

Element 9 *Stormwater Management Plan*

9.1 Introduction

This Stormwater Management Plan (MSWMP) documents the strategy for the Borough of West Wildwood to address stormwater-related impacts. The creation of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations as promulgated by the New Jersey Department of Environmental Regulations. The elements of this plan are specified by N.J.A.C. 7:8-4 Municipal Stormwater Management Planning. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new development, defined as projects that disturb one or more acre of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities.

These regulations on a statewide basis also intend to minimize the adverse impact of development on the recharge of groundwater that provides base flow in receiving water bodies. The surface aquifer of the island on which the Borough is constructed is isolated and fragmented and does not provide for base flow to the surrounding water body.

A build-out analysis has been included in this plan based upon existing zoning. The plan also addresses the review and update of existing ordinances, the Borough Master Plan, and other documents to allow for project designs that include development consistent with this plan. The final component of this plan is a mitigation strategy for when a variance or exemption of the design and performance standards is sought. As part of the mitigation section of the stormwater plan; specific stormwater management measures are identified to lessen the impact of existing development.

9.2 Goals

The goals required by N.J.A.C. 7:8-2.2 requires the stormwater management plan goals as follows:

- a. Reduce flood damage, including damage to life and property;
- b. Minimize, to the extent practical, any increase in stormwater runoff from any new development;
- c. Reduce soil erosion from any development or construction project;

- d. Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- e. Maintain groundwater recharge;
- f. Prevent, to the greatest extent feasible, an increase in nonpoint pollution;
- g. Maintain the integrity of stream channels for their biological functions, as well as for drainage;
- h. Minimize pollutants in stormwater runoff from new and existing development in order to restore, enhance and maintain the chemical, physical, and biological integrity of the waters of the State, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water; and
- i. Protect public safety through the proper design and operation of stormwater management basins.

This plan outlines specific stormwater design and performance standards for new development. Additionally, the plan proposes stormwater management controls to address impacts from existing development. Preventative and corrective maintenance strategies are included in the plan to ensure long-term effectiveness of stormwater management facilities. The plan also outlines safety standards for storm water infrastructure to be implemented to protect public safety.

Development can result in the accumulation of pollutants on the land surface that runoff can mobilize and transport to the receiving waters. New impervious surfaces and disturbed areas created by development can accumulate a variety of pollutants from the atmosphere, fertilizers, hydrocarbons, pathogens, and nutrients.

In addition to increased pollutant loading, land development can also adversely affect water habitat by altering the water temperature and/or alter the natural food chain.

9.3 Stormwater Discussion

Alteration of ground surface elevations and changes to the surface materials can dramatically alter the hydrologic cycle of a site and, ultimately, an entire watershed. In uplands areas with continuous unconsolidated surfaces rainfall and snow melt seep into the soil. The ground water recharge descends through the spaces between soil particles in the unsaturated zone to the water table at the start of the saturated zone. The elevation of the water table surface is sloped downhill and eventually emerges at the ground surface as a lake, stream or other surface body. Soils that conduct water and extend to the surface are called unconfined aquifers. The water level in the lake or stream is controlled by the elevation of the groundwater within the

adjacent ground surface, which holds much more water than the surface of the watercourse. Surface runoff adds to the stream flow for short periods of time.

The fine soils of the salt marsh have such small distances between soil particles that water does not flow. Salt marsh is called a confining layer. At the coastline, the salt marsh covers the edges of the soils containing fresh water aquifer and provides a confining layer that limits the intrusion of salt water into the aquifer. Over-pumping of wells and/or the loss of recharge draw saltwater into and damage the fresh water aquifer.

Surface aquifers located on islands are largely controlled by the elevation of the Ocean. A rain event does not change sea level. The volume of water in the small thin surface aquifer is dwarfed by the volume of water in the Ocean. The daily tide maintains the groundwater at the shoreline at the elevation of the average high tide. Any precipitation that or irrigation on the island then mounds the water table. The groundwater flows towards the closest intersection of the ground surface and the water table. The placement of permeable soils over the existing soils of low permeability raises the elevation of the water table. Where development has raised the land surface with permeable soils the raised water table intersects the surface at the edge of the development. This generally causes flooding of existing lower properties unless the elevation of the groundwater surface is controlled by the installation of a perimeter drainage system as required by Ordinance 452. Where fill has been placed without mitigation of the impact on groundwater problems have developed.

It should also be recognized that Grassy Sound, Wildwood Canal, Post Creek Basin and the connecting water ways are an integral part of the stormwater system. These bodies of water which are beyond the normal limits of a municipal planning board are an integral part of the community.

9.4 Background

The Borough of West Wildwood encompasses 0.34 square miles (230 acres) in Cape May County, New Jersey. This includes 20 acres of open water and 26 acres of land zoned as conservation. The 175 acres of the remaining 62 acres are public rights of way. The net developed and developable land area within the bough is 121 acres.

The municipality occupies portions of a costal island and a Back Bay island. The entire municipality is located within a Tidal Flood Hazard Area and is contained within a single HUC-14 drainage area within the Great Egg Harbor watershed identified by the United State Geological Service as Watershed No. 02040302. There are no class one surface waters in or adjacent to the Borough.

There are no wellhead protection areas in or adjacent to the Borough. The surface aquifer discharges to saltwater and has an estimated volume of 2 million cubic feet which is less than 9 percent of the 23 million cubic feet of annual rainfall.

The ground surface elevation of the developed portions of the island range from 2.9 feet to 8 feet NGVD 1929. The elevation of the new moon high tide typically reaches an elevation of 3.7 feet NGVD 1929. The groundwater table for much of the year is therefore at or near the ground surface. This results in runoff approaching 100% of the precipitation.

The definitions contained within the Storm Water Regulations NJAC 7:8 include the following:

“Stormwater” means water resulting from precipitation (including rain and snow) that runs off the land’s surface, is transmitted to the subsurface, or is captured by separate storm sewers or other sewage or drainage facilities or conveyed by snow removal equipment.

“Tidal Flood Hazard Area” means a flood hazard area, which may be influenced by stormwater runoff from inland areas, but is primarily caused by the Atlantic Ocean.

The major flood events in the recent history of the Borough have not been accompanied by heavy rains. The floods have been caused by extreme tides associated with high winds. The storm drainage system is therefore designed for the tidal flood event which is the equivalent of 56 inches of rainfall in a 6-hour period which exceeds the 100-year rain event, by a factor of 9.

9.5 Design and Performance Standards

The Borough will adopt revised design and performance standards for stormwater and tidal flood management that are consistent with the goals of NJAC 7:8-4 as they apply within the tidal flood plan. Peak capacity of new stormwater structures must provide for the removal of the tidal flood event. The recharge and runoff quantity standards will be consistent with NJAC 7:8-5.4(a)3iv. The Stormwater quality standards will be in accordance with NJAC 7:8-5.5. The design standards will include language for the maintenance of stormwater management measures consistent with the stormwater management rules at NJAC 7:8-5.8. Maintenance requirements and language for safety standards consistent with NJAC 7:8-6 Safety Standards for Stormwater Management Basins. The ordinances will be submitted to the county for review within 24 months of the effective date of the Stormwater management rules.

9.6 Plan Consistency

The Borough is not located within a Regional Stormwater Management Planning (RSWMP) Area and no Total Maximum Daily Load (TMDL) requirements have been developed for waters within the Borough. If any RSWMPs or TMDLs are developed in the future, this Municipal Stormwater Management Plan will be reviewed for consistency.

