ROCKAWAY RIVER AND DEN BROOK
DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY
CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

APPENDIX B
ENVIRONMENTALAND CULTURAL RESOURCES

September 2023

U.S. Army Corps of Engineers
North Atlantic Division New York and Baltimore Districts
In partnership with the New Jersey Department of Environmental Protection

ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

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ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

ATTACHMENT 1: AGENCY CORRESPONDENCE AND COORDINATION RECORD

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Jersey Ecological Services Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, NJ 08205
Phone: (609) 646-9310

In Reply Refer To: May 23, 2023
Project Code: 2023-0009834
Project Name: Denville, NJ CAP 205 Flood Risk Management Study

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the ECOS-IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using ECOS-IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the footprint of the project. The action area also includes all areas that may be indirectly affected through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic

change, chemical exposure, reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably forseeable future that would not occur without ("but for") the project that is currently being proposed.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Jersey Ecological Services Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, NJ 08205
(609) 646-9310

PROJECT SUMMARY

Project Code: 2023-0009834

Project Name: Denville, NJ CAP 205 Flood Risk Management Study

Project Type: Flooding

Project Description: The U.S. Army Corps of Engineers (USACE), New York District, in partnership with the New Jersey Department of Environmental Protection, is conducting a study to document the feasibility of implementing a flood risk management project in the Township of Denville, New Jersey (NJ). USACE Baltimore District is conducting the feasibility study. The study area includes the Rockaway River and Den Brook portion of Denville. Significant developed portions of the Township of Denville are subject to flooding. Township residents and businesses have suffered extensive losses and damage from several severe flooding events in recent decades. The primary source of this flooding is the Rockaway River and its tributaries. The study will consider both structural and non-structural measures to reduce flood risk in Denville. Structural measures include floodwalls (including movable floodgates along roadway), limited widening of the channel or adding new culverts at bridge locations, pump stations, removal of the former Morris County pier, and road raising. Nonstructural
measures include flood-proofing or elevating houses, structure relocations, buyouts and a flood warning system.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.89394805,-74.47812483842702,14z

Counties: Morris County, New Jersey

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

REPTILES

NAME	STATUS
Bog Turtle *Glyptemys muhlenbergii* Population: Wherever found, except GA, NC, SC, TN, VA No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6962	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- The monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (FAQ found here: https://www.fws.gov/savethemonarch/FAQ-Section7.html).

Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Black-capped Chickadee *Poecile atricapillus practicus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Jul 31
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

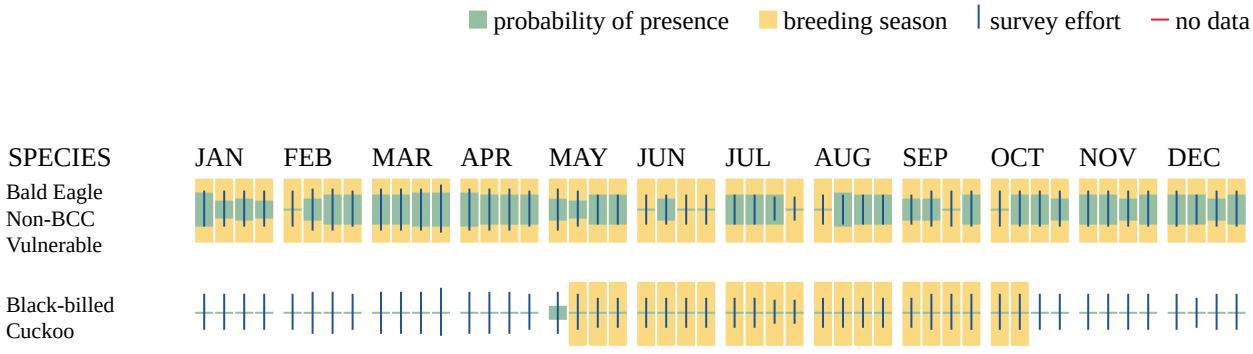
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

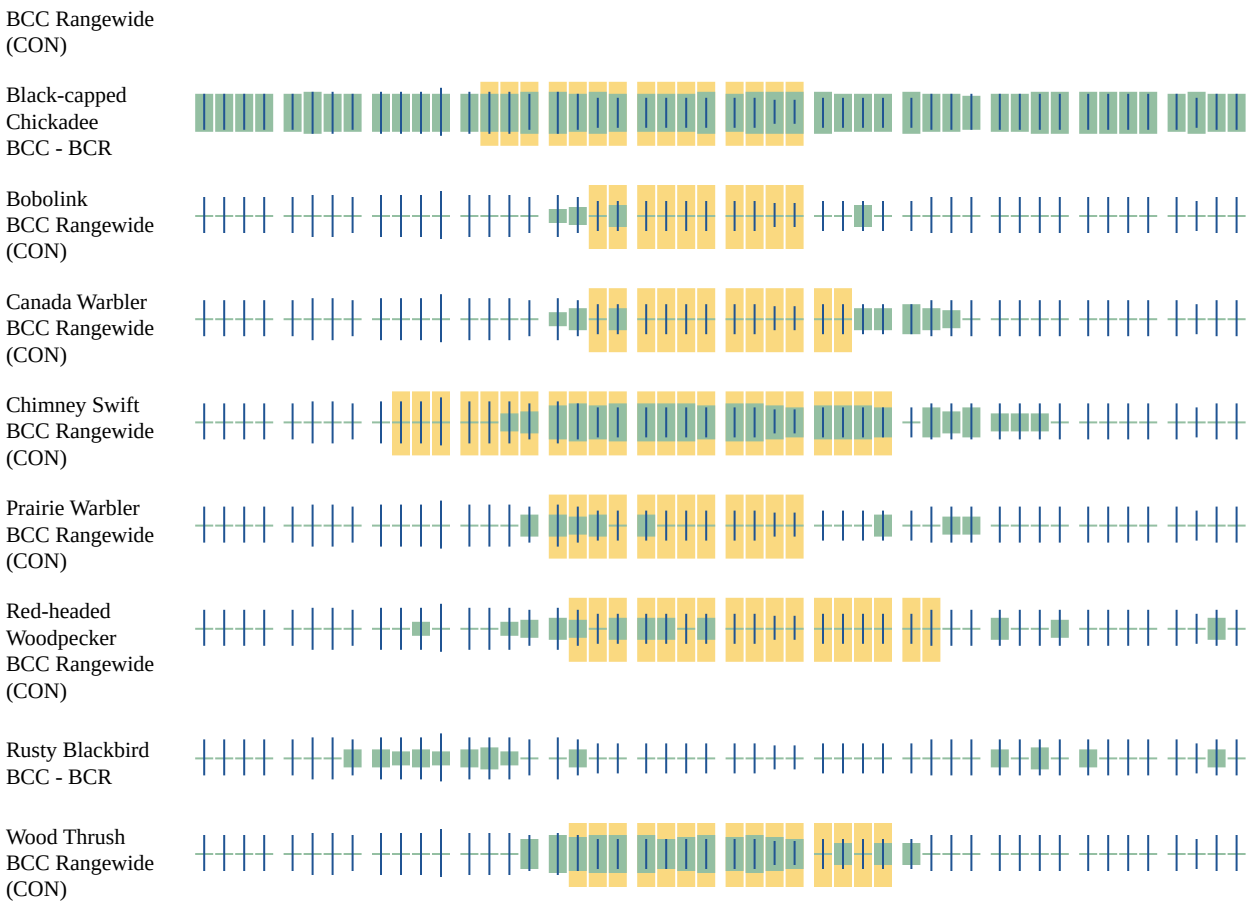
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R2UBF
- R5UBH
- R2UBH

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1A

IPAC USER CONTACT INFORMATION

Agency: Army Corps of Engineers
Name: Joseph Chandler
Address: 2 Hopkins Plaza
City: Baltimore
State: MD
Zip: 21201
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Phone: 4109622809

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Jersey Ecological Services Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, NJ 08205
Phone: (609) 646-9310

In Reply Refer To: May 22, 2023
Project code: 2023-0009834
Project Name: Denville, NJ CAP 205 Flood Risk Management Study

Federal Nexus: yes
Federal Action Agency (if applicable): Army Corps of Engineers

Subject: Record of project representative's no effect determination for 'Denville, NJ CAP 205 Flood Risk Management Study'

Dear Joseph Chandler:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 22, 2023, for 'Denville, NJ CAP 205 Flood Risk Management Study' (here forward, Project). This project has been assigned Project Code 2023-0009834 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter.

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may

include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Bog Turtle *Glyptemys muhlenbergii* Threatened
- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of “No Effect” on the northern long-eared bat. If there are no updates on listed species, no further consultation/ coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New Jersey Ecological Services Field Office and reference Project Code 2023-0009834 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Denville, NJ CAP 205 Flood Risk Management Study

2. Description

The following description was provided for the project 'Denville, NJ CAP 205 Flood Risk Management Study':

> The U.S. Army Corps of Engineers (USACE), New York District, in partnership with the New Jersey Department of Environmental Protection, is conducting a study to document the feasibility of implementing a flood risk management project in the Township of Denville, New Jersey (NJ). USACE Baltimore District is conducting the feasibility study. The study area includes the Rockaway River and Den Brook portion of Denville. Significant developed portions of the Township of Denville are subject to flooding. Township residents and businesses have suffered extensive losses and damage from several severe flooding events in recent decades. The primary source of this flooding is the Rockaway River and its tributaries. The study will consider both structural and non-structural measures to reduce flood risk in Denville. Structural measures include floodwalls (including movable floodgates along roadway), limited widening of the channel or adding new culverts at bridge locations, pump stations, removal of the former Morris County pier, and road raising. Nonstructural
> measures include flood-proofing or elevating houses, structure relocations, buyouts and a flood warning system.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.89394805,-74.47812483842702,14z

DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (Myotis septentrionalis). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Do you have post-white nose syndrome occurrence data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed acoustic detections. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   Yes

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

   Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   Yes

PROJECT QUESTIONNAIRE

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Army Corps of Engineers
Name: Joseph Chandler
Address: 2 Hopkins Plaza
City: Baltimore
State: MD
Zip: 21201
Email joseph.w.chandler@usace.army.mil
Phone: 4109622809

Attachment 1: Correspondence and Coordination

Coordination with government agencies, interested organizations, and Tribes for the proposed action was undertaken by USACE during preparation of the draft EA. The table below presents a summary of these efforts. The table excludes coordination between USACE and other agencies concerned with minor details of scheduling meetings and comparable non-policy activities.

Table: Summary Record of Coordination Undertaken During Preparation of Draft EA. Asterisk indicates copy of document provided in this EA.

Date	Person/Agency External to USACE	Summary
January 30, 2019	USFWS, Information, Planning, and Consultation System (website)	Generated list of threatened and endangered species that may occur in proposed project location, and/or may be affected by proposed project
April & May, 2019	Multiple agencies, elected officials, organizations, and libraries	USACE study initiation letter/notice* sent to mailing list*
May 2, 2019	USFWS, Ron Popowski	Ron and CS discussed level of involvement by USFWS. Based on expectation of low risk to USFWS trust resources, by mutual agreement did not develop SOW for USFWS FWCA/ESA support to USACE.
May 6, 2019	NJDEP, Office of Permit Coordination and Environmental Review, Ruth Foster	Acknowledged receipt of study initiation correspondence. Send electronic copy of EA as well as in hard copy once ready for review.*
May 15, 2019	USEPA, Michael Poetzsch	Acknowledged receipt of study initiation correspondence. Suggested considering the Hurricane Sandy studies' findings as well as acquisition programs of Green Acres/Blue Acres.*
May 28, 2019	NJDEP, HPO, Katherine Marcopul	HPO received initiation correspondence. Look forward to further coordination.*
May 31, 2019	FEMA, Michael Foley	Email from CS inquiring whether FEMA received study initiation letter
June 2019	Tribes and Nations	Study initiation letter/notice* sent to mailing list*

June 18, 2019	The Delaware Nation	Form letter acknowledging receipt of study initiation correspondence
August 21, 2019	FEMA, Michael Foley	AO left voice mail regarding study.
Feb 10, 2020	NJDEP, Kunal Patel, Chief, Bureau of Flood Engineering	CS sent email inquiring whether any structures/properties in downtown business district would qualify for purchase/acquisition under NJDEP Green or Blue Acres Programs. NJDEP director of acquisitions stated no current acquisitions or interest in Denville under those programs.

