,350	17,250	12.3%
2011	139,600	122,200	17,450	12.5%
2012	140,700	122,900	17,800	12.6%
2013	137,300	121,450	15,850	11.6%
2014	133,150	119,300	13,800	10.4%
2015	131,092	118,575	12,525	9.6%

Source: NJ Dept. of Labor & Workforce Development Labor Force Estimates



4. The South Jersey Economic Review, William J. Hughes Center for Public Policy, Stockton University, Volume 10, Number 1. Winter 2016.

Major Industries

Atlantic County’s largest industry is the accommodation and food services industry with an estimated 42,570 workers in 2014. Approximately thirty-two percent (32%) of the County’s workforce is employed in this industry. The large concentration of the leisure and hospitality industry is due to Atlantic City’s casino resorts, as well as the other hotels and resorts located along the barrier island beaches.

The other major industries within the County are the Health Care and Social Assistance industry, and the Retail Trade industry, which account for about thirteen percent (13%) and twelve percent (12%) of the workforce respectively. The health care and social assistance industry will likely continue to grow as the median age of the County’s population increases. Table 1.7 shows the breakdown of employment by industry within the County.

Gaming Industry

Casino closures in Atlantic City and the decline of the gaming industry have imperiled the economies of the City and County. The region has long depended on the hospitality and service industries centered around casino gaming to provide employment and a tax ratable base. Since the 2000 Master Plan, additional competition has sprung up throughout the region as laws have changed to permit gaming in Pennsylvania, New York, and Delaware. The regional saturation of casinos has eliminated the monopoly that Atlantic City once enjoyed on the east coast casino business. Atlantic City held approximately 71% of the resort casino market in the Northeast in 2000, at the time of the previous Master Plan. In 2015, that share had fallen to 37%. As a result, several casino closures in 2014, including the failure of Revel, which was in operation for less than two and a half years, have cast the future of the County’s economy into doubt.



Casinos in Atlantic City

Table 1.7 Employment by Industry, Atlantic County, 2014

Industry	Number	Percentage
Total	131,680	100.0%
Accommodation and Food Services	42,570	32.3%
Health Care and Social Assistance	17,590	13.4%
Retail Trade	16,240	12.3%
Educational Services	12,700	9.6%
Public Administration	10,990	8.3%
Construction	4,810	3.7%
Administrative and Waste Services	4,700	3.6%
Professional and Technical Services	3,990	3.0%
Other Services, Ex. Public Admin	3,920	3.0%
Wholesale Trade	2,470	1.9%
Finance and Insurance	2,320	1.8%
Transportation and Warehousing	2,260	1.7%
Arts, Entertainment, and Recreation	1,840	1.4%
Manufacturing	1,730	1.3%
Real Estate and Rental and Leasing	1,320	1.0%
Management of Companies and Enterprises	930	0.7%
Utilities	640	0.5%
Information	640	0.5%

Source: BLS Occupational Employment Statistics Survey

The SJTPO has included an evaluation of the casino market in Atlantic City as part of its 2016 demographic forecasting. This report has determined that the market for casino gaming in the Northeast is saturated and new competition is continuing to emerge. The bottom line forecast expects Atlantic City’s market share to decline by 17% over the next several years, which will cause the loss of additional casino jobs and jobs in related industries. In addition, if casino gaming is approved in Northern New Jersey, additional competition will emerge within Atlantic City’s primary market and have a further impact.⁵

The continued struggle to rebound from the Great Recession has dovetailed with the struggles experienced by the gaming industry to limit job growth and diminish the labor force. Atlantic City in particular, is facing significant fiscal challenges as the funding for essential services has been diminished by the loss of revenue from the hospitality industry. The City’s bonds were downgraded to “junk status” in 2014.⁶ is overseeing the 2017 budgeting process, negotiations with casinos on Payment in Lieu of Taxes (PILOT) arrangements, contracts with union personnel and other financial decisions.

5. A Plan for South Jersey Transportation Matters, SJTPO 2016 Update to the Regional Transportation Plan – Appendix C: Demographic Forecast, July 25, 2016

6. “What is Happening To Atlantic City’s Gambling Industry?” Rahul Gupta | October 7, 2014

Atlantic County Comprehensive Economic Development Strategy and Action Plan

In response to the economic stagnation and decline, the Atlantic County Improvement Authority recently commissioned AngelouEconomics to prepare a Comprehensive Economic Development Strategy and Action Plan, which was released in late 2015. The resulting strategy and action plan described some of the challenges the County faces, including a higher poverty rate than both state and national averages, declining home values, high unemployment rates and a shrinking labor force, loss of ratable base leading to higher property taxes, and an over reliance on the tourism and service industry sectors of the economy. The recommended goals are summarized as follows:

- Empower a Regional Economic Development Authority –
 - o A regional authority can improve the County’s position in the competition for state level economic incentives. The Atlantic County Economic Alliance has been established in the wake of this recommendation. The ACEA was formed as a private sector led, nonprofit economic development corporation that seeks to attract and retain businesses and market Atlantic County.
- Diversify Industrial Base –
 - o The County economy remains reliant on the tourism and service sectors. The County needs to attract new industries, enhance and retain existing industries, and utilize public-private partnerships to explore diverse funding opportunities. Identified targets for industry development and diversification include:
 - ◆ Agriculture and Fisheries
 - ◆ Aerospace and Avionics
 - ◆ Life Sciences
 - ◆ Specialty Manufacturing
 - ◆ Tourism – Tourism has long been one of the County’s major industries, but diversification within this sector is identified as an important strategy.
- Improve the County’s Skilled Labor Force –
 - o The County suffers from a shortage of skilled workers. The development of skills training, education and continuing education programs in concert with local businesses and industries can help the competitiveness and capability of the County’s work force. The County can continue to collaborate with Stockton University and Atlantic Cape Community College to ensure that programs are offered that will produce well-rounded and competitive candidates for the workforce.
- Consider merging services within the County to save money for towns and ease the tax burden for residents.
- Continue to enhance the service and tourism industries. The reinforcement and expansion of existing industries should not be ignored despite efforts to diversify the economy.

The alignment of local and regional planning efforts is an important consideration in the planning process. The County Comprehensive Economic Development Strategy and Action Plan represents an ongoing initiative that is driving efforts to improve the County's economy by building on local strengths and attracting targeted outside industries. The County Master Plan Elements will support and align with the Comprehensive Economic Development Strategy and Action Plan document goals, objectives, and strategies. Planning decisions related to land use, infrastructure, sustainability and resiliency all play a role in enhancing property values and encouraging targeted economic development opportunities.

The Federal Aviation Administration William J. Hughes Technical Center



Federal Aviation Administration

The Federal Aviation Administration (FAA) William J. Hughes Technical Center is a state of the art facility that focuses on research and development, testing, and training activities related to the aviation industry. The FAA Technical Center Campus includes the Atlantic City International Airport, The US Coast Guard Air Station Atlantic City, the Department of Homeland Security Transportation Security Laboratory, Federal Air Marshal Services Training Facility, and the NJ Air National Guard 177th Fighter Wing, and the new Stockton Aviation Research and Technology Park.

The Technical Center is one of several facilities throughout the country that is specializing in the development and advancement of Unmanned Aircraft Systems (UAS), also commonly known as "drones". Furthermore, the facility is involved in the development of the Next Generation Air Transportation System (NextGen). This system is a reinvention of the country's air traffic control system moving from a radar based system to a satellite based system, which will enhance safety, efficiency, and capacity.



Federal Aviation Administration Map

The Stockton Aviation Research and Technology Park (ARTP) is a non-profit auxiliary organization of Stockton University. It represents a joint effort between the university, the Atlantic County Improvement Authority, and the Casino Reinvestment Development Authority. The goal of the Stockton ARTP is to facilitate collaboration between academia, industry, and government and to enable public-private partnerships in the aviation industry.

Further efforts include, the integration of the Stockton Aviation Research and Technology Park into the FAA campus, and the development of a partnership between the Atlantic County Institute of Technology and Atlantic Cape Community College to focus on meeting the growing needs of the aviation industry shows a practical application of targeting educational programs to meet the demands of growing industries and employers.⁷

7. Atlantic Cape and ACIT Partner to Meet Needs of Growing Aviation Industry, Atlantic Cape Community College, April 28, 2016

Finally, Bill NJ S1322 has been introduced in the State Senate to modify and expand the "Innovation Zone" program administered by the New Jersey Economic Development Authority. The program has been in place since 2004, but the proposed modifications would include the FAA Technical Center and Stockton University in the Greater Camden Innovation Zone for the first time. The innovation zones program hopes to attract high-technology businesses and professionals to specific areas and encourage collaboration between academic research institutions and industry. The enactment of this legislation would further bolster the status of this important academic, governmental, and industrial cluster.

REGULATORY ENVIRONMENT

The regulatory environment within the County remains substantially similar to the situation presented in the 2000 Atlantic County Master Plan. The New Jersey Department of Environmental Protection (NJDEP) Coastal Area Facilities Review Act of 1973 (CAFRA) established the CAFRA zone. The Division of Land Use Regulation within NJDEP regulates certain activities undertaken in the CAFRA zone. The Barrier Island and Back Bay regions of the County are within the CAFRA zone.

The New Jersey Pinelands Commission Comprehensive Management Plan (CMP) guides land use, development, and natural resource protection programs for the balance of the County with the exception of a small section of Buena Borough and Buena Vista Township. The Pinelands Commission was established in 1979 by the Pinelands Protection Act following from the Federal designation of the Pinelands National Reserve in the National Parks and Recreation Act of 1978.

CAFRA and the Pinelands CMP both seek to preserve and protect sensitive environmental areas while concentrating growth and development in designated areas. CAFRA Coastal Centers are the desired outlet for development within the coastal area. In the Pinelands, regional growth areas are designated to absorb development. The development trends that were observed and described in the 2000 Master Plan have continued in the ensuing years. The areas designated for regional growth have continued to grow while most of the other municipalities within the County have been stagnant or seen their populations decline.

Land use development patterns within Atlantic County are controlled by various state, county and local planning efforts. Comprehensive planning documents and regulations are developed at each of these levels to provide goals and policy statements which guide the growth and development within the County.

State Development and Redevelopment Plan (2001)

The primary objectives of the New Jersey State Development and Redevelopment Plan (SDRP) are to strike a balance between public and private sector investments in infrastructure, to coordinate planning efforts between state, county and local governments, to revitalize the state's urban centers, provide adequate and affordable housing in reasonable proximity to places of employment, and to promote the conservation and protection of the environment. To accomplish its objectives, the SDRP utilizes a combination of Planning Areas, Centers and Statewide Policies.

The SDRP jurisdiction covers the entire state of New Jersey, with the exception of the Pinelands region, which is regulated separately by the New Jersey Pinelands Commission, but is incorporated into the planning area map. The SDRP Planning Areas have the goal of creating a seamless policy map to guide land use decisions throughout the state. However, because of existing municipal, regional and statewide

comprehensive plans and regulations, the SDRP overlays with other existing jurisdictions. As such, the SDRP acknowledges these overlay areas and acknowledges these existing Planning Regions for the purpose of coordinating and integrating the policies of these established regional agencies with the policies of the SDRP.

Planning Areas

The SDRP identifies seven different Planning Areas. Per the Plan, Planning Areas are “large masses of land that share a common set of conditions, such as population density, infrastructure systems, level of development or natural systems.” The Planning Areas are generally broken down into:

- The Metropolitan Area (PA1) that provides for growth, compact development, redevelopment, and stabilizing and protecting the character of existing communities.
- The Suburban Area (PA2) that provides for the state's future development. The plan looks to discourage sprawl in these areas while promoting growth in Centers and other compact forms.
- The Fringe Area (PA3) can accommodate growth in centers and serves as a buffer between the more developed PA1 and PA2 areas and the rural and environmentally sensitive planning areas.
- The Rural Area (PA4) are meant to be maintained as contiguous areas of farmland and other open space, promote agriculture as an industry and concentrate any growth in centers. Rural Environmentally Sensitive Areas (PA4B) is a sub-group of the Rural Area that is intended to support agricultural development on lands with environmentally sensitive features.
- The Environmentally Sensitive Area (PA5) is large contiguous land areas with valuable ecosystems. Preservation and protection of these resources, particularly watersheds, recharge areas, threatened and endangered species habitat, scenic view sheds, and other valuable features, is the goal of PA5. The Environmentally Sensitive Barrier Islands Area (PA5B) is a subset of PA5 that focuses on the specific environmental value of the state's coastal barrier islands.

A large portion of Atlantic County is under the jurisdiction of the Pinelands Comprehensive Management Plan. The SDRP has accepted the Pinelands Management Areas and incorporated them into the State Plan Policy Map.

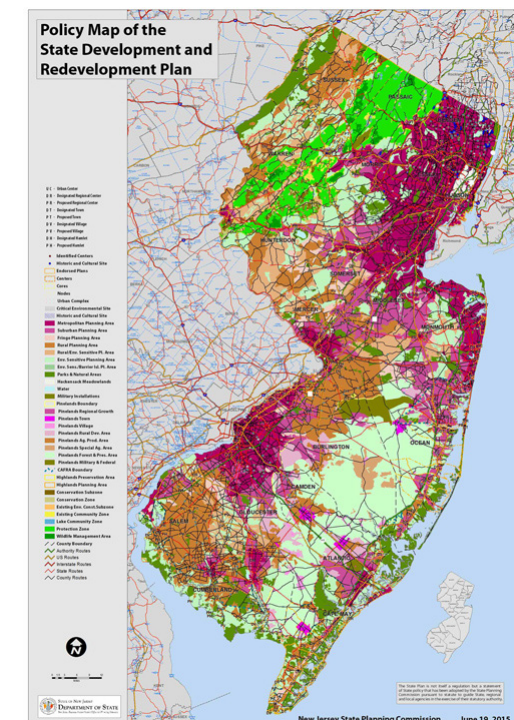
Nearly all of the remainder of Atlantic County is covered by the Coastal Area Facility Review Act (CAFRA). Lands in CAFRA Zones are subject to permitting regulations, but are also classified in Planning Areas under the SDRP.

Within the CAFRA overlap areas, the mapping of the Planning Areas varies and includes:

- PA1 - Metropolitan Planning Areas encompassing the municipalities of Atlantic City, Ventnor, Margate, Longport, Somers Point, Linwood, Northfield, Pleasantville, Absecon, and portions of Galloway Township; and
- PA2 - Suburban Planning Areas within the municipalities of Galloway Township and Egg Harbor Township; and
- PA3 - Fringe Area in Hamilton Township near Mays Landing; and
- PA4 - Rural Planning Areas in municipalities of Galloway Township, Egg Harbor Township, Port Republic, and Corbin City; and
- PA5 - Environmentally Sensitive Areas encompass the remainder of land area not covered by PA1 – PA4.

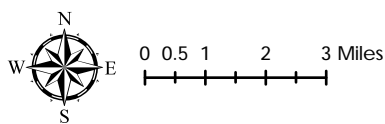
The areas within Atlantic County where the SRDP Planning Areas are not superseded by the Pinelands CMP, and are not subject to CAFRA Zone regulations are relegated to a small portion of Buena Borough and Buena Vista Township. The majority of this area is within the PA4 – Rural Planning Area.

Ultimately, zoning and land use decisions are made at the municipal level. Municipalities have an obligation to maintain consistency with the Pineland CMP, and state permitting in coastal areas is controlled by CAFRA. It is crucial to maintain consistency between municipal plans and zoning ordinances, the County's plans, and regional and state entities.



Regulatory Framework

- Pinelands Management Areas**
 - Preservation Area
 - Forest Area
 - Agricultural Production Area
 - Special AG Production Area
 - Federal or Military Facility
 - Pinelands Town
 - Pinelands Village
 - Regional Growth Area
 - Rural Development Area
- CAFRA Coastal Planning Areas**
 - Coastal Metropolitan
 - Coastal Fringe
 - Coastal Suburban
 - Coastal Rural
 - Coastal Environmentally Sensitive
 - Coastal Park
 - CAFRA Coastal Centers



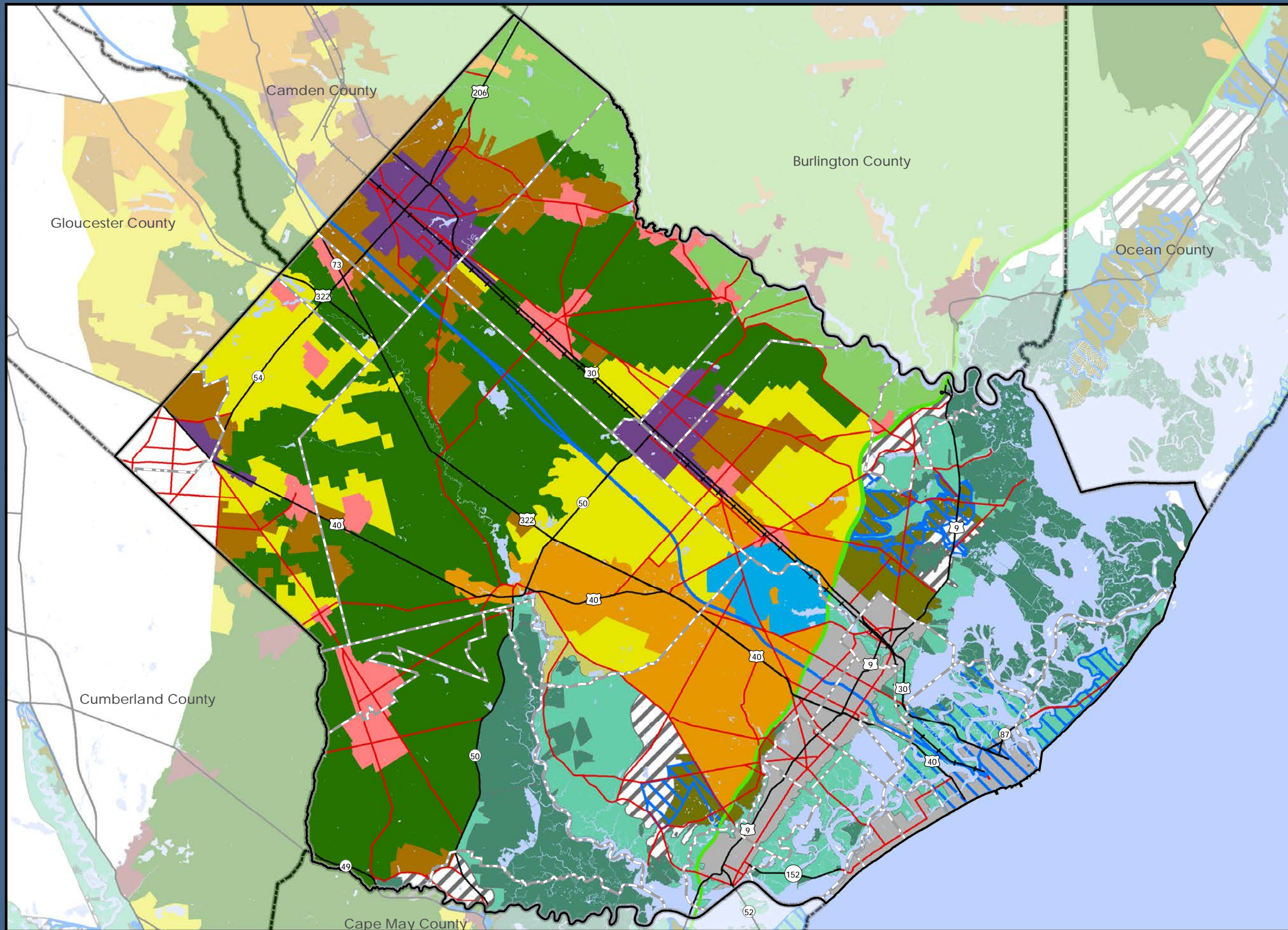
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, NJ Pinelands

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



Designated Centers and Endorsed Plans

Designated Centers identify areas within any of the State Planning Areas that feature established, compact communities with a defined character, and are able to accommodate additional growth.

Within Atlantic County there are four Centers and one Core identified in the SDRP.

- The City of Atlantic City – Urban Center
 - Urban Centers are the largest, most diverse type of center. They feature a mix of land uses and substantial built infrastructure. Atlantic City is the main urbanized area on Absecon Island and has traditionally been the focal point of the County’s economic activity. It has recently been supplanted as the largest (by population) municipality in the County by Egg Harbor Township. This center designation does not have an expiration date.



Atlantic City

- Oceanville in Galloway Township – Village Center
 - Village Centers are compact residential communities that also offer local consumer services, and occasionally specialized services to their occupants. This designated center is set to expire at the end of 2018.
- Smithville and Wrangleboro Estates in Galloway Township – Town Centers
 - Town Centers are traditional centers of commerce or government. They feature a compact form of development with a commercial core. Smithville and Wrangleboro estates are set to expire at the end of 2018.
- Galloway Downtown Core
 - Cores are the downtowns and activity centers of traditional communities.

Statewide Policies

In addition to the Planning Areas and Centers, nineteen (19) Statewide Policies have been adopted. These policies are applied to each Planning Area and Center to achieve the goals of the State Planning Act.

- | | |
|---|------------------------|
| • Comprehensive Planning | • Equity |
| • Public Infrastructure Priorities | • Energy Resources |
| • Economic Development | • Urban Revitalization |
| • Open Lands & Natural Systems | • Transportation |
| • Historic, Cultural & Scenic Resources | • Air Resources |
| • Infrastructure Investment | • Water Resources |
| • Waste Stream Management | • Agriculture |
| • Design | • Coastal Resources |
| • Planning Regions | • Housing |
| • Resources Areas | |

Draft State Strategic Plan

A Draft State Strategic Plan was prepared in 2012 as an update to the State Plan. This plan has not been adopted. The Plan outlined four specific goals to guide planning at the state level:

Goal 1: Targeted Economic Growth: Enhance opportunities to attract and grow industries of statewide, regional and international importance.

Goal 2: Effective Regional Planning: Guide and inform regional planning enabling each region of the State to experience appropriate growth based on its desires and assets.

Goal 3: Preservation, Protection and Enhancement of Critical State Resources: Ensure that strategies for growth include preservation, protection and enhancement of the State’s critical natural, agricultural, scenic, recreation, and

historic resources, recognizing their role in economic growth and the quality of life for New Jersey residents.

Goal 4: Tactical Alignment of Government: Prioritize effective resource allocation, coordination, cooperation and communication among entities that play a role in meeting the mission of this Plan.

Along with this set of goals, the Plan establishes a set of “Garden State Values” that are meant to form the basis for tactical investment throughout the state. These Values are:

- Concentrate Development and Mix Uses
- Prioritize Redevelopment, Infill, and Existing Infrastructure
- Increase Job and Business Opportunities
- Create High-Quality, Livable Places
- Provide Transportation Choice and efficient Mobility of Goods
- Protect Equity
- Diversify Housing Opportunities
- Provide for Healthy Communities through Environmental Protection and Enhancement
- Protect, Restore and Enhance Agricultural, Recreational and Heritage Lands
- Make Decisions within a Regional Framework

These ideas focus on strategically targeting investment and policies to promote growth, development, and redevelopment in areas that have infrastructure capacity and are free of environmental constraints. On the flip-side, investment of resources in preservation should be directed to areas that feature valuable natural resources or soil conducive to agricultural production. These goals and values align with those of Atlantic County.

New Jersey Pinelands

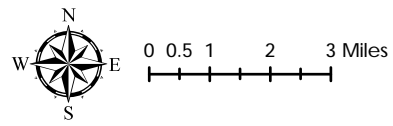
In June 1979, the State Legislature adopted the Pinelands Protection Act. The Act required that the Pinelands Commission adopt and implement a comprehensive plan for the Pinelands Area. The New Jersey Pinelands Comprehensive Management Plan (CMP) was adopted on November 21, 1980 and took effect on January 14, 1981. By administering the goals, policies and objectives of the CMP, the Pinelands Commission is empowered to protect and preserve the natural, ecological, agricultural, archaeological, historic, cultural and recreational resources of the Pinelands boundary. The designated Pinelands boundary applies to about 67 percent of the County.

The CMP establishes a series of management areas specifying overall development intensity and permitted uses for the portions of the County indicated in the map on the following page.

Pinelands Management Areas (State Designated Areas)

Pinelands Management Areas

- Preservation Area
- Forest Area
- Agricultural Production Area
- Special AG Production Area
- Federal or Military Facility
- Pinelands Town
- Pinelands Village
- Regional Growth Area
- Rural Development Area



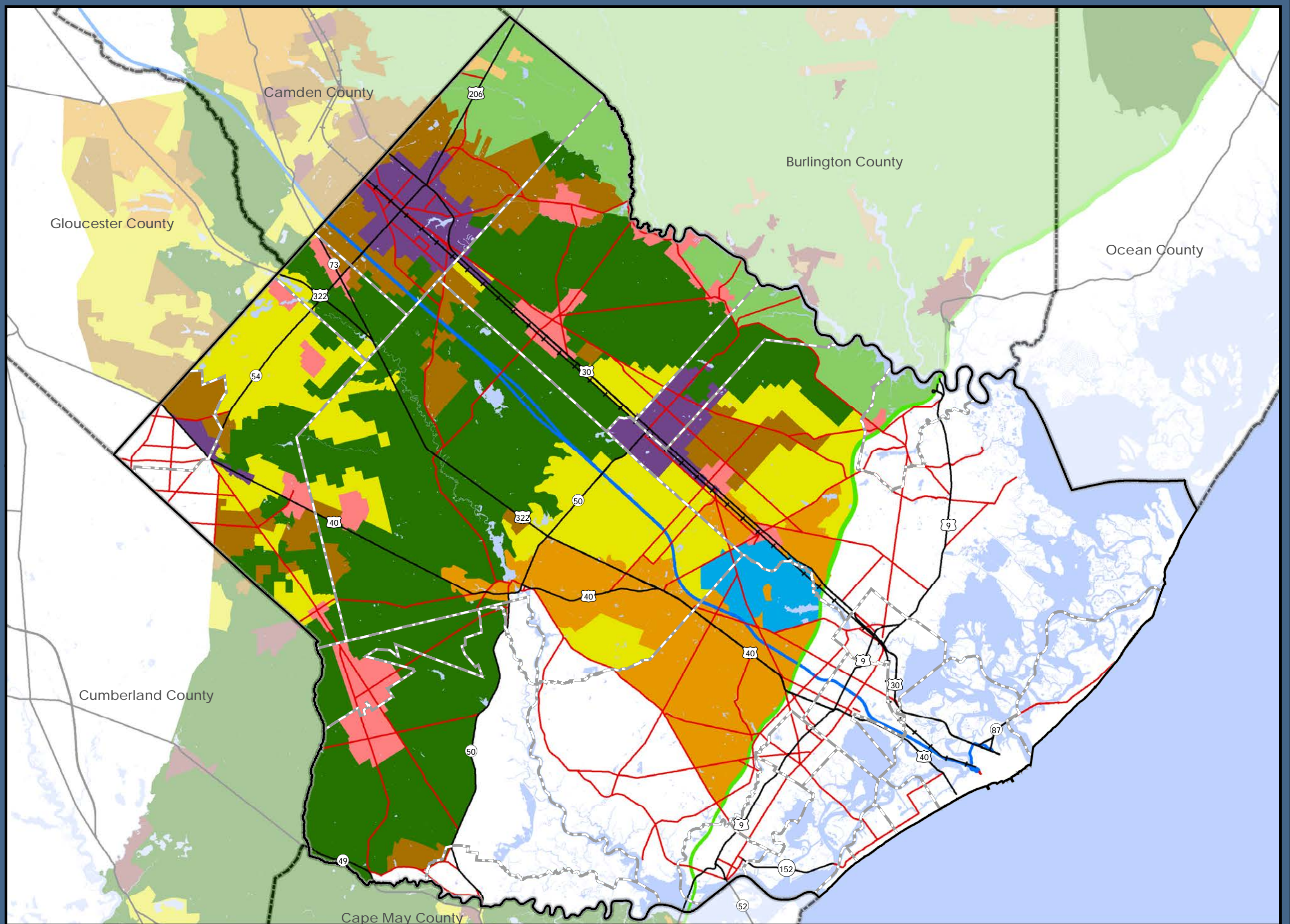
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, NJ Pinelands

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



The management areas are divided into nine different land use categories to regulate growth. Areas are target for preservation, agricultural production, or growth and development based on their physical characteristics. The Pinelands Land Use Management Areas are identified below and are mapped on the Pinelands Management Areas Map on page 19.

- Preservation Area District
- Forest Area
- Agricultural Production Area
- Rural Development Area
- Regional Growth Area
- Town
- Military and Federal Institution Area
- Village
- Special Agricultural Production Area

Preservation Area District and Forest Area

The Preservation Area District represents the most critical ecological region, which is especially vulnerable to degradation, in the Pinelands. The Forest Areas are largely undisturbed tracts of forested land that are to be preserved. Development within these sensitive management areas is severely restricted in order to protect their long term ecological integrity.

In Atlantic County, the Preservation Area and Forest Areas have been designated along the Mullica River, which encompasses the northern portions of Hammonton Town, Egg Harbor City, Galloway Township, Mullica Township and Port Republic City. The western portion of Hamilton Township, a section of Corbin City and large portions of Weymouth Township, Estell Manor City, Folsom Borough and portions of Buena Vista Township are also included.

Agricultural Production Areas and Special Agricultural Production Areas

Development is restricted in the Agricultural Production and Special Agricultural Production Areas in favor of preserving farmland and agricultural related uses. These areas have been designated in portions of Hammonton, Mullica Township, Hamilton, Township, Galloway Township, Buena Vista Township and Buena Borough.

Rural Development Areas

These are transitional areas which include existing agricultural activities which are inter-mixed between existing areas of rural development. In general, this area is designated for limited development with residential dwelling densities of 3.2 to 5 acres

per dwelling unit due to the absence of public sewer and water. Agricultural uses and processing activities are permitted in this area.

These Rural Development Areas are found in Buena Vista Township, Folsom, Hamilton Township, Mullica Township and Galloway Township.

Pinelands Towns and Villages

These Towns and Villages are existing settlements within the Pinelands that have been identified in the CMP. Infill development in these Towns and Villages is permitted that is compatible with the existing character of these settlements.

There are three (3) Pinelands Towns within Atlantic County:

- Hammonton Town
- Buena Borough
- Egg Harbor City

Pinelands Villages are typically centered around the intersection of two roads and can accommodate a higher density of development than their adjacent rural surroundings. In Atlantic County the Pinelands Villages are:

- Collings Lake, Milmay, Newtonville and Richland in Buena Vista Township;
- Folsom in Folsom Borough;
- Mizpah in Hamilton Township;
- Elwood, Westcoatville-Nesco, Sweetwater and Weekstown in Mullica Township;
- Port Republic;
- Estell Manor in Estell Manor;
- Cologne-Germania and Pomona in Galloway Township; and
- Dorothy and Belcoville in Weymouth Township.










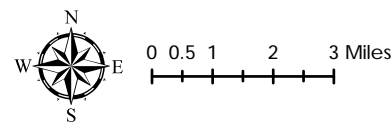
Downtown Egg Harbor City



Richland Village

Coastal Area Facilities Review Act Management Areas

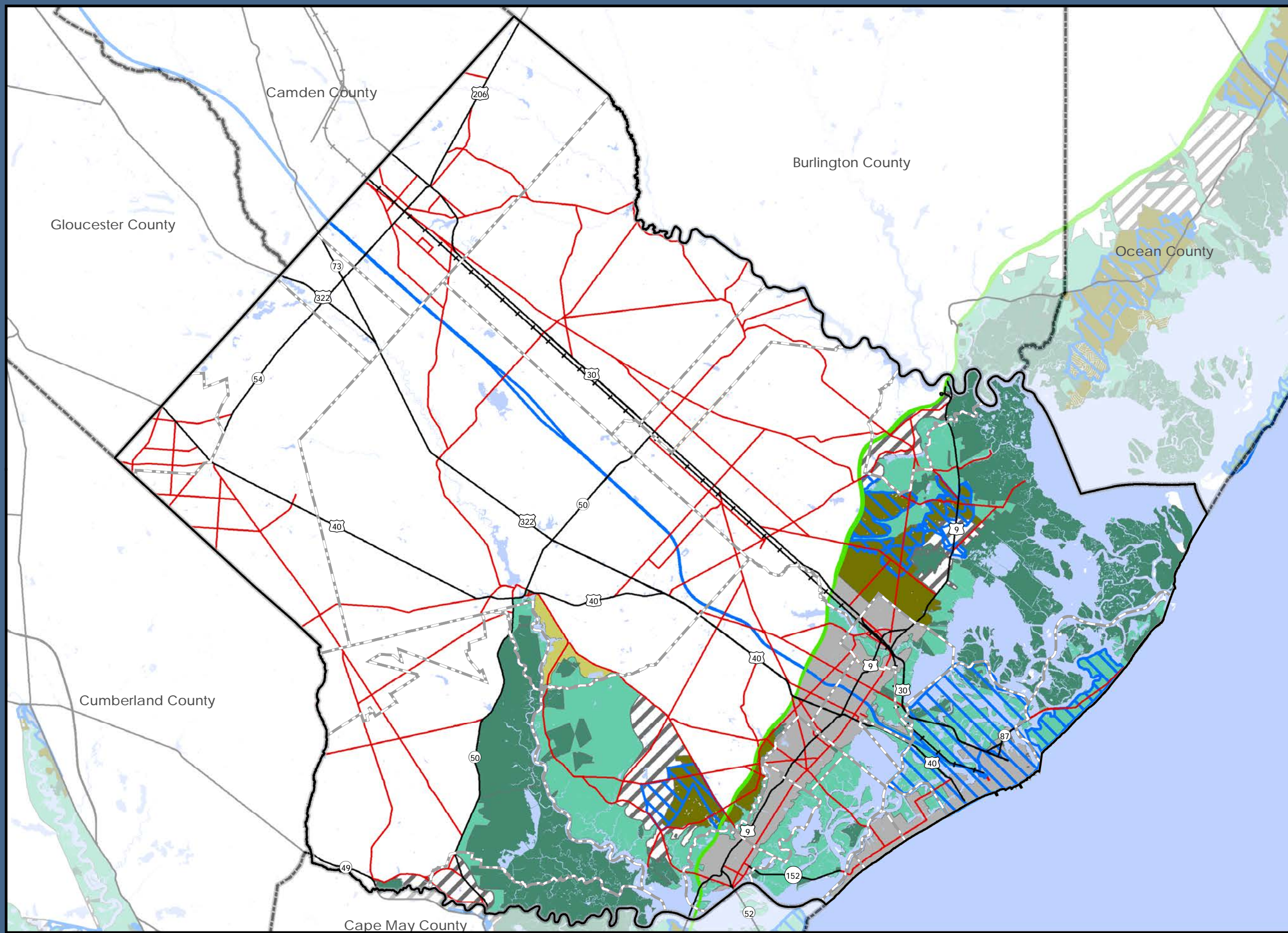
- CAFRA Coastal Planning Areas
-  Coastal Metropolitan
 -  Coastal Fringe Planning Areas
 -  Coastal Suburban Planning Areas
 -  Coastal Rural Planning Areas
 -  Coastal Environmentally Sensitive Planning Area
 -  Coastal Park
 -  CAFRA Coastal Centers



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Based on a memorandum of agreement by and between the New Jersey State Planning Commission and the New Jersey Pinelands Commission, Pinelands Centers receive the same benefits as other designated centers, since they are certified in conformance with the Pinelands CMP.

Regional Growth Areas

Regional Growth Areas are the areas in the Pinelands where higher density residential, commercial, industrial and warehousing uses are concentrated. These Growth Areas are located in or adjacent to existing developed areas served by public sewer and water infrastructure. The Regional Growth Areas are designated as the receiving zone for the Pinelands Development Credits transfer of development rights program.

Atlantic County Regional Growth Areas are concentrated within the municipalities of Galloway, Hamilton, and Egg Harbor Townships. These areas have existing infrastructure to support the permitted densities of the growth area.

Military and Federal Installations

The are in Atlantic County covered by this designation is the William J. Hughes Federal Aviation Technical Center, adjacent to the Atlantic City International Airport where the Egg Harbor, Hamilton and Galloway Township borders intersect.



Lake Fred in Galloway

Coastal Area Facilities Review Act

The Coastal Area Facilities Review Act (CAFRA) was adopted to regulate development along the coastline of New Jersey and within 150 feet of the mean high water line. The CAFRA boundary in Atlantic County generally includes areas east of the Garden State Parkway and areas between Route 50 and Ocean Heights Avenue. The Pinelands Land Capability Areas & CAFRA Planning Areas Map shows the CAFRA boundaries along with the designated Coastal Centers.

The Coastal Area Facilities Review Act requires that all regulated development activity within the CAFRA region must obtain a permit from the NJ Department of Environmental Protection. Regulated development activity includes residential projects with 25 or more units, any public or industrial development and commercial projects with 50 or more parking spaces if the property is located beyond 150 feet of the mean high water line. If the property is located within 150 feet of the mean high water line, CAFRA regulates three or more residential units, commercial projects with five (5) or more parking spaces or any public or industrial development.

CAFRA does not regulate land uses but controls the impacts of a proposed use by issuing permits. These permits ensure the uses meet standards related to development intensities identified in SDRP Planning Areas, including impervious coverage, storm water management, and impacts to wetlands.

As previously discussed, the SDRP acknowledges the overlap of the existing CAFRA boundaries and has specifically created the goal to acknowledge these existing Planning Regions and coordinate and integrate the policies of these established regional agencies with the policies of the SDRP.

The CAFRA Planning Areas correspond to the SDRP Planning Areas. The following represents a list of the Planning Areas and their Key Locations:

SDRP Planning Area	CAFRA Planning Area	Key Locations
PA 1: Metropolitan	Coastal Metropolitan	Atlantic City, Ventnor, Margate, Longport, Somers Point, Linwood, Northfield, Pleasantville, Absecon, and portions of Galloway Township
PA 2: Suburban	Coastal Suburban	Galloway Township and Egg Harbor Township
PA 3: Fringe	Coastal Fringe	Hamilton Township near Mays Landing
PA 4: Rural	Coastal Rural	Corbin City, Galloway Township, Egg Harbor Township and Port Republic
PA 5 & 5B: Environmentally Sensitive*	Coastal Environmentally Sensitive*	Portions of Absecon, Atlantic City, Brigantine, Corbin City, Egg Harbor Township, Galloway, Mays Landing, Linwood, Northfield, Pleasantville, Port Republic, Somers Point, Ventnor, and Weymouth
PA 8: Park	Coastal Park	Primarily Federal, State & County Parks located in portions of Absecon, Atlantic City, Brigantine, Corbin City, Egg Harbor Township, Estell Manor, Galloway, Mays Landing, Northfield, Pleasantville, Port Republic, Somers Point and Weymouth

*This category includes the Environmentally Sensitive Barrier Island Planning Areas

CAFRA Centers, Cores, Nodes, Coastal Planning Areas, and Coastal Centers

The CAFRA rules define impervious cover limits and vegetative cover percentages for sites in Coastal Zone. Delineated areas known as CAFRA Centers, Cores, and Nodes, or Coastal Planning Areas and Coastal Centers, or Mainland Coastal Centers permit more intense development than other areas (see CAFRA Management Areas Map). The rules seek to concentrate development in areas where existing development and infrastructure are present, to discourage sprawl, and to protect environmentally sensitive areas. The following areas in the County are designated as centers in the Coastal Zone Management Rules:

- Brigantine Coastal Town – The coastal town boundary follows the municipal boundary of the City of Brigantine, but does not include any bay islands of the Absecon Wildlife Management Area
- Atlantic City CAFRA Urban Center
- Galloway Downtown CAFRA Core
- Oceanville (Galloway Township) CAFRA Village
- Smithville (Galloway Township) CAFRA Core
- Smithville (Galloway Township) CAFRA Town
- Wrangleboro (Galloway Township CAFRA Town
- Egg Harbor Coastal Town – This area is a Mainland Coastal Center. These centers were due to expire in March 2007, but have been extended by the Permit Extension Act of 2008 and its amendments. The most recent amendment was enacted on June 30, 2016. This amendment was limited to the nine counties most impacted by Superstorm Sandy, and provides an additional year of extension through no later than June 30, 2017 for permits in these counties.

The Egg Harbor coastal town boundary extends from the intersection of English Creek Avenue and Schoolhouse Lane, thence south on Schoolhouse Lane to Mays Landing Somers Point Road (County Route 559), thence

southeast on Mays Landing Somers Point Road (County Route 559) to Steelmanville Road (County Route 651), thence east on Steelmanville Road (County Route 651) to Robert Best Road, thence northeast on Robert Best Road to a point that is a perpendicular distance of 2,000 feet west of Ocean Heights Avenue, thence south along a line that is parallel to and 2,000 feet west of Ocean Heights Avenue to Steelmanville Road (County Route 651), thence west on Steelmanville Road (County Route 651) to a point that is a perpendicular distance of 3,000 feet west of Ocean Heights Avenue, thence south along a line that is parallel to and 3,000 feet west of Ocean Heights Avenue to the Garden State Parkway, thence northeast on the Garden State Parkway to Ocean Heights Avenue, thence northwest on Ocean Heights Avenue to a point that is a perpendicular distance of 2,000 feet north of English Creek Avenue, thence west along a line that is parallel to and 2,000 feet north of English Creek Avenue to Evergreen Avenue, thence south on Evergreen Avenue to English Creek Avenue, and thence west on English Creek Avenue to Schoolhouse Lane.

Sewer Service Areas/Public Water Supply Service Areas

In Atlantic County, the developed regions of the Barrier Island Region, Back Bay Region, and Suburban Region hold the major concentration of sewer and public water supply services. The Sewer Service Area Map overlays the current sewer service areas with the municipal boundaries of Atlantic County. Although not mapped, the public water infrastructure generally follows the sewer service areas. The Sewer Service Area Map clearly shows that the public investment in sewer infrastructure falls within the established areas and the future growth areas of the County.

In western portions of the County, where Pinelands regulations restrict development in sensitive areas, public water and sewer supply is less prevalent. The majority of Pinelands communities are serviced by private wells and septic systems. The exception in the western portion of the County is the existing sewer treatment plants in the Town of Hammonton and Buena Borough. These treatment plants have provided and will continue to provide sewer service to the established population centers around these farming communities.

With the availability of public sewer and water, higher densities and more intense land uses are possible. Without this infrastructure, development will remain at low densities more conducive to the farming industry. Thus, the western portion of the County is more conducive to farming and preservation due to its rural nature and lack of public infrastructure such as sewer and water.

CURRENT LAND USE & TRENDS

Over the past two decades, development and population has shifted from the Barrier Island and Back Bay Regions, which are more densely developed and feature minimal new developable land, to the Suburban Region. This has resulted in the large spike in population growth observed in these more suburban townships. In addition, the trend in development has affected land use patterns in historically rural areas located in the western portions of the County. These development patterns have placed pressure on the more rural areas of the County, but with several exceptions a pattern of preserved land, very low density residential development, and agricultural uses dominates the rural areas.

The Existing Land Use Map shows land use within the county as derived from the MODIV property tax records. This map provides a county-wide view of development and land use patterns that is consistent with the regulatory environment outlined above. Due to some inconsistencies and technical issues with the tax parcel base, this data is not suitable for parcel level analysis, but it provides a telling picture at the County level. Improving the quality and consistency of this data should be a priority for municipalities in the future.

Another method of analyzing land use patterns in the County is the New Jersey Department of Environmental Protection’s (NJDEP) Bureau of Geographic Information Systems (GIS) Land Use / Land Cover dataset. This data uses aerial imagery to interpret land use patterns. The NJDEP’s LU/LC classification system employs geographic information system (GIS) and digital orthophotography data to examine land features within the context of their surrounding landscape. Human activities that impact the land are described as Land Use (LU) and the physical surface of the land is Land Cover (LC) (see Land Use Land Cover 2012 Map).

The Anderson classification system identifies six general categories which are represented in the Atlantic County landscape. They are specified in numerical order, URBAN LAND (1000), AGRICULTURE (2000), FOREST (4000), WATER (5000), WETLANDS (6000), and BARREN LAND (7000).

The Table 1.9 compares Atlantic County LU/LC data from 2002 to 2012. Urban Lands grew by over 8,000 acres while Agriculture, Barren Lands, Forested Areas, and Wetlands declined during this time (see Expansion of Urban Areas Map). Over 5,000 acres of land that had previously been forest were reclassified. It is worth noting that the majority of the change took place in the years between 2002 and 2007. This is consistent with the general pattern of activity within the County. The Great Recession began in 2007 and the County has notably struggled to rebound in economic activity and land development since that time.

Table 1.9 Land Use Land Cover (2002 to 2012)



Type	2002 (Acres)	2007 (Acres)	2012 (Acres)	Net Change (2002 to 2012)	
				Acreage	Percentage
Agriculture	24,458	23,460	22,885	-1,573	-6.4%
Barren Land	4,283	2,900	2,460	-1,823	-42.6%
Forest	142,752	138,231	137,428	-5,324	-3.7%
Urban Land	59,133	65,553	67,416	8,283	14.0%
Water	37,391	39,079	39,152	1,761	4.7%
Wetlands	122,798	121,593	121,741	-1,057	-0.9%
Total	390,815	390,815	391,082	-	-

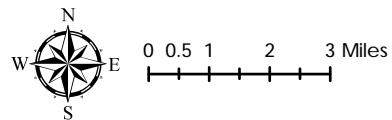
Source: NJDEP Land Use Land Cover



Downtown Egg Harbor City

Sewer Service Areas

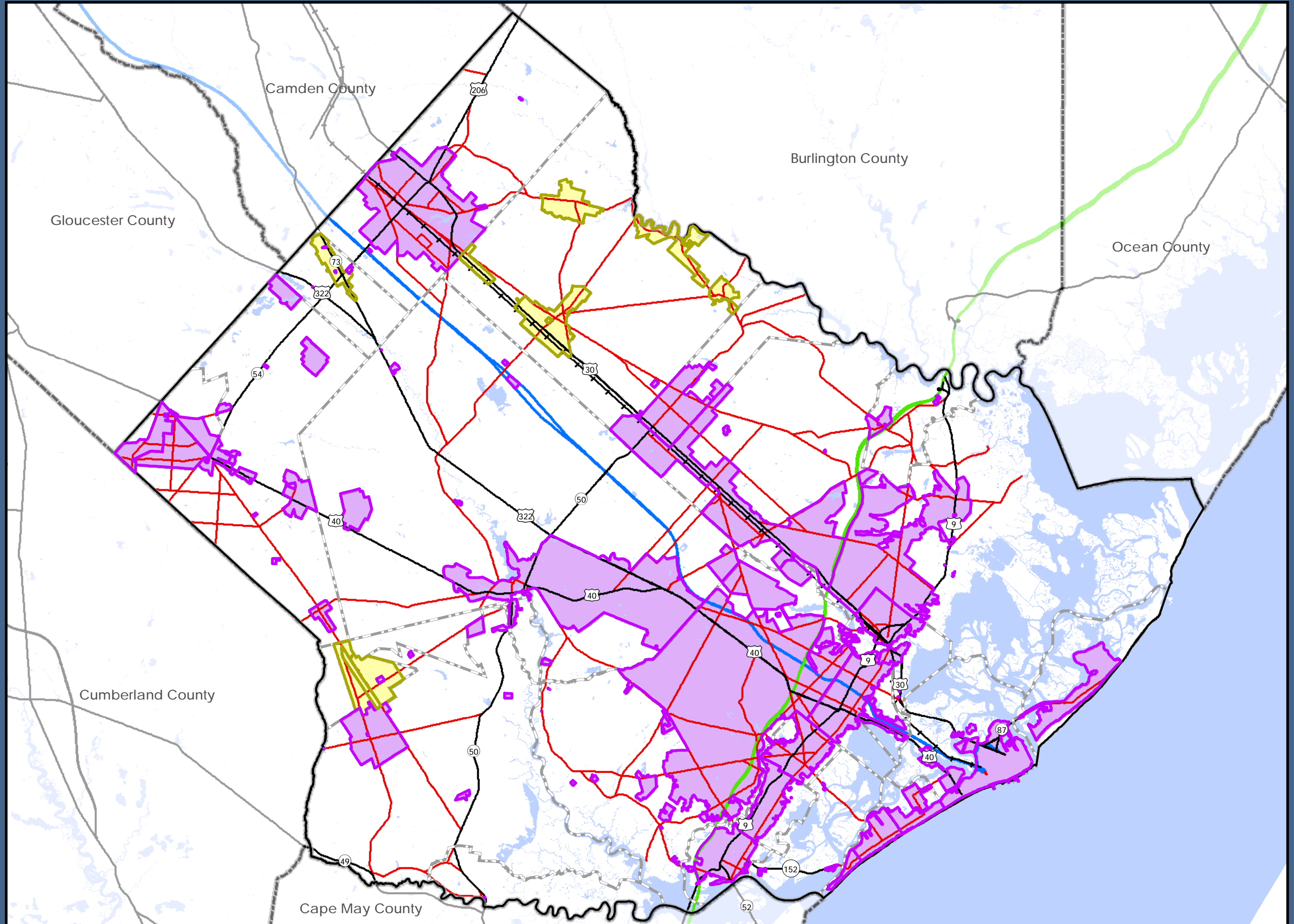
-  Existing Sewer Service Areas
-  Proposed Pinelands Center Wastewater Service Facility



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

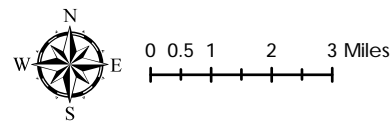
The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Land Use Land Cover (2012)

Land Use Land Cover (2012)

- Agriculture
- Barren Land
- Forest
- Urban
- Water
- Wetlands



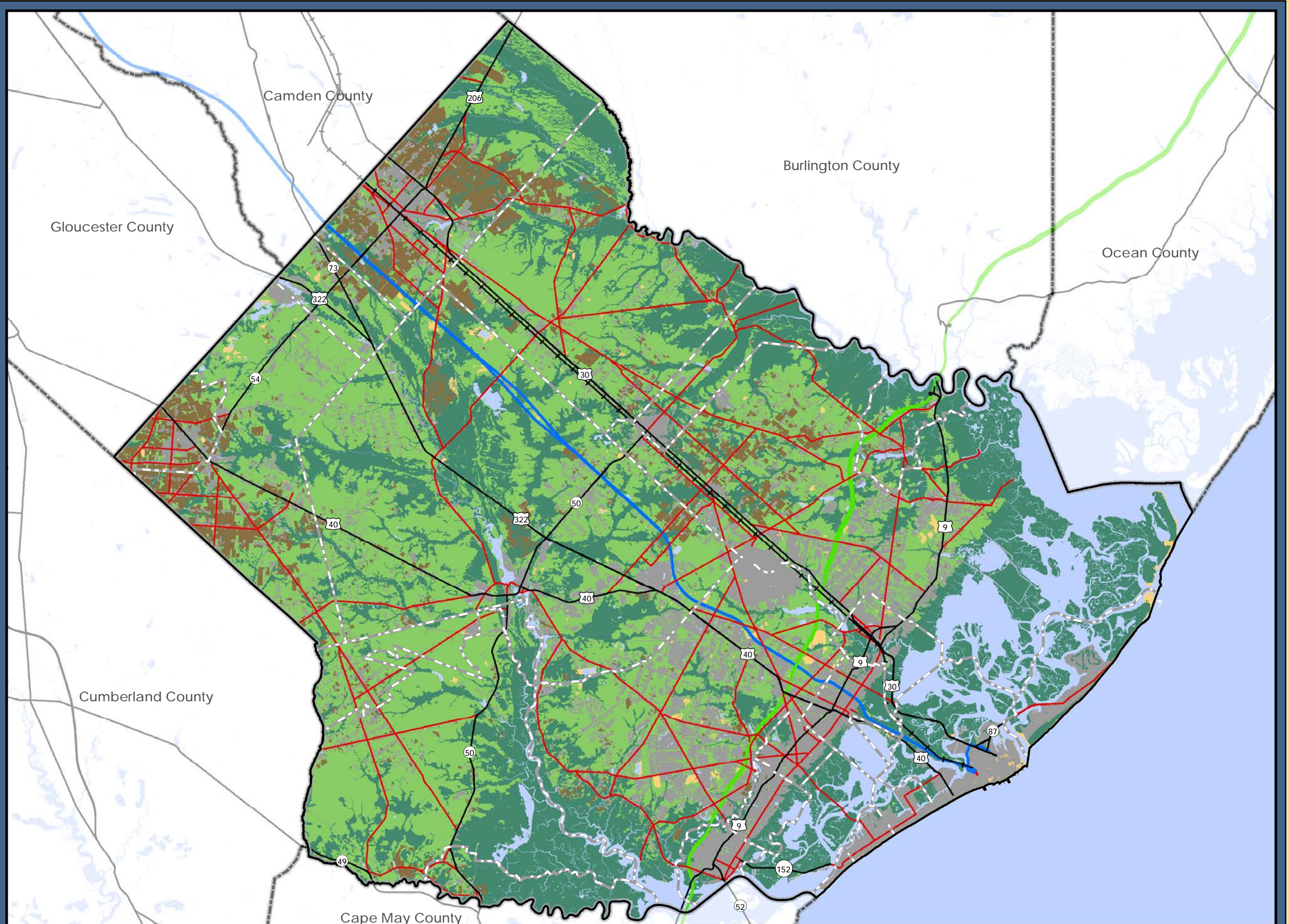
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.

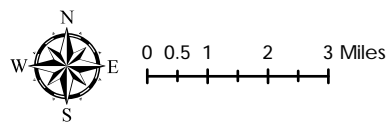


HEYER GRUEL & ASSOCIATES



Expansion of Urban Areas

- 2002 LULC Urban Areas
- 2007 LULC Urban Areas
- 2012 LULC Urban Areas



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

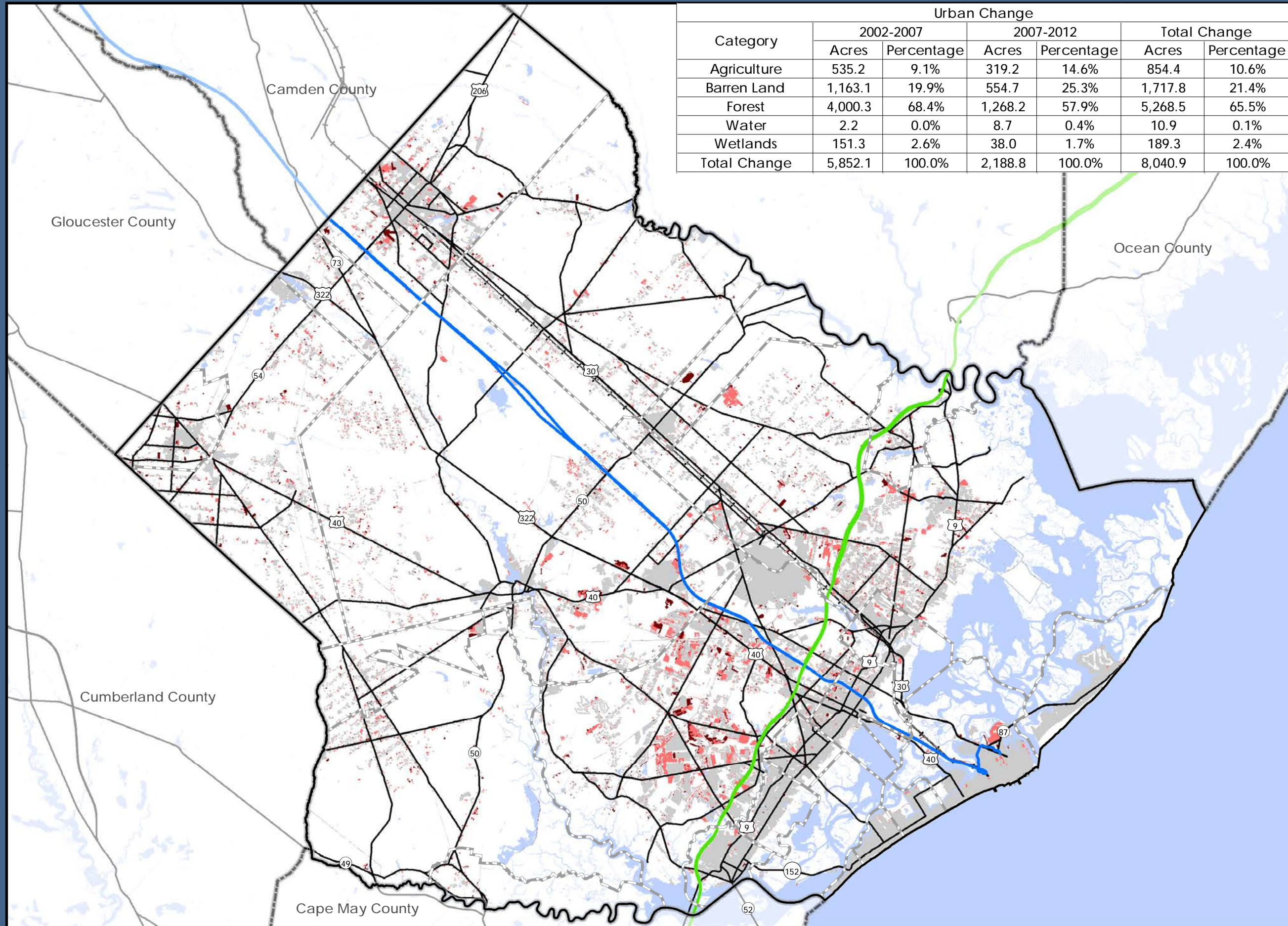
This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES

Category	Urban Change				Total Change	
	2002-2007		2007-2012			
	Acres	Percentage	Acres	Percentage	Acres	Percentage
Agriculture	535.2	9.1%	319.2	14.6%	854.4	10.6%
Barren Land	1,163.1	19.9%	554.7	25.3%	1,717.8	21.4%
Forest	4,000.3	68.4%	1,268.2	57.9%	5,268.5	65.5%
Water	2.2	0.0%	8.7	0.4%	10.9	0.1%
Wetlands	151.3	2.6%	38.0	1.7%	189.3	2.4%
Total Change	5,852.1	100.0%	2,188.8	100.0%	8,040.9	100.0%

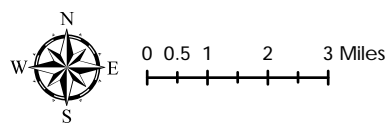


Existing Land Use (2014)

Existing Land Use

Property Class

- Unknown
- Vacant
- Residential
- Apartment
- Farmland (Regular)
- Farmland (Qualified)
- Commercial
- Industrial
- Public School
- Private School
- Public Property
- Church & Charitable
- Cemeteries & Graveyards
- Other Exempt
- Railroad



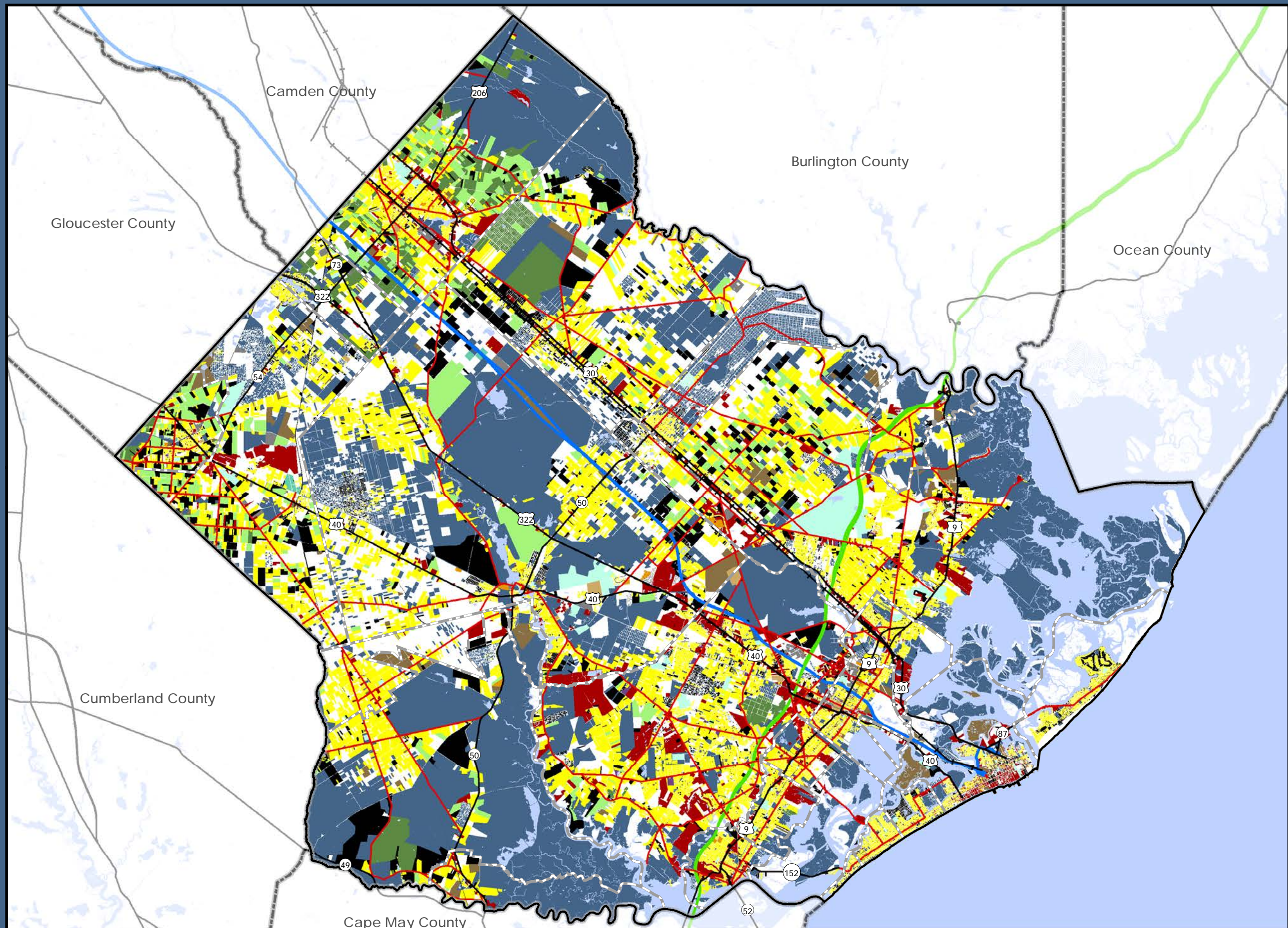
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, 2014 Tax Records

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.














