8-Step Floodplain Analysis - Executive Order 11988, HUD 24 CFR 55 SPF001 Route 35 Sheeting Shore Protection Project

#### **Introduction:**

This analysis describes the decision-making process performed for the NJDEP Route 35 Sheeting Shore Protection project (SPF 001) to comply with Executive Order 11988, Floodplain Management as required by HUD Regulations at 24 CFR Part 55.

The proposed project involves construction of a continuous, 3.5-mile steel sheet pile oceanfront bulkhead parallel to Route 35 through a portion of the Township of Brick and the Borough of Mantoloking in Ocean County. The project extends along Route 35 from the southern boundary of Brick Township (Milepost 7.24) to the north side of the Lyman Street intersection with Route 35 in Mantoloking (Milepost 10.7)<sup>1</sup>.

The Route 35 Sheeting Shore Protection project is associated with other federal/state recovery investments within the project area.

The NJDOT Route 35 Reconstruction project involves a 12.5 mile portion of the roadway, from milepost 0.0 at the entrance to Island Beach State Park in Berkeley Township north to the project terminus at milepost 12.5 near the southern boundary of Point Pleasant Beach Borough. Project elements include a complete road reconstruction with full-depth pavement replacement, improved drainage collection and outfall system, and bicycle and pedestrian infrastructure. The cost for the entire project is approximately \$265 million. As a coastal emergency evacuation route, this reconstruction project is an important element for increasing storm resiliency along the entire Barnegat Bay barrier island.

The NJDEP Route 35 Sheeting project would help to protect the investment in the reconstruction of Route 35 from future coastal storms and erosion.

The USACE Manasquan Inlet to Barnegat Inlet Shore Protection project would involve completion of a beachfill with a berm and dune. The purpose of the project is to aid in reducing future impacts from coastal erosion and storms on the beach and adjacent oceanfront lands. The project would cover approximately 14 miles from Island Beach State Park in Berkeley Township to the Manasquan Inlet at the northern border of Point Pleasant Beach Borough. Periodic beach nourishment is also proposed over a 50-year period post construction. The original project was authorized in 2007 prior to Superstorm Sandy, but no funds were allocated for construction. The initial construction costs (based on a 2007 estimate) were approximately \$77 million, but are expected to increase as the project is revised to address additional damage experienced from the storm.

The Route 35 Sheeting project would occur prior to the USACE project. The Route 35 sheeting would ultimately be completely enveloped by the beachfill sand and constructed dune and the projects would work in conjunction to protect the investment of the NJDOT Route 35 Reconstruction Project.

<sup>&</sup>lt;sup>1</sup> Note: The original extent of the Route 35 Sheeting Shore Protection project was approximately 4.0 miles from the southern boundary of Brick Township (Milepost 7.24) to the northern boundary of Mantoloking Borough (Milepost 11.2). Subsequent permit decisions and private investment commitments by landowners in the northern end of the project area to fund and construct compatible shore protection infrastructure allowed a reduction in the scope of the proposed federal/state-funded action. Design revisions to reflect this change resulted in the elimination of approximately 1,765 linear feet of sheeting originally proposed.

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### Analysis:

The HUD floodplain management decision making process at 24 CFR Part 55.20 contains eight steps, including public notice and an examination of practicable alternatives.

# **Step 1: Determine whether the action is located in a 100-year floodplain (or a 500-year floodplain for critical actions).**

The proposed project area is located in a designated Special Flood Hazard Area "VE" Zone (area of coastal flood zone with velocity hazard (wave action) and base flood elevations determined) floodplain as indicated on the preliminary Flood Insurance Rate Map (FIRM) Panel 216 of 660, Map Number 34029C0216G and Panel 218 of 660, Map Number 34029C0218G, revised March 28, 2014 (see Exhibit 1). Areas designated as a Special Flood Hazard Area are those subject to inundation by the 1% annual chance flood (e.g., a 100-year flood), also known as the base flood.

Under HUD regulations, this project is considered a substantial improvement involving new construction, and therefore is not exempt from the requirements of 24 CFR 55.20 (24 CFR 55.12). An evaluation of direct and indirect impacts associated with construction, occupancy, and modification of the floodplain is required.

# **Step 2:** Notify the public for early review of the proposal and involve the affected and interested public in the decision making process.