Denville Section 205 CAP Project - Study Initiation Notice NEPA Coordination/Mailing List. Spring 2019			
		Initiation	
		Letter	Notice
Federal agencies:			
	U.S. Fish and Wildlife Service Northeast Region (5)	X	
	EricSchrading, Field Office Supervisor		
	New Jersey Ecological Services Field Office		
	4 East Jimmie Leeds Road, Suite 4		
	Galloway, NJ 08205		
	NJFO_ProjectReview@fws.gov - use email address, do not mail a paper copy		
	Thomas Von Essen, Regional Adminstrator	X	
	Federal Emergency Management Agency		
	FEMA Region II		
	26 Federal Plaza		
	Suite 1307		
	New York, NY 10278		
	Mr. Peter Lopez, Regional Administrator		X
	U.S. Environmental Protection Agency Region 2		
	290 Broadway		
	New York, NY 10007-1866		
	USDA Natural Resources Conservation Service		X
	Hackettstown Service Center		
	Attn: Dan Mull, District Conservationist		
	101 Bilby Rd. Suite 1H		
	Hackettstown, NJ 07840-1753		
	dan.mull@nj.usda.gov		
	Robert Clark, Division Administrator		X
	USDOT Federal Highway Administration		
	New Jersey Division		
	840 Bear Tavern Road		
	Suite 202		
	West Trenton, NJ 08628		
State agencies:			
	New Jersey Department of Environmental Protection	X	
	Bureau of Dam Safety and Flood Control		
	Attn: John Ritchey		
	501 East State St.		
	P.O. Box 420		
	Trenton, NJ 08625-0420		
	Mail Code 501-01A		
	NJDEP	X	
	Office of Permit Coordination and Environmental Review		
	Dr Ruth Foster, Acting Director		
	PO Box 420 Mail Code 401-07J		
	Trenton, NJ 08625-0420		
	Ruth.Foster@dep.nj.gov		
	NJDEP		X
	Katherine Marcopul, Deputy SHPO		
	Historic Preservation Office		
	501 East State Street		
	Mail Code 501-04B		
	PO Box 420		
	Trenton, New Jersey 08625-0420		
	New Jersey Department of Environmental Protection		X
	Mail Code 401-02A		
	Division of Land Use Regulation		
	Water Resource Management		
	P.O. Box 420		
	401 E. State St.		
	Trenton, NJ 08625-0420		
	New Jersey Department of Environmental Protection		X
	Division of Fish and Wildlife		
	Mail Code 501-03		
	P.O. Box 420		
	Trenton, NJ 08625-0420		
	State of New Jersey		X
	Department of Environmental Protection		
	Green Acres Program		
	Mail 501-01		
	P.O. Box 420		
	Trenton, NJ 08625-0420		
Local agencies:			

	County of Morris		X
	Board of Chosen Freeholders		
	P.O. Box 900		
	Morristown, NJ 07963		
	https://morriscountynj.gov/about/contact/		
	County of Morris		X
	Department of Public Works		
	Engineering & Transportation Division		
	10 Court St		
	Morristown, NJ		
	Mayor Thomas Andes		X
	Township of Denville		
	1 Saint Mary's Place		
	Denville, NJ 07834		
	Township of Boonton		X
	Barbara Shepard, General Administrator		
	155 Powerville Road		
	Boonton Township, NJ 07005		
	bshepard@boontontownship.com		
	Rockaway Borough		X
	Honorable Russell Greuter, Mayor		
	Municipal Building		
	1 East Main Street		
	Rockaway, NJ 07866		
Organizations			
	Passaic River Coalition		X
	330 Speedwell Avenue		
	Morristown, NJ		
	info@passaicriver.org		
	Sierra Club		X
	New Jersey Chapter		
	145 West Hanover Street		
	Trenton, NJ 08618		
	https://www.sierraclub.org/new-jersey/contact-us		
	Association of New Jersey Environmental Commissions (ANJEC)		X
	P.O. Box 157		
	Mendham, NJ 07945		
	info@anjec.org		
	Morris County Historical Society		X
	info@morriscountyhistory.org		
	Judy McBride		X
	Denville Historical Society & Museum		
	113 Diamond Spring Road		
	Denville, NJ 07834		
	Peg Shultz, Acting Director		X
	Morris County Heritage Commission		
	30 East Hanover Avenue		
	Whippany, NJ 07981		
Tribes			
	Deborah Dotson, President		X
	Delaware Nation		
	3 Miles North of Anadarko on Highway 281		
	Main Office Building 100		
	Anadarko, OK 73005		
	Susan Bachor, DTHPO		X
	Special Assistant Eastern Office		
	P.O. Box 64		
	Pocono Lake, PA 18347		
	Ron Sparkman, Chairman		X
	Shawnee Tribe		
	29 South Highway 69A		
	Miami, OK 74355		
Libraries			
	Denville Township Public Library		X
	121 Diamond Spring Rd		
	Denville, NJ 07834		
	Morris County Public Library		X
	30 East Hanover Ave		
	Whippany, NJ 07981		

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201

Planning Division

APR 19 2019

NJ Department of Environmental Protection
Office of Permit Coordination and Environmental Review
Dr. Ruth Foster, Acting Director
PO Box 420 Mail Code 401-07J
Trenton, NJ 08625-0420

Dear Dr. Foster:

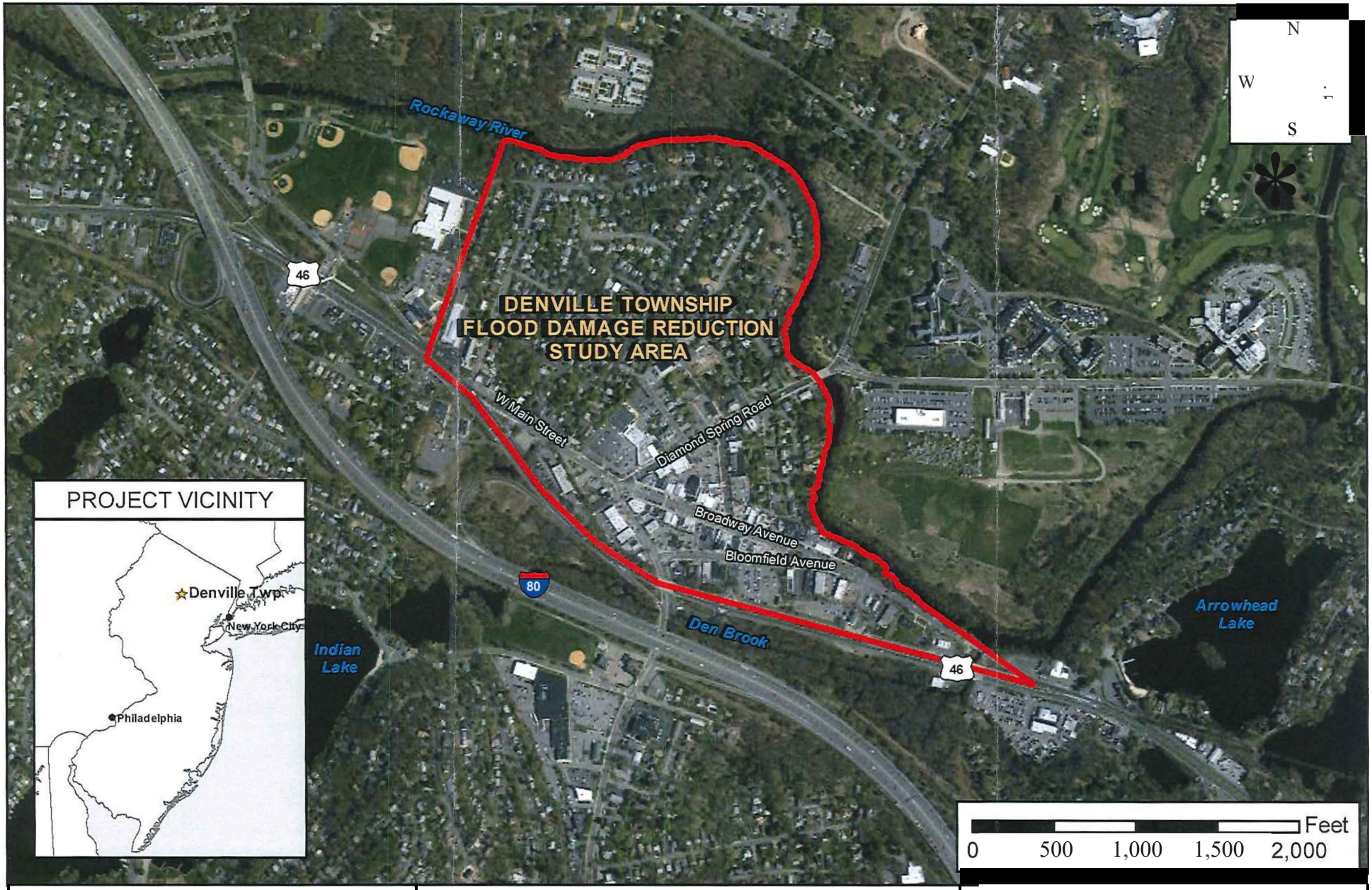
The U.S. Army Corps of Engineers (USACE), in partnership with the New Jersey Department of Environmental Protection (NJDEP), is conducting a study to document the feasibility of implementing a flood risk management project in the Township of Denville, New Jersey (NJ). Denville is located approximately 25 miles northwest of Newark, NJ (Enclosure). Authority for this study is provided by Section 205 of the Continuing Authorities Program, under which USACE can partner with a non-federal sponsor to plan, design, and construct small flood control projects. USACE is preparing an environmental assessment (EA) for this study in accordance with the National Environmental Policy Act of 1969, as amended. USACE New York District is managing the study. USACE Baltimore District is preparing the EA. The draft EA will be integrated into the project feasibility report, and is expected to be publicly released in June 2020.

The study is focused on the central part of Denville, which is subject to flooding from the Rockaway River and Den Brook. Township residents and businesses have suffered extensive losses and damage from multiple flooding events in recent decades. Hurricane Irene caused severe damage in 2011. The USACE/NJDEP study will consider both structural and non-structural measures. Structural measures under preliminary consideration include improving interior drainage, constructing floodwalls (including floodgates along roadways), and raising road elevations. Non-structural measures that appear promising include flood-proofing or elevating houses.

Please provide any information or concerns your agency may have that may assist us in preparation of the EA within 30 days of the receipt of this letter, as well as a point of contact, and indicate the degree to which your agency would like to be involved. If you have any questions, please contact Mr. Christopher Spaur at (410) 962-6134 or by email at christopher.c.spaur@usace.army.mil.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division



US Army Corps of Engineers®

Denville Township
Section 205 Flood Damage Reduction Study
Morris County, New Jersey

Study Area

US Army Corps of Engineers
Baltimore District

Public Notice

Denville, Morris County, NJ: Flood Risk Management Study

All Interested Parties: The U.S. Army Corps of Engineers (USACE), in partnership with the New Jersey Department of Environmental Protection (NJDEP), is conducting a study to document the feasibility of implementing a flood risk management project in the Township of Denville, New Jersey (NJ). Denville is located approximately 25 miles northwest of Newark, NJ (Enclosure). Authority for this study is provided by Section 205 of the Continuing Authorities Program, under which USACE can partner with a non-federal sponsor to plan, design, and construct small flood control projects. USACE is preparing an environmental assessment (EA) for this study in accordance with the National Environmental Policy Act of 1969, as amended. USACE New York District is managing the study. USACE Baltimore District is preparing the EA. The draft EA will be integrated into the project feasibility report, and is expected to be publicly released in June 2020.

The study is focused on the central part of Denville, which is subject to flooding from the Rockaway River and Den Brook. Township residents and businesses have suffered extensive losses and damage from multiple flooding events in recent decades. Hurricane Irene caused severe damage in 2011. The USACE/NJDEP study will consider both structural and non-structural measures. Structural measures under preliminary consideration include improving interior drainage, constructing floodwalls (including floodgates along roadways), and raising road elevations. Non-structural measures under preliminary consideration include flood-proofing or elevating houses.

Study efforts are being coordinated with other federal and state agencies, local governments and the public. USACE and NJDEP are seeking input on flooding and other concerns, which may be of value to development of the study, as well as area-specific considerations important in assessing associated impacts to the environment.