The Municipal Stormwater Management Plan will be updated to be consistent with future updates of the Residential Site Improvement Standards (RSIS) as applicable to achieve the goals of the program.

9.7 Developmental Ordinance Revisions

A review of the Land Development Ordinance of the Borough of West Wildwood has identified several areas that may be revised to provide consistency between the Storm Water Regulations and the Residential Site Improvement Standards (RSIS). The topics are as follows:

- The applicability of the RSIS rules to development will be further defined in the Ordinance,
- The use of permeable parking lot surfaces for overflow parking will be reviewed and revised if deemed appropriate,
- The rules regarding stormwater runoff calculations will be reviewed by the Municipal Engineer for consistency with other regulations and the Borough Flood Mitigation Strategy.
- The development ordinance does not yet include reference to stormwater quality standards,
- The development ordinance does not yet include provisions for stormwater mitigation in lieu of struck compliance.

9.8 Land Use/Build-Out Analysis

The Borough is located within a single HUC-14 and has a total area of 220 Acres (0.34 square miles). The existing land uses were documented in 2000 for the Wildwood Urban Enterprise Zone Application. The Re-Development Build-Out of the Borough in accordance with the current zoning regulations would result in a maximum impervious surface area of 122 Acres (0.19 sq miles). The overall impervious surface of the Borough at total build-out would then be 55% impervious coverage.

9.9 Mitigation Projects

The Borough of West Wildwood has identified several projects directly related to stormwater quantity and quality that could be undertaken as mitigation projects. These projects include:

- The construction of the missing components of the Arion Avenue Drainage System. This system has been designed however only those portions for which funding were available have been completed.
- The extension of the Lake Road Drainage System from Maple to Pine Avenue.
- The completion of the Avenue E Drainage system. This system has been designed however several elements have not yet been constructed pending availability of funds.
- The installation of an oil skimmer on the South Neptune Avenue Drainage system adjacent to the Borough Public Works Facility.
- The construction of a roofed street sweeping drying area at the Borough Yard.
- The video inspection of municipal sanitary sewer mains. Infiltration into the sanitary system has direct impact upon ground water.
- The video inspection of the municipal and county storm sewer system within the Borough, to document its current condition and to verify the absence of illegal connections.

Element 10 *Consistency with Other Plans*

10.1 Wildwood

One of the main objectives of the Wildwood Master Plan is to encourage appropriate and compatible land uses. Additional objectives include creating lodging units by allowing greater building height for hotels, and to stabilize and protect residential neighborhoods.

The adjacent zoning districts of Wildwood and West Wildwood are residential.

Both the objectives and zoning are consistent with West Wildwood's Master Plan.

10.2 North Wildwood

Several of the objectives of the March 2003 Master Plan Re-examination Report are similar to the objectives of this West Wildwood Master Plan, including:

- preserve and improve the physical character of existing residential neighborhoods with concentration of year around residents;
- protect concentrations of residential land uses from inappropriate adjacent or nearby land uses;
- encourage water-dependent and water-oriented land uses from inappropriate adjacent or nearby uses.

The adjacent zoning district is APT/TH-3 Apartment/Townhouse Residential, which is compatible with West Wildwood's marine commercial zone on 26th Street.

10.3 Middle Township

Although Middle Township is very different in size, population and character, the Master Plan, adopted August 12, 2003, has similar planning goals and objectives, including:

- Maintain the character and integrity of each community within the Township.
- Protect the quality of the environment such as groundwater resources and wetlands and encourage cooperation with organizations that promote same.

The second goal is especially consistent, as the area of Middle Township that borders West Wildwood is primarily wetlands and water bodies.

10.4 Cape May County

The Cape May County Comprehensive Plan (last amendment adopted on February 15, 2005) stated several policy goals discussed below.

It is the policy of the County Planning Board that future growth should not exceed the ability to provide adequate water supply.

Energy conservation is promoted and encouraged by the County Planning Board.

Policies of the Cape May County Planning Board regarding the fishing industry include: To promote and encourage land use and zoning policies which support the fishing industry; To aid other County Departments in seeking funding and sources of aid for the County's fishing industry; To protect the County's fishing industry from economic or environmental harm by supporting or opposing proposed legislation and projects; In cooperation with the County Extension Service, to gather and disseminate information regarding the County's fishing industry.

Regarding affordable housing, the County plan state the following policy goals for municipalities: view development ordinances to eliminate excessive cost generating items; provide incentives or bonus zoning techniques for provision of low and moderate cost housing; seek federal and State funding for housing rehabilitation programs to aid low and moderate income families in meeting housing code requirements; and encourage rehabilitation of older homes having good architectural and structural qualities.

The County report also states "The Planning Board and Planning staff will, whenever capable, provide technical assistance to the County Open Space and Farmland Preservation Program, municipalities, and other entities, including private recreational interests, to help meet and preserve the open space and recreational needs of the County's present and future citizens."

Regarding the preservation and enhancement of the resort economy, the Cape May County Planning Board adopted the following policies:

- Through the development review process and other existing regulations, promote a sound and wise use of our natural resources, particularly wetlands and coastal areas.
- Recognizing the economic significance of our coastal heritage, encourage and support beach, inlet and bay maintenance and restoration activities at the State and Federal level.

- Preserve and promote Cape May County's agricultural industry and its role in our resort economy.
- Preserve the resort character of our County by promoting sound land use policies that discourage sprawl and encourage the preservation of our farms and open spaces.
- Support and assist, as able, a unified County-wide resort marketing strategy designed to make Cape May County competitive on a national and international scale.

West Wildwood's Master Plan is consistent with the Cape May County Comprehensive Plan.

10.5 New Jersey State Development and Redevelopment Plan (State Plan), 2001

State Planning Designation: Coastal Center/ PA5B: Environmentally Sensitive/Barrier Island – “The State Plan promotes barrier island communities with sustainable economies which are compatible with the natural environment, minimize the risks from natural hazards, and maximize public access to and enjoyment of coastal resources. Planning for growth should acknowledge the unique character and history of each barrier island community and the ecosystem which molds it. Public access to the rich variety of experiences which the barrier system offers should be protected and expanded. Redevelopment opportunities should maintain and enhance community character.”

West Wildwood, categorized as a PA5B, is primarily a residential community that has an economy based on water dependent uses; in particular, marinas.

The Borough has made major progress in eliminating natural hazards by raising the elevation of the streets, properties and structures.

All but one of the public recreation areas are on the water, with unobstructed views of the water, exemplifying public access. All of the new construction that has taken place over the past ten years is in developed areas.

Land Use: Development should be compact and accommodate mixed-use development in areas with existing infrastructure, maintaining the character, density and function of communities.

Consistent: West Wildwood's land use patterns are consistent with the State Plan. New residential development is planned for the vacated railroad tracks, an area that is within the sewer service area. Mixed use development is permitted in the Town Commercial and Marine

Commercial Zones, and mixed use structures are being contemplated to encourage retail that serves the needs of the residents and guests.

Housing: Provide housing through redevelopment, rehabilitation, new construction and building reuse.

Consistent: West Wildwood's housing needs follow the State Plan goals. Construction permits illustrate that new construction after demolition, and renovations to existing structures are the primary residential development.

Economic Development: Support coastal industries, recreation, and natural resource-based activities. Conservation walks and wildlife lookouts can also contribute to the local economy by attracting tourists who want to stay in the rental units.