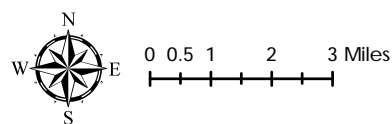
HEYER GRUEL & ASSOCIATES



Existing Zoning

Existing Zoning

-  Low Density Residential (Pinelands Forest/ Preservation Area)
-  Single & Two Family Zone
-  Multi-Family Residential
-  Institutional Zone
-  Commercial Zone
-  Industrial
-  Agricultural Zone
-  Conservation/Recreation Zone
-  Utilities
-  Redevelopment Area; Renewal Area
-  Rehabilitation Area



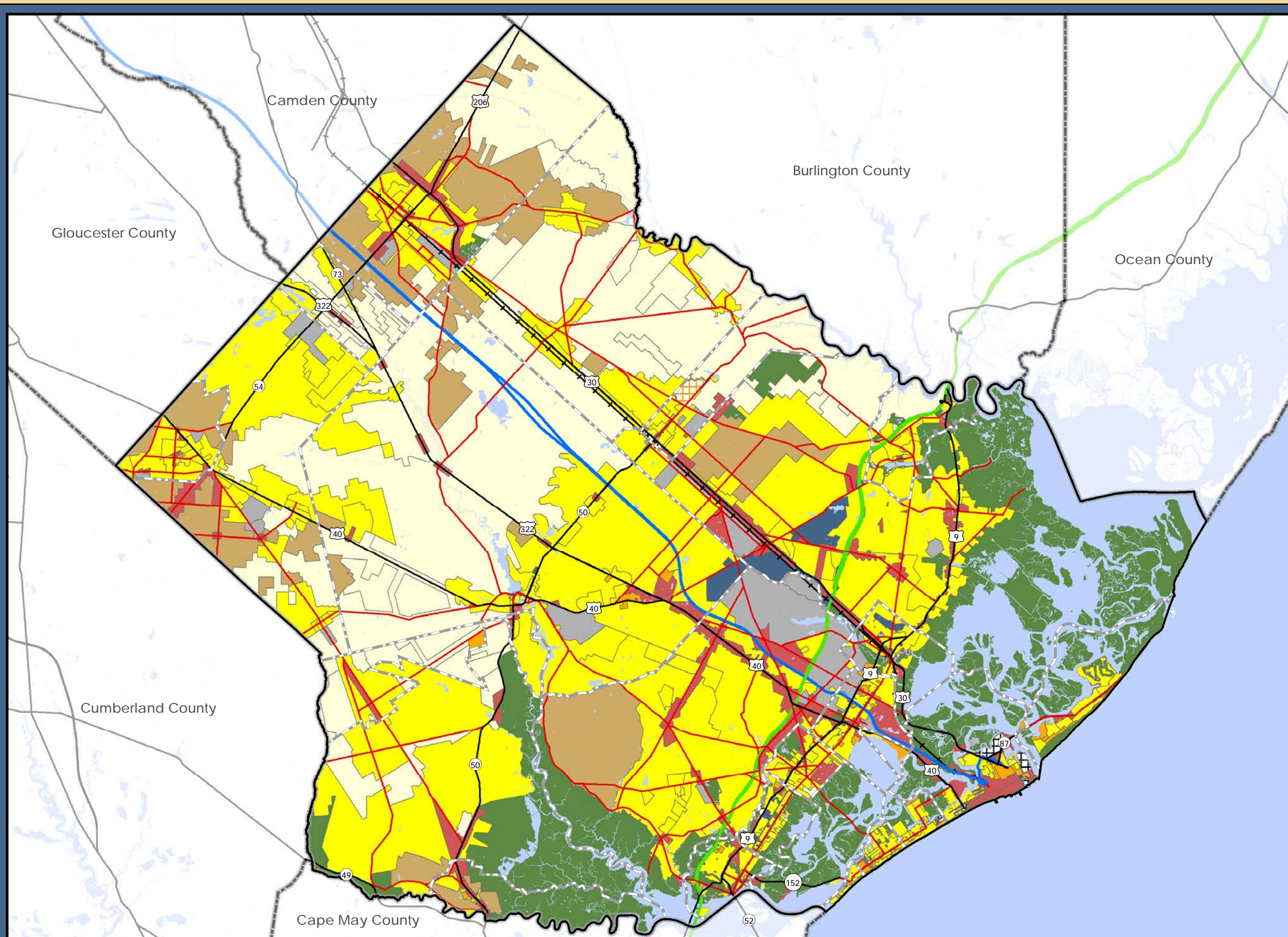
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



Municipal Master Plans and Zoning

Permitted land uses and intensity of development are governed at the municipal level. The decisions that shape the land use patterns within the County are primarily made at the local level through the adoption of municipal master plans and land use elements, zoning ordinances and land development regulations.

In the Pinelands, municipal zoning ordinances and master plans must conform to the standards set forth in the Pinelands Comprehensive Management Plan. Municipal plans and zoning must be consistent with the density requirements and uses permitted in the various Pinelands Management Areas.

The standards prescribed in municipal zoning ordinances tend to be relatively consistent with established patterns of land use throughout the County (the maps on the preceding pages show generalized zoning and land use patterns). The controls imposed by the Pinelands Comprehensive Management Plan ensure consistency within the majority of the Rural and Suburban portions of the County. These areas are characterized by lower density residential development, areas targeted for preservation and conservation, and the County’s prime agricultural lands. Commercial zones tend to be found along County and State roads, at significant crossroads and intersections, and in downtown areas. Higher densities are mostly located in the Back Bay and Barrier Island communities. Conservation and recreation zones are found throughout the County and are consistent with preserved land patterns.

Table 10 shows the breakdown of zone types throughout the County. One and two family residential zones and low density residential zones in the Pinelands region make up over 60% of the land area of the County. Conservation and recreation zones are over 21% of the County. Agricultural zones are just under 9%. The remainder is composed of Commercial Zones (4.4%), Industrial zones (2.9%), Multi-Family Residential (0.5%), and miscellaneous Institutional and Utility Zones. Redevelopment, Rehabilitation, and Renewal zones are collectively under 1,000 acres and less than half of one-percent of the County’s land area.

A breakdown of the zoning summary for each municipality in the County is provided in Table 11. The land use and zoning patterns within the municipalities in the Rural and Suburban portions of the County are predominantly dictated by the Pinelands Comprehensive Plan. The Back Bay and Barrier Island municipalities tend to have greater densities, although the residential zoning is predominantly for one and two family homes. These areas also tend to have a greater percentage of commercial and mixed-use zoning, as well as several redevelopment and rehabilitation areas. There are significant conservation and recreation zones throughout the County.

Zone	Acreage	Percentage
Agricultural Zone	34,596.9	8.9%
Commercial Zone	17,372.5	4.4%
Conservation/Recreation Zone	84,050.2	21.5%
Industrial	11,453.5	2.9%
Institutional Zone	3,340.7	0.9%
Low Density Residential (Pinelands)	104,794.0	26.8%
Multi-Family Residential	2,101.1	0.5%
Redevelopment Areas	478.9	0.1%
Rehabilitation Areas	357.7	0.1%
Renewal Area	140.6	0.0%
Single & Two Family Zone	131,754.5	33.7%
Utilities Zone	374.7	0.1%
Total	390,815.3	100.0%

Absecon City Zones	Acreage	Percentage
Commercial Zone	361.3	7.8%
Conservation/Recreation Zone	2,259.8	48.8%
Industrial	310.8	6.7%
Institutional Zone	225.7	4.9%
Multi-Family Residential	65.8	1.4%
Single & Two Family Zone	1,403.7	30.3%
Total	4,627.1	100.0%

Atlantic City Zones	Acreage	Percentage
Commercial Zone	1,630.6	16.0%
Conservation/Recreation Zone	6,904.4	67.8%
Industrial	74.7	0.7%
Institutional Zone	18.9	0.2%
Multi-Family Residential	317.9	3.1%
Redevelopment Area	305.6	3.0%
Renewal Area	140.6	1.4%
Single & Two Family Zone	786.6	7.7%
Total	10,179.3	100.0%

Brigantine City Zones	Acreage	Percentage
Commercial Zone	114.4	1.7%
Conservation/Recreation Zone	5,439.7	79.4%
Multi-Family Residential	229.3	3.3%
Single & Two Family Zone	1,067.8	15.6%
Total	6,851.2	100.0%

Buena Borough Zones	Acreage	Percentage
Agricultural Zone	2,100.6	43.3%
Commercial Zone	148.2	3.1%
Industrial	143.8	3.0%
Multi-Family Residential	9.8	0.2%
Single & Two Family Zone	2,443.4	50.4%
Total	4,845.8	100.0%

Buena Vista Township Zones	Acreage	Percentage
Agricultural Zone	4,577.8	17.2%
Commercial Zone	735.6	2.8%
Industrial	1,258.8	4.7%
Low Density Residential (Pinelands Forest/Preservation)	6,478.9	24.3%
Single & Two Family Zone	13,556.9	51.0%
Total	26,607.9	100.0%

Corbin City Zones	Acreage	Percentage
Agricultural Zone	749.3	13.0%
Commercial Zone	379.6	6.6%
Conservation/Recreation Zone	4,122.1	71.8%
Low Density Residential (Pinelands Forest/Preservation)	65.6	1.1%
Multi-Family Residential	24.9	0.4%
Single & Two Family Zone	400.7	7.0%
Total	5,742.2	100.0%

Egg Harbor City Zones	Acreage	Percentage
Commercial Zone	178.2	2.4%
Industrial	323.1	4.4%
Low Density Residential (Pinelands Forest/Preservation)	5,164.0	70.8%
Multi-Family Residential	16.5	0.2%
Redevelopment Area	102.3	1.4%
Rehabilitation Area	357.7	4.9%
Single & Two Family Zone	1,147.0	15.7%
Total	7,288.9	100.0%

Table 1.11 Cont.

Egg Harbor Township Zones	Acreage	Percentage
Agricultural Zone	6,328.7	13.1%
Commercial Zone	4,106.1	8.5%
Conservation/Recreation Zone	13,099.6	27.1%
Industrial	5,848.3	12.1%
Multi-Family Residential	457.8	0.9%
Single & Two Family Zone	18,502.5	38.3%
Total	48,342.9	100.0%
Estell Manor City Zones		
Acreage	Percentage	
Agricultural Zone	908.3	2.6%
Commercial Zone	798.0	2.3%
Conservation/Recreation Zone	10,998.0	31.1%
Low Density Residential (Pinelands Forest/Preservation)	4,369.3	12.4%
Single & Two Family Zone	18,246.0	51.7%
Total	35,319.7	100.0%
Folsom Borough Zones		
Acreage	Percentage	
Agricultural Zone	347.6	6.4%
Commercial Zone	111.5	2.0%
Industrial	112.9	2.1%
Low Density Residential (Pinelands Forest/Preservation)	3,562.5	65.4%
Single & Two Family Zone	1,311.5	24.1%
Total	5,446.0	100.0%
Galloway Township Zones		
Acreage	Percentage	
Agricultural Zone	3,833.9	5.4%
Commercial Zone	3,387.4	4.8%
Conservation/Recreation Zone	33,882.8	47.6%
Industrial	1,207.8	1.7%
Institutional Zone	2,241.5	3.1%
Low Density Residential (Pinelands Forest/Preservation)	4,763.8	6.7%
Single & Two Family Zone	21,907.6	30.8%
Total	71,224.7	100.0%

Table 1.11 Cont.

Hamilton Township Zones	Acreage	Percentage
Agricultural Zone	3,006.0	4.2%
Commercial Zone	1,344.1	1.9%
Conservation/Recreation Zone	51.5	0.1%
Industrial	947.5	1.3%
Institutional Zone	706.3	1.0%
Low Density Residential (Pinelands Forest/Preservation)	38,424.7	53.2%
Multi-Family Residential	257.1	0.4%
Redevelopment Area	5.6	0.0%
Single & Two Family Zone	27,528.7	38.1%
Total	72,271.4	100.0%
Hammonton Town Zones		
Acreage	Percentage	
Agricultural Zone	9,318.9	35.2%
Commercial Zone	1,453.3	5.5%
Conservation/Recreation Zone	251.6	1.0%
Industrial	554.1	2.1%
Low Density Residential (Pinelands Forest/Preservation)	10,155.1	38.4%
Multi-Family Residential	8.2	0.0%
Single & Two Family Zone	4,697.8	17.8%
Total	26,438.9	100.0%
Linwood City Zones		
Acreage	Percentage	
Commercial Zone	104.0	3.7%
Conservation/Recreation Zone	1,435.8	51.4%
Institutional Zone	118.9	4.3%
Multi-Family Residential	53.5	1.9%
Redevelopment Area	29.1	1.0%
Single & Two Family Zone	1,049.6	37.6%
Total	2,790.8	100.0%
Longport Borough Zones		
Acreage	Percentage	
Commercial Zone	3.7	1.0%
Conservation/Recreation Zone	157.1	41.3%
Institutional Zone	7.8	2.0%
Multi-Family Residential	14.8	3.9%
Single & Two Family Zone	196.8	51.8%
Total	380.2	100.0%

Table 1.11 Cont.

Margate City Zones	Acreage	Percentage
Commercial Zone	50.4	4.8%
Conservation/Recreation Zone	254.8	24.4%
Multi-Family Residential	84.7	8.1%
Single & Two Family Zone	654.6	62.7%
Total	1,044.6	100.0%
Mullica Township Zones		
Acreage	Percentage	
Agricultural Zone	3,425.9	9.4%
Low Density Residential (Pinelands Forest/Preservation)	26,024.7	71.6%
Single & Two Family Zone	6,921.7	19.0%
Total	36,372.3	100.0%
Northfield City Zones		
Acreage	Percentage	
Commercial Zone	523.5	22.6%
Conservation/Recreation Zone	268.3	11.6%
Institutional Zone	7.8	0.3%
Low Density Residential (Pinelands Forest/Preservation)	59.5	2.6%
Single & Two Family Zone	1,455.9	62.9%
Total	2,315.0	100.0%
Pleasantville City Zones		
Acreage	Percentage	
Commercial Zone	1,072.3	23.1%
Conservation/Recreation Zone	1,091.7	23.5%
Industrial	657.2	14.1%
Multi-Family Residential	222.6	4.8%
Single & Two Family Zone	1,604.3	34.5%
Total	4,648.1	100.0%
Port Republic City Zones		
Acreage	Percentage	
Commercial Zone	91.7	1.7%
Conservation/Recreation Zone	1,546.5	28.2%
Low Density Residential (Pinelands Forest/Preservation)	1,432.4	26.2%
Single & Two Family Zone	2,179.2	39.8%
Utilities	225.7	4.1%
Total	5,475.5	100.0%

Table 1.11 Cont.

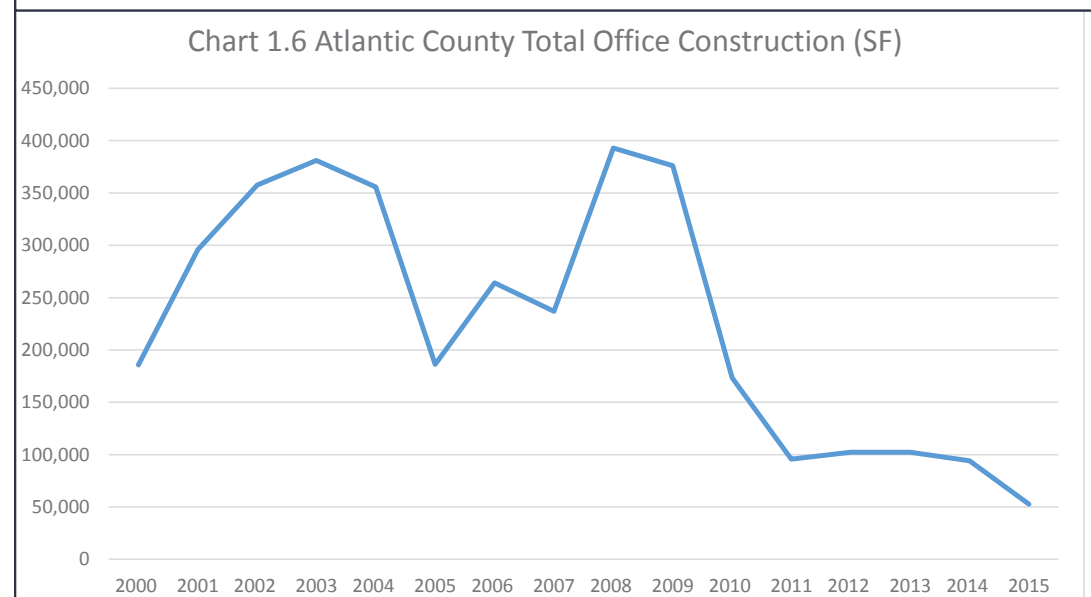
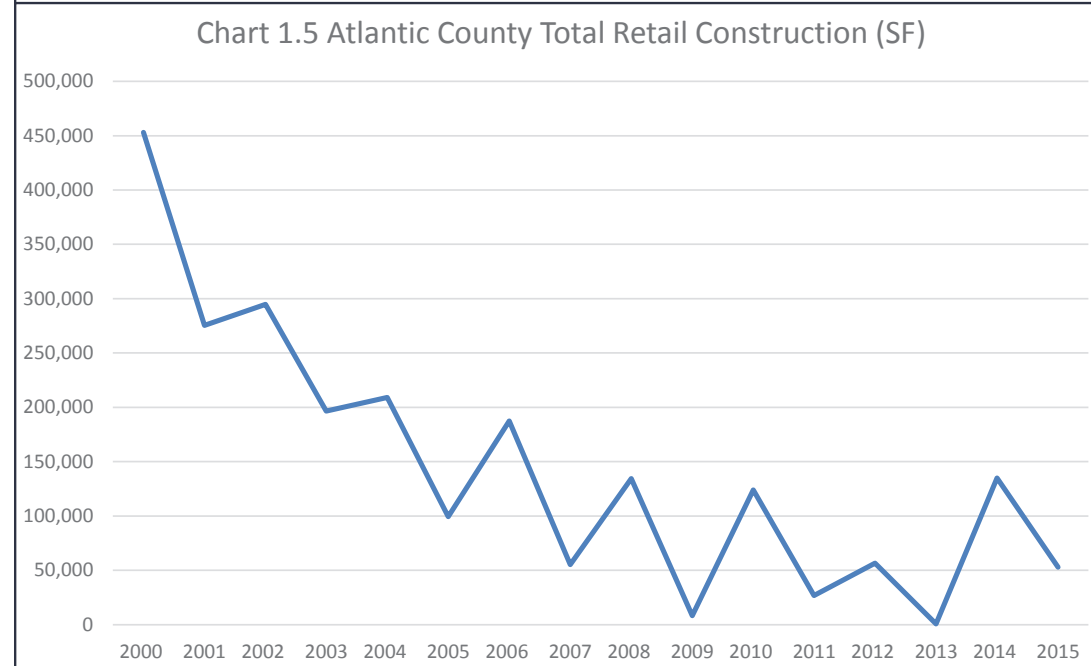
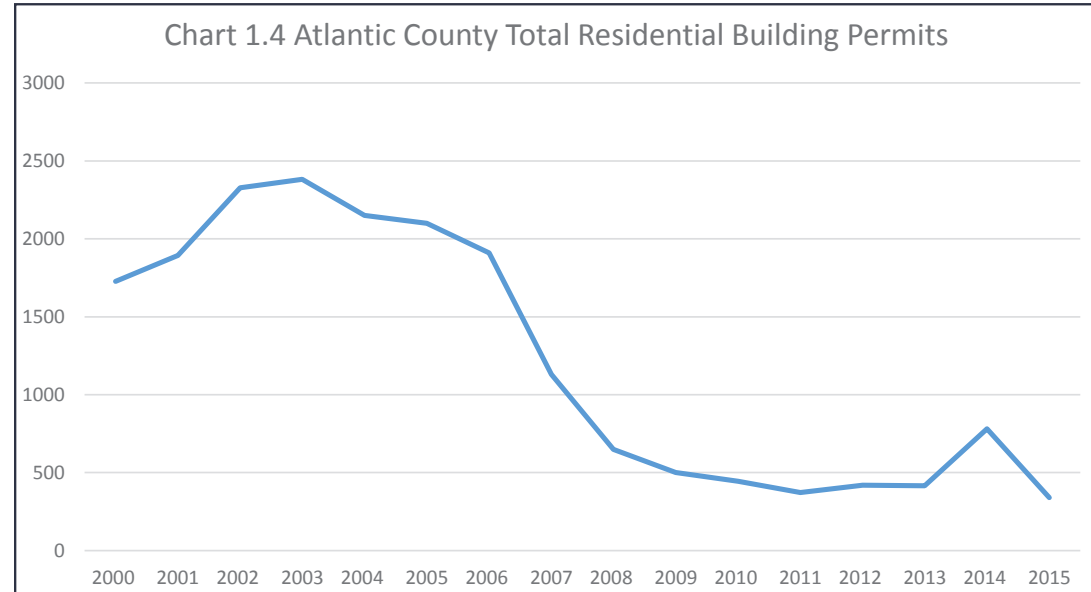
Somers Point City Zones	Acreage	Percentage
Commercial Zone	363.0	11.4%
Conservation/Recreation Zone	1,480.2	46.5%
Industrial	14.7	0.5%
Institutional Zone	13.9	0.4%
Multi-Family Residential	120.2	3.8%
Single & Two Family Zone	1,043.5	32.8%
Utilities	149.0	4.7%
Total	3,184.6	100.0%

Ventnor City Zones	Acreage	Percentage
Commercial Zone	68.1	4.2%
Conservation/Recreation Zone	806.3	49.4%
Multi-Family Residential	58.0	3.6%
Redevelopment Area	36.4	2.2%
Single & Two Family Zone	662.8	40.6%
Total	1,631.6	100.0%

Weymouth Township Zones	Acreage	Percentage
Commercial Zone	347.4	4.5%
Low Density Residential (Pinelands Forest/Preservation)	4,293.4	55.1%
Multi-Family Residential	160.0	2.1%
Single & Two Family Zone	2,985.8	38.3%
Total	7,786.7	100.0%



Underutilized stretch of land along White Horse Pike



Development Trends

Development in the County has slowed considerably since the mid-2000s. The number of residential building permits issued in the County peaked in 2003 and remained at a fairly steady and robust level until 2006 before plummeting with the onset of the Great Recession. The level of new residential construction has remained fairly steady since 2008 at about 20% of where it was during the peak years in the early 2000s. A moderate increase in 2014 looked like it could be a sign of recovery in the development market, but the 2015 numbers were the lowest of the past sixteen years, with only 353 housing units authorized by building permits county-wide (see Chart 1.4).

The retail construction market has shown a similar downward trend, although it has seen greater year-to-year volatility (see Chart 1.5). The office construction market has been stagnant for the last five years, and is well below the early- and mid- 2000s peaks that the County experienced (see Chart 1.6).

Brownfields & Redevelopment Opportunities

The New Jersey Local Redevelopment and Housing Law (N.J.S.A. 40A:12.A-1, et. Seq.) provides for a process by which municipalities can pursue redevelopment projects for areas within their boundaries that meet at least one of several statutory criteria. Redevelopment can be an important tool for communities in dealing with outdated and underutilized land. A number of municipalities in Atlantic County have designated areas within their boundaries as being in need of redevelopment, and have prepared and adopted redevelopment plans with the goal of restoring these properties to more productive uses.

It is often associated with the revitalization of urban areas and the repurposing of former industrial sites. Brownfields, sites that have experienced contamination due to commercial or industrial uses, can benefit from the redevelopment process, which allows municipalities or developers to access resources at the State level to assist with environmental remediation.

Table 1.12 displays the number of known contaminated sites within Atlantic County by municipality. Dealing with these sites, either through private remedial efforts, or municipally initiate redevelopment proceedings is an important land use process.

Table 1.13 shows the six active sites on the United States Environmental Protection Agency (EPA) National Priorities List, which are also known as Superfund Sites. These are sites that are particularly contaminated and may pose a risk to human health. The ongoing clean-up of these sites continues to be a priority nationwide. These sites may eventually lend themselves to redevelopment opportunities at some point in the future.

Table 1.12 Known Contaminated Sites

Municipality	Number of Known Contaminated Sites (KCS)
Absecon City	12
Atlantic City	140
Brigantine City	6
Buena Borough	17
Buena Vista Township	13
Corbin City	1
Egg Harbor City	15
Egg Harbor Township	36
Estell Manor City	2
Folsom Borough	4
Galloway Township	19
Hamilton Township	28
Hammonton Town	49
Linwood City	11
Longport Borough	5
Margate City	6
Mullica Township	13
Northfield City	12
Pleasantville City	23
Port Republic City	1
Somers Point City	14
Ventnor City	10
Weymouth Township	2
Total	439

Source: NJ DEP Data Miner

Redevelopment is not only used for urbanized or contaminated areas. The process can be applied in any setting provided the statutory criteria are applicable. Statutory redevelopment per the LRHL can provide flexibility in zoning and design to give a community close and detailed control over the development process. It can also offer incentives to developers and can be used to condemn property for acquisition. Municipalities should explore the options that redevelopment affords, but must keep in mind that the process is a balancing act and may not be appropriate in many situations.

The County does not play a direct role in designating an area as being in need of redevelopment, or in the creation of redevelopment plans. However, the County may be able to offer support to communities that are interested in evaluating the appropriateness of redevelopment.

Urban Enterprise Zone

The Pleasantville Urban Enterprise Zone (UEZ) encompasses the City’s main commercial corridors and neighborhoods. The UEZ program is a Statewide program that enables businesses to charge half the standard sales tax rate, offers a variety of small business loan options, and provides information and support to business owners. The program is currently being reevaluated by the State and its future is uncertain.

Educational Institutions

Atlantic County is home to several institutes of higher learning that provide a variety of educational programs and degree opportunities. These institutions are hubs for employment, and provide an opportunity for partnerships with other entities to provide targeted programs to produce well-trained and in demand professionals.

Stockton University

The Stockton University main campus is located in Galloway Township. The University offers a range of undergraduate and graduate degrees. Through expansions, partnerships, and the development of satellite campuses, the University has become an increasingly influential part of the County’s identity and future. Stockton University has expanded its footprint in recent years to include instructional sites in Hammonton and Manahawkin. Furthermore, the emerging Stockton Aviation Research and Technology Park collaboration with the FAA Technical Center, and the recently approved Atlantic City Island Campus will further expand the University’s scope and influence.

Atlantic Cape Community College

Atlantic Cape Community College offers two-year degrees in a variety of disciplines as well as the opportunity to earn four-year degrees on campus through partnerships with Stockton, Rutgers, and Fairleigh Dickinson Universities. ACCC serves students in both Atlantic and Cape May Counties. The main campuses are located in Mays Landing, Atlantic City and Cape May Court House.

Atlantic County Institute of Technology

ACIT is the most comprehensive technical education facility in Atlantic County. Situated on a 58-acre campus in the Hamilton Business Park in Mays Landing, the Vo-Tech is the school of choice for approximately 900 students, about 700 of which are high school students. The remainder of the population is comprised of post-secondary or adult students, most of whom have returned to school to seek a career change. The school also offers part-time classes for adults.

Education Technology Training Center (ETTC)

The ETTC provides K-12 teachers and school administrators with training opportunities on relevant subjects including the New Jersey Core Curriculum Content Standards, instructional technology, computer technologies, telecommunications and distance learning.

Rutgers Cooperative Extension Program

The Rutgers Cooperative Extension Program offers educational opportunities focused on issues and needs related to family and economic well-being, agriculture, the environment, natural resource management and youth development through various programs including 4-H, the Master Gardener Program, and the Blueberry Integrated Pest Management program.



Stockton University

Table 1.13 Superfund Sites

Superfund Sites	Municipality	Date Listed
D'Imperio Property	Hamilton Township	9/8/1983
Emmells Septic Landfill	Galloway Township	7/22/1993
FAA Technical Center	Egg Harbor & Galloway Townships	8/30/1990
Garden State Cleaners	Buena Borough	3/31/1986
Price Landfill #1	Egg Harbor Township & Pleasantville City	9/8/1983
South Jersey Clothing Company	Buena Borough	10/4/1989

Source: US Environmental Protection Agency

GOALS AND OBJECTIVES

The update to the County's Master Plan Elements considers the goals and objectives adopted in the previous County Master Plan prepared in 2000. Some of the 2000 goals continue to be relevant, while others have changed in the sixteen years since the release of the last plan. The current social, economic, and environmental context will inform a new set of goals and strategies.

The demographic and economic climate in the County have shifted substantially since 2000. In the years leading up to the 2000 Master Plan, the County was growing rapidly, and the economy, driven primarily by Atlantic City was booming. The ensuing years have seen a state- and nation-wide economic decline that continues to burden the County and the County has seen its population age and stagnate.

Most recently, the effects of Superstorm Sandy, coupled with the continuing trends of changing climate and weather patterns and rising sea levels have placed issues of resiliency and sustainability in the forefront of the planning discussion. The concepts of resiliency and sustainability have become important enough to be addressed in a distinct plan element, but these ideas permeate all aspects of planning, and thus are considered throughout the other plan elements as well.

Overall Planning Goals

- Incorporate principles of sustainability and resiliency into all aspects of County planning and policy development.
- Acknowledge the risks associated with climate change, sea level rise, and severe weather events, by applying lessons learned in the aftermath of Hurricane Irene, the Derecho of 2012, and Super Storm Sandy.
- Promote targeted growth and development in areas served by existing infrastructure outside flood prone areas, and encourage redevelopment of under-utilized urban, suburban, and rural sites.
- Coordinate County planning efforts with other entities including municipalities, improvement authorities, economic development agencies, and state agencies.
- Encourage the diversification of the County's economy and job creation by supporting business attraction and development initiatives.
- Promote the location of research and development businesses for mutual benefit of industry; job searchers and the colleges in Atlantic County.
- Capitalize on the Federal Aviation Administration (FAA) William J. Hughes Technical Center and its continued expansion as an asset for industry and job attraction.
- Support the County's status as a tourist destination with a wide array of natural amenities and communities of interest.

- Promote safe and efficient transportation systems for access to the County and within the County, including air, rail and motor vehicle systems.
- Preserve and make more efficient use of existing roadway capacities by encouraging sound land use planning and highway access control.
- Promote sustainable design, management, and education related to the use of potable water and the treatment of wastewater.
- Preserve and enhance the quality of the natural resources of the County.
- Preserve selected critical natural areas supporting endangered species and wildlife habitat.
- Protect farmland within the County and promote the continued economic viability of farming.
- Preserve the historic and cultural resources in the County.
- Advocate for the preservation and protection of important natural resources while working to reevaluate the capacity of growth areas and the scope of permitted uses and activities within the Pinelands.
- Collaborate with constituent municipalities and outside jurisdictional entities to streamline the development process to make the County a more attractive place for investment.
- Continue to expand the County Park System and the recreation opportunities and facilities available to County residents and visitors.

Land Use Goals and Objectives

- **Influence State and Regional master plans to support the land use goals of Atlantic County, particularly with regard to the Pinelands Comprehensive Management Plan.**
 - o The State Plan update has remained in draft form for a number of years. When the process of adopting the current draft, or making further revisions to the State Plan arises, the County should be involved to advocate for its interests, and the interests of its constituent municipalities.
 - o The existing State Plan remains a relevant document for planning matters. The County will continue to operate in a manner consistent with the goals and objectives of this policy document.
 - o The County should advocate for its constituents' interests as they relate to the Pinelands Comprehensive Management Plan. The CMP retains regulatory authority over a vast portion of the County's land use planning and decision making.
- **Promote quality growth and development in areas where capital facilities are available**
 - o The built communities in the barrier islands should pursue development and redevelopment in a sustainable manner that acknowledges sea level rise and storm related risks. Increases in impervious surface should be

limited, and existing infrastructure should be bolstered and enhanced in a resilient manner.

- o Development in the Back Bay Region features urbanized areas that may benefit from programs of rehabilitation, redevelopment, and reinvestment. The economic decline in Atlantic City has placed a burden on these communities.
- o The majority of the growth in the County remains targeted in the more suburban communities with Pinelands regional growth areas. The contrast between communities that are experiencing significant population growth, and those that are stagnant or declining is stark. These suburban areas are dealing with traffic congestion and other issues that accompany sustained periods of growth. Continued development needs to be mindful of existing infrastructure constraints, and targeted investment in new infrastructure should be undertaken carefully.
- o The rural portions of the County, particularly those within the Pinelands Preservation, Agricultural, and Forest Areas do not have infrastructure and other capital facilities in place to support growth. The expansion of such is unlikely to occur due to existing land use regulations. Minimal growth and development may occur in clustered housing developments, but preservation and conservation should continue to be the focus for these communities.
- o Building permit trends show that the recovery in the post-Recession new construction market has been slow.

- **Support efforts to revitalize neighborhoods and rehabilitate older housing stock**
 - o For new development, encourage attractive, modern designs that align with the goals and desires of the communities in which they are built.
 - o Take environmental concerns and issues of resiliency into account in areas prone to flooding or other natural hazards, particularly in the Barrier Island and Back Bay regions.
 - o Encourage mixed-use neighborhoods and buildings in areas where density and regulatory framework is appropriate to support this type of development.
 - o Promote a link between commercial and residential development to balance job creation / retention and the provision of new housing.
- **The County should encourage State legislators to continue the Urban Enterprise Zone Program throughout the state, which will benefit the City of Pleasantville by continuing to offer support to small businesses and promote economic development in the City.**



JFK Memorial Bridge, Longport



Brigantine



Longport Historical Society

- **Discourage growth in areas that require unplanned extension of capital facilities**
 - o Growth in areas that is not currently served by capital facilities is not economically sound considering the redevelopment opportunities present in the County for sites that are currently vacant, underutilized, or in disrepair.
 - o Targeting growth and development in areas that are already developed has the twin benefits of repurposing existing infrastructure and built environment, and preventing increased disturbance of open lands and environmentally sensitive areas.
 - o The expansion of infrastructure and development in environmentally sensitive areas is restricted in the Rural Region of the County by Pinelands regulations. In the Barrier Islands and Back Bay Regions of the County the flood hazard area and CAFRA Zone regulate development. Development should be targeted in areas where infrastructure is already in place, and where environmental impacts will be limited or mitigated.

- **Promote lands for a diversity of economic development opportunities within the communities of Atlantic County**
 - o Capitalize on existing developments and opportunities to promote compatible land uses and development types.
 - o The FAA William J. Hughes Technical Center and Atlantic City International Airport present the opportunity to form a new hub of economic activity in the County. The County should encourage land uses in their vicinity with connections to appropriate infrastructure that can complement or expand the economic potential in emerging industries.
 - o The County should encourage the State legislature and governor to act on the bill expanding the NJ EDA innovation zones program to encompass the FAA Technical Center area and Stockton University.

- **Encourage the repurposing of existing infrastructure and a redefinition of economic activity in Atlantic City and the surrounding communities.**
 - o The casino and resort infrastructure in Atlantic City represents a substantial challenge and opportunity in the Barrier Island Region, and for the County as a whole.
 - o Support efforts by Stockton University, and other entities, to bring new industry and growth opportunities to Atlantic City

- **Promote a mix of housing types to support the demands of a changing population**
 - o The median age of the population in the County is getting older. As a result, there may be increased demand for smaller residences or age-restricted housing.
 - o Encourage municipalities to provide increased flexibility in residential

- o zoning where appropriate to meet consumer demand.
- o Support municipalities in their efforts to provide affordable housing, and continue to support the Atlantic County Improvement Authority's home rehabilitation program.

Region Specific Land Use Goals & Objectives

- **Barrier Island Region**
 - o Ensure that all rehabilitation and new construction occurs in a sustainable and resilient manner that accounts for sea level rise, nuisance flooding, and potential flooding and storm events
 - o Encourage the protection, preservation, and enhancement of natural features such as dunes and wetlands that provide capacity to mitigate flooding events
 - o Promote redevelopment and repurposing of underutilized or obsolete buildings, sites, and infrastructure
 - o Consider buyouts and removal of development in areas that are prone to repeated hazard related loss, or areas that could benefit from wetlands restoration to enhance storm water capacity
 - o Attempt to diversify the economic base of the area while continuing to promote and redefine the tourism, convention, and casino based economy that exists

- **Back Bay Region**
 - o Promote economic development
 - o Ensure that current and future development takes present and future flood hazard risk into account
 - o Capitalize on existing density and encourage infill development and redevelopment to promote connections between land use and transportation infrastructure

- **Suburban Region**
 - o Encourage infill development and enhancing density in areas where additional capacity exists
 - o Pursue revitalization and redevelopment of highway corridors and underutilized retail and office centers
 - o Continue to develop centers of economic activity, particularly around the Atlantic City Airport, FAA Technical Center, and Stockton University
 - o Capitalize on existing built infrastructure before extending development

- **Rural Region**
 - o Continue to preserve farmland
 - o Support agriculture as an industry

- o Preserve and protect delicate and valuable environmental resources
- o Concentrate development in centers
- o Avoid extending infrastructure as much as possible

Strategic Action Plan

Table 1.14 Strategic Action Plan Implementation

Action	Short-Term	Mid-Term	Long-Term
Advocate for County and Municipal Planning Interests in the Development and Revision of Regional Plans and State Plans	X	X	X
Coordinate Land Use Planning and Capital Improvement Planning		X	X
Encourage Growth and Development where Infrastructure Capacity Currently Exists		X	X
Promote Preservation and Protection of Environmentally Sensitive Features	X	X	X
Encourage Municipalities to Pursue Redevelopment and Rehabilitation Projects Where Appropriate	X	X	
Collaborate with the FAA and Atlantic City International Airport to Promote Compatible Land Uses and Capital Improvement Investments	X	X	
Advocate for Sensible Housing Policy and Promote an Appropriate Mixture of Housing Types	X	X	X
Support Atlantic City's Efforts to Reinvent its Economic Base	X		
Consider Needs of Aging Population and Provide Appropriate Services and Housing Opportunities		X	X
Adopt Land Development Standards that Require Enhanced Resiliency Measures in Coastal Zones and Flood Hazard Areas	X		



II. *Housing Element*



INTRODUCTION

In the case of Southern Burlington County NAACP v. the Township of Mount Laurel, (commonly known as Mount Laurel I), the New Jersey Supreme Court established the doctrine that developing municipalities in New Jersey have a constitutional obligation to provide a realistic opportunity for the construction of low and moderate income housing in their communities. In its Mount Laurel decision, decided on January 20, 1983 (Mount Laurel II), the Supreme Court expanded the Mount Laurel doctrine by unilaterally determining that this constitutional responsibility extended to all municipalities in New Jersey.

In response to the Mount Laurel II decision, the New Jersey Legislature adopted the Fair Housing Act in 1985 (Chapter 222, Laws of New Jersey, 1985). The Fair Housing Act established the Council on Affordable Housing (COAH) as an administrative alternative to the courts. COAH was given the responsibility of dividing the state into housing regions, determining regional and municipal fair share affordable housing obligations, and adopting regulations that would establish the guidelines and approaches that municipalities may use in addressing their affordable housing need.

Low income households are defined as those with incomes no greater than 50 percent of the median household income, adjusted for household size, of the housing region in which a municipality is located. Moderate-income households are those with incomes no greater than 80 percent and no less than 50 percent of the median household income, adjusted for household size, of the housing region.

Municipalities were mandated to be responsible for preparing Housing Elements and Fair Share Plans, following the New Jersey Supreme Court Decision decided on March 10, 2015, In re Adoption of N.J.A.C. 5:96 & 5:97 by the N.J. Council on Affordable Housing, 221 N.J. 1 (2015) (“Mount Laurel IV”). In this decision, the Supreme Court held that since COAH was no longer functioning, trial courts were to resume their role as the forum of first instance for evaluating municipal compliance with Mount Laurel obligations, and also established a transitional process for municipalities to seek a Judgment of Compliance and Repose (“JOR”) in lieu of Substantive Certification from COAH.



This affordable housing element updates the 2000 County Master Plan with up to date information about housing and demographics and the current inventory of affordable housing units. This includes data from the US Census Bureau’s Decennial Census, and American Community Survey (ACS) five-year estimates, and other official sources. Throughout the state, municipalities are in the process of determining their status with the Courts, and much uncertainty remains as various parties debate the methodology for determining obligations. This Element is informational in purpose, as the County does not have a direct role in the provision of affordable housing.

COUNTY SUMMARY

Atlantic County comprises 23 municipalities within an area of approximately 561 square miles. The County is bordered to the north by Ocean and Burlington Counties, to the west by Camden, Gloucester, and Cumberland Counties, to the south by Cape May County, and to the east by the Atlantic Ocean. The Mullica River forms the northern border of the County and the Great Egg Harbor and Tuckahoe Rivers form the southern border. The eastern part of the County is defined by barrier island communities and tidal lagoons, while the central and western parts of the County are within the Pinelands National Preserve, vast portions of which are preserved open space and agrarian in nature.

According to the 2010 Census, Atlantic County’s population was 274,549, which represents an increase of 8.7 percent from 2000. The US Census Bureau 2010-2014 American Community Survey estimates a 2014 total population of 275,209. The median age in 2010 was 40.5 years, up from 37 years in 2000, and the average household size increased slightly from the 2000 level of 2.59 persons to 2.61 persons in 2010.

The housing stock of the County is approximately 58 percent single-family detached dwelling units, 8 percent single-family attached dwelling units, and 34 percent multi-family or mobile home units.

The age of housing units in the County is widely distributed, with about 14 percent having been built before 1940, and between 12 and 15 percent having been built each decade from the 1950s through the 1980s. According to the guidelines established by COAH, the County is located in Housing Region 6, a region that consists of Atlantic, Cape May, Cumberland and Salem counties. Based on the 2014 COAH Regional Income Limits, the median income in Region 6 for a four-person household is \$79,979, the moderate-income is \$58,383, and the low-income is \$36,490.

DEMOGRAPHIC CHARACTERISTICS

Population

Population trends in Atlantic County have tended to move at different rates from that of the State as a whole from decade to decade; however, the overall growth from 1930 to 2014 is nearly identical by percentage. As seen in Table 2.1, the rate of growth in the County is slowing since 2000, as it is in the State.

Population Composition by Age

The median age of residents in Atlantic County has increased from 37 to 40.5 years between 2000 and 2010 (Table 2.2). The most rapidly growing segments of the population are the 45 to 54 and 55 to 64 age cohorts. The population of children has declined, as the 0 to 5 age cohort has been steady and the 5 to 14 cohort has declined, and the 25-44 cohorts have seen a marked decline as well – both in raw numbers and in percentage of the population. The data appears to show a trend that fewer people are starting families in Atlantic County, which does not bode well for long-term growth prospects. The aging populace of the County will also play a role in determining the type of housing stock that is most desirable, and will influence the demand for community facilities and certain industries and services, particularly in the health care sector.

Households

A household is defined as one or more persons, either related or not, living together in a housing unit. In 2010, there was a total of 102,847 households in Atlantic County. The County features a mix of household sizes in a breakdown that is fairly similar to that of the state as a whole (Table 2.3). The County has a slightly higher percentage of one and two person households and a slightly lower percentage of larger households, with an overall average size of 2.61 persons compared to 2.68 persons at the state level.

Table 2.1 Population Trends 1930 - 2014

Year	Atlantic County			New Jersey		
	Population	Change		Population	Change	
		Number	Percentage		Number	Percentage
1930	124,823	-	-	4,041,334	-	-
1940	124,066	-757	-0.6%	4,160,165	118,831	2.9%
1950	132,399	8,333	6.7%	4,835,329	675,164	16.2%
1960	160,880	28,481	21.5%	6,066,782	1,231,453	25.5%
1970	175,043	14,163	8.8%	7,171,112	1,104,330	18.2%
1980	194,119	19,076	10.9%	7,365,011	193,899	2.7%
1990	224,327	30,208	15.6%	7,730,188	365,177	5.0%
2000	252,552	28,225	12.6%	8,414,350	684,162	8.9%
2010	274,549	21,997	8.7%	8,791,894	377,544	4.5%
2010-2014	275,209	660	0.2%	8,938,175	146,281	1.7%
1930-2014	-	150,386	120.5%	-	4,896,841	121.2%

Source: U.S. Census Bureau, 2010-2014 ACS 5-Year Estimates

Table 2.2 Population by Age 2000 and 2010, Atlantic County

Population	2000		2010		Change, 2000 to 2010	
	Number	Percentage	Number	Percentage	Number	Percentage
Total population	252,552	100.0%	274,549	100.0%	21,997	8.7%
Under 5 years	16,483	6.5%	16,484	6.0%	1	0.0%
5 to 14	37,479	14.8%	35,388	12.9%	-2,091	-5.6%
15 to 24	30,260	12.0%	37,505	13.7%	7,245	23.9%
25 to 34	33,626	13.3%	31,243	11.4%	-2,383	-7.1%
35 to 44	43,706	17.3%	36,306	13.2%	-7,400	-16.9%
45 to 54	33,872	13.4%	44,620	16.3%	10,748	31.7%
55 to 64	22,689	9.0%	34,101	12.4%	11,412	50.3%
65 and over	34,437	13.6%	38,902	14.2%	4,465	13.0%
Median Age	37		40.5		-	-

Source: US Census Bureau 2000 & 2010

Table 2.3 Household Size- Occupied Housing Units - 2010
Atlantic County and State of New Jersey

	County		State	
	Number	Percent	Number	Percent
Total Households	102,847	100.0%	3,214,360	100.0%
1-person household	27,622	26.9%	811,221	25.2%
2-person household	32,067	31.2%	957,682	29.8%
3-person household	16,862	16.4%	558,029	17.4%
4-person household	14,479	14.1%	506,107	15.7%
5-person household	6,925	6.7%	231,727	7.2%
6-person household	2,787	2.7%	87,444	2.7%
7-or-more-person household	2,105	2.0%	62,150	1.9%
Average Household Size	2.61		2.68	

Source: US Census Bureau 2010

Family households are defined as two or more persons living in the same household, related by blood, marriage, or adoption. They do not include same-sex married couples. As detailed in Table 2.4, about two-thirds of the households in the County were family households in 2010. Of these, about two-thirds were married-couple families, but only 41.3 percent of those had children under the age of 18. Nearly 27 percent of the households were one-person households, 43.4 percent of which were male householders, and 56.6 percent of which were female householders.

The 2010 Census also provides data about sub-groups of households “Other Family” and “Non-Family” households. Of the “Other Family” households, 73 percent were female households with no husband present, of which 53 percent had children under 18, while 27 percent were male households with no wife present, of which 47.2 percent had children under 18. “Non-family” households are defined as households that consist of a householder living alone or sharing the home exclusively with people to whom he is not related. “Non-Family” households comprised approximately 6.3 percent of households in the County.

Table 2.4 Household Size and Type, 2010
Atlantic County

	Total	Percent
Total Households	102,847	100.0%
1 person household	27,622	26.9%
Male householder	11,975	43.4%
Female householder	15,647	56.6%
2 or more person household	75,225	73.1%
Family households	68,738	66.8%
Married Couple Family	46,885	68.2%
With own children under 18 years	19,356	41.3%
No children under 18 years	27,529	58.7%
Other Family	21,853	21.1%
Male householder, no wife present	5,901	27.0%
With own children under 18 years	2,786	47.2%
No own children under 18 years	3,115	52.8%
Female householder, no husband present	15,952	73.0%
With own children under 18 years	8,456	53.0%
No own children under 18 years	7,496	47.0%
Nonfamily Households	6,487	6.3%
Male householder	3,740	57.7%
Female householder	2,747	42.3%
Average Family Size	3.17	

Source: US Census Bureau 2010

Table 2.5 Per Capita and Household Income

	2014 Per Capita Income	2014 Median Household Income
Atlantic County	\$27,411	\$54,392
New Jersey	\$36,359	\$72,062

Source: 2010-2014 American Community Survey 5-year Estimates

Income

As measured in 2014, Atlantic County had a significantly lower per-capita and median household income compared to the State of New Jersey. In 2014, the median household income in Atlantic County was \$54,392, approximately \$17,700 less than the State’s median income (Table 2.5).

In 2014, 46.3 percent of households earned under \$50,000 per year, while 18.6 percent of households earned \$50,000 to \$74,999. The remaining 35.2 percent of households earned more than \$75,000. Of those, 12 percent earned between \$75,000 and \$99,999, 13.7 percent earned \$100,000 to \$149,999 and 9.5 percent earned \$150,000 or more (Table 2.6).

Table 2.6 Household Income
Atlantic County, 2014

	Atlantic County	
	Number	Percentage
Total Households	101,166	100.0%
Less than \$10,000	7,440	7.4%
\$10,000 to \$14,999	4,858	4.8%
\$15,000 to \$24,999	10,632	10.5%
\$25,000 to \$34,999	10,341	10.2%
\$35,000 to \$49,999	13,541	13.4%
\$50,000 to \$74,999	18,790	18.6%
\$75,000 to \$99,999	12,143	12.0%
\$100,000 to \$149,999	13,866	13.7%
\$150,000 to \$199,999	5,255	5.2%
\$200,000 or more	4,300	4.3%
Median Household Income	\$54,392	

Source: 2010-2014 American Community Survey 5-year Estimates

Poverty Status

Of the 268,775 persons in Atlantic County in 2014 for whom poverty status was determined, 40,852, or 15.2 percent, lived in poverty. The distribution of impoverished residents by age group is nearly identical to that of the State as a whole. However, Atlantic County's poverty rate is about one and a half times that of the state (15.2 percent vs. 10.7 percent). See Table 2.7.

Table 2.7 Poverty Status
Atlantic County and New Jersey, 2014

	Atlantic County		New Jersey	
	Number	Percent	Number	Percent
Total persons	268,775	-	8,699,566	-
Total persons below poverty level	40,852	15.2%	934,665	10.7%
Under 18	13,910	34.0%	309,904	33.2%
18 to 64	23,267	57.0%	528,921	56.6%
65 and over	3,675	9.0%	95,840	10.3%

Source: 2010-2014 American Community Survey 5-Year Estimate

Household Costs

Tables 2.8 and 2.9 show the monthly resident expenditures for housing costs as a percentage of income for those who own and rent housing in Atlantic County. Slightly more than two-thirds of occupied housing units in the County are owner-occupied (68,479) while slightly less than a third are renter-occupied (30,705). General affordability standards set a limit of 30 percent of gross income to be allocated for owner-occupied housing costs and 28 percent of gross income to be allocated for renter-occupied housing costs. By this measure, nearly 43 percent of homeowners in Atlantic County are cost-burdened, while nearly 61 percent of renters are cost-burdened.

These percentages of cost-burdened households are both higher than their statewide counterparts. Affordability of housing is a key issue in Atlantic County.

Table 2.8 Selected Monthly Owner Costs as a Percentage of Household Income, 2014

	Atlantic County		New Jersey	
	Number	Percentage	Number	Percentage
Total Owner-Occupied Housing Units	68,479	100.0%	2,073,915	100.0%
Less than 15%	13,267	19.4%	193,462	9.3%
15 to 19%	8,719	12.7%	296,612	14.3%
20 to 24%	9,358	13.7%	288,074	13.9%
25 to 29%	6,818	10.0%	229,446	11.1%
30 to 34%	5,661	8.3%	173,784	8.4%
35% or more	24,208	35.4%	631,051	30.4%
Not computed	448	0.7%	11,849	0.6%

Source: 2010-2014 American Community Survey 5-Year Estimates

Table 2.9 Gross Rent as a Percentage of Household Income 2014

	Atlantic County		New Jersey	
	Number	Percentage	Number	Percentage
Total Renter-Occupied Housing Units	30,705	100.0%	1,054,586	100.0%
Less than 15%	2,391	7.8%	116,845	11.1%
15 to 19%	2,590	8.4%	122,743	11.6%
20 to 24%	3,817	12.4%	128,837	12.2%
25 to 29%	3,280	10.7%	117,439	11.1%
30 to 34%	3,131	10.2%	94,217	8.9%
35% or more	15,496	50.5%	474,505	45.0%
Not computed	1,982	6.5%	59,997	5.7%

Source: 2010-2014 American Community Survey 5-Year Estimates

EXISTING HOUSING CONDITIONS

Housing Unit Data

As depicted in Table 2.10, the age of Atlantic County's housing stock is diverse. Since 1940, no decade has seen construction that accounts for more than 16 percent of the current housing stock. The 70s and 80s saw relatively higher levels of construction, while the 1990s saw the lowest amount of housing built since the 1940s. The first half of the 2000s saw a surge in construction, mirroring the national trend, while the latter half of that decade through the present has seen a dramatic drop-off and stagnation in the construction market. A small uptick of permits issued for housing units in 2014 was followed by a decline in 2015 to the lowest level of the past sixteen years (see Table 2.11). Considering the general stagnation in the residential construction industry represented by the number of building permits issued, it is no surprise that the median year of construction for the housing stock in Atlantic County is 1973.

Occupancy patterns within the County are influenced by the seasonal and recreational nature of many dwelling units in the barrier island beach communities. According to the 2010 Census, approximately eighty-one percent of housing units in the County were occupied. Of the 23,800 units that were considered vacant, 15,231 (64 percent) were seasonal, recreation, or occasional use units. Communities with a preponderance of seasonal homes face a unique set of planning needs and a demand for services that ebbs and flows during the course of the year. Additionally, many of the communities with the highest proportion of these seasonal housing units were in the areas most substantially affected by Superstorm Sandy.

The primarily residential barrier island communities of Longport (67.6 percent), Margate (50.8 percent), Brigantine (45.9 percent), and Ventnor (33 percent) all have significant portions of their housing stock devoted to seasonal, recreation, or occasional use. The preponderance of seasonal second homes and rental properties in the barrier island communities plays a role in the planning and decision making process for these locales. These trends can be seen in Table 2.12.

Housing Type and Size

Approximately two-thirds (65.4 percent) of the housing stock in Atlantic County is single-family attached or detached homes. The remainder is in multi-family structures that vary in size. The largest single cohort of multi-family units displayed in the ACS data is structures that contain 50 or more units. Finally, mobile homes accounted for 3,230 (2.5 percent) units (see Table 2.13).

The median number of rooms within housing structures is 5.6, with the largest percentage of structures having five or six rooms (see Table 2.13).

Table 2.10 Year Structure Built Atlantic County, NJ

	Total Housing Units	Percentage of Total Housing Units
Built 1939 or earlier	18,083	14.2%
Built 1940 to 1949	6,887	5.4%
Built 1950 to 1959	15,579	12.3%
Built 1960 to 1969	16,795	13.2%
Built 1970 to 1979	19,880	15.6%
Built 1980 to 1989	20,050	15.8%
Built 1990 to 1999	12,315	9.7%
Built 2000 to 2009	16,567	13.0%
Built 2010 or later	948	0.7%
Total	127,104	100.0%
Median Year Structure Built	1973	

Source: 2010-2014 American Community Survey 5-Year Estimates

Table 2.11 Housing Units Authorized by Building Permits: 2000 – 2015 Atlantic County

Year	1 & 2 Family	Multi Family	Mixed-Use	Total
2000	-	-	-	1,727
2001	-	-	-	1,894
2002	-	-	-	2,328
2003	-	-	-	2,382
2004	2,068	52	30	2,150
2005	1,933	155	11	2,099
2006	1,611	289	10	1,910
2007	1,037	85	8	1,130
2008	575	46	29	650
2009	431	66	3	500
2010	366	76	2	444
2011	361	0	11	372
2012	403	12	5	420
2013	392	17	6	415
2014	419	361	2	782
2015	344	4	5	353

Source: NJ Department of Community Affairs Construction Reporter

Table 2.12 Housing Data Atlantic County, 2010

	Number	Percentage
Total Housing Units	126,647	100.0%
Occupied Housing Units	102,847	81.2%
Owner Occupied	70,156	68.2%
Renter Occupied	32,691	31.8%
Vacant Housing Units	23,800	18.8%
For Rent/Rented Not Occupied	3,649	15.3%
For Sale Only	1,837	7.7%
For Seasonal, Recreational or Occasional Use	15,231	64.0%
Other Vacant	2,717	11.4%

Source: 2010 Census

Table 2.13 Housing Type and Size Atlantic County, 2014

Units in Structure	Total	Percentage
Total	127,104	100.0%
1, detached	73,231	57.6%
1, attached	9,937	7.8%
2	8,373	6.6%
3 or 4	5,289	4.2%
5 to 9	7,359	5.8%
10 to 19	6,424	5.1%
20 to 49	3,193	2.5%
50 or more	10,068	7.9%
Mobile home	3,230	2.5%
Boat, RV, van, etc.	0	0.0%

Source: 2010-2014 ACS 5-Year Estimates

Rooms	Total	Percentage
1 room	3,422	2.7%
2 rooms	2,921	2.3%
3 rooms	11,750	9.2%
4 rooms	19,168	15.1%
5 rooms	23,142	18.2%
6 rooms	24,350	19.2%
7 rooms	16,113	12.7%
8 rooms	12,051	9.5%
9 or more rooms	14,187	11.2%
Median number of rooms	5.6	

Source: 2010-2014 ACS 5-Year Estimates

Housing Values and Contract Rents

The median value of owner-occupied housing units in Atlantic County according to the 2010-2014 ACS data was \$230,200 compared to \$319,900 for the State as a whole. The value of housing in Atlantic County is significantly lower than the Statewide median. A far greater proportion of homes in Atlantic County are valued between \$100,000 and \$299,999 than throughout the State. Over 50 percent of homes in New Jersey are valued at \$300,000 or greater, while less than 30 percent of the homes in Atlantic County are valued at or above that amount (see Table 2.14).

The percentage of units with mortgages and multiple mortgages is similar in Atlantic County to the statewide number. According to the ACS data, 68.6 percent of homes in Atlantic County have a mortgage, while 69.8 percent of homes do throughout the state as a whole (see Table 2.15).

The cost of housing in Atlantic County is also lower than the State average for renters. As shown in Table 2.16, the median contract rent in the County is \$893 while the Statewide number is \$1,046. In both instances the most common rent cohort is between \$1,000 and \$1,499; however, Atlantic County has a far lower percentage of units above \$1500 and a far higher percentage below \$1,000 than the State as a whole.

Median contract rent of \$893 per month amounts to \$10,716 annually. Based on the assumption that housing expenses are affordable if they amount to 30 percent of household income, a minimum annual income of \$35,720 would be necessary to afford the median contract rent. Approximately 33 percent of households within Atlantic County would be cost burdened if they lived in a residence whose rent is at or above the median contract rent.

Housing Conditions

The Housing Conditions data from the American Community Survey is used to identify the number of units within the County that qualify as substandard for the purposes of calculating affordable housing obligations. Substandard units are defined as those lacking adequate kitchen facilities, lacking adequate plumbing, or being occupied by more than one person per room.

The 2014 5-year ACS data (seen in Table 2.17) shows that approximately three percent of units in Atlantic County are overcrowded, just under one percent lack adequate kitchens, and just under one percent lack adequate plumbing.

Table 2.14 Value for Owner-Occupied Housing Units

	Atlantic County		New Jersey	
	Number	Percentage	Number	Percentage
Total	68,479	100.0%	2,073,915	100.0%
Less than \$50,000	2,839	4.1%	60,078	2.9%
\$50,000 to \$99,999	3,821	5.6%	62,688	3.0%
\$100,000 to \$149,999	7,350	10.7%	115,101	5.5%
\$150,000 to \$199,999	12,840	18.8%	205,780	9.9%
\$200,000 to \$299,999	22,559	32.9%	504,321	24.3%
\$300,000 to \$399,999	10,042	14.7%	446,700	21.5%
\$400,000 to \$499,999	3,187	4.7%	263,230	12.7%
\$500,000 and greater	5,841	8.5%	416,017	20.1%
Median Value	\$230,200		\$319,900	

Source: 2010-2014 American Community Survey 5-Year Estimates

Table 2.15: Mortgage Status

	Atlantic County		New Jersey	
	Number	Percentage	Number	Percentage
Housing units with a mortgage, contract to purchase, or similar debt:	68,479	100.0%	2,073,915	100.0%
With either a second mortgage or home equity loan, but not both:	46,978	68.6%	1,448,250	69.8%
Second mortgage only	3,821	5.6%	62,688	3.0%
Home equity loan only	8,884	13.0%	310,834	15.0%
Both second mortgage and home equity loan	1,695	2.5%	49,627	2.4%
No second mortgage and no home equity loan	7,189	10.5%	261,207	12.6%
Housing units without a mortgage	359	0.5%	12,599	0.6%
	37,735	55.1%	1,124,817	54.2%
	21,501	31.4%	625,665	30.2%

Source: 2010-2014 American Community Survey 5-Year Estimates

Table 2.16 Contract Rent

	Atlantic County		New Jersey	
	Number	Percentage	Number	Percentage
Total Renter Occupied Units	32,687	100.0%	1,114,583	100.0%
Less than \$200	1,895	5.8%	34,967	3.1%
\$200 to \$499	3,416	10.5%	75,303	6.8%
\$500 to \$699	3,430	10.5%	76,776	6.9%
\$700 to \$899	7,150	21.9%	186,889	16.8%
\$900 to \$999	3,767	11.5%	117,954	10.6%
\$1,000 to \$1,499	9,555	29.2%	397,714	35.7%
\$1,500 to \$1,999	1,619	5.0%	120,626	10.8%
\$2,000 or more	412	1.3%	67,234	6.0%
No cash rent	1,443	4.4%	37,120	3.3%
Median Contract Rent	\$893		\$1,046	

Source: 2010-2014 American Community Survey 5-Year Estimates

Table 2.17 Housing Conditions Atlantic County, 2014

	Number	Percentage
House Heating Fuel-Occupied Housing Units		
Total	101,166	100.0%
Utility gas	70,108	69.3%
Bottled, tank, or LP gas	2,806	2.8%
Electricity	15,565	15.4%
Fuel oil, kerosene, etc.	10,228	10.1%
Coal or coke	36	0.0%
Wood	1,281	1.3%
Solar energy	78	0.1%
Other fuel	448	0.4%
No fuel used	616	0.6%
Occupants per Room- Occupied Housing Units		
Total	101,166	100.0%
Owner-Occupied (Over 1.0)	973	1.0%
Renter-Occupied (Over 1.0)	2,253	2.2%
Facilities-Total Units		
Total	101,166	100.0%
Lacking complete plumbing facilities	686	0.7%
Lacking complete kitchen facilities	917	0.9%
Telephone Service- Occupied Housing Units		
Total	101,166	100.0%
No Service	3,193	3.2%

Source: 2010-2014 ACS 5-Year Estimates

ACCREDITED AFFORDABLE UNITS

A list of affordable housing developments and programs that provide affordable housing within Atlantic County are listed in Table 2.18. This information is taken from the New Jersey Department of Community Affairs website, and lists the number of affordable units, qualifying structural rehabilitations, and housing vouchers in each Municipality within the County. The table also indicates whether the units are age-restricted, for families, or serving special populations as group homes. Finally, the Table indicates the program through which the unit was funded or created. There are a variety of different programs at the State and Federal level that have contributed to the creation of affordable housing stock in the County.