For federal and state agencies receiving a copy of this notice, we request that you provide information concerning interests within your organization's area of responsibility or expertise within 30 days of the date of this notice to the address below. A timely review of the enclosed information and a written response will be greatly appreciated and will assist us with proper scoping of this study.

Information about the study is available at the website https://www.nan.usace.army.mil/. If you have any questions regarding this study, please contact Christopher Spaur by email at christopher.c.spaur@usace.army.mil, telephone at 410-962-6134, or mail at USACE, Planning Division, 2 Hopkins Plaza, Baltimore, MD 21201.

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

Spaur, Christopher C CIV USARMY CENAB (US)

From: Foster, Ruth <Ruth.Foster@dep.nj.gov>
Sent: Monday, May 6, 2019 3:16 PM
To: Spaur, Christopher C CIV USARMY CENAB (US)
Cc: Foster, Ruth; Moyle, John
Subject: [Non-DoD Source] Denville Rockaway River Flood Control feasibility NJDEP contacts
Attachments: 042919 USACE Denville Roackaway River Flood Control FS Scoping doc.pdf

Mr. Spauer – The Office of Permit Coordination and Environmental Review has received your letter dated April 19, 2019. While the lead agency will be the Department's Division of Dam Safety, our office will be assisting Dam Safety by coordinating NEPA document review. We look forward to reviewing the EA when available - please send electronically with one hard copy for our files.

If you have any immediate questions please do not hesitate to call John or me and we look forward to working with you.

John Moyle, Dam Safety – (609) 984-0859

Ruth W. Foster, PhD., P.G., Director

New Jersey Department of Environmental Protection

Office of Permit Coordination and Environmental Review

Mail Code 401-07J

401 East State Street – PO Box 420

Trenton, NJ 08625

Office # 609-292-3600

Fax # 609-292-1921

Ruth.Foster@dep.nj.gov <mailto:Ruth.Foster@dep.nj.gov>

From: Moyle, John
Sent: Monday, May 6, 2019 3:02 PM
To: Foster, Ruth <Ruth.Foster@dep.nj.gov>; Brunatti, Megan <Megan.Brunatti@dep.nj.gov>
Cc: VonBriel, Robert <Robert.VonBriel@dep.nj.gov>; Reinknecht, Dennis <Dennis.Reinknecht@dep.nj.gov>; Bearce, Randy <Randy.Bearce@dep.nj.gov>
Subject: Re: Denville Rockaway River Flood Control feasibility

Rurh: This project falls under the Division of Dam Safety and Flood Control. There is no tidal influence.

John

Sent via the Samsung Galaxy S®6 active, an AT&T 4G LTE smartphone

-------- Original message --------

From: "Foster, Ruth" <Ruth.Foster@dep.nj.gov <mailto:Ruth.Foster@dep.nj.gov> >

Date: 5/6/19 2:59 PM (GMT-05:00)

To: "Brunatti, Megan" <Megan.Brunatti@dep.nj.gov <mailto:Megan.Brunatti@dep.nj.gov> >, "Foster, Ruth" <Ruth.Foster@dep.nj.gov <mailto:Ruth.Foster@dep.nj.gov> >

Cc: "Moyle, John" <John.Moyle@dep.nj.gov <mailto:John.Moyle@dep.nj.gov> >, "VonBriel, Robert" <Robert.VonBriel@dep.nj.gov <mailto:Robert.VonBriel@dep.nj.gov> >, "Reinknecht, Dennis" <Dennis.Reinknecht@dep.nj.gov <mailto:Dennis.Reinknecht@dep.nj.gov> >, "Bearce, Randy" <Randy.Bearce@dep.nj.gov <mailto:Randy.Bearce@dep.nj.gov> >

Subject: Denville Rockaway River Flood Control feasibility

John – would your office be lead with PCER assistance or Rob – would this be your office? ACOE looking for contacts and EA currently being prepared . Let me know by 5/19 if possible

Rockaway River and Den Brook flood control 25 miles inland from Newark

Randy – any tidal?

Ruth W. Foster, PhD., P.G., Director

New Jersey Department of Environmental Protection

Office of Permit Coordination and Environmental Review

Mail Code 401-07J

401 East State Street – PO Box 420

Trenton, NJ 08625

Office # 609-292-3600

Fax # 609-292-1921

Ruth.Foster@dep.nj.gov <mailto:Ruth.Foster@dep.nj.gov>

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

May 15, 2019

Mr. Daniel M. Bierly, P.E.
U.S. Army Corps of Engineers (USACE)
Civil Projects, Development Branch
Planning Division,
2 Hopkins Plaza
Baltimore, MD, 21201

RE: Public Notice Denville, Morris County, NJ Flood Risk Management Study, dated April 19, 2019

Dear Mr. Bierly:

The U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Army Corps of Engineers (USACE) Public Notice dated April 19, 2019 describing a proposed study to document the feasibility of implementing a flood risk management project in the Township of Denville, New Jersey. In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, we are providing scoping comments for the anticipated draft Environmental Assessment (DEA) that will be released in June 2020. This study is focused on the central part of Denville which is subject to flooding from the Rockaway River and Den Brook. The study will consider both structural measures such as raising roadways or floodwalls and non-structural measures such as elevating houses or flood proofing.

We understand that coastal flooding concerns along the Atlantic Coast of New Jersey have previously been evaluated by a Federal Coastal Storm Risk Management Program Hurricane Sandy Coastal Projects Performance Evaluations Study (CSRM HSCPPES) prepared by the USACE. Many areas within the region experienced extensive damage during Hurricane Sandy and subsequent coastal events, due to low elevation areas and highly developed residential and commercial infrastructure along the back-bay coastline. We anticipate that findings of this study would be considered when preparing future documents related to this project as it is within the area evaluated in the CSRM HSCPPES.

Please note if homeowner buyouts/acquisitions will be considered in the study, under the State of New Jersey Green Acres and Blue Acres Programs, properties (including structures) that have been damaged by, or may be prone to incurring damage caused by, storms or storm-related flooding, or that may buffer or protect other lands from such damage, are eligible for acquisition. Additional information is available on the web at:
http://www.state.nj.us/dep/greenacres/blue_flood_ac.html.

Thank you for the opportunity to comment. Should you have any questions regarding the comments and concerns detailed in this letter, please feel free to contact Michael Poetzsch at 212-637-4147.

Sincerely,

Lingard Knutson

Lingard Knutson, Acting Team Leader,
Environmental Review Team

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NATURAL & HISTORIC RESOURCES
HISTORIC PRESERVATION OFFICE
MAIL CODE 501-04B
P.O. BOX 420
TRENTON, NJ 08625-0420
TEL: # 609-984-0176 FAX: # 609-984-0578

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. McCABE
Commissioner

May 28, 2019

Daniel M. Bierly
Chief, Civil Project Development Branch
Panning Division
Department of the Army
Corps of Engineers, Baltimore District
2 Hopkins Plaza
Baltimore, Maryland 21201

Re: Morris County, Denville Township
Denville Flood Risk Management Study

Dear Mr. Bierly:

Thank for your submission regarding the proposed United States Department of the Army, Corps of Engineers (Corps) and New Jersey Department of Environmental Protection feasibility study for flood risk management in Denville Township, Morris County. The Historic Preservation Office (HPO) reviews projects for their effects on historic properties when federal funding, licensing, or permitting is involved. Section 106 of the National Historic Preservation Act of 1966, as amended, (16 U.S.C. 470f) requires federal agencies to take into account the effects of their undertakings on historic properties. The HPO consults with federal agencies in identifying historic properties and avoiding or minimizing any potential adverse effects from federally funded, licensed, or permitted undertakings.

The HPO also review projects requiring Freshwater Wetlands permits, Waterfront Development permits, and/or Upland Development permits, and Highland Preservation Area Approval Permits issued by the State of New Jersey's Department of Environmental Protection, Division of Land Use Regulation, as well as environmental assessments under Executive Order 215. In these cases, the HPO consults with the Department of Environmental Protection and makes recommendations for the identification and treatment of historic properties.

The HPO's cultural resource data is available online through the HPO's online mapping tool, LUCY: https://www.nj.gov/dep/hpo/1identify/gis.htm. This Cultural Resources Geographic Information System (CRGIS) includes data on all resources included in, or formally determined eligible for inclusion in the New Jersey and National Registers of Historic Places. Please note however, while the HPO's CRGIS does include some information pertaining to archaeological site

sensitivity, the HPO is not the repository for archaeological site registration information or site data. Information regarding registered archaeological sites within New Jersey is managed by the Bureau of Archaeology and Ethnology at the New Jersey State Museum. For more information on the presence of archaeological sites within the proposed area of potential effects, please contact Dr. Gregory Lattanzi, Curator and State Archaeologist, Bureau of Archaeology and Ethnology, at 609-984-9327.

Independent file review and research may be conducted at the Historic Preservation Office. Our collection includes New Jersey and National Registers of Historic Places nomination and opinion of eligibility files, cultural resource surveys, inventories and reports, as well as a small reference library. Please contact the HPO at 609-984-0176 for required file review training and for file review appointments, once trained. Please see the HPO website for further information: http://www.nj.gov/dep/hpo/4sustain/info.htm#tatraining.

The HPO looks forward to further consultation with the Corps regarding the identification, evaluation, and treatm mt of historic properties within the undertaking's area of potential effects, pursuant to Section 106 of the National Historic Preservation Act, as amended.

Additional Comments

Thank you for providing this opportunity to review and comment on this proposed project. If additional consultation with the HPO is needed for this undertaking, please reference the HPO project number 19-2207 in any future calls, emails, submissions or written correspondence·to help expedite your review and response. If you have any questions, please feel free to contact Jesse West-Rosenthal (609-984-6019) of my staff with questions regarding archaeology or Lindsay Thivierge (609-292-4091) with questions regarding historic architecture.

Sincerely,

Katherine J. Marcopul

Katherine J. Marcopul
Deputy State Historic
Preservation Officer

Cc: Christopher Spaur. USACE (via e-mail)

KJM/JWR

ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

ATTACHMENT 2: CLEAN AIR ACT PRIORITY POLLUTANTS AND PRECURSORS OF CONCERN: EMISSIONS ESTIMATE AND IMPLICATIONS

Attachment 2: Clean Air Act Priority Pollutants and Precursors of Concern: Emissions Estimate and Implications

CONTENTS

I INTRODUCTION

Emissions of Clean Air Act priority pollutants and precursors of concern needed to be estimated for proposed USACE flood-risk management (FRM) measures in Denville, NJ, to ensure compliance with the Clean Air Act.

This estimate was prepared in March 2021. Alternative plans then under consideration would involve retrofit construction of non-structural FRM measures on approximately 145 structures in the downtown business district. The emissions would arise entirely from mobile sources. Emissions would originate from vehicles and other equipment during construction at the sites, as well as construction vehicles travelling to and from the construction site.

II PROJECT INFORMATION

A Physical Description

The proposed project would undertake non-structural FRM improvements to structures of the Denville downtown business district. Within seven cluster areas, approximately 25 non-residential (commercial) structures and approximately 120 residential structures would be treated. FRM for residential structures would be provided primarily by elevating structures such that living spaces (typically from the 1st floor up) would no longer be vulnerable to the 1% annual chance event. Some residential structures would be wet flood-proofed instead to the 1% annual chance event. For non-residential structures, FRM would be provided via wet or dry floodproofing.

During the elevation process, most frame, masonry veneer, and masonry homes are separated from their foundations, physically lifted and raised on hydraulic jacks, and held by temporary supports while a new or extended foundation is constructed below. When homes are lifted with this technique, the new or extended foundation can consist of continuous walls or separate piers, posts, columns, or piles. The method used depends largely on construction type, foundation type, and flooding conditions (FEMA, 2014).

Wet floodproofing techniques include raising utilities and important contents to or above the flood protection level, installing and configuring electrical and mechanical systems to minimize disruptions and facilitate repairs, installing flood openings or other methods to equalize the hydrostatic pressure exerted by floodwaters, and installing pumps to gradually remove floodwater from basement areas after the flood. Wet floodproofing requires a variety of modifications to a structure, including its walls, construction and finishing materials, and service equipment (FEMA, 2014).