Consistent: Marinas are West Wildwood's most predominant commercial establishment. Of nine businesses in the borough, six are marinas. They provide support to the boating industry through boat slip rentals, and boat sales and rentals for fishing, crabbing, recreational boating and water sports.

There are also many additional opportunities for tourists to enjoy the island and direct water views, including public parks, a playground and beach located on the water.

Transportation: Enhance transportation systems linking barrier communities to the mainland. Accommodate seasonal demands of travel and tourism. Emphasize use of public transit and alternatives to private cars where appropriate and feasible and maximize circulation and mobility options.

Consistent: Due to the compact nature of the community, walking and biking are viable forms of transportation both within the community and when travelling to adjacent towns. Wildwood and North Wildwood's beach and boardwalk are within one mile of West Wildwood.

Coastal Resource Conservation: Conserve water resources to prevent saltwater intrusion into the ground water supply. Restrict or limit development and redevelopment adjacent to these sensitive areas.

Consistent: No significant increase in development is expected that will increase demand on water supply.

Recreation: Promote local and regional recreation opportunities, encourage tourism, and create meaningful public access along the bay front.

Consistent : West Wildwood has five (5) active marinas along its waterways. Four public parks, three of which are waterfront property are an asset to the residents and visitors of the island.

Redevelopment: Support redevelopment activity compatible with existing barrier island community character. Use redevelopment to maintain, expand and link parks and open space.

Consistent: Vacant land will be encouraged to develop into necessary housing, waterfront commercial development, and low density residential adjacent to environmentally sensitive areas.

Intergovernmental Coordination: Municipalities sharing the same island are encouraged to establish multi-jurisdictional policy and planning entities to guide and coordinate the efforts of state, county and municipal governments.

Consistent: West Wildwood shares several services with neighboring municipalities. Below are the services shared and agency providing service.

Trash and recycling service is contracted by the Borough of West Wildwood.

Construction permits and enforcement are provided by a construction office funded by the communities of Wildwood, North Wildwood, Wildwood Crest and West Wildwood.

Police dispatch is provided by Wildwood.

The **Fire Code Inspector** is provided by West Wildwood.

Emergency Medical Services and **First Response for Fire** is provided by West Wildwood with automatic mutual aid by Wildwood.

School Administration is provided by North Wildwood for grades Pre-Kindergarten through 8, and Wildwood for grades 9 through 12.

Planned Growth: In these planning areas, planning should promote a balance of conservation and limited growth—environmental constraints affect development and preservation is encouraged in large contiguous tracts.

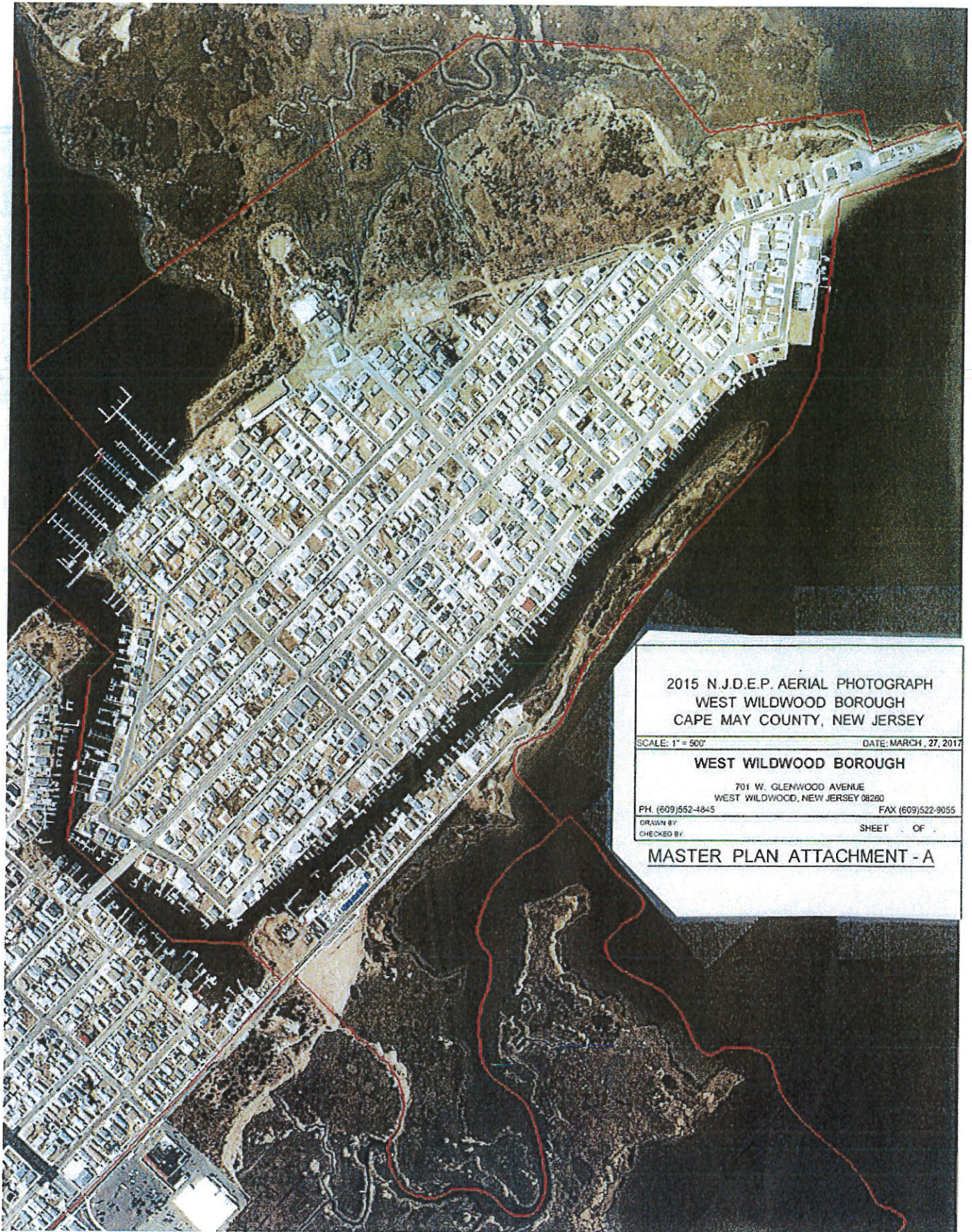
Consistent: Environmental constraints severely restrict development in West Wildwood. In the remaining undeveloped contiguous area, this master plan supports low density residential use, compatible with the adjacent residential and conservation zones.