An early public notice of the proposed activity within the 100-year floodplain was published on April 3, 2014 (see Exhibit 2). Notices were published in the Asbury Park Press and the Reporte Hispano newspapers. The notice was also made available to the public via the NJDEP, Bureau of Coastal Engineering website (<u>http://www.nj.gov/dep/shoreprotection/route35floodplain.htm</u>). The notice was also distributed to federal, state and municipal agencies via email on April 4, 2014 (see Exhibit 2).

The notice requested comments from the public concerning floodplain and natural resource impacts of the proposed economic revitalization programs. The notice also indicated that the NJDEP would evaluate proposed actions under these programs for potential direct and indirect impacts associated with floodplain development and, where practicable, would design or modify proposed actions to minimize potential adverse impacts to lives, property, and natural values within the floodplain. The required 15 calendar day were allowed for public comments and comments were accepted either electronically (http://www.nj.gov/dep/shoreprotection/contact.htm) or via written correspondence.

Individual and agency comments received from the early notice concerning the proposed action, and NJDEP responses, are summarized below:

Frank Master, IV, Chief, Civil Works Programs Branch, USACE Philadelphia District:

1. The notice indicates that the sheetpile wall will be constructed after the Corps' beachfill project. That is not necessarily the case. Based on the timing of both projects the wall may go in first and the Corps' project would come after. This section of the notice needs to be revised to reflect that possibility.

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> DEP response: We understand the text of the notice was not specifically clear and also anticipate that the proposed action would be in place prior to the USACE beachfill project. The floodplain analysis and final notice will indicate the anticipated order of construction as stated by the USACE.

2. Based upon a review of information submitted as part of the NJDEP/LURP permit application, it appears at this time that all work is taking place outside of the Corps' regulatory jurisdiction, and a Department of the Army permit is not required for the currently proposed sheet pile wall.

*DEP response: We concur that no work is proposed within an area of USACE regulatory jurisdiction.* 

#### Step 3: Identify and evaluate practicable alternatives.

#### Alternative 1: Relocate the Proposed Action Outside of the 100-year floodplain

Executive Order 11998, Section 1 states that "agencies... shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare..." As the intent of this project is to reduce the impact of coastal storms on areas and infrastructure located within floodplain areas, the project meets the intent of EO 11998.

Alternatives to relocate the shore protection project outside of the floodplain are not available and would be contrary to the purpose and function of the proposed improvement. Route 35 is a major coastal traffic route that supports the vast majority of vehicular traffic along the barrier island between Barnegat Bay and the Manasquan Inlet, a distance of approximately 14.8 miles (see Exhibit 3). Therefore, Route 35 is an essential component of the regional transportation network.

Additionally, the entire stretch of Route 35 is located within the 100-year floodplain. The project area is especially vulnerable to coastal storm damage and island breaches due to the narrowness of the island and underlying geomorphology.

Therefore, there are no alternatives which could be located outside of the floodplain and meet the project purpose and intent.

#### Alternative 2: Alternative Actions that Serve the Same Purpose

Alternatives that would potentially serve the same purpose as the proposed shore protection project—reducing the risk of flood damage to Route 35— would essentially involve locating Route 35 out of the 100-year floodplain.

As previously noted, the entire extent of Route 35 on the barrier island is located within the 100-year floodplain (see Exhibit 4), therefore there is no surface alternative where the road alignment could be relocated outside of the 100-year floodplain.

Elevation of Route 35 out of the floodplain would be technically feasible; however such an alternative would require extensive right-of-way acquisition; have significant impacts on the oceanfront homes, local businesses, communities and the Mantoloking Historic District; and still impact the 100-year floodplain. Additionally, such an approach would not provide the additional protection for community

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structures and other public infrastructure that the proposed action would provide. Finally, the costs for both construction and maintenance of such a roadway would be vastly greater than the proposed action.

#### Alternative 3: No Action Alternative

A no action alternative was considered and rejected because the no action alternative would not address the vital infrastructure needs of the area, would not aid in community and economic recovery in Brick and Mantoloking, and would not address the needed reduction of future flood risk and associated human health, safety and welfare impacts.

Superstorm Sandy had a widespread and lasting impact on New Jersey's coastal communities. Approximately 27% of the residential housing units in Mantoloking Borough were damaged, with many others in the Brick Township portion of the study area also affected by storm damage.