Dry floodproofing involves completely sealing the exterior of a building to prevent the entry of flood-waters. Dry floodproofing seals all openings below the flood level and relies on the walls of the building to keep water out. Even if a structure is dry floodproofed, water can still seep through small openings in the sealant system or through the gaskets of shields that are protecting openings (doors and windows). Internal drainage systems, utilizing sump pumps, are required to

remove any water that has seeped through and to remove water collected from any necessary underdrain systems in the below-grade walls and floor of the structure (FEMA, 2014).

B. Construction Equipment Details

Cost engineering prepared a list of necessary construction equipment, operating hours, fuel type, and duration of use in months using other USACE studies and projects equipment lists plus previous design experience as a basis[1]. The equipment list was generated by project categories established based upon severity of flooding event that FRM would be provided for (e.g., 100-year), and type of construction work (e.g., elevation). Resultant categories of projects are listed in Table 1 below.

Table 1: Project categories for generation of equipment list

Flood Event Frequency (yrs)	Structure Treatment
5	Dry Floodproofing
10	Dry Floodproofing
25	Dry Floodproofing
100	Elevation
100	Wet Floodproofing

Cost engineering generated an equipment list for each project category. The number of hours required for each piece of equipment was estimated per project category within each cluster based on the number of structures within each project category. The cost engineer estimated construction duration for each cluster individually based upon working a 40 hour work week. The cost engineer did not think it would be possible to foresee how many contractors would be involved in the multiple clusters, so a construction duration was not forecast for all the clusters together. The total number of contractors would likely affect duration. The cost engineer anticipated that construction could occur year-round, but that cold weather would limit certain tasks, and accounted for that in the forecast of construction duration for each cluster.

The estimate assumes all equipment and labor is available in close proximity to Denville in metropolitan northern NJ. It is assumed that localized cut and fill volumes of earth within the project sites would largely balance, and contractors would need to borrow to bring in borrow or haul earth away from the project site.

III AIR QUALITY BACKGROUND

A Regulations

The Clean Air Act establishes the framework for improving air quality to protect public health and the environment. General Conformity rules of the act apply to all non transportation-related projects, except actions exempted because they would cause only de minimis levels, are presumed to conform, or are specifically identified as exempt. Because the proposed action

[1] Including General Investigation study for flood risk management along the tributaries of the Connecticut River located in Vermont, South Central Coastal Louisiana Feasibility Study

would not be explicitly exempt, and it is not intuitive whether emissions would violate de minimis levels, it is necessary to quantitatively estimate emissions. The general conformity program is an emission-based system - the program requires emissions to be evaluated and addressed as necessary, such as by mitigation measures (USEPA, No Date).

The goal of general conformity is to ensure that non-transportation actions conducted or sponsored by federal agencies are consistent with State air quality goals. It is called a conformity rule because Federal agencies are required to demonstrate that their actions conform with (i.e. do not undermine) the approved State Implementation Plan (SIP) for their geographic area. Each state develops a SIP which provides the state's strategy for attaining or maintaining the National Ambient Air Quality Standards (NAAQS). These air quality goals are tied to states meeting the NAAQS established by the U.S. Environmental Protection Agency (USEPA). The conformity process ensures that emissions of air pollutants from planned federal activities would not affect the state's ability to achieve the clean air goal of meeting the NAAQS. The General Conformity Regulations apply in nonattainment and maintenance areas designated by USEPA. A nonattainment area is an area designated by USEPA as not meeting a NAAQS where the air is more polluted than acceptable and threatens human and environmental health. A maintenance area is an area that was once designated as nonattainment but is currently meeting and maintaining the standard (USEPA, No Date).

Six criteria pollutants that can injure health, harm the environment and cause property damage are evaluated by the USEPA to determine air quality in an area. NAAQS for each of the criteria pollutants set permissible levels of these criteria pollutants in outdoor air. If the air quality in a geographic area meets or does better than the national standard, it is called an attainment area. USEPA promulgated de minimis emissions levels for each of the NAAQS pollutants. If the total emissions from an action are less than the de minimis levels, the action is exempt from General Conformity rules. The de minimis levels are based on an area's designation and classification (USEPA, No Date).

Morris County is located in the New York–Northern New Jersey–Long Island, NY-NJ-CT Air Quality Control Region (US Environmental Protection Agency [USEPA], 2019). The New York–Northern New Jersey–Long Island, NY-NJ-CT Air Quality Control Region is also in the Ozone Transport Region. The Ozone Transport Region includes states in the northeast United States that must adhere to stricter conformity thresholds for nitrogen oxides (NOx) and volatile organic compounds (VOCs), which are precursors for ground-level ozone (O_3).

B Study Area Air Quality

Similar to most urban industrial areas, emissions from automobiles, manufacturing processes, and utility plants have affected air quality in the study area. Levels of some pollutants are largely affected by emissions from regional upwind sources outside of NJ. Air quality in NJ has generally improved over the last 40 years (Denville, 2014).

Morris County is designated as a moderate nonattainment area for ground-level ozone (8 hour Ozone 2008 and 2015 standards). Morris County is designated in maintenance for carbon

monoxide and fine inhalable particulate matter less than 2.5 micrometers in size ($PM_{2.5}$) (USEPA, 2019).

Because ground-level ozone, carbon monoxide, and PM2.5 pollutants remain a concern in Denville, NJ, it is necessary to determine if emissions for these priority air pollutants or their precursors of concern could exceed de minimis threshold levels published in the Code of Federal Regulations (Table 2). Under the current USEPA policy for PM2.5 precursors, SO_2 and NO_x must be evaluated in all regions.

Table 2: *De minimis* emission levels (USEPA, 2017[2]).

Priority Pollutant	**Precursor of Concern**	***De minimis* emission (TPY)**
Carbon monoxide	(Not applicable)	100
Ozone	NO_x	100
	VOC	50
$PM_{2.5}$	Direct Emissions	100
	SO_2	100
	NO_x	100

IV METHODS

A Procedures to Estimate Emissions

U.S. Environmental Protection Agency (USEPA) Motor Vehicle Simulator (MOVES) (version MOVES2014a) was used to determine total project emissions using the cost engineering equipment list described above.

USEPA MOVES incorporates consideration of multiple variables utilized in emission estimate equations. MOVES contains an inventory of equipment types that incorporate consideration of information needed to estimate emissions from these equipment types. Equipment types were determined by comparing information from the project equipment inventory provided by the cost engineer to MOVES equipment type descriptions.

Emissions from vehicles can vary substantially from national averages as a function of local climate (humidity and temperature range at time of travel). MOVES considers local conditions by region. In this case, estimates were run using climatic conditions of the Morris County, New Jersey region.

MOVES estimates air pollution emissions from on-road mobile sources and non-road equipment through a range of user-defined parameters. Separate MOVES run specifications were created to separately model the project's on-road and non-road emission sources.

B. USEPA MOVES Input Databases

[2] Summarized from 40 CFR 93 § 153

The project description and project-based assumptions were used to define model input parameters for the on-road and non-road run specifications. The following panels were defined during the modeling process for each run: scale, time span, geographical bounds, vehicle type, road type, pollutant and process, and output emissions. The input values for the on-road and non-road MOVES models, and rationale for each selection, are presented in Attachment Table A and Table B, respectively.

C. USEPA MOVES Model Output Database

The MOVES model performs a series of calculations from the user-defined inputs and provides an estimate of total emissions or emission rates per vehicle unit of activity for each run specification. The results for an executed MOVES run are stored in the following three main output database tables:

- MOVESOutput Table – contains the quantity of emissions by source type, pollutant process, etc. It is based upon output detail selections made in the run specification.

- MOVESActivityOutput Table – Contains the quantities (miles, number of vehicles, starts, or hours) of activity types selected in the General Output panel during run specification creation. These can be useful to check that all activity entered in MOVES was accounted for during the run.

- MOVESRun Table – Information about the run specification such as the date/time of the run specification, domain and scale, and the units selected.

Based on the MOVES run specification selected post-processing scripts were applied to the output databases to provide detailed information for estimating emissions over the entire project.

1. On-road MOVES Run Specification

The on-road MOVES run specification was executed, and the "TabbedOutput.sql" post-processing script was run on the output database. This script produces a tab-deliminated output suitable for reading into an Excel spreadsheet from the MOVES MySQL database output tables.

The generated script was saved as a text file and imported into an Excel spreadsheet. Based on the general output panel, the quantity of emissions was presented in units of grams per hour and the total energy consumption is presented in units of joules. The quantity of emissions from the MOVESOutput table was condensed into an Excel pivot table where the passenger truck and single unit short-haul truck pollutant emissions were tabulated over a twelve-month period. An emission rate was calculated per vehicle based on an average of the pollutant emissions over the course of the year. This emissions rate was imported into the equipment list, where Equation 1 was used to determine the total emissions quantity in tons for the on-road vehicle. This equation utilizes the estimated operational hours per vehicle provided by the Cost Engineer.

$$Equation\ 1 \qquad Emissions\ Rate\ \frac{grams}{hour}\ \text{x}\ Operational\ Hours\ \text{x}\ \frac{1\ ton}{907185\ grams} = Pollutant\ Quantity\ \ (tons)$$

Detailed results of the on-road calculation and estimate of emissions by equipment is presented in Attachment C.

2. Non-road MOVES Run Specification

The non-road MOVES run specification was executed, and the "Emission Factor per Operating Hour by Equipment" post-processing script was run on the non-road output database. This script generates emission factors for each selected pollutant per operating hour by fuel type and equipment type.

The generated script was saved as an Excel spreadsheet, and condensed into an Excel pivot table where the non-road equipment emissions were tabulated over a twelve-month period. An emission rate was calculated per equipment type based on an average of the pollutant emissions over the course of the year. This emissions rate was imported into the equipment list where, similar to the on-road vehicles, Equation 1 was used to determine the total pollutant quantity in tons for the non-road equipment.

Detailed results of the calculation and an estimate of emissions for each piece of non-road equipment is presented in Attachment C.

V RESULTS

A summary of the cumulative total of on-road and non-road emissions for the pollutants of concern and their precursors is presented in Table 3. A detailed breakdown of the total emissions by the seven areas, sub-divided based on wet and dry floodproofing methods, can be found in the attachments.

Table 3: Emissions of pollutants of concern and their precursors. (Rounded to nearest 100th.)

Source	Pollutant of Concern or Precursor Emissions (tons/yr)				
	CO	**NOx**	**SO2**	**VOCs**	**Primary Exhaust PM2.5 - Total**
On-Road MOVES	3.46	3.60	0.00	0.41	0.01
Non-Road MOVES	1.27	0.33	0.01	0.43	0.25
Total	**4.73**	**3.93**	**0.01**	**0.84**	**0.26**

VI CONCLUSION

As summarized in Table 3, this analysis found that total emissions of the pollutants and precursors of concern were in every case below the de minimis thresholds (Table 2). It is anticipated that review of this estimate by USEPA and NJDEP will confirm the findings of this analysis.

There is uncertainty in the accuracy of the estimates given the numerous assumptions made and of the parameter values. However, because the emissions estimates are substantially less than de minimis levels, no mitigation measures that could reduce emissions were evaluated. (These could have included scenarios such as minimizing construction during warm weather months or other measures).

VII REFERENCES

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Table A: On-Road MOVES Model Input Values.

Panel		Selected Input	Rationale
Scale	Model	Onroad	Runspec to estimate emissions from onroad equipment.
	Domain/Scale	County	The county domain/scale was chosen based on "MOVES2014a Technical Guidance: Using MOVES to Prpare Emission Inventories for State Implementation Plans and Transportation Conformity" which suggests the county scale setting be selected for SIP and regional conformity analysis.
	Calculation Type	Inventory	Inventory was chosen as the calculation type based on the type of project and location of the project in a single county.
Time Spans	Time Aggregation Level	Hour	As noted in the "MOVES2014a Users Guide" - for all regulatory purposes, Time Aggregation Level should be set to hour.
	Years	2022	Assumed year for start of construction
	Months	All	All months were selected in order to average the emissions rate over the course of the year.
	Days	Weekdays	Based on the assumption that the contractor would work for 8 hours per day for 40 hours per week.
	Hours	Start Hour: 00:00 - 00:59 End Hour: 23:00 - 23:59	As noted in the "MOVES2014a Users Guide" all hours must be selected for any run that estimated hydrocarbon emissions.
Geographic Bounds	Region	County	The county option was selected as stated above under Domain/Scale, and only one county is being analyzed under this Runspec.
	Selections	NEW JERSEY - Morris County	The location of the project is in Morris County, New Jersey.
Vehicles/Equipment	On Road Vehicles	Diesel Fuel - Single Unit Short-haul Truck Gasoline - Passenger Truck	Based on the equipment list provided by the cost engineer on-road vechicles include gasoline pick-up trucks and diesel fuel single unit short-haul trucks.
Road Type	Selected Road Type	Off-Network Urban Restricted Access Urban Unrestricted Access	The road types at the project location would be considered Off-Network (all locations where the predominant activity is vehicle starts, parking, idling), Urban Restricted Access (urban highways than can only be accessed by an on ramp), and Urban Unrestricted Access (all other urban roads - arterial, connectors, and local streets).