ATTACHEMENTS

- A. West Wildwood 2015 NJDEP Aerial
- B. West Wildwood Existing Land Use
- C. West Wildwood Existing Zoning
- D. West Wildwood, Flood Insurance Rate Map – Oct 5, 2017
- E. West Wildwood Flood Insurance Rate Map – Oct 17, 1975
- F. West Wildwood Upper Wetlands Boundary
- G. West Wildwood Soils
- H. West Wildwood Borough Sewerable Area
- I. Tidelands Claim Areas
- J. Flood Control Perimeter – Ordinance 455 - 2006
- K. Tidal Drainage Area Boundaries – Ordinance 455 - 2006
- L. West Wildwood Conceptual Pier Head Line
- M. West Wildwood Avenue E Extension Concept Plan
- N. List of capital projects
- O. Roadway Inventory

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2015 N.J.D.E.P. AERIAL PHOTOGRAPH
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500'

DATE: MARCH, 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08280

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UTILITY MAP
EXISTING LAND USES
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500'

DATE: MARCH, 27, 2017

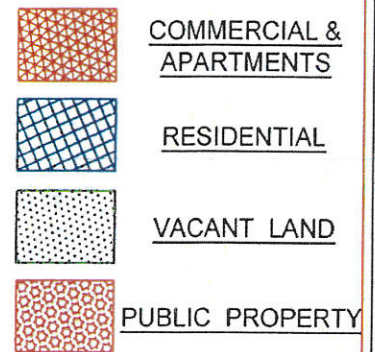
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FIELD BOOK

PROJECT NO: 0513-17-001

UTILITY MAP
ZONING DISTRICTS
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

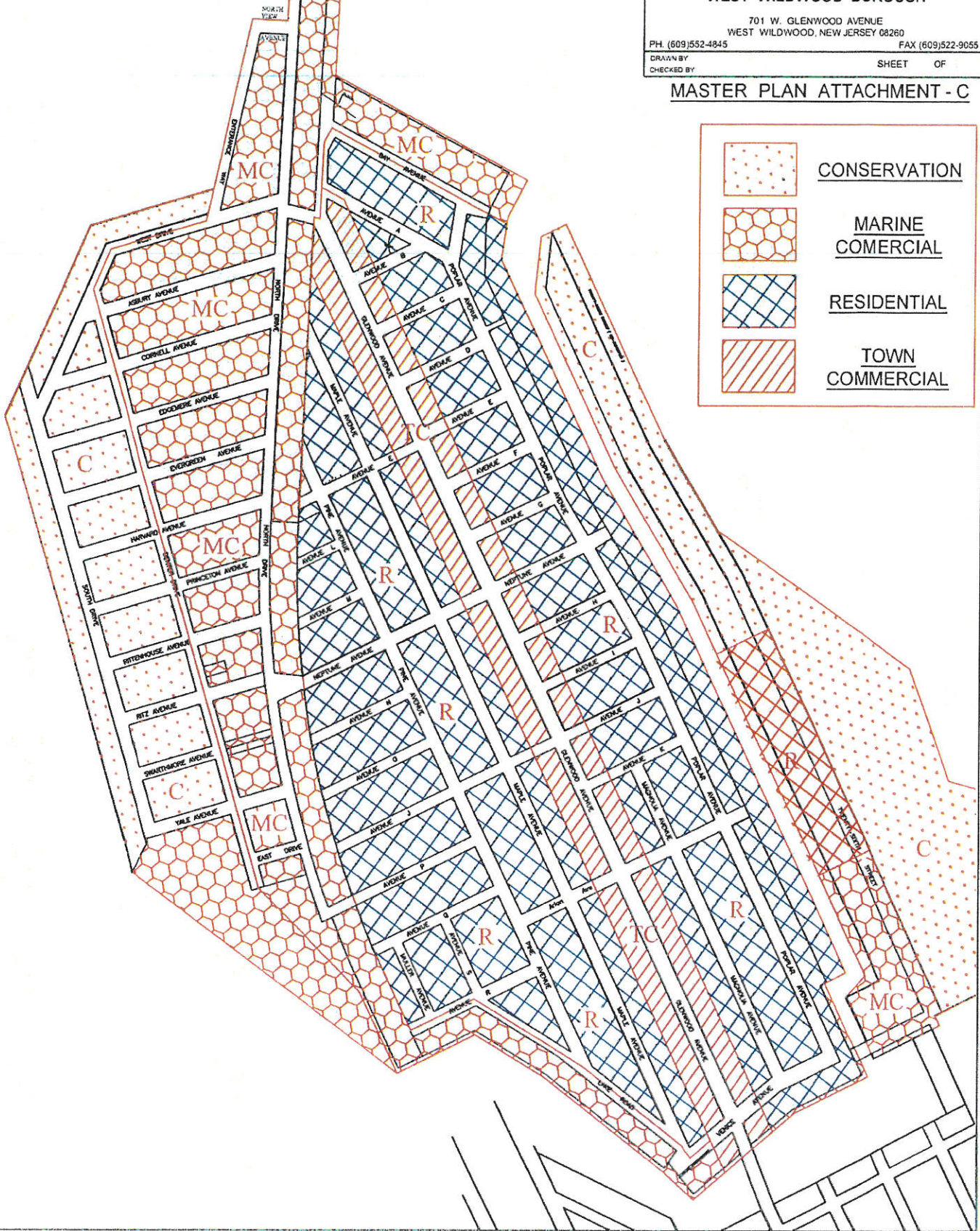
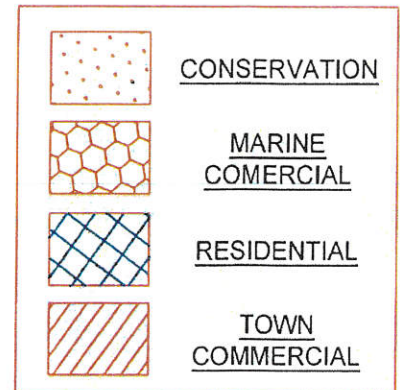
SCALE 1" = 500' DATE, MARCH, 27, 2017

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Legend

SEE REPORT FOR DETAILED LEGEND AND INDEX MAP FOR PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) 2-1 A, 2-1 B, 2-1 C
- With BFE or Depth 2-1 A, 2-1 B, 2-1 C, 2-1 D, 2-1 E, 2-1 F, 2-1 G, 2-1 H, 2-1 I, 2-1 J, 2-1 K, 2-1 L, 2-1 M, 2-1 N, 2-1 O, 2-1 P, 2-1 Q, 2-1 R, 2-1 S, 2-1 T, 2-1 U, 2-1 V, 2-1 W, 2-1 X, 2-1 Y, 2-1 Z
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile 2-1 A, 2-1 B, 2-1 C, 2-1 D, 2-1 E, 2-1 F, 2-1 G, 2-1 H, 2-1 I, 2-1 J, 2-1 K, 2-1 L, 2-1 M, 2-1 N, 2-1 O, 2-1 P, 2-1 Q, 2-1 R, 2-1 S, 2-1 T, 2-1 U, 2-1 V, 2-1 W, 2-1 X, 2-1 Y, 2-1 Z
- Future Conditions 1% Annual Chance Flood Hazard 2-1 A, 2-1 B, 2-1 C, 2-1 D, 2-1 E, 2-1 F, 2-1 G, 2-1 H, 2-1 I, 2-1 J, 2-1 K, 2-1 L, 2-1 M, 2-1 N, 2-1 O, 2-1 P, 2-1 Q, 2-1 R, 2-1 S, 2-1 T, 2-1 U, 2-1 V, 2-1 W, 2-1 X, 2-1 Y, 2-1 Z
- Area with Reduced Flood Risk due to levee. See Notes. 2-1 A, 2-1 B, 2-1 C, 2-1 D, 2-1 E, 2-1 F, 2-1 G, 2-1 H, 2-1 I, 2-1 J, 2-1 K, 2-1 L, 2-1 M, 2-1 N, 2-1 O, 2-1 P, 2-1 Q, 2-1 R, 2-1 S, 2-1 T, 2-1 U, 2-1 V, 2-1 W, 2-1 X, 2-1 Y, 2-1 Z
- Area with Flood Risk due to Levee 2-1 A, 2-1 B, 2-1 C, 2-1 D, 2-1 E, 2-1 F, 2-1 G, 2-1 H, 2-1 I, 2-1 J, 2-1 K, 2-1 L, 2-1 M, 2-1 N, 2-1 O, 2-1 P, 2-1 Q, 2-1 R, 2-1 S, 2-1 T, 2-1 U, 2-1 V, 2-1 W, 2-1 X, 2-1 Y, 2-1 Z