In Mantoloking, the storm surge washed entirely across the Barnegat Peninsula from the ocean to the bay in three locations, breaching three sections of the highway. The largest of the breaches created a channel between the Atlantic Ocean and the Barnegat Bay at the intersection with Route 528 at the Mantoloking Bridge. In addition to the breaches, the storm destroyed much of the highway, undermining and moving concrete slabs and destroying much of the roadway's underground drainage<sup>2</sup>.

After Superstorm Sandy, it was evident that this area was in need of beachfront storm protection. That storm eroded the beach and breached the roadway causing hundreds of millions of dollars of damage to the homes and infrastructure.

The NJ Route 35 Reconstruction Project is a vital regional improvement needed to both recover from Superstorm Sandy and to revitalize adjacent communities. Funding for the reconstruction project is part of the United States Department of Transportation (USDOT) Emergency Relief Program which is designed to aid the repair and reconstruction of highways that have suffered serious damage as a result of natural disasters. The Route 35 Sheeting Shore Protection Project will complement reconstruction of the roadway by reducing overall flooding risk and providing a barrier to aid in reducing impacts of future coastal storms.

The no-action alternative would limit state and community recovery efforts and not provide the necessary complementary flood damage protection for substantial federal and state post-storm recovery investments.

# **Step 4: Identify Potential Direct and Indirect Impacts of Associated with Floodplain Development.**

While the proposed construction of the sheeting project would occur within the 100-year floodplain, the overall design would help to minimize the effects of coastal flooding.

The top of the sheeting would be placed at +15 feet above sea level (NAV88). With additional sand placement from the USACE project, the sheeting would be encased within the constructed dune to

<sup>&</sup>lt;sup>2</sup> NJDOT Route 35 Reconstruction, http://www.state.nj.us/transportation/commuter/roads/rt35reconstruction/impacts.shtm

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provide a barrier with a top height of approximately +22 feet above sea level (NAV88). The highest preliminary base flood elevation (BFE) in the project area as delineated on the Preliminary FIRMs is 16.0 feet above sea level (NAV88).

Overall, construction and operation of the proposed project would not result in significant adverse impacts to flood levels, flood risk, or the flow of flood waters on the project site or surrounding areas. Conversely, the project would reduce flood level, flood risk, and the flow of flood waters onto the project area. Therefore, the proposed project would be compliant with the National Flood Insurance Act of 1968 (44 CFR § 59) and Executive Order 11988 on Floodplain Management (42 FR 26951).

# Step 5: Where practicable, design or modify the proposed action to minimize the potential adverse impacts to lives, property, and natural values within the floodplain and to restore, and preserve the values of the floodplain.

The NJDEP Bureau of Coastal Engineering considered other construction approaches to the proposed steel sheeting to determine the most practicable and effective method for reducing flood risk and damage within the project area.

An interim beachfill alternative was evaluated which would consist of a sand barrier to be constructed prior to the USACE beachfill project. Analysis of this option indicated that the alternative would only provide protection for a 30-40 year storm event at a similar cost in comparison with the proposed sheeting bulkhead. This option would also require a substantially longer construction period than the 6-month proposed schedule for the sheeting project.

Use of geotube technology was also investigated as a potential design option, using either a single large tube or a stacked pyramid of multiple smaller tubes. For this option, a steady supply of sand would be required to allow for proper settling of the fill material; however sand supplies are already lacking in this area. The Brick and Mantoloking beach sections are already starved of sand and therefore not a viable option for fill material. Use of geotubes also has stability limitations when encountering direct wave attack and can also be relatively easily damaged through careless maintenance or vandalism. If exposed during a storm event, geotubes can easily shift or roll and exacerbate flood conditions.

Evaluation of a stone revetment option noted that it would be ideal for a shore protection feature as the stone would dissipate wave energy while protecting infrastructure. However, to provide a similar level of protection than the proposed action, the costs of a rock revetment structure are close to twice the costs of installing a bulkhead. Furthermore, the required footprint of the structure is greatly increased.

In combination with the USACE beachfill project, the proposed action is the best option for providing necessary coastal storm protection while maximizing retention of natural floodplain values.

#### **Step 6: Reevaluate the Alternatives.**

The proposed action is viewed as the most practicable alternative by reducing the risk of adverse impacts to vital infrastructure and oceanfront communities along the Route 35 corridor. These needed infrastructure improvements are vital to state and local transport, commerce, and emergency preparedness. Relocation of the project outside of the floodplain is not available nor would such an

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alternative meet the project intent. Other options would be either ineffective or impose extraordinary costs and environmental impacts. The no action alternative also remains impracticable because it will not satisfy the need for post-Sandy storm protection and infrastructure stability. The proposed project is the best alternative for meeting those needs and minimizing potential hazards to human safety, health, and welfare.