Table A: On-Road MOVES Model Input Values.

Panel		Selected Input	Rationale
Pollutants and Process	Total Gaseous Hydrocarbons	Running Exhaust, Start Exhaust, Evap. Permeation, Evap. Fuel Vapor Venting, Evap, Fuel Leaks, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	These polluatants and processes associated with a particular pollutant (as noted under Selected Input) were chosen in order to account for the emissions of that pollutant.
	Non-Methane Hydrocarbons	Running Exhaust, Start Exhaust, Evap. Permeation, Evap. Fuel Vapor Venting, Evap, Fuel Leaks, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	Volatile Organic Compounds	Running Exhaust, Start Exhaust, Evap. Permeation, Evap. Fuel Vapor Venting, Evap, Fuel Leaks, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	Methane (CH4)	Running Exhaust, Start Exhaust, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	Carbon Monoxide (CO)	Running Exhaust, Start Exhaust, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	Oxides of Nitrogen (NOx)	Running Exhaust, Start Exhaust, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	Primary Exhaust PM2.5 - Total	Running Exhaust, Start Exhaust, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	[+] Primary Exhaust PM2.5 - Species	Running Exhaust, Start Exhaust, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	Sulfur Dioxide (SO2)	Running Exhaust, Start Exhaust, Crankcase Running Exhaust, Crankcase Start Exhaust, Crankcase Extended Idle Exhaust, Extended Idle Exhaust, Auxilliary Power Exhaust	
	Total Energy Consumption	Running Exhaust, Start Exhaust, Extended Idle Exhaust, Auxillary Power Exhaust	
	Atmospheric CO2	Running Exhaust, Start Exhaust, Extended Idle Exhaust, Auxillary Power Exhaust	

Table A: On-Road MOVES Model Input Values.

Panel		Selected Input	Rationale
Manage Input Data Sets	Selections	None Selected	The "MOVES2014a Users Guide" states that the Manage Input Data Sets Panel is not used in most cases, and its function has been replaced by the County Data Manager. Therefore, there were no inputs in this panel.
Strategies	Rate of Progress	None Selected	There was no need to model a "no Clean Air Act Amendments"' scenario as part of an ozone reasonable further progress SIP. Therefore, nothing was selected under this panel.
General Output	Database	denville_onroad_030521_out	This is the created Output database where the Runspec results are stored and the units reported.
	Units	Mass Units: Grams Energy Units: Joules Distance Units: Miles	Grams was chosen as the mass units to reduce the possible loss of significant figures.
	Activity	Distance Traveled, Source Hours, Hotelling Hours, Source Hours Operating, Source Hours Parked, Population, Starts	At a minimum the EPA recommends including distance travelled and population be selected in all Runspecs.
Ouput Emission	Always	Time: Hour, Location: COUNTY, Pollutant	Hour was chosen to estimate the emissions by time of day, and county was selected because the Runspec is at county scale.
	for All Vehicle/Equipment Categories	Fuel type, Emissions Process	The default values would provide detailed emission for each fuel type and emissions process. Model year reaults for each source type was not needed.
	On and Off Road	Road Type, Source Use Type, SCC	SCC and default values were chosen as values to be reported in the output.
Advanced Performance	-	None Selected	Based on the "MOVES2014a Users Guide" which states that the advanced performance features panel is generally not used, there were no inputs into this section.
County Data Manager	Source Type Population	Gasoline Passenger Truck 1 Vehicle	Based on the provided information the number of vehicles for each source type being modeled is one.
		Diesel Single Unit Short-haul Truck 1 Vehicle	
	Road Type Distribution	25% travel on Urban Unrestricted Access roads 75% travel on Urban Restricted Acess Roads	Based on the project location it is assumed that 75% of travel will be on urban restricted access roads and 25% on urban unrestricted access roads.
	I/M	Default Data Used	
	Age Distribution	Gasoline Passenger Truck 0 trough 2 years old = 0.0427 3 through 5 years old = 0.0787 6 through 9 years old = 0.0676 10 through 30 years old = 0.0174	Based on the average age distribution published in the "2009 National Household Travel Survey of the U.S. Department of Transportation, Federal Highway Administration," the average age distribution of vans/trucks in 2009 was 0-2 years = 12.8%; 3-5 years = 23.6%; 6-9 years = 27.1%; 10 or more years = 36.6%. These percentages were used to determine the age fractions of the passenger trucks (Example: 0 through 2 years = (0.128/(3 years)) = 0.0427)
		Diesel Single Unit Short-haul Truck 17 years = 1.0 or 100%	Based on the Bureau of Transportation Statistics the average age of other trucks in 2017 was 17.3 years. https://www.bts.gov/content/average-age-automobiles-and-trucks-operation-united-states#:~:text=2018%2D19%3A%20IHS%20Markit%20Co,17%2C%202019.
	Average Speed Distribution	Default Data Used	
	Vehicle Type VMT - HPMSV Type Day	Default Data Used	
	Hour VMT Fraction	Default Data Used	
	Fuel	Default Data Used	
	Meteorology	Default Data Used	

Table B: Non-Road MOVES Model Input Values

Panel		Selected Input	Rationale
Scale	Model	Nonroad	Runspec to estimate emissions from nonroad equipment.
	Domain/Scale	National	No other Domain/Scale can be selected for a nonroad MOVES Runspec.
	Calculation Type	Inventory	No other Calculation Type can be selected for a nonroad MOVES Runspec.
Time Spans	Time Aggregation Level	Day	No other Time Aggregation Level can be slected for a nonroad MOVES Runspec.
	Years	2022	Assumed year for start of construction. Based on the "MOVES2014a Users Guide" it is suggested running on year at a time to keep the output size manageable.
	Months	All	All months were selected in order to average the emissions rate over the course of the year.
	Days	Weekdays	Based on the assumption that the contractor would work for 8 hours per day for 40 hours per week.
	Hours	N/A	No selection can be made under this input panel.
Geographic Bounds	Region	County	The county option was selected as stated above under Domain/Scale, and only one county is being analyzed under this Runspec.
	Selection	NEW JERSEY - Morris County	The location of the project is in Morris County, New Jersey.
Vehicles/Equipment	Nonroad Vehicles	Nonroad Diesel Fuel - Commercial Nonroad Diesel Fuel - Construction Nonroad Diesel Fuel - Industrial Gasoline - Commercial Gasoline - Construction Gasoline - Industrial	The inputs were selected based on the equipment list provided by the cost engineer.
Road Type	Nonroad	Nonroad	Not applicable when modeling nonroad emissions.

Table B: Non-Road MOVES Model Input Values

Panel		Selected Input	Rationale
Pollutants and Process	Total Gaseous Hydrocarbons	Running Exhaust, Crankcase Exhaust, Refueling Displacement Vapor Loss, Refueling Spillage Loss, Evap. Tank Permeation, Evap. Hose Permeation, Diurnal Fuel Vapor Venting, HotSoak Fuel Vapor Veniting, RunningLoss Fuel Vapor Venting	These polluatants and processes associated with a particular pollutant (as noted under Selected Input) were chosen in order to account for the emissions of that pollutant.
	Non-Methan Hydrocarbons	Running Exhaust, Crankcase Exhaust, Refueling Displacement Vapor Loss, Refueling Spillage Loss, Evap. Tank Permeation, Evap. Hose Permeation, Diurnal Fuel Vapor Venting, HotSoak Fuel Vapor Veniting, RunningLoss Fuel Vapor Venting	
	Volatile Organic Compounds	Running Exhaust, Crankcase Exhaust, Refueling Displacement Vapor Loss, Refueling Spillage Loss, Evap. Tank Permeation, Evap. Hose Permeation, Diurnal Fuel Vapor Venting, HotSoak Fuel Vapor Veniting, RunningLoss Fuel Vapor Venting	
	Carbon Monoxides	Running Exhaust	
	Oxides of Nitrogen (NOx)	Running Exhaust	
	Primary Exhaust PM2.5 - Total	Running Exhaust	
	Sulfur Dioxide (SO2)	Running Exhaust	
Manage Input Data Sets	Database	None selected	Alternative data tables were not used in place of the data from the MOVES default database, therefore, there were no inputs in this section.
Strategies	Rate of Progress	None selected	Based on the "MOVES2014a Users Guide" these calculations are not relevant for nonroad equipment. Therefore, there were no inputs in this section.
General Output	Output Database	MOVES_southwest_nonroad_output2	Outputdatabase where the Runspec results are stored and the units reported.
	Units	Mass Units: Grams Energy Units: Joules Distance Units: Miles	Grams was chosen as the mass units to reduce the possible loss of significant figures.

Table B: Non-Road MOVES Model Input Values

Panel		Selected Input	Rationale
Output Emissions	Always	Time: 24-hour day Location: County Pollutant	The only option for time aggregation of the output is 24-hour day. Therefore this was chosen as the time input. Because county was chosen as the input for the geographic bound, county was selected as the location input.
	for All Vehicle Equipment Categories	Fuel Type, Emission Process	This selection was made to provide detailed emissions for fuel type and emission process in the output. Model year reaults for each source type was not needed.
	On and Off Road	SCC	Soure Classification Code (SCC) was selected in order to classify the emission sources in the output.
	Off Road	Sector, Engine Tech., HP Class	In order to provide a detailed output emission estimate, sector, Engine Tech, and HP class were selected.
Advanced Performance	-	None selected	Based on the "MOVES2014a Users Guide" which states that the advanced performance features panel is generally not used, there were no inputs into this section.
NonRoad Data Importer	Fuel	Default Data Values	
	Meteorology	Default Data Values	

Summary of Emissions (tons)	NOx	VOC	SO2	PM2.5	CO
0001 SouthWest_100%PR	**0.424**	**0.118**	**0.001**	**0.028**	**0.773**
Nonroad Equipment	*0.370*	*0.050*	*0.001*	*0.027*	*0.195*
Onroad Vehicle	*0.054*	*0.068*	*0.000*	*0.001*	*0.578*
0002 Southeast_100%PR	**0.148**	**0.029**	**0.000**	**0.009**	**0.175**
Nonroad Equipment	*0.137*	*0.015*	*0.000*	*0.009*	*0.061*
Onroad Vehicle	*0.011*	*0.013*	*0.000*	*0.000*	*0.114*
0003 South_100%PR	**0.223**	**0.056**	**0.000**	**0.013**	**0.390**
Nonroad Equipment	*0.194*	*0.020*	*0.000*	*0.012*	*0.078*
Onroad Vehicle	*0.029*	*0.037*	*0.000*	*0.001*	*0.312*
0004 NorthRiversideDr_100%PR	**0.268**	**0.078**	**0.000**	**0.019**	**0.502**
Nonroad Equipment	*0.234*	*0.037*	*0.000*	*0.018*	*0.150*
Onroad Vehicle	*0.033*	*0.042*	*0.000*	*0.001*	*0.352*
0005 North_100%PR	**0.472**	**0.130**	**0.001**	**0.031**	**0.859**
Nonroad Equipment	*0.412*	*0.054*	*0.001*	*0.029*	*0.219*
Onroad Vehicle	*0.060*	*0.075*	*0.000*	*0.001*	*0.640*
0006 HinchmanSnyder_100%PR	**0.908**	**0.179**	**0.001**	**0.059**	**0.976**
Nonroad Equipment	*0.843*	*0.098*	*0.001*	*0.058*	*0.285*
Onroad Vehicle	*0.065*	*0.082*	*0.000*	*0.002*	*0.692*
0007 Center_100%PR	**1.479**	**0.248**	**0.002**	**0.094**	**1.059**
Nonroad Equipment	*1.406*	*0.156*	*0.002*	*0.092*	*0.282*
Onroad Vehicle	*0.073*	*0.091*	*0.000*	*0.002*	*0.776*
Total	**3.923**	**0.838**	**0.005**	**0.253**	**4.733**