OTHER AREAS

- Area of Minimal Flood Hazard 2-1 A, 2-1 B, 2-1 C, 2-1 D, 2-1 E, 2-1 F, 2-1 G, 2-1 H, 2-1 I, 2-1 J, 2-1 K, 2-1 L, 2-1 M, 2-1 N, 2-1 O, 2-1 P, 2-1 Q, 2-1 R, 2-1 S, 2-1 T, 2-1 U, 2-1 V, 2-1 W, 2-1 X, 2-1 Y, 2-1 Z
- Effective Limits
- Area of Undetermined Flood Hazard 2-1 A, 2-1 B, 2-1 C, 2-1 D, 2-1 E, 2-1 F, 2-1 G, 2-1 H, 2-1 I, 2-1 J, 2-1 K, 2-1 L, 2-1 M, 2-1 N, 2-1 O, 2-1 P, 2-1 Q, 2-1 R, 2-1 S, 2-1 T, 2-1 U, 2-1 V, 2-1 W, 2-1 X, 2-1 Y, 2-1 Z

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

The pie displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFIP web services provided by FEMA. This map was reported on 6/17/2019 at 4:57:16 PM and does not reflect changes or amendments subsequent to this date and time. The NFIP and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FEMA panel number, and FEMA effective date. Map images for unmapped and undetermined areas cannot be used for

FLOOD INS. RATE MAP 2017
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500' DATE: MARCH 27, 2017

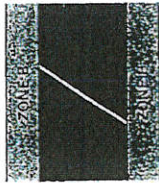
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MASTER PLAN ATTACHMENT - D



KEY TO SYMBOLS



ZONE DESIGNATIONS WITH
DATE IDENTIFICATION
MAY 17/2017

Base Flood Elevation Line

Base Flood Elevation

Elevation Reference Mark

High Water

*EXPLANATION OF ZONE DESIGNATIONS

A flood insurance map displays the zone designations for a community. The zones are designated by letters and numbers. The zone designations are used by F.I.A. to determine the flood hazard factor and date of SFH identification.

Zone Symbol

Category

Area of special flood hazards (SFH) and without base flood elevations determined.

A1 through A30
Area of special flood hazards (SFH) with base flood elevations. Zones are assigned according to flood hazard factor, and date of SFH identification.

AD
Area of special flood hazards that have shallow water depths. The water depths are determined by the flood hazard factor and date of SFH identification.

V
Area of special flood hazards, with velocity, that are inundated by tidal flood. Zones are assigned according to flood hazard factor and date of SFH identification.

B
Area of moderate flood hazards.

C
Area of minimal flood hazards.

D
Area of undetermined, but possible, flood hazards.

CONSULT NFIA SERVING COMPANY OR LOCAL INSURANCE AGENT OR BROKER TO DETERMINE IF PROPERTIES IN THIS COMMUNITY ARE ELIGIBLE FOR FLOOD INSURANCE.

INITIAL IDENTIFICATION DATE:
JANUARY 8, 1971

INTERIM MAP REVISION
EFFECTIVE JULY 1, 1974
TO CHANGE ZONE DESIGNATIONS

MAP REVISION EFFECTIVE OCTOBER 17, 1975
TO REFLECT CURVILINEAR FLOOD BOUNDARY

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Federal Insurance Administration

FLOOD HAZARD BOUNDARY MAP H - 01

FLOOD INSURANCE RATE MAP I - 01

MAP INDEX

BOROUGH OF

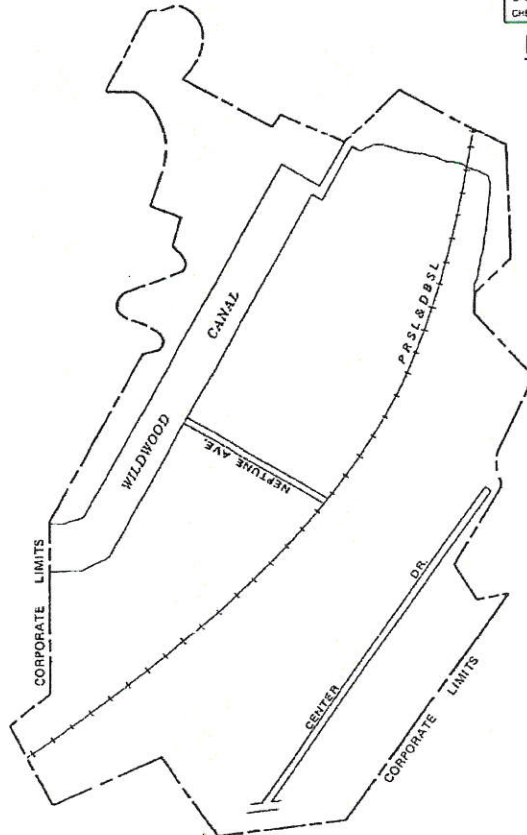
WEST WILDWOOD, NJ

(CAPE MAY CO.)

COMMUNITY NO. 3453288



01



FLOOD INS. RATE MAP 1974 WEST WILDWOOD BOROUGH CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500'

DATE: MARCH, 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
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MASTER PLAN ATTACHMENT - E

SON SOUND

UPPER WETLANDS BOUNDARY

UTILITY MAP
UPPER WETLANDS BOUNDARY
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500'

DATE: MARCH, 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260

PH (609)552-4845

FAX (609)522-9055

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CHECKED BY:

SHEET OF

MASTER PLAN ATTACHMENT - F

GRASSY SOUND

WILDWOOD CANAL

UPPER WETLANDS BOUNDARY

UPPER WETLANDS BOUNDARY

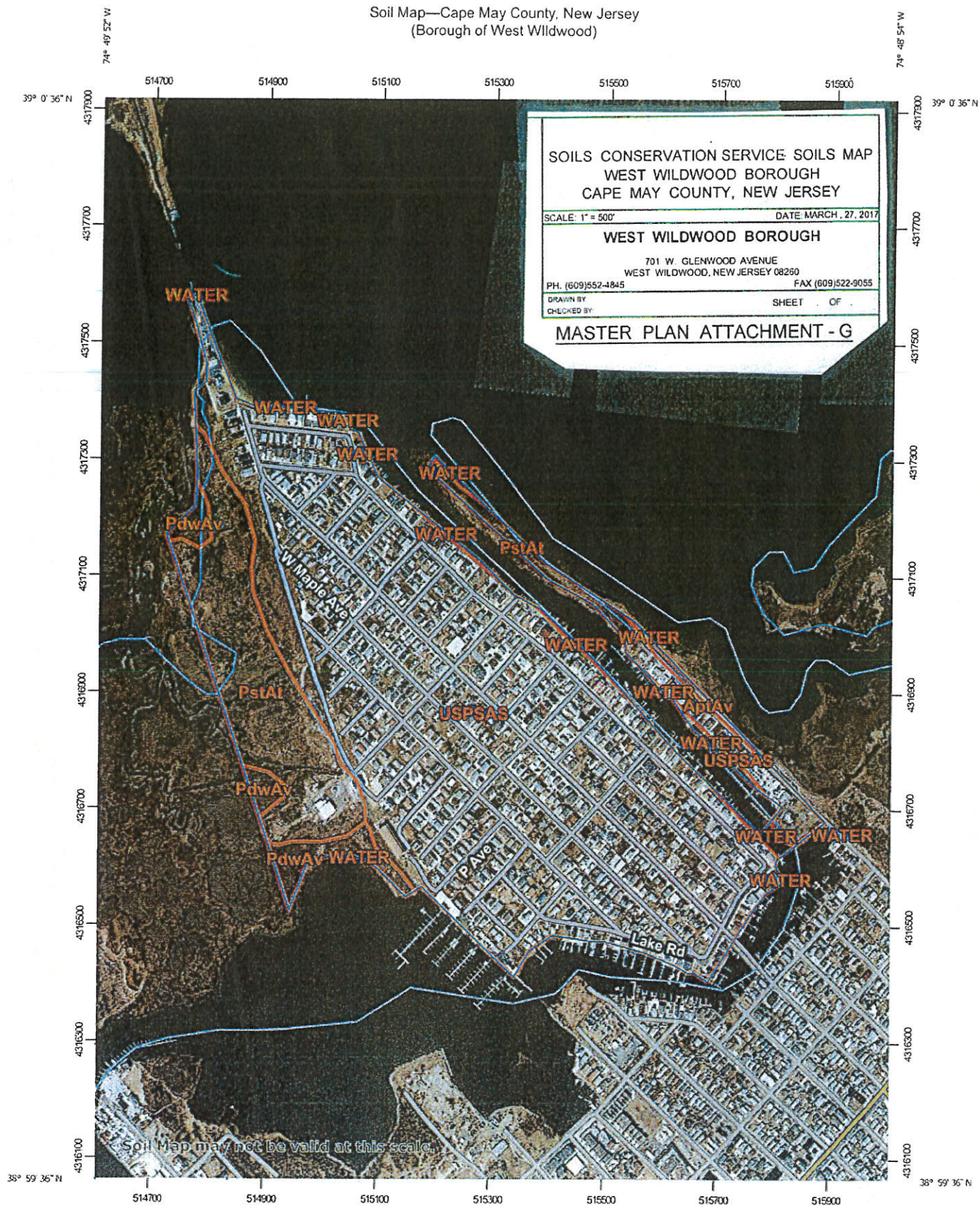
POST CREEK BASIN

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FIELD BOOK

PROJECT NO. 0513.67.001

Soil Map—Cape May County, New Jersey
(Borough of West Wildwood)



SOILS CONSERVATION SERVICE SOILS MAP
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500' DATE: MARCH 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260

PH. (609)552-4845

FAX (609)522-9055

DRAWN BY

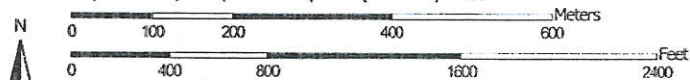
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MASTER PLAN ATTACHMENT - G

Soil Map may not be valid at this scale.

Map Scale: 1:9,040 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

6/6/2019
Page 1 of 3

UTILITY MAP
WEST WILDWOOD BOR. SEWERABLE AREA
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500' DATE: MARCH, 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260
PH (609)552-4845 FAX (609)522-9055

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MASTER PLAN ATTACHMENT - H

SEWER PERMIT
No. 96-0644-4

BOROUGH LIMIT
OF SEWERABLE AREA

SEWER PERMIT
No.

BOROUGH LIMIT
OF SEWERABLE AREA

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FELD BOOK

PROJECT NO. 0513-17-001

SON SOUND

UTILITY MAP
TIDELANDS CLAIM AREAS
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500'

DATE MARCH 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260
PH (609)552-4845 FAX (609)522-9055
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CHECKED BY _____

MASTER PLAN ATTACHMENT - I

TIDELANDS CLAIM AREA

GRASSY SOUND

WILDWOOD CANAL

TIDELANDS CLAIM AREA

POST CREEK BASIN

TIDAL CONTROL PERIMETER
ORINANCE No. 455
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500'

DATE: MARCH, 27, 2017

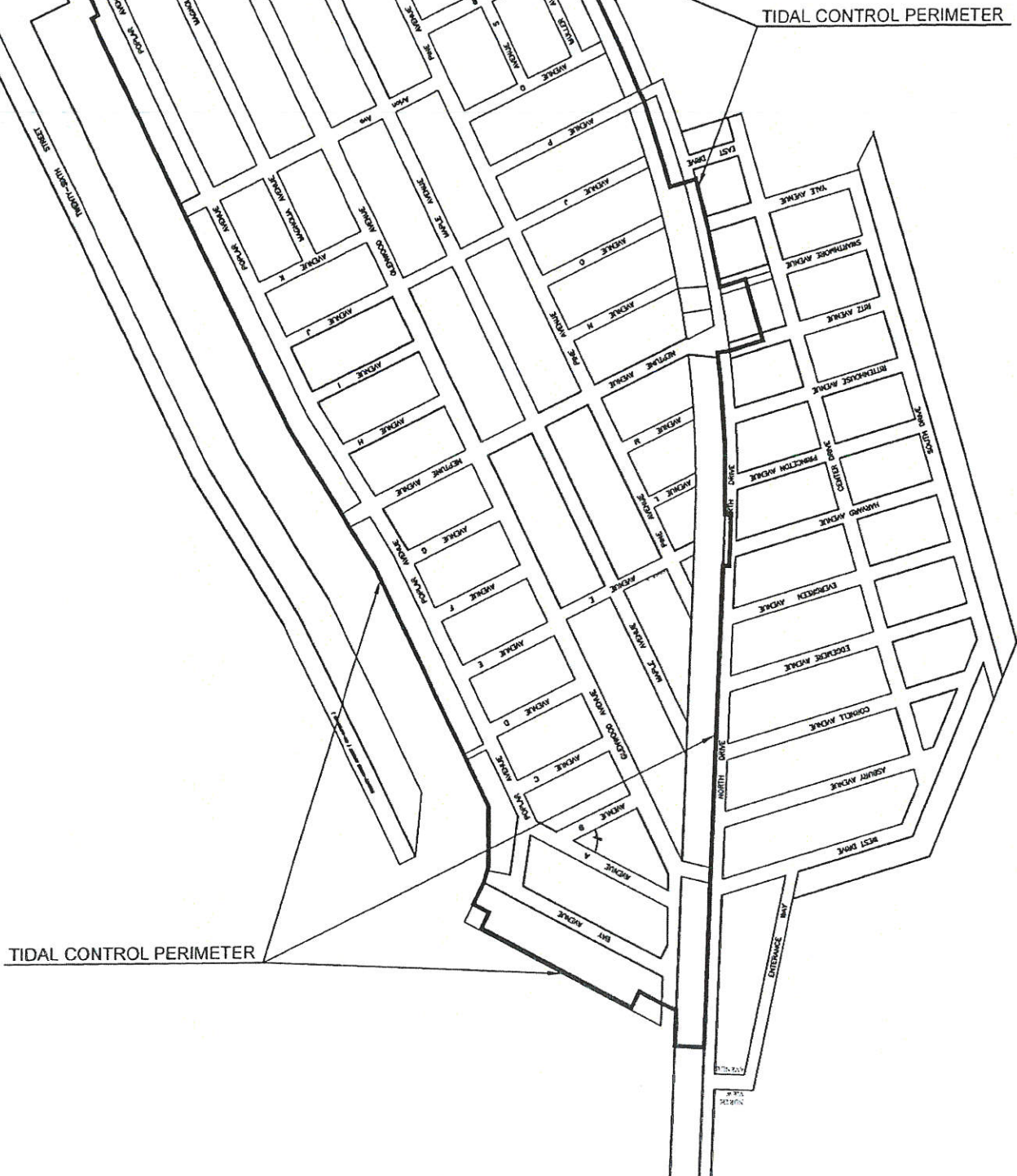
WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260
PH. (609)552-4845 FAX (609)522-9055