#### **Step 7: Determination of No Practicable Alternative**

It is our determination that there is no practicable alternative to locating the project in the flood zone. This is due to: 1) the intent of the project to reduce the risk and impacts of coastal flooding events; 2) the lack of alternative locations outside of the 100-year floodplain for the roadway alignment related to the physical geography of the barrier island; and 3) the ability to meet the project intent while minimizing impacts on human health, public property, and floodplain values.

A final public notice will be published in accordance with HUD requirements. The final notice will detail the reasons why the modified project must be located in the floodplain, a list of alternatives considered, and measures taken to minimize adverse impacts and preserve natural and beneficial floodplain values.

#### **Step 8: Implement the Proposed Action**

Implementation of the proposed action will require additional local and state permits, which may place additional mitigation requirements on the project.

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# Exhibit 1: Floodplain Maps



Exhibit 1, Sheet 1 of 4 Floodplain Map SPF001 Route 35 Sheeting Shore Protection Project Brick Township and Mantoloking Borough, Ocean County

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Exhibit 1, Sheet 2 of 4 Floodplain Map SPF001 Route 35 Sheeting Shore Protection Project Brick Township and Mantoloking Borough, Ocean County

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Exhibit 1, Sheet 3 of 4 Floodplain Map SPF001 Route 35 Sheeting Shore Protection Project Brick Township and Mantoloking Borough, Ocean County

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Exhibit 1, Sheet 4 of 4 Floodplain Map SPF001 Route 35 Sheeting Shore Protection Project Brick Township and Mantoloking Borough, Ocean County A 1:10,000 V 0 800 1,600 Feet

8-Step Floodplain Analysis - Executive Order 11988, HUD 24 CFR 55 SPF001 Route 35 Sheeting Shore Protection Project

## **Exhibit 2: Early Public Notice**

#### Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain

#### April 3, 2014

This is to give notice that the New Jersey Department of Environmental Protection (NJDEP) is conducting an evaluation as required by Executive Order 11988 for floodplain management, in accordance with U.S. Department of Housing and Urban Development (HUD) regulations at 24 CFR Part 55.20 Subpart C Procedures for Making Determinations to determine the potential effect that its activity in the floodplain will have on the human environment for Community Development Block Grant under Title 1 of the Housing and Community Development Act of 1974 (P.L. 93-383).

NJDEP has determined that the following proposed action under the Shore Protection Fund Program is located in the 100-year floodplain, and that NJDEP will be identifying and evaluating practicable alternatives to locating the action in the floodplain and the potential impacts on the floodplain from the proposed action.

The proposed project is to protect Route 35 shore communities from future damage of breach as was experienced during Superstorm Sandy. It involves the placement of a continuous 4.0-mile wall of steel sheeting parallel to New Jersey Route 35 within the Borough of Mantoloking and Township of Brick in Ocean County. The steel sheeting would be placed along the beach and, after the completion of a forthcoming U.S. Army Corps of Engineers beachfill project, would be covered with sand to become part of the dune system and form a barrier to protect the Route 35 roadway from the effects of future coastal flooding.

The entire project would essentially be constructed within the Special Flood Hazard Area Zone "VE" coastal floodplain, as shown on the Federal Emergency Management Agency (FEMA) Preliminary Flood Insurance Rate Maps (FIRMs) Panel 216 of 660, Map Number 34029C0216G, March 28, 2014 and Panel 218 of 660, Map Number 34029C0218G, March 28, 2014. The proposed project is located in the Borough of Mantoloking and Township of Brick, Ocean County, New Jersey.

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Commenters are encouraged to offer alternative sites outside of the floodplain, alternative methods to serve the same project purpose, and methods to minimize and mitigate impacts. Second, an adequate public notice program can be an important public educational tool. The dissemination of information and request for public comment about floodplains can facilitate and enhance Federal efforts to reduce the risks and impacts associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains, it must inform those who may be put at greater or continued risk.

Written comments must be received by NJDEP at the following address on or before April 19, 2014. All comments should be submitted to Kelly Staffieri, Bureau of Coastal Engineering at 1510 Hooper Avenue, Toms River, New Jersey 08753 or online at <u>http://www.nj.gov/dep/shoreprotection/contact.htm</u>.