Federal Affordable Housing Programs

Public Housing units are built and run by public housing agencies through grants administered by the US Department of Housing and Urban Development (HUD). Atlantic County has three public housing authorities: Atlantic City Housing Authority (ACHA), Buena Housing Authority, and Pleasantville Housing Authority. Each of these entities administers public housing developments, and the ACHA and Pleasantville Housing Authority also administer rental voucher programs.

Section 8 housing assistance comes in two forms. The first is project-based grants that are tied to specific units. The other is rental assistance vouchers that move with people as they move.

Tax Credits are provided by the federal government to developers in exchange for the development of affordable units as a portion of a multi-family housing project.

Section 221 / 236 are federal programs that have been discontinued, but units constructed with these funding sources remain in the affordable housing stock.

Section 202 is a Federal program that provides affordable apartments to senior citizens aged 62 and older.

Section 811 is a Federal program that provides affordable apartments to people with disabilities.

HOME is a federal grant program that provides funds for rental assistance, construction, rehabilitation, and first-time homebuyer assistance. Households with incomes at or below 60% of median county income are eligible.

Farm Home is a federal grant program administered by the US Department of Agriculture (USDA) to build affordable apartments in rural locations.

State Affordable Housing Programs

The New Jersey Housing and Mortgage Finance Agency (HMFA) provides various types of housing assistance including aid for the construction of affordable housing units.

New Jersey's Balanced Housing Program supports repairs and renovations of existing housing and construction and conversion of new affordable units. This program also produces units that are affordable to low- and moderate-income households that may be for sale or for rent.

Mount Laurel (MtL) Housing refers to different kinds of housing units. These units may include federally or state funded projects, or may be units in inclusionary developments built with minimal or no public subsidy.⁴

4. New Jersey Department of Community Affairs, Guide to Affordable Housing in New Jersey, revised April 01, 2016. <http://www.state.nj.us/dca/divisions/codes/publications/guide.html>

ATLANTIC COUNTY IMPROVEMENT AUTHORITY

The Atlantic County Improvement Authority (ACIA) administers a Housing Rehabilitation Program using funding from the Federal Community Development Block Grant program. The rehabilitation program is designed to provide assistance for very low- and low-income home owners in the form of low-interest, deferred loans. These loans can be used for basic, essential home components including plumbing, roofing, heating, electrical work, and exterior repairs.

This program prevents housing stock owned by low and very low income families from falling into, or remaining in a deficient state. Assistance provided through this program contributes to affordability, and generally bolsters the quality of the County's housing stock.

CONCLUSION

Affordable housing remains an issue in Atlantic County, as it does throughout the entire State of New Jersey. Census data shows that housing values are lower in Atlantic County than they are throughout much of the state. However, median income levels are also lower, with the end result being that a greater percentage of residents of Atlantic County are burdened by their housing costs than the statewide average.

The County does not have a direct role in the provision of affordable housing units, but the housing rehabilitation program run by the Atlantic County Improvement Authority does assist low income households with affordability and helps maintain a portion of the County's aging housing stock.



Pleasantville housing authority

Table 2.18 Affordable Housing Developments and Programs, Atlantic County

Development / AKA	Type	Tenure	# of Units	Program
Absecon Township				
Caring Inc. Group Home 2008	Special	Rent	8	Section 202 / 811
Caring Inc. Group Home 2010	Special	Rent		Section 202 / 811
Atlantic City				
Atlantic City Housing Authority	Family	Rent	946	Section 8 Vouchers
334 N Tennessee	Family	Rent	8	HOME
46 N Connecticut Avenue	Family	Rent	13	Tax Credit
Altman Terrace	Age-Restricted	Rent	190	Public Housing
Atlantic City consumer group home	Special	Rent	3	Section 202 / 811
Atlantic City Hope 6 Homeownership	Family	Own	18	Hope 6 Homeownership
Atlantic City Townhouse	Age-Restricted	Rent	175	HMFA / Section 8
Atlantic Marina	Age-Restricted	Rent	295	HMFA / Tax Credit
Atlantic Villas	Family	Rent	121	Section 236
Baltic Plaza	Age-Restricted	Rent	168	HMFA / Tax Credit
Barclay Arms	Family	Rent	75	Section 221
Barlervis Apartments	Family	Rent	68	Section 236
Brigantine Homes	Family	Rent	160	HMFA / Section 8
Bright's Villa North	Family	Rent	32	Section 221
Bright's Villa South	Family	Rent	35	Section 221
Charles P. Jeffries Tower	Age-Restricted	Rent	300	Public Housing
Carver Hall Apartments	Family	Rent	251	Section 223
Community Haven Senior Apartments	Age-Restricted	Rent	267	HMFA / Section 236
Elliott House Senior Apartments	Age-Restricted	Rent	104	Section 202 / 811
Garden Court Apartments / McKinley	Family	Rent	177	HMFA
Harbor Point scattered sites	Family	Rent	42	Balanced Housing
The High Gate Apartments / Marina Apartments	Family	Rent	161	Tax Credit
Holmes Village Extension	Family	Rent	164	Public Housing
Inlet Towers	Age-Restricted	Rent	156	Public Housing
John P. Whittington Sr. Center (assisted living)	Age-Restricted	Rent	48	Public Housing
Magellan Manor	Family	Rent	77	Section 221
Metropolitan Plaza	Family	Rent	191	HMFA

Table 2.18 Continued				
Development / AKA	Type	Tenure	# of Units	Program
Atlantic City Continued				
New York Avenue Apartments	Age-Restricted	Rent	150	HMFA / Section 8
Scattered sites Townhouses	Family	Rent	160	Public Housing
School House Apartments / Liberty School	Age-Restricted	Rent	153	Tax Credit
Shore Park High Rise	Age-Restricted	Rent	39	Public Housing
Stanley S. Holmes Village	Family	Rent	279	Public Housing
Townhouse Terrace / West	Family	Rent	82	HMFA / Section 221
Townhouse Terrace East 2	Family	Rent	67	Section 221
Vermont Plaza Apts.	Family	Rent	201	HMFA / Tax Credit / Balanced Housing
Walter J. Buzby Homes / Buzby Village	Family	Rent	122	Public Housing
Brigantine City				
Brigantine Housing Rehab		Rehab	8	Mount Laurel
Buena Borough				
Buena Gardens Senior Apartments	Age-Restricted	Rent	78	HMFA / Tax Credit
Buena Terrace Apartments	Age-Restricted	Rent	36	Farm Home / Tax Credit / Mount Laurel
Park View Gardens / Daniel Muccio	Age-Restricted	Rent	60	Public Housing / Mount Laurel
Buena Borough Housing Rehab		Rehab	15	Mount Laurel
Buena Group Home / Zion Inc.	Special	Rent	3	Mount Laurel
Buena Terrace 1, 2, & 4	Age-Restricted	Rent	70	Farm Home / Tax Credit / Mount Laurel
Elwyn Group Home	Special	Rent	4	Mount Laurel
Vineland Development Center 1 & 2	Special	Rent	8	Mount Laurel
Egg Harbor City				
Career Opportunity Development Inc. 1 & 2 group homes	Special	Rent	9	Mount Laurel
Egg Harbor City Downtown Housing Rehab		Rehab	30	Mount Laurel
Harbor City Apartments	Family	Rent	69	Section 8
Liverpool Estates	Age-Restricted	Rent	18	Farm Home

Table 2.18 Continued				
Development / AKA	Type	Tenure	# of Units	Program
Egg Harbor Township				
Atlantic County ARC group homes 1-4	Special	Rent	15	Mount Laurel
Caring Homes 2004	Special	Rent	8	Section 202/811 / Mount Laurel
Caring Inc. Group Home 2007	Special	Rent	4	Section 202 / 811
CHT Vision Inc.	Special	Rent		Section 202 / 811
Egg Harbor Township Housing Rehab		Rehab	65	Mount Laurel
Mey House Assisted Living	Special	Rent	47	Mount Laurel
Galloway Township				
Aloe Village 1, 2, 3, & 4	Age-Restricted	Rent	152	Farm Home / Tax Credit
Atlantic County ARC Group Homes	Special	Rent	4	Mount Laurel
Bayview Cottage Assisted Living 1, 2, & 3	Special	Rent	17	Mount Laurel
Career Opportunity Development Inc. group homes 1 & 2	Special	Rent	8	Mount Laurel
Caring Inc. Group Homes	Special	Rent	4	Mount Laurel
Collaborative Support Program Group Home	Special	Rent	3	Mount Laurel
Community Options Inc. Group Home	Special	Rent	3	Mount Laurel
Countryside Meadows / Presbyterian Homes	Age-Restricted	Rent	84	Mount Laurel
Development Resources Corp. Group Home	Special	Rent	4	Mount Laurel
Galloway Housing Rehab		Rehab	29	Mount Laurel
Galloway Township Consumer Group Home	Special	Rent	3	Section 202 / 811
Habitat for Humanity	Family	Rent	3	Mount Laurel
Hansen House for Men	Special	Rent	10	Mount Laurel
Hansen House for Women	Special	Rent	10	Mount Laurel
Seashore Housing	Age-Restricted	Rent	58	HMFA / Mount Laurel
Society Hill at Galloway 1 & 2	Family	sale	57	Mount Laurel

Table 2.18 Continued				
Development / AKA	Type	Tenure	# of Units	Program
Hamilton Township				
Atlantic County ARC Group Homes	Special	Rent	24	Mount Laurel
Career Opportunity Development Inc. Group Homes (4)	Special	Rent	6	Mount Laurel
Hamilton Housing Rehab Program		Rehab	24	Mount Laurel
Lenape Landing Apartments	Family	Rent	36	Farm Home
Village Housing Inc. Group Homes	Special	Rent	6	Section 202 / 811
Hammonton Township				
Baltimore Supportive Housing	Special	Rent	8	Section 202 / 811
Hammonton Assisted Living Dwellings	Special	Rent	2	Mount Laurel
Plymouth Place Apartments	Family	Rent	127	HMFA / Tax Credit / Balanced Housing
Silver Terrace	Age-Restricted	Rent	34	Farm Home
Linwood City				
Atlantic County Improvement Authority Housing Rehab		Rehab	2	Mount Laurel
Delta Community Group Home	Special	Rent	3	Mount Laurel
Mullica Township				
Atlantic County Improvement Authority Housing Rehab		Rehab	14	Mount Laurel
Mullica Twp. Housing Rehab Program		Rehab	39	Mount Laurel
White Horse Supportive Housing	Special	Rent	4	Section 202 / 811
Northfield City				
Northfield Consumer Group Home	Special	Rent	3	Section 202 / 811

Table 2.18 Continued				
Development / AKA	Type	Tenure	# of Units	Program
Pleasantville City				
Pleasantville Housing Authority	Family	Rent	245	Section 8 Vouchers
Caring Inc. Apartments 1 & 2	Age-Restricted	Rent	36	HOME
Decatur Av Apartments	Family	Rent	2	Tax Credit
Gillette Homes (HOME)	Family	sale	6	HOME
New Hope Community 1	Family	Rent	57	HMFA / Tax Credit
New Hope Community 2	Family	Rent	71	HMFA / Tax Credit
Pleasant Manor Apartments	Family	Rent	100	Section 8
Pleasantville Towers	Age-Restricted	Rent	80	Public Housing
Pleasantville Tower Annex	Age-Restricted	Rent	50	Public Housing
Residential Alternatives Inc.	Special	Rent	7	Section 202 / 811
Village at St Peters Senior Apartments	Age-Restricted	Rent	74	Section 202 / 811
Somers Point City				
Community Quest Inc. / Disability Resource Center Group Home	Special	Rent	3	Mount Laurel
Plus Group Homes 1 & 2	Special	Rent	6	Mount Laurel
Somers Point Consumer House	Special	Rent	3	Section 202 / 811
Somers Point Housing Rehab Program		Rehab	6	Mount Laurel
Somers Point Village 1	Family	Rent	117	Section 8
Somers Point Village 2	Family	Rent	107	Section 8
Ventnor City				
Shalom House	Age-Restricted	Rent	150	Section 202 / 811
Waterview Condominiums	Family	Rent	198	HMFA
Source: NJ Department of Community Affairs, List of Affordable Developments by County, 2015 http://www.state.nj.us/dca/divisions/codes/publications/developments.html				



III. *Transportation*



TRANSPORTATION SYSTEM OVERVIEW

The transportation element of the Atlantic County Master Plan is a cooperative effort, bringing together data, plans, and studies of Atlantic County, South Jersey Transportation Planning Organization (SJTPPO), New Jersey Department of Transportation (NJDOT), South Jersey Transportation Authority (SJTA), New Jersey Transit (NJ Transit), New Jersey Pinelands Commission, and any local agencies that are concerned with the maintenance and improvement of the transportation system within Atlantic County. The transportation element will address existing conditions, emerging issues, and the responses needed to support and improve all modes of transportation, including roads, highways, public transit, bicycle and pedestrian facilities. The transportation element will encourage Atlantic County's transportation facilities to be maintained and improved to promote a balanced transportation system that will accommodate all users, including users that are transit dependent and users with disabilities. The element will also address the need to support economic development by integrating transportation with land use and town centers throughout the County.

SJTPPO is the metropolitan planning organization (MPO) that serves Atlantic County and the southern New Jersey region. Transportation Matters – A Plan for South Jersey (online) serves as the official regional transportation plan for the SJTPPO region and guides the region's transportation decision-making for the next 20 years. Transportation Matters, (also referred to as the Plan), identifies the region's long-term needs and the projects and activities that seek to address them. SJTPPO is also responsible for developing an annual Transportation Improvement Program (TIP) of federally funded transportation projects which, in part, serves to implement the plan's transportation element.⁴

The Transportation Element presents five goals:

1. Maintain and improve a circulation system that provides for the safe and efficient movement of traffic.
2. Provide an energy-efficient transportation system that minimizes the negative effects of vehicular emissions on air quality.
3. Protect natural and manmade resources from the negative effects of traffic and road improvements.
4. Provide transportation choices for work, recreation and other trips for County residents and visitors.
5. Promote economic development and tourism in the transportation planning process.

The Transportation Element provides recommendations to encourage development policies that advance the Pinelands Comprehensive Management Plan's (CMP) goals

⁴ Transportation Matters – A Plan for South Jersey, South Jersey Transportation Planning Organization Table 3.1 - Source: NJDOT
Table 3.2 - Source: SJTA; *Total Eastbound and Westbound Toll Collection

Table 3.1 New Jersey Department of Transportation
Road Mileage by Municipality and Jurisdiction within Atlantic County

Municipality	NJDOT	Authority	County	Municipal	Total Mileage
Absecon City	7.05	0.00	7.54	35.73	50.32
Atlantic City	5.32	8.80	1.29	87.94	103.35
Brigantine City	0.06	0.11	3.74	60.54	64.45
Buena Borough	2.97	0.00	11.72	24.69	39.38
Buena Vista Township	9.60	0.00	21.27	90.67	121.54
Corbin City	2.37	0.00	4.30	3.52	10.19
Egg Harbor City	1.58	0.00	14.46	34.05	50.09
Egg Harbor Township	10.10	14.93	65.50	212.36	302.89
Estell Manor	10.51	0.00	20.22	26.22	56.95
Folsom Borough	6.37	0.00	4.00	17.32	27.69
Galloway Township	16.66	5.68	59.44	182.72	264.50
Hamilton Township	32.91	14.00	40.49	176.73	265.13
Hammonton Town	14.65	4.20	30.61	77.58	127.04
Linwood City	2.49	0.00	3.15	37.37	43.01
Longport Borough	0.00	0.00	0.78	12.78	13.56
Margate City	0.00	0.00	2.55	40.00	42.55
Mullica Township	8.07	0.00	38.26	59.97	106.30
Northfield City	1.91	0.00	8.43	36.42	46.76
Pleasantville City	4.26	3.20	7.70	53.27	68.43
Port Republic City	1.81	3.65	9.65	8.83	23.94
Somers Point City	3.73	3.02	5.45	43.15	55.35
Ventnor City	0.00	0.00	2.42	34.03	36.45
Weymouth Township	1.08	0.00	9.80	26.02	36.90
Total of All Municipalities:	143.50	57.591	372.77	1,381.91	1,955.77

Table 3.2 Annual Statistical Summary – 2010 to 2015

	2010	2011	2012	2013	2014	2015	CHANGE Since 2010	CHANGE Since 2014
Atlantic City Expressway (Total Toll Paying Traffic*)								
Egg Harbor Plaza	16,302,461	15,652,373	15,927,761	15,536,319	15,370,321	15,691,409	-3.75%	2.09%
Pleasantville Plaza	21,520,551	21,016,509	20,593,433	20,223,208	19,088,597	18,552,596	-13.79%	-2.81%
Atlantic City International Airport								
Commercial Passengers	1,260,900	1,237,563	1,251,613	1,002,450	1,082,206	1,089,277	-13.61%	0.65%
Charter Passengers	165,899	157,013	134,265	133,900	129,461	111,016	-33.08%	-14.25%
Casino Buses to Atlantic City								
Casino Buses	165,877	147,016	123,055	102,248	88,010	67,784	-59.14%	-22.98%
Casino Bus Passengers to Atlantic City	3,758,451	3,274,389	2,539,926	2,079,580	1,688,221	1,267,510	-66.28%	-24.92%
Atlantic City Rail Service Passengers								
Passengers	1,301,961	1,380,607	1,385,878	1,245,979	1,215,008	1,185,164	-8.97%	-2.46%

Table 3.3 Annual Visit-Trips to Atlantic City (in thousands)

Year	Automobile	Casino Bus	Franchise Bus	Air	Rail	Total
2015	22,437	1,212	403	235	176	24,462
2014	22,950	1,625	422	240	185	25,422
2013	23,370	2,040	410	232	185	26,237
2012	23,807	2,491	461	274	194	27,227
2011	24,293	3,223	449	282	205	28,452
2010	24,678	3,709	455	292	194	29,328
2009	25,185	4,282	475	240	199	30,381
2008	25,903	4,910	505	250	245	31,813
2007	26,929	5,408	501	260	202	33,300
2006	27,545	6,041	526	260	162	34,534
2005	27,889	6,104	519	261	151	34,924
2004	25,815	6,600	495	261	152	33,323
2003	24,553	6,764	504	261	142	32,223
2002	24,676	7,586	514	268	143	33,188
2001	23,501	7,985	519	276	139	32,420
2000	23,177	9,015	536	323	133	33,184
1999	23,247	9,342	539	396	128	33,652

Source: SJTA

Chart 3.1 Annual Passengers to Atlantic City and Vicinity

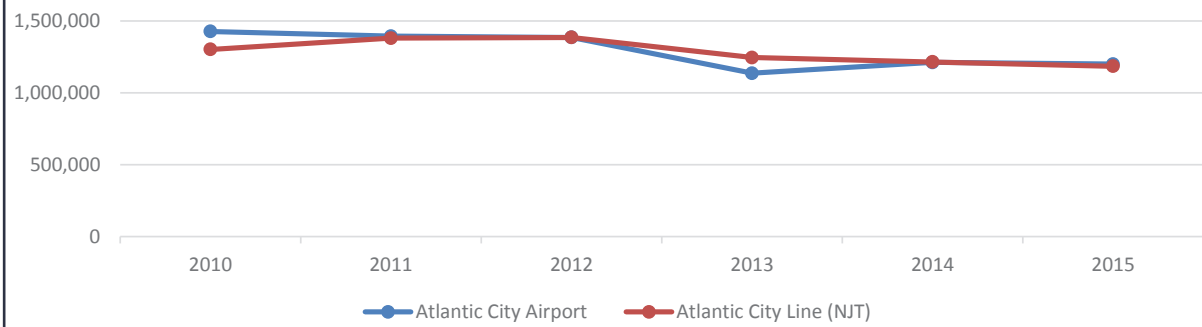
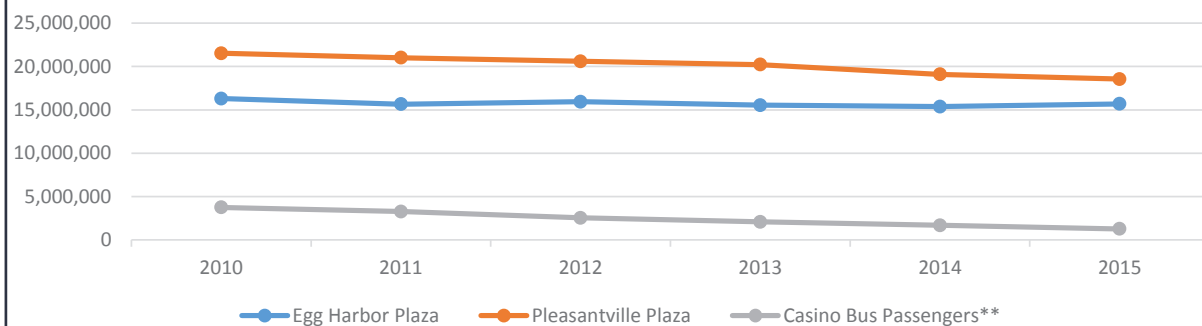


Chart 3.2 Annual Atlantic City Expressway Toll Plaza Traffic*



*Total Eastbound and Westbound Toll Collection
 **Only Casino Bus Passengers traveling into Atlantic City

and objectives in advancing compatible development in growth-oriented Pinelands Management Areas (PMAs).

Atlantic County accommodates a diverse array of transportation facilities including the Garden State Parkway, Atlantic City Expressway, several US and NJ State highways, several county routes, and the Atlantic City Line (NJ Transit). Interstate, regional and local bus and intercounty shuttle services are also provided within the County by NJ Transit, SJTA, and Cross County Connection. Atlantic City International Airport serves Atlantic County and surrounding southern New Jersey counties with passenger service to several domestic destinations.

County Road Network

Major intercounty routes and state highways serving Atlantic County include the following:

- The Garden State Parkway is a limited access toll highway that follows a north-south route throughout New Jersey, linking Atlantic County with Ocean County, Central and Northern New Jersey, New York State to the north, and Cape May County to the south. Approximately 21 miles of the Garden State Parkway, including nine full or partial grade-separated interchanges, are located within Atlantic County. The Garden State Parkway's Great Egg Toll Plaza is located in Somers Point and is the only toll plaza for the Garden State Parkway within the County.
- The Atlantic City Expressway, owned and operated by SJTA, is a limited access, east-west toll road that begins in Atlantic City and merges with NJ 42 in Camden County. Approximately 30 miles of the Atlantic City Expressway, including 11 full or partial grade-separated interchanges, are located within the County.
- Black Horse Pike (US Route 40/322) and White Horse Pike (US Route 30) also serve east-west travel, although their function as regional routes has largely been supplanted by the Atlantic City

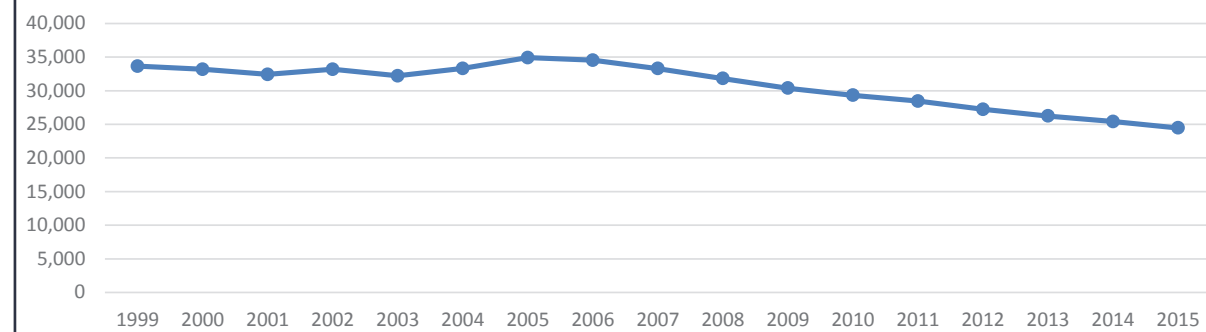
Expressway. At one time they were the primary routes providing access to the Atlantic City Shore area. These state routes now serve as commercial corridors in many of the municipalities through which they pass.

- US Route 40 is an east-west highway linking the County with Salem and Cumberland Counties and with the Delaware Memorial Bridge to Wilmington, Delaware.
- US Route 9 is a north-south highway that parallels the Garden State Parkway and provides local access to the shore communities.
- A network of NJDOT, NJTA, SJTA, state, county, and municipal routes serve local and inter-county travel. Table 3.1 lists the total route mileage by jurisdiction within Atlantic County.

The Pine Barrens Byway was designated as a New Jersey Scenic Byway in 2005. This 130 mile route passes through five counties including Atlantic County. Along the route are two National Wildlife Refuges, ten State Wildlife Management Areas, three State Forests, five County parks, several major rivers and numerous smaller streams, as well as a variety of historic and scenic sites.⁵ The Atlantic County portion of the byway includes County Route 642, County Route 648, County Route 623, County Route 559, and NJ Route 50.









5. Pinelands Comprehensive Management Plan

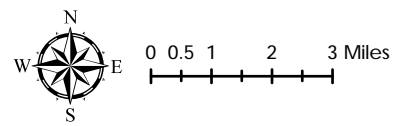
Chart 3.3 Annual Visit-Trips to Atlantic City (total in thousands)



Pine Barrens Scenic Byway



-  Pine Barrens Scenic Byway
-  County Open Space
-  Other Open Space
-  Atlantic City Expressway
-  Garden State Parkway
-  U.S. Highway
-  State Highway
-  County Routes



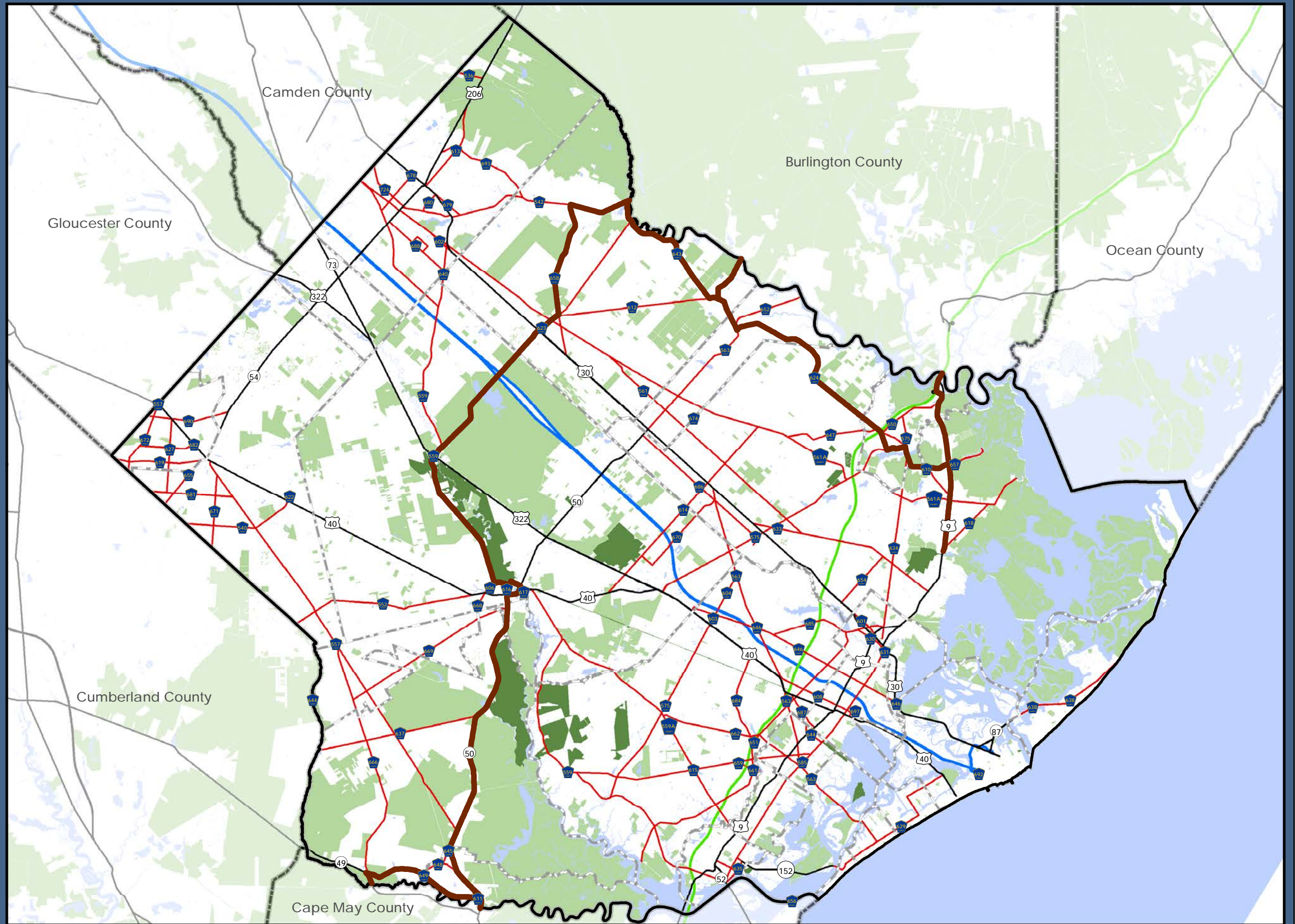
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



Atlantic County Highway Network Functional Classification & Right-of-Way (ROW)

Roadways

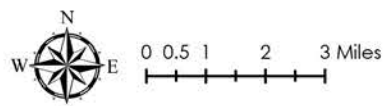
- U.S. Highway
- State Highway
- Atlantic City Expressway
- Garden State Parkway

County Routes

- Arterial (100' ROW - 90' ROW)
- Collector (90' ROW - 72' ROW)
- Minor Collector (60' ROW - 50' ROW)

Areas and Boundaries

- Atlantic County
- Counties
- Municipalities
- Water



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

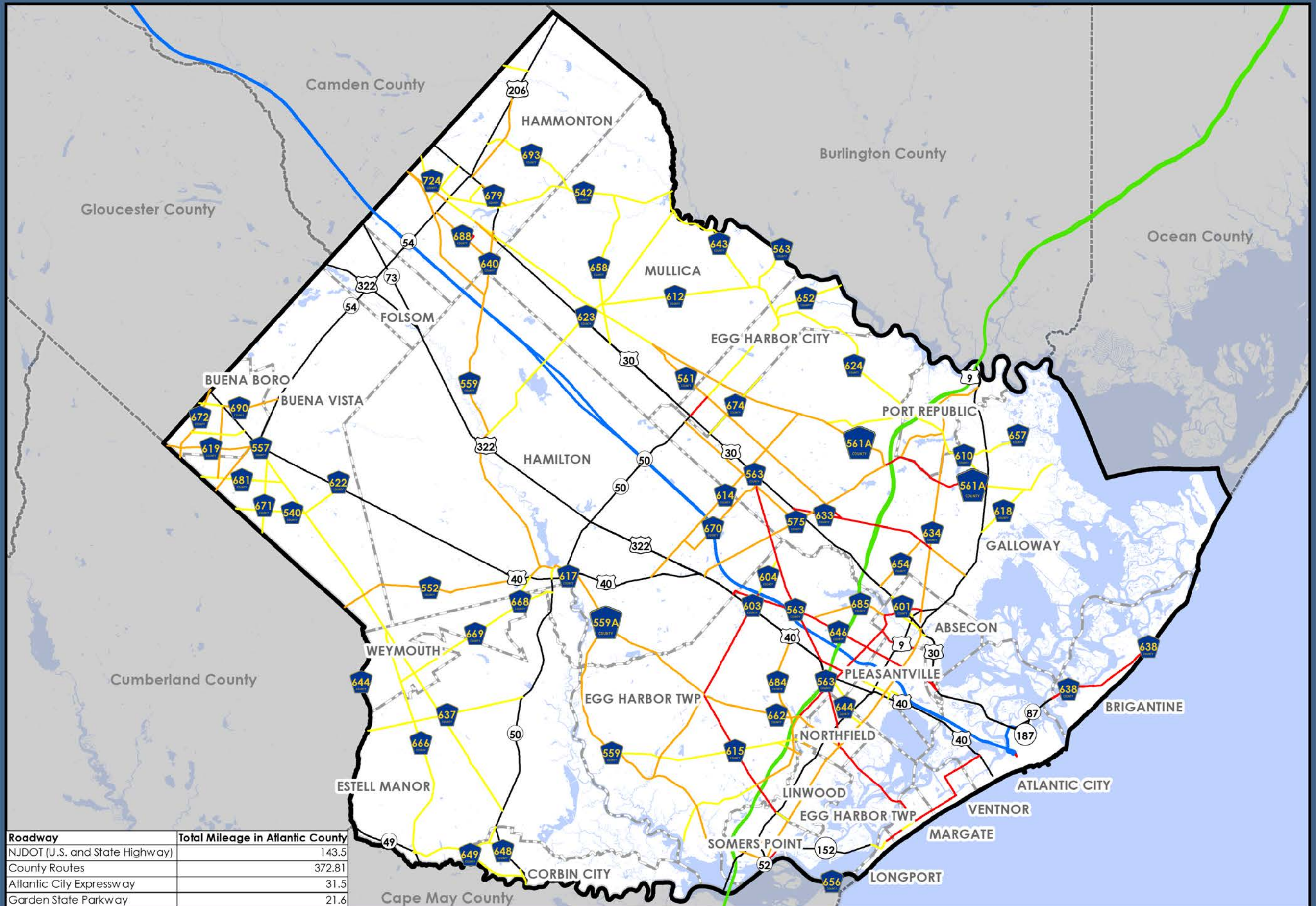
The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker INTERNATIONAL

January 2017

Roadway	Total Mileage in Atlantic County
NJDOT (U.S. and State Highway)	143.5
County Routes	372.81
Atlantic City Expressway	31.5
Garden State Parkway	21.6



Annual Trip Summaries of Travel Modes

This section provides the most recent trip data reported by SJTA as of 2015, including Atlantic City Expressway toll paying traffic at two toll plazas located within Atlantic County, commercial and charter airplane passengers at Atlantic City International Airport, casino-bound buses to Atlantic City hotels and casinos, and boarding numbers on NJ Transit's Atlantic City Line (Table 3.2).

Overall, each category experienced decline from 2010 totals. The trip numbers generally fell from 2014 totals, likely due to the closure of hotels and casinos in Atlantic City during this time period. Of note, toll paying traffic through Egg Harbor Plaza and commercial passengers for the airport both saw increases during the last year, though both still were at lesser totals from their respective numbers in 2010. In addition, the number of casino buses to Atlantic City and ridership have been consistently decreasing (Charts 3.1 and 3.2). SJTA provides Visit-Trips to Atlantic City data to show the total annual trips taken to Atlantic City by all modes of transportation since 1999 (Table 3.3). The total number peaked in 2005 and has decreased every year over the past decade (Chart 3.3).

SJTPO Transportation Improvement Program

SJTPO is the designated Metropolitan Planning Organization (MPO) for the southern New Jersey Counties of Atlantic, Cape May, Cumberland, and Salem. The SJTPO Transportation Improvement Program (TIP) includes state and local highway projects, regional highway projects, NJDOT Statewide program, and NJ Transit program. Over \$628 million of Federal and State funding for fiscal years (FY) 2009-2018 were identified for transportation improvements within the four counties. A revised TIP is produced each year.

SJTPO provides data for transportation projects in Atlantic County from the TIP.⁶ A map containing these completed projects is included in this section. The following projects were completed since 2012:

- Airport Circle Elimination, CR 563, CR 646: Intersection, operational, and safety improvements at the intersection of Tilton Road (CR 563) and Delilah Road (CR 646) included replacement of the traffic circle with a signalized intersection and geometric improvements.
- Route 52, Causeway Replacement and Somers Point Circle Elimination: This project has provided the replacement of two movable bridges located closest to Somers Point and Ocean City at Ship Channel and Broad Thoroughfare with high-level fixed span structures (i.e. 55-foot vertical clearance above the navigation channel). In addition, this project has replaced the Somers Point Circle with a signalized intersection with widening of Route 52 adjacent to the circle as well as extensive context-sensitive design elements to the Route 9 intersection. As part of a planned scenic overlook, the Ocean City Visitors Center has been replaced on site.
- Route 30, Pomona Road (CR 575): This project will extend from Genoa Road

to 1600 feet east of the intersection with Pomona Road, and on Pomona Road beginning 25 feet north of the existing NJ Transit rail line to the vicinity of Father Keis Drive. Improvements will consist of widening on Route 30 eastbound and westbound to accommodate left-turn lanes, shoulders and border areas on both approaches to Pomona Road. Pomona Road will be widened to accommodate shared left-turn and through lanes, shoulders and border areas on both approaches to Route 30. All lane widths will be 12 feet and shoulders will be 10 feet on Route 30 and six feet on Pomona Road. A four-foot concrete mountable curb median will be provided for the purpose of controlling access in the vicinity of the intersection. Fire engine access to Pomona Volunteer Fire Company will be provided via a break in the median. Signalization and pedestrian crossing improvements will be included for both Route 30 and Pomona Road. Drainage improvements are included for both Route 30 and Pomona Road. This project will be designed to be bicycle/pedestrian compatible.

- Tilton Road Resurfacing: Resurfacing of Tilton Road (CR 563) from Pomona Road to English Creek Avenue in Egg Harbor Township and Hamilton Township.

SJTPO Capital Improvements FY 2016-2025

Below is the extensive list of surface projects in Atlantic County receiving federal and state funding that are currently under construction or beginning construction during the current SJTPO Transportation Improvement Program⁷:

- Atlantic Avenue, Atlantic City: This project will resurface the roadway between Connecticut Avenue and Maine Avenue. It will modify roadway drainage systems to comply with MS4 storm water regulations, and will modify sidewalks and curb ramps to comply with the ADA.
- Brigantine Blvd, Brigantine City: This project will repave a half-mile segment of Brigantine Blvd from Harbor Beach Blvd to Bayshore Avenue (CR 638).
- Eleventh Avenue (CR 669), Weymouth Township: This project will perform a mill and overlay of the pavement within the existing right-of-way to preserve the life of the pavement along a 3.4 mile segment of Eleventh Avenue from the municipal border with Mays Landing to Route 50 (Broad Street). (This project is not shown on the FY 2016-2025 map)
- Route 30, Hammonton: This project will resurface 10 miles of pavement from Atco Avenue to Route 206, per the Pavement Management System. It will also replace guiderails, install curb ramps and crosswalks, and upgrade traffic signals.
- Route 30 (Absecon Blvd), Bridge over Duck Thorofare, Atlantic City: This project will rehabilitate or replace the bridge.
- Route 30, Mullica Township: This project will resurface 14.4 miles of road from Elwood Rd/Weymouth Road (CR 623) to Haddon Avenue. It will also make improvements to guiderails, sidewalks, curbs, curb ramps, intersections, and swales. Some inlets will be constructed to prevent ponding from the many rivers and lakes passing under the road.

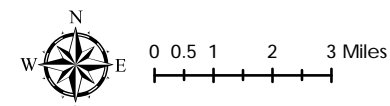
- Route 30, Absecon City: This project was initiated from the Pavement Management System and will resurface 4.4 miles of road from Illinois Avenue (CR 631) to Grammercy Ave.
- Route 40, Egg Harbor Township: This project will make improvements to 3.1 miles of roadway on Route 40 from milepost 60.4 to 63.5. Approximately one mile of the road will be raised between 2.5 and 4 feet above the existing roadway to prevent flooding. New pavement, curbs, and sidewalks will be installed and both overhead and underground utilities will be relocated. Milepost 63.4 will also receive steel sheeting and new drainage.
- Route 40/322, Hamilton Township: This Concept Development Study will address safety concerns arising out of a crash analysis for the corridor between Delilah Road and Fire Road (CR 651), Originally part of a larger study of Route 40/322 from Cologne Avenue to Fire Rd, this project has shifted from its original study in order to focus specifically on safety improvements to the 4.9-mile corridor from Fire Road to Delilah Road.
- Route 50, Tuckahoe River Bridge: The existing bascule bridge carried two 10-foot travel lanes and a 10-foot shoulder. The replacement is a fixed structure with a nine-foot, six-inch vertical clearance from Mean High Water Level on the same alignment. The new structure has two 12-foot travel lanes and 6-foot shoulders, as well as a six-foot sidewalk on the northbound side of the bridge. Additional roadway improvements have included signalizing the Route 50 and Route 49 intersection as well as a 15-foot through lane and 12-foot left-turn lane northbound and a 12-foot through lane and 15-foot right-turn lane southbound. The intersection of Route 50 and Tuckahoe-Mount Pleasant Road was reconfigured to allow for one-way operation of Tuckahoe-Mount Pleasant Road. Traffic accessing Route 50 is provided safer access to the highway through the reconstructed Marshall Avenue and Kendall Lane intersections. This project is bicycle/pedestrian compatible. (This project is not shown on the FY 2016-2015 map)
- Route 54, Folsom Borough: This project will perform environmental mitigation on 0.7 miles of Route 54 from Route 322 over Cape May Point Branch. Because significant land disturbances are expected from the project, NJDOT will purchase land to plant vegetation and trees in accordance with NJDEP riparian and reforestation mitigation requirements.
- Route 73 (Blue Anchor Road), Folsom Borough: This project will perform a mill and overlay of the pavement within the existing right-of-way to preserve the life of the pavement along a 2.4 mile segment of Route 73 from Route 322 to Route 54 (Twelfth Street).
- Route 73 (Mays Landing Road), Folsom Borough: This project will perform a mill and overlay of the pavement within the existing right-of-way to preserve the life of the pavement along a 1.6 mile segment of Route 73 from Route 54 (Twelfth Street) to Sherry Ln.
- Route 152, Somers Point City: This project will resurface 3.2 miles of pavement from Bay Avenue to Seaview Drive per the Pavement Management System.
- Route 322, Hamilton Township: This project will resurface 4.1 miles of pavement from Route 50 to Leipzig Avenue per the Pavement Management System.

6. Transportation Improvement Program, South Jersey Transportation Planning Organization

7. *ibid.*

South Jersey Transportation Planning Organization
 Transportation Improvement Program
 Projects Completed Since 2012

- Roadway**
-  Airport Circle Elimination; CR 563, CR 646
 -  Route 52 Causeway Replacement and Somers Point Circle
 -  Route 30 and Pomona Rd
 -  Tilton Road
- Roadways**
-  U.S. Highway
 -  State Highway
 -  County Routes
 -  Atlantic City Expressway
 -  Garden State Parkway
- Areas and Boundaries**
-  Atlantic County
 -  Municipalities
 -  Counties
 -  Water



Source: SJTPO, NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

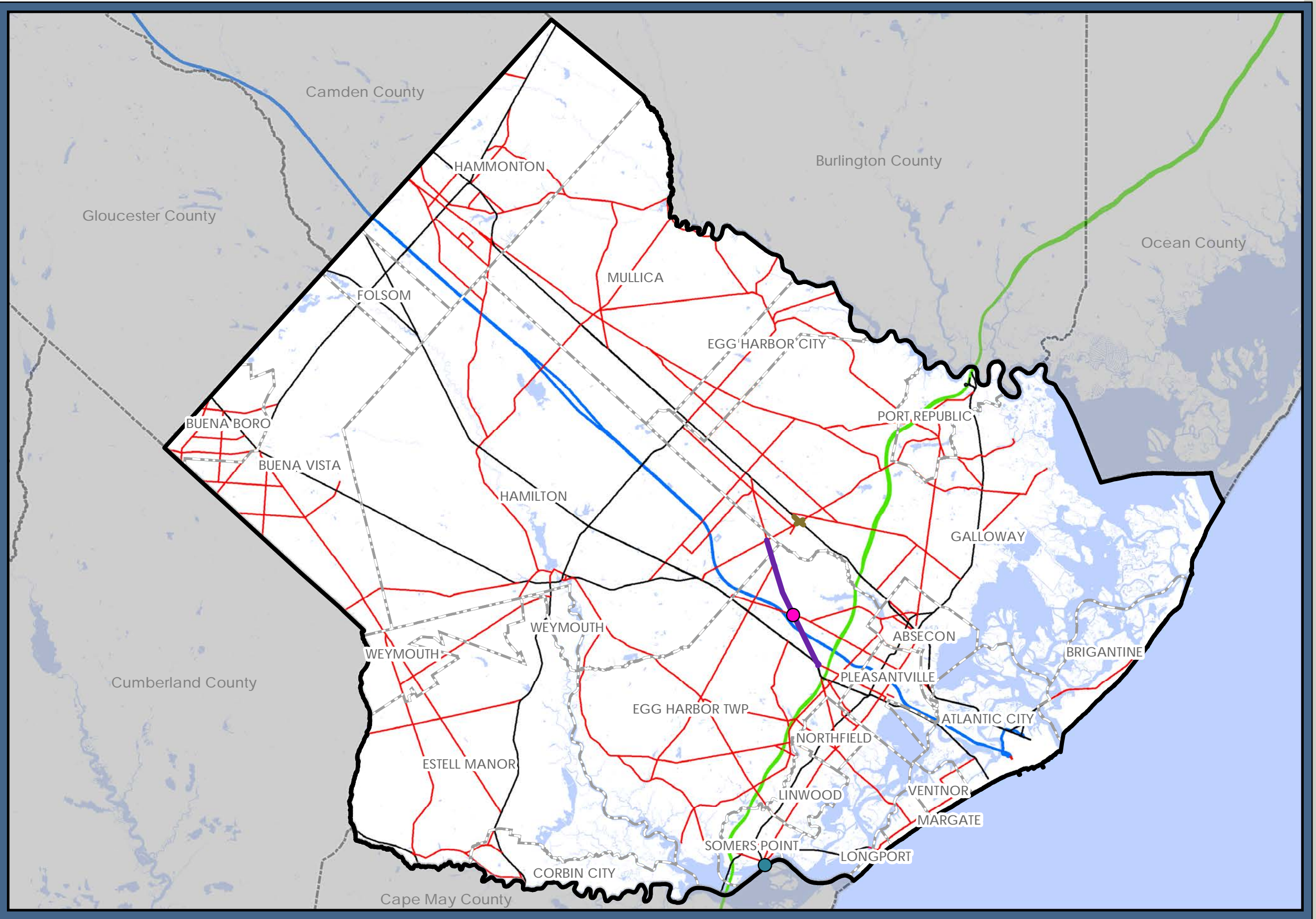
This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL

January 2017



South Jersey Transportation
Planning Organization
Capital Improvements FY 2016-2025

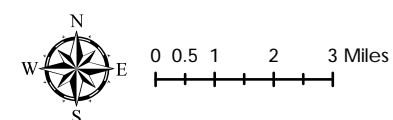
SJTPO Capital
Improvements FY 2016-2025

Roadways

- U.S. Highway
- State Highway
- County Routes
- Atlantic City Expressway
- Garden State Parkway

Areas and Boundaries

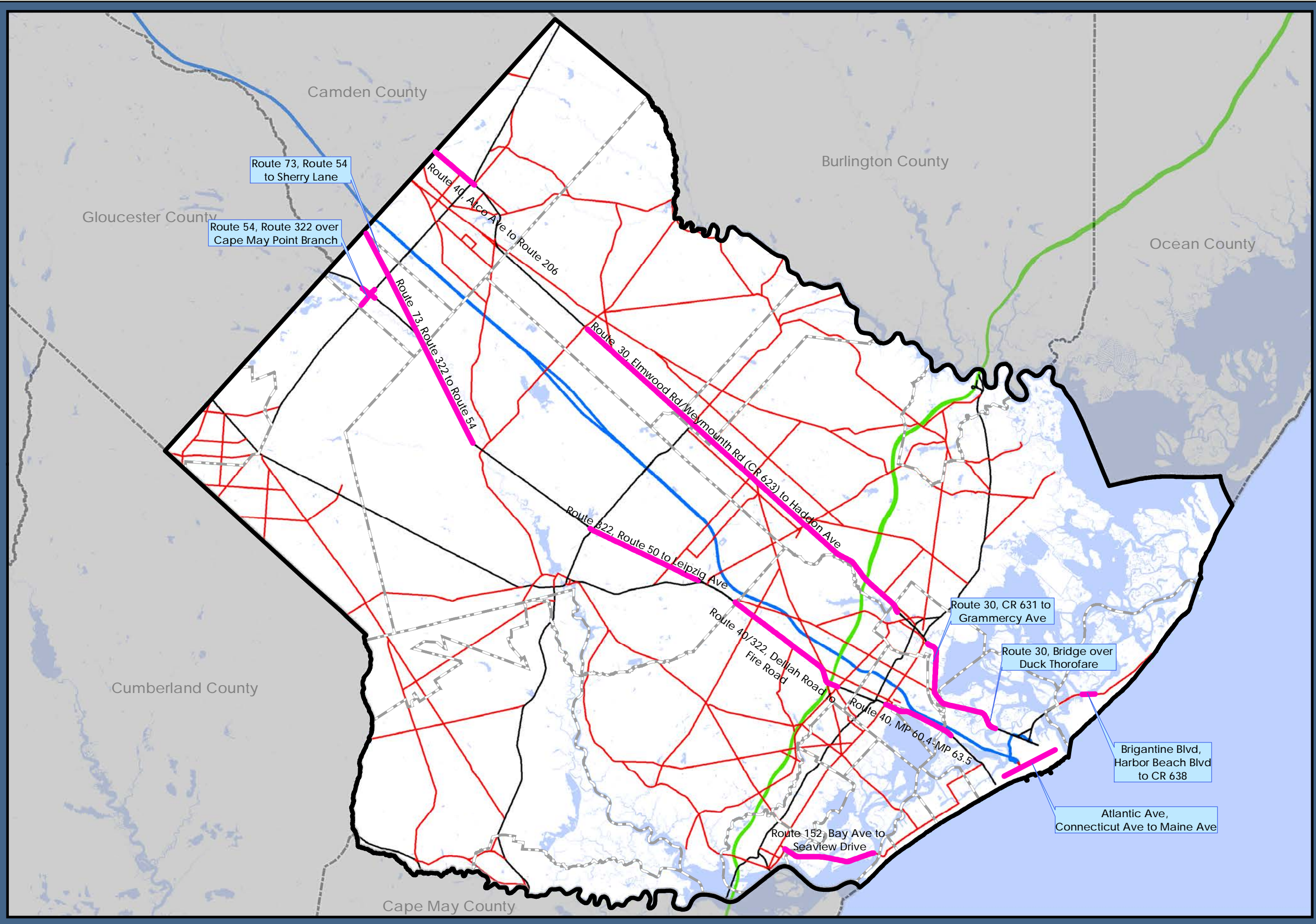
- ▭ Atlantic County
- ▭ Municipalities
- ▭ Counties
- ▭ Water



Source: NJDEP, NJGIN, NJOGIS, NJDOT,
Atlantic County Office of GIS







This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.

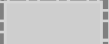





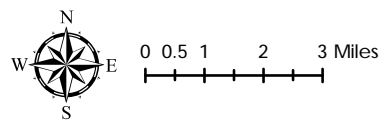
Atlantic County Existing Public Transit Network

Public Transit

-  Train Station
-  Park and Ride Lot
-  Bus Routes (NJT)
-  Atlantic City Line (NJT)
-  English Creek Shuttle
-  Route 54-40 Shuttle

Areas and Boundaries

-  Counties
-  Municipalities
-  Water
-  Urbanized Land



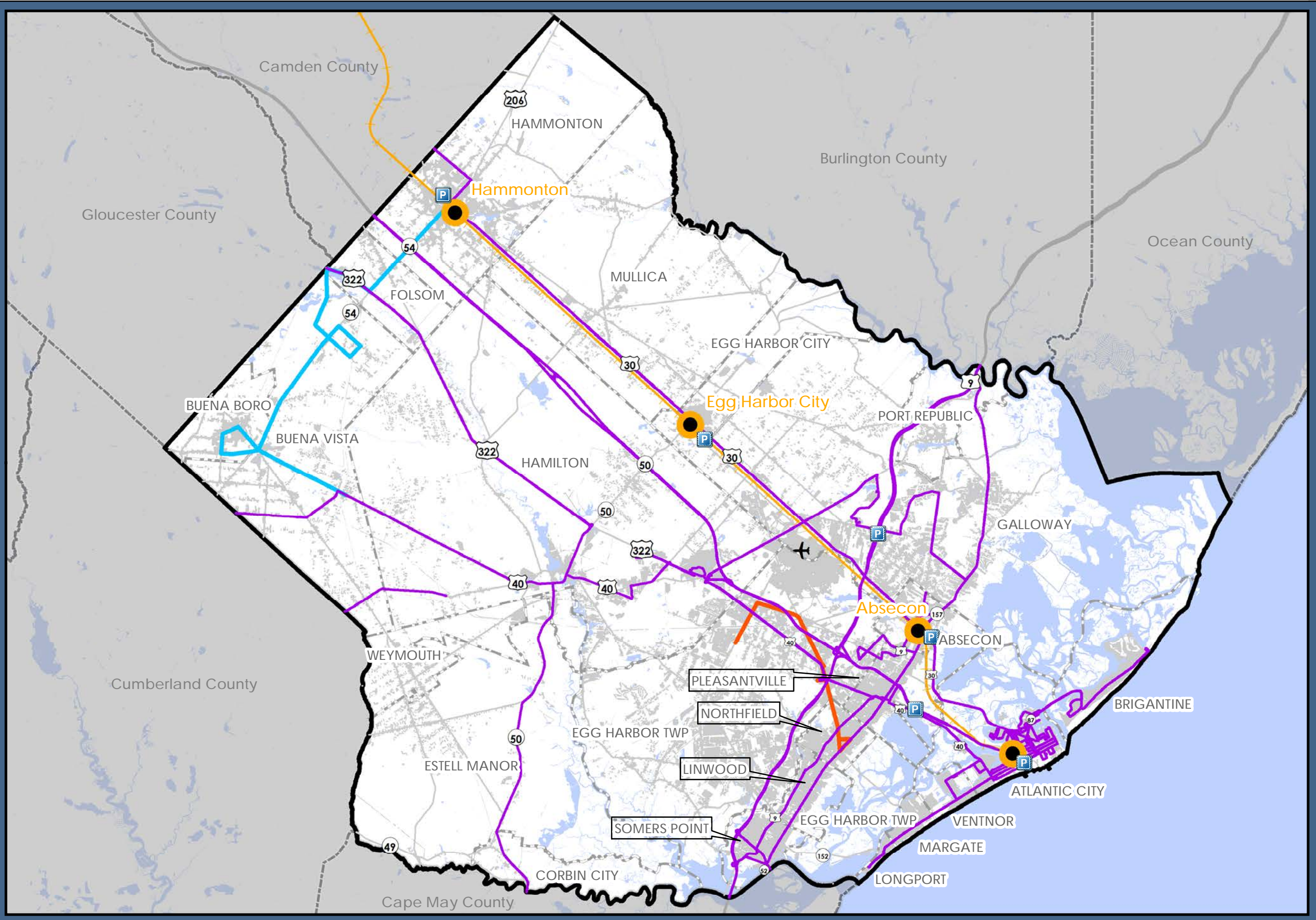
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker January 2017
INTERNATIONAL



Cont. from page 52

- South Inlet Transportation Improvement Project, Atlantic City: This project will make improvements to certain feeder routes of the Atlantic City Expressway to complement the South Jersey Transportation Authority's Atlantic City Expressway Project. Roads to be improved include Melrose Avenue in between Delaware and Connecticut Avenues, Connecticut Avenue from Melrose to Oriental Avenues, Massachusetts Avenue, and others. (This project is not shown on the SJTPO Capital Improvements FY 2016-2025 map)

between exits 40 and 44 contains 30 parking spaces. The Atlantic City Bus Terminal located at the intersection of Ohio Avenue and Arctic Avenue in Atlantic City contains 60 parking spaces. All three Park and Ride facilities contain accessible parking spaces and transit service.⁴

Bus Transportation

NJ Transit is the primary agency providing local and regional bus service in Atlantic County. As shown in Table 3.4, there are currently 14 NJ Transit bus routes providing service in Atlantic County. Seven of the 14 routes are local within Atlantic County that connect various population centers in the County with Atlantic City – 501, 502, 504, 505, 507, 508 and 509. Five of the 14 routes are long distance and originate in Atlantic City and provide service to points elsewhere in Southern New Jersey – 551, 552, 553, 554, and 559. The remaining two routes, 315 and 319 are long distance routes operating from Atlantic City to Philadelphia and New York City.⁵

All NJ Transit bus routes in Atlantic County operate seven days a week. All routes operate during evening hours with some routes offering 24 hour service both during the week and on weekends.

The most recent bus ridership data was obtained from NJ Transit. Average weekday boarding's, Saturday and Sunday boarding's for all NJ Transit bus routes in Atlantic County are presented in Table 3.4.

PUBLIC TRANSIT

There are currently three types of public transportation services offered in Atlantic County; fixed-route, demand-responsive (paratransit), and passenger rail. NJ Transit is the County's primary fixed-route bus operator. SJTA in partnership with Cross County Connection Transportation Management Association is a secondary fixed-route operator with two shuttle routes: the English Creek-Tilton Road Community Shuttle and the Route 54/40 Community Shuttle. SJTA also operates the Egg Harbor Shuttle connecting Atlantic City International Airport and Stockton University in Galloway Township which includes a stop at the Egg Harbor City NJ Transit rail station. A third fixed-route operator is the Atlantic City Jitney Association (ACJA) which operates six shuttle lines in Atlantic City 24 hours a day.

The primary demand-responsive service operators in Atlantic County include the Atlantic County Transportation Unit (ACTU), the NJ Transit Access Link program, LogistiCare - the state Medicaid broker, and various public and private, nonprofit organizations and transportation companies.

Passenger rail service is provided by NJ Transit's Atlantic City Line, operating daily service between Atlantic City and Philadelphia. Parking is available at the four County train stations.

In addition to the parking facilities located at the four train stations, there are Park and Ride facilities located throughout the County. The Atlantic City Expressway Intercept Lot located in Pleasantville at the Visitors Center contains 725 parking spaces. The Atlantic City Service Area on the Garden State Parkway in Galloway



4. NJDOT Park and Ride Locator
5. Atlantic County 2015 Human Services Transportation Plan Update

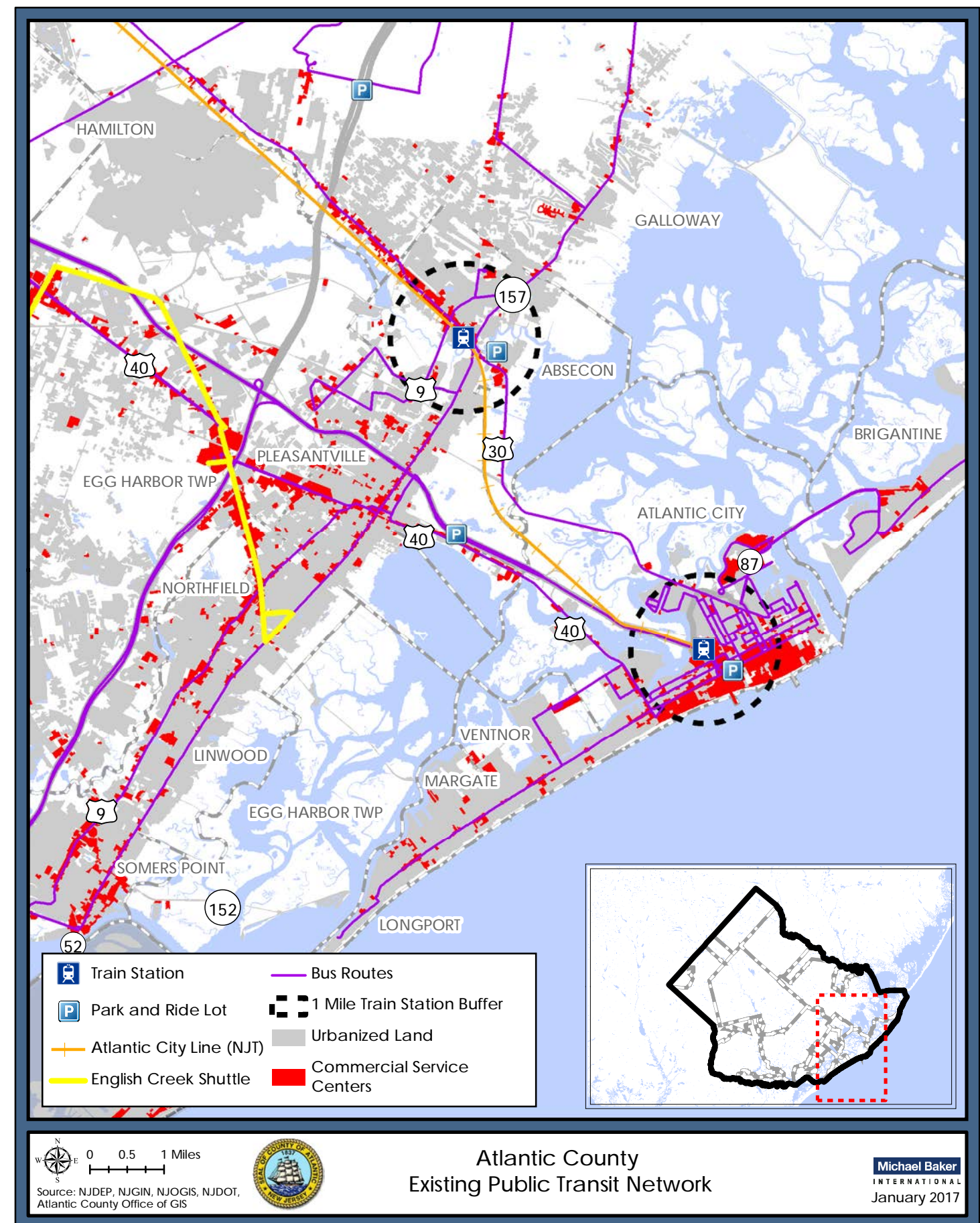


Table 3.4 NJ Transit Bus Routes Service Atlantic County

Route	From	To	Average Weekday Boardings (2015)	Average Saturday Boardings (2015)	Average Sunday Boardings (2015)
NJ Transit Intercounty Bus Routes					
501	Atlantic City – Bus Terminal	Brigantine Beach	318	282	210
502	Atlantic City	Mays Landing – Atlantic Cape Community College	1328	975	468
504	Bungalow Park	Ventnor City - Ventnor Plaza	607	527	151
505	Atlantic City – Venice Park	Longport	3702	2962	2269
507	Atlantic City	Ocean City – Transportation Center	1007	848	666
508	Atlantic City	Hamilton Township	818	528	383
509	Atlantic City	Ocean City – Transportation Center	590	414	354
NJ Transit Intracounty Bus Routes					
315	Philadelphia – Greyhound Station	Cape May	52	80	59
319	Atlantic City – Bus Terminal / Wildwood – Bus Terminal (seasonal)	New York City – Port Authority Bus Terminal	345	380	271
551	Atlantic City – Bus Terminal	Philadelphia – Greyhound Station	874	604	558
552	Atlantic City – Bus Terminal	Cape May	774	567	495
553	Atlantic City	Upper Deerfield	1412	1348	1113
554	Atlantic City – Bus Terminal	Lindenwold – PATCO Station	1100	971	784
559	Atlantic City – Bus Terminal	Lindenwold – Bus Terminal	1045	940	712

Source: NJ Transit, Bus Ridership and Fare Zone Profile, November 2015

Shuttle Services

Cross County Connection is the Lead Agency for the Atlantic County Work Group that oversees two shuttles:

The English Creek-Tilton Road Community Shuttle serves the general public connecting Egg Harbor Township and the City of Northfield. This shuttle requires a \$1 one-way fare as of July 18, 2016.⁶ Passengers can transfer to NJ Transit buses 502, 507, and 509 at various points.