Tables: Emissions by Individual Cluster

(Includes Construction Equipment Lists)

Project Location: 0001 SouthWest_100%PR
Assumptions: Project Duration assumes 8 hours/day and 5 days/week

Summary of Emissions (tons)	NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment	0.370	0.050	0.001	0.027	0.195
Total	**0.424**	**0.118**	**0.001**	**0.028**	**0.773**

5 yr Dry Floodproofing

Number of Structures	*2*
Project Duration (months)	*4 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	200	Diesel	0.035	0.00360	0.00004	0.00221	0.014
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	398	Gas	0.003	0.00332	0.00000	0.00006	0.028
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	400	Gas	0.003	0.00334	0.00000	0.00006	0.028

10 yr Dry Floodproofing

Number of Structures	*2*
Project Duration (months)	*4 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	200	Diesel	0.035	0.00360	0.00004	0.00221	0.014
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	398	Gas	0.003	0.00332	0.00000	0.00006	0.028
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	400	Gas	0.003	0.00334	0.00000	0.00006	0.028

25 yr Dry Floodproofing

Number of Structures	*2*
Project Duration (months)	*4 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	200	Diesel	0.035	0.00360	0.00004	0.00221	0.014
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	398	Gas	0.003	0.00332	0.00000	0.00006	0.028
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	400	Gas	0.003	0.00334	0.00000	0.00006	0.028

100 yr Elevation	
Number of Structures	*14*
Project Duration (months)	*42 months*

Emissions Source Type	Hours	Fuel Type	NOx	VOC	tons SO2	PM2.5	CO
Nonroad Equipment							
GEN C10Z1380 COMPACTOR, VIBROPLATE, 17.7" X 22" (450 X 559 MM) PLATE, 4,050 LBS (18 KN) IMPACT	226	Diesel	0.008	0.00110	0.00001	0.00065	0.007
GEN H25Z3170 HYDRAULIC EXCAVATOR, CRAWLER, 30,000 LB (13,608 KG), 0.75 CY (0.6 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	127	Diesel	0.014	0.00383	0.00006	0.00053	0.005
GEN H25Z3175 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	37	Diesel	0.004	0.00111	0.00002	0.00015	0.002
GEN L40Z4390 LOADER, FRONT END, WHEEL, 2.0 CY (1.5 M3) BUCKET, ARTICULATED, 4X4	16	Diesel	0.004	0.00079	0.00001	0.00057	0.004
GEN L50Z4640 LOADER / BACKHOE, WHEEL, 1.0 CY (0.76 M3) FRONT END BUCKET, 24" (61 CM) DIP, 6.2 CF (0.18 M3), 14.5' (4.4 M) DIGGING DEPTH, 4X2	296	Diesel	0.077	0.01460	0.00011	0.01052	0.074
USR A15XX044 AIR COMPRESSOR, 58 CFM, 120 GAL (ADD HOSE)	145	Diesel	0.024	0.00246	0.00004	0.00116	0.009
USR C55M3002 CONCRETE PUMP, 45 CY/HR, SINGLE, TRAILER MTD	3	Diesel	0.001	0.00006	0.00000	0.00004	0.000
USR C65WC005 CONCRETE VIBRATOR, 1.75" HEAD, 13' SHAFT, W/GAS MOTOR ON CART	3	Diesel	0.002	0.00021	0.00000	0.00011	0.001
USR F10JC001 FORK LIFT, ROUGH TERRAIN, 6,000 LBS @ 28' HIGH STRAIGHT MAST, 4X4	303	Diesel	0.032	0.00481	0.00009	0.00042	0.009
USR H25Z3184 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	10	Diesel	0.001	0.00030	0.00000	0.00001	0.000
USR JACK-15-9 Crib Jack (Pair), 15-Ton, Double Acting, w/(12) - 25' Hydraulic Hoses and "T" Assembly	2,450	None	n/a	n/a	n/a	n/a	n/a
USR P45AF008 PUMP, GROUT, 50 CF/HR, 0-250 PSI, SKID MTD, W/5 GAL HOPPER AND 30 GAL MIXER (ADD 50 CFM COMPRESSOR & HOSE)	145	Diesel	0.026	0.00279	0.00003	0.00179	0.012
USR UJS-19 Unified Jacking System, 19 Point	245	None	n/a	n/a	n/a	n/a	n/a
Onroad Vehicle							
ELEC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	2,855	Gas	0.019	0.02382	0.00001	0.00045	0.203
GEN T50Z7580 TRUCK, HIGHWAY, 45 KGVW (20.4 MT), 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
GEN T45Z7180 TRUCK TRAILER, PUP TRAILER, 15 CY (11.5 M3), 17' (5.2 M), TRIPLE AXLE (W/HOIST) (ADD TOWING TRUCK)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
PLUMB SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
HVAC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030

100 yr Wet Floodproofing	
Number of Structures	*4*
Project Duration (months)	*8 months*

Emissions Source Type	Hours	Fuel Type	NOx	VOC	tons SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	400	Diesel	0.071	0.00721	0.00007	0.00443	0.029
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	796	Gas	0.005	0.00664	0.00000	0.00013	0.057
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	800	Gas	0.005	0.00668	0.00000	0.00013	0.057

Project Location: 0002 Southeast_100%PR
Assumptions: Project Duration assumes 8 hours/day and 5 days/week

Summary of Emissions (tons)	NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment	0.137	0.015	0.000	0.009	0.061
Onroad Vehicle	0.011	0.013	0.000	0.000	0.114
Total	**0.148**	**0.029**	**0.000**	**0.009**	**0.175**

25 yr Dry Floodproofing	
Number of Structures	*4*
Project Duration (months)	*8 month*

Emissions Source Type	Hours	Fuel Type	NOx	VOC	tons SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	400	Diesel	0.071	0.00721	0.00007	0.00443	0.029
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	796	Gas	0.005	0.00664	0.00000	0.00013	0.057
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	800	Gas	0.005	0.00668	0.00000	0.00013	0.057

100 yr Elevation	
Number of Structures	*1*
Project Duration (months)	*3 months*

Emissions Source Type	Hours	Fuel Type	NOx	VOC	tons SO2	PM2.5	CO
Nonroad Equipment							
GEN C10Z1380 COMPACTOR, VIBROPLATE, 17.7" X 22" (450 X 559 MM) PLATE, 4,050 LBS (18 KN) IMPACT	30	Diesel	0.001	0.00015	0.00000	0.00009	0.001
GEN L50Z4640 LOADER / BACKHOE, WHEEL, 1.0 CY (0.76 M3) FRONT END BUCKET, 24" (61 CM) DIP, 6.2 CF (0.18 M3), 14.5' (4.4 M) DIGGING DEPTH, 4X2	35	Diesel	0.009	0.00173	0.00001	0.00124	0.009
USR A15XX044 AIR COMPRESSOR, 58 CFM, 120 GAL (ADD HOSE)	145	Diesel	0.024	0.00246	0.00004	0.00116	0.009
USR C55M3002 CONCRETE PUMP, 45 CY/HR, SINGLE, TRAILER MTD	3	Diesel	0.001	0.00006	0.00000	0.00004	0.000
USR C65WC005 CONCRETE VIBRATOR, 1.75" HEAD, 13' SHAFT, W/GAS MOTOR ON CART	3	Diesel	0.002	0.00021	0.00000	0.00011	0.001
USR F10JC001 FORK LIFT, ROUGH TERRAIN, 6,000 LBS @ 28' HIGH STRAIGHT MAST, 4X4	24	Diesel	0.003	0.00038	0.00001	0.00003	0.001
USR H25Z3184 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	10	Diesel	0.001	0.00030	0.00001	0.00004	0.000
USR JACK-15-9 Crib Jack (Pair), 15-Ton, Double Acting, w/(12) - 25' Hydraulic Hoses and "T" Assembly	2,450	None	n/a	n/a	n/a	n/a	n/a
USR P45AF008 PUMP, GROUT, 50 CF/HR, 0-250 PSI, SKID MTD, W/5 GAL HOPPER AND 30 GAL MIXER (ADD 50 CFM COMPRESSOR & HOSE)	145	Diesel	0.026	0.00279	0.00003	0.00179	0.012
USR UJS-19 Unified Jacking System, 19 Point	245	None	n/a	n/a	n/a	n/a	n/a
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	5	Gas	0.000	0.00004	0.00000	0.00000	0.000

U.S. Army Corps of Engineers, Baltimore District
Denville, NJ, Flood Risk Management
March 2021

Project Location: 0003 South_100%PR
Assumptions: Project Duration assumes 8 hours/day and 5 days/week

Summary of Emissions (tons)	NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment	0.194	0.020	0.000	0.012	0.078
Onroad Vehicle	0.029	0.037	0.000	0.001	0.312
Total	**0.223**	**0.056**	**0.000**	**0.013**	**0.390**

25 yr Dry Floodproofing	
Number of Structures	*2*
Project Duration (months)	*4 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	200	Diesel	0.035	0.00360	0.00004	0.00221	0.014
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	398	Gas	0.003	0.00332	0.00000	0.00006	0.028
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	400	Gas	0.003	0.00334	0.00000	0.00006	0.028

10 yr Dry Floodproofing	
Number of Structures	*9*
Project Duration (months)	*18 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	900	Diesel	0.159	0.01622	0.00016	0.00996	0.064
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	1,790	Gas	0.012	0.01494	0.00001	0.00028	0.127
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	1,800	Gas	0.012	0.01502	0.00001	0.00028	0.128

Project Location: 0004 NorthRiversideDr_100%PR
Assumptions: Project Duration assumes 8 hours/day and 5 days/week

Summary of Emissions (tons)	NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment	0.234	0.037	0.000	0.018	0.150

5 yr Dry Floodproofing	
Number of Structures	*1*
Project Duration (months)	*2 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	100	Diesel	0.018	0.00180	0.00002	0.00111	0.007
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	199	Gas	0.001	0.00166	0.00000	0.00003	0.014
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	200	Gas	0.001	0.00167	0.00000	0.00003	0.014

100 yr Wet Floodproofing	
Number of Structures	*1*
Project Duration (months)	*2 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	100	Diesel	0.018	0.00180	0.00002	0.00111	0.007
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	199	Gas	0.001	0.00166	0.00000	0.00003	0.014
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	200	Gas	0.001	0.00167	0.00000	0.00003	0.014

100 yr Elevation	
Number of Structures	*18*
Project Duration (months)	*54 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
GEN C10Z1380 COMPACTOR, VIBROPLATE, 17.7" X 22" (450 X 559 MM) PLATE, 4,050 LBS (18 KN) IMPACT	226	Diesel	0.008	0.00110	0.00001	0.00065	0.007
GEN H25Z3170 HYDRAULIC EXCAVATOR, CRAWLER, 30,000 LB (13,608 KG), 0.75 CY (0.6 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	127	Diesel	0.014	0.00383	0.00006	0.00053	0.005
GEN H25Z3175 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	37	Diesel	0.004	0.00111	0.00002	0.00015	0.002
GEN L40Z4390 LOADER, FRONT END, WHEEL, 2.0 CY (1.5 M3) BUCKET, ARTICULATED, 4X4	16	Diesel	0.004	0.00079	0.00001	0.00057	0.004
GEN L50Z4640 LOADER / BACKHOE, WHEEL, 1.0 CY (0.76 M3) FRONT END BUCKET, 24" (61 CM) DIP, 6.2 CF (0.18 M3), 14.5' (4.4 M) DIGGING DEPTH, 4X2	296	Diesel	0.077	0.01460	0.00011	0.01052	0.074
USR A15XX044 AIR COMPRESSOR, 58 CFM, 120 GAL (ADD HOSE)	145	Diesel	0.024	0.00246	0.00004	0.00116	0.009
USR C55M3002 CONCRETE PUMP, 45 CY/HR, SINGLE, TRAILER MTD	3	Diesel	0.001	0.00006	0.00000	0.00004	0.000
USR C65WC005 CONCRETE VIBRATOR, 1.75" HEAD, 13' SHAFT, W/GAS MOTOR ON CART	3	Gas	0.001	0.00044	0.00000	0.00003	0.011
USR F10JC001 FORK LIFT, ROUGH TERRAIN, 6,000 LBS @ 28' HIGH STRAIGHT MAST, 4X4	367	Diesel	0.039	0.00583	0.00011	0.00051	0.011
USR H25Z3184 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	10	Diesel	0.001	0.00030	0.00001	0.00004	0.000
USR JACK-15-9 Crib Jack (Pair), 15-Ton, Double Acting, w/(12) - 25' Hydraulic Hoses and "T" Assembly	2,450	None	n/a	n/a	n/a	n/a	n/a
USR P45AF008 PUMP, GROUT, 50 CF/HR, 0-250 PSI, SKID MTD, W/5 GAL HOPPER AND 30 GAL MIXER (ADD 50 CFM COMPRESSOR & HOSE)	145	Diesel	0.026	0.00279	0.00003	0.00179	0.012
USR UJS-19 Unified Jacking System, 19 Point	245	None	n/a	n/a	n/a	n/a	n/a
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	2,855	Gas	0.019	0.02382	0.00001	0.00045	0.203
GEN T45Z7180 TRUCK TRAILER, PUP TRAILER, 15 CY (11.5 M3), 17' (5.2 M), TRIPLE AXLE (W/HOIST) (ADD TOWING TRUCK)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
GEN T50Z7580 TRUCK, HIGHWAY, 45 KGVW (20.4 MT), 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
ELEC SLUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
PLUB SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
HVAC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030