Date: April 3, 2014 Commissioner Bob Martin New Jersey Department of Environmental Protection

## Aviso Anticipado y Revisión Pública Para un Proyecto Propuesto en un Terreno Inundable de 100 Años

#### 3 de Abril del 2014

Por medio del siguiente aviso se anuncia que el Departamento de Protección Ambiental (New Jersey Department of Environmental Protection [NJDEP]) de Nueva Jersey llevara a cabo una evaluación, como lo es requerido por la orden ejecutiva 11988 para el manejo de terrenos inundables, de acuerdo con las regulaciones del Departamento de Vivienda y Desarrollo Urbano de EE.UU. (U.S. Department of Housing and Urban Development [HUD]) del 24 CFR Parte 55.20 Subpart C, Procedimientos para la Creación de Determinaciones, para determinar los posibles efectos que su actividad en terrenos inundables tendría en el medioambiente humano ya que el proyecto propuesto está siendo considerando para recibir fondos bajo el Programa de Subsidios para el Desarrollo Comunitario bajo el Titulo 1 del Acto de 1974 para la Vivienda y el Desarrollo Comunitario (Community Development Block Grant under Title 1 of the Housing and Community Development Act of 1974 [P.L. 93-383]).

El NJDEP ha determinado que el proyecto propuesto bajo el Programa de Fondos para la Protección de Orillas (Shore Protection Fund Program) está ubicada en un terreno inundable con una probabilidad del uno por ciento (1%) de ser inundado (es decir, un terreno inundable de 100 años) y que el NJDEP va a identificar y evaluar alternativas prácticas para localizar el proyecto propuesto en el terreno inundable y los posibles impactos en el terreno inundable a causa del proyecto propuesto.

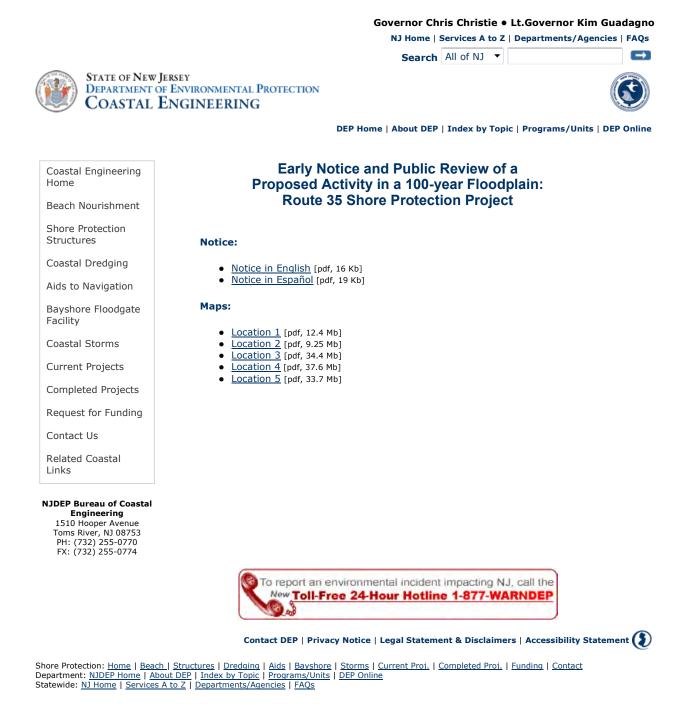
El proyecto propuesto incluye la instalación de una pared de tablestacas con láminas de acero por 4 millas de forma paralela a la Ruta 35 de Nueva Jersey (New Jersey Route 35) dentro del Distrito de Mantoloking y el Municipio de Brick en el Condado Ocean. Las tablestacas con láminas de acero serían instaladas a lo largo de la playa y después de la finalización de un proyecto próximo para rellenar la playa por parte del Cuerpo de Ingenieros del Ejército de los Estados Unidos (U.S. Army Corps of Engineers), sería cubierta con arena para volverse parte del sistema de dunas y conformar una barrera para proteger la calzada de la Ruta 35 de los efectos de inundaciones costales en un futuro.