The Route 54/40 Community Shuttle provides the general public with free service through Hammonton Rail Station, Folsom Borough, Buena Vista Township, Collings Lakes, Newtonville, Buena Borough, Buena, Landisville, Minotola, and Richland. Passengers can transfer to NJ Transit buses 553, 554 and the Atlantic City Line at the Hammonton Rail Station.

These two shuttle services are a partnership between Atlantic County, SJTA, the Pascale Sykes Foundation, NJ Transit, Cross County Connection and community members. The Pascale Sykes Foundation is a private family-run Foundation that is funding shuttle services in Atlantic, Cumberland and Gloucester counties. The

6. Cross County Connection

Foundation provides the matching funds for NJ TRANSIT’s JARC grant (English Creek Shuttle) and 5311 Innovative Grant (Rt. 54/40 Shuttle). The JARC (Job Access and Reverse Commute) Program of the Federal Transit Administration (FTA) that provides funding to address the transportation needs of welfare recipients and low-income persons seeking to obtain and maintain employment.

As the Transportation Management Association (TMA) for Atlantic County, Cross County Connection provides the following services:

Technical Support

- Route planning, including location of stops and timepoints for operating schedule
- Passenger feedback surveys and analysis
- GIS mapping
- Coordination with Work Group members
- Customer service support
- Passenger Alert System via smart phones and email
- Administration of Foundation grant including report writing and grant renewal applications

Marketing Support

- Development of each shuttle’s brand, including logo, graphics, etc.
- Development of brochure for each shuttle which includes operating schedule and map
- Development and placement of advertising (cable, radio, print, on-line, direct mail postcards)
- Development of decals for vehicles
- Public relations coordination
- Outreach to businesses along the route

The Egg Harbor Shuttle provides the general public with free service between Atlantic City International Airport, the Federal Aviation Administration’s William J. Hughes Technical Center (FAA Tech Center), Stockton University, and Egg Harbor City Rail Station.⁷ Passengers can transfer to NJ Transit buses 508 and 554.

The Atlantic City Jitney Association (ACJA) operates four fixed-route shuttles in Atlantic City that provide frequent connections between hotels, casinos, shopping, restaurants, public services, convention services and Atlantic City Rail Terminal. These routes operate 24 hours a day and require a fare of \$2.25. The ACJA also operates an Atlantic City International Airport route that is available for all incoming flights and serves the convention center, Atlantic City Rail Terminal, and several hotels and casinos.⁸

Paratransit Services

NJ Transit Access Link is a demand-responsive paratransit service developed in response to the Americans with Disabilities Act of 1990 (ADA). The ADA requires public transportation systems to offer ADA paratransit service to individuals who are unable to use local bus service as a result of their disability. Access Link service is comparable to bus service in that it is available during the same days and hours as the regularly scheduled local fixed route bus service, including weekends and holidays, and charges a comparable fare. If there is bus service available, Access Link service will be available. If there is no bus service, Access Link will not be available. Those using Access Link must be within ¼ of a mile of a regular bus route and follow the same hours.⁹

The County of Atlantic and the Department of Human Services offer a wide range of Transportation services to residents of Atlantic County. The Atlantic County Transportation Unit’s (A.C.T.U.) program is designed to provide necessary services, on a “first come, first served” basis, in conjunction with all other service providers in the region. Services are available and provided to Qualified Residents, weekdays, between the hours of 7:00am to 6:00pm, for both Life Essential and Life Enhancing Services.¹⁰

7. South Jersey Transportation Authority

8. Atlantic City Jitney Association

9. New Jersey Transit

10. Official Web Site of Atlantic County Government

Under Title XIX, Medicaid recipients are covered for certain medical services, including travel to and from medical appointments and services, with prior authorization. Eligibility for Medicaid is income based; thus the services span the target populations of persons with low income as well as older adults and persons with disabilities who also have low income.

In 2009 the New Jersey Department of Human Services (DHS), Division of Medical Assistance and Health Services (DMAHS), awarded a contract to LogistiCare—a privately operated transportation broker—to provide fee-for service non-emergency transportation to all eligible Medicaid and N.J. FamilyCare clients in the state. LogistiCare schedules all trip requests and then assigns the trips to certified local transportation providers based on a negotiated reimbursement rate.

Five municipalities in Atlantic County offer demand-responsive transportation services for seniors and people with disabilities to complement the services provided by Atlantic County, NJ Transit, or other regional operators. These municipalities include:

- Atlantic City
- City of Brigantine
- City of Pleasantville
- Margate City
- Ventnor City

Services are generally offered to and from medical appointments, shopping trips, nutrition sites, and recreation for eligible riders on weekdays. Riders must be residents of the respective city, and the trip must not be served by other transportation services, such as those provided by a senior housing complex or hospital. Most services are fare-free, but must be reserved one to two days in advance by phone. Many programs are staffed by volunteers, so office hours are limited.

Rail Service

The Atlantic City Line offers passenger rail service from 30th Street Station in Philadelphia to Atlantic City Rail Terminal seven days a week. From 30th Street Station, the trip takes approximately 90 minutes. There are a total of nine existing NJ Transit rail stations on the Atlantic City Line with four in Atlantic County. The rail stations within Atlantic County include Hammonton, Egg Harbor City, Absecon, and Atlantic City. The Atlantic City Line runs on a single track between Hammonton and Atlantic City.

In 2009, NJ Transit began operating the Atlantic City Express Service (ACES) which provided summer seasonal inter-city passenger rail service between New York Penn Station and Atlantic City. This service was funded by the Casino Reinvestment Development Authority (CRDA). The ACES allowed visitors from New York City to access Atlantic City and surrounding areas by a 2 hour, 40 minute train ride. The ACES train was formally discontinued in 2012. Access by rail service from New York

Table 3.5 NJ Transit Rail Stations Service Atlantic County

Station Name	Line	Parking Spaces	Average Weekday Boardings (2015)	Average Saturday Boardings (2015)	Average Sunday Boardings (2015)	Average Weekday Boardings (2005)
Absecon	Atlantic City Line	176	197	199	172	196
Atlantic City	Atlantic City Line	75	712	828	714	1163
Egg Harbor	Atlantic City Line	99	164	156	135	200
Hammonton	Atlantic City Line	228	135	130	112	205

Source: NJ Transit FY 2015 Average Weekday Rail Boardings

City is now only possible by taking Amtrak or regional rail (NJ Transit and SEPTA) to 30th Street Station in Philadelphia, then transferring to the Atlantic City Line.

The most recent rail ridership data was obtained from NJ Transit. Average weekday boardings, Saturday and Sunday boardings for the Atlantic City Line at the four rail stations in Atlantic County are presented in Table 3.5.

Employment Centers & Transportation

Atlantic County contains a number of employment centers which are primarily clustered along the coast. Atlantic City and Absecon Island are home to a large concentration of hospitality services, such as resorts and casinos. The inland region of the County located near the Garden State Parkway features a large concentration of health & educational employment centers.

Hospitality & Tourism (Coastal)

- Borgata Hotel, Casino, & Spa
- Caesars Atlantic City Casino
- Bally's Atlantic City
- Golden Nugget Hotel & Casino
- Tropicana Casino & Resort
- Harrah's Atlantic City
- Resorts Casino Hotel

Education & Healthcare (Inland)

- Atlantic Care Surgery Center
- Atlantic Care Regional Medical Center (ACCC) city campus
- Bacharach Institute-Rehab Inc.
- Atlantic Cape Community College
- Galloway Township Senior Services
- Stockton University
- Atlantic Adult Day Healthcare
- Shore Memorial Hospital
- William J. Hughes Technical Center
- Atlantic City International Airport
- Atlantic Care Regional Medical Center
- Margate Senior Services

The mean travel time to work in Atlantic County in 2014 was 23.7 minutes. 43.8% of households in Atlantic County own two automobiles, 22.7% own one automobile, and 17.4 % own three automobiles. 7.1% of households do not own an automobile. 76.8% of households commute to work by driving alone, 7.4% use public transit, and 6.8% carpool.

The tables below contain census data that describe the travel patterns of workers who are employed in Atlantic County and where workers are employed who live in Atlantic County. More than 65% of workers employed in Atlantic County reside in Atlantic County.

Table 3.6 Resident Locations of Workers Employed in Atlantic County

Where Workers Live Who are Employed in Atlantic County	2014	
	Count	Share
Total Workers	128,123	100.0%
Atlantic County	84,158	65.7%
Ocean County	6,297	4.9%
Cape May County	5,940	4.6%
Camden County	5,662	4.4%
Cumberland County	4,585	3.6%
Gloucester County	3,855	3.0%
Burlington County	3,480	2.7%
Monmouth County	1,381	1.1%
Middlesex County	1,258	1.0%
Essex County	897	0.7%
All Other Locations	10,610	8.3%

Source: US Census Bureau

Table 3.7 Employment Locations of Atlantic County Residents

Where Workers are Employed who live in Atlantic County	2014	
	Count	Share
Total Workers	125,197	100.0%
Atlantic County	84,158	67.2%
Camden County	4,640	3.7%
Cape May County	4,175	3.3%
Cumberland County	4,116	3.3%
Burlington County	3,807	3.0%
Mercer County	2,940	2.3%
Gloucester County	2,705	2.2%
Ocean County	2,552	2.0%
Middlesex County	2,147	1.7%
Philadelphia County, PA	1,456	1.2%
All Other Locations	10,610	8.3%

Source: US Census Bureau

There is an increasing need for public transportation in Atlantic County to connect workers to job opportunities. Existing gaps in public transit coverage in urbanized areas of inland Atlantic County where jobs and opportunities are lacking should be addressed. These urbanized areas include Absecon, Galloway, Egg Harbor Township, Egg Harbor City, Hamilton, and Hammonton. Gaps in coverage may open opportunities for new shuttle routes and services.

Transit Village Initiative

In 1999, the New Jersey Transit Village initiative was created as a “smart growth” strategy designed to foster transportation-efficient community redevelopment and revitalization around transit facilities (train and bus stations) and to reduce traffic congestion and improve air quality by increasing transit ridership. NJDOT, in partnership with NJ Transit, administers the initiative. To be considered for designation, a municipality must adopt land use entitlements necessary to advance transit-oriented development (TOD) and demonstrate commitment to redeveloping the half-mile area around the transit facility into compact, mixed-use neighborhoods with a strong residential component.¹¹

As of 2016, thirty-two municipalities in New Jersey have been designated as Transit Villages for their commitment to creating transit-friendly land uses around transit hubs. The City of Pleasantville was one of the first five communities to be designated a Transit Village. Pleasantville is also one of just two Transit Villages situated around a bus terminal as the community focal point rather than a train station. Built in 1999, the bus terminal located near Main Street and West Jersey Avenue is served by seven bus routes and provides an indoor commuter waiting room, restrooms and a concession kiosk. Bus service connects Pleasantville with many of its surrounding communities including Hamilton Township (the site of Atlantic Cape Community

11. An evaluation of property values in New Jersey Transit Villages, Alan M. Voorhees Transportation Center, Prepared for New Jersey Association of REALTORS

College), Egg Harbor Township, Ocean City, Linwood and Atlantic City. More than 13% of Pleasantville’s workforce commutes each day by bus.¹²

FREIGHT RAIL

Conrail and the Southern Railroad Company of New Jersey provide a majority of the freight rail services in Atlantic County. The primary Conrail freight line in the County is the Cape May Line, which follows a north-south route from Hammonton to Corbin City. The primary freight line that the Southern Railroad Company of New Jersey operates is the Winslow to Pleasantville branch, which services the Pleasantville Urban Enterprise Zone. There is a branch of the Southern Railroad Company of New Jersey from Winslow Junction to Vineland that passes through Atlantic County, but this section of track is currently unused.¹³ See Existing and Historic Rail Facilities Map.

AVIATION

Atlantic County is home to one commercial airport, Atlantic City International Airport (ACY), which is operated by SJTA. Atlantic City International Airport offers flights to cities in the eastern United States on Spirit Airlines and Caesars Entertainment. The Airport is located in Egg Harbor Township, about 10 miles from Atlantic City. It is accessible by car from Route 30, Garden State Parkway, and Atlantic City Expressway. The Atlantic City Jitney Association (ACJA) operates a shuttle between the Airport and Atlantic City. The airport is not directly accessible by train, but two stations on the Atlantic City Line, Egg Harbor and Absecon, are located nearby. SJTA operates a shuttle between the Airport and Egg Harbor Station, a distance of approximately 6 miles.¹⁴

In 2004, the airport completed construction of a 300-seat holding room and additional administrative offices. A \$26.3 million parking garage was erected across the street from the main terminal of the airport in 2008, which provides 1,400 parking spaces as well as a space for car rental services. In 2011, a \$27 million, 75,000-square-foot expansion was completed as part of a modernization project. Among improvements to the technology and facilities of the airport, an additional gateway with supplementary passenger loading bridges and gates and a federal inspection station were added to the grounds. Most recently, in 2013, ACY created a 40,700-square-foot Airport Rescue and Fire Fighting station to replace the former rescue station that was originally built in 1965. The facility cost \$15.4 million dollars, the majority of which was supported through a Federal Aviation Administration grant.¹⁵

The 5,143 acres that the Atlantic City International Airport resides on is shared and owned primarily by the William J. Hughes Technical Center, an important facility

12. *ibid.*

13. South Jersey Regional Rail Study, Gannett Fleming, Prepared for South Jersey Transportation Planning Organization

14. Atlantic City International Airport – Our History

15. Atlantic City International Airport Fact Sheet

for aviation research and development. There is a \$1.5 to \$2.5 million expansion and renovation project being funded by the Federal Aviation Administration to revitalize a defunct research lab, adding 10,000-square-feet to the campus.¹⁶

In addition, the William J. Hughes Center contains a branch of the Department of Homeland Security, the Transportation Security Lab, the United States Coast Guard Group Air Station Atlantic City, and the New Jersey Air National Guard 117th Fighter Wing. The Center houses a wing of National Guard aircraft and serves as a major base of operations.¹⁷

Other Airports in Atlantic County include:

Public:

- Hammonton Municipal Airport: A public-use airport
- Strawberry Fields Landing Strip: Owned by the New Jersey Forest Fire Service

Private:

- Dix Field
- Hanselman’s Landing Strip
- Harrah’s Landing Strip
- Rossenwasser’s Landing Strip
- Winchell’s Landing Strip
- Yacovelli’s Landing Strip

AIR QUALITY

Under the authority of The Clean Air Act Amendments of 1990 (42 USC Sections 7401-7671q), in conjunction with the transportation planning provisions of the United States Code (23 USC 109(j)), the transportation conformity process is required in areas that have been designated by the US Environmental Protection Agency (USEPA) as not having met specific standards for any of six criteria pollutants as defined by The Clean Air Act (CAA). EPA sets these standards, more formally known as National Ambient Air Quality Standards, or (NAAQS), to protect public health. Those areas that currently do not meet these standards are called “non-attainment areas;” or “maintenance areas,” if they have recently attained the standards but need to demonstrate maintenance via a federally-approved maintenance plan before they can be formally classified as an attainment area.¹⁸ SJTPO’s Regional Transportation Plan must demonstrate conformity with NAAQS or risk losing State and Federal funding for transportation projects.

Atlantic County is part of a CO (Carbon Monoxide) “not classified” maintenance area. It is part of a limited carbon monoxide maintenance plan and thus SJTPO no longer has to complete a regional emissions analysis for Atlantic County for CO.¹⁹

16. Federal Aviation Administration

17. FAA Tech Center to renovate research building, Press of Atlantic City

18. SJTPO




19. SJTPO

Atlantic County Aviation Facilities


Aviation Facilities

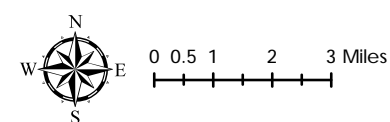
-  Atlantic City International Airport
-  Heliports
-  Other Aviation Facilities

Roadways

-  Roadways
-  Atlantic City Expressway
-  Garden State Parkway

Areas and Boundaries

-  Atlantic County
-  Municipalities
-  Counties
-  Water



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

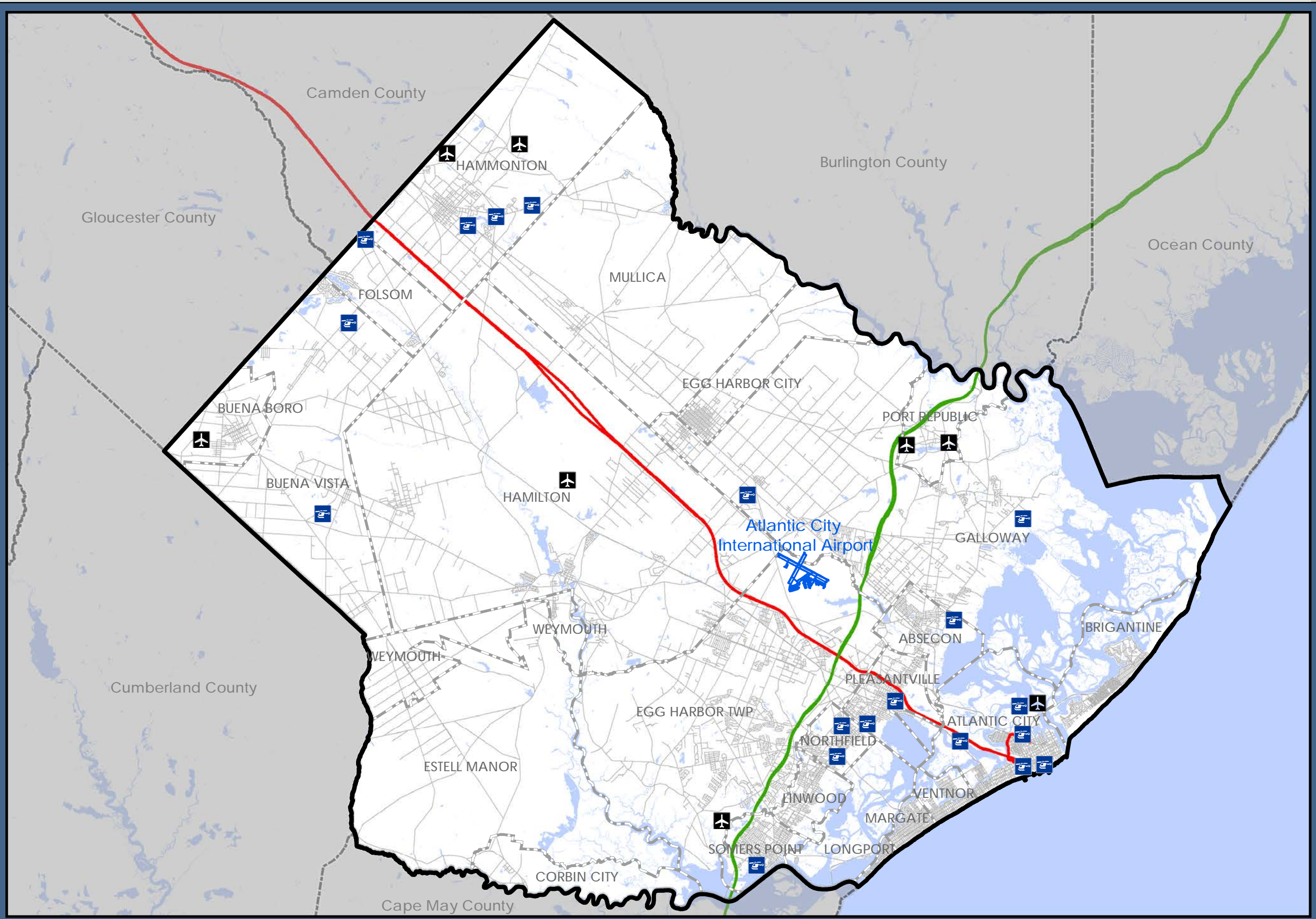
This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.









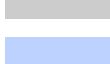

Michael Baker
INTERNATIONAL

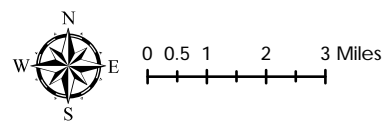
January 2017



Atlantic County Existing and Historic Rail Facilities

- Rail Facilities**
-  Train Station
 -  Atlantic City Line (NJT)
 -  Historic Rail Lines & Facilities

- Areas and Boundaries**
-  Atlantic County
 -  Counties
 -  Municipalities
 -  Urbanized Land
 -  Water



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

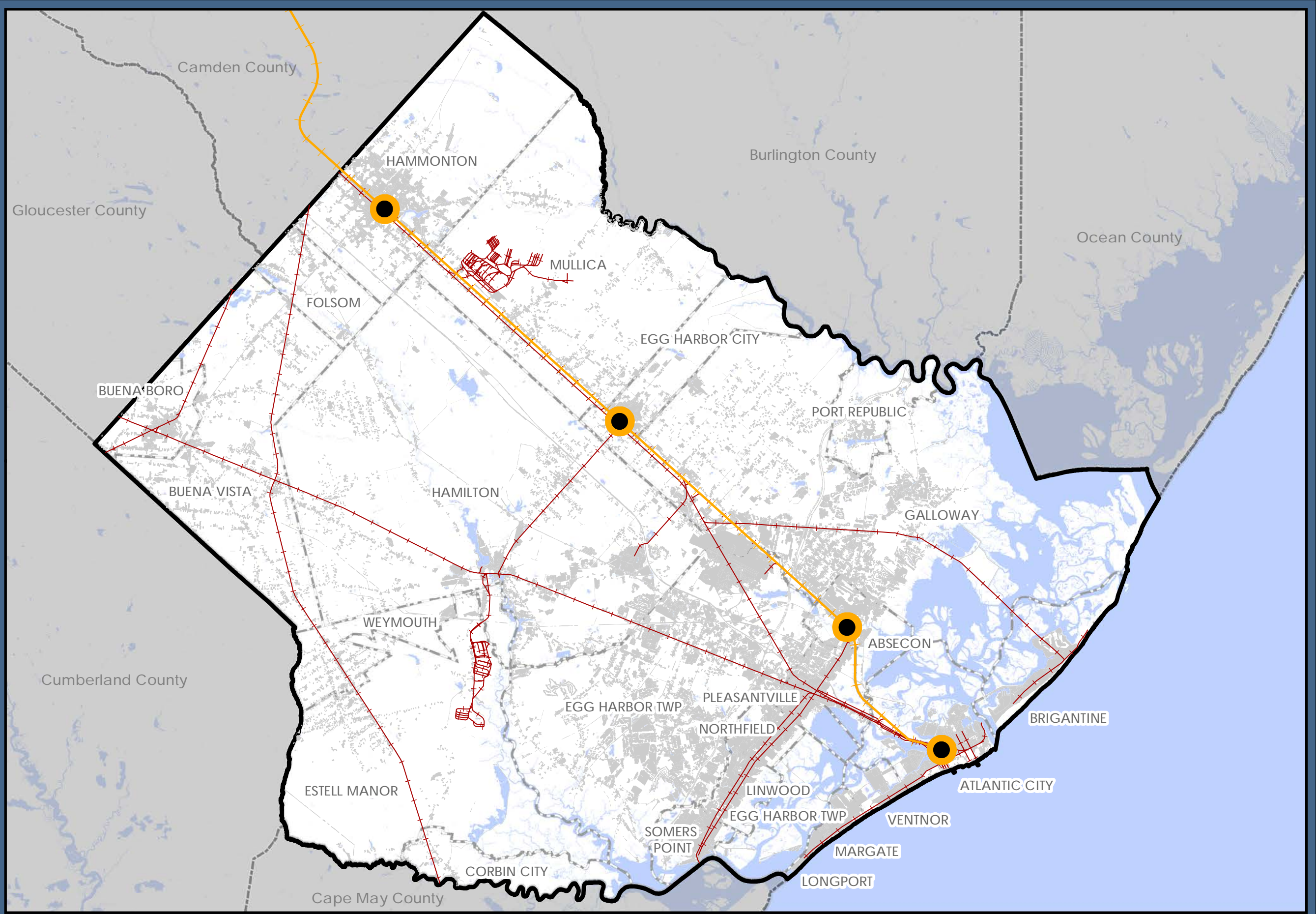
This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection, Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL

January 2017



Atlantic County falls within the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE Marginal Ozone Non-attainment Area, with an original attainment date of July 20, 2015. This area is slightly above the NAAQS standard of 0.075 parts per million (ppm) for ozone, which became the standard in 2008. However, in October 2015, EPA promulgated more stringent ozone standards of 0.070 ppm.²⁰ While designations are still pending, it is likely that Atlantic County and the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE Marginal Ozone Non-attainment Area will remain in non-attainment. Under this new standard, the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE Marginal Ozone Non-attainment Area must have attained the ozone NAAQS by July 20, 2016. However, under the more stringent ozone standards, the attainment date will be extended.²¹

The New Jersey Department of Environmental Protection (NJDEP) operates one Air Quality Monitoring Station in Atlantic County in Brigantine. The Brigantine station monitors sulfur dioxide, ozone, and particulate matter (see table below).

Table 3.8 Air Quality Monitoring Locations in Atlantic County (2014)

Location	Address	Parameters
Brigantine	Edwin B. Forsythe National Wildlife Refuge Visitor Center, 800 Great Creek Road	SO ₂ , O ₃ , PM _{2.5}

Source: NJDEP - 2014 Air Quality Report, NJ Department of Environmental Protection

COMPLETE STREETS

Complete Streets are roadways that allow safe and convenient access for users of all ages and abilities. In contrast to many roadways built exclusively for private automobiles, Complete Streets accommodate bicyclists, pedestrians, children, persons with disabilities, motorists, seniors, movers of commercial goods, and users of public transit in order to provide transportation options that are safer, healthier for both people and the environment. Improvements may include sidewalks, crosswalks, ADA compliant curb ramps, ADA compliant pedestrian control features, bicycle lanes, and bus stops. Additionally, Complete Streets are shown to have positive effects on local businesses, economic development, and the housing market.

20. USEPA
21. USEPA

The New Jersey Department of Transportation (NJDOT) was one of the first in the nation to adopt a statewide Complete Streets Policy in December 2009,²² and expressed a specific goal of improving safety for bicyclists and pedestrians on its roadways. However, NJDOT holds jurisdiction only over state-owned roads, and 91% of New Jersey's roadways are owned by counties and municipalities.²³ Therefore, local agencies are encouraged to adopt their own policies for Complete Streets. To assist them, the state has published "Making Complete Streets a Reality: A Guide to Policy Development," with sample policies, checklists, and best practices for counties and municipalities interested in implementing what former Commissioner James Simpson promoted as a "way of life."²⁴

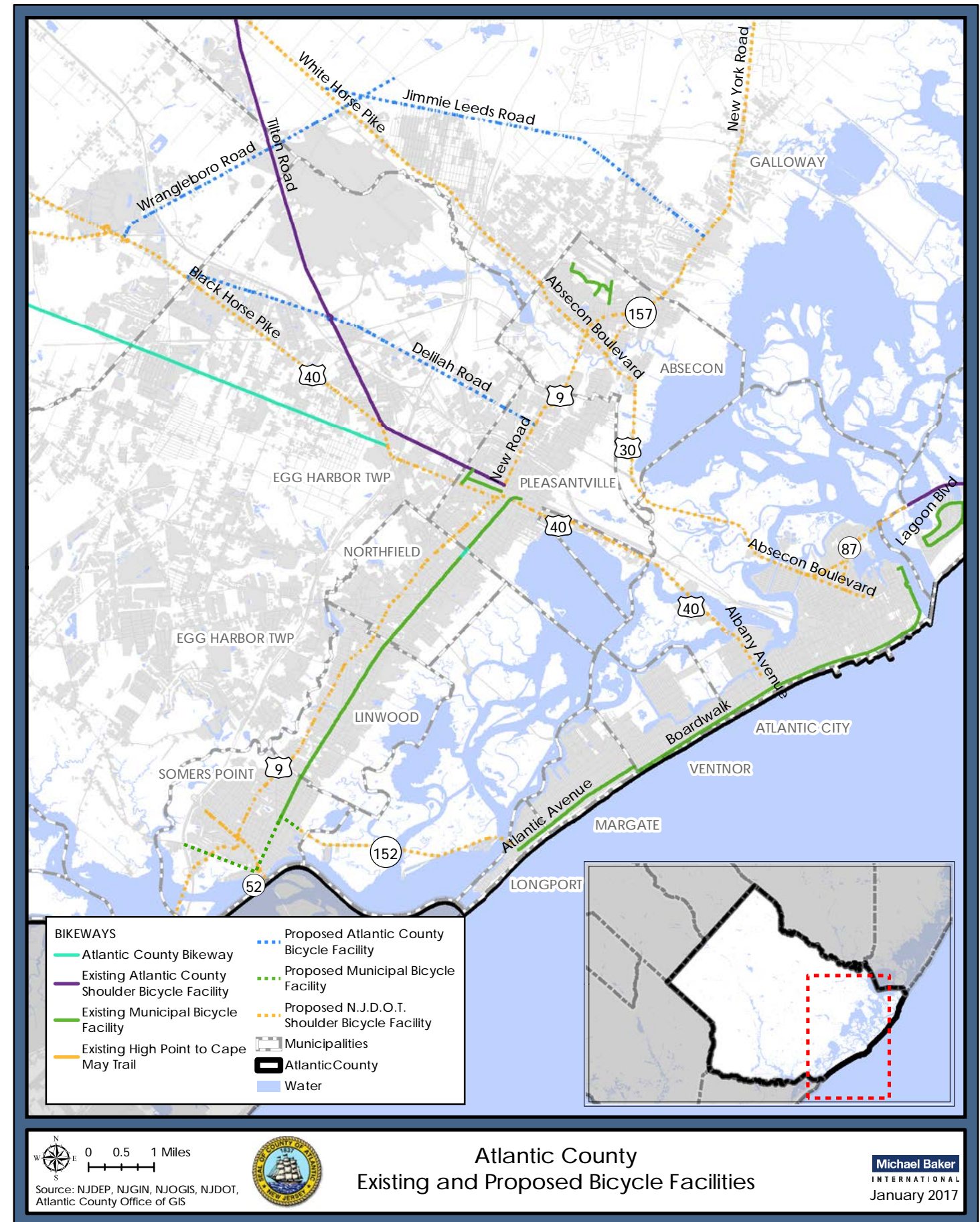
As of June 2016, 130 municipalities and 7 counties in New Jersey had implemented Complete Streets policies, propelling New Jersey to the top spot in the nation for policy adoption.²⁴

In Atlantic County, the municipalities of Buena, Egg Harbor City, Hammonton, Pleasantville, Northfield, Linwood, Somers Point, Margate, Ventnor City, and Atlantic City have adopted Complete Streets policies. While each municipality's policy is unique, all emphasize the importance of providing streets that are safe for all users, especially bicyclists and pedestrians. The policies call for new construction to provide for these users when possible, although most policies allow for exceptions if a Complete Street is not appropriate for the local context or would be prohibitively expensive, unsafe, or under-utilized. Atlantic County has not adopted a county-wide Complete Streets Policy.

BICYCLE FACILITIES

Atlantic County is currently working to expand its bicycle infrastructure. The statewide High Point to Cape May Bicycle Route, overseen by NJDOT, is a major north-south bicycle corridor in the County, running along NJ Route 50 through Egg Harbor City and Hamilton. Shorter segments of shoulder bike facilities are found throughout the County and municipal facilities provide paths along Atlantic Avenue in Margate, Ventnor and Atlantic City, The Boardwalk in Atlantic City, and Brigantine Boulevard in Brigantine. The Atlantic County Bikeway also runs 7.5 miles from Hamilton Township to Egg Harbor Township along the former Pennsylvania-Reading Seashore Line. A County bicycle facility located along Tilton

22. NJ Bicycle and Pedestrian Resource Center
23. Making Complete Streets a Reality, NJDOT
24. NJ Bicycle and Pedestrian Resource Center



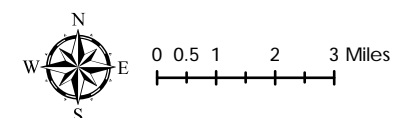
Atlantic County Existing and Proposed Bicycle Facilities (As of June 2014)

BIKEWAYS

- Atlantic County Bikeway
- Existing Atlantic County Shoulder Bicycle Facility
- Existing Municipal Bicycle Facility
- Existing High Point to Cape May Trail
- - - Proposed Atlantic County Bicycle Facility
- - - Proposed Municipal Bicycle Facility
- - - Proposed N.J.D.O.T. Shoulder Bicycle Facility

Areas and Boundaries

- Counties
- Atlantic County
- Municipalities
- Urbanized Land
- Water



Source: NJDEP, NJGIN, NJGIS, NJDOT, Atlantic County Office of GIS

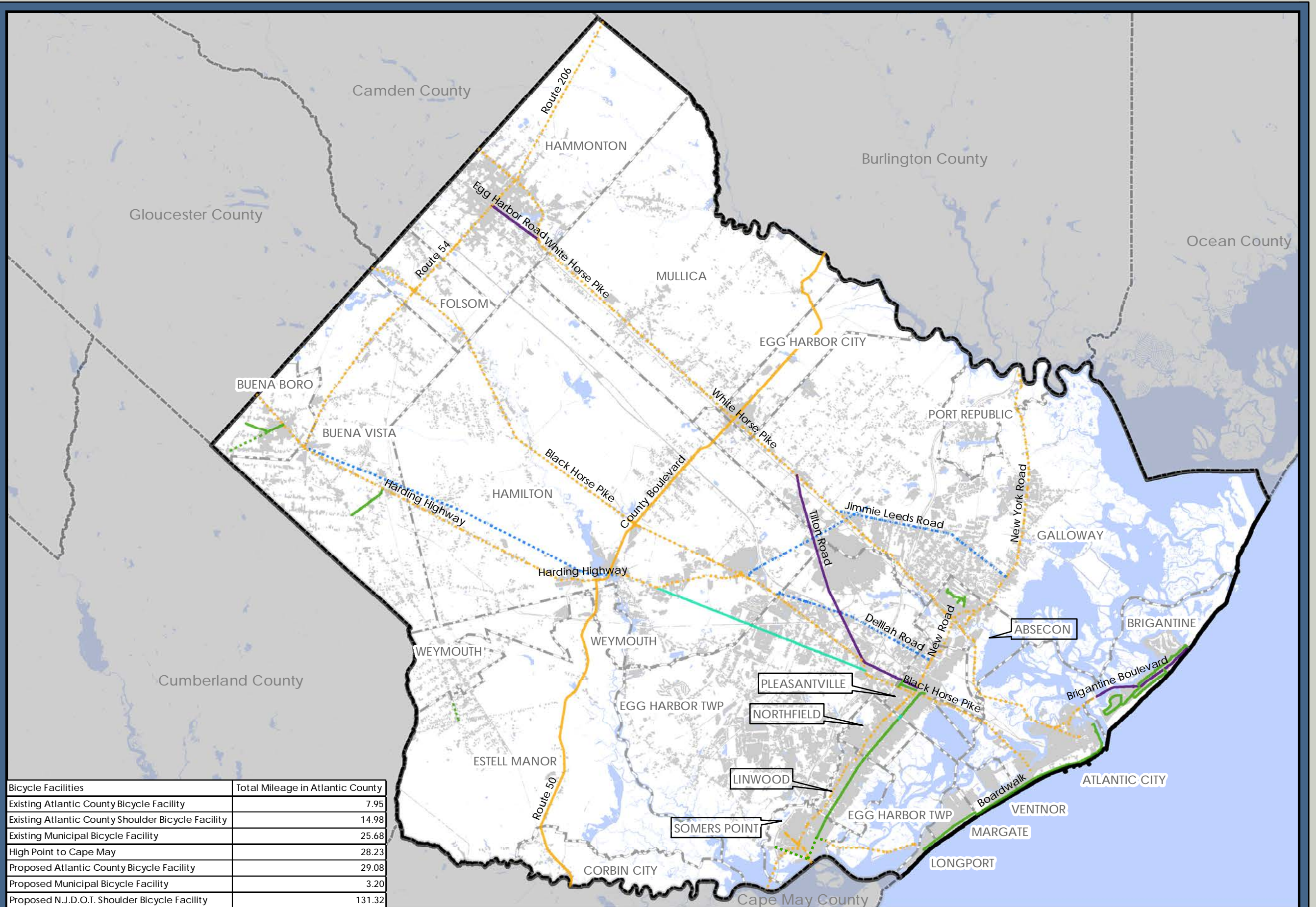
This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL
January 2017

Bicycle Facilities	Total Mileage in Atlantic County
Existing Atlantic County Bicycle Facility	7.95
Existing Atlantic County Shoulder Bicycle Facility	14.98
Existing Municipal Bicycle Facility	25.68
High Point to Cape May	28.23
Proposed Atlantic County Bicycle Facility	29.08
Proposed Municipal Bicycle Facility	3.20
Proposed N.J.D.O.T. Shoulder Bicycle Facility	131.32



Road (CR 563) and Washington Avenue (CR 608) connects Egg Harbor City and Pleasantville. The Pleasantville to Somers Point Bike Path is a north-south municipal bike path running parallel to US Route 9.

In 2015, Somers Point received a grant to construct a 500-foot bike facility connecting this path with the Route 52 Causeway.²⁵ The new Garden State Parkway bridge over Great Egg Harbor Bay contains a pedestrian and bike path which allows pedestrians and bicyclists to travel between Route 9 in Somers Point and Upper Township in Cape May County. These projects allow Somers Point to act as a gateway for bicycle travel into southern Atlantic County.

Table 3.9 Existing Bicycle Facilities in Atlantic County

Facility Location	Type
Tilton Road - Route 30 to Route 9	County
Washington Road - Cardiff Circle to Route 9	County
CR 638 / Brigantine Ave - Bay Ave. to 29th St.	County / Mun..
Atlantic County Bikeway East	County
Somers Point to Pleasantville Bike Path	Municipal
Boardwalk in Atlantic City and Ventnor	Municipal
Dr. J. Pitney Recreational Bike Path Absecon	Municipal
Buena Vista Bike Lane - Cedar Ave / CR 540	Municipal
Buena Bike Path - Central Railroad ROW	Municipal
Atlantic Ave Bike Lane - Margate	Municipal
Wrangleboro Rd. - Galloway	Municipal

Portions of the Pine Barrens Byway in Atlantic County possess formally classified bicycle and pedestrian facilities. The Byway provides non-motorized users a unique way of experiencing its intrinsic qualities.

The County, various municipalities, and the NJDOT have proposed new bicycle facilities to provide greater cross-county connectivity. The proposed routes include several that will span the length of the County: two north-south routes, three east-west routes, and several smaller segments. Two of the east-west routes propose to extend all the way to Atlantic City near the boardwalk where cyclists will be able to connect with municipal facilities within a short distance.

25. Press of Atlantic County

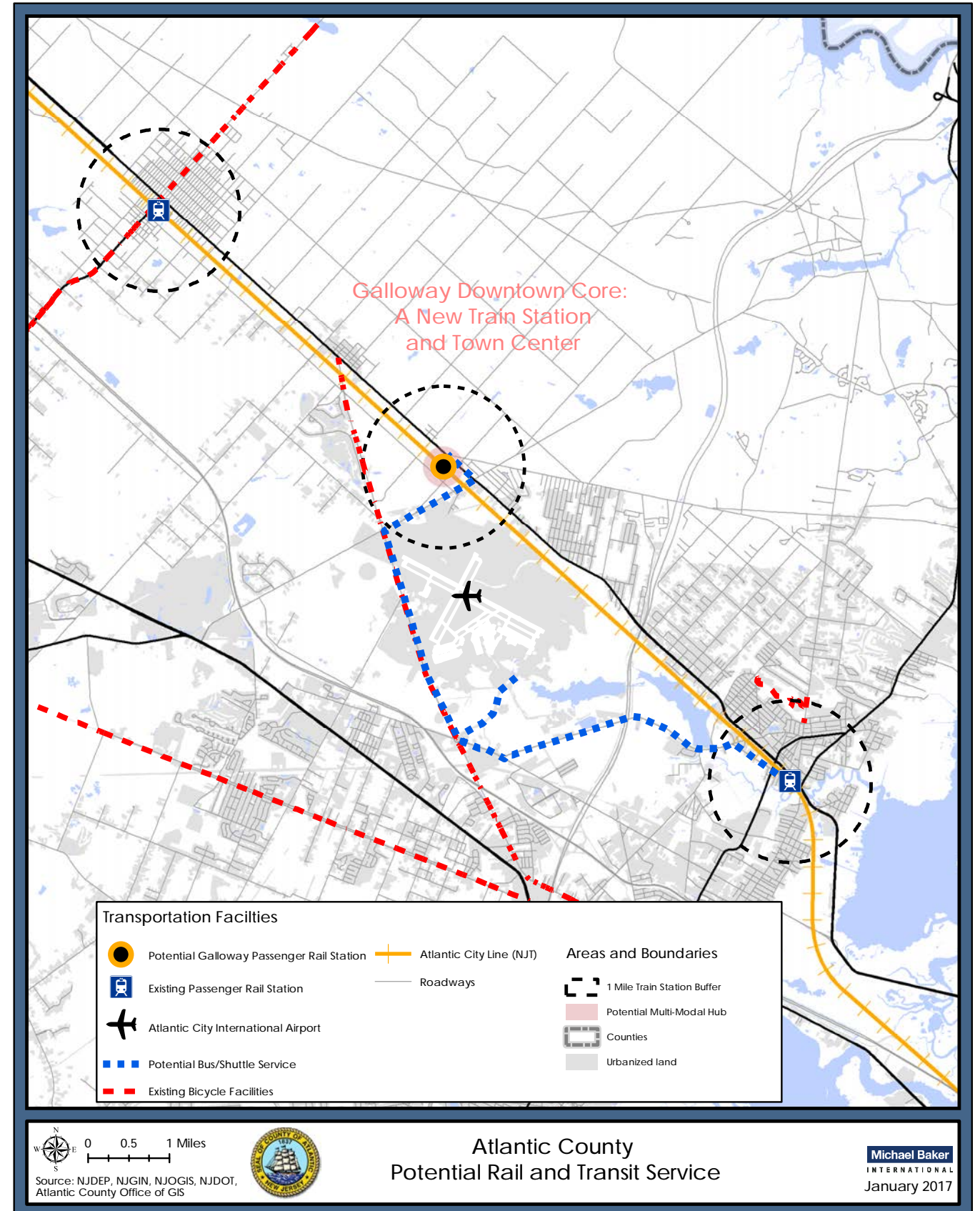
POTENTIAL IMPROVEMENTS

Atlantic County has no shortage of transportation infrastructure. However, much of its network is aging or is not used to its full potential. The County features a direct rail connection to Philadelphia and its suburbs, but the line consists of a single track for much of its duration. This limitation severely constrains the speed and frequency of trains on the line, limiting its utility for area residents and visitors. With a second track and up-to-date infrastructure, faster and more frequent trains can more efficiently link the economies, populations, and commuter sheds of Atlantic County and Philadelphia.

Rail connection to Philadelphia enables daily commuting patterns between the two cities, and direct access to 30th Street Station with connections to New York, Washington, Boston, and beyond. The existing rail infrastructure makes it possible to reestablish a connection between Atlantic City and New York Penn Station. A proposed multi-modal hub located in Galloway Township coupled with the bolstered Atlantic City Line could bring Atlantic City International Airport within reach of millions more passengers. A growing airport is the foundation of a strong local economy, attracting businesses and tourists alike.

Public transit promotes economic development, specifically compact development with multiple uses rather than single uses, a pedestrian orientation, and attention to civic uses. Development along the Atlantic City Line and around the four rail stations in Atlantic County could encourage a new form of community building that supports transit use and transforms the surrounding areas into places to live, work, and invest. Transit hubs should also be considered in the Suburban Region where practical, such as Hamilton Mall.




A new rail station at Galloway presents a number of opportunities for Atlantic County. First, the proposed station would be located within a short distance of Atlantic City International Airport, which could easily be directly accessed by regular shuttles thereby creating a gateway to the Airport for residents from Atlantic City to Philadelphia. Secondly, a Galloway Station, with improved connectivity through the Airport and improved Atlantic City Line rail service, would provide an ideal opportunity for a multi-modal transportation hub. Land adjacent to the station, near the intersection of Route 30 and S. Genoa Avenue, has already seen interest from developers. With Galloway Station as a multi-modal transportation hub with useful regional and national connections, development can occur at higher densities, creating a pedestrian-oriented town center. Encouraging future growth in

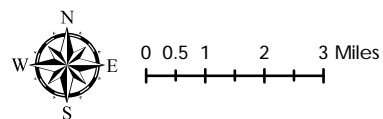


Atlantic County Municipalities with Complete Streets Policies (2016)

 Municipalities with Complete Streets Policies

Areas and Boundaries

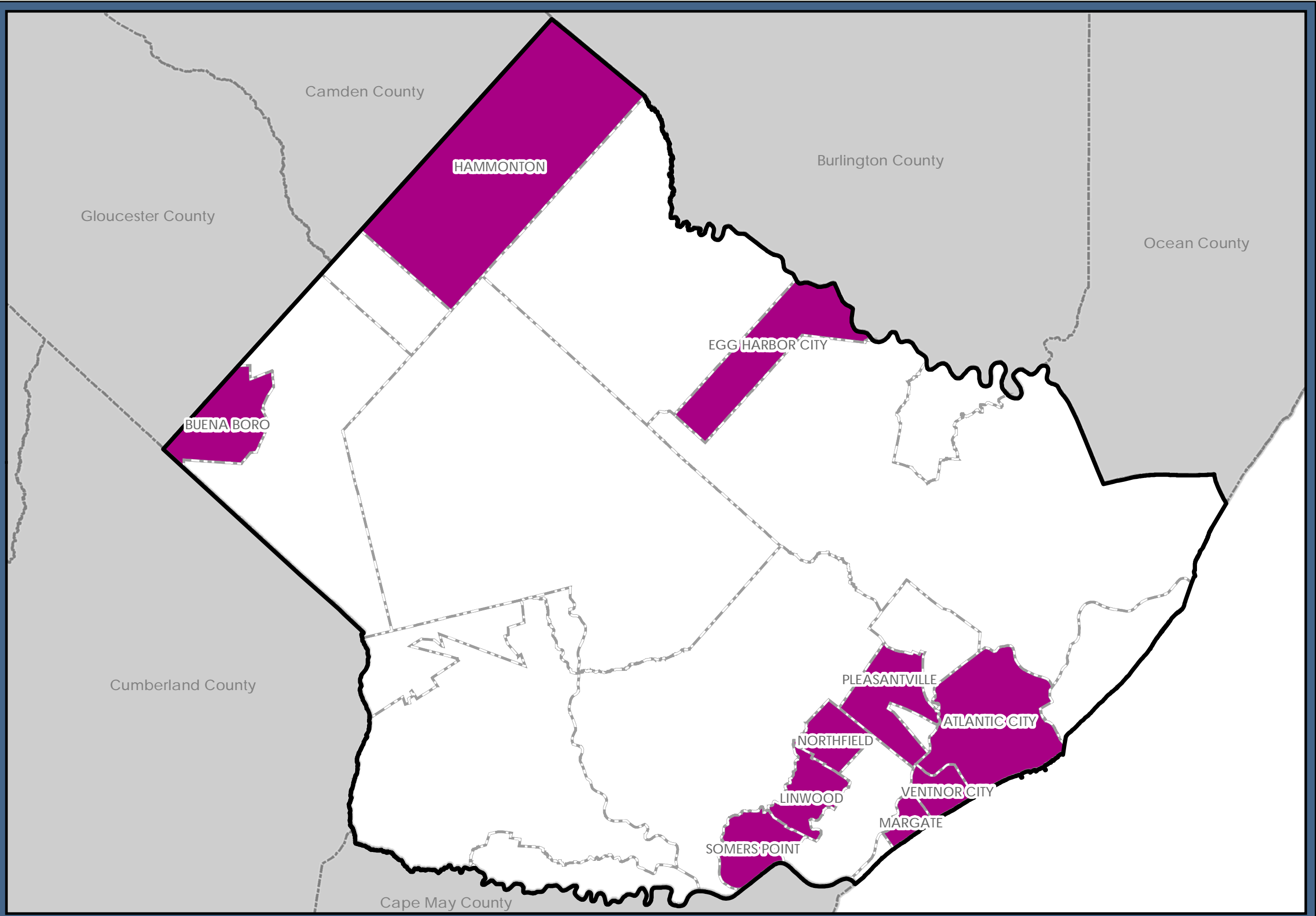
-  Atlantic County
-  Municipalities
-  Counties



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



concentrated nodes will help the County take advantage of its existing infrastructure, reduce automobile usage and dependency, and help preserve its treasured natural environment by discouraging suburban sprawl.

In addition to the Atlantic City Line, NJ Transit should investigate a connection to the North Jersey Coast Line, which terminates in Ocean County. Utilizing existing rights-of-way, an extension to Atlantic County has the potential to connect the entire Jersey Shore region, including regional hubs such as Toms River and Red Bank. NJ Transit has previously studied such a proposal.²⁶

The historic Mays Landing train station in Mays Landing served passengers until service ceased in 1950. The County purchased this property for the construction of the Atlantic County Bikeway. Restoration of this train station should be considered.

Freight rail saves consumers billions of dollars while reducing energy consumption and pollution, lowering greenhouse gas emissions, cutting highway gridlock, and reducing the high costs to taxpayers of highway construction and maintenance.²⁷ Expansion of freight rail could serve nearly every industrial, wholesale, retail, and resource-based sector of Atlantic County's economy. A second track along the Atlantic City Line could allow freight rail companies such as Conrail to service adjacent industry and also allow the siting of freight rail operations within adjacent municipalities. An example of potential for freight rail expansion is the Barrette Outdoor Living warehouse (formerly Lenox China factory) on Tilton Road in Egg Harbor City.

Atlantic County has more to offer than its coastal areas. The County contains thousands of acres of protected Pinelands – the “largest surviving open space on the eastern seaboard” between Maine and Florida.²⁸ The defunct train lines that cross the region provide an opportunity to expand its bicycle and pedestrian trail network. The current trails connect towns along the coast, offering opportunities for recreation and green transportation. Expanding this network throughout the rest of the County would create opportunities for county-wide recreation, as well as help grow its reputation as a center of eco-tourism by offering new ways to explore its unique natural environment.

Atlantic County should seek out new opportunities for expanding its bicycle facilities network on county roadways. A potential north-south bicycle route adjacent to County Route 557 would connect Estell Manor, Weymouth Township, and Buena Vista Township. A potential east-west bicycle route on County Route 669 would intersect with the bicycle facilities adjacent to County Route 557 and connect Estell Manor and Weymouth Township with Route 50 near Mays Landing.

A potential east-west bicycle route utilizing existing right-of-way would connect Mays Landing to Buena. This route would begin in Mays Landing and utilize a defunct rail line that travels northwest through wooded areas to Buena.

26. Ocean County Comprehensive Master Plan

27. Association of American Railroads

28. Pinelands Preservation Alliance, Pinelands Overview

Additional priority linkages within the on-road bicycle facility network include Delilah Road (CR 646) between Route 40 and Route 9, English Creek Road, Wrangelboro Road between Route 40 and Jimmie Leeds Road to link the Hamilton Mall, Pitney Road to Moss Mill Road, and Philadelphia Avenue from Route 30 through Egg Harbor City to the County Line.

The Pine Barrens Byway has provided non-motorized users opportunities to uniquely experience the Pine Barrens. However, there are notable segments of the Byway where significant opportunities for improving bicycle and pedestrian activity exist. The Byway should be identified as an opportunity for expanding and improving connections in Atlantic County's bicycle facilities network.

A connection between the Atlantic County Bikeway and the Pleasantville-Somers Point Bike Path would connect the suburban region of the County to Somers Point and Cape May County. A connection between the Pleasantville-Somers Point Bike Path and Atlantic City along US Route 40/322 would connect the suburban region of the County to The Boardwalk in Atlantic City. With the Garden State Parkway's future pedestrian-bike path over Great Egg Harbor, a connection between the pedestrian-bike path and the Pleasantville-Somers Point Bike Path via bike lanes on Somers Point-Mays Landing Road should be considered. The Potential Improvements map identifies these potential connections.

The County should also continue to improve sidewalks and other pedestrian infrastructure along roadways under its jurisdiction. Existing substandard sidewalks should be improved to ADA accessible standards, and filling in missing links should be prioritized. In addition to improvements to sidewalk infrastructure, the County should work to provide pedestrian scale lighting, particularly at intersections and other areas with high traffic volumes. Improvements to way-finding signage may also be beneficial.

POLICY RECOMMENDATIONS

Encourage the creation of a second track on NJ Transit's Atlantic City Line to provide improved freight rail and passenger rail service between Atlantic City and Hammonton and points between Atlantic County and Philadelphia.

The Atlantic City Line has supported Atlantic County's economic growth and should continue to be an economic driver throughout the County. The line, which has just a single track through the majority of the County, is highly constrained in speed, capacity, and frequency by limited infrastructure. As of today, there are just four scheduled weekday AM trains in each direction at each of the four rail stations within the County. A second track would allow for additional rail service with the potential to become a convenient and competitive option for both commuters and leisure travelers. Additional rail service will also provide Atlantic City International Airport passengers a more reliable way of getting to and from ACY – whether their destination be Atlantic City or Philadelphia. Due to the constraints present related

to the rail line's location in the Pinelands National Reserve, Atlantic County should explore the regulatory language of the Pinelands Comprehensive Management Plan for any potential revisions that may allow accommodation of a transportation project with regional economic importance.

Encourage municipalities in Atlantic County with existing bus stations and/or rail terminals to apply for NJ Transit's Transit Village designation.

A bolstered Atlantic City Line has the potential to increase economic activity at existing rail stations and new rail stations in the future. In addition, this program promotes and encourages revitalization efforts and transit-oriented development around bus stations and rail terminals. Benefits of becoming a designated Transit Village include priority funding and technical assistance from some state agencies and a commitment from the State of New Jersey to the municipality's vision for redevelopment. Additionally, this recommendation advances the Pinelands CMP goals and objectives in advancing compatible development in growth-oriented Pinelands Management Areas (PMAs), while also reducing the effects of automobile-dependent development forms.

Encourage the development of Transit Villages along the Atlantic City Line.

The existing rail stations in Hammonton, Egg Harbor City, Absecon, and Atlantic City have the potential to become Transit Villages. A new rail station in Galloway presents a number of opportunities for Atlantic County. A proposed station would be located within a short distance of Atlantic City International Airport, which could be directly accessed by regular shuttles. Galloway has the potential to become a gateway to the Airport for passengers from the existing rail stations in the County as well as Camden County and Philadelphia-30th Street Station. With frequent and multimodal transportation services, a Galloway Station could support significant Transit-Oriented Development. Land adjacent to the station, near the intersection of US 30 and S. Genoa Avenue, has already seen interest from developers.

Seek feasibility of additional public transit routes and more frequent service in areas of need.

According to SJTPO, most of Southern New Jersey's transit service is concentrated in Atlantic County, specifically within Atlantic City.²⁹ However, there are many unmet transit needs amongst transit-dependent and rural populations. As many employment centers exist along highway corridors in the inland region of the County, new and improved public transit services may be needed as long as residential densities can support potential ridership.

Continue to partner with Cross County Connection Transportation Management Association on shuttle services and any other technical and marketing support this organization can provide.

Cross County Connection can provide technical transportation planning services

29. SJTPO, <http://sjtpo.org/modes/>

including route planning, passenger feedback surveys and analysis, GIS mapping, customer service support, a passenger alert system via smart phones and email, and grant administration including report writing and grant renewal applications. Marketing support services include design of shuttle logos and graphics, development of brochure which includes schedule and map, development and placement of advertising, development of decals for vehicles, public relations coordination, and outreach to businesses along each route.

Encourage and promote the usage of Atlantic City International Airport for passengers traveling to and from Philadelphia and the surrounding area.

More frequent and convenient rail connection to Atlantic City International Airport offers an opportunity to make traveling through ACY more attractive and competitive for Philadelphians and population centers in Gloucester, Camden and Burlington Counties. Better ground transportation options coupled with an advertising campaign can solidify the ACY as an alternative to Philadelphia International Airport.

Encourage and promote the usage of Atlantic City International Airport as a tremendous economic benefit.

The New Jersey State Airport System Plan (SASP) concludes that New Jersey receives an estimated \$1.7 billion in economic benefit from the operation of the public use airport system and from spending by visitors who arrive in New Jersey via one of the system airports using general aviation. When commercial service, including spending by arriving passengers, at ACY, Newark Liberty International Airport and Trenton-Mercer Airport are added, aviation impacts are increased by 216,400 jobs, \$6.5 billion in payroll benefits, and \$12.2 billion in output.³⁰

Explore possibilities for more frequent and convenient north-south transit connections along the coast.

With the Atlantic City Line providing a major axis of east-west transit through the County, its stations and transit villages can be used to anchor complementary north-south bus routes. Connections at Atlantic City, Galloway/ACY Airport, and Absecon can provide bus connections to Cape May and Ocean Counties, including direct links between the barrier islands. A transit route along the coast between Ocean City in Cape May County and Atlantic City would connect two major shore destinations for both commuters and tourists. Better connections to Atlantic County will reinforce Atlantic City as the region's economic and transportation center, and reduce automobile dependency.

Adopt a county-wide Complete Streets Policy to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.

As of 2016, seven of the 21 New Jersey counties have adopted county-wide Complete

30. New Jersey State Airport System Plan

Streets policies. These counties are committed to improving safety by providing pedestrians, bicyclists, and drivers with adequate facilities so that all users and modes can safely use streets together. By adopting a policy, Atlantic County can incorporate the principles of Complete Streets into county roadway design that will direct transportation planners, engineers, and other government officials to consider and balance the needs of all roadway users.

Encourage all municipalities in Atlantic County to adopt Complete Streets policies to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.

In Atlantic County, the municipalities of Buena, Egg Harbor City, Hammonton, Pleasantville, Northfield, Linwood, Somers Point, Margate, and Atlantic City have adopted Complete Streets policies over the past several years. The County's existing transportation infrastructure presents opportunities for more municipalities to provide safe and efficient pedestrian and bicycle facilities.

Continue to strengthen policies that create on and off-street pedestrian and bicycle infrastructure in line with the County's goal of promoting its natural environment.

Atlantic County offers abundant natural assets beyond its coast line, such as the Pinelands. This, along with its flat terrain and many abandoned rail lines in Egg Harbor Township, Galloway, Mullica, and Estell Manor make widespread bicycle and pedestrian infrastructure an attractive travel option, both for commuters and



*Atlantic City International Airport
(Source: Press of Atlantic City pressofatlanticcity.com)*

recreational users. A complete network can help the County promote sustainable transportation options, while also providing safe and low-impact methods of

exploring the outdoors. This recommendation is compatible with the goals of the Pinelands CMP by providing safe, environmentally friendly access to the region's unique ecology, cultural resources, and the Pine Barrens Scenic Byway.

Continue to improve and expand pedestrian infrastructure to improve safety and mobility.

Improve sidewalks along County roads to modernize outdated and substandard infrastructure, ensure compatibility with the Americans with Disabilities Act, and fill in missing links in the sidewalk infrastructure. Several target areas include Pitney Road (CR 634), Jimmie Leeds Road (CR 561), Tilton Road (CR 563), and Zion Road (CR 651).

Educate residents about pedestrian and cyclist safety and sharing roads.

The County should expand public outreach and information efforts to educate residents about sharing public roads and ensuring safety for pedestrians, cyclists, and motorists. One method may be to collaborate with schools and other local entities to support programs like Safe Routes to School and other outreach programs.

Encourage preservation of active rail facilities, historic rail facilities and other rail facility right-of-way for future rail and/or non-rail use.







Both passenger and freight rail provide limited services throughout Atlantic County. Although the Atlantic City Line is the only active passenger rail service, non-active rail lines should be preserved for potential use in the future. Potential uses may include reestablishing passenger and/or freight rail usage or developing a Rails to Trails concept of converting non-active rail lines to bicycle trails/paths and pedestrian walkways.

Encourage the preparation of an update to the Bicycle and Pedestrian Master Plan for Atlantic County.





A county-wide Bicycle and Pedestrian Master Plan was originally prepared in 1995 and updated in 2000 and 2005. This Plan incorporates information and recommendations from those plans along with references to developments that have taken place since 2005. A new, more comprehensive version of the Bicycle and Pedestrian Master Plan should further the goals of reducing overall carbon emissions, increasing the number of people who walk and bike, promoting eco-tourism, and making Atlantic County a more attractive place for residents to enjoy recreational activity.