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SHEET OF

MASTER PLAN ATTACHMENT - J



TIDAL DRAINAGE AREA BOUNDARIES
ORDINANCE No. 455
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 500'

DATE: MARCH, 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260

PH (609)552-4845

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MASTER PLAN ATTACHMENT - K

TIDAL DRAINAGE
AREA BOUNDARY

TIDAL CONTROL PERIMETER

TIDAL DRAINAGE
AREA BOUNDARY

TIDAL CONTROL PERIMETER

UTILITY MAP
PIER HEAD LINE CONCEPT PLAN
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE 1" = 500'

DATE: MARCH, 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260

PH. (609)552-4845

FAX (609)522-9055

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MASTER PLAN ATTACHMENT - L

PROPOSED PIER HEAD LINE
155 FT FROM STREET R-O-W

PROPOSED PIER HEAD LINE
CHANNEL APPROX. 60 FT WIDE

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FIELD BOOK

PROJECT NO 0513-17-006

UTILITY MAP
AVENUE E EXTENSION CONCEPT PLAN
WEST WILDWOOD BOROUGH
CAPE MAY COUNTY, NEW JERSEY

SCALE: 1" = 50'

DATE: MARCH, 27, 2017

WEST WILDWOOD BOROUGH

701 W. GLENWOOD AVENUE
WEST WILDWOOD, NEW JERSEY 08260

PH. (609)552-4845

FAX (609)522-9055

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SHEET . OF .

CHECKED BY

MASTER PLAN ATTACHMENT - M

LOT 2.16

EXISTING
STORM DRAIN

PROPOSED 50 FT
EASEMENT

LOT 2.15

LOT 2.14

AVE. E EXT.

86 LF

124 LF

AVENUE E

LOT 2.14

FUTURE
SANITARY SEWER

LOT 2.13

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FIELD BOOK

PROJECT NO. 051317-001

ATTACHMENT – N (1 OF 3)

**WEST WILDWOOD IMPROVEMENT PROJECTS
FUNDING SUMMARY**

	FUNDING AGENCY	BUDGET	LOAN	GRANT
1. Sanitary Sewer & Potable Water Reconstruction & Rehabilitation, 1991-92 Contract 1A & 1B	FmHA	-0-	\$562,600	\$488,400
2. Reconstruction of Pine Ave. 1991	NJDOT	\$6,790	-0-	\$120,970
3. Sanitary Sewer & Potable Water Reconstruction & Rehabilitation, 1991 Contract 1C	NJDCA	- 0-	-0-	\$350,000
4. Reconstruction of Maple Ave. 1993 6839	NJDOT	\$12,000	-0-	\$148,938.50
5. Sanitary Sewer & Potable Water Reconstruction & Rehabilitation, 1992-93 Contract 2A & 2B	FmHA	-0-	\$1,000,000	\$1,000,000
6. Sanitary Sewer & Potable Water Reconstruction & Rehabilitation, 1992 Contract 3A	NJDCA	-0-	-0-	\$350,000
7. Neptune Avenue Drainage, 1992	Borough	\$10,000	-0-	-0-
8. Reconstruction of Poplar Avenue Arion Ave to Neptune, 1995	NJDOT	\$12,000	-0-	\$100,000
9. Reconstruction of Poplar Avenue Neptune Ave to Bay Ave, 1996	NJDOT	\$11,000	-0-	\$150,000
10. Emer. Management Public Works & Fire Safety Building, 1996	NJDCA	-0-	-0-	\$350,000
11. Sanitary Sewer & Potable Water Reconstruction & Rehabilitation, 1996 Contract 3B	FmHA	\$1,000	\$1,095,000	\$485,000

ATTACHMENT – N (2 OF 3)

**WEST WILDWOOD IMPROVEMENT PROJECTS
FUNDING SUMMARY**

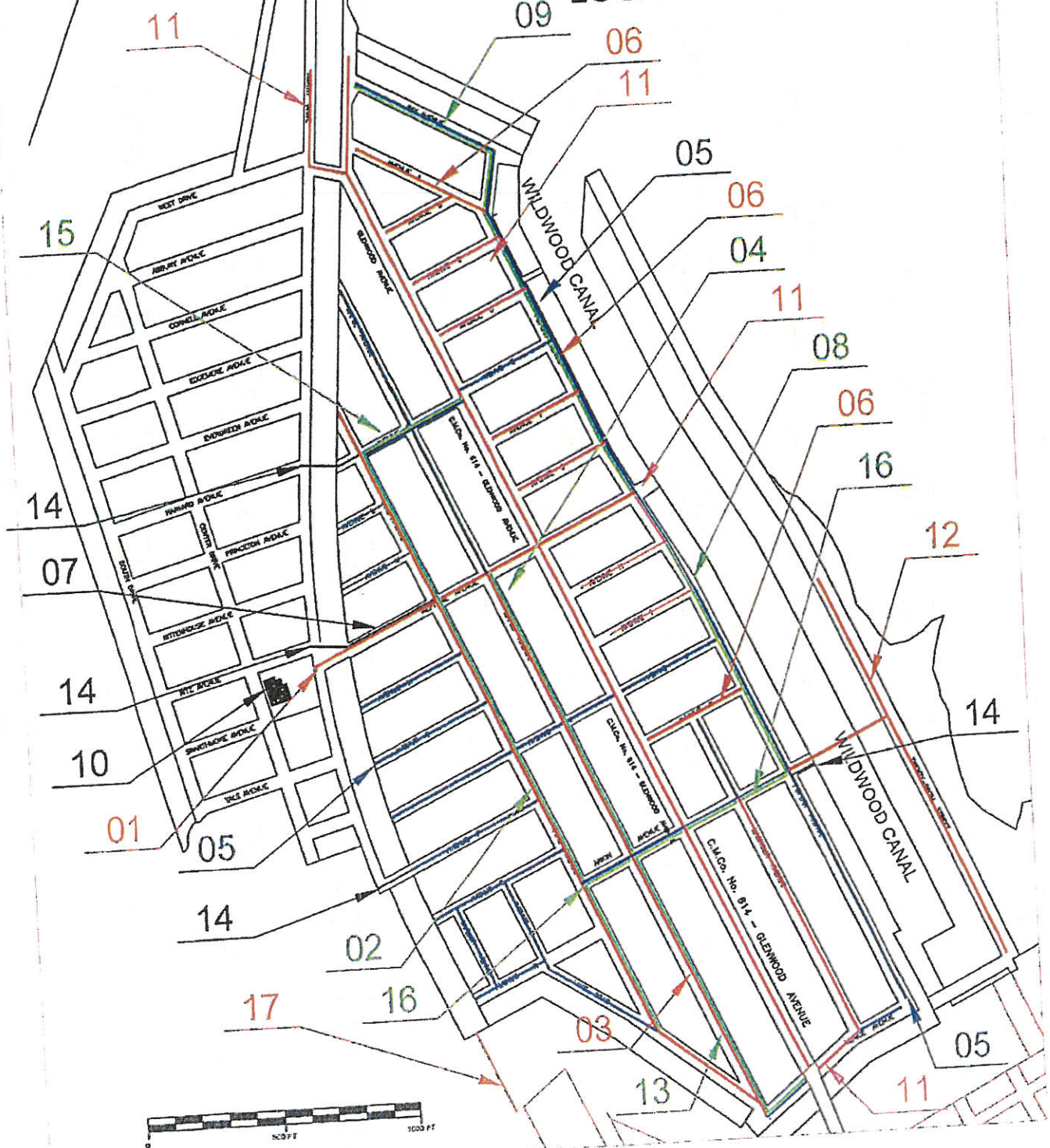
	FUNDING AGENCY	BUDGET	LOAN	GRANT
12. Sanitary Sewer & Potable Water Extension & Replacement 1996 Contract 4A & 4B	NJDCA	\$40,000	-0-	\$400,000
13. Reconstruction of Venice Avenue & Maple Ave. 1999	NJDOT	\$15,000	-0-	\$150,000
14. Disaster Mitigation Grant, 2001	FEMA	\$50,000	-0-	\$197,000
15. Reconstruction of Avenue E & Pine Ave. 2002	NJDOT	\$68,479	-0-	\$130,000
16. Reconstruction of Arion Avenue, 2007	NJDOT	\$17,121	-0-	\$148,000
17. Railroad Trestle Span Removal, 2008	U.E.Z.	\$1,250.	-0-	\$50,000
TOTALS		<u>\$244,630</u> 3%	<u>\$2,657,600</u> 35%	<u>\$4,616,400</u> 62%