Project Location: 0005 North_100%PR
Assumptions: Project Duration assumes 8 hours/day and 5 days/week

Summary of Emissions (tons)		NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment		0.412	0.054	0.001	0.029	0.219
Onroad Vehicle		0.060	0.075	0.000	0.001	0.640
	Total	**0.472**	**0.130**	**0.001**	**0.031**	**0.859**

100 yr Wet Floodproofing	
Number of Structures	*5*
Project Duration (months)	*10 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	900	Diesel	0.159	0.01622	0.00016	0.00996	0.064
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	1,790	Gas	0.012	0.01494	0.00001	0.00028	0.127
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	1,800	Gas	0.012	0.01502	0.00001	0.00028	0.128

100 yr Elevation	
Number of Structures	*12*
Project Duration (months)	*36 months*

Emissions Source Type	Hours	Fuel Type	NOx	VOC	tons SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	400	Diesel	0.071	0.00721	0.00007	0.00443	0.029
GEN C10Z1380 COMPACTOR, VIBROPLATE, 17.7" X 22" (450 X 559 MM) PLATE, 4,050 LBS (18 KN) IMPACT	226	Diesel	0.008	0.00110	0.00001	0.00065	0.007
GEN H25Z3170 HYDRAULIC EXCAVATOR, CRAWLER, 30,000 LB (13,608 KG), 0.75 CY (0.6 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	127	Diesel	0.014	0.00383	0.00006	0.00053	0.005
GEN H25Z3175 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	37	Diesel	0.004	0.00111	0.00002	0.00015	0.002
GEN L40Z4390 LOADER, FRONT END, WHEEL, 2.0 CY (1.5 M3) BUCKET, ARTICULATED, 4X4	16	Diesel	0.004	0.00079	0.00001	0.00057	0.004
GEN L50Z4640 LOADER / BACKHOE, WHEEL, 1.0 CY (0.76 M3) FRONT END BUCKET, 24" (61 CM) DIP, 6.2 CF (0.18 M3), 14.5' (4.4 M) DIGGING DEPTH, 4X2	296	Diesel	0.077	0.01460	0.00011	0.01052	0.074
USR A15XX044 AIR COMPRESSOR, 58 CFM, 120 GAL (ADD HOSE)	145	Diesel	0.024	0.00246	0.00000	0.00042	0.005
USR C55M3002 CONCRETE PUMP, 45 CY/HR, SINGLE, TRAILER MTD	3	Diesel	0.001	0.00006	0.00000	0.00004	0.000
USR C65WC005 CONCRETE VIBRATOR, 1.75" HEAD, 13' SHAFT, W/GAS MOTOR ON CART	3	Gas	0.001	0.00044	0.00000	0.00003	0.011
USR F10JC001 FORK LIFT, ROUGH TERRAIN, 6,000 LBS @ 28' HIGH STRAIGHT MAST, 4X4	207	Diesel	0.022	0.00329	0.00006	0.00029	0.006
USR H25Z3184 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	10	Diesel	0.001	0.00030	0.00001	0.00004	0.000
USR JACK-15-9 Crib Jack (Pair), 15-Ton, Double Acting, w/(12) - 25' Hydraulic Hoses and "T" Assembly	2,450	None	n/a	n/a	n/a	n/a	n/a
USR P45AF008 PUMP, GROUT, 50 CF/HR, 0-250 PSI, SKID MTD, W/5 GAL HOPPER AND 30 GAL MIXER (ADD 50 CFM COMPRESSOR & HOSE)	145	Diesel	0.026	0.00279	0.00003	0.00179	0.012
USR UJS-19 Unified Jacking System, 19 Point	245	None	n/a	n/a	n/a	n/a	n/a
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	3,253	Gas	0.022	0.02714	0.00001	0.00051	0.231
GEN T50Z7580 TRUCK, HIGHWAY, 45 KGVW (20.4 MT), 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	91	Gas	0.001	0.00076	0.00000	0.00001	0.006
GEN T45Z7180 TRUCK TRAILER, PUP TRAILER, 15 CY (11.5 M3), 17' (5.2 M), TRIPLE AXLE (W/HOIST) (ADD TOWING TRUCK)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	800	Gas	0.005	0.00668	0.00000	0.00013	0.057
ELEC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
PLUB SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
HVAC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030

Project Location: 0006 HinchmanSnyder_100%PR
Assumptions: Project Duration assumes 8 hours/day and 5 days/week

Summary of Emissions (tons)		NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment		0.843	0.098	0.001	0.058	0.285
Onroad Vehicle		0.065	0.082	0.000	0.002	0.692
	Total	**0.908**	**0.179**	**0.001**	**0.059**	**0.976**

100 yr Wet Floodproofing	
Number of Structures	*10*
Project Duration (months)	*20 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	1,400	Diesel	0.247	0.02523	0.00025	0.01549	0.100
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	2,785	Gas	0.019	0.02324	0.00001	0.00044	0.198
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	2,800	Gas	0.019	0.02336	0.00001	0.00044	0.199

100 yr Elevation	
Number of Structures	*6*
Project Duration (months)	*18 months*

Emissions Source Type	Hours	Fuel Type	NOx	VOC	tons SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	400	Diesel	0.424	0.04325	0.00044	0.02656	0.057
GEN C10Z1380 COMPACTOR, VIBROPLATE, 17.7" X 22" (450 X 559 MM) PLATE, 4,050 LBS (18 KN) IMPACT	226	Diesel	0.008	0.00110	0.00001	0.00065	0.007
GEN H25Z3170 HYDRAULIC EXCAVATOR, CRAWLER, 30,000 LB (13,608 KG), 0.75 CY (0.6 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	127	Diesel	0.014	0.00383	0.00006	0.00053	0.005
GEN H25Z3175 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	37	Diesel	0.004	0.00111	0.00002	0.00015	0.002
GEN L40Z4390 LOADER, FRONT END, WHEEL, 2.0 CY (1.5 M3) BUCKET, ARTICULATED, 4X4	16	Diesel	0.004	0.00079	0.00001	0.00057	0.004
GEN L50Z4640 LOADER / BACKHOE, WHEEL, 1.0 CY (0.76 M3) FRONT END BUCKET, 24" (61 CM) DIP, 6.2 CF (0.18 M3), 14.5' (4.4 M) DIGGING DEPTH, 4X2	296	Diesel	0.077	0.01460	0.00011	0.01052	0.074
USR A15XX044 AIR COMPRESSOR, 58 CFM, 120 GAL (ADD HOSE)	145	Diesel	0.024	0.00246	0.00004	0.00116	0.009
USR C55M3002 CONCRETE PUMP, 45 CY/HR, SINGLE, TRAILER MTD	3	Diesel	0.001	0.00006	0.00000	0.00004	0.000
USR C65WC005 CONCRETE VIBRATOR, 1.75" HEAD, 13' SHAFT, W/GAS MOTOR ON CART	3	Gas	0.001	0.00044	0.00000	0.00003	0.011
USR F10JC001 FORK LIFT, ROUGH TERRAIN, 6,000 LBS @ 28' HIGH STRAIGHT MAST, 4X4	112	Diesel	0.012	0.00178	0.00003	0.00016	0.003
USR H25Z3184 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	10	Diesel	0.001	0.00030	0.00001	0.00004	0.000
USR JACK-15-9 Crib Jack (Pair), 15-Ton, Double Acting, w/(12) - 25' Hydraulic Hoses and "T" Assembly	2,450	None	n/a	n/a	n/a	n/a	n/a
USR P45AF008 PUMP, GROUT, 50 CF/HR, 0-250 PSI, SKID MTD, W/5 GAL HOPPER AND 30 GAL MIXER (ADD 50 CFM COMPRESSOR & HOSE)	145	Diesel	0.026	0.00279	0.00003	0.00179	0.012
USR UJS-19 Unified Jacking System, 19 Point	245	None	n/a	n/a	n/a	n/a	n/a
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	2,059	Gas	0.014	0.01718	0.00001	0.00033	0.146
GEN T45Z7180 TRUCK TRAILER, PUP TRAILER, 15 CY (11.5 M3), 17' (5.2 M), TRIPLE AXLE (W/HOIST) (ADD TOWING TRUCK)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
GEN T50Z7580 TRUCK, HIGHWAY, 45 KGVW (20.4 MT), 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	800	Gas	0.005	0.00668	0.00000	0.00013	0.057
ELEC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
PLUB SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
HVAC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030

U.S. Army Corps of Engineers, Baltimore District
Denville, NJ, Flood Risk Management
March 2021

Project Location: 0007 Center_100%PR
Assumptions: Project Duration assumes 8 hours/day and 5 days/week

Summary of Emissions (tons)	NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment	1.406	0.156	0.002	0.092	0.282
Onroad Vehicle	0.073	0.091	0.000	0.002	0.776
Total	**1.479**	**0.248**	**0.002**	**0.094**	**1.059**

100 yr Wet Floodproofing	
Number of Structures	*9*
Project Duration (months)	*18 months*

Emissions Source Type	Hours	Fuel Type	tons NOx	VOC	SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	1,300	Diesel	0.229	0.02343	0.00024	0.01438	0.093
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	2,586	Gas	0.017	0.02158	0.00001	0.00041	0.184
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	2,600	Gas	0.017	0.02169	0.00001	0.00041	0.185

100 yr Elevation	
Number of Structures	*14*
Project Duration (months)	*42 months*