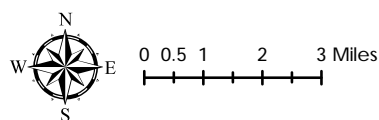
Atlantic County Transit Vision

Components

-  Existing East-West Rail Corridor
-  Future North-South Bus Corridors
-  Future East-West Transit Corridor
-  Primary Transit Hub
-  Secondary Transit Hub
-  Airport Shuttle

Areas and Boundaries

-  Atlantic County
-  Counties
-  Water
-  Urbanized Land



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

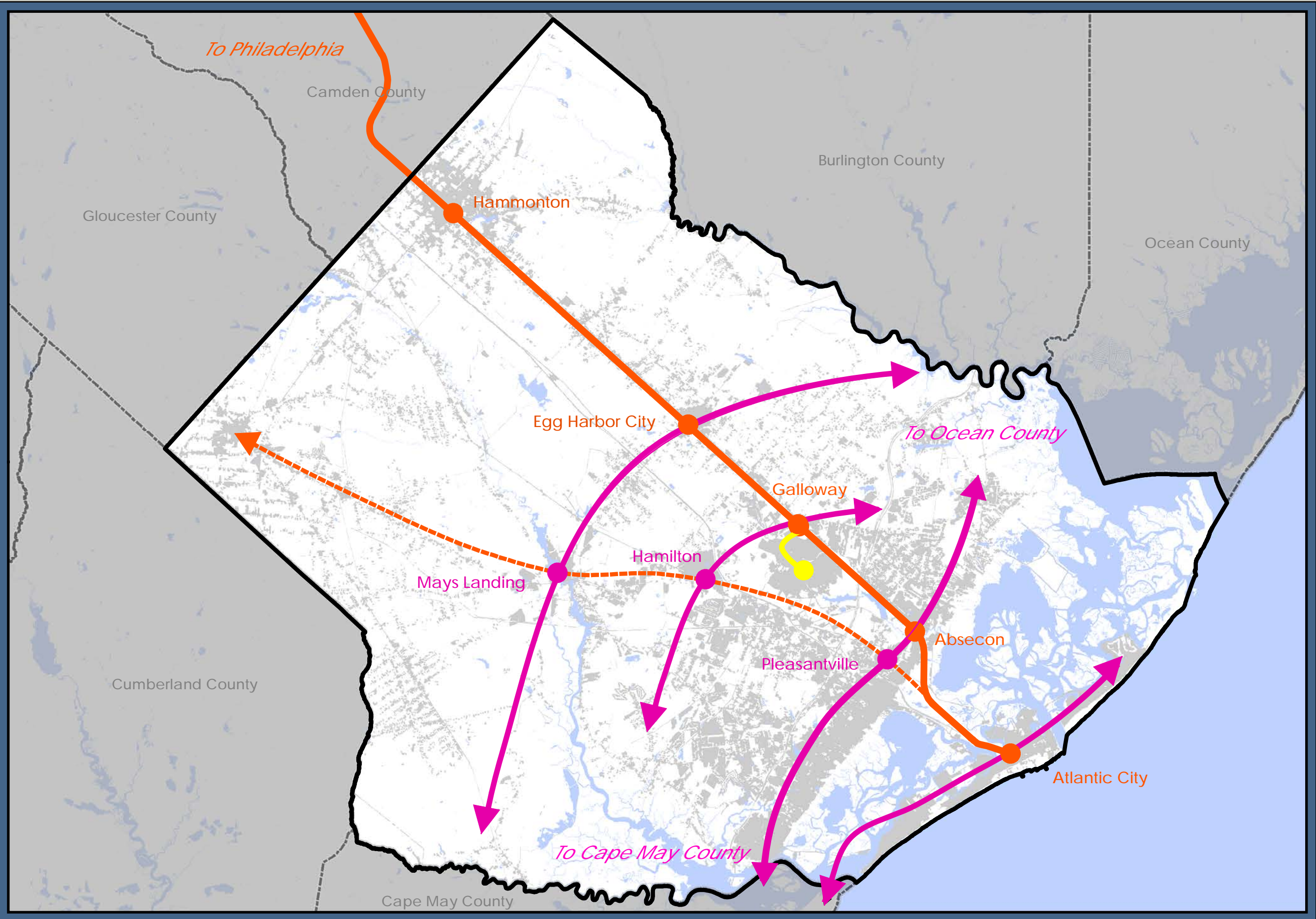
This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

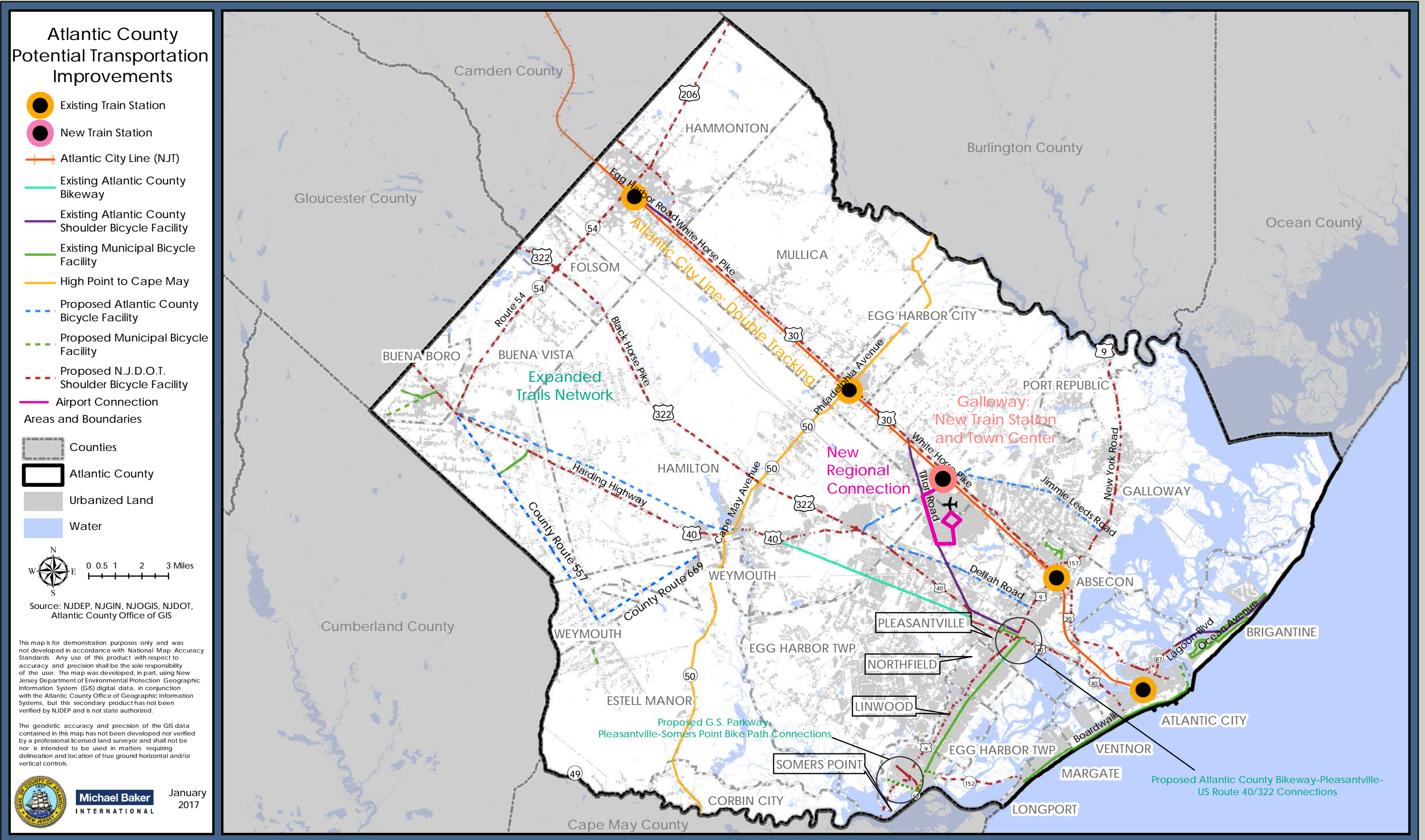
The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL

January 2017





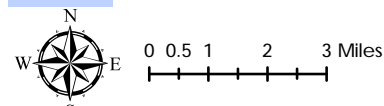
Atlantic County Bicycle Facilities and Historic Rail Facilities

- Bicycle Facilities**
- Atlantic County Bikeway
 - Existing Atlantic County Shoulder Bicycle Facility
 - Existing Municipal Bicycle Facility
 - High Point to Cape May
 - Proposed Atlantic County Bicycle Facility
 - Proposed Municipal Bicycle Facility
 - Proposed N.J.D.O.T. Shoulder Bicycle Facility

- Rail Facilities**
- Active Railroads
 - Historic Railroads

Areas and Boundaries

- Atlantic County
- Municipalities
- Counties
- Urbanized Land
- Water

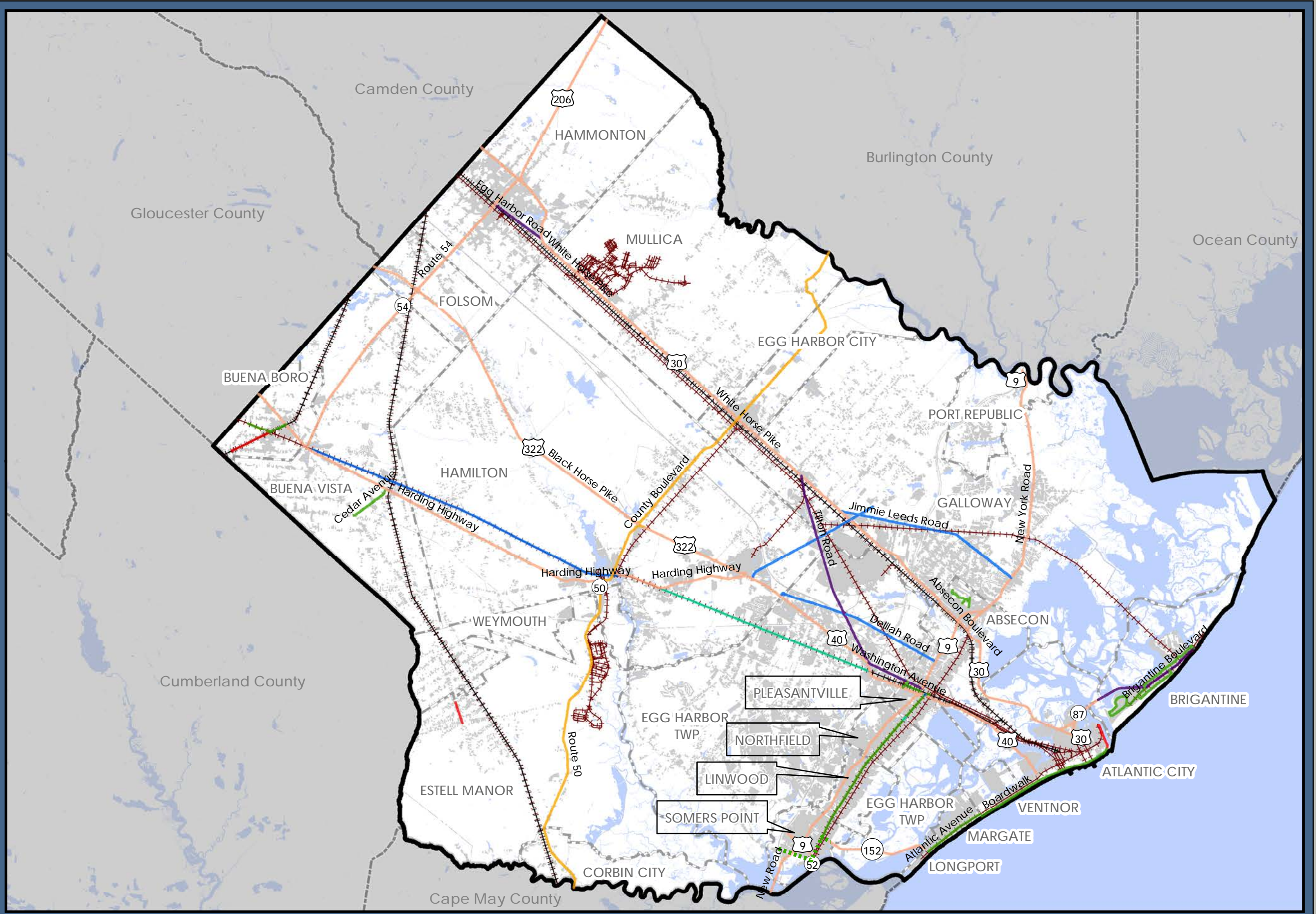


Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.

January 2017



IV. *Infrastructure*



SOLID WASTE MANAGEMENT

New Jersey Historical Perspective

Prior to the 1970s, solid waste management in New Jersey was accomplished locally through the disposal of solid waste at private landfills. This led to the enactment of the New Jersey Solid Waste Management Act (SWMA) of 1970. The SWMA established a regulatory framework for the collection, transportation, and disposal of solid waste for more than four decades in the state. It designated each of the twenty-one (21) counties in New Jersey, and the Hackensack Meadowlands Commission, as the solid waste management districts.

Each district was given the authority and responsibility to develop and implement a comprehensive solid waste management plan that would detail the individual district's solid waste management needs for a ten-year planning period. The plan was required to include: (1) an inventory and appraisal, including life expectancy, of all existing solid waste disposal facilities; (2) a site plan including all existing solid waste facilities and sufficient, additional, available sites to provide solid waste facilities to treat and dispose of the actual and projected amounts of solid waste over the ten year planning process; and (3) a disposal strategy which incorporates the maximum practicable use of resource recovery. By the early 1980's, the New Jersey Department of Environmental Protection (NJDEP) had approved solid waste management plans for each of the 22 solid waste management districts as was required by the SWMA.

Up until the early 1980s New Jersey received large amounts of waste from neighboring states, the majority coming from New York and Pennsylvania. During the late 1980s, state regulations required the closing of many landfills and incinerators. During this time period, more efficient municipal solid waste incinerators improved emissions controls and new, modern landfills replaced older facilities causing the amount of waste disposed of in New Jersey to decline to less than 6 million tons per year from 12 million tons per year (NJDEP, 2016).

In the mid-1990s, recycling became an integral component to the management of solid waste in New Jersey due to the New Jersey Statewide Mandatory Source-Separation and Recycling Act of 1987. As identified in the Recycling Act, statewide mandatory recycling goals were established, and municipalities were assigned the responsibility for implementing recycling programs for residential, commercial, and institutional waste generators.

Atlantic County Historical Background

The Atlantic County Solid Waste Management Plan of 1980 determined that recycling, resource recovery and landfill siting were the major issues to be resolved. The plan recommended that six County Districts be established, each with a landfill. The eventual closure of these landfills would be combined with the expansion of the Pinelands Park Landfill.

In June of 1981, the Board of Freeholders designated the ACUA as the implementing agency for the Atlantic County Solid Waste Management Plan. As the implementing agency, the ACUA was responsible for performing a landfill siting study for a new landfill within the County. Prior to the Freeholder's action, solid waste generated in the County had been buried in 46 unlined landfills, which had become a direct threat to groundwater resources. The Pinelands Commission required that many of these landfills be closed by August 8, 1990.

Amendments to the 1980 Atlantic County Solid Waste Management Plan were adopted in 1986 and 1988 to ensure there would be sufficient capacity for the County's solid waste. The amendments also permitted a temporary expansion of the Pinelands Park landfill, conditioned upon a closure date of August 1990 as promulgated by the Pinelands Comprehensive Management Plan (CMP). The amendments further stipulated that no landfills located within the Pinelands areas of Atlantic County should expand; nor would any new landfills be sited in the Pinelands.

Starting in 1990, the ACUA established a nationally recognized system to recycle, compost, and dispose of solid waste. A double-lined landfill, recycling center, composting site, transfer station, and ancillary facilities were built on a 360-acre site known as the Howard "Fritz" Haneman Environmental Park. In an effort to become self-sufficient, the County then underwent a series of amendments and modifications in order to operate a landfill adjacent to the transfer station. However, due to its proximity to the Atlantic City Airport, a bird deterrent plan was required for the landfill. The amendment was later rejected because the bird deterrent plan was not adequate. A subsequent amendment was approved which designated a Limited Use Landfill for that was permitted to accept waste types 13 and 27 (bulky waste and dry industrial waste, respectively).

In July 2009, the Atlantic County Board of Chosen Freeholders adopted an amendment to the County Plan that was developed in response to the updated Statewide Solid Waste Management Plan. The County Plan amendment contained, among other things, the required identification of a solid waste disposal strategy. As a result of this requirement, the County established a market participant strategy which allowed delivery of solid waste to any legal in-state or out-of-state solid waste facility.

In April 2012 the Atlantic County Board of Chosen Freeholders adopted an amendment to the County Plan to amend the solid waste disposal strategy by switching to an intra-state solid waste flow system. Accordingly, the ACUA Landfill was designated as the only disposal facility for all solid waste types 10, 13, 13c, 23, 25, 27 and 27A generated by any residential, public commercial, industrial or institutional establishment located within Atlantic County.

Atlantic County Solid Waste Management Operations

The Atlantic County Utilities Authority (ACUA) is responsible for enhancing the quality of life through the protection of waters and lands from pollution by providing responsible waste management services. The ACUA activities within Atlantic County include curbside recycling of mixed paper, cardboard, glass, plastic containers, plastic bags, aluminum, tin, bi-metal, steel cans, and household batteries. The ACUA also provides for the collection of household hazardous wastes at designated times and can manage "special materials" such as freon gas, sewage sludge and tires. The County's Solid Waste Management Plan is additionally supplemented through municipal recycling of Class A Recyclables using drop-off centers. Class A Recyclables are paper, plastic, metal, and glass and are also collected by the ACUA. An invaluable component of any management plan including solid waste is the ongoing need to provide public education. The ACUA satisfactorily accomplishes this by providing educational opportunities on proper practices of solid waste management. These educational efforts are particularly aimed at source reduction as a function of "buying habits, product selection and waste generation." The ACUA also provides tours of all facilities, publishes a quarterly newsletter, and attends community events to promote recycling.

Inventory of Solid Waste and Recycling Facilities

According to the Atlantic County Solid Waste Management Plan, there are a combination of both public and private facilities for the disposal and recycling of solid waste within Atlantic County. These facilities are permitted to handle the following waste types:

Type-10 Municipal (household, commercial and institutional): Waste originating in the community consisting of household waste from private residences, commercial waste which originates in wholesale, retail or service establishments, such as restaurants, stores, markets, theatres, hotels and warehouses, and institutional waste material originated in schools, hospitals, research institutions and public buildings.

Type-13 Bulky Waste: Large items of waste material, such as appliances and furniture. Discarded automobiles, trucks and trailers and large vehicle parts, and tires are included under this category.

Type-13C Construction and Demolition Waste: Waste building material and rubble resulting from construction, remodeling, repair and demolition operations on houses, commercial buildings, pavements, and other structures. The following materials may be found in construction and demolition waste: treated and untreated wood scrap; tree parts, tree stumps and brush; concrete, asphalt, bricks, blocks and other masonry; plaster and wallboard; roofing materials; corrugated cardboard and miscellaneous paper; ferrous

and non-ferrous metal; non-asbestos building insulation; plastic scrap; dirt; carpets and padding; glass (window and door); and other miscellaneous materials; but shall not include other solid waste types.

Type-23 Vegetative Waste: Waste materials from farms, plant nurseries and greenhouses that are produced from the raising of plants. This waste includes such crop residues as plant stalks, hulls leaves and tree wastes processed through a wood chipper. Also included are non-crop residues such leaves, grass clippings, tree parts, shrubbery and garden wastes.

Type-25 Animal and Food Processing Wastes: Processing waste materials generated in canneries, slaughterhouses, packing plants or similar industries, including animal manure when intended for disposal and not reuse. Also included are dead animals. Animal manure, when intended for reuse or composting is to be managed in accordance with the criteria and standards developed by the Department of Agriculture as set forth at N.J.A.C. 4:9-38.

Type-27 Dry industrial Waste: Waste materials resulting from manufacturing, industrial and research and development processes and operations, and which are not hazardous in accordance with the standards and procedures set forth at 7:26G. Also included are non-hazardous oil spill cleanup waste, dry non-hazardous pesticides, dry non-hazardous chemical waste, and residue from the operations of a scrap metal shredding facility.

Type-27A Waste material consisting of asbestos.

Atlantic County has one (1) solid waste disposal facility: the Atlantic County Utilities Authority (ACUA) Landfill in Egg Harbor Township. It is available to accept all solid waste generated within the County, including waste types 10, 13, 13C, 23, 25, 27 and 27A. The facility is also used as a drop-off location for recyclables and bulky waste, a Class A recycling center, a Class B recycling center for trees and brush, and a Class C composting facility for leaves, grass and brush.

There is one (1) transfer station located within Atlantic County. The ACUA operates a transfer station as part of its facility in Egg Harbor Township.

Both private and municipal service providers operate several “Class B” Recycling Centers within Atlantic County. Class B materials include source-separated concrete, brick, block, asphalt-based roofing scrap, wood, asphalt, trees and tires. Class B Recycling Centers provide for the receipt, processing, transfer and storage of these materials subject to NJDEP approval. These facilities provide for the recycling of these materials rather than disposing of them at the landfill. In addition, several municipalities operate composting facilities within the County for leaves, grass, and brush. They include City of Absecon, Egg Harbor Township, Galloway Township, City of Northfield, and Mullica Township.

Table 4.1 identifies the solid waste and recycling facilities located within Atlantic County. This list is compiled from information provided by the NJDEP Division of Solid and Hazardous Waste (DSHW) and the Atlantic County Planning Department. The Solid Waste Management Map on the following page identifies the solid waste management facilities within Atlantic County.

Table 4.1 Solid Waste and Recycling Facilities within Atlantic County

Facility Type	Facility Name	Facility Address and Location	Authorized Waste
Class A	Atlantic County Utilities Authority Recycling Center	Egg Harbor Township	
Class B	A. E. Stone	Egg Harbor Township	A, BB, C
Class B	Arawak Paving Co., Inc.	Hammonton Township	C, A
Class B	Atlantic City UA	Egg Harbor Township	TRS, TS, B, W
Class B	B & J Recycling	Galloway Township	A, BB, B, C, W
Class B	Iaconelli Contracting Co., Inc.	City of Pleasantville	C, A, BB, W
Class B	L. Feriozzi Concrete Co.	Egg Harbor Township	A, C
Class B	Old Cape Recycling.	Egg Harbor Township	A, BB, C, TRS, TP, TS, W
Class B	Penn Jersey Bldg. Materials	Egg Harbor Township	C, A, BB
Class B	Puggi, Anthony	Egg Harbor Township	A, BB, C, TRS, TP, TS, W
Class B	Waste Management of NJ, Inc.	Buena Vista Township	C, BB, A, T, W, G
Class B	Winzinger, Robert T.	Egg Harbor Township	C, BB
Compost Facility	Atlantic County Utility Authorities	Egg Harbor Township	L/G/B
Compost Facility	Absecon Compost	City of Absecon	
Compost Facility	Galloway Township Compost	Galloway Township	
Compost Facility	Cummings Compost	City of Northfield	
Compost Facility	Egg Harbor Compost	Egg Harbor Township	
Compost Facility	Mullica Compost	Mullica Township	
Convenience Center	Galloway Twp. Convenience Center	Galloway Township	
Convenience Center	Port Republic Convenience Center	City of Port Republic	
Convenience Center	Mullica Twp. Convenience Center	Mullica Township	
Convenience Center	Buena Vista Twp. Convenience Center	Buena Vista Township	
Convenience Center	Hammonton Convenience Center	Hammonton Township	
Convenience Center	Brigantine Convenience Center	City of Brigantine	
Convenience Center	Ventnor City Convenience Center	City of Ventnor	
Convenience Center	Margate City Convenience Center	City of Margate	
Transfer Station	Atlantic County Utilities Authority	Egg Harbor Township	10,13,13C,23,25,27
Land Fill	Atlantic County Utilities Authority	Egg Harbor Township	10,13,13C,23,25,27, 27A

Class B and Class C Recyclable Materials:

A = Asphalt, ABRM = Asphalt-Based Roofing Material, B = Brush, B&B = Brick and Block, C = Concrete, CWA = Commingled Wood and Aggregate, G = Grass, L = Leaves, PCS=Petroleum-Contaminated Soil, SS = Street Sweepings, SSSW = Source Separated Supermarket Waste, T = Tires, TP = Tree Parts, TRS = Trees, TS = Tree Stumps, W = Wood, (unpainted, not chemically-treated), WC = Wood Chips

The list below identifies Atlantic County mandatory recyclable materials and is consistent with the 2009 Solid Waste Management Plan Update:

- **Paper Products:** including newspaper (with inserts), magazines, office paper, junkmail, telephone and paperback books, corrugated cardboard, kraft grocery bags and shredded junk mail & office paper.
- **Clear and Colored Glass Bottles/Containers.**
- **Food and Beverage metal containers:** including aluminum, bi-metal and steel food beverage and aerosol cans. Also included are empty paint cans.
- **Plastic Bottles and Jugs imprinted with a “1” (PETE) or “2” (HDPE) on the bottom:** including food, beverage, health/beauty, and cleaning products, bottles 2 % gallons or less in size. Automotive fluid containers and other bottles which contain hazardous products are not included.
- **Leaves.**
- **Grass Clippings.**
- **Brush, tree branches, tree stumps, and Christmas trees:** including vegetative and land clearing waste.
- **“White Goods”, ferrous scrap, and non- ferrous scrap including:** refrigerators, air conditioners , other “CFC” containing appliances, and washers , dryers, ovens, water heaters, steel and metal piping.
- **Asphalt & Concrete.**
- **Propane Tanks (must be 20 lbs. size or less).**
- **Consumer Electronics (a.k.a. E-Waste):** including CPU’s, monitors, keyboards, mouse, TV’s, VCR’s, radios, telephones.
- **Used Motor Oil, Kerosene, and # 2 home heating oil:** including crankcase oil and other oils which meet market specifications.
- **Anti-freeze.**
- **Chipboard:** including dry food boxes with liners removed and powdered detergent boxes.
- **Tires:** commercial and passenger vehicles tires
- **Lead acid batteries:** including motor vehicle, aviation, marine, and sealed lead acid (SLA) batteries.
- **Consumer Rechargeable Batteries.**

Available information from the NJDEP DSHW was used to gather information on the quantities of solid waste and recyclables in Atlantic County from 1995 to 2014. This information is detailed in Table 4.2.

The 2009 Solid Waste Management (SWM) Plan provides a ten-year projection for solid waste disposal and recycling rates based on the goal of attaining a 50% MSW Recycling Rate and 60% Total Recycling Rate by 2019. The recent trend for the MSW Recycling Rate and Total Recycling Rate percentages have been declining since 2012; however, the 2012 and 2013 rates have exceeded the annual projected rates noted in the 2009 SWM Plan Update. The 2009 Solid Waste Management Plan Update, should be reviewed for a complete analysis of the Solid Waste Management in Atlantic County.

Recycling Outreach

The County’s regional approach to recycling has afforded the opportunity to provide consistent and standardized recycling information to residents served by the Regional Recycling Program since its inception in 1982.

As the Solid Waste Management Plan Implementation Agency, the ACUA is responsible for providing public information; education & outreach; household hazardous waste collection events; clean communities abatement; and, research development & demonstrations. The ACUA continuously informs, promotes and educates residents in waste management, environmental preservation, and recycling. The ACUA researches, evaluates and implements new technologies that enhance the quality of life through the protection of waters and lands from pollution via responsible waste management service. It engages the public by providing cost-free tours to the ACUA facilities and also hosts Household Hazardous Waste Collection Events the first Saturday of every other month.

Municipal Recycling Plans

All municipalities have a designated recycling coordinator. Municipal recycling coordinators regularly communicate with the ACUA regarding recycling rates, collection and other issues. The County Planning Department, together with the ACUA, holds regular meetings with MRCs to provide updates regarding new programs and laws and regulations related to recycling and solid waste management. The County also provides individual assistance to coordinators as needed regarding special recycling projects and preparation of tonnage reports.

Each municipality has adopted a Municipal Recycling Ordinance that outlines its own recycling program consistent with the state and county plans. The County has assisted each municipality with reviewing their existing Recycling Ordinance and updating it in order to insure the achievement of the Statewide Municipal Solid Waste Recycling goal of 50%.

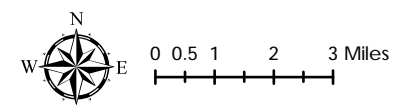
Table 4.2 Generation, Disposal and Recycling Rates in Atlantic County

Year	Population	Disposal				Recycling			
		Disposal and Recycling	MSW	Bulky	Total Disposed	MSW	MSW % Recycled	Total Recycled w/ Add-ons	Total Recycled
1995	227,000	670,709	197,743	77,703.0	275,446	122,499.9	38.25%	395,263.1	58.93%
1996	227,000	514,463	198,789	76,542.0	275,331	62,512.7	24.02%	239,131.6	46.48%
1997	227,000	567,820	206,207	80,129.0	286,336	78,711.0		281,484.1	49.6
1998	227,000	463,226	176,421	68,732.0	245,153	106,653.0	37.70%	218,073.0	47.10%
1999	227,000	666,178	212,983	82,232.0	295,215	90,597.0	29.80%	370,963.0	55.70%
2000	252,552	736,586	234,317	90,420.0	324,737	95,115.0	28.90%	411,849.0	55.90%
2001	252,552	699,811	270,069	102,767.0	372,836	81,170.8	23.10%	326,975.3	46.70%
2002	252,552	881,516	249,715	94,307.7	344,023	99,354.9	28.5	537,492.7	61
2003	252,552	825,656	225,501	96,369.0	351,870	86,093.0	25.2	473,786.0	57.4
2004	252,552	867,542	254,567	96,017.0	350,584	97,675.1	27.7	516,958.1	59.6
2005	252,552	776,601	283,867	107,183.0	391,050	92,890.4	24.7	385,551.0	49.6
2006	252,552	920,383	321,432	123,242.0	444,674	121,970.8	27.5	475,708.6	51.7
2007	252,552	1,171,485	325,816	119,088.0	444,904	111,375.4	25.5	726,580.8	62
2008	252,552	844,710	265,267	100,232.0	365,499	11,378.1	30.30%	479,210.3	56.70%
2009	252,552	747,439	250,800	85,209.5	336,009	108,155.3	30.10%	411,429.6	55.00%
2010	274,549	690,197	241,824	81,104.1	322,928	117,739.6	32.70%	367,269.2	53.20%
2011	274,549	782,052	232,726	75,292.0	308,019	137,733.9	37%	474,033.9	61%
2012	274,549	829,911	224,479	111,176.7	335,656	174,508.3	44%	494,254.7	60%
2013	274,549	755,211	219,805	102,178.8	321,984	158,366.2	42%	433,226.9	57%
2014	274,549	681,789	217,389	82,911.8	300,301	132,464.9	38%	381,487.9	56%

Total Recycled with Add-ons also includes tonnage reported by ISRI/AMRA and Class B recycling facilities which was not reported by the municipalities. Totals subject to rounding.

Solid Waste Management

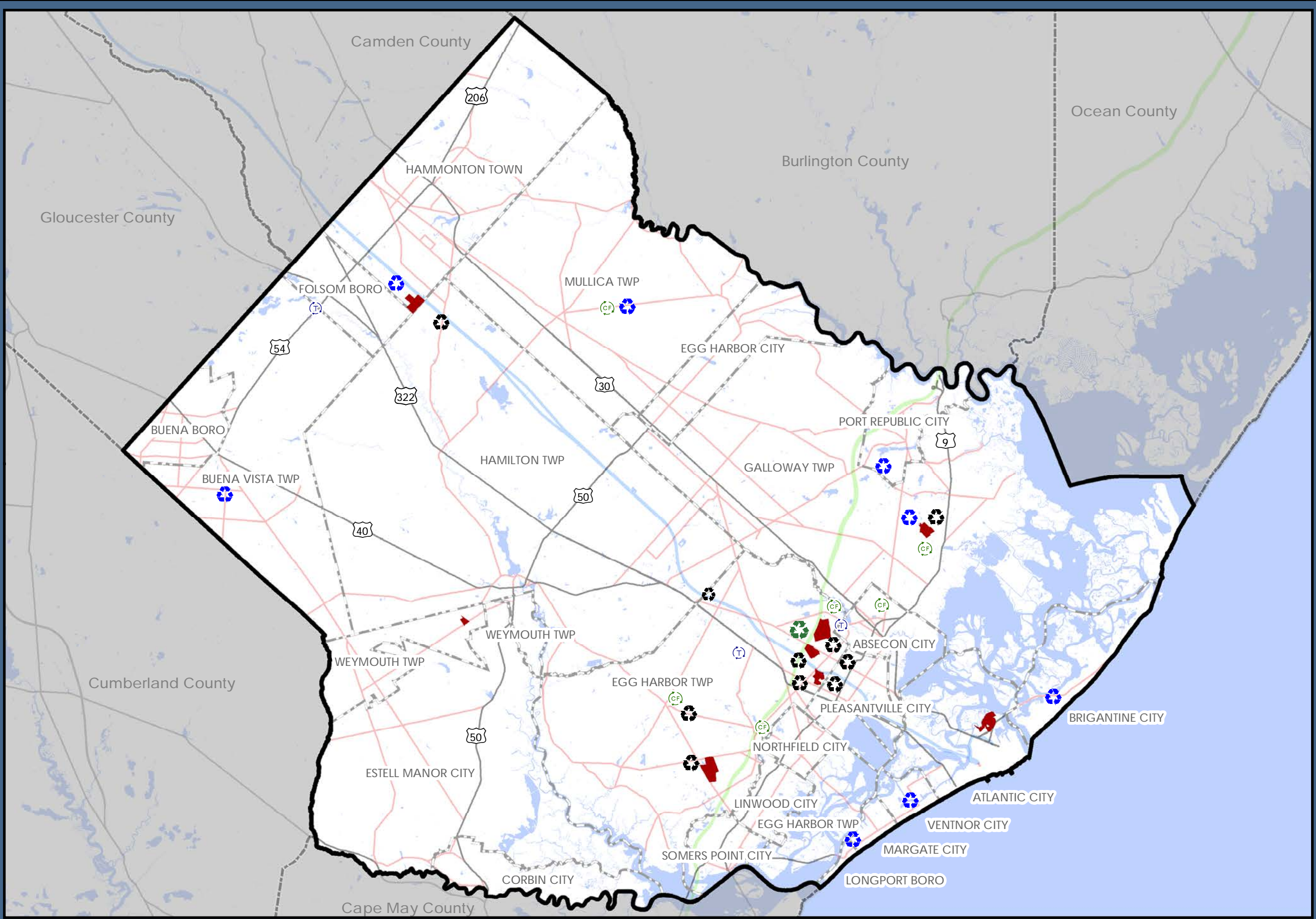
- Facility Type**
- Class A Recycling
 - Class B Recycling
 - Convenience Center
 - Compost Facility
 - Transfer Station
 - Landfill
- Roadways**
- U.S. Highway
 - State Highway
 - County Routes
 - Atlantic City Expressway
 - Garden State Parkway
- Areas and Boundaries**
- Atlantic County
 - Municipalities
 - Counties
 - Water



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Solid Waste Management Infrastructure Recommendations

The update to the County’s Master Plan Elements considers the recommendations adopted in the previous County Master Plan prepared in 2000. Some of the previous recommendations continue to be relevant, while others have changed in the sixteen years since the release of the last plan. The recommendations related to Solid Waste Management are as follows:

The County should continue to reexamine the Solid Waste Management Plan to assure that programs are meeting specific goals and objectives.

It is imperative that the Solid Waste Management Plan be flexible to meet the dynamic nature of the solid waste industry. The County should continually review the Plan to assure its successful application to the community which it serves.

Assist and encourage source reduction programs and techniques in order to facilitate management of the County’s waste flows.

The County has recognized that its per capita solid waste generation has a seasonal component that must be considered, therefore, it is essential that not only permanent residents but seasonal residents also are educated on the source reduction initiatives.

Assist in the development of educational programs to effectuate public awareness on the importance of recycling.

The County should continue to assist municipalities in educating the community on the importance of recycling and the reporting of same, as well as, source reduction and landfill capacities to assure proper application of the County Solid Waste Management Plan.

Assist in the Household Hazardous Waste Collection program and the development of a permanent facility for same.

These efforts should continue in order that the public is continually reinforced on the importance of proper disposal of these substances.

The County needs to continue to support in-county disposal of all solid waste. This is consistent with State policies of self-sufficiency.

The ACUA should continue to promote the state policies of self-sufficiency and in-county disposal of all solid waste.

WASTEWATER MANAGEMENT

Wastewater Management Planning is part of the Continuing Planning Process required by the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.) and Section 208 of the Federal Clean Water Act. Wastewater Management Plans (WMPs) are required and outlined in the NJDEP Water Quality Rules, N.J.A.C. 7:15. The purpose of a WMP is to identify the potential wastewater generation within a specific geographic area and designate which areas are suitable for sewer service.

The Atlantic County Utilities Authority (ACUA) was formed in the late 1960s by the Atlantic County Board of Freeholders and was responsible for developing a comprehensive approach to wastewater management (ACUA 2016). In 1979, the County’s Department of Planning and Economic Development prepared the Atlantic County Water Quality Management Plan (WQMP) in response to Section 208 of the Federal Clean Water Act and the New Jersey Water Quality Planning Act.

In 1989, the Atlantic County Board of Chosen Freeholders was designated as the Areawide Water Quality Management Planning Agency for Atlantic County. The responsibility for wastewater treatment was established under the ACUA. This agency developed the Coastal Area Wastewater Collection System and built the City Island Sewage Treatment Plant. This Regional Sewage Treatment Plant was a major event in the improvement of water quality in the ocean and bays of Atlantic County. Prior to the construction of the ACUA City Island Sewage Treatment Plant, the County had more than 20 outdated sewage plants, many of which discharged effluent into streams, tidal waters and other surface waters (ACUA 2016).

Overview of Current Wastewater Service

Atlantic County divides its Water Quality Management Areas into three sewer planning regions: Coastal Region, Lower Great Egg Harbor River Region, and Mullica and Upper Great Egg Harbor River Region. Each sewer planning region’s portion of the sewer service area is keyed to a specific sewage treatment plant which is the facility authorized to accept and treat wastewater from that planning area. Each sewer planning region is discussed below (see Wastewater Management Map).

Coastal Region

The Coastal Region’s sewer service areas include Absecon and Brigantine Islands, the bay communities and the Pineland’s Regional Growth Areas of the County. This region is subdivided into the following service areas as referenced in Table 4.3.

The Coastal Region consists of an integrated network of interceptors, force mains, and pump stations that direct all flows to the ACUA City Island Sewage Treatment Plant. The ACUA owns and operates this sewage treatment plant. Constructed in 1978 at a design capacity of 40 million gallons per day, this facility provides secondary wastewater treatment that discharges into the Atlantic Ocean, approximately 8,000 feet offshore from Raleigh Avenue in Atlantic City, New Jersey. This facility also treats

Service Area	Municipalities
Island Service Area	Atlantic City, Brigantine, Margate, Longport, and Ventnor
Mainland Service Area	Linwood, Northfield, Pleasantville, and Somers Point
Pomona Service Area	Eastern Absecon, Egg Harbor City, South Egg Harbor Township, Germania, Gardens, Pinehurst and Pomona in Galloway Township
Smithville Service Area	Eastern Galloway Township
Coastal Interceptor Area	Atlantic City International Airport and FAA Technical Center, Atlantic City, Expressway Farley Plaza, Belcoville in Weymouth Township and the Pinelands Regional Growth Areas of Egg Harbor and Hamilton Townships

sludge and sewage generated throughout the County (ACUA 2014). The Coastal Interceptor Service Area was a major project of approximately fifteen (15) miles of force mains and five (5) pump stations serving the Pinelands Regional Growth Areas of Hamilton and Egg Harbor Townships.

The average daily flows of the City Island Sewage Treatment Plant are provided in Table 4.4.

Lower Great Egg Harbor River Region

The Lower Egg Harbor River Region includes the areas within Hamilton and Egg Harbor Townships that are excluded from the Pinelands Regional Growth Areas and the communities of Corbin City, Estell Manor, and Weymouth Township which are primarily served by individual septic systems. The siting of these individual septic systems must comply with Pinelands Commission requirements with the exception of those within the Belcoville section of Weymouth Township. Belcoville accesses the ACUA Regional Treatment Facility through the Hamilton Township Municipal Utility Authority (MUA) infrastructure and the Coastal Interceptor.

Mullica and Upper Great Egg Harbor River Region

The Mullica and Upper Great Egg Harbor River Region provide centralized sewer service to the western section of the County through the Hammonton Sewage Treatment Plant (STP) and the Buena Borough STP. These service areas are limited to urbanized portions of Buena Borough and the Town of Hammonton. The balance of development within this region uses individual on-site disposal systems.

Historically, the Hammonton STP provided secondary wastewater treatment that discharged into the Hammonton Creek. This facility was replaced with a new advanced wastewater treatment plant designed at a capacity of 2.5 MGD with a temporary approval to discharge into the Hammonton Creek. This discharge is limited however, to the originally designed and approved 1.6 MGD capacity. A condition of the Pinelands approval for the new plant required advance treatment of the effluent

Table 4.4 Atlantic County Utilities Authority
City Island Sewage Treatment Plan
(Average Daily Flows in Million Gallons)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2010	30.46	33.62	38.48	32.51	29.65	28.52	29.61	31.14	27.78	27.85	26.21	24.16
2011	25.63	25.58	26.41	26.54	26.95	27.42	30.39	31.37	31.31	27.72	26.87	26.09
2012	24.70	24.06	24.96	25.09	26.53	29.85	30.47	31.57	28.06	28.85	30.55	28.54
2013	26.28	27.94	30.10	26.77	26.65	32.37	31.27	30.53	26.71	27.09	24.36	26.30
2014	27.21	29.20	27.27	28.04	28.76	27.90	30.00	32.22	27.76	26.62	26.87	27.85
2015	26.50	26.74	28.60	26.33	25.30	28.58	31.77	28.39	26.30	27.58	25.01	25.84

Source: Atlantic Count Utilities Authority (2016)

and elimination of the discharge into Pinelands surface waters by implementation of a land application system. In addition, the Pinelands approval provides/stipulates that no discharge of treated wastewater to Hammonton Creek will occur, except in the case of an emergency.

The Buena Borough STP opened in 1992 replacing the previous facility that discharged effluent into Deep Run, a tributary of the Great Egg Harbor River. The new STP relocates the treated discharge into the Blackwater Branch, a tributary of the Maurice River. This point discharge into the Maurice River watershed is outside of the Pinelands National Reserve and was a requirement of NJDEP to meet applicable surface water quality standards. The present permitted flows are 0.4 MGD with a design capacity of 0.5 MGD and a capability to expand to 1.0 MGD.

The distribution and intensity of development throughout the County are both dependent on the capacity of the existing wastewater management systems, proposed upgrades, and service areas. As noted in the Background and Land Use section of this Master Plan, development trends in the County have slowed considerably since the mid-2000s. As such, impacts on wastewater demand are anticipated to be less than previously anticipated. A coordinated effort to plan and accommodate for future growth and generated wastewater has been on-going in Atlantic County since 2012.

In 2012, Atlantic County proposed Future Wastewater Service Areas (FWSA) which would designate sewer service areas in the County. The proposed FWSAs, seen in the Wastewater Management Map, identify areas to be served by sewage treatment facilities/sewer systems as well as areas to be served by septic systems with design flows of equal to or less, than 2,000 gallons per, day. The proposed map modifies the previously approved sewer service areas to eliminate environmentally sensitive areas that are not currently connected to sewer systems, as well as removes areas from sewer service based on local planning initiatives. Additional new areas have been proposed for sewer service based on local planning initiatives and the requirements of the Pinelands Comprehensive Management Plan.

agencies guide the intensity of development throughout most of the County. However, land use regulations within the sewer service areas do allow the development of at least 2 dwelling units per acre, commercial, and industrial uses. The County Wastewater Management Plan should be reviewed for a complete analysis of the County’s sewer service areas.

Reclaimed Water for Beneficial Reuse (RWBR)

The Atlantic County Utilities Authority (ACUA) participates in NJDEP’s Bureau of Surface Water Permitting to implement a Reclaimed Water for Beneficial Use (RWBR) program. In this program, high quality reclaimed water can be used for non-potable applications in place of potable water or as a supplement to potable water. RWBR has a myriad of application potentials, including: the spray irrigation of crops, parks, and golf courses; dust control; or even, firefighting. Approved Wastewater Reuse projects approved for ACUA include sewer jetting, street sweeping, and incinerator cooling. In the year 2015, the ACUA reused 1,088,700,000 gallons of reclaimed water for Non-Contact Cooling Water.

Resiliency

The ACUA City Island Treatment Plant is surrounded by salt marshes on the low-lying western edge of Atlantic City (Litterski 2015). Approximately 40 acres of the City Island Sewage Treatment Plant, is within an A Zone of the 100-year flood plain. In October 2012, the storm surge created by Hurricane Sandy nearly flooded the ACUA City Island Sewage Treatment Plant. In other parts of the State, floodwaters inundated sewage treatment plants causing extended discharges of partially treated wastewater to open waters (NJDEP 2015). This led the ACUA to explore mechanisms to fortify the resiliency of the wastewater infrastructure against future storm events (Waugh 2015).

ACUA applied to the New Jersey Environmental Infrastructure Trust (NJFIT), which provides low-interest loans for water and wastewater infrastructure projects (Verrilo 2015). ACUA will use funds from the NJFIT to pay for the following three flood protection projects:

Several factors were considered in designating the County sewer service areas. Some of these factors include existing infrastructure locations, population densities, land use, municipal zoning and problem areas as identified by the Atlantic County Board of Health and various municipal WMP’s. The Pinelands Commission and the State’s Coastal Management Program, including Coastal Area Facilities Review Act (CAFRA), Waterfront Development Law, and the Wetlands Act of 1970 as administered by the NJDEP all have a significant influence on the development of land within the County. These

Portable Flood Barriers

A portable flood protection barrier system, which can be inflated for use during storms and other high water events, will be purchased for use at the City Island Sewer Treatment Plant and at eight pump stations throughout Atlantic County.

Sumps

Sumps will be installed in the lower elevated buildings of the plant to be used to remove water from powerful storm surges and prevent flooding from causing failure at the facility.

Seawall

A seawall will be constructed to surround sections of the facility that are not at a high enough elevation to withstand flooding. The seawall will protect the plant from storm surges that could cause a failure during storms and high water events.

Currently, the ACUA is awaiting authorization for these projects and once received will be put out to bid.

Wastewater Management Infrastructure Recommendations

The update to the County’s Master Plan Elements considers the recommendations adopted in the previous County Master Plan prepared in 2000. Some of the previous recommendations continue to be relevant, while others have changed in the sixteen years since the release of the last plan. The recommendations related to Wastewater Management are as follows:

Encourage the continued study and development of wastewater management plans as a cooperative effort among municipalities, the County, and other jurisdictional agencies.

To be most effective, the wastewater management planning process needs to have consistent goals among those involved in the design, approval, and implementation phases of the plan.

Encourage and assist in the development of standardized methods for the reporting and recording of wastewater flow information.

It is important that the recording and reporting of wastewater flows by municipalities and utility authorities follow a standardized format in order that the County’s Wastewater Management Plan (WMP) can be prepared with the assurance that data analysis is based on consistent and quality information.

Assist in the development of alternative applications of treated wastewater.

The utilization of treated wastewater for landscaping in Atlantic City should be explored in other areas of the County. The application of treated wastewater may be

Wastewater Management

Sewer Planning Regions

- Mullica and Upper Great Egg Harbor Region
- Lower Great Egg Harbor
- Coastal Region

Sewer Service Areas

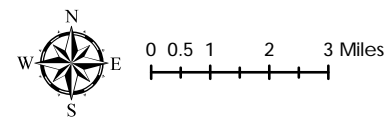
- Individual Facilities
- ACUA City Island Plant
- Buena Borough MUA
- Hammonton MUA
- Oaks of Weymouth Plant
- Proposed Pinelands Center Wastewater Service Facility
- Wastewater Treatment Plant

NJPDES Discharges

- Major SW Discharge
- Minor SW Discharge
- GW Discharge

Areas and Boundaries

- Atlantic County
- Municipalities
- Counties



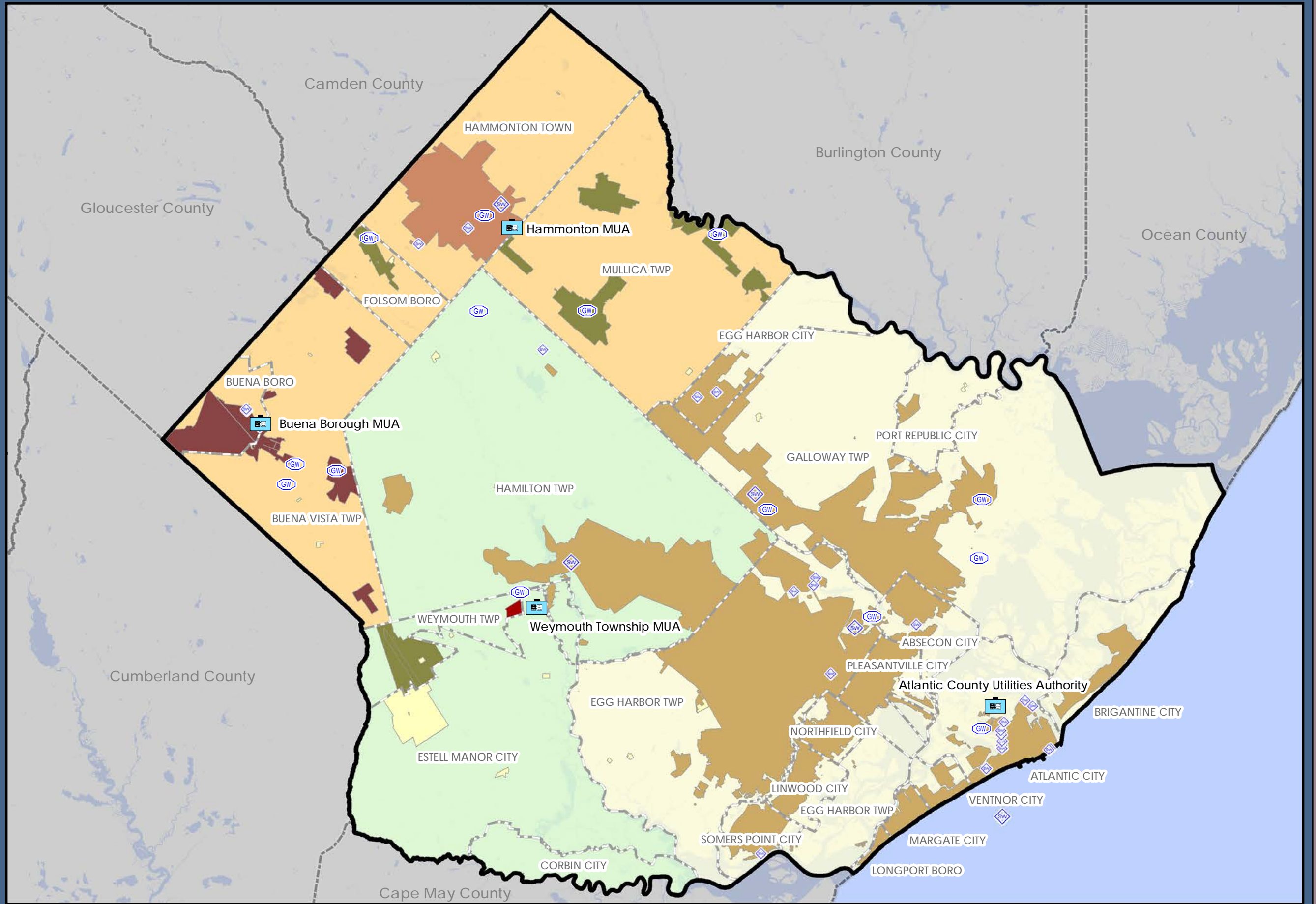
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL
January 2017



an alternative method of irrigation for plant nurseries, golf courses, and other land uses while providing a secondary benefit of recharging the aquifer.

Assist in the development of funding programs for wastewater management.

It is important that funding is made available to not only the large scale public projects that serve the majority of the population, but also to owners of individual septic systems that are not designed to the current standards, and have failed and are compromising public health.

Assist and educate residents in best management practices for individual onsite septic systems.

The County Board of Health’s documentation of septic system failures and problem areas suggests that not only should funding programs continue to correct and/or replace these systems, but that the public health would be benefited by the establishment of educational opportunities, whereby, residents can be assured that investments in the management of wastewater are being maintained at optimum levels.

Recognize that modular treatment technology may be necessary to meet groundwater quality standards.

Throughout the Pinelands Area new and/or expanded point sources such as schools or commercial enterprises may require the implementation of modular treatment technology in order to meet the stringent groundwater criteria required by the Pinelands Comprehensive Management Plan.

WATER SUPPLY

Residential, commercial, agricultural, and industrial users within the County rely on both surface and subsurface water supply sources for their water needs. Surface water supplies are derived from various reservoirs, lakes, and streams situated throughout the County, while subsurface sources are obtained from the unconfined Kirkwood-Cohansey and the underlying Atlantic City “800-foot” sand aquifer systems. These two aquifer systems yield the majority of water supplied throughout the County.

Even though a major portion (387 sq. mi or 63%) of the County is within the New Jersey Pine Barrens, an environmentally sensitive area protected through the enactment of the Pinelands Protection Act of 1979; concerns regarding the quantity and quality of the water supply include saltwater intrusion, aquifer contamination, and reductions in stream flows as a result of excessive pumping of the aquifers. Surficial water surface elevations can also fluctuate in response to changes in the Kirkwood-Cohansey’s groundwater table. Such impacts can negatively affect water quality by reducing the amount of water available to dilute dissolved solids and sustain biological components within the ecosystem.

The purpose of this section is to assess the existing conditions of the water supply within Atlantic County. Since the water that flows throughout the hydrologic cycle follows hydrologic boundaries and hydraulic principles rather than political boundaries a watershed approach was used to identify and quantify potential problems, and develop long term planning strategies. There are many factors that influence the water budget within a watershed, but in general precipitation, slope of the land, soil characteristics, soil saturation, land cover, infiltration, evaporation, transpiration, storage, and human water use are the primary factors that influence the water budget the greatest. The Water Supply has been separated into four sub-sections: Natural Resources, Water Sources, Water Use, and Water Quality in order to address the factors that influence the quantity and quality of the water supply available for use within Atlantic County.

Natural Resources

Watershed Management Areas

A watershed is the geographic area through which water flows across the land and drains into a common body of water, whether a stream, river, lake, or ocean. The flow of water within a watershed is linked to the hydrologic cycle, which includes the following key components: precipitation, runoff, surface and groundwater storage,

evaporation and transpiration, and condensation. Watersheds are classified by their drainage boundaries into hydrologic units. These hydrologic units are divided and sub-divided into successively smaller hydrologic units, which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged or nested within each other, from the largest geographic area (regions) to the smallest geographic area (cataloging units). Each hydrologic unit is identified by a unique Hydrologic Unit Code (HUC) that has a two digit code assigned to each level of classification in the hydrologic unit system. As seen in Table 4.5, the political boundary of Atlantic County, NJ crosses three HUC-8 watersheds.

HUC-8	Watershed Name
02040301	Mullica-Toms
02040302	Great Egg Harbor
02040206	Cohansey-Maurice

The New Jersey Department of Environmental Protection (NJDEP) has aggregated smaller HUC-10 watersheds in NJ into five Water Regions and twenty-one Watershed Management Areas (WMAs). The majority (597 sq. mi or 98%) of Atlantic County is located within Water Region 3 (Atlantic Coastal); and the remaining area (14 sq. mi or 2%) is located within Water Region 5 (Lower Delaware). Atlantic County intersects three WMAs, which include WMA-14 (Mullica), WMA-15 (Great Egg Harbor), and WMA-17 (Maurice, Salem, Cohansey). Approximately one-third of the County is located within WMA-14 (191 sq. mi or 31%), two-thirds within WMA-15 (406 sq. mi or 66%), and a minimal area of the County is located within WMA-17 (14 sq. mi or 2 %). Table 4.7 shows the area (sq.mi) and percentage of municipalities in Water Regions and Watershed Management Areas located within Atlantic County, NJ.

Climate

In a normal year, Atlantic County receives about 45 inches of rainfall over an approximate 561 square miles of land. About half of the precipitation is released back to the atmosphere through the process of evapotranspiration and the remaining water sustains streamflow and replenishes surface and groundwater supplies, which amounts to approximately 219 billion gallons. Table 4.6 shows historical climate data based on monthly averages at each station located within the County.

Location	Maximum Temperature (°F)	Minimum Temperature (°F)	Average Temperature (°F)	Precipitation (in)	Snowfall (in)	Years of Record
Atlantic County	63.68	44.18	53.95	44.61	19.65	1874-2016

Source: Rutgers University, 2016

Table 4.7 Municipal Locations within Water Regions and Watershed Management Areas

Municipality	Municipal Area	Water Region		Watershed Management Area			Water Region		Watershed Management Area		
		3	5	14	15	17	3	5	14	15	17
Absecon City	7.3	7.3	-	-	7.3	-	100%	-	-	100%	-
Atlantic City	15.7	15.7	-	-	15.7	-	100%	-	-	100%	-
Brigantine City	10.4	10.4	-	5.6	4.8	-	100%	-	54%	46%	-
Buena Borough	7.6	3.3	4.3	-	3.3	4.3	43%	57%	-	43%	57%
Buena Vista Twp	41.4	31.7	9.7	-	31.7	9.7	77%	23%	-	77%	23%
Corbin City	8.9	8.9	-	-	8.9	-	100%	-	-	100%	-
Egg Harbor Twp	75.6	75.6	-	-	75.6	-	100%	-	-	100%	-
Egg Harbor City	11.9	11.9	-	11.9	-	-	100%	-	100%	-	-
Estell Manor City	55.1	55.1	-	-	55.1	-	100%	-	-	100%	-
Folsom Borough	8.5	8.5	-	-	8.5	-	100%	-	-	100%	-
Galloway Twp	111.4	111.4	-	85.8	25.6	-	100%	-	77%	23%	-
Hamilton Twp	113.1	113.1	-	0.9	112.2	-	100%	-	1%	99%	-
Hammonton Town	41.4	41.4	-	32.0	9.4	-	100%	-	77%	23%	-
Linwood City	4.3	4.3	-	-	4.3	-	100%	-	-	100%	-
Longport Borough	0.6	0.6	-	-	0.6	-	100%	-	-	100%	-
Margate City	1.6	1.6	-	-	1.6	-	100%	-	-	100%	-
Mullica Twp	56.8	56.8	-	46.2	10.6	-	100%	-	81%	19%	-
Northfield City	3.4	3.4	-	-	3.4	-	100%	-	-	100%	-
Pleasantville City	7.4	7.4	-	-	7.4	-	100%	-	-	100%	-
Port Republic City	8.6	8.6	-	8.6	-	-	100%	-	100%	-	-
Somers Point City	5	5.0	-	-	5.0	-	100%	-	-	100%	-
Ventnor City	2.5	2.5	-	-	2.5	-	100%	-	-	100%	-
Weymouth Twp	12.5	12.5	-	-	12.5	-	100%	-	-	100%	-
Atlantic County	611	597	14	191	406	14	98%	2%	31%	66%	2%

The Downer-Hammonton-Sassafras Association contains nearly level or gently sloping, well drained to somewhat poorly drained soils that have a loamy subsoil. The association occupies 34% of the County and is predominantly located in the eastern part of the County, but occurs throughout.

The Sassafras-Aura-Woodstown Association contains nearly level or gently sloping, well drained and moderately well drained soils that have a loamy subsoil. The association occupies 12% of the County and is located in the eastern part of the County at an elevation of about 60 feet and in the western part at an elevation of about 100 feet.

The Galloway-Lakehurst-Evesboro Association contains nearly level to gently sloping, excessively drained to somewhat poorly drained soils that have a sandy subsoil. The association occupies 16% of the County and is located in fairly large areas south of the Mullica and Penny Pot Rivers and on both the east and west sides of the Great Egg Harbor River.

The Atsion-Manahawkin Muck-Mullica Association contains nearly level, poorly drained and very poorly drained soils that have a sandy or loamy subsoil, and organic soils underlain mainly by sand. The association occupies 23% of the County and is located in the lowest parts of the landscape that are drained by freshwater.

The Appoquinimink-Transquaking-Mispillion (ATM)-Psammets-Hooksan-Urban Association contains nearly level, poorly drained tidal flats; nearly level excessively drained sandy fill land; and nearly level or gently sloping, excessively drained coastal beaches. The association occupies 15% of the County. The ATM soil series is located in areas near sea-level that are flooded twice daily by tidal waters. Psammets are located where several feet of sandy fill was placed on top of ATM soils to create developable land. Hooksan-Urban soils are located along the barrier beaches and includes areas that have been highly urbanized.

Coastal Plain sediments have been mined in the past for bog iron, glass sand, foundry sand, ceramic and brick clay, the mineral glauconite for use in fertilizer, and titanium from the mineral ilmenite in sand deposits (NJDEP, 1999). Today, the Coastal Plain sediments continue to supply glass sand and are extensively mined for sand and gravel construction material. There are a total of 14 mining operations within the County that have obtained a Soil Erosion and Sediment Control Plan certification with the Cape Atlantic Conservation District with a total acreage of 891.99 acres (D. Reilly, personal communication, April 22, 2016). The sand formations are productive aquifers and important groundwater reserves.

Bedrock Geology

Atlantic County, NJ is situated atop of the Coastal Plain Province, which overlaps bedrock of the Piedmont Province. These sediments range in age from Cretaceous to Miocene (135 to 5.3 myo), and dip toward the coast and extend beneath the Atlantic Ocean to the edge of the Continental Shelf. The Coastal Plain sediments

Physical Features and Landforms

The flow of surface water is controlled by the topography of a region while the flow storage of groundwater is controlled by the underlying soils and geologic formations. The topography, soil and mineral resources, and bedrock geology of Atlantic County is discussed below.

Topography

The topography of the region is a function of its geographic location on the Coastal Plain, which is generally flat to very gently undulating. The areas with the highest elevation within the County are located along the western boundary along the drainage divide between the Mullica and Upper Great Egg Harbor Watersheds (150 feet above sea level in Hammonton); and the divide between the Upper Great Egg harbor and Upper Maurice Watersheds (130 feet above sea level in Buena Borough). The drainage divides in the western section of the County are the only areas with minimal topographic relief. The remainder of the eastern section of the County is low-lying, across the mainland, estuaries, and barrier islands. The general slope of the

County is nearly flat (0.1%) following along the approximately 25 miles of the Atlantic City Expressway from Hammonton (150' El) to the eastern mainland boundary of Pleasantville (10' El) (see Elevation Map).