IMPROVEMENTS

1991 – 2008

\$7,518,000.

N



ATTACHEMENT – O

**Borough of West Wildwood
Road Inventory**

Glenwood Avenue(C.R. 614)	4,131 Ft	Full Recon, Curb & SW 1997 & 2003
Pine Avenue Venice to Neptune	1,750 Ft	Full Recon., Curb 1992
Pine Avenue Neptune to Ave E.	575 Ft	Full Recon. Curb & SW 2003
Pine Avenue Ave E to RR	170 Ft	Asphalt Restoration 1991
Maple Avenue Venice to Arion	956 feet	Full Recon., Curb & SW 1998
Maple Avenue Arion to Mid 700s	1650 feet	Full Recon., Curb 1994
Maple Avenue Mid 700s to RR	750 feet	Asphalt Restoration 1993
Magnolia Avenue Venice to Arion	956 Ft	Asphalt Rest. 1998, Recon. 2015
Magnolia Avenue Arion to Ave K	344 Ft	Asphalt Rest 1994, 2006
Poplar Ave Venice to Arion	952 Ft	Asphalt Rest. 1993, Recon 2012. ?
Poplar Ave Arion to Neptune	1,148 Ft	Full Recon., Curb 1996
Poplar Ave Neptune to Ave G	90 feet	Full Recon., Curb 1997
Poplar Ave Avenue G to Ave A	1115 feet	Full Recon., Curb 1996
Poplar & Bay Ave A to Glenwood	625 feet	Asphalt Trench 1992, ?
Venice Avenue Poplar to Glenwood	440 Ft	Asphalt Trench 1993, ?
Venice Avenue Glenwood to Maple	214 Ft	Full Recon, Curb & SW 1998
Neptune Avenue Poplar to Maple	173 Ft	Full Recon, Curb & SW 1998
Neptune Avenue Maple to North	915 Ft	Recon, Curb & SW 1998 Grades?
Avenue A	568 Ft	Fully Reconstructed, Some Curb 1994
Avenue B	316 Ft	Fully Reconstructed, Some Curb 1994
Avenue C	375 Ft	Base & Curb 1997, Surf. Oct. 04
Avenue D	375 Ft	Base & Curb 1997, Surf. Oct. 04

Avenue E RR to Pine Avenue	110 Ft	Oil & Stone 1972
Avenue E Pine Avenue to Maple	210 Ft	Full Recon, Curb & SW 2003
Avenue E Maple to Glenwood	220 Ft	Full Recon. Curb 1997
Avenue E Glenwood to Poplar	375 Ft	Asphalt Restoration 1994, 2006
Avenue F	375 Ft	Asphalt Restoration 1994, 2006
Avenue G	375 Ft	Base Reconstructed, Curb 1997
Avenue H	414 Ft	Base Reconstructed, Curb 1997
Avenue I	430 Ft	Base Reconstructed, Curb 1997
Avenue J Poplar to Glenwood	430 Ft	Asp. Rest. 1994 – Rec. 2004
Avenue J Glenwood to Maple	220 Ft	Tch Rest. 1997 – Rec. 2004
Avenue J Maple to Pine	210 Ft	Tch Rest. 1994 – Rec. 2004
Avenue J Pine to RR	500 Ft	Tch Rest. 1994 – Rec. 2004
Avenue K	430 Ft	Fully Recon, Curb 1994, 2006
Avenue L	188 Ft	Fully Reconstructed 1994, 2006
Avenue M	288 Ft	Fully Reconstructed 1994
Avenue N	415Ft	Asphalt Rest.1994, Recon 2010
Avenue O	465Ft	Asphalt Rest.1994, Recon 2011
Avenue P	560Ft	Asphalt Restoration 1994
Avenue Q	540 Ft	Asphalt Restoration 1994
Avenue R RR to Lake	174 Ft	Asphalt Restoration 1994
Avenue R Pine to Lake	370 feet	Oil & Stone 1972, Borough
Avenue S	325 Ft	Full Recon., Curb & SW 1998 Grades?
Lake Road	950 Ft	Full Recon., Curb & SW 1998 Grades?

Arion Ave Poplar to Glenwood	430 Ft	Trench Restoration 1972, 2007
Arion Ave Maple to Glenwood	220 Feet	Full Recon., Curb 1997, 2007
Arion Ave Maple to Pine	210 Feet	Oil & Stone 1972, 2007
Muller Avenue	325 Ft	Asphalt Restoration 1994
Twenty-Sixth Street	<u>1555 Ft</u>	Full Recon, Curb 1998
	25,771 Ft	
West Drive	169 Ft	
North Dr.		
Northview to West Dr.	634 Ft	
West Drive to Harvard-E Outfall	1107 Ft	
Harvard-E Outfall to Neptune Ave	657 Ft	
Neptune-Ritz Ave to Ave P	880 Ft	
Center Drive		
Asbury Avenue	670 Ft	
Cornell Avenue	600 Ft	
Edgemere Avenue	530 Ft	
Evergreen Avenue	460 Ft	
Harvard Avenue – Wetlands	389 Ft	
Princeton Avenue	300 Ft	
Rittenhouse Avenue	270 Ft	
Ritz Avenue	232 Ft	
Swarthmore Avenue – Vacated		
Yale Avenue – Wetlands	195 Ft	
East Avenue – Wetlands	198 Ft	
	<u>6,509 Ft</u>	
State Road Mileage	0.00 miles	
County Road Mileage	0.78 miles	
Borough Road Mileage	5.05 miles	
Borough Roads Un-improved	1.23 miles	