El proyecto en su totalidad sería esencialmente construido dentro de una Area Especial de Riesgos de Inundación, Zona "VE", zona de inundación costera, como lo muestran los Mapas preliminares de Tarifas de Seguro de Inundación (FIRMs) preparados por la Agencia Federal para el Manejo de Emergencias de EE.UU (FEMA) tablero 216 de 660, mapa número 34029C0216G, con fecha de Marzo 28 del 2014, y el tablero 218 de 660, mapa número 34029C0218G, con fecha de Marzo 28 del 2014. El proyecto propuesto está ubicado en el Distrito Matoloking y el Municipio de Brick en el Condado Ocean, Nueva Jersey.

Este aviso tiene tres propósitos principales. El primero es que la gente afectada por las actividades de las zonas de inundaciones y aquellos que estén interesados en la protección del medio ambiente tengan la oportunidad de expresar sus inquietudes y proveer información sobre esas áreas. Los comentadores están invitados a ofrecer sitios alternativos por fuera de la zona de inundación, métodos alternativos que cumplan con el mismo propósito del proyecto, y métodos para minimizar y mitigar impactos. Segundo, un programa adecuado de aviso público puede ser una herramienta educacional muy importante. La diseminación de información y la solicitud de comentarios del público sobre los terrenos inundables pueden facilitar y mejorar los esfuerzos del Gobierno Federal para reducir los riesgos e impactos asociados con la ocupación y modificación de estas zonas especiales. Tercero, para ser justos, cuando el Gobierno Federal determina que va a participar en acciones que se llevan a cabo en terrenos inundables, tiene que informar a todos aquellos que pueden ser puestos en un riesgo más alto o en un riesgo continuo.

Los comentarios escritos tienen que ser recibidos por el NJDEP en la siguiente dirección hasta el 19 de Abril del 2014. Todos los comentarios deben ser dirigidos a Kelly Staffieri, Bureau of Coastal Engineering, 1510 Hooper Avenue, Toms River, New Jersey 08753 o en la siguiente página de la internet <u>http://www.nj.gov/dep/shoreprotection/contact.htm</u>.

Fecha: 3 de Abril del 2014 Commisionado Bob Martin Departamento de Protección Ambiental de Nueva Jersey



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Last Updated: April 4, 2014

Affidavit of Pu	Iblication
Publisher's Fee \$82.80 Af	fidavit Charge \$35.00
State of New Jersey } SS. Monmouth/Ocean Counties Personally appeared Account Personally appeared Account Personally appeared Account Personal Provide Account Press, a newspaper printed in Freehold in said County and State, and of general circulation in said c that the advertisement of which the annexed is a true copy, I 1 times, once in each issue as follows: 4/3/2014	county, who being duly sworn, deposeth and saith
Kathleen A. Gibson Notary Public State of New Jorsey My Commission Expires Dec. 18, 2014 Support Notary Public of New Jersey	A.D. 2014 Sworn and subscribed before me, this 18 day of April, 2014

#### OCEAN COUNTY

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#### **Craig Shirk**

From: Sent: To:	Theresa Albanese <talbanese@gfnet.com> Friday, April 04, 2014 1:41 PM Carlo Popolizio; perciasepe.bob@epa.gov; jon_jarvis@nps.gov; edward.horton@noaa.gov; john.bullard@noaa.gov; Megan.Jadrosich@dhs.gov; dan.saunders@dep.state.nj.us; douglas.fisher@ag.state.nj.us; Robert.Clark@dot.gov; SColabella@co.ocean.nj.us; boroclerk@mantoloking.org; clerk@twp.brick.nj.us; james.simpson@dot.state.nj.us; richard.l.tomer@usace.army.mil</talbanese@gfnet.com>
Cc:	'Mahon, Donna'; 'Key, Tonalee'; Kristen Maines
Subject:	Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain
Attachments:	SPF001_EarlyNoticeFloodplainAnalysis_English_SPF_TOSPF-001.pdf
Follow Up Flag:	Follow up
Flag Status:	Completed
Categories:	NJDEP

Federal, State and Local Agencies,

The New Jersey Department of Environmental Protection (NJDEP) is assisting the Department of Community Affairs (DCA) with the Environmental Review portion of the Department of Housing and Urban Development's (HUD) Community Development Block Grant Disaster Relief Assistance Funding Program, Shore Protection Fund Program. Please see the attached notice that has been published on April 3 in several newspapers. The floodplain map is available for review and is posted at the following location: <a href="http://www.nj.gov/dep/shoreprotection/floodplain.htm">http://www.nj.gov/dep/shoreprotection/floodplain.htm</a>.

If you have any questions, please feel free to contact me.