Soil and Mineral Resources

The Soil Survey of Atlantic County (1978) contains complete descriptions of the various soil types and their respective attributes as well as mapped locations of each soil type throughout the County. The published soil survey still serves as useful reference, but the most current soil data information can be obtained from the Web Soil Survey, hosted by the USDA Natural Resources Conservation Service (NRCS). Soil Associations were used to describe and map the locations of different soil types throughout the County. A brief description on the soil association as well information on the distribution of that soil type throughout the County is included in the following text (also see Soils Map).

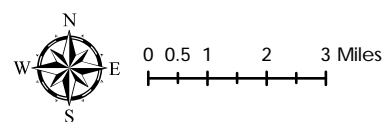
Watershed Management Areas

Watershed Management Areas

- 13 - Barnegat Bay
- 14 - Mullica
- 15 - Great Egg Harbor
- 16 - Cape May
- 17 - Maurice, Salem, & Cohansey
- 18 - Lower Delaware

Areas and Boundaries

- Atlantic County
- Municipalities
- Counties
- Water



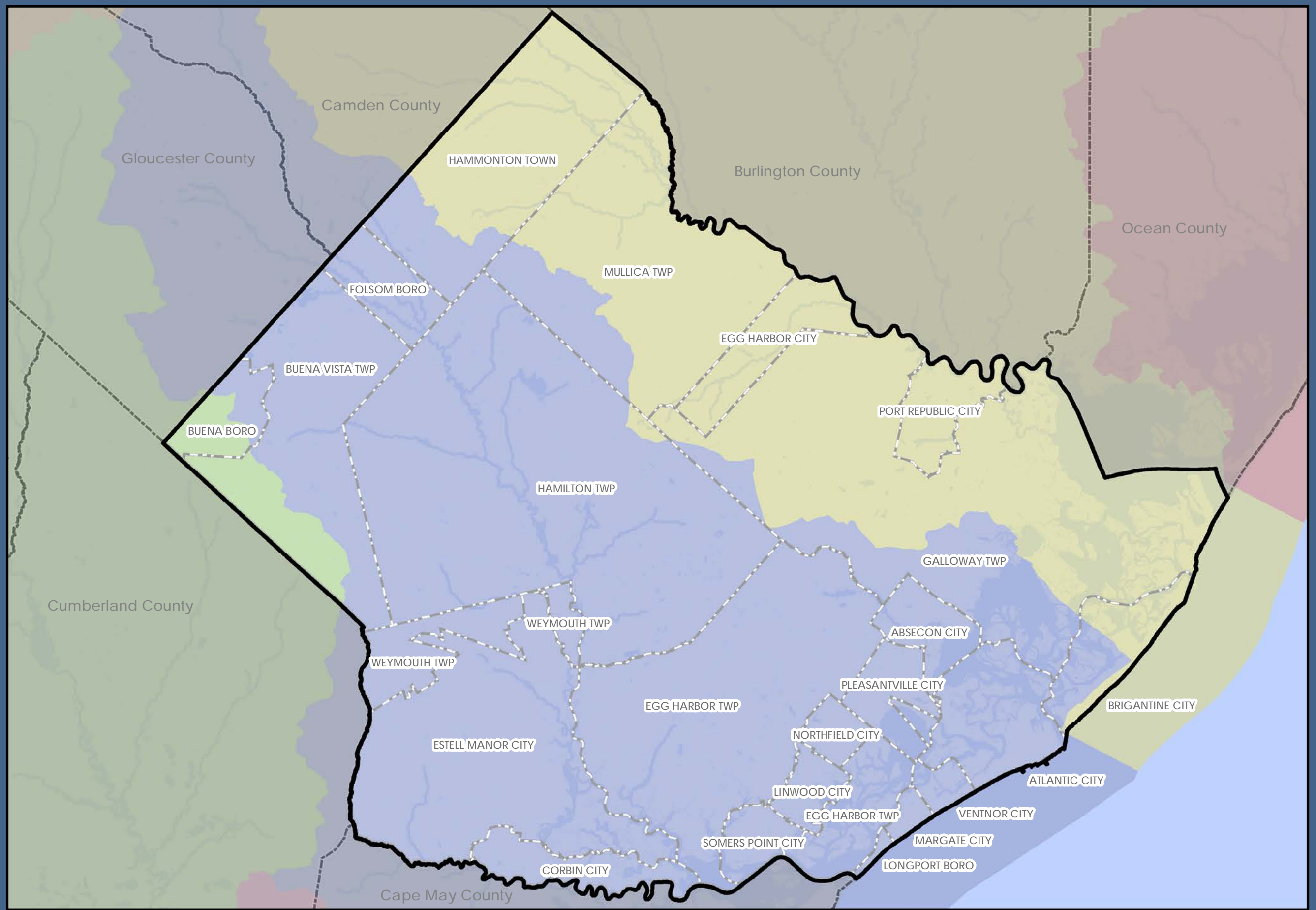
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL
January 2017



thicken southeastward from a featheredge along the northwestern margin of the province to approximately 4,500 feet near Atlantic City to a maximum of more than 40,000 feet in the area of the Baltimore Canyon Trough, 50 miles offshore from Atlantic City (NJDEP, 1999). The sediments consists of layers of sand, silt, and clay deposited alternately in deltaic and marine environments as sea level fluctuated during Cretaceous and Tertiary time (NJDEP, 1999).

Surface Hydrology

Surface waters are classified based on the type of waterbody and the designated use of the waterbody. Freshwaters are classified as FW-1 (not subject to any man-made wastewater discharges), and FW-2 waters (all other freshwaters except Pinelands waters). Freshwaters are further classified based on trout status, trout production (FW-2-TP), trout maintenance (FW-2-TM), and non-trout (FW-2-NT). Saline waters are classified as saline estuarine (SE) and saline coastal (SC). SE waters are further classified into SE1, SE2, and SE3 based on their designated uses. Waters within Pinelands Protection and Preservation areas (which may be either freshwater or saline) are classified as Pinelands Waters (PL). Refer to N.J.A.C. 7:9B Surface Water Quality Standards for a more detailed description.

The surface hydrology of Atlantic County consists of fresh and marine waters and associated wetlands. The major hydrologic features of the County include the Mullica River, Great Egg Harbor River, and Tuckahoe River (see Surface Hydrology Map).

Mullica River

The Mullica River has its origins in Berlin and Waterford Townships and serves as the natural border between Atlantic County and Burlington County. It flows in a southeasterly direction for approximately 35 miles through the Wharton State Forest into Atsion Lake and continues for another 20 miles to the Great Bay which empties to the Atlantic Ocean through Little Egg Inlet. The Mullica River and tributaries are within a drainage area of 561 square miles and considered the primary drainage system for the Pinelands National Reserve. The Mullica River watershed primarily drains undeveloped land such as the Wharton State Forest, Bass River State Forest, Wharton State Forest (Green Bank Section), the southern section of the Edwin B. Forsythe National Wildlife Refuge, and the Swan Bay Wildlife Management Area (WMA). The remainder of the drainage area consists of agricultural land and the population centers of Winslow, Hammonton, and Galloway. The

streams within the watershed are classified FW-PL, FW-1, FW2-NT, and SE-1. The major and minor tributaries of the Mullica River are listed in Table 4.8.

Great Egg Harbor River

The headwaters of the Great Egg Harbor River are in Winslow Township in Camden County. The river is 49 miles long and drains an area of 304 square miles, of which approximately 20% of that area is within the Pinelands National Reserve. It meanders in a southeasterly direction and gradually widens as it collects the waters of 17 tributaries before discharging into the Great Egg Harbor Bay, which empties to the Atlantic Ocean through Great Egg Harbor Inlet. The river becomes tidally influenced downstream of the dam at Mays Landing. In October 1992 a total of 129 miles of the Great Egg Harbor River and its tributaries were designated as a “National Scenic and Recreational River” by President Bush through the National Park Service Wild and Scenic River System. The Great Egg Harbor Watershed Association works to protect and restore the natural, cultural, and recreational resources within the watershed as well as promote research and public awareness of the river system.

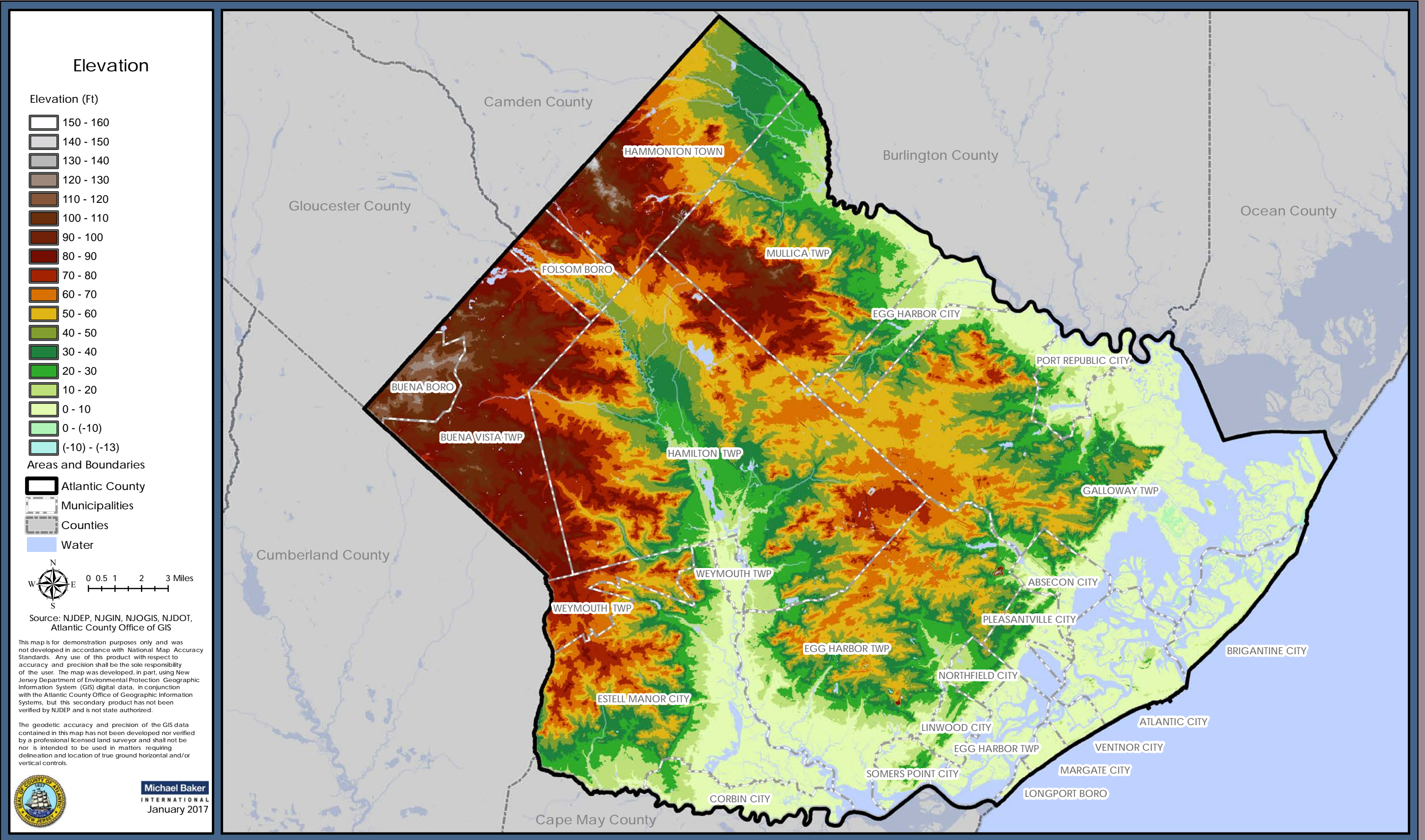
There are many lakes and ponds within the watershed, but the largest is Lake Lenape, near Mays Landing. The watershed’s dominant land use is forest land, with the remainder consisting of agricultural land and population centers of Berlin, Winslow, Monroe, Mays Landing, and Egg Harbor City. The waters within the watershed are classified FW-2 Non-trout, Pinelands Waters, FW-1, and SE-1. The major and minor tributaries of the Great Egg Harbor River are listed in Table 4.9.

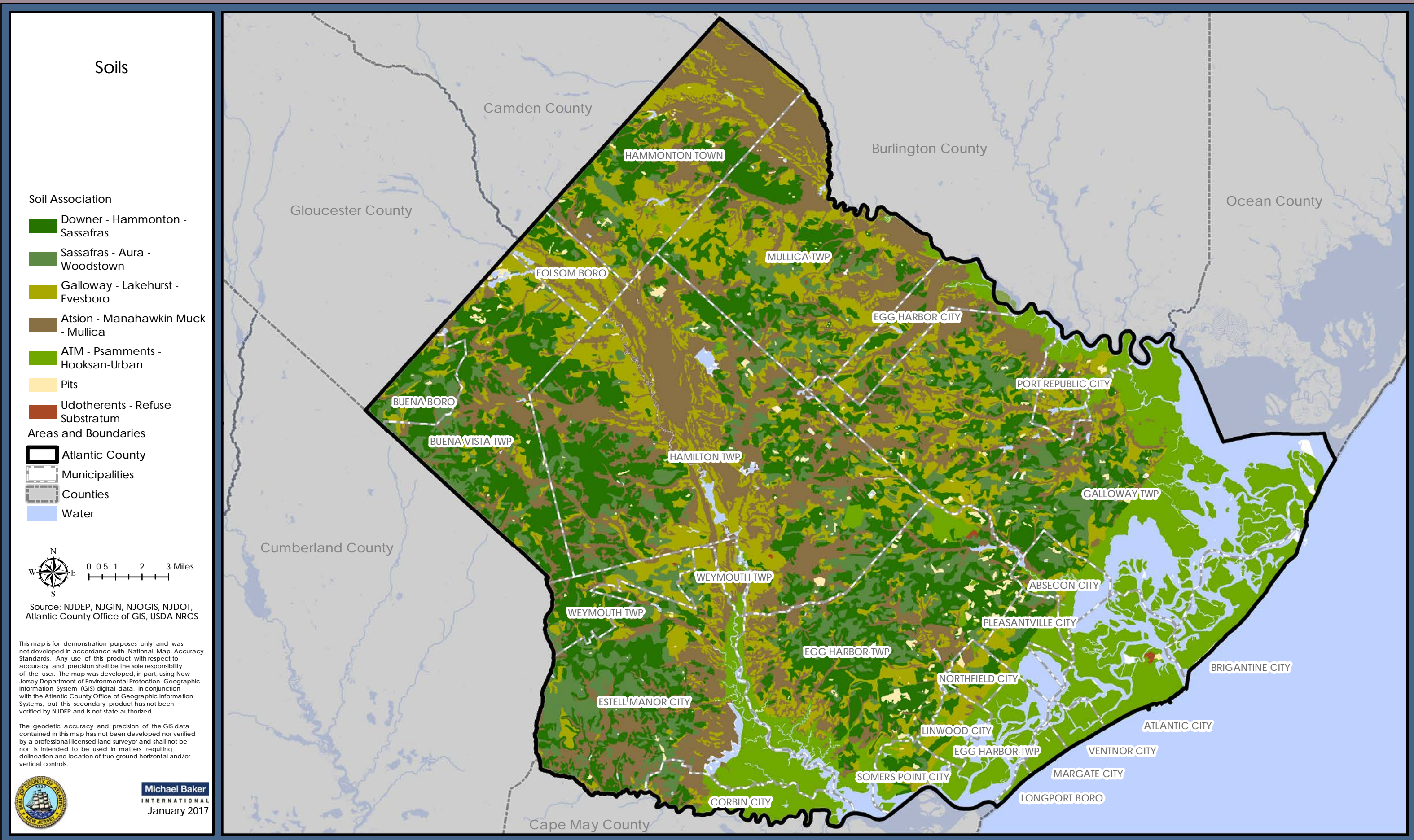
Table 4.8 Major and Minor Tributaries of the Mullica River

Name	Origin	Description
Batsto River	Tabernacle	SW through Tabernacle, Shamong, and Washington Twp Confluence: 1 mile S of Nesco-Batsto Rd
Wading River	Washington	SE through Washington Twp Confluence: 1 mile W of Garden State Parkway Bridge
Bass River	Bass River	SW through Bass River Confluence: 1 1/2 miles E of Garden State Parkway Bridge
Nescochague Creek	Hammonton	SE to Forge Pond Confluence: Nescochague Lake
Nacote Creek	Port Republic	NE through Port Republic Confluence: Edwin B Forsythe National Wildlife Refuge
Landing Creek	Egg Harbor City	NE through Egg Harbor City Confluence: N of Hog Island
Minor Tributaries	Hammonton	Mochescatauxin Branch, Great Branch, Gun Branch
	Mullica Twp	Hammonton (Jackson) Creek, Pine Creek, and Indian Cabin Creek
	Galloway Twp	Clarks Mill Stream, and Horses Mill Stream

Table 4.9 Major and Minor Tributaries of the Great Egg Harbor River

Name	Origin	Description
Penny Pot Stream	Hammonton	S through Hammonton, thence into Folsom Confluence: vicinity of Penny Pot County Park
Hospitality Creek	Folsom	S from Hospitality Lakes, thence into Penny Pot Lake Confluence: Penny Pot Lake
Deep Run	Buena Borough	SE to Pancoast Lake, thence SE Confluence: Weymouth Rd Hamilton Twp S of Black Horse Pike
Little Mill Stream	Mullica	SW through Hamilton Twp Confluence: Weymouth Rd south of Black Horse Pike
South River	Buena Vista	SE through Hamilton Twp, Weymouth and Estell Manor Confluence: Estell Manor County Park
Watering Race	Mullica	SW through Hamilton Twp Confluence: US Rt 40 in Mays Landing
Babcock Creek	Hamilton Twp	SW through Hamilton Twp Confluence: US Rt 40 in Mays Landing
Minor Tributaries	Hamilton Twp	John's Branch, Big Ditch (Makepeace WMA), Gravelly Run
	Egg Harbor Twp	English Creek, Lakes Creek, and Powell Creek
	Buena Vista Twp	Mare Run
	Estell Manor	Stephen's Creek, Gibson Creek, and Middle River





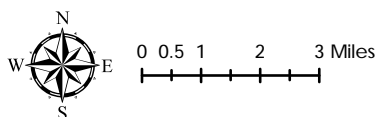
Surface Hydrology

Hydrologic Features

-  Rivers & Streams
-  Lakes & Ponds
-  Wetlands

Areas and Boundaries

-  Atlantic County
-  Municipalities
-  Counties
-  Water



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, USGS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL
January 2017

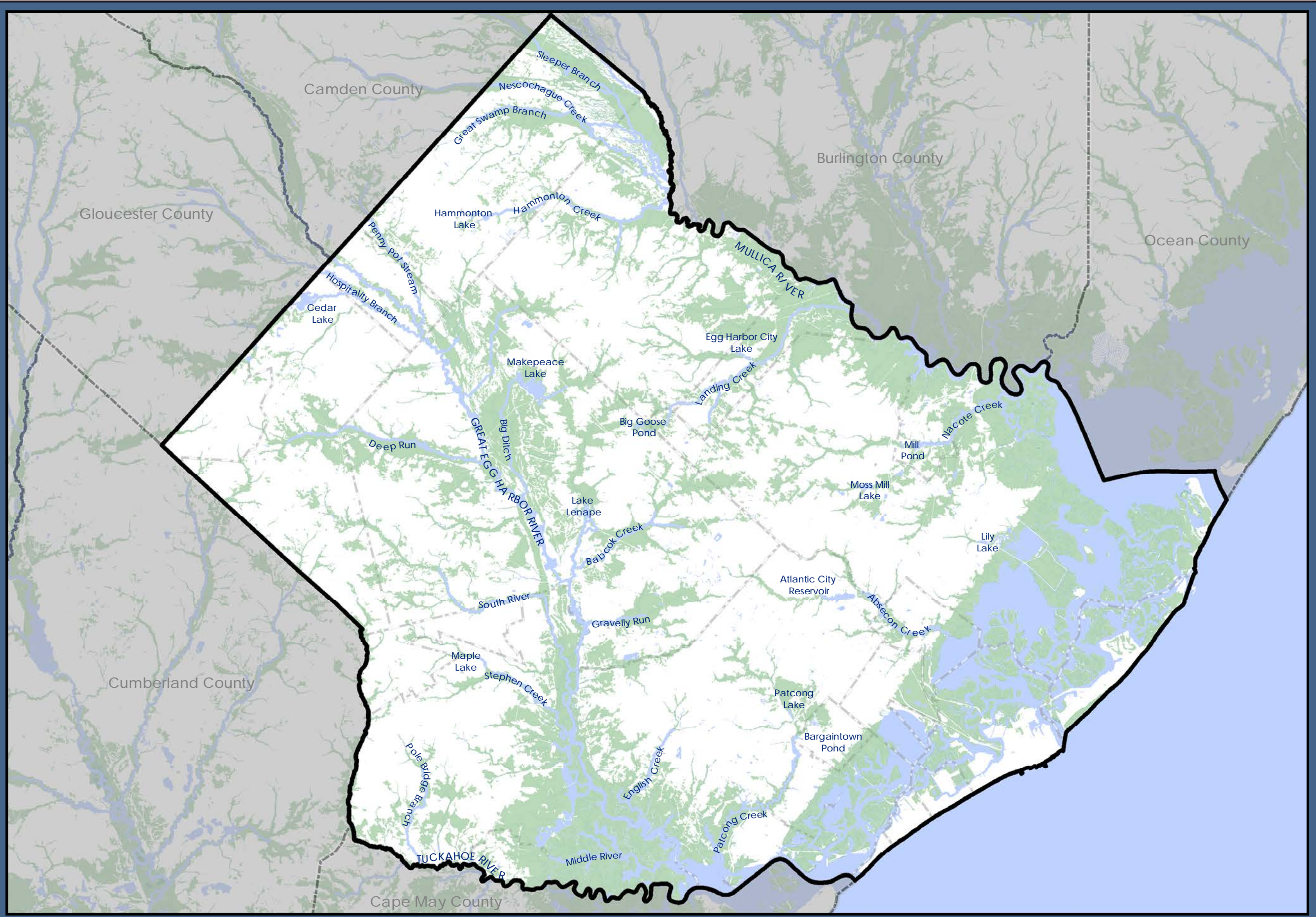


Table 4.10 Major Tributaries of the Tuckahoe River

Name	Origin	Description
Mc Neals Branch	Maurice River Twp	SE through Peaslee WMA W of Cape May Ave Confluence: 1/2 mile S of Aetna Dr
Warners Mill Stream	Maurice River Twp	SE through Peaslee WMA E of Cape May Ave Confluence: 1/2 mile S of Aetna Dr
Sharps Branch	Maurice River Twp	SE through Maurice River Twp and the Peaslee WMA Confluence: 2 miles S of Rt 552
Cedar Swamp Creek	Upper Twp	NE through the Lester G MacNamara WMA Confluence: 2 miles downstream from Rt 49 and 50

Tuckahoe River

The Tuckahoe River originates in Cumberland County and is the common boundary between Atlantic, Cumberland, and Cape May Counties. It flows southerly between Atlantic and Cumberland Counties, and then easterly between Atlantic and Cape May Counties where it meanders for approximately 20 miles into the Great Egg Harbor Bay before emptying into the Atlantic Ocean through Little Egg Inlet. The Tuckahoe River watershed comprises approximately 40 square miles of State Parks and forested areas. These include the Peaslee WMA in Cumberland and Atlantic Counties and the Tuckahoe WMA Lester and the G. McNamara WMA in Atlantic and Cape May Counties. The major tributaries of the Tuckahoe River watershed are listed in Table 4.10.

Water Sources

Surface Water Sources

Surface water withdrawals within the County are primarily obtained from two reservoirs operated by the Atlantic City Municipal Utilities Authority (ACMUA). These facilities are identified as Kuehnle Pond and Doughty Pond, both of which are located within the Great Egg Harbor Watershed along branches of the Absecon Creek. Water from the Mullica River and its tributaries serve as significant irrigation supply sources for agricultural operations.

Subsurface Water Sources

The Kirkwood-Cohansey and Atlantic City “800-foot” Sands are the major subsurface water supply sources for the County. Minor aquifer formations include the confined Rio Grande and Piney Point aquifers.

The Kirkwood-Cohansey aquifer is a shallow, unconfined formation consisting of sands and gravel that quickly respond to recharge influxes from surface precipitation. This response in conjunction with the hydraulics of the formation greatly impacts the

Great Egg Harbor River and Mullica River watersheds that overlay this aquifer. Within the County, the thickness of the Kirkwood-Cohansey is greatest along the shoreline and thins out as you approach the western portion of the state.

The Atlantic City “800-foot” Sands underlie the Kirkwood-Cohansey formation, but is separated by a massive confining clay layer that can be as thick as 400 feet below certain locations of the Atlantic City area. This aquifer is composed of sands, gravel, and fragmented shell materials. It serves as the predominant source of water for public wells pumping more than 1.0 MGD along barrier island and coastal communities. There are three principal pumping centers within the County: Absecon Island, Brigantine, and Pleasantville. On Absecon Island, the pumping center includes Atlantic City, Ventnor, Margate, and Longport.

Water Use

Water Withdrawals

Water withdrawals can be classified by water source and use, and the analysis of this information can be constrained to different temporal and spatial scales. Average annual water withdrawals by source as well as use over the past two decades were identified for Atlantic County. The tables below summarize water withdrawal data by source and use for Atlantic County from the previous two decades. This information was extracted from reports prepared by the NJ Geological Society that examined water withdrawals throughout the state and within each county.

As seen in Table 4.11, the average annual water withdrawal in Atlantic County has increased by 11%. Groundwater has remained the predominate source of water withdrawal between each decade. Surface water withdrawal from rivers has remained relatively constant between each decade. Water withdrawals from reservoir systems exhibited a significant increase between decades (albeit the large percentage increase in reservoir system use can be associated with minimal use as a source from 1990 – 1999).

The most notable trend that is exhibited when water withdrawals throughout the County is analyzed by use as well as source, as illustrated in Table 4.12, is that most categories increased water withdrawals by approximately 10%. The two exceptions to the trend include the increased use associated with power generation from 0 MGY on average to 28 MGY on average and the increased use of surface water as a source of potable withdrawals by 75%.

Table 4.12 Average Annual Freshwater Withdrawal by Use and Source in Millions of Gallons

Report Years	Average Annual Withdrawal	Use of Withdrawals				Source of Potable Withdrawals	
		Power Generation	Industrial, Commercial, and Mining	Irrigation and Agriculture	Potable Supply	Ground Water	Surface Water
1990 - 1999	18,488	0	1,012	4,183	13,293	12,842	451
2000 - 2009	20,497	28	1,091	4,553	14,821	14,028	793
% Change	11	2800	8	11	9	9	76

Source: Water Withdrawals in New Jersey. 1990-1999, and 2000-2009

Table 4.11 Average Annual Freshwater Withdrawal by Source in Millions of Gallon

Report Years	Average Annual Withdrawal	Source of Withdrawal		
		Ground Water	Surface Water	
			Rivers	Reservoir Systems
1990 - 1999	18,488	17,178	1,309	2
2000 - 2009	20,497	19,041	1,390	66
% Change	11	11	6	3200

Source: Water Withdrawals in New Jersey. 1990-1999, and 2000-2009

According to the U.S. Geological Survey, the average water demand for the County in the year 2000 was approximately 44 million gallons per day (MGD). Of this amount, approximately 41 MGD was derived from groundwater use and 3 MGD from Surface-water use. This demand has kept pace with population and growth of the area. In 2010, the average water demand was approximately 60 MGD with 55 MGD from groundwater and 5 MGD from Surface-water, respectfully. The NJDEP Division of Water Supply is expected to release a Statewide Water Supply Plan detailing water supply availability and projected demand on a region-by-region basis. Since its last release in 1996, the plan projected a 58 percent increase in MGD from 1990 (33 MGD) to 2040 (52MGD).

Table 4.13 USGS Estimates of Water Use in Atlantic County. Water-use values are in million gallons per day (MGD)

Year	Population	Housing Units	Groundwater use	Surface-water use	Total
2010	274,549	126,647	54.94	5.12	60.06
2005	271,015	123,025	47.46	3.91	51.37
2000	252,552	114,090	40.92	3.03	43.95

Source: US Geological Survey

Public Community Water Purveyor Service Areas

Public Community Water Purveyors are systems that pipe water for human consumption to at least 15 service connections used year-round, or one that regularly serves at least 25 year-round residents. Public purveyors can be government agencies, private companies, or quasi-government groups. Information about an active community safe drinking water system's water quality is available through the NJDEP Division of Water Supply and Geoscience's Drinking Water Watch or in the system's annual Consumer Confidence report. The Public Community Water Purveyors that serve each municipality are listed in the Table 4.14.

The NJDEP Division of Water Supply and Geoscience has created a database to manage each public water supply's deficit or surplus, and aims to update the database monthly. The information that pertains to the County is tabulated in Table 4.15. There are 30 permitted Public Water Systems within the County, but only 22 of those have an annual demand associated with them. Of the 22 with annual demand associated with them, 7 public community water purveyors are within a 100-yr Flood Zone within a coastal community. The total permitted allocation limit for the County is 20.7 BGY and the total demand is 14.6 BGY leaving a surplus of 6.1 BGY.

Water consumption data provided by the second largest water purveyor in Atlantic County, New Jersey American Water Company – Atlantic Division, demonstrates the monthly variability associated with the amount of water used during a year since it partially depends on the season. Seasonal demand for potable water within Atlantic County is attributable to the influx of summer visitors throughout the coastal communities.

Chart 4.1 illustrates the monthly water use data from 2014 to 2015 for each municipality that is served by New Jersey American Water-Atlantic Division in millions of gallons.

Demands for other uses, such as irrigation and agriculture, is dependent on the growing season and amount of precipitation. In order to improve comprehensive water supply planning efforts, the County should request an Annual Water Quantity Report from the NJDEP Division of Water Supply and Geoscience that summarizes the information contained in the New Jersey Water Transfer Data Model databases for all public community water purveyors, especially New Jersey American Water and ACMUA.

Municipality	PWSID	Water System Name	Water Type	Owner Type
Absecon City	0119002	NJ American Water - Atlantic Division	Surface Water	Private/Investor
Atlantic City	0102001	Atlantic City MUA	Surface Water	Municipal/MUA
Brigantine City	0103001	Brigantine Water Department	Groundwater	Municipal/MUA
Buena Borough	0104003	Buena Borough MUA	Groundwater	Municipal/MUA
Buena Vista Twp	0104003	Buena Borough MUA	Groundwater	Municipal/MUA
	0105001	Buena Family Manor Mobile Home Park	Groundwater	Private/Investor
	0105002	Alpine Village Mobile Home Park	Groundwater	Private/Investor
Egg Harbor City	0107001	Egg Harbor City Water Department	Groundwater	Municipal/MUA
Egg Harbor Twp	0112002	Black Horse Manor	Groundwater	Private/Investor
	0119002	NJ American Water - Atlantic Division	Surface Water	Private/Investor
	0108009	Stoney Field Mobile Home Park	Groundwater	Private/Investor
	0108019	Oak Forest Mobile Home Park	Groundwater	Private/Investor
	0108023	Egg Harbor River Resort	Groundwater	Private/Investor
	0108303	Bay Breeze Village	Groundwater	Private/Investor
	0108004	Norms Dale Mobile Home Park	Groundwater	Private/Investor
	0108014	Tower East Mobile Home Park	Groundwater	Private/Investor
	0108003	Tilton Terrace Mobile Home Park	Groundwater	Private/Investor
	0119001	Delilah Terrace Mobile Home Park	Groundwater	Private/Investor
	0108002	English Creek Manor Mobile Home Park	Groundwater	Private/Investor
	0108006	Tower Mobile Home Park	Groundwater	Private/Investor
	0108013	Tower 1999 Mobile Home Park	Groundwater	Private/Investor

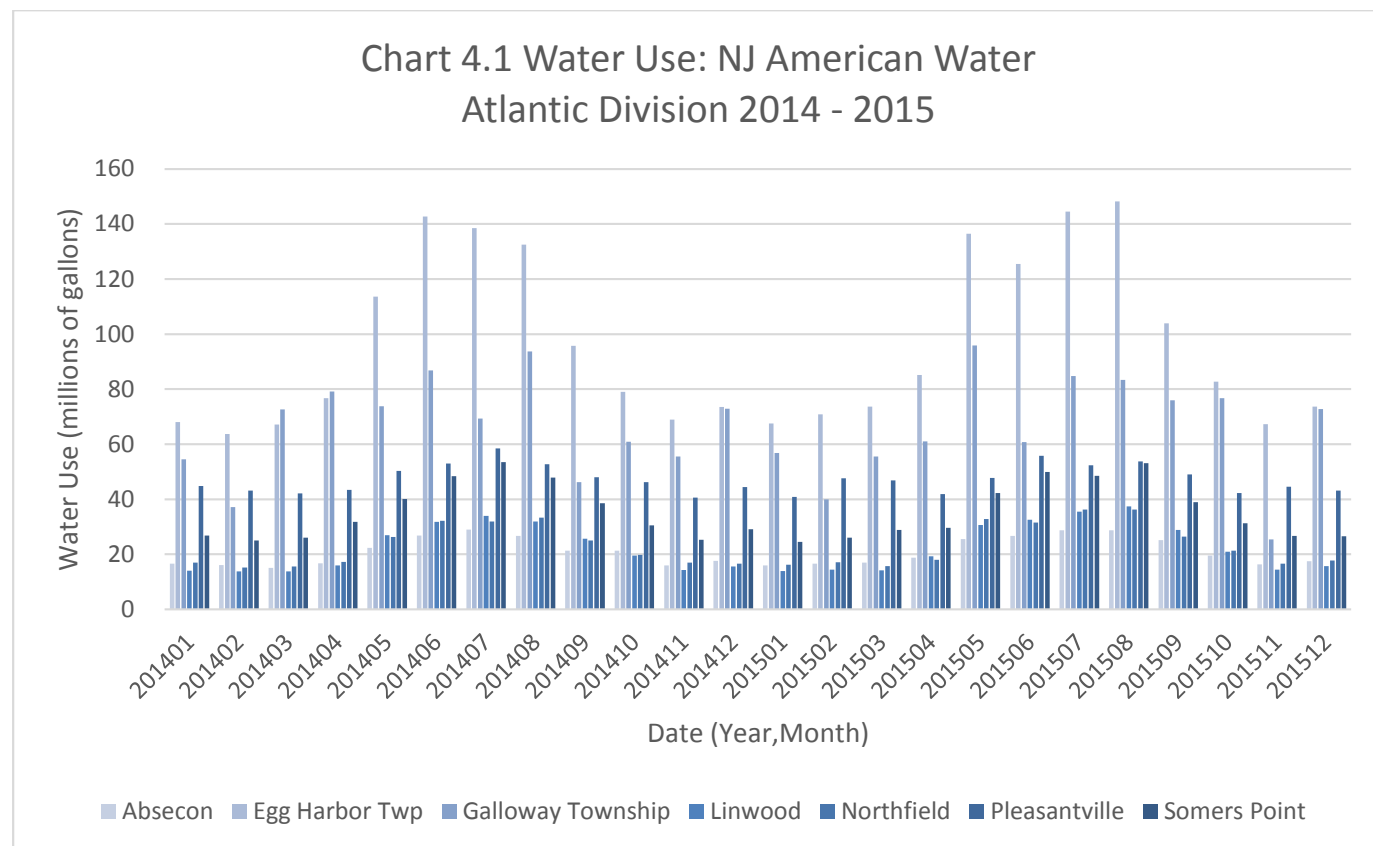


Table 4.14 Continued

Municipality	PWSID	Water System Name	Water Type	Owner Type
Galloway Twp	0119002	NJ American Water - Atlantic Division	Surface Water	Private/Investor
	0111007	Swan Lake Resort	Groundwater	Private/Investor
	0107001	Egg Harbor City Water Department	Groundwater	Municipal/MUA
	0111006	Shady Pines Camping Resort	Groundwater	Private/Investor
	0111004	Pomona Mobile Home Park	Groundwater	Private/Investor
Hamilton Twp	0112001	Hamilton Township MUA	Groundwater	Municipal/MUA
Hammonton Town	0113001	Hammonton Water Department	Groundwater	Municipal/MUA
Linwood City	0119002	NJ American Water - Atlantic Division	Surface Water	Private/Investor
Longport Borough	0115001	Longport Water Department	Groundwater	Municipal/MUA
Margate City	0116001	Margate City Water Department	Groundwater	Municipal/MUA
Mullica Township	0117001	Mullica Woods Mobile Home Park	Groundwater	Private/Investor
Northfield City	0119002	NJ American Water - Atlantic Division	Surface Water	Private/Investor
Pleasantville City	0119002	NJ American Water - Atlantic Division	Surface Water	Private/Investor
Somers Point City	0119002	NJ American Water - Atlantic Division	Surface Water	Private/Investor
Ventnor City	0112001	Ventnor City Water & Sewer Utility	Groundwater	Municipal/MUA
Weymouth Twp	0123002	The Oaks of Weymouth Water Company	Groundwater	Private/Investor
	0112001	Hamilton Township MUA	Groundwater	Municipal/MUA
	0123001	Weymouth Township MUA	Groundwater	Municipal/MUA

Source: NJDEP, 2016

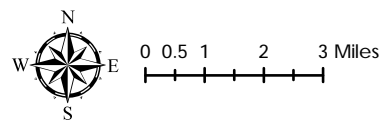
Table 4.15 Public Water Systems

PWSID	Public Water System Name	Yearly Limit	Yearly Demand	Yearly Deficit/Surplus	100-yr Flood Zone	500-yr
0102001	Atlantic City MUA	8555	5766.168	2788.832	√	
0103001	Brigantine Water Department	855	628.356	226.644	√	
0104003	Buena Borough MUA	243	197.792	45.208		
0105001	Buena Family Manor Mobile Home Park	37.2	0.29	36.91		
0105002	Alpine Village Mobile Home Park	37.2	3.603	33.597		
0107001	Egg Harbor City	190	170.644	19.356		
0108002	English Creek Manor Mobile Home Park	37.2	8.82	28.38		
0108003	Tilton Terrace Mobile Home Park	37.2	13.468	23.732		
0108004	Norms Dale Mobile Home Park	37.2	10.431	26.769		
0108005	Seaview Water Company	36.5	7.353	29.147	√	
0108006	Tower Mobile Homes	-	-	-	n/a	n/a
0108009	Stony Field Mobile Home Park	-	-	-	n/a	n/a
0108013	Tower 1999 Mobile Home Park	-	-	-	n/a	n/a
0108014	Tower East Mobile Home Park	37.2	1.162	36.038		
0108019	Oak Forest Mobile Home Park	37.2	14.123	23.077		
0108023	Egg Harbor River Resort	-	-	-		
0108303	Bay Breeze Village	37.2	1.642	35.558	√	
0111004	Pomona Mobile Home Park	-	-	-	n/a	n/a
0111006	Shady Pines Camping Resort	-	-	-	n/a	n/a
0111007	Evergreen Woods Campground	-	-	-	n/a	n/a
0112001	Hamilton Township MUA	1229	926.777	302.223		
0112002	Black Horse Manor	-	-	-		
0113001	Hammonton Water Department	650.81	558.182	92.628		
0115001	Longport Water Department	150	115.909	34.091	√	
0116001	Margate City Water Department	700	529.345	170.655	√	
0117001	Mullica Woods Mobile Home Park	37.2	8.92	28.28		
0119001	Delilah Terrace Mobile Home Park	37.2	7.97	29.23		
0119002	NJ American Water Company - Atlantic	6987	4914.405	2072.595		
0122001	Ventnor City Water and Sewer Utility	725	695.045	29.955	√	
0123002	The Oaks of Weymouth Water Company	35	28.037	6.963		
	Atlantic County	20728.31	14608.442	6119.868		

Source: NJDEP, 2016

Atlantic County Transportation & Water Utilities in Relation to Flood Zones

- Water Supply Facility
 - Water Supply Facility at Risk of Flooding
 - Sewage Treatment Plants
 - Sewage Treatment Plants at Risk of Flooding
 - Transmission Lines
- Roadways and Rail
- U.S. Highway
 - State Highway
 - County Routes
 - Atlantic City Expressway
 - Garden State Parkway
 - + Railroads
- Flood Zones
- A
 - AE
 - VE
 - Floodway
 - X - Contained in Channel
 - X - 0.2 PCT



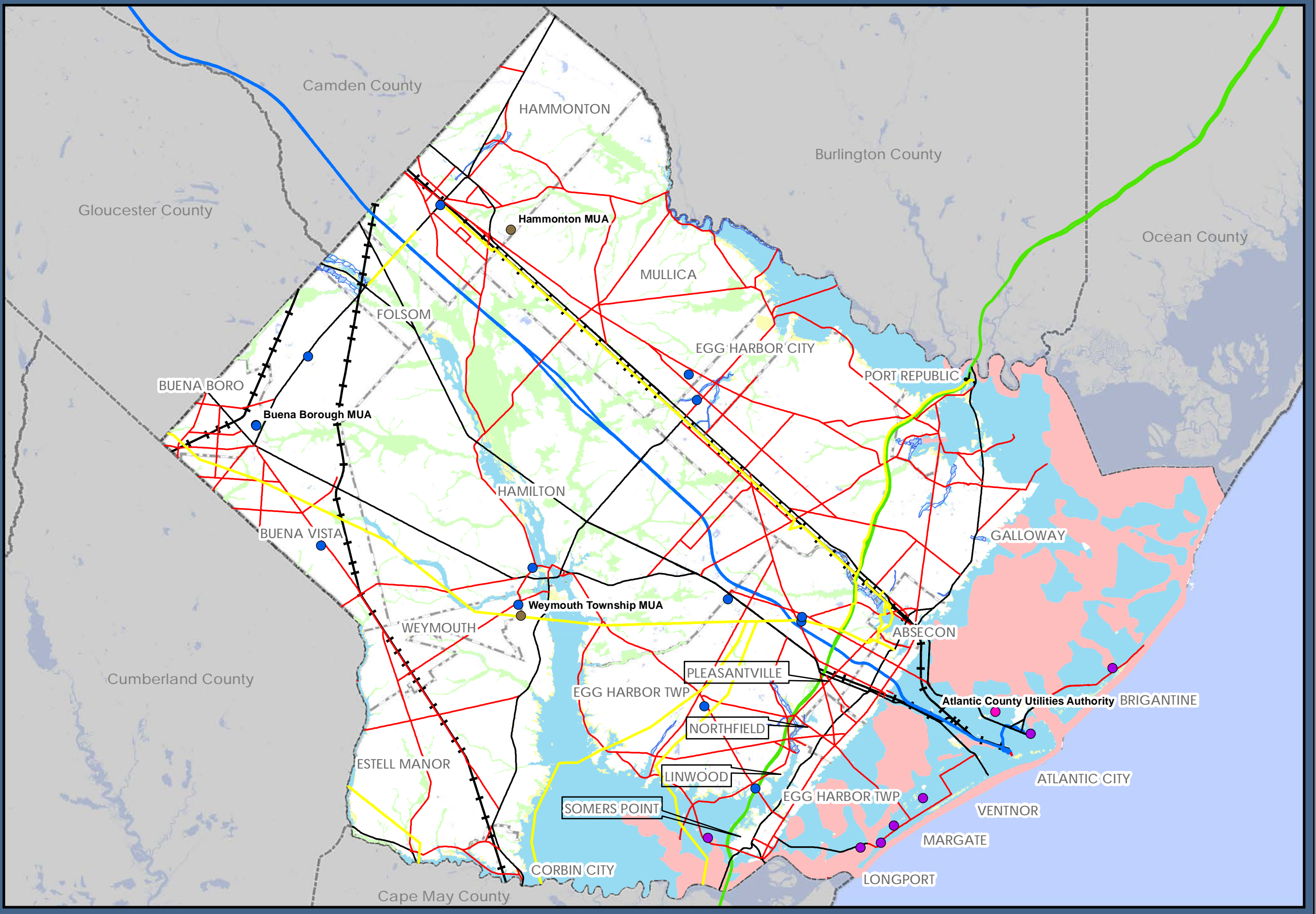
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.






Michael Baker
INTERNATIONAL
January 2017




Water Purveyor Service Areas & Aquifers


Water Purveyor Service Areas

-  Reservoir
-  Surface Water Supply
-  Water Purveyor Service Areas

Surficial Aquifer

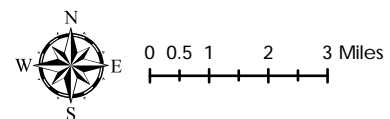
-  Surficial sediment of the Coastal Plain > 50 ft thick

Bedrock Aquifer

-  Kirkwood-Cohansey aquifer system

Areas and Boundaries

-  Atlantic County
-  Municipalities
-  Counties
-  Water



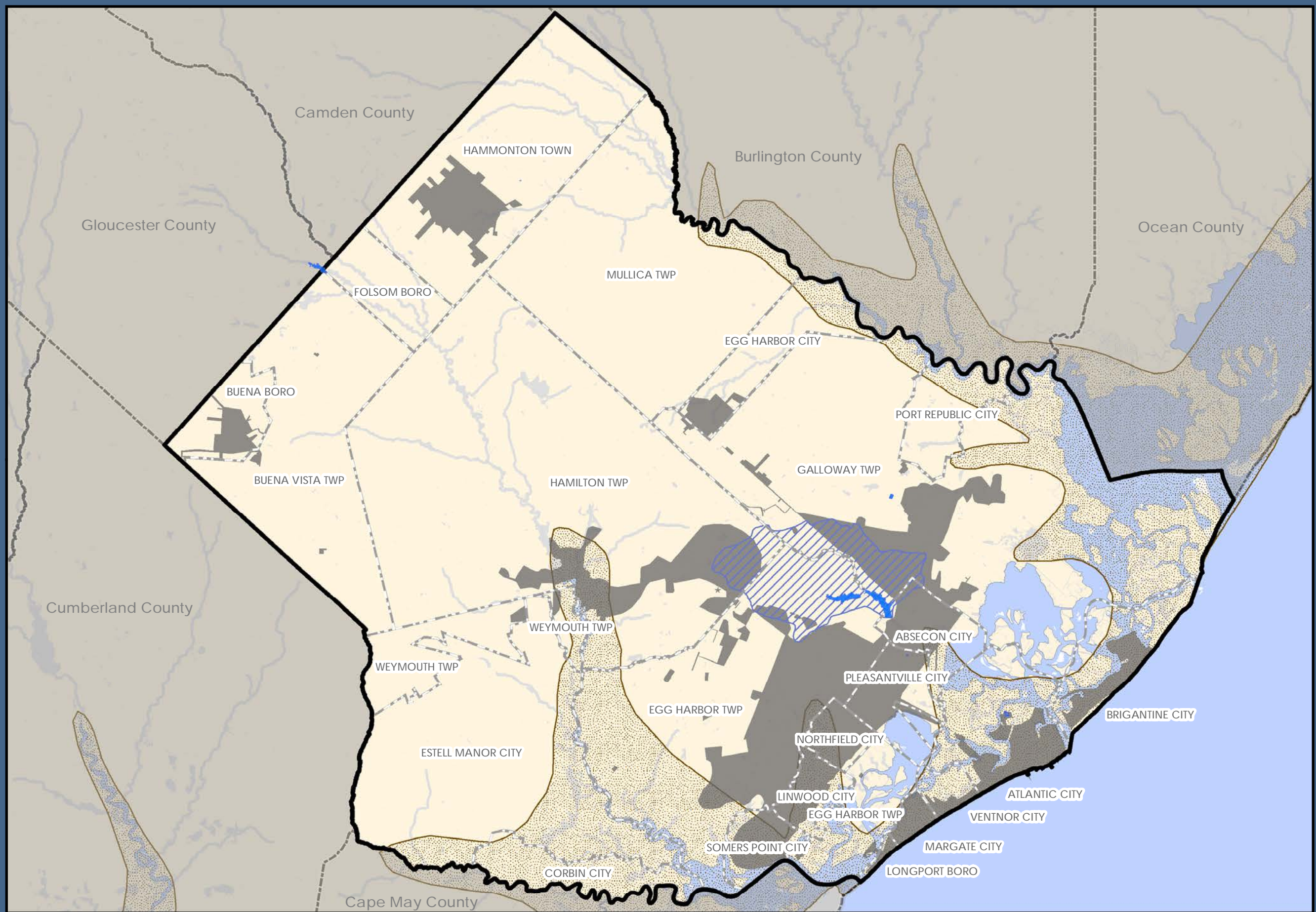
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL
January 2017



Effects of Withdrawals and Impervious Cover

Groundwater and surface water are fundamentally interconnected and are integral components of the hydrologic cycle. Excessive groundwater withdrawals can result in not only degradation of the quality and quantity of subsurface water sources, but to surface water sources as well. Groundwater withdrawals can result in reduced flows to streams and alter wetland hydrology. The combinations of increased development activities (and subsequent increase in the amount of impervious surface area), installation of sewers, and an increase in agricultural uses has a cumulative effect of reducing stream flows. Changes in groundwater levels and stream flow have important implications for water and flood management, irrigation, and planning.

In order to provide water-supply managers, regulators, and scientists with a regional assessment of groundwater conditions in multiple aquifers, the USGS, in cooperation with the NJDEP, initiated a plan in 1978 to map the potentiometric surfaces of the major aquifers on a 5-year cycle. Depaul and Rosman (2013) analyzed water level changes from 1978 to 2008 and observed sustained, long-term declines in wells within the Atlantic City “800-foot” sand aquifer as well as the Piney Point aquifer, in which rates of decline were as great as 1.4 feet/year. Water-level differences during fall of 2003 and 2008, reported that Atlantic City “800-foot” sand had groundwater levels that were typically below those previously recorded in 2003, and the declines were greatest near the pumping centers in coastal areas of the County: Absecon Island, Brigantine, and Pleasantville.

The primary concern of the long-term trend within the Atlantic City “800-foot” sand aquifer is the potential for saltwater intrusion, which would adversely impact the potable water supply. Therefore, water purveyors that use the Atlantic City “800-foot” sand aquifer as a water source should carefully review the next USGS report on water levels changes and make plans to reduce dependence on the Atlantic City “800-foot” sand aquifer if necessary. The following water purveyors that should continue to evaluate the current and future groundwater conditions of the Atlantic City “800-foot” sand aquifer include: New Jersey American Water Company – Atlantic Division, Brigantine Water Department, Egg Harbor City Water Department, Aqua New Jersey, Hamilton Township MUA, Hammonton Water Department, Longport Water Department, and Margate City Water Department.

The Atlantic City MUA and New Jersey American Water – Atlantic Division use the Kuehnle Pond Dam and Doughty Pond Dam reservoirs as a surface water source in addition to subsurface water sources to provide water to customers within each entities’ respective water purveyor service areas. The remaining water purveyors within the County rely on the Kirkwood-Cohansey water-table aquifer as a water source and groundwater recharge, the process that replenishes water that is withdrawn. Impervious cover can influence the rate of groundwater recharge that occurs following precipitation events depending upon where the surface runoff is directed to. Hoffman and Thompson (2013) analyzed changes in groundwater recharge resulting from development in Atlantic County from 1995 – 2007 and demonstrated the impact of

impervious cover. Atlantic County had 15,699 acres of impervious cover (4.0% of the County) in 1995 and 19,003 acres in 2007 (an increase of 1,544 acres or 9.8%). Estimates of groundwater recharge in Atlantic County of 70,024 MGY in 1995, declined to 69,005 MGY in 2007.

In an effort to minimize the impact of increased development on groundwater recharge the NJDEP published a set of regulations in 2004 (N.J.A.C. 7:8) which require major developments (> 1 acre) to implement best management practices (BMPs) that preserve groundwater recharge. In 2004 the groundwater recharge section of the stormwater management rules were applied to residential developments and those requiring a NJDEP Division of Land Use permit. In 2006, the regulations started to be applied to commercial and industrial developments, but delays occurred and implementation did not fully occur until 2007.

In addition to preserving existing groundwater recharge capacity, the implementation of BMPs is also an effective method to reduce non-point source pollution contained in stormwater runoff that could negatively impact surface water supplies such as the Kuehnle Pond Dam and Doughty Pond Dam. Therefore, all of the municipalities within Atlantic County should consider implementing regulations that require stormwater infiltration on parcels smaller than one acre in order to minimize the impact of any future development on the quantity and quality of water that is available for potable uses throughout the County.

Water Quality

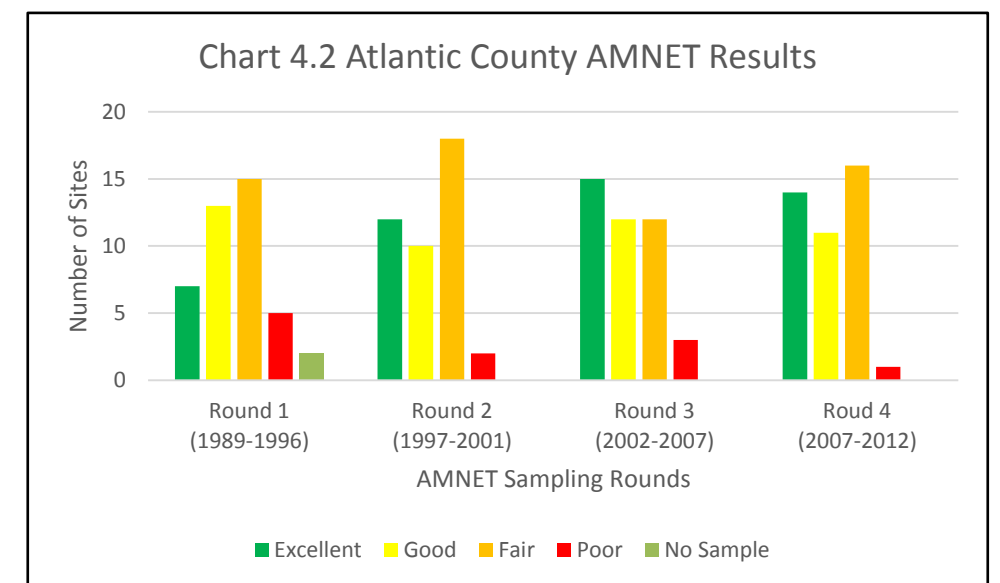
The NJDEP Division of Water Monitoring and Standards Bureau of Environmental Analysis, Restoration and Standards (BEARS) is responsible for the development, adoption, and administration of New Jersey’s Surface Water Quality Standards (SWQS) N.J.A.C. 7:9B as well as the New Jersey Ground Water Quality Standards (GWQS) N.J.A.C. 7:9C. The BEARS is also responsible for conducting and coordinating water quality assessments of all waters of the State, including assessment of data collected by non-departmental entities (e.g., regional and local government agencies and volunteer monitoring organizations), and determining the causes and sources of water quality impairment. Assessment results are reported every two years in the New Jersey Integrated Water Quality Monitoring and Assessment Report, which includes the Section 303(d) List of Water Quality Limited Waters. The Integrated Report published by the NJDEP provides effective tools for maintaining high quality waters and improving the quality of waters that do not attain their designated uses. The reports also describe progress toward attainment of the designated uses of surface waters of the State, as specified in the New Jersey Surface Water Quality Standard (N.J.A.C. 7:9B). A biennial review of the Integrated Report upon publication is recommended for not only the County, but all of the municipalities located within the County to determine how to align efforts that support the NJDEP’s Water Quality Management Programs to protect and restore water quality.

The NJDEP Division of Water Monitoring and Standards Bureau of Freshwater and Biological Monitoring is responsible for several multi-year monitoring programs mandated by the Clean Water Act. Water quality monitoring projects emphasize watershed monitoring and efficiently combine biological and chemical / physical monitoring as part of emerging state and federal strategies to assess the success of State and Federal Clean Water Programs. The sampling stations include surface water as well as groundwater monitoring. A wide range of parameters are collected including, chemical / physical (nutrients, metals, discharge, etc.), biological and bacteriological. Chemical and biological monitoring is often co-located to correlate chemical conditions with biological response. The results of both surface water and groundwater assessments that have been conducted by the NJDEP for waters located within Atlantic County are discussed below.

Surface Water Monitoring and Quality

Ambient Biomonitoring Network

In 1992, the NJDEP reactivated its Ambient Biomonitoring Network (AMNET) to support its Statewide Water Quality Inventory, Impaired Waters, and Watershed Programs. Under the program, sites in each of New Jersey’s five Water Regions are sampled for benthic macroinvertebrates on a rotating schedule (once every five years). The long-term biological data reflects the quality of surface waters at each sampling site. An assessment ranking of excellent, good, fair, or poor is assigned to each sampling site based on macroinvertebrate populations at reference sites. There are 42 sites located within Atlantic County that are sampled by the NJDEP as part of the AMNET program, and four of those sites double as reference sites to provide a biological population baseline that is used for comparison. As of 2014 there have been four rounds of sampling completed with reported data. The level of assessment from each round is reported in Chart 4.2. Also see the Surface Water Quality and Monitoring Map.



Non-impaired sites are those that are classified as Excellent and Good. Impaired sites are those that are classified as Fair and Poor. The most notable trend has been the fluctuation in the number of sites that are classified as Good and Fair between each round. The sites that were classified as Fair (as well as Poor) during the last round of sampling are listed in Table 4.16 and should be closely monitored so as to prevent them from becoming more severely impaired.

Total Maximum Daily Loads

Waters that exceed SWQS require the development of total maximum daily loads (TMDLs), which represent the assimilative capacity of surface water for a given parameter of concern. TMDLs are required under Section 303(d) of the Clean Water Act to be developed for waterbodies that cannot meet surface water quality standards after the implementation of technology-based effluent limitations. The BEARS is responsible for determining the pollutant reductions needed for restoration of water quality, through the development and implementation of TMDLs or watershed restoration plans. Once TMDLs are adopted in the NJ Register they are officially added as amendments to the NJDEP Water Quality Management Plan.

The pollutants of concern for surface water within Atlantic County are mercury, phosphorus, and fecal/total coliform. TMDLs for mercury impairments based on concentration in fish tissue (mainly caused by air deposition) were developed for five streamsheds in 2010. TMDLs for fecal coliform were developed for four lakesheds in 2007. TMDLs for phosphorous were developed for two lakesheds in 2003. TMDLs for

shellfish-impaired waters were developed for 440 streamsheds (nearly all of Atlantic County) in 2006 in order to bring water bodies into compliance for unrestricted shellfish harvest.

Groundwater Monitoring and Quality

Ambient Ground Water Quality Monitoring Network

The Ambient Ground Water Quality Monitoring Network (AGWQMN) is a NJDEP/USGS Cooperative project. The NJDEP Bureau of Freshwater and Biological Monitoring collects well water samples throughout the network, which consists of 150 wells screened at the water table throughout the state. The sampling of the wells occurs on a five year cycle with 30 wells sampled each year. The water samples are sent to the USGS National Water Quality Laboratory and analyzed for the following parameters: pH, specific conductance, dissolved oxygen, alkalinity, major ions, trace elements (metals), gross-alpha particle activity (radionuclides), volatile organic compounds, nutrients, and pesticides.

Known Contaminated Sites List

The Known Contaminated Sites List (KCSL) for New Jersey are non-homeowner sites and properties within the state where contamination of soil or groundwater has been confirmed at levels equal to or greater than applicable standards. The KCSL includes sites where remediation is either currently under way, required but not yet initiated, or has been completed. There are 437 sites listed on the NJDEP KCSL located within Atlantic County (see Table 4.17).

Table 4.16 Impaired Sites in Atlantic County

Water Body	Location	Municipality	Round 1	Round 2	Round 3	Round 4
UNT to Deep Run	Rt 54	Buena Borough	Severe	Fair	Poor	Poor
Marsh Lake Br (Collings Br)	Blue Anchor Rd	Buena Vista Twp	None	Fair	Fair	Fair
Indian Cabin Creek	EHC Lk outlet	Egg Harbor	None	Good	Fair	Fair
Maple Run (Asbury Run)	Mill Rd	Egg Harbor Twp	Moderate	Fair	Fair	Fair
Absecon Creek N Branch	Garden St Pkwy	Egg Harbor Twp	Moderate	Fair	Fair	Fair
Patcong Creek	Spruce Ave	Egg Harbor Twp	Moderate	Fair	Fair	Fair
Tuckahoe River	Cumberland Ave	Estell Manor	Moderate	Fair	Good	Fair
Stephens Creek	Rt 50	Estell Manor	Severe	Fair	Fair	Fair
Hospitality Branch	Rt 54	Folsom	None	Fair	Good	Fair
Jack Pudding Branch	Cologne Ave.	Hamilton Twp	No Sample	Good	Fair	Fair
Cedar Brook	Myrtle Ave	Hammonton	Moderate	Fair	Fair	Fair
Albertson Brook	Old Bridge Crossing	Hammonton	None	Fair	Excellent	Fair
Great Swamp Branch	Rt 206	Hammonton	None	Good	Good	Fair
Hammonton Creek	Boyer Rd (blw STP)	Hammonton	Severe	Poor	Poor	Fair
Hammonton Creek	Columbia Rd	Mullica Twp	None	Fair	Good	Fair
Landing Creek	Rt 30	Mullica Twp	Severe	Fair	Fair	Fair
Mullica River	Constable Bridge	Mullica Twp	Moderate	Excellent	Excellent	Fair

Source: NJDEP, 2016

Table 4.17 Known Contaminated Sites by Class

Class	Description	Number of Sites
A	On-Site Source	314
B	Unknown Source	20
C	Closed with Restrictions	103

Source: NJDEP, 2014

Currently Known Extent of Groundwater Water Contamination

The Currently Known Extents (CKEs) of groundwater contamination are geographically defined areas within which the local ground water resources are known to be compromised because the water quality exceeds drinking water and ground water quality standards for specific contaminants. Historically, a number of the CKEs have also been identified as Well Restriction Areas (WRAs). CKEs are used by NJDEP staff, water purveyors, and local officials to make decisions concerning appropriate treatment and/or replacement of contaminated drinking water supplies.

The CKE areas, as shown, are intended to provide information to the public about contaminated ground water areas in the County. Unless precautionary measures are taken to protect potable users, well installation should be avoided. This information is being made available so informed decisions can be made on well location, design, or treatment before wells are proposed, permitted, and installed.

There are 21 CKEs within Atlantic County that cover a total of 6,331 acres. The four largest CKEs include:

- Genoa Avenue and Cologne Port Road in Galloway Township (557 acres)
- Wheat Road and Route 40 in Buena Borough and Buena Vista Township (1,175 acres)
- Delilah Road in Egg Harbor Township and Absecon City (1,418 acres)
- Pinelands Park in Egg Harbor Township (1,443 acres)

Classification Exception Area

The NJDEP has established Classification Exception Areas (CEAs) in accordance with N.J.A.C. 7:9-1.6 and 1.9(b). CEAs are institutional controls in geographically defined areas within which the GWQS for specific contaminants have been exceeded. CEAs are established in order to provide notice that the constituent standards for a given aquifer classification are not or will not be met in a localized area due to natural water quality or anthropogenic influences, and that designated aquifer uses are suspended in the affected area for the term of the CEA. There are 105 CEAs located within the County that cover a total area of 943 acres. The three largest CEAs include:

- Borgata Huron North Redevelopment Site in Atlantic City (124 acres)
- South Jersey Clothing Co in Buena Borough (174 acres)
- Lenox China Facility in Galloway Township (217 acres)

Water Supply Infrastructure Recommendations

The update to the County's Master Plan Elements considers the recommendations adopted in the previous County Master Plan prepared in 2000. Some of the previous recommendations continue to be relevant, while others have changed in the sixteen years since the release of the last plan. The recommendations related to Waste Supply are as follows:

Assist in the quantification of the region's existing water supply.

It is imperative that the existing dependable yield of the area water supply be determined so that plans can be developed and implemented that are flexible in providing alternative water supply resources for anticipated demands. In order to improve comprehensive water supply planning efforts, the County should request an Annual Water Quantity Report from the NJDEP Division of Water Supply and Geoscience that summarizes the information contained in the New Jersey Water Transfer Data Model databases for all public community water purveyors, especially New Jersey American Water and ACMUA.

Assist in the development of an updated water model, monitoring program, and alternative water use implementation strategies.

The existing water models need to be updated and a program of monitoring water supplies and use implemented to assure that the effects on the resource from current and projected demands can be accurately evaluated. This would facilitate development of effective water use strategies depending on the quantitative and qualitative conditions of the water supply.

Assist in the promotion and education of water conservation.

The conservation of our water supply has a cumulative effect, whereby, everyone has a role to play in conserving this natural resource. Therefore, education in schools and proactive leadership from agricultural, commercial, and industrial users shall advance the awareness that the cumulative efforts of water conservation shall have far reaching benefits to the overall sustainability of the water supply.

Assist and encourage the development of wastewater recycling.

The development of alternative uses of treated effluent as irrigation and recharge into the water table, as well as, discharge into surface waters should be implemented on a regional basis. These strategies properly planned and implemented shall reduce the adverse effects from the "mining" of water. This is important in both the Kirkwood-Cohansey aquifer and the Atlantic City 800-Foot Sands, whereas, stream flows can be properly maintained, as well as, stabilization of the advancing saltfront, respectively.

Assist in the development of land use strategies that mitigate adverse effects to our water resources from non-point source pollution.

The effects of land use and associated non-point source pollution is an important aspect in the overall planning of our water resources. The implementation of effective land use planning and stormwater management practices, and wellhead protection programs shall all advance the quantity and quality of our water resources, as well as, benefit the recreational and ecological aspects of surface waters.

Assist in the development of a regional water supply and quality plan.

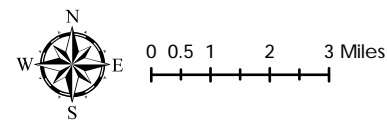
The sustainability and quality of our water resources combined with wastewater management and land use planning, as well as, observed adverse trends such as, the cone of depression and inland migration of the saltfront implores us that we develop comprehensive plans based on a regional watershed perspective.

Encourage Flood protection and resiliency measures for all water supply facilities within a Flood Zone.

Resiliency and flood protection measures may include building flood walls, raising and widening the berms, installing new flood gates, improving drainage mechanisms, installing a new low lift pump stations, or replacing emergency generators, as supported by the Army Corp of Engineers.

Ground Water Recharge Areas

- Ground Water Recharge Areas**
- 16 to 23 in/yr
 - 11 to 15 in/yr
 - 8 to 10 in/yr
 - 1 to 7 in/yr
 - 0 in/yr
 - Hydric Soils
 - Wetlands and Open Water
 - No Recharge Calculated
- Areas and Boundaries**
- Atlantic County
 - Municipalities
 - Counties
 - Water



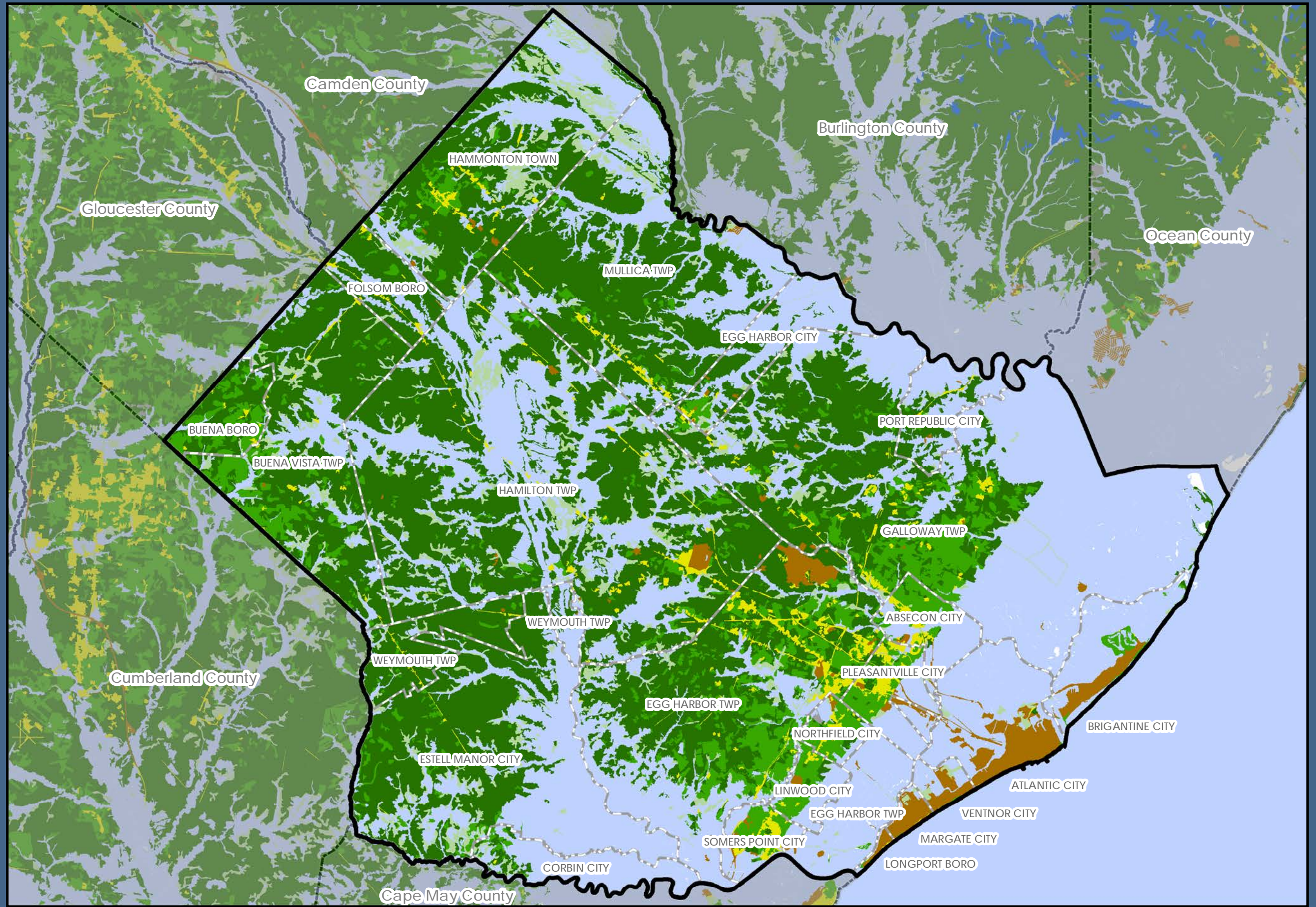
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL
January 2017



Surface Water Quality & Monitoring

- NJDEP STORET Stations
- NJDEP Ambient Surface Water Monitoring
- NJDEP Ambient Lake Monitoring
- NJDEP AMNET Ref Sites

NJDEP AMNET Sites

Impairment Level

- Excellent
- Good
- Fair
- Poor

Streamshed TMDL

- Mercury

Lakeshed TMDL

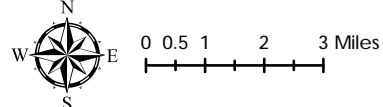
- Fecal Coliform
- Total Phosphorus

Shellfish TMDL

- Total Coliform

Areas and Boundaries

- Atlantic County
- Municipalities
- Counties



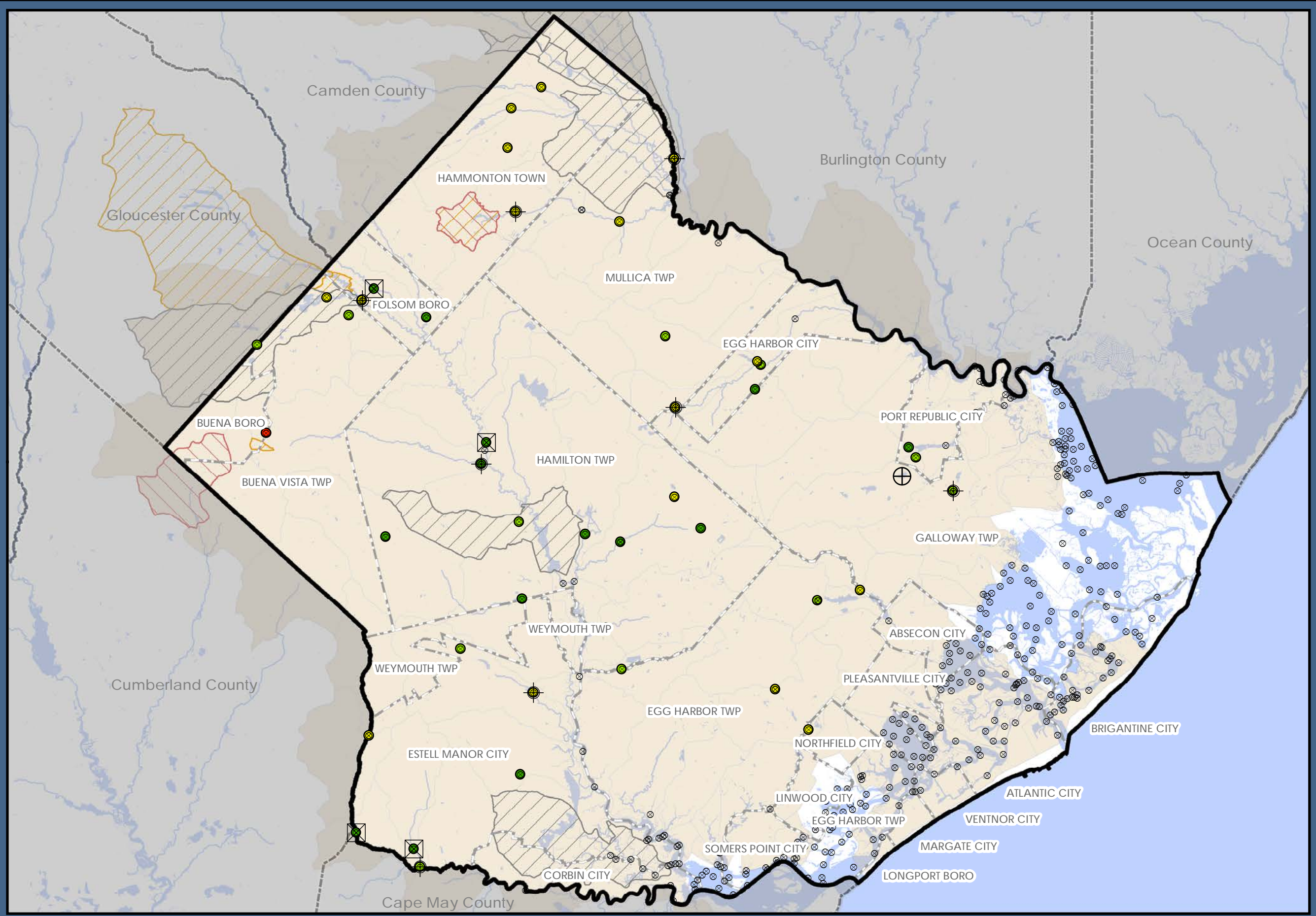
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.

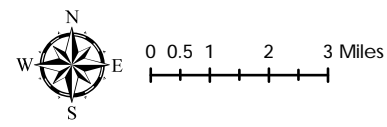


Michael Baker
INTERNATIONAL
January 2017



Soil & Ground Water Contamination

- Soil and GW Contamination**
- A: On-Site Source
 - B: Unknown Source
 - C: Closed with Restrictions
 - GW Contamination CEA
 - GW Contamination CKE
- Areas and Boundaries**
- ▭ Atlantic County
 - ▭ Municipalities
 - ▭ Counties
 - ▭ Water



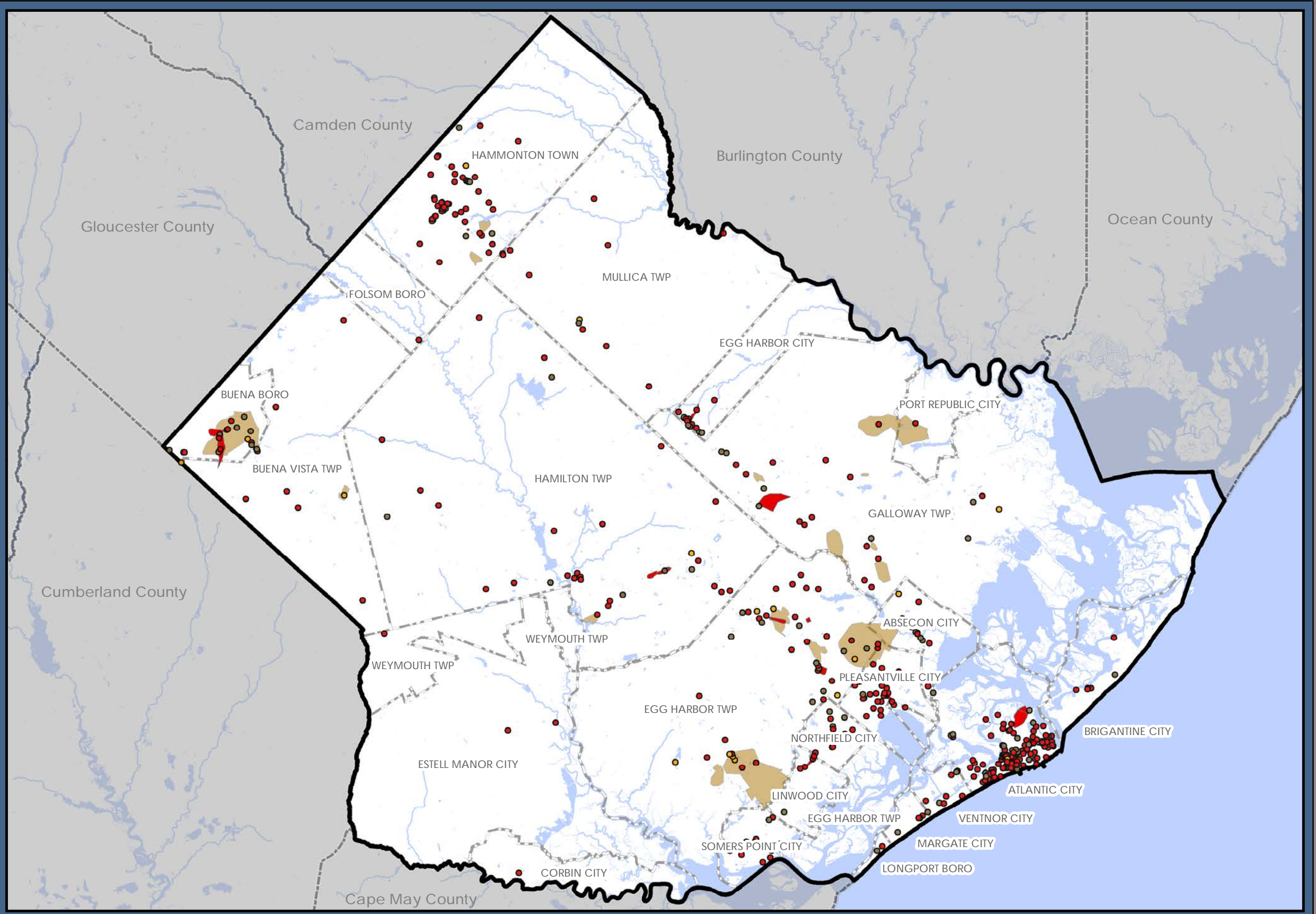
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Michael Baker
INTERNATIONAL
January 2017



V. Sustainability and Resiliency



SUSTAINABILITY AND RESILIENCY

In 2011 and 2012, the back-to-back impacts of Hurricane Irene and Superstorm Sandy exposed the vulnerability of communities throughout the northeast. Since those landmark storms, additional weather events, particularly Winter Storm Jonas in early 2016, have impacted communities in coastal New Jersey. In the wake of these storms, it became apparent that there is a real and dramatic need to focus planning and investment efforts on resiliency and sustainability measures.

Atlantic County sustained a substantial amount of damage during Sandy, particularly in its barrier island communities. This event, spurred a great deal of investment in planning and developing a more resilient and sustainable vision for the future. Through the development of this plan element, Atlantic County has an opportunity to promote and support the implementation of a variety of actions to boost the resiliency and sustainability of the County.

Resiliency has become a focus of planning as the effects of climate change and the impacts associated with severe weather events have become more costly and profound. In the broadest sense, a resilient community is able to absorb shocks of outside events (such as storms and natural disasters) in a way that accrues minimal impact to its built environment and social fabric.

Sustainability entails making decisions and taking actions in the present that do not negatively impact a community or population's future ability to thrive. Sustainability encompasses a range of environmental, economic, and social factors that contribute to making high quality places to live, work, and invest.

Planning for sustainability and resiliency has never been more important for Atlantic County. The two concepts will need to inform decision making and investment decisions for both public and private entities. This plan element can serve as the basis for sound decision making that encourages adaptation and flexibility in the face of changing realities. In addition, the County can offer guidance and support to municipalities and other stakeholders to enhance local planning and investment decisions.

The recovery from the effects of Super-Storm Sandy continues over four years after the Storm struck. Slower, subtler changes have been happening at the global scale that will impact life in Atlantic County. Tangible trends in sea-level rise and warming global temperatures will continue to increase the frequency and intensity of flooding and storm events. The planning community must acknowledge the changing reality of life in coastal and back bay communities as beach erosion continues, flooding becomes more common place, and storms increase in frequency and severity.

The inland portions of the County will also face a set of challenges related to sustainability. Several communities are subject to riverine flooding, which will continue

to intensify as sea levels rise and storms become more frequent. Communities that rely on agriculture will need to adapt as the climate and weather patterns continue to change. Social and economic factors are also at play. The County's recovery from the global financial crisis has been slower than average, and there is a need for the County to reinvent its economic base and address shifts in development patterns.

Post-Sandy Conditions

In October 2012, Superstorm Sandy made landfall in Atlantic County and inflicted a significant amount of damage to buildings and infrastructure. Within the first several months after the storm, the New Jersey Department of Banking and Insurance reported that Atlantic County incurred approximately \$265 million in damage. Nearly 17,000 insurance claims were reported by March, 2013.

The insurance claim data shows that the barrier island communities suffered by far the greatest losses. Atlantic City was the most heavily impacted, due to the density and scale of its development. The City reported \$83.3 million in losses. Brigantine City was the next most significantly impacted (\$44.2 million in losses), followed closely by Margate City (\$39.1 million in losses), and Ventnor City (\$37.4 million in losses). The back bay and inland communities suffered losses from Superstorm Sandy at a smaller scale.

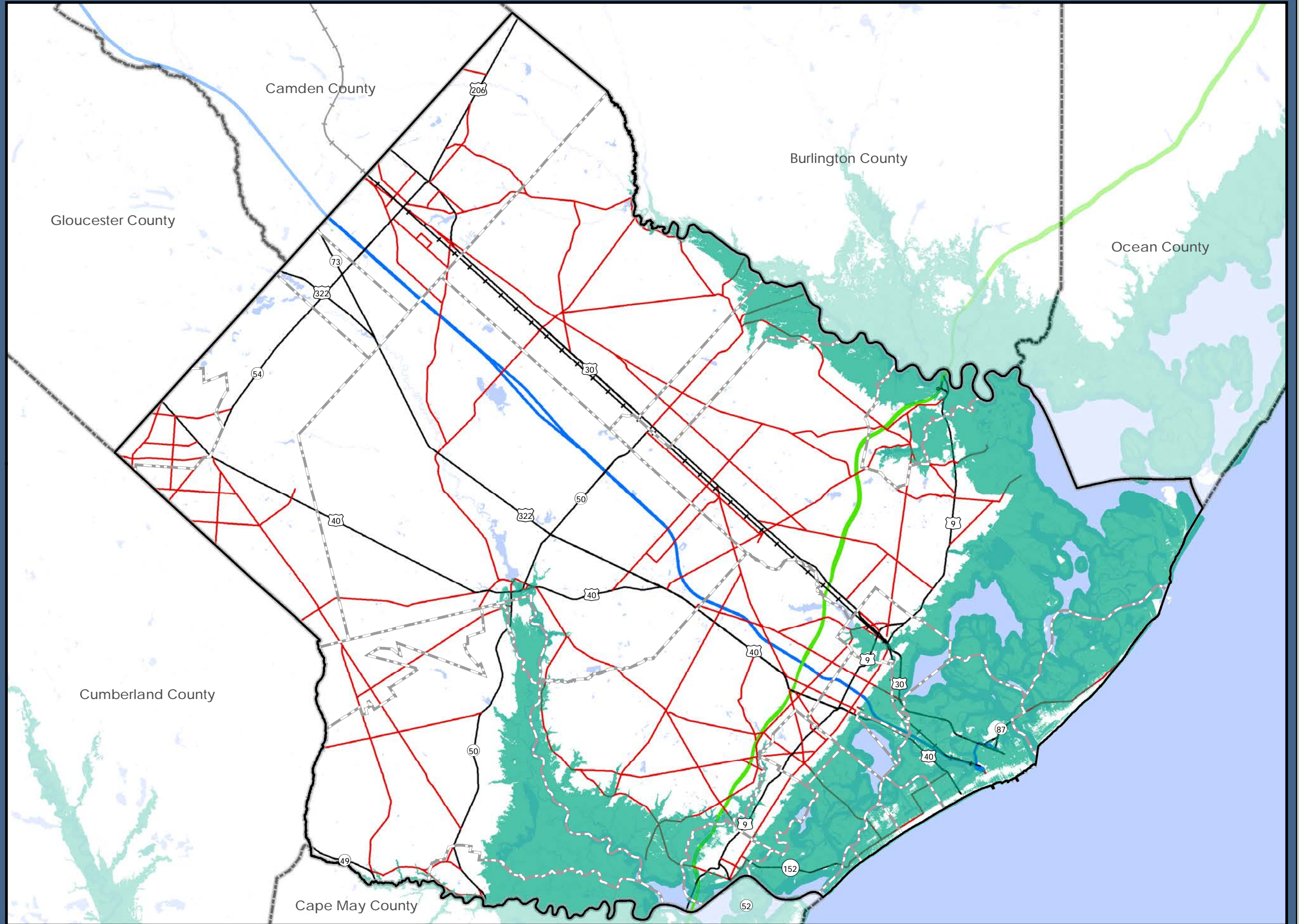


County Damage from Superstorm Sandy
Photo Credit: Atlantic County

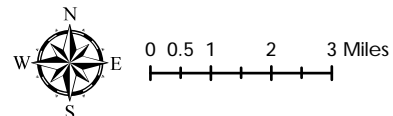
Table 5.1 Super Storm Sandy Insurance Claims March 2013

Zip code	All claims reported	All claims closed with payment	All paid losses	All incurred losses
08037 Hammonton	285	185	\$2,491,986	\$2,670,025
08201 Absecon	304	215	\$2,155,269	\$2,556,609
08203 Brigantine	2,929	2,172	\$40,346,192	\$44,199,176
08205 Galloway	528	373	\$3,351,379	\$5,810,517
08213 Cologne	7	7	\$42,062	\$42,062
08215 Egg Harbor City	183	132	\$1,008,987	\$1,053,759
08217 Elwood	1	1	\$10,000	\$10,000
08220 Leeds Point	8	6	\$62,046	\$62,046
08221 Linwood	220	154	\$1,681,869	\$2,898,364
08225 Northfield	307	210	\$1,416,608	\$1,686,778
08231 Oceanville	6	5	\$53,135	\$53,135
08232 Pleasantville	762	557	\$6,357,405	\$7,380,191
08233 Pleasantville	2	2	\$9,435	\$9,435
08234 Egg Harbor Twp	1,038	703	\$7,296,503	\$7,764,267
08240 Pomona	19	13	\$80,001	\$80,932
08241 Port Republic	83	61	\$1,286,129	\$1,631,182
08244 Somers Point	420	270	\$4,474,827	\$5,185,153
08310 Buena	21	12	\$28,163	\$34,921
08317 Dorothy	2	1	\$9,135	\$9,135
08319 Estell Manor	3	1	\$250	\$250
08326 Landisville	10	6	\$128,177	\$130,677
08330 Mays Landing	324	221	\$2,053,802	\$2,198,154
08332 Millville	156	102	\$470,760	\$509,345
08340 Milmay	3	3	\$19,278	\$19,278
08341 Minotola	5	4	\$6,035	\$6,035
08342 Mizpah	0	0	\$0	\$0
08346 Newtonville	5	2	\$23,402	\$23,402
08350 Richland	2	2	\$20,402	\$20,402
08401 Atlantic City	3,596	2,501	\$51,588,367	\$83,305,670
08402 Margate City	2,289	1,567	\$31,616,650	\$39,105,192
08403 Longport	770	506	\$15,550,560	\$19,149,957
08405 Federal Aviation	1	1	\$14,121	\$14,121
08406 Ventnor City	2,559	1,851	\$33,891,366	\$37,409,845
Atlantic County	16,848	11,846	\$207,544,301	\$265,030,015
Percentage of Claims Closed with Payment			70.3%	

Super Storm Sandy Storm Surge



Surge Area



Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



Nine percent of the households in Atlantic County had homes that sustained “severe” or “major” damage. According to the Department of Housing and Urban Development (HUD), “severe” damage is defined as homes with more than \$28,800 worth of physical damage or more than four feet of flooding on the first floor, while “major” damage is defined as homes with between \$8,000 and \$28,799 worth of physical damage or more than one foot of flooding on the first floor (as determined by FEMA).

The most heavily impacted locations were a census tract in Brigantine City and a census tract in Atlantic City. More than 50% of households in each of these tracts experienced major or severe damage. Twelve census tracts had between 25% and 49% of households experience major or severe damage, and ten census tracts had between 10% and 24% of households experience such damage.

Substantial Damage and Substantial Improvements

The National Flood Insurance Program (NFIP), which is administered by FEMA, places enhanced regulations on the reconstruction and rehabilitation of structures that have sustained “substantial damaged”. FEMA defines “substantial damage” as “damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.”⁴

In accordance with NFIP requirements and NJ DEP Flood Hazard Area Control Act Rules, new residential construction is required to have a finished first floor elevation at least one foot above the base flood elevation of the property on which the structure



*County Damage from Superstorm Sandy
Photo Credit: Atlantic County*

4. FEMA P-758 Substantial Improvement / Substantial Damage Desk Reference <https://www.fema.gov/media-library/assets/documents/18562>

sits. In the wake of Superstorm Sandy, “substantially damaged” residential structures must be brought into compliance with local flood plain management regulations. In addition, the substantial damage determination served a major screening factor for the State of New Jersey Rehabilitation, Reconstruction, Elevation and Mitigation Program (RREM), the largest grant program designed to assist homeowners in the rebuilding effort.

Defining Flood Risks

Flood hazard areas are identified by FEMA in Flood Insurance Studies (FIS) and delineated on Flood Insurance Rate Maps (FIRMs). The National Flood Insurance Program (NFIP) uses these documents to identify risk for insurance and regulatory purposes. A FIS consists of a narrative about the community and its history of flood events, maps, data, and computed flood profiles for recurrence probabilities to define flood risk in the area. The FIS and FIRMs identify the base flood, the Special Flood Hazard Area (SFHA), and Base Flood Elevation (BFE).

- Base Flood – The one-percent annual chance flood, which is also commonly and informally referred to as the 100-year flood. Susceptibility to the base flood is used as the standard for purposes of requiring flood insurance and regulating new development.
- Special Flood Hazard Area – The SFHA is also called the base floodplain. This is the area that is covered by the floodwaters of the base flood. The NFIP’s floodplain management regulations must be enforced in these areas, and the mandatory flood insurance purchase requirement applies.
- Base Flood Elevation – The elevation above sea level to which floodwater is anticipated to rise in the SFHA during the base flood event.

Mapped flood hazard areas are broken down into different areas depending on flood hazard type, risk level, and the amount of information available.

- High-Risk Areas: ‘A’ and ‘V’ Zones on flood hazard maps. Home and business owners in these areas are required to purchase flood insurance if they have a mortgage from a federally regulated or insured lender.
- Moderate- to Low-Risk Areas (Non-Special Flood Hazard Area or NSFHA): ‘B’, ‘C’, ‘X’ Zones on flood hazard maps. There is a reduced risk of flooding in these areas, but it is not completely absent. Flood insurance is not mandated, but it is still recommended, and over 20% of NFIP claims come from these areas.
- Undetermined Risk Areas: ‘D’ Zones on flood hazard maps. These are areas where there may be flood hazard risks that have not been defined, or areas that have not been studied.⁵

5. FloodSmart.gov. Understanding Your Risk., https://www.floodsmart.gov/floodsmart/pages/flooding_flood_risks/defining_flood_risks.jsp

Community Rating System

The National Flood Insurance Program’s (NFIP) Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS:

1. Reduce flood damage to insurable property;
2. Strengthen and support the insurance aspects of the NFIP;
3. Encourage a comprehensive approach to floodplain management.

In 2013, the NFIP enacted changes to the CRS Coordinators Manual for the Community Rating System. These changes will drive new achievements in the following six core flood loss reduction areas important to the NFIP:

1. Reduce liabilities to the NFIP Fund;
2. Improve disaster resiliency and sustainability of communities;
3. Integrate a Whole Community approach to addressing emergency management;
4. Promote natural and beneficial functions of floodplains;
5. Increase understanding of risk;
6. Strengthen adoption and enforcement of disaster-resistant building codes.

In Atlantic County, the following communities currently participate in the CRS program:

Table 5.2 FEMA, NFIP Community Rating System Participation

Municipality	Current Class	% Discount for SFHA	% Discount for Non-SFHA
Absecon	8	10%	5%
Atlantic City	9	5%	5%
Brigantine	5	25%	10%
Hamilton	8	10%	5%
Linwood	7	15%	5%
Longport	5	25%	10%
Margate	5	25%	10%
Pleasantville	7	15%	5%
Ventnor	6	20%	10%

Source: NFIP Community Rating System October 1, 2016

Every community in the County that is vulnerable to flooding events should continue to pursue enhanced standing in the CRS program. The County can encourage the sharing of information, strategies, processes, and techniques between its constituent municipalities. The actions that lead to higher CRS levels benefit the community by enhancing resiliency and provide a direct financial benefit to property owners with flood insurance policies.

FEMA Floodplains

FEMA Floodplains (2015)

Shaded X Zone: Area of moderate flood hazard, usually between the limits of the 100-year and 500-year floods



Zone A: Area subject to inundation by the 100-year flood. No base flood elevations are determined



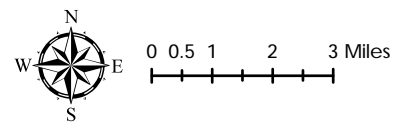
Zone AE: Area subject to inundation by the 100-year flood. Baseflood elevations are determined.



Zone VE: Area subject to inundation by the 100-year flood with additional hazards due to storm-induced velocity wave action. Base flood elevations are determined.



Floodway



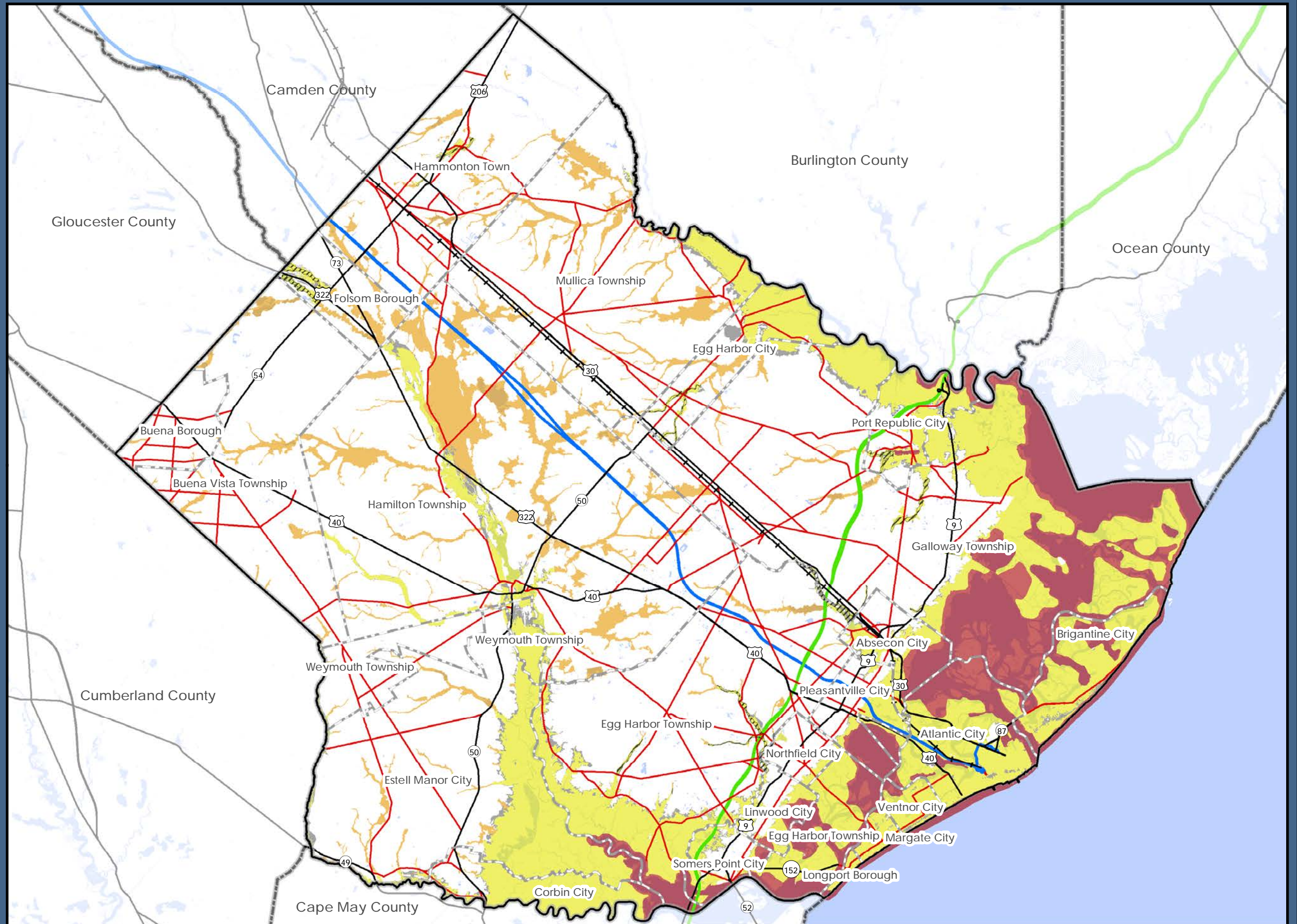
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, FEMA

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



Vulnerabilities

Flooding, Severe Storm, Wave Action, and Coastal Erosion

Atlantic County is vulnerable to flooding and severe storms due to its coastal location, and the presence of rivers extending inland along its northern and southern borders. Future sea level rise will further imperil low lying and coastal areas, and exacerbate flooding problems in areas currently designated as flood hazard areas and beyond. Tropical storms intensify over warmer water, which can lead to more intense and frequent storm events. The coastal impacts associated with severe storms are likely to increase as global temperatures increase.

- Absecon
- Atlantic City
- Brigantine
- Egg Harbor Township
- Galloway Township
- Linwood
- Longport
- Margate
- Northfield
- Pleasantville
- Somers Point
- Ventnor

Communities & Neighborhoods along streams, creeks, and rivers:

- Corbin City along the Tuckahoe River
- Mays Landing (Township of Hamilton) along the Great Egg Harbor River
- Somers Point, Linwood, and Northfield along the Patcong Creek and Mill Creek
- Port Republic along the Nacote Creek

Population and Infrastructure is densely concentrated on Barrier Islands

The Barrier Island section of Atlantic County features the highest population density, and the most concentrated areas of infrastructure and commercial development, particularly in Atlantic City. The population of the five municipalities (Atlantic City, Brigantine City, Longport Borough, Margate City, and Ventnor City) that comprise the Barrier Island section of the County was 66,907, or nearly a quarter of the County's total population, in 2010. These five communities consist of less than four (3.8%) percent of the County's land area, which illustrates the population density and concentration of value and infrastructure.

Transportation access to Absecon and Brigantine Islands is limited to several roads and bridges and the Atlantic City Rail Terminal. The City of Brigantine does not have direct access to the mainland and relies exclusively on access through Atlantic City via Brigantine Boulevard and the Brigantine Bridge. Atlantic City has three roughly parallel roads (US-30, US-40, and the Atlantic City Expressway) that provide access to the mainland. The Margate Bridge provides access via Margate Boulevard in Margate City, and the JFK Memorial Bridge provides access via Ventnor Avenue in Longport Borough. Several of these roadways can be impacted by flooding events. The

main artery used for evacuation in the face of serious emergency is the Atlantic City Expressway, which has the option to set up a contra-flow traffic pattern that allows both sides of the highway to be used to exit Absecon Island.

Atlantic City also has a significant population without access to cars. According to the 2014 American Community Survey 5-year estimates, approximately 27% of households in Atlantic City do not have access to a vehicle. The density of development and transit services on the island reduce the need for private vehicles in day-to-day activity. However, when the need to evacuate or relocate people arises before or during a natural disaster, this high concentration of people without access to vehicles creates an additional logistical challenge.

Table 5.3 outlines the flooding impacts to the most affected portions of Atlantic County based on the height recorded at the USGS Atlantic City Ocean Front hydrologic gauge. Lower levels of flooding, which happen much more routinely, can begin to have impacts of access and mobility and can affect property and public infrastructure. When the height of water measured at the gauge reaches 5.8 feet, the most susceptible locations in West Atlantic City begin to experience flooding. Minor flooding commences at 6 feet, and as the water rises, different locations begin to see impacts. Moderate flooding occurs at 7 feet, major flooding occurs at 8 feet, and the high-water mark was recorded at 9 feet on December 11, 1992. The high mark during Sandy was just shy of that record.⁶

Table 5.3 Historic Flood Impacts, Atlantic County

Water Height (ft.) Measured at USGS Atlantic City Ocean Front Hydrologic Gauge	Atlantic County Impacts
9	Record high-water mark reached on December 11, 1992.
8.8	The level reached during the hurricane of September 14, 1944 and during Superstorm Sandy on October 29, 2012.
8.6	The level reached during Hurricane Gloria on September 27, 1985 and on October 31, 1991.
8.4	The level reached on March 6, 1962 and during Hurricane Belle on August 9, 1976.
8.2	The level reached on November 25, 1950.
8	MAJOR FLOODING. At this level, flooding starts to become severe enough to begin causing structural damage along with widespread flooding of roadways in the coastal communities of Atlantic County. Vulnerable homes and businesses may be severely damaged or destroyed as water levels rise further above this threshold. Numerous roads become impassable and some neighborhoods may be isolated. The flood waters become a danger to anyone who attempts to cross on foot or in a vehicle.
7	MODERATE FLOODING. At this level, widespread flooding of roadways begins due to high water and/or wave action with many roads becoming impassable in the coastal communities of Atlantic County. Lives may be at risk when people put themselves in harm's way. Some damage to vulnerable structures may begin to occur.
6.8	Flooding begins in Pleasantville, along Longport Boulevard (NJ Route 152) between Somers Point and Longport, and along Atlantic County Route 559 in Somers Point (the section between US Route 9 and NJ Route 52).
6.6	Flooding begins around Absecon Inlet in Atlantic City, and in Longport between 11th Street and 24th Street.
6.4	Flooding begins on the north end of Brigantine, on Absecon Creek in Absecon (US Route 30, Shore Road and US Route 9), in Margate, and along Bay Avenue in Somers Point.
6.2	Flooding begins on the White Horse Pike (US Route 30 - Absecon Boulevard) in Absecon and Atlantic City, along the back bays in Atlantic City and Ventnor, on the Black Horse Pike (US Routes 40 and 322) in West Atlantic City, and along US Route 9 at the north end of the Beeselys Point Bridge.
6	MINOR FLOODING.
5.8	Flooding begins at the most susceptible locations in West Atlantic City.
5.5	ACTION STAGE.

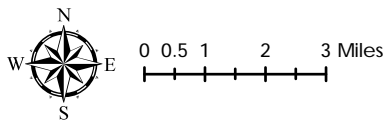
Source: National Weather Service Advanced Hydrologic Prediction Service

6. National Weather Service, Advanced Hydrologic Prediction Services, <http://water.weather.gov/ahps2/hydrograph.php?wfo=phi&gage=acyn4>

Population Density

Population per Sq. Mile

- 0 persons
- Less Than 1,000
- 1,000-3,000
- 3,000-6,000
- 6,000-21,000



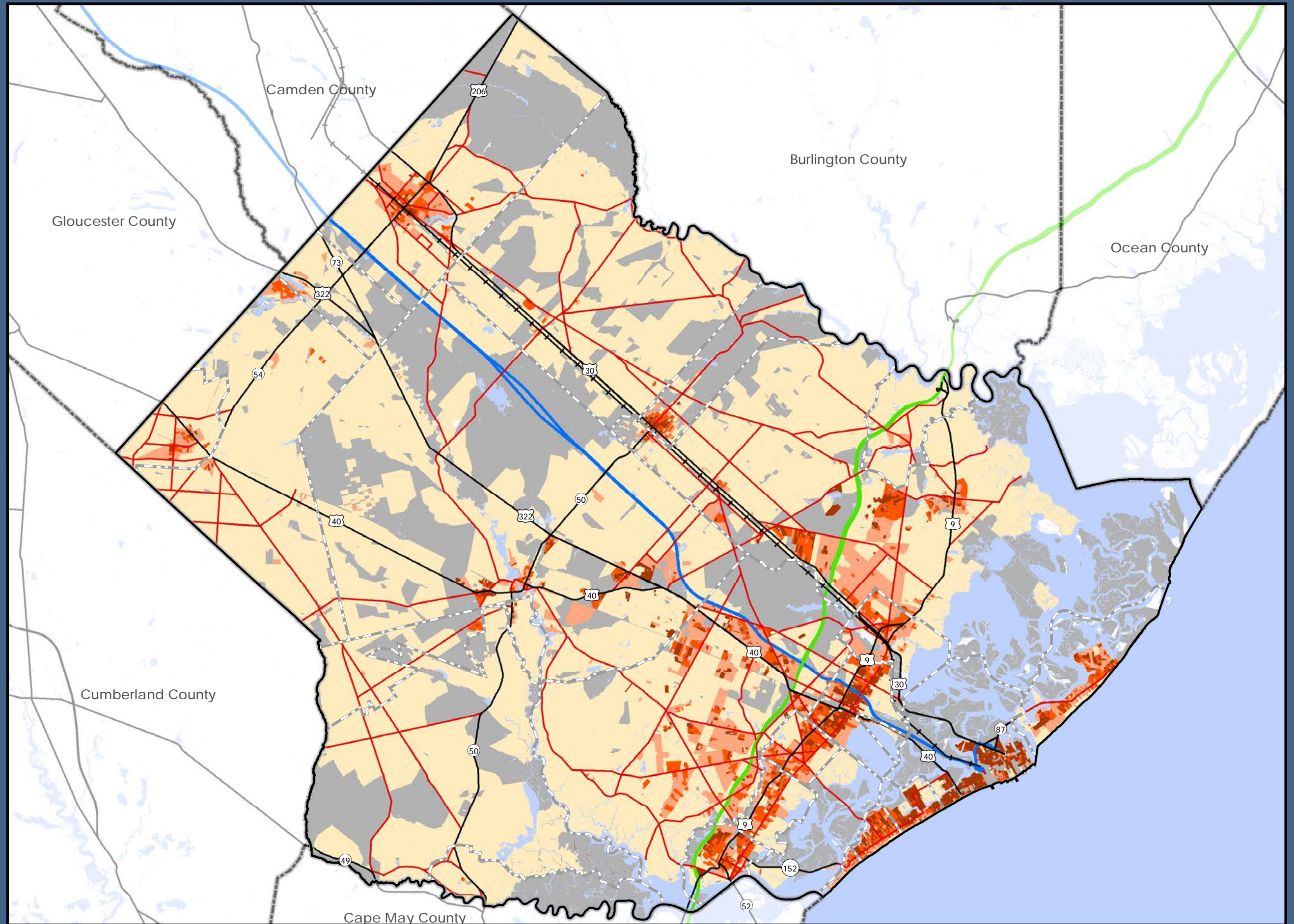
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, 2010 Census

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



Percentage of “second” homes in flood prone areas

The Barrier Island section of the County is a vacation destination with substantial seasonal variation in residents and visitors. The local economy is driven by tourism year-round in Atlantic City, while the neighboring towns on Absecon and Brigantine Islands see an influx of residents and visitors in the summer. Many of the homes in Longport, Margate, Ventnor, and Brigantine are second homes where people do not reside year-round.

The seasonal nature of these communities means that there are large spikes in population during the summer months. These spikes can place a strain on limited infrastructure during the high season. In the off season, there are fewer people to evacuate in the face of severe storms, but there are fewer people available to properly prepare structures and properties to withstand a hazard event.

Table 5.4 Housing Units for Seasonal, Recreational or Occasional Use

Municipality	Housing Units for Seasonal, Recreational, or Occasional Use	Total Housing Units	Percentage of Second Homes
Brigantine	4,232	9,222	45.9%
Longport	1,119	1,656	67.6%
Margate City	3,616	7,144	50.6%
Ventnor City	2,584	7,829	33.0%

Source: 2010 US Census

Data shows that year-round population in the Barrier Island portion of Atlantic County declined over 11% between 2000 and 2010. The pattern of population decline pre-dates Superstorm Sandy, and all indications are that the trend has continued.

Table 5.5 Barrier Island Populations, 2000 and 2010

Town	2000 Population	2010 Population	% Change 2000-2010
Atlantic City	40,517	39,558	-2.4%
Brigantine	12,594	9,450	-25.0%
Longport	1,054	895	-15.1%
Margate City	8,193	6,354	-22.4%
Ventnor City	12,910	10,650	-17.5%
Barrier Island Totals	75,268	66,907	-11.1%

Source: US Census Bureau

Asset Inventory

The Multi-Jurisdictional Hazard Mitigation Plan for Atlantic County identified assets and critical facilities that are vulnerable to delineable hazard events. The hazards identified include floods, wildfires, storm surges, and dam failures. Every municipality within the County, with the exception of Estell Manor has critical facilities located in at least one delineable hazard area.

The following critical facilities were considered for this analysis:

- Airports
- Communication Facilities
- Electrical Power Facilities
- Emergency Shelters
- Emergency Operations Centers
- Fire Stations
- Hospitals
- Nursing Homes
- Passenger Rail Stations
- Police Stations
- Public Works
- Rescue Squads
- Schools
- Water Treatment Facilities
- Wastewater Treatment Facilities

The Barrier Island and Back Bay regions of the County have the majority of their critical facilities within hazard areas. The storm surge area can affect locations up to five miles from the coast, and the flood hazard area encompasses the majority of these portions of the County.



Beachfront Construction, Longport

Table 5.6 Critical Facilities in Hazard Areas

Municipality	Number of Critical Facilities	Number of Critical Facilities in a Delineable Hazard Area
Absecon City	12	8
Atlantic City	44	44
Brigantine City	8	8
Buena Borough	15	1
Buena Vista Township	13	4
Corbin City	6	5
Egg Harbor City	16	5
Egg Harbor Township	32	6
Estell Manor City	3	0
Folsom Borough	4	1
Galloway Township	46	9
Hamilton Township	42	25
Hammonton Town	24	4
Linwood City	12	10
Longport Borough	5	5
Margate City	16	16
Mullica Township	13	3
Northfield City	15	7
Pleasantville City	24	7
Port Republic City	6	5
Somers Point City	14	2
Ventnor City	15	15
Weymouth Township	9	5
Total	394	195














Source: Multi-Jurisdictional Hazard Mitigation Plan - Atlantic County, New Jersey, Prepared by URS, February 2016






*White Horse Pike flooded
Photo Credit: Atlantic County*

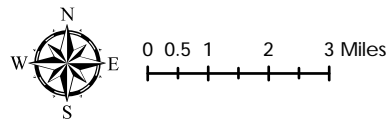
Community Facilities

Community Facilities

-  Airports
-  Hospitals
-  Train Stations
-  Schools
-  School Properties
-  Recycling Facilities
-  Municipal Public Works/MUA
-  Municipal Buildings
-  County Public Works
-  Other County Facilities
-  FAA Tech Center
-  County Open Space
-  Other Open Space

FEMA Flood Plains

-  A & AE Zone- 100 year floodplain
-  VE Zone- 100 year floodplain with wave action
-  Floodway



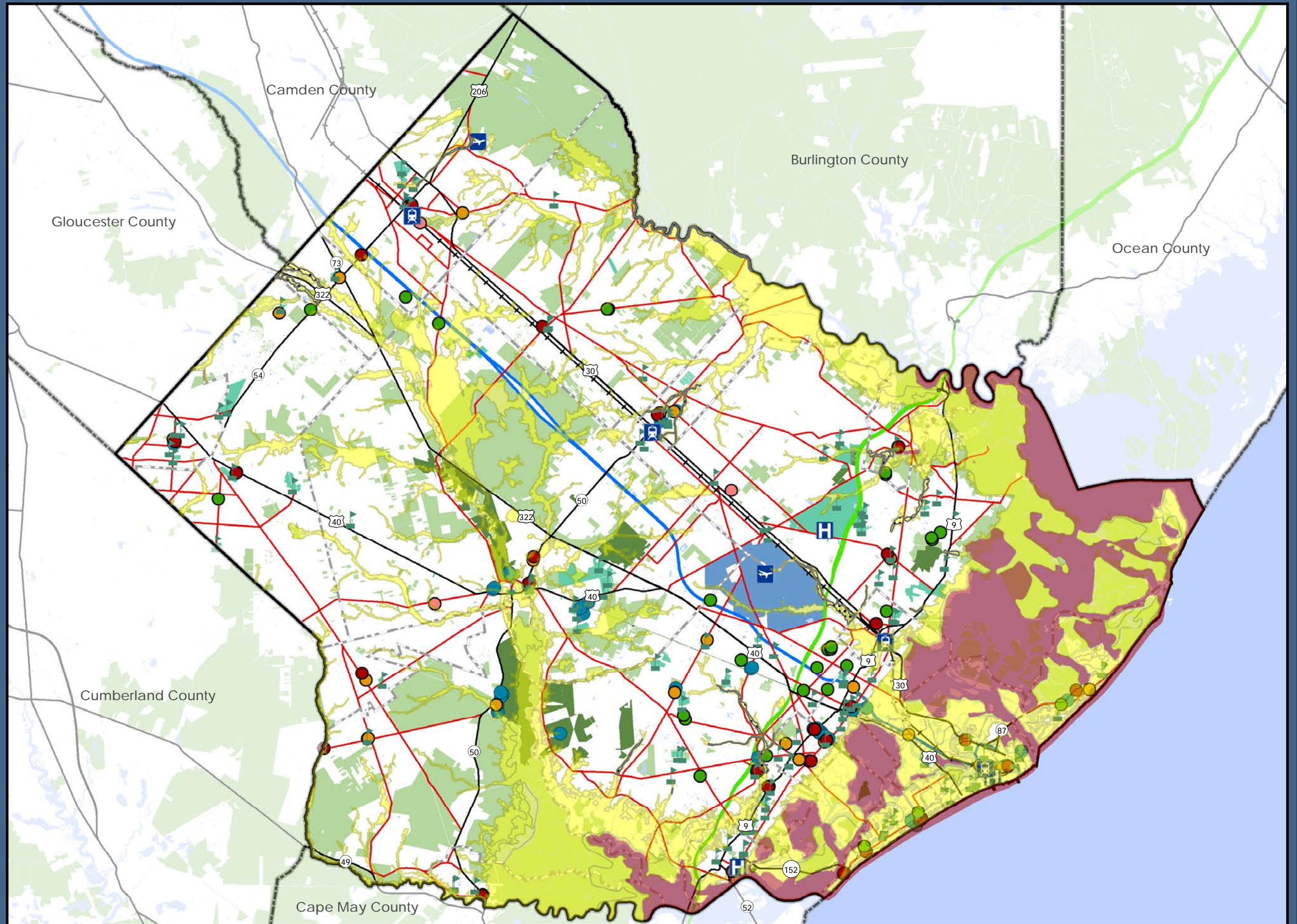
Source: NJDEP, NJGIN, NJOGIS, NJDOT, Atlantic County Office of GIS, FEMA

This map is for demonstration purposes only and was not developed in accordance with National Map Accuracy Standards. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user. The map was developed, in part, using New Jersey Department of Environmental Protection Geographic Information System (GIS) digital data, in conjunction with the Atlantic County Office of Geographic Information Systems, but this secondary product has not been verified by NJDEP and is not state authorized.

The geodetic accuracy and precision of the GIS data contained in this map has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls.



HEYER GRUEL & ASSOCIATES



Land Use

The post-Superstorm Sandy planning landscape has placed significant emphasis on adaptation and mitigation in the face of sea level rise, climate change, and increased frequency and severity of coastal storms and flooding events. In order to ensure a sustainable future for Atlantic County, managing the coastal areas, particularly the Barrier Island region will be a primary focus in the near-term. According to a report prepared by Climate Central in 2014, only about 6% of the land in the County is at or below 5 feet above the high tide line. However, approximately 20% of the population and 40% of the property value in the County are located in these areas.

The density of development in the Back Bay and Barrier Islands regions is a significant cause for concern from a long-term sustainability perspective. These communities tend to be mostly built-out, and otherwise encumbered by environmental constraints such as wetlands and flood hazard areas. Projected sea-level rise will jeopardize existing structures and subject large portions of the Barrier Island, Back Bay communities, and areas along the County's rivers to increased flooding.



Ongoing Recovery Construction, Ventnor City

A number of areas within the inland portions of the County are also susceptible to flooding and the impacts of climate change and sea level rise. In the southern portion of the County, the Great Egg Harbor River and its tributaries impact the Mays Landing area and other communities in Hamilton, Weymouth, and Egg Harbor Townships. The Mullica River impacts the northern portion of the County, particularly parts of Port Republic City and Mullica Township.

State, County, and Local regulations generally discourage development in vulnerable areas that are located in environmentally sensitive and flood prone areas. However, when developers comply with applicable regulations and receive permits from state agencies, development may proceed in areas that are vulnerable to sea level rise. The County and its constituent municipalities need to consider the sustainability of land

use regulations and development standards. Careful consideration should be given to limiting the scale and intensity of development in environmentally sensitive areas. Any proposed changes to municipal land use and zoning standards that allow increases in density in environmentally sensitive areas, or land that is subject to delineable hazards should be considered inconsistent with the principles of resiliency and sustainability presented in this plan.

In the western and central portions of the County, land use patterns are generally established and controlled by the Pinelands Comprehensive Management Plan (CMP). The CMP effectuates the preservation of the sensitive Pinelands special resource area by controlling land uses and densities in a large portion of the Rural and Suburban regions of the County. These controls can limit the autonomy that municipalities possess, and may limit options for economic development in some areas.

Strategic Recovery Planning Report

As part of the Strategic Recovery Planning process, Atlantic County held a community meeting on October 15, 2014 in Brigantine. Members of the community attended to voice their experiences about Super Storm Sandy and the recovery efforts that are ongoing. Issues and suggestions that were discussed included:

- Flooding in flood prone areas, specifically in Ventnor Heights, Margate, Atlantic City and Brigantine
- FEMA has been helpful, however communication issues exist
- Prolonged displacement is a major issue
- Rehabilitation, Reconstruction, Elevation and Mitigation (RREM) program was helpful however had many requirements that included other improvements needed to meet stated standards
- RREM project managers are not local to New Jersey
- County and FEMA rent/ mortgage assistance programs were beneficial
- Local charities (Red Cross and Catholic Charities) and government long term recovery assistance programs were helpful in the recovery
- 50% loss requires raising of the structure by insurance companies
- Issues with utilities, gas company specifically requiring disconnection prior to permits and associated fees
- There were concerns raised about the timeliness of insurance payments, mismatched damage estimates and payments, and unscrupulous or dishonest contractors
- Storm water grates in Brigantine were blocked causing further flooding
- Discussions were had on whether to construct dunes or not
- Many bayside areas were flooded due to lack of bulkheads
- Some stated that raising homes was better than bulkhead solutions
- Inconsistent bulkhead locations and treatment led to further flooding

- Brigantine has challenges with “stilt homes” and preserving the character of the city
- Natural shorelines and other natural storm water management techniques were discussed as resiliency measures
- Debris and flooding of evacuation routes, government buildings (county library), and catch basins was a major issue
- A need for a refuge area outside the floodplain was discussed
- A statement was made about the lack of knowledge the local construction officials had
- There were service outage issues with cellular communications
- There was a need for more information about shelters for displaced residents
- Predatory contractors were a concern



SRPR Community Meeting Brigantine
Photo Credit: Atlantic County

Significant Issues and Hazards

The preparation of the Atlantic County Strategic Recovery Planning Report (SRPR) entailed outreach within the portions of the County most affected by Sandy. These sessions brought stakeholders and residents of these towns together to discuss the ongoing recovery efforts and identify issues and challenges. These issues reflect the continuing need to plan for resiliency, particularly in coastal communities.

Knowledge and Training

Public officials should make every effort to remain informed about best practices related to hazard mitigation and emergency response. The County should provide support and collaborate on training sessions with municipal officials to ensure that communities are prepared for a variety of potential hazard events. Furthermore, training and information sessions should be offered to the public to encourage the development of a well informed and prepared citizenry.

Public Information

The dissemination of public information was seen as an issue and a challenge in the wake of Superstorm Sandy. Technology has made it easier than ever to broadcast information to residents. The County should encourage municipalities to incorporate a public information strategy as part of their hazard mitigation planning and emergency management protocol. These strategies should include a variety of communication outlets including text messaging, reverse-911 call notifications, social media outreach across multiple platforms, along with a constant review of these policies to ensure that available technology is utilized, and that all citizens can be kept informed.

Evacuation Routes, Lack of Refuge Locations Outside Flood Hazard Areas

Barrier Islands by nature are vulnerable to flooding and storm events. The geographic isolation that creates this hazard and makes them unique and attractive places to

develop and visit also makes them difficult to leave in the face of looming threats. Evacuation routes and refuge locations are likely to be compromised in the immediate lead-up to and aftermath of flooding events. The County Office of Emergency Management handles the operational aspects of disaster response, but the County Planning Department can contribute support in defining actions to enhance evacuation options and identify refuge areas accessible to, but outside of, the immediate flood hazard areas.

Utility / Cell Phone Service Issues

Utilities and cell phone providers operate outside the purview of the County. However, the County can encourage the Atlantic County Utilities Authority (ACUA) and other providers of electricity and other utilities to enhance their physical infrastructure and operations in a resilient manner. Where possible, utility providers should locate crucial facilities outside flood hazard areas, or if necessary, elevate them three feet above the base flood elevation, or provide other means of flood proofing.

In addition, the County should pursue options for micro-gridding, particularly for critical facilities. This can allow small areas to operate independently of the larger electrical power grid. In the event of a power outage due to a storm event or damage to a substation, these areas may be able to retain service. Localized renewable energy generation, particularly with the aid of battery storage as that technology becomes more widely adopted, can also help stabilize utility service in areas that are prone to service outages.

Uneven and Inconsistent Bulkhead Locations

In order to function effectively, bulkheads must be consistently designed and installed along a vulnerable area. The County should develop standards that can be incorporated in the County Land Development Standards for infrastructure over which the County holds jurisdiction. In addition, a model ordinance dealing with the provision of bulkheads can be provided for municipal use to ensure that towns are working together and with the same basic requirements for bulkhead design.

Cost of Insurance as a Burden to Affordability

The County can offer support to municipalities in their efforts to maintain and enhance their standing with the National Flood Insurance Program (NFIP) Community Rating System (CRS). This program offers community wide discounts to homeowners with qualifying flood insurance policies. The NFIP, in conjunction with FEMA, has been updating the flood hazard area boundaries and Flood Insurance Rate Maps (FIRMs) over the last several years. These maps are still in the iterative process of development, review, comment, and revision. The final maps will provide the foundation of flood insurance requirements when they are released. It is uncertain how these changes will affect homeowners in Atlantic County, but any assistance municipalities can provide through successful participation in the CRS program will be beneficial to homeowners and tax payers.