Theresa Program Director, NJDEP EAF Contractor

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#### **Craig Shirk**

From:	Theresa Albanese <talbanese@gfnet.com></talbanese@gfnet.com>
Sent:	Friday, April 04, 2014 3:40 PM
То:	Frank.J.Cianfrani@usace.army.mil;
	jodi.m.mcdonald@usace.army.mil;
	karen.greene@noaa.gov;
Cc:	'Mahon, Donna'; 'Key, Tonalee'; Kristen Maines
Subject:	Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain
Attachments:	SPF001_EarlyNoticeFloodplainAnalysis_English_SPF_TOSPF-001.pdf

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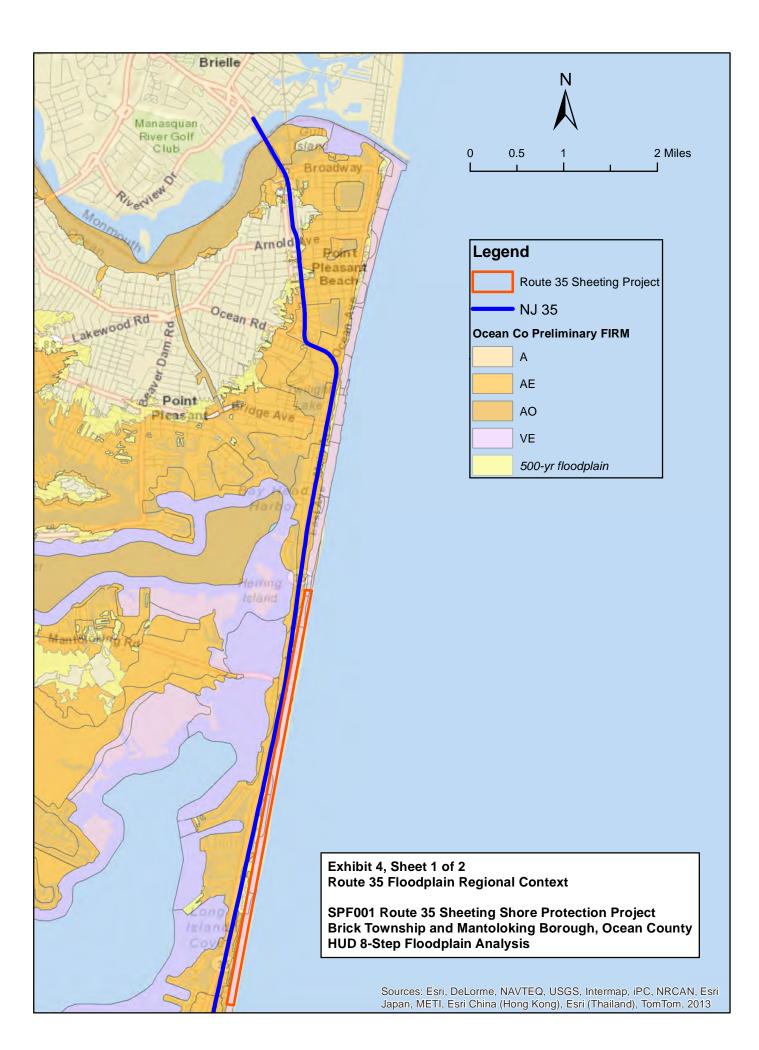
8-Step Floodplain Analysis - Executive Order 11988, HUD 24 CFR 55 SPF001 Route 35 Sheeting Shore Protection Project

## Exhibit 3: Route 35 Regional Context



8-Step Floodplain Analysis - Executive Order 11988, HUD 24 CFR 55 SPF001 Route 35 Sheeting Shore Protection Project

# Exhibit 4: Floodplain Regional Context





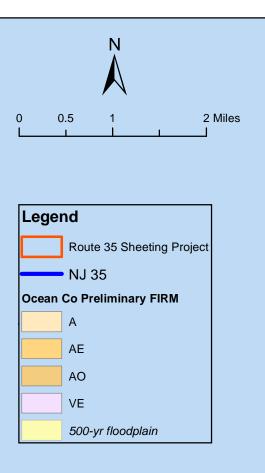


Exhibit 4, Sheet 2 of 2 Route 35 Floodplain Regional Context

SPF001 Route 35 Sheeting Shore Protection Project Brick Township and Mantoloking Borough, Ocean County HUD 8-Step Floodplain Analysis

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013