Table 5.7 Acres of Land in Flood Hazard Areas by Municipality

Municipality	Total Land Area (Acres)	High Flood Risk (Acres)		Moderate Flood Risk (Acres)	Low Flood Risk (Acres)	Land in High Flood Risk %		Land in Moderate Flood Risk %
		VE	A, AE	X500	X	VE	A, AE	X500
Absecon City	3,453	360	1,254	149	1,690	10.4%	36.3%	4.3%
Atlantic City	6,878	1,263	5,246	129	239	18.4%	76.3%	1.9%
Brigantine City	4,088	742	3,171	164	10	18.2%	77.6%	4.0%
Buena Borough	4,850	0	73	0	4,777	0.0%	1.5%	0.0%
Buena Vista Township	26,274	0	1,154	2	25,117	0.0%	4.4%	0.0%
Corbin City	4,906	71	3,536	87	1,212	1.4%	72.1%	1.8%
Egg Harbor City	42,623	0	3,252	312	3,433	0.0%	7.6%	0.7%
Egg Harbor Township	6,997	1,091	9,629	728	31,175	15.6%	137.6%	10.4%
Estell Manor City	34,125	108	9,137	480	24,399	0.3%	26.8%	1.4%
Folsom Borough	5,249	0	1,302	93	3,854	0.0%	24.8%	1.8%
Galloway Township	57,008	5,817	15,639	571	34,982	10.2%	27.4%	1.0%
Hamilton Township	71,121	0	13,851	672	56,599	0.0%	19.5%	0.9%
Hammonton Town	26,167	0	1,613	48	24,507	0.0%	6.2%	0.2%
Linwood City	2,474	277	885	95	1,217	11.2%	35.8%	3.8%
Longport Borough	247	35	212	0	0	14.2%	85.8%	0.0%
Margate City	906	38	835	30	3	4.2%	92.2%	3.3%
Mullica Township	36,110	0	5,769	259	30,083	0.0%	16.0%	0.7%
Northfield City	2,178	0	254	29	1,895	0.0%	11.7%	1.3%
Pleasantville City	3,644	118	1,210	50	2,266	3.2%	33.2%	1.4%
Port Republic City	4,788	231	2,503	262	1,793	4.8%	52.3%	5.5%
Somers Point City	2,579	159	1,071	142	1,206	6.2%	41.5%	5.5%
Ventnor City	1,249	71	1,095	73	10	5.7%	87.7%	5.8%
Weymouth Township	7,737	0	1,445	191	6,101	0.0%	18.7%	2.5%
Total	355,651	10,381	84,136	4,566	256,568	2.9%	23.7%	1.3%

Source: Multi-Jurisdictional Hazard Mitigation Plan - Atlantic County, New Jersey, Prepared by URS, February 2016

Issues with Storm Water Management Infrastructure

Traditional storm water management infrastructure can be easily overtaxed and lead to nuisance flooding during the confluence of full moons and high tides, and can be slow to dissipate water during more severe flooding events. Repairs, upgrades, and enhancements should be undertaken wherever possible on existing infrastructure. In addition, the County can encourage the use of green storm water infrastructure along County roads and in conjunction with County drainage facilities. This type of storm water management can serve the dual benefit of lessening the burden on traditional systems and reducing impervious surfaces and the runoff they produce.

The County can provide recommended or required green storm water management as part of the County Land Development Standards. The County can also work to develop a model ordinance that municipalities can adopt in whole, or in part, as part of their storm water management ordinance.

Debate over Dunes

The installation of engineered dunes and other physical barriers along the shoreline can be controversial with homeowners that have direct beachfront access. These structures provide protection and contribute to public safety; however, they may also diminish property values. The benefits of engineered flood hazard protection need to be weighed against the private property rights of homeowners. The County should encourage cooperation between municipalities and provide support in the design and installation of engineered dunes if appropriate.

Neighborhood Character and Streetscape with Raised Homes

In the wake of the devastation caused by Super Storm Sandy, numerous homes, particularly in the island communities of the County were substantially damaged or destroyed. The rebuilding of a substantially damaged home, or the construction of a new home in a flood hazard area requires that the finished first floor elevation of the structure be, at minimum, one-foot above the base flood elevation (BFE) of the lot on which it is built. Some municipalities have opted to require additional structural



Damaged Back Bay Bulkhead

elevation, commonly measured in feet of “freeboard”, above the BFE. Insurance policies also provide discounts for structures located more than one-foot above the BFE.

The character of a neighborhood in which some or all of the homes are elevated is different from one in which homes are located at or near grade. The communal interaction offered by front porches and front yard areas can be lost, and in many cases the pedestrian streetscape is less attractive and inviting. In order to retain a sense of character, and place, the County should adopt design standards for elevated structures along County roads to provide decorative finishing materials on exposed concrete foundations, and plantings to obscure monolithic vertical facades.

Storm Debris Removal

Storm debris removal, and other cleanup and response efforts are a strain on local and county government budgets. The County should adopt policies and provide model guidance to municipalities that encourages construction and operation methods that reduce debris left behind in minor to moderate storm events. A simple example of one such program could be to require a sealable enclosure, or another method of securing garbage cans and any other outdoor storage containers.

Breakaway walls designed to be knocked down and easily restored are another example of a measure that can be encouraged.

High Hazard Dams

There are eight dams in Atlantic County classified as High Hazard Dams. Lake Lenape Dam is the only one that is considered a Major High Hazard Dam by the USGS. Any dam failure could have costly consequences. The potential area affected by a failure of the Lake Lenape Dam is 225 acres or 582 parcels within Hamilton Township, Egg Harbor Township, and Weymouth Township.

Wildfires

According to information prepared as part of the 2016 Atlantic County Multi-Jurisdictional Natural Hazard Mitigation Plan, approximately 46% (approximately 28,088 acres) of the vacant, developable land in Atlantic County is located in a wildfire hazard area. The County should promote awareness of the danger of wildfires and ensure that there is information posted in natural and recreation areas to educate the public about matters of fire safety.

Drought

Drought is a potential hazard, particularly in the western portion of the County. Agricultural production is an important industry in the rural portions of the County. As evidence of rising temperatures continues to mount, growing seasons may shift, and periods of drought may intensify. In addition, the portions of the County susceptible to wildfires may face additional hazards during periods of prolonged drought. The County has not experienced problems with water supply in the past, but conservation and management measures should be considered in the face of an uncertain future.



New Home Site, Longport

Sustainability and Resiliency Initiatives in Atlantic County

The County, and its constituent municipalities, have taken steps toward a sustainable future. The Sustainable Jersey program has been successful throughout the state in encouraging towns to adopt a mindset of sustainable policy implementation, and take a series of small steps, which can broaden and develop into a new way of life. A number of municipalities in Atlantic County have pursued certification by the Sustainable Jersey program. Atlantic County, and the County Improvement Authority have also taken action to create a more sustainable future.

Atlantic County Utilities Authority (ACUA) Post-Sandy Flood Mitigation Initiatives
The ACUA City Island Treatment Plant is susceptible to flooding and damage during high tide and storm conditions. The facility is vulnerable to inundation of plant and collection system buildings, access to the facility can be blocked, and loss of power is common. The ACUA is pursuing mitigation projects to enhance resiliency at the City Island Treatment Plant, at the Authority’s Vehicle Maintenance Facility, and at several pump stations throughout the County.

The proposed improvements at the ACUA City Island Treatment Plant and other facilities related to the collection and treatment process are:

- Plant Complex - Raise high voltage manholes.
- Operations Building - Replace the remaining underground storage tanks with above ground units.
- Effluent Pump House – Provide back-up emergency power for two, 1,250 Horsepower (HP) pumps, plus obtaining a third generator as a back-up to the existing, including the raising of the elevation of the existing controls.
- Solids Handling Facility – Install an emergency generator at this location.
- TAS Building – Increase generator capacity at this location.
- All Collection System Pump Stations – Two portable emergency generators and portable emergency fuel supply.

- Pump Station Resiliency - The intent of this project is to provide portable flood protection measures and to remove some existing underground storage tanks and replace them with above ground units.
- Vehicle Maintenance Facility (Egg Harbor Township Staging Area) – Provide an emergency generator.
- Seawall around City Island Treatment Plant Site - The ACUA is developing a project to protect the entire treatment plant site from potential storm surge water from hurricane type events similar to the Super Storm Sandy. The intent of this project would be to construct a seawall (or bulkhead) around the entire City Island Treatment Plant site.
- Pump Station installation and improvements in Brigantine, Ventnor/Margate, Linwood, Northfield, Absecon, Egg Harbor, Somers Point, and Mays Landing. These improvements will include temporary flood barriers and enhanced pump systems.⁷



Ventnor Gardens Pump Station, Ventnor City
(Source: ACUA - Ventnor Gardens Plaza Stormwater Pump Station Fact Sheet)

Energy Efficiency

Atlantic County and the ACUA have recently undertaken a variety of initiatives to promote sustainability and energy efficiency.

The ACUA operates wastewater and solid waste management systems within the County. The ACUA facilities and operations include trash and recycling collection, a landfill, composting, a compressed natural gas filling station, and a transfer station. The ACUA has led the way with several renewable energy installations and other efficiency initiatives:

- 7.5 megawatt wind farm in Atlantic City – Five, 380-foot-tall turbines owned by Jersey-Atlantic Wind, LLC. When operating at peak conditions, the wind farm powers the ACUA wastewater treatment plant and excess energy is provided to the main power grid.

7. Combined Public Notice, March 11, 2016, http://www.nj.gov/dca/divisions/sandyrecovery/pdf/SRF340809_TriplePublicNotice_English%20March%2011%202016.pdf

- 500 kilowatt solar generation facility – Solar facility is located at the ACUA wastewater treatment facility and consists of two roof mounted, two ground mounted, and one canopy array.
- 5.4 megawatt landfill gas to electric facility – This facility powers the ACUA Solid Waste Facility. Since 2005, the facility has saved ACUA \$5,666,629 in energy costs. Furthermore, the facility is crucial to controlling odors from the landfill.
- Biodiesel- B5 blend for diesel fleet vehicles
- Hybrid & Electric vehicles – Electric vehicle charging stations are located at the wastewater treatment facility and the solid waste facility. The charging stations are powered by renewable energy sources.
- Geothermal heating and cooling
- Energy & Water Conservation
- Compressed Natural Gas vehicles
- Membership in the greenhouse gas offset markets Chicago Climate Exchange and Climate Action reserve

In 2010, the Atlantic County Government contracted Dome Tech, Inc. to prepare an energy audit using funding from the Local Government Energy Audit Program. This audit evaluated 36 buildings in 29 County facilities to establish baselines for energy efficiency and identify opportunities to reduce energy consumption and costs. The recommendations in the report include upgrading lighting, switching to gas tank-less hot water heaters, replacing outdated boilers and HVAC systems, and implementing energy awareness programs.

Lakes Creek Wetland Mitigation Bank

The County acquired an approximately 37-acre tract known as the Burman Property in October 2009. This property is located just west of the intersection of Somers Point Mays Landing Road and Jeffers Landing Road (CR 651). The purpose of this acquisition was to establish a wetland mitigation bank for the County. The wetland mitigation bank gives the County credits, which it can use to satisfy mitigation needs for infrastructure projects throughout the County.

The Wetland Mitigation Bank is a successful sustainability initiative that provides environmental, social, and economic benefits to the County. Infrastructure projects that involve the disturbance of wetlands are able to happen in a timelier and more cost-effective manner, and the County can be self-sufficient in providing mitigation credits, rather than being subject to external market forces.

Brownfields Redevelopment Initiatives

The redevelopment of Brownfields, (defined under New Jersey state law as “any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant”) has been a priority at the state level, and represents an initiative that promotes sustainability. The County promotes the continued cleanup of contaminated



Lake Creek Wetland
(Source: Atlantic County)

sites and reuse and redevelopment of underutilized commercial and industrial properties.

In 2016, Atlantic City was awarded assessment and cleanup grants through the United States Environmental Protection Agency (US EPA) Brownfields Program. These grants amount to a total of over \$763,000 in funds for several projects. A \$200,000 in community-wide hazardous substances grant will be used to inventory and prioritize brownfields, and conduct environmental site assessments. A \$200,000 community-wide petroleum grant will be used to assess sites with potential petroleum contamination. Additionally, \$363,658 in hazardous substances grant funds will be used to clean up the Bungalow Park site at 709 Mediterranean Avenue, and the Delta Basin Homes site at North Maryland, Wabash, and Adriatic Avenues. The Bungalow Park site is vacant, undeveloped land and is contaminated with historic fill. The Delta Basin Homes site was formerly developed with a vehicle inspection station and automobile repair garages, and is contaminated with historic fill. Grant funds at both sites also will be used for community outreach and involvement activities. A few key sites have been identified where housing and the local workforce can be constructed. There are redevelopment plans in place in the inlet, downtown and other areas.

Municipal Initiatives

Sustainable Jersey

All but two municipalities in Atlantic County are currently participating in the Sustainable Jersey program, and twelve of them have achieved either bronze or silver certification levels (see Table 5.8). The Sustainable Jersey program consists of a variety of actions that deal with different aspects of sustainability and involve various levels of community investment and involvement. Some of the actions include energy audits of municipal buildings and building system upgrades, local ordinances that protect

natural resources and enhance resilience to natural disasters, complete streets and “safe routes to schools” programs, farmers’ markets and community gardens, and recycling initiatives.

The County encourages continued participation in this program and supports municipal efforts to acquire additional points and achieve higher levels of recognition. There is substantial overlap between the policies and objectives recommended in County and Municipal planning documents and the Sustainable Jersey programs.

<i>Table 5.8 Sustainable Jersey Participation in Atlantic County</i>	
Municipality	Sustainable Jersey Level
Absecon City	None
Atlantic City	Bronze
Brigantine City	Bronze
Buena Borough	None
Buena Vista Township	Silver
Corbin City	Not Participating
Egg Harbor City	Bronze
Egg Harbor Township	Not Participating
Estell Manor City	None
Folsom Borough	None
Galloway Township	Silver
Hamilton Township	Bronze
Hammonton Town	Silver
Linwood City	Bronze
Longport Borough	Bronze
Margate City	Bronze
Mullica Township	None
Northfield City	None
Pleasantville City	Bronze
Port Republic City	None
Somers Point City	Bronze
Ventnor City	Bronze
Weymouth Township	None

Source: Sustainable Jersey, Dec. 2016

The Atlantic-Cape Coastal Coalition

The Atlantic-Cape Coastal Coalition is a group of municipal representatives from Atlantic and Cape May Counties that formed in the months following Superstorm Sandy. This group is pursuing a joint venture to enable participants to secure Community Rating System points for their municipalities, and is looking into establishing shared services agreements among communities that can improve efficiency and enable cost reductions. This collaborative effort recognizes the challenges inherent in disaster recovery and planning for future resiliency and sustainability. Partnerships between

public entities are important to leverage resources. The County should support the efforts of groups like the Coastal Coalition in the ongoing planning process.

Sustainable Recovery Planning Reports and Sustainability and Resiliency Plans

Several municipalities within the County completed Strategic Recovery Planning Reports following Superstorm Sandy including:

- Margate
- Brigantine
- Atlantic City
- Ventnor
- Somers Point
- Pleasantville
- Hamilton
- Egg Harbor Township

Recommendations and projects identified by these municipalities include:

- Environmental Design
- Master Plan Development
- Zoning Ordinance Revisions- Design Standards
- Capital Improvement Plan for Regionalization and Shared Services
- Energy Audit/ Energy Saving Improvement Plan
- Community Rating System
- Recreation and Open Space Element/ Municipal Public Access Plan
- Storm Damage Mitigation Projects
- Public Outreach, Community Resiliency and Preparedness
- Participation in FEMA’s Community Rating System
- Vulnerability Assessment
- Blue Acres/ Buyouts

These concepts are in line with best practices in resiliency and sustainability planning and post-disaster recovery. The County encourages continued efforts at the municipal level to mandate resilient and sustainable design, undertake public education and outreach programs, and incorporate these principles in policy and investment decisions. To that end, additional sustainability planning, updated master plans, and master plan re-examination reports are in various stages of completion in municipalities throughout the County.

Municipal Infrastructure Initiatives

- The Ventnor Gardens pump station was a project involving funding from Ventnor, Margate, and Atlantic County, and with participation from the ACUA that helps manage storm water in the back bay portions of Ventnor and Margate.
- Ventnor City received grant funding through the New Jersey Environmental Infrastructure Trust to implement several stormwater management infrastructure improvements. Some of the resiliency projects that have been funded, or awaiting additional funding include drainage improvements at

Fulton and Calvert Avenues, backup generators at pump stations, new check valves at back-bay outfall pipes, and bulkhead improvements.

- Brigantine City received grant funding from NJDEP to install new pump stations at Hackney Place, Lighthouse Circle, and at 34th Street and Jenkins Parkway. Other projects are being considered including:⁸
 - o Installing a pump station and flood gates at the 5th Street South Boat Ramp
 - o Elevated micro-grid emergency generator at City Hall.
 - o Building living shoreline improvements along Brigantine Boulevard.
 - o Other assorted storm water management improvements.
- Longport Borough installed a new pumping station at 34th Avenue and Amherst Avenue.

Resiliency Strategies

Several communities along with the ACUA have taken the lead on post-Sandy resiliency projects. The County should support ongoing efforts and consider the following strategies to promote resiliency within its borders. These strategies can be employed at the municipal level, but a spirit of cooperation can be fostered between municipalities and the County’s resources can help create a collaborative atmosphere. The challenges that the Barrier Island and Back Bay regions face are different than those encountered in the Rural and Suburban Areas. However, the present conditions and recognized vulnerabilities to various hazards show that each community has potential to improve its resiliency.



Ventnor City

8. reNEWJersey Stronger, <http://www.renewjerseystronger.org/november-29-2016-christie-administration-highlights-brigantine-for-successfully-developing-and-implementing-storm-resiliency-projects-with-help-of-sandy-recovery-grants/>

Flood Monitoring and Early Warning Systems

Monitoring tide gauges and other devices can allow communities to effectively predict flooding patterns and provide warning to residents in advance of severe events. Areas in the Back Bay and Barrier Island regions of the County that are consistently subject to nuisance flooding understand that the confluence of tide cycles, winds, and phases of the moon can produce regular and predictable flooding. Monitoring systems can provide data that can be used to inform residents about specific risks in conjunction with other public information and outreach programs.

Public Information and Education

The County should encourage municipalities to incorporate a public information strategy as part of their hazard mitigation planning and emergency management protocol. These strategies should include a variety of communication outlets including text messaging, reverse-911 call notifications, social media outreach across multiple platforms, along with a constant review of these policies to ensure that available technology is utilized, and that all citizens can be kept informed.

The County can also encourage or facilitate the establishment programs to disseminate information about resilient design and rehabilitation strategies, as well as storm preparation. These programs could be developed as support and training for local officials and municipal employees, or open to the general public. Each community can evaluate its needs and employ the appropriate strategies.

Establish Community Hubs to Distribute Assistance and Information

The County should work to establish strategic community hubs in its facilities, or work with municipalities to designate sites, that can serve as gathering places during emergencies and interruptions in services. These facilities should be outfitted with access to key services, including water, backup electrical systems or generators, cell phone charging stations, and other materials to support residents in the face of hazards.

Promote Regional Coordination

Individual municipalities need to work together to create the most resilient community possible. In New Jersey, home rule means that municipalities control their own land use regulation and retain autonomy. However, there are regional concerns and issues that extend across municipal borders that require cooperation. Resiliency concepts and mitigation efforts in the Back Bay and Barrier Island communities involving infrastructure such as bulkheads and dunes require an unbroken line to be an effective deterrent. Shared services agreements between municipalities may also have beneficial outcomes for the allocation of scarce resources.

Living Shorelines

Living shorelines employ natural materials and native plants, either on their own, or in concert with an artificial structural element, to protect vulnerable coastlines. This method reinforces the natural structure of coastlines while also maintaining



Living Shoreline Example

(Source: Living Shorelines Academy, livingshorelinesacademy.org)

ecological stability. Living shorelines create habitat as well as reducing the impacts of wave energy.

In places with low to moderate wave energy, living shorelines may be constructed of sand, plants, and logs made of biodegradable material, such as coir. When stronger wave action is present, a hybrid approach is usually employed that includes static structural elements like rocks, or submerged vegetation.

Oyster reefs can also be employed as part of this strategy, which has the dual effect of creating a potential base for long-term aquaculture while providing shoreline resiliency. A project combining oyster reefs and the living shoreline strategy is underway at Gandy Beach, New Jersey along the Delaware Bay.⁹

Monitoring living shorelines is an essential part of their success.¹⁰ This strategy may be best deployed in lagoon and back bay areas that are not subject to intense wave action and will not impede recreational use of beaches.

US Army Corps of Engineers – Back Bays Coastal Storm Risk Management

The New Jersey Back Bay Study is being undertaken by the US Army Corps of Engineers to investigate strategies and solutions to reduce damages from coastal flooding. The focus on the Back Bay portions of the New Jersey coast stretches from Monmouth County to Cape May County and involves the Barrier Island and Back Bay portions of Atlantic County. Dredging in the Back Bay region and other physical developments to improve resiliency are a massive undertaking well beyond the means

9. U.S. Fish & Wildlife Service, Hurricane Sandy Recovery, <https://www.fws.gov/hurricane/sandy/projects/GandysBeach.html>

10. U.S. Fish & Wildlife Services, Open Spaces, <https://www.fws.gov/news/blog/index.cfm/2015/4/29/Nature-Heal-Thyself#more>



Great Egg Harbor Inlet

of any individual local entity. The County should support the Army Corps efforts and ensure that policy and investment decisions are in line with the recommendations that are developed and implemented as part of the USACE project.

Dredging Projects

In addition to collaborating with the US Army Corps of Engineers on larger scale, area wide dredging projects, the County should support efforts at the local level that involve one or more municipal stakeholders. Dredging has the twin potential benefits of increasing system capacity to reduce flooding, and opening channels for recreational boating. Dredging could also provide economic benefits by supporting and stimulating water related businesses.

Drainage Improvements

The County should take the lead on maintenance of existing drainage facilities as well as improvements to capacity and enhanced design standards for future construction. A number of approaches should be considered including widening and deepening earthen canals, cleaning ditches, replacing culverts, upgrading pumps, and installing check valves and inverts in certain culverts.

Zoning and Design Standards

The County can encourage and support the development of enhanced design standards in municipal land development ordinances that include resiliency measures. These standards can ensure that building retrofits, rehabilitation, and new development in hazard areas throughout the County can be built in a safe and resilient manner. Some potential options include:

- Zoning to reduce development density and amounts of impervious coverage in flood hazard areas.
- Easing or modifying height restrictions to permit ample elevation of structures to account for base flood elevations, sea level rise, and wave action.
- Transfer of Development Rights (TDR) to remove buildings and strip away future development rights from the most flood prone areas susceptible to repetitive losses, in exchange for density bonuses in “Sending Areas”. The County is already familiar with the concept of TDR as part of the Pinelands Comprehensive Management Plan. The logistical and legal issues of a cross-municipal transfer of development rights program within the County may be complicated, but it is worth pursuing as a potential strategy.
- Design standards that encourage sustainable management of water quality and stormwater runoff.

Acquisition of Structures

The County should remain receptive to opportunities to pursue the acquisition of structures that are subjected to repetitive losses during floods and other hazard events. Removing structures from hazardous locations can promote public safety, provide open space, reduce the monetary expense to the community and individual for clean-up, repairs, and rebuilding, and contribute to the Community Rating System score for a municipality.

Acquiring structures and removing them can be difficult decision to make, but it should be considered as a reasonable option of last resort in the most flood prone areas. Ultimately, the financial and social benefits may outweigh the costs of property acquisition. The County should be open to acquiring properties that are contiguous to existing open space and County owned land, and should support municipally initiated efforts to do the same.

Generators and Alternative Energy Sources

Emergency facilities including police, fire, rescue, and evacuation shelters should be equipped with generators or other backup power sources. Renewable energy sources with battery systems or microgrids can provide crucial areas with power even if the larger grid fails. In flood hazard areas, backup energy systems must be located on platforms that are elevated sufficiently above base flood elevation and areas of wave action or on rooftops. The County should ensure that its facilities are equipped with backup energy options and work with municipalities to ensure that theirs are as well.



Elevated houses seen on Atlantic County's coastline, Longport

Utilize Sea Level Rise Simulation and Mapping to Inform Land Use and Capital Investment Decisions

A great deal of mapping work using historical data, observed storm events, and sensing technology has been under development by government and non-profit institutions. Some of these mapping tools include user friendly simulations that can show the extent of storm surge and flooding. They can also simulate sea level rise. The County should utilize these tools and the data on which they are based to inform investment decisions, guide policy, and support municipalities.

Sustainability Strategies

Transportation

The Transportation Element of the County Master Plan provides an inventory of transportation infrastructure and transit options available in the County. The element also includes recommendations for improvements to those systems and other access and mobility related issues. A more sustainable future depends heavily on advancements in transportation technology and demand and congestion management.

- The County should continue to pursue alternative fuel vehicles, including compressed natural gas and electric cars and trucks as they continue to become more affordable and more widely adopted.
- The County should explore public-private partnerships to develop a network of charging stations throughout the County to support the emerging electric vehicle market.
- The majority of Atlantic County, particularly the less dense suburban and rural areas will continue to rely on primarily auto-centric transportation, so maximizing the efficiency of the County road network without overbuilding infrastructure will be an important action moving forward.
- Transit oriented development and redevelopment should continue to be encouraged near existing transit stations and hubs. If the opportunity for the

expansion of transit services emerges, the County should encourage and/or facilitate an alignment of land use policies and infrastructure investment with all stakeholders.

- As the FAA Technical Center and Stockton University continue to emerge as a hub of activity, the County should promote public and private bus and shuttle services to integrate the multi-modal transportation network.
- The County should continue to expand its on-road and off-road bike networks in the interest of encouraging healthy active recreation, and non-motorized transportation options.

Complete Streets – Nine municipalities in Atlantic County have adopted Complete Streets policies. The Transportation Element of the Master Plan contains more information about complete streets. From a sustainability perspective, the development and application of a complete streets policy at the County level, and in appropriate municipalities encourages people to use non-motorized forms of transportation, and provides a safer, more attractive, and more user-friendly streetscape.

Infrastructure

The County should continue to support municipal efforts as well as local utility authorities, including the ACUA, in their efforts to enhance resiliency of utility infrastructure. Programs to enhance key stormwater and wastewater infrastructure, and continue to improve the resiliency of the electrical transmission and distribution infrastructure in the County, are ongoing.

Waste Management

The County should continue to promote recycling and encourage local governments to adopt policies that reduce the flow of solid waste to landfills.

Agriculture

Agriculture has a lengthy history in Atlantic County and remains an important sector of the County's economy, particularly in the more rural western portion of the County. There are environmental, social, and economic factors at play when considering the future sustainability of agriculture in Atlantic County.

The changing climate and rising annual average temperatures will have an impact on agricultural practices throughout the world. Rising temperatures and shifting weather patterns may change growing seasons, affect rainfall, and alter disease and pest vectors. These factors may influence the quality and/or size of the crop in a given year, and may affect the viability of particular crops in the future.

A survey of agriculture stakeholders in New Jersey conducted by the NJ Climate Adaptation Alliance in 2014 found that the major concerns for the future sustainability of agriculture in the state are water conservation, crop diversification, green infrastructure for storm water management, crop disease surveillance and research, and development of hardy adaptable species and varieties of crops.



Solar Canopy seen at Stockton University in Galloway Township

Transportation concerns are intertwined with any distribution of goods, and agriculture is no exception. The County can support programs to connect farmers and their crops to local retailers and end users, which can be beneficial by reducing shipping costs and the associated greenhouse gases and pollution, and can provide fresh, healthy, minimally processed foods to local residents. Farm equipment is generally not subject to the same emissions and pollutant controls as passenger vehicles. This equipment, along with chemicals used as pesticides or herbicides can pose a public health hazard to farm workers and those living on and near farms.

The County, through the Agricultural Development Board, will continue to work with farmers and advocate for their rights. Farming is part of the history and tradition of Atlantic County, and it is a fundamental way of life for many families. The economics of farming make it difficult to sustain as a small or mid-sized operator. The environmental sustainability of farming in the face of climate change is a real concern, but the economic sustainability for people that make a living as farmers is also of importance. The County will continue to support farmland preservation programs that provide financial support to working farmers.

In addition, the County can advocate on behalf of local farmers with the State Agricultural Development Commission and the Pinelands Commission when the need arises. The County agriculture board should support farmers if they seek to add ancillary operations to supplement their incomes that are not currently permitted by the program rules.

The County should work with the Agriculture Board and municipalities with large farming operations to ensure that technical assistance is available when needed, including in the development and provision of sustainable low-cost living quarters for migrant, seasonal laborers.

Building and Site Design

Encourage communities to develop resilient building guidelines. These take into account the regulatory controls associated with wetlands and flood hazard areas, and may mandate a higher level of resiliency.

Building systems should be designed with sustainability and efficiency at the forefront. Energy Star and LEED are popular rating systems. Smart meters, advanced metering infrastructure, renewable energy, battery backup systems, and other measures can isolate buildings from the grid and sustain power supplies even if the wider system fails.

Retrofitting aging commercial buildings and housing stock can improve resiliency to weather events and enhance energy efficiency. The County should explore programs to incentivize the investment in building improvements. Grant funding from outside sources should be prioritized whenever available, but municipalities could be encouraged to offer short term property tax abatements on the value of renovations or additions that meet standards of sustainability or efficiency.

The ongoing revisions to the County Land Development Standards will encourage the application of principles of sustainability in site and infrastructure design.

Municipal policies and land use and zoning regulations that can promote sustainable development patterns include prioritizing open space preservation, cluster development, encouraging renewable energy, permitting green roofs and other emerging design practices, promoting passive solar design with a focus on building orientation and site landscaping, minimizing and reducing impervious cover, and developing stormwater management regulations that exceed the standards mandated by NJDEP.

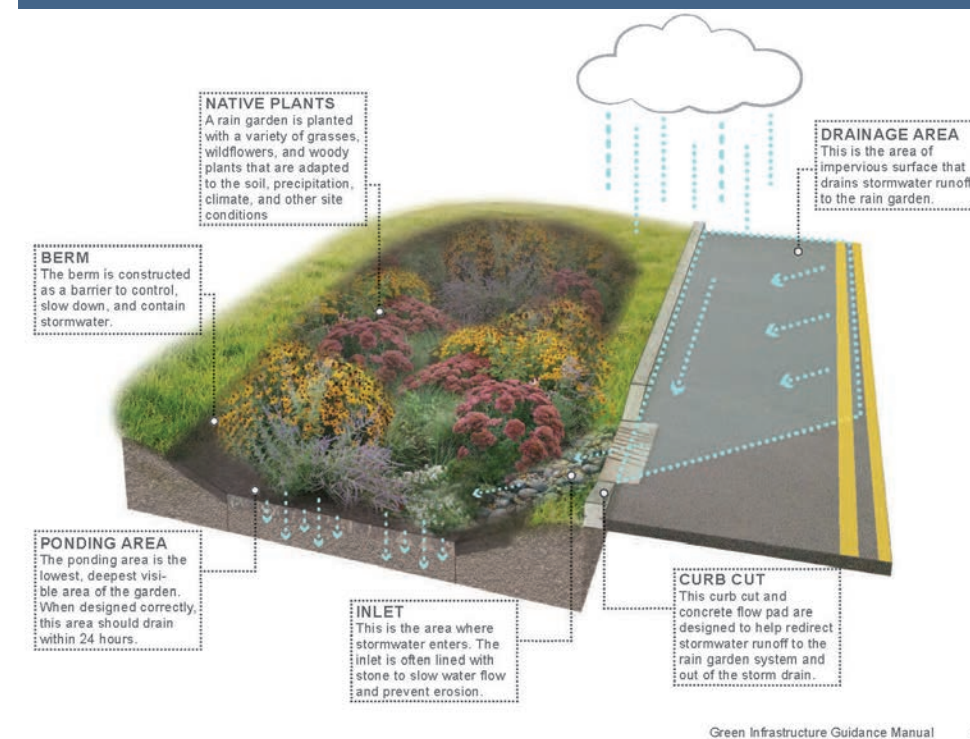
Green Infrastructure

Green infrastructure for stormwater management includes a combination of traditional structural stormwater management facilities and techniques and non-structural natural systems based methods. The goal of green infrastructure is to create an integrated system of dealing with stormwater at its source rather than at downstream points.

The County is in the process of updating its land development standards, and preparing model ordinance language that can be adopted by municipalities. These documents will incorporate current best management practices for green infrastructure. The New Jersey Department of Environmental Protection is continuing to update its best management practices (BMP) for stormwater management, which include non-structural elements. The updated County standards will incorporate these ideas and reference the BMP.

Sustainable/ Resilient Design Best Practices

- Rebuilding and renovating structures in accordance with flood hazard and resiliency based construction codes.
- Locate critical systems, specifically emergency generators and pump stations, above flood levels so to withstand flooding and extreme weather events.
- Optimize the use of on-site renewable energy.
- Provide redundant water storage for use during emergencies.
- Provide redundant electric systems with at least minimal back-up power capacity, such as a fuel-fired electric generator (with adequate fuel storage) or a solar-electric system with islanding capability.
- Design vegetated roofs and rainwater bio-swales to reduce the urban heat island effect and manage storm water.
- Design and build (or rebuild) physical infrastructure, such as culverts, storm sewers, roadways, and bridges, to handle increased storm water flows.
- Work to ensure the resiliency of cell phone towers so that communications can be maintained during times of emergency.
- Consider potential extreme weather events and climate change in determining locations of critical facilities and systems.
- Protect natural areas that currently buffer developed neighborhoods and businesses from storm damage and storm surge.
- Educate residents, business owners, builders, and developers about flood hazards and flood mitigation techniques in codes.



Source: Green Infrastructure Manual, page 25, prepared by the Rutgers Cooperative Extension Water Resources Program.

Natural Resources Conservation

Development projects should protect sensitive environmental features beyond those regulated by State permits. Municipal ordinances should have clear definitions of critical environmental areas and ensure that impacts are minimized.

Community Outreach and Education

Community outreach and education efforts are important to sustainability and resiliency efforts. The County should work with municipalities, non-profits, educational institutions at all levels, and any other interested groups to develop community outreach programs to educate the public about the importance of sustainability policies and actions. These outreach efforts should focus on providing tangible examples of the benefits of these policies.

Sustainability and Resiliency Goals and Objectives

- **Consider sustainability principles in all County planning initiatives and capital investments**
- **Adopt principles of sustainability in County land development standards and review procedures**
- **Encourage a range of transportation options and compatible land uses within the County**
- **Promote development that is resistant to natural effects such as storms, flooding, and drought**

Environment

- **Encourage the use of green building techniques and low-impact green alternatives to structured storm water management.**
 - o Consider development of model ordinances that can be implemented by constituent municipalities. These standards can encourage building design and construction, and site design and development that save energy and water, and protect and enhance the environment.
 - o Consider providing density bonuses, or other relief in exchange for enhanced sustainability in design and construction.
 - o Encourage the use of native and drought-resistant landscaping that requires less upkeep, maintenance, and water.
- **Consider the impacts of climate change and sea level rise in infrastructure and development planning.**
 - o Modeling tools are available that can project future sea level rise based on a variety of scenarios. Project development and prioritization in capital improvement plans should include evaluation of future vulnerabilities using these models. County projects should be designed for future resiliency and sustainability taking into account the expected lifespan of the project and sea level rise and climate change impacts over that duration.

- **Preserve open space, habitat, and other valuable natural features.**
 - o The County should continue to prioritize the preservation of open space in order to protect sensitive environmental features, and to provide recreational opportunities. The future of the open space tax program should be evaluated in weighing the costs and benefits to the public. Sustainable communities include access to recreation, and see open space as an amenity. Any opportunities to partner with non-profits, private entities, and other public agencies should be considered. The County should also encourage acquisitions at the municipal level and work with local government representatives to coordinate a comprehensive open space strategy.
- **Reduce greenhouse gas emissions.**
 - o Reduction in greenhouse gas emissions is an important goal with global impacts. The County should continue to pursue energy efficient measures for its buildings and vehicle fleet. The County should continue to promote sustainability in its policies and in direct outreach to its citizens. Public education and behavior modification are important aspects of natural resource conservation and emissions reduction.
- **Promote energy efficiency, alternative energy, and micro-gridding to reduce the County's fossil fuel consumption, save money in the long run, and enhance resiliency in the face of grid disruptions.**
- **Develop electric charging infrastructure and alternative fueling stations.**
 - o The County and other public agencies should consider capital investment, or pursue grant funding, for the purchase of alternative fuel and electric vehicles, and the installation of alternative fueling infrastructure.
 - o Encourage public-private partnerships to create infrastructure networks that can support the emerging generation of electrical vehicles and alternative fuel trucks and buses.
- **Develop Regional Watershed Management Plans in cooperation with municipal representatives. These plans are a prerequisite for attaining a Class 4 Rating in the CRS Program**
- **Elevate County roads that provide critical access during emergency situations.**
- **Acknowledge the Atlantic-Cape May Coastal Coalition" which includes all coastal communities in Atlantic County as well as municipalities in Cape May County. This entity is working with legislators to at all levels of government to make the region more resilient.**

- **Work to ensure that NFIP flood insurance remains in effect and is affordable to property owners in Atlantic County.**
- **Promote additional funding for the elevation and relocation of structures within the flood hazard area that have been subject to insurance claims and repetitive losses.**
- **Coordinate with the Army Corps of Engineers to ensure that recommendations and actions related to the ongoing Back Bay study are consistent with planned regional and County improvements.**

Economy

- **Facilitate connections between institutes of higher learning and employers to provide a well-trained and competitive workforce.**
 - o The long-term economic sustainability of the County depends on residents being able to connect their skills with the needs and desires of employers. As the County's economy diversifies, the demand within new employment sectors will increase; thereby necessitating new training and education programs.
- **Promote emerging industries and technologies to diversify the County's economy and attract investment.**
- **Support municipal and private sector efforts to modernize and retrofit outdated developments and facilities with modern technology and designs that increase market appeal.**
- **Capitalize on the natural resources present in the County to broaden opportunities for tourism and recreation.**
- **Encourage the preservation of working farms, promote local agricultural products, and encourage growing of a diverse mix of crops.**
 - o The agricultural heritage of the County should be honored and reinforced with policies that encourage commercial agriculture and the continued preservation of working farms. Continuing to support locally grown products and encouraging farmers to sell locally and consumers to buy locally can ensure the economic viability of agriculture and provide health benefits to the County.
- **Create a diversified economy that can capitalize on existing strengths and continue to grow and develop in the future.**
 - o The County's position as an emerging center of aviation technology and environmental research should be promoted and reinforced in planning and policy decisions. Stockton University and public-

private partnerships can strengthen the knowledge base and allow the County to develop as an attractive destination for talent and businesses.

- **Support the growth and development of the Atlantic County Economic Alliance.**
 - o The Atlantic County Economic Alliance is in its nascent stage. The County should support the effort to establish a strong economic development corporation and work with all stakeholders to ensure policies and regulations are conducive to sustainable business and economic development.
- **Encourage energy efficiency measures for building and transportation cost savings and economic benefits.**
- **Guide investment in infrastructure through a holistic alignment of planning efforts and an understanding of sustainability principles.**

Social

- **Encourage a mix of housing opportunities to meet the needs of the population.**
 - o Demographic trends show that the average age of the County population is increasing as the County is also becoming more racially diverse. The diversity of ethnic backgrounds, family types, and age will spur changes in housing demand. The County should support efforts at the municipal level to encourage a mix of housing types to meet emerging demands and the affordability needs of the population.
- **Provide recreation and cultural amenities to enhance quality of life.**
 - o Consider changing demographics in the development of new facilities and programs. As the County population ages, additional focus should be given to recreational and cultural opportunities for seniors.
 - o Ensure that recreation facilities and activities that are affordable and relevant are available to residents of all communities.
- **Capitalize on the agricultural and natural resources in the County to promote healthy active lifestyles.**
- **Educate County residents about healthy lifestyles that include exercise, recreation, and a balanced diet.**
- **Promote connections between local agriculture production and end users in the community.**

- **Create quality communities that encourage civic engagement and pride.**
- **Improve access to healthcare for County residents, particularly those with limited mobility.**
- **Promote complete streets programs in the County to promote encourage non-motorized transportation options and promote equity.**

Implementation

- Pursue the implementation of a comprehensive and diverse set of strategies to manage the coastal zone, improve environmental resiliency in the face of future storms, and make the physical and social fabric of the community more sustainable.
- Implement new land development standards that require green infrastructure to limit impervious coverage and manage storm water through non-structural means.
- Continue to encourage the use of alternative energy, particularly in micro-gridding applications for critical infrastructure.
- Identify locations for the development of natural coastal protection such as oyster reefs and living shorelines, and support municipal efforts that are already underway.
- Work with Pinelands Commission to provide opportunities for economic development and growth in targeted areas while ensuring preservation of natural features.
- Pursue the acquisition and use of hybrid, electric, and alternative fuel vehicles in public sector fleets.
- Identify locations for compressed natural gas stations and electric vehicle charging infrastructure and pursue funding opportunities.
- Develop model ordinances for coastal communities that require enhanced design standards and integrate CAFRA regulations into local land development codes to streamline the permitting and approval process.

*Combinations of Adatable Resilient Measures
(Source: North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Rist, January 2015, Chapter 2: Findings, Outcomes, and Opportunities, Figure II-1, page 7)*

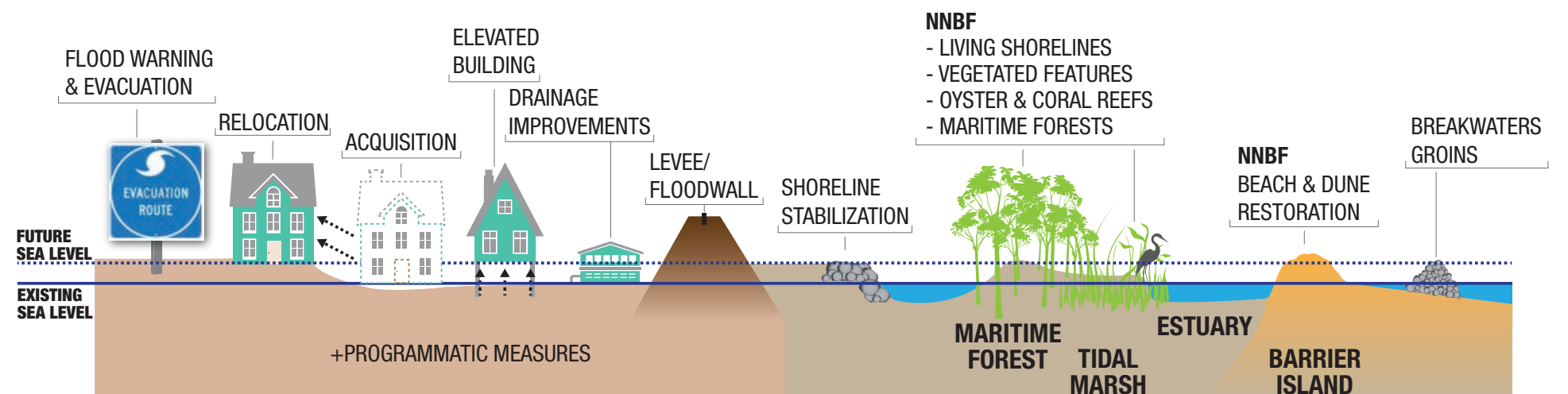


Table 5.9 Implementation Matrix

Overall	Short-Term	Mid-Term	Long-Term
Consider the impact of climate change and sea level rise in guiding investment and land use decisions.	X	X	X
Environmental			
Implement new Land Development Standards that require Green Infrastructure and other sustainability and resiliency measures.	On Going		
Work with municipalities and encourage cooperation in the management of coastal zones.	X		
Identify locations for natural coastal protection such as living shorelines and oyster reefs.		X	X
Promote use of alternative energy at County owned facilities and to enhance the resiliency of the grid.	X	X	
Develop electric vehicle charging infrastructure on County properties and encourage the acquisition of electric fleet vehicles.		X	
Economic			
Coordinate with stakeholders and institutes of higher education to provide job training and retraining for emerging industries.	X	X	
Work with Pinelands Commission to promote new opportunities for economic development and growth in targeted areas while ensuring preservation of natural features.		X	X
Support the growth of local agriculture and encourage connections to local markets, restaurants, and events.	X		
Work with Atlantic City to diversify the City's economic base and diversify tourism opportunities.	X	X	
Support the growth of the Atlantic Economic Alliance.	X		
Social			
Promote a mix of housing options for residents as the County's demographic profile evolves.	X	X	
Provide recreational and cultural amenities to promote a high quality of life.		X	
Encourage active and healthy lifestyles for County residents that include exercise, recreation, and a balanced diet.	X		
Improve access to healthcare for County residents, particularly those with limited mobility.	X		



APPENDIX A

OFFICIAL COUNTY MAP OF RIGHT-OF-WAY STANDARDS AND FUNCTIONAL CLASSIFICATION

Rt. #	Road Name	Terminal Point(s)	Functional Classification	R.O.W Standard Width (feet)
536	Waterford Rd./Chew Rd.	Camden Co. Line-US 206	Minor Collector	60
540	Cedar Ave./Landis Ave.	Cumberland Co. Line-US 40	Minor Collector	60
542	Hammonton/Pleasant Mills Rd.	NJ 54-Burlington Co. Line	Minor Collector	60
552	Bears Head Rd.	Cumberland Co. Line-US 40	Collector	72
557	Buena Tuckahoe Rd.	US 40-NJ 50	Minor Collector	60
559	Chew Rd.	CR 561-CR 640	Collector	72
559	Mays Landing-Dacosta Rd.	CR 640-CR 606	Collector	72
559	Somers Point-Mays Landing Rd.	CR 617-NJ 52	Collector	72
559	Old Harding Highway	CR 606-US 40/NJ 50	Collector	72
Alt. 559	Ocean Heights Ave.	CR 559-CR 575	Collector	72
		CR 575-Patcong Crk.	Collector	72
		Patcong Crk.-US 9	Collector	72
		CR 585-US 9	Minor Collector	60
561	Jimmy Leeds Rd.	Duerer Street-CR 634	Arterial	90
		CR 634- Rt. 9	Collector	72
561	Duerer Street	Moss Mill Rd.-CR 757	Collector	72
		CR 575-Jimmy Leeds	Collector	72
561	Moss Mill Rd.	US 30-Egg Harbor Road	Collector	72
		US 30-Duerer Street	Collector	72
561	Egg Harbor Rd.	Rt. 54-Moss Mill Rd.	Minor Collector	60
561	Hammonton-Rosedale Rd.	Camden Co. Line-NJ 54	Minor Collector	60
Alt 561	Moss Mill Rd.	CR 561-CR575	Collector	60
		CR 575-US 9	Collector	60
		US 9-Oyster Crk.	Minor Collector	60
Spur 561	Blue Anchor Rd.	Camden Co. Line-US 322	Collector	72
563	Jerome Ave.	Margate Brig.-CR 629	Arterial	100
563	Mill Road, Tilton Rd.	CR 585-Margate Bridge	Collector	72
563	Tilton Road	Rt 30-Uibel Ave	Arterial	100
		US 40/322-Rt 9	Arterial	100
		Rt 9-Shore Rd.	Arterial	100

Rt. #	Road Name	Terminal Point(s)	Functional Classification	R.O.W Standard Width (feet)
563	Philadelphia Ave.	CR 561-US 30	Arterial	100
563	Egg Harbor-Greenbank Rd.	Burlington Co. Line-CR 561	Minor Collector	60
		CR 561-Moss Mill Rd.	Minor Collector	60
575	Cologne-Port Republic Rd.	CR 561 Alt.-US 9	Minor Collector	60
575	English Crk.-Port Republic Rd.	CR 561 Alt-CR 563	Arterial	100
575	Pomona Rd.	CR 563-US 40/322	Arterial	100
575	English Crk. Rd.	US 40/322-West Jersey	Arterial	90
		West Jersey-559 Alt	Arterial	90
		Alt 559-CR 559	Collector	72
585	Shore Road	US 30-NJ 152	Minor Collector	60
601	New Jersey Ave.	US 30-CR561	Minor Collector	60
		CR 651-US 9	Minor Collector	60
602	Hammonton-Dacosta Rd.	CR 30-CR 561	Collector	72
603	English Crk Rd.	Expressway-Delilah Rd	Minor Collector	60
		Delilah Rd-US 40/322	Arterial	100
604	English Crk. Rd.	Tilton Rd-Expressway	Minor Collector	60
605	English Crk. Rd.	Pomona Rd-Cape Drive	Minor Collector	60
606	Harding Highway	US 40-CR 559	Collector	72
608	Franklin Ave.	Washington Ave.-US 40	Arterial	90
608	Washington Ave.	Tilton Rd-CR 651	Arterial	90
		CR 651-Doughty Rd.	Collector	72
		Doughty Rd.-Franklin Ave	Minor Collector	60
610	Old New York Road	CR 575-US 9	Minor Collector	60
611	Main Street	NJ 50-NJ 50	Minor Collector	60
612	Elwood Weekstown Rd.	CR 623-CR 643	Minor Collector	60
613	Hammonton Atsion Rd.	NJ 206-US 30	Minor Collector	60
614	Cologne Ave.	CR Alt 561-US 40	Collector	72
615	Zion Road	CR 559-CR 585	Collector	60
616	Mill Street	CR 559-NJ 50	Minor Collector	60
617	River Road	NJ50/US 40-CR 559	Minor Collector	60
618	Oyster Creek Road	CR 561-US 9	Minor Collector	60
619	Wheat Road	Cumberland Co. Line-US 40	Collector	72
620	Maryland Ave.	CR 585-NJ 152	Collector	72
622	Cedar Ave.	US 40-Railroad Ave.	Minor Collector	60

Rt. #	Road Name	Terminal Point(s)	Functional Classification	R.O.W Standard Width (feet)
623	Weymouth Elwood Rd.	CR 542-CR 559	Minor Collector	60
624	Clarks Landing Rd.	CR 563-CR 575	Minor Collector	60
627	Central Road	US 40-CR681	Collector	60
629	West End-Wellington Ave.	US 40/322-Dorest Ave.	Collector	72
629	Dorset Ave.	Ventnor Ave.-Wellington Ave	Collector	72
629	Ventnor Ave.	NJ 152-32nd Street	Arterial	90
		32nd Ave.-Wilson Ave.	Arterial	90
		Wilson Ave.-Lancaster Ave.	Arterial	60
		Lancaster Ave.-Dorset Ave.	Arterial	90
630	Ohio Ave.	CR 651-CR 585	Minor Collector	60
631	Illinois Ave.	CR 585-US 30	Minor Collector	60
633	Jimmy Leeds Rd.	US 30-CR 575	Collector	72
		CR 575-Duerer Street	Collector	72
634	Pitney Road.	CR 610-Rt 9	Collector	72
		Rat 9-Church St.	Collector	60
637	Cumberland Ave.	Cumberland Co.-NJ 50	Minor Collector	60
638	Brigantine Boulevard	Bridge-30th Street	Arterial	90
		30th Street-14th Street	Arterial	90
640	Mays Landing-Dacosta Rd.	US 30-CR 559	Collector	72
643	Weekstown-Pleasant Mill Rd.	CR 623-CR 563	Minor Collector	60
644	Dolphin Ave.	Pleasantville Line-CR 585	Minor Collector	60
645	Buck Hill Road	NJ 50-CR 648	Minor Collector	60
646	Delilah Road	Rt 40/322-English Crk Rd.	Collector	72
		English Crk-Fire Rd.	Arterial	90
		Fire Rd- Rt 30	Arterial	90
647	Cologne Port Republic Rd.	CR 651 Alt-CR 624	Minor Collector	60
648	Buck Hill Road	CR 649-NJ 50	Minor Collector	60
649	Head of the River Rd.	NJ 49-CR 611	Minor Collector	60
650	Cologne Port Republic Rd.	CR 575-CR 624	Minor Collector	60
651	Mill Road	US 30-CR 634	Collector	72
651	Fire Road	US 30-CR 662	Arterial	90
		CR 662-CR 559 Alt	Collector	72
		CR 559 Alt-CR 559	Collector	60
651	Jeffers Landing Rd.	CR 559-Jeffer's Landing	Minor Collector	60
652	Lower Bank Rd.	Burlington Co. Line-CR 563	Minor Collector	60
654	Sixth Ave.	CR 561-US 30	Minor Collector	60

Rt. #	Road Name	Terminal Point(s)	Functional Classification	R.O.W Standard Width (feet)
655	Lincoln Ave.	CR 619-Cumberland Co.	Collector	72
657	Motts Creek Rd.	CR 610-Motts Creek	Minor Collector	60
658	Columbia Rd.	CR 542-US 30	Minor Collector	60
659	Central Ave.	CR 615-Parkway	Minor Collector	60
660	Farragut Ave.	CR 617-US 40	Minor Collector	50
661	Central Ave.	Parkway-EHT/Linwood Border	Minor Collector	60
662	Mill Road	CR 559 Alt-CR 651	Collector	72
		CR 651-Rt 9	Collector	72
		Rt 9-CR 585	Minor Collector	60
663	California Ave.	CR 651-CR 585	Collector	72
665	New York Ave.	US 9-Bay Ave.	Collector	72
666	Cape May Ave.	CR 557-NJ 49	Minor Collector	60
668	Forty Wire Road	US 40-CR 669	Minor Collector	60
669	Eleventh Ave.	CR 666-NJ 50	Minor Collector	60
670	Leipzig Ave. & Almond Street	CR 563-CR 614	Collector	72
671	Union Road	Cumberland Co.-CR 557	Minor Collector	60
672	Brewster Road	Gloucester Co. Line-Cumber Co. Line	Collector	72
674	Bremen Ave.	Liebig Street-US 30	Minor Collector	60
678	Thirteenth & Fairview Ave.	US 30-CR 559	Minor Collector	60
679	Main Road	US 30-CR 542	Collector	72
680	Broadway	US 30-CR 542	Minor Collector	60
681	Oak Road	Cumberland Co.-CR 557	Minor Collector	60
682	Summer Road	CR 672-US 40	Minor Collector	60
684	Spruce Ave.	US 49/322-Parkway	Collector	72
685	Westcoat Road	CR 646-CR 651	Collector	72
686	Aloe Street	NJ 50-CR 605	Collector	72
687	Old Tilton Road	US 40/322-US 9	Collector	72
688	First Road	NJ 54-CR 640	Collector	72
690	Weymouth Malaga Rd.	Gloucester Co.-US 40	Collector	60
		US 40-NJ 54	Collector	60
691	Burroughs Ave.	CR 615-Oak Ave.	Minor Collector	50
693	Columbia Road	US 206-CR 542	Minor Collector	60
697	Old Turnpike Road	Franklin Blvd-AC Expressway	Local Road	60
724	Third Street	Camden Co. Line -CR 678	Minor Collector	60
		CR 678-CR 542	Minor Collector	60

APPENDIX B

SUMMARY OF PUBLIC OUTREACH PROCESS AND COMMENTS

August 10, 2017 Atlantic County Press Release

A press release was issued on August 10, 2017 announcing that the Master Plan, Open Space and Recreation Plan, and Farmland Preservation Plan were available for public review on the County's website, at County library branches, and local municipal offices. The release also mentioned that date and time of the public hearing, and indicated that comments would be accepted through October 13, 2017. The following comments were sent to the County:

Letter from Linda Peyton, PP, Pleasantville City Administrator to Robert Lindaw, dated October 5, 2017

Issue Raised: Economic Development: The Plan should incorporate the Atlantic County Comprehensive Economic Development strategy and Action Plan in discussion of each issue addressed throughout the Master Plan and continue to support economic development in the City of Pleasantville.

- **Answer:** The Plan does incorporate and reference the Atlantic County Comprehensive Economic Development Strategy and Action Plan although not for every issue raised in the Master Plan.

Issue Raised: The Plan Should Support the Urban Enterprise Zone, other economic development programs and the City of Pleasantville as a "place of business".

- **Answer:** The Urban Enterprise Zone is a State program, but the Plan does mention the UEZ program and County support for its continuation in Pleasantville.

Issue Raised: Safety Improvements for the intersections of CR 608 Washington Avenue and CR 585 Shore Road with the Black Horse Pike should be encouraged and reconfigured to complete streets.

- **Answer:** CR 608 does not intersect with the Black Horse Pike. The intersection of Shore Road and the Black Horse Pike is under New Jersey department of Transportation's jurisdiction.

Issue Raised: A pedestrian bridge over the Atlantic City Expressway near the Pleasantville middle school and high school should be considered as a County transportation safety improvement.

- **Answer:** The Pleasantville School Board should discuss with South Jersey Transportation Authority not a County issue.

Issue Raised: The County should consider supporting a pedestrian/bicycle pathway restoring access between these two sections of Pleasantville (from West Adams Avenue north to California Avenue near Fire Road). The right-of-way remains but is bisected by the Expressway.

- **Answer:** Request for restored bicycle pedestrian access should be addressed to the South Jersey Transportation Authority.

Issue Raised: Area between Pleasantville's Marina District and the County's Stillwater Park in Northfield should be targeted as an area to be utilized to connect existing facilities.

- **Answer:** The City of Pleasantville should develop and submit to the County a proposal to consider and discuss.

Issue Raised: Shared recreation services should be explored to leverage efficiencies and expand recreation options for County and City residents.

- **Answer:** Request for restored bicycle pedestrian access should be addressed to the South Jersey Transportation Authority.

Email from Joseph Rossi, Lahn Lane Mays Landing dated October 10, 2017

Issue Raised: Widen Cates Avenue and the Black Horse Pike

- **Answer:** The referenced intersection is under the jurisdiction of the New Jersey Department of Transportation and is not under the jurisdiction of the County.

Email From Cricket Cohen of Weymouth Township dated September 29, 2017 and September 28, 2017

Issue Raised: County should consider a formal Quality of Life Study

- **Answer:** The County will take this recommendation under advisement.

Email from Cricket Cohen of Weymouth Township dated October 10, 2017

Issue Raised: Would like to see multi-use paths/bikeways in the rural part of the County specifically along County Routes 669 – 11th Avenue and 557 – Tuckahoe Road (south of US 40, west of Route 50).

- **Answer:** There is insufficient right-of-way to consider multi-use paths along these roadways.

Issue Raised: Would like to advocate for a scenic route to connect to the Western Bikeway from US 40 just east of Route 54, down Tuckahoe Road (CR557) though Buena Vista to Dorothy, then east over the RR tracks on 11th Avenue (CR 669) to Route 50 (or up Forty Wire Road to US 40) and back to the link with the existing Eastern Bikeway.

- **Answer:** There is insufficient right-of-way to consider multi-use paths along these roadways.

Email from Jerry DelRosso regarding Freeholder Richard Dase's email regarding bike paths in Galloway Township.

Issue Raised: Would like to see a painted bike lane on Jim Leeds Road from Route 30 to Route 9.

- **Answer:** The County Master Plan references existing and proposed bicycle facilities on pages 62 and 63. Specifically a proposed County bicycle facility along Jim Leeds and Pomona Roads from US Route 9 to the Black Horse Pike is proposed. When sections of Jim Leeds Road are widened, the roadway will include a bicycle compatible shoulder.

Email from Rosemary Goldberg of the Sustainable Galloway Go Green Team.

Issue Raised: Rosemary Goldberg of the Sustainable Galloway Go Green Team would like help from County Planning staff implementing a Complete Streets Project for Galloway Township.

- **Answer:** At this time, the County has not adopted a Complete Streets policy but would consider specific suggestions by the governing body.

Emails from Leigh Ann Napoli, Municipal Clerk for the City of Linwood to Ranae Fehr dated August 31, 2017 and September 1, 2017

Issue Raised: Corrections in the City's Open Space inventory.

- **Answer:** Corrections noted and made by Ranae and transmitted to our consultant Heyer Gruel and Associates.

Email from Jim Hicks a Galloway resident dated September 26, 2017

Issue Raised: Would like to see the reservoir on the East side of the Atlantic City International Airport a park. Jim is also an avid fisherman and said that the fishing is good in this body of water.

- **Answer:** Due to the location on Federal Property the reservoir is off limits for any sort of park development.

Email from Caren Fitzpatrick dated September 27, 2017

Issue Raised: Has any consideration been given to reinstating train service from Atlantic City to New York?

- **Answer:** An Atlantic City to New York service was reinstated several years ago and quickly discontinued due to a lack of ridership.

County Planning Staff

Issue Raised: Edits to the Master Plan Table of Contents and Acknowledgements Page

- **Answer:** Edits sent to the consultant for correction

Email from Maria Dowd dated October 13, 2017

Issue Raised: Opposes the development of the Garwood Mills site in Atlantic City with the current developer (Kushner), favors reinventing Atlantic City with family oriented charms such as Amusement Piers and independent restaurants, opposes building on environmentally sensitive lands, believes in promoting the County's natural resources and growing eco-tourism activities

- **Answer:** The Garwood Mills development is not within the County's jurisdiction and therefore should be addressed with the City of Atlantic City.

September 27, 2017 Public Hearing at the Anthony Canale Training Center in Egg Harbor Township

A public hearing was conducted on September 27, 2017 to present the final draft Master Plan, Farmland Preservation Plan, and Open Space and Recreation Plan. Notice of the public hearing was published in the Press of Atlantic City. The project team presented an overview of the Plans and then took questions and comments from interested members of the public in attendance. The following comments were taken from the official transcript of the meeting prepared by Certified Shorthand Reporters (CSR) Associates:

- With the release of the State's Water Supply Master Plan, the most recent water supply numbers need to be addressed and incorporated into the Plan
- Nadine Flynn mentioned Offshore Wind and it was mentioned that it has been an idea that has been around for some time.
- Cricket Cohen mentioned the problem of groundwater flooding which is hard to guard against.
- Bill Reinert mentioned the idea of using open space funds for park maintenance and park programs.
- John Cooke and Ray Zabihach of Ventnor stated that Ventnor was in synch with most if not all of the ideas noted in the Master Plan and associated documents.
 - o The idea of strengthening the "farm to table" concept was brought up.
 - o The idea of the County being a major partner with the Economic Alliance.
- Cricket Cohen brought up the idea of the County doing a "Quality of Life" survey through Stockton.
- Fred and Maria Dowd brought up the idea of strengthening the County's Eco-Tourism efforts.

APPENDIX C

OPEN SPACE AND RECREATION PLAN, ATLANTIC COUNTY, NEW JERSEY (MAY 2018)

Under Separate Cover

APPENDIX D

FARMLAND PRESERVATION PLAN, ATLANTIC COUNTY, NEW JERSEY (MAY 2018)

Under Separate Cover





WELCOME to Lucy

PARKING FOR LUCY THE ELEPHANT AND GIFT SHOP ONLY ONE HOUR LIMIT ALL OTHERS TOWED AT OWNER'S EXPENSE

PARKING FOR LUCY THE ELEPHANT AND GIFT SHOP ONLY ONE HOUR LIMIT ALL OTHERS TOWED AT OWNER'S EXPENSE

PARKING FOR LUCY THE ELEPHANT AND GIFT SHOP ONLY ONE HOUR LIMIT ALL OTHERS TOWED AT OWNER'S EXPENSE

PARKING FOR LUCY THE ELEPHANT AND GIFT SHOP ONLY ONE HOUR LIMIT ALL OTHERS TOWED AT OWNER'S EXPENSE