Emissions Source Type	Hours	Fuel Type	NOx	VOC	tons SO2	PM2.5	CO
Nonroad Equipment							
EP G10XX008 GENERATOR SET, SKID MTD, 75 KW	400	Diesel	0.988	0.10091	0.00102	0.06196	0.057
GEN C10Z1380 COMPACTOR, VIBROPLATE, 17.7" X 22" (450 X 559 MM) PLATE, 4,050 LBS (18 KN) IMPACT	226	Diesel	0.008	0.00110	0.00001	0.00065	0.007
GEN H25Z3170 HYDRAULIC EXCAVATOR, CRAWLER, 30,000 LB (13,608 KG), 0.75 CY (0.6 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	127	Diesel	0.014	0.00383	0.00006	0.00053	0.005
GEN H25Z3175 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	37	Diesel	0.004	0.00111	0.00002	0.00015	0.002
GEN L40Z4390 LOADER, FRONT END, WHEEL, 2.0 CY (1.5 M3) BUCKET, ARTICULATED, 4X4	16	Diesel	0.004	0.00079	0.00001	0.00057	0.004
GEN L50Z4640 LOADER / BACKHOE, WHEEL, 1.0 CY (0.76 M3) FRONT END BUCKET, 24" (61 CM) DIP, 6.2 CF (0.18 M3), 14.5' (4.4 M) DIGGING DEPTH, 4X2	296	Diesel	0.077	0.01460	0.00011	0.01052	0.074
USR A15XX044 AIR COMPRESSOR, 58 CFM, 120 GAL (ADD HOSE)	145	Diesel	0.024	0.00246	0.00004	0.00116	0.009
USR C55M3002 CONCRETE PUMP, 45 CY/HR, SINGLE, TRAILER MTD	3	Diesel	0.001	0.00006	0.00000	0.00004	0.000
USR C65WC005 CONCRETE VIBRATOR, 1.75" HEAD, 13' SHAFT, W/GAS MOTOR ON CART	3	Gas	0.001	0.00044	0.00000	0.00003	0.011
USR F10JC001 FORK LIFT, ROUGH TERRAIN, 6,000 LBS @ 28' HIGH STRAIGHT MAST, 4X4	266	Diesel	0.028	0.00423	0.00008	0.00037	0.008
USR H25Z3184 HYDRAULIC EXCAVATOR, CRAWLER, 40,000 LB (18,144 KG), 1.00 CY (0.8 M3) BUCKET, 19.6' (5.9 M) MAX DIGGING DEPTH	10	Diesel	0.001	0.00030	0.00001	0.00004	0.000
USR JACK-15-9 Crib Jack (Pair), 15-Ton, Double Acting, w/(12) - 25' Hydraulic Hoses and "T" Assembly	2,450	None	n/a	n/a	n/a	n/a	n/a
USR P45AF008 PUMP, GROUT, 50 CF/HR, 0-250 PSI, SKID MTD, W/5 GAL HOPPER AND 30 GAL MIXER (ADD 50 CFM COMPRESSOR & HOSE)	145	Diesel	0.026	0.00279	0.00003	0.00179	0.012
USR UJS-19 Unified Jacking System, 19 Point	245	None	n/a	n/a	n/a	n/a	n/a
Onroad Vehicle							
EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	3,651	Gas	0.024	0.03046	0.00002	0.00058	0.259
GEN T45Z7180 TRUCK TRAILER, PUP TRAILER, 15 CY (11.5 M3), 17' (5.2 M), TRIPLE AXLE (W/HOIST) (ADD TOWING TRUCK)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
GEN T50Z7580 TRUCK, HIGHWAY, 45 KGVW (20.4 MT), 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	91	Diesel	0.000	0.00028	0.00000	0.00001	0.001
MAP T50XX005 TRUCK, HIGHWAY, CONVENTIONAL, 3/4 TON PICKUP, 4X4	800	Gas	0.005	0.00668	0.00000	0.00013	0.057
ELEC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
PLUMB SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030
HVAC SUB - EP T50XX011 TRUCK, HIGHWAY, CREW, 3/4 TON PICKUP, 4X4	420	Gas	0.003	0.00350	0.00000	0.00007	0.030

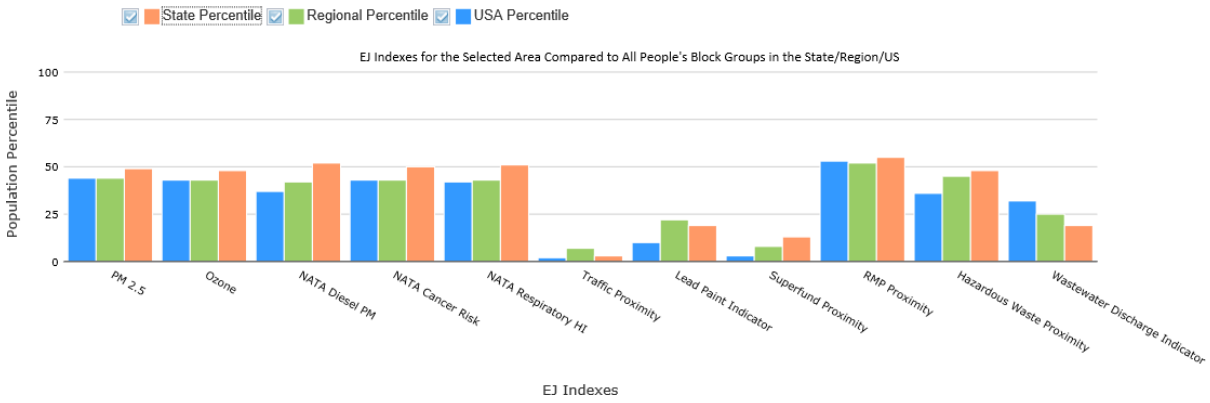
ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

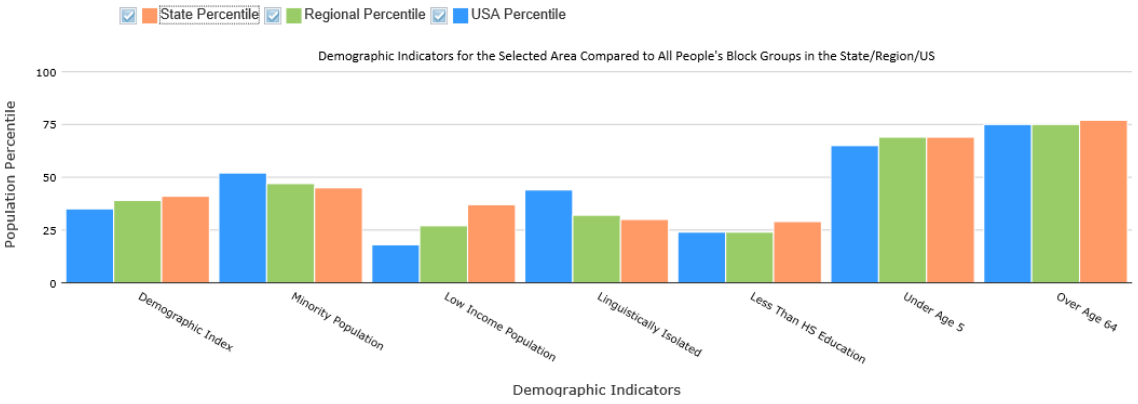
ATTACHMENT 3: ENVIRONMENTAL JUSTICE

Attachment 3: Environmental Justice

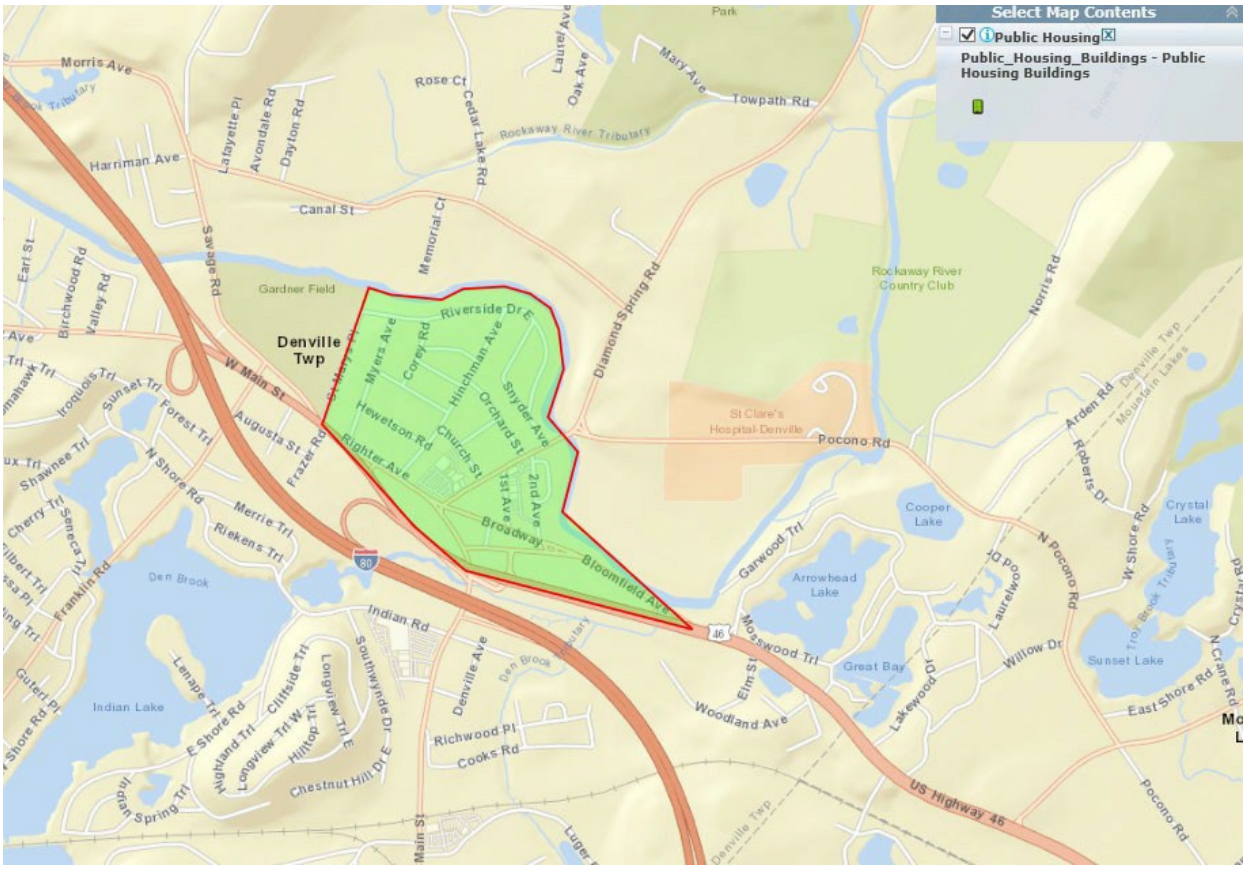
United States Environmental Protection Agency. 2019. EJSCREEN: Environmental Justice Screening and Mapping Tool.



Environmental justice index figure



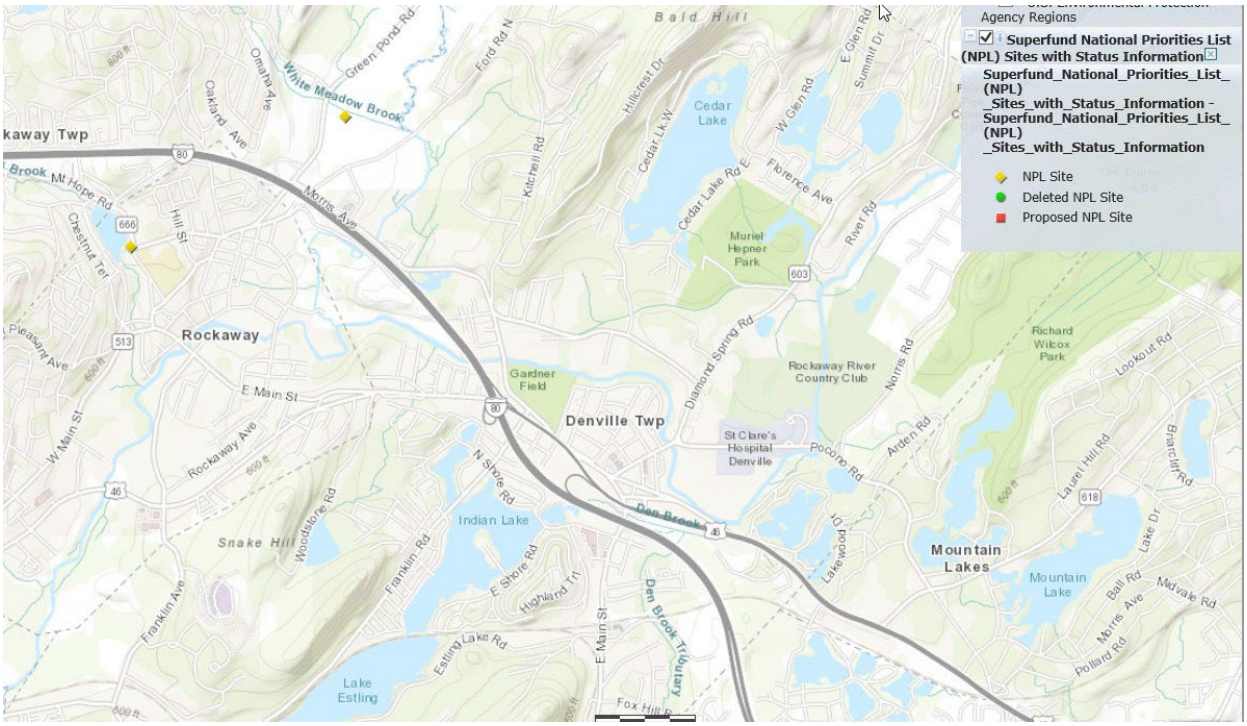
Demographic indicator graph



Public Housing (within the Area of interest) (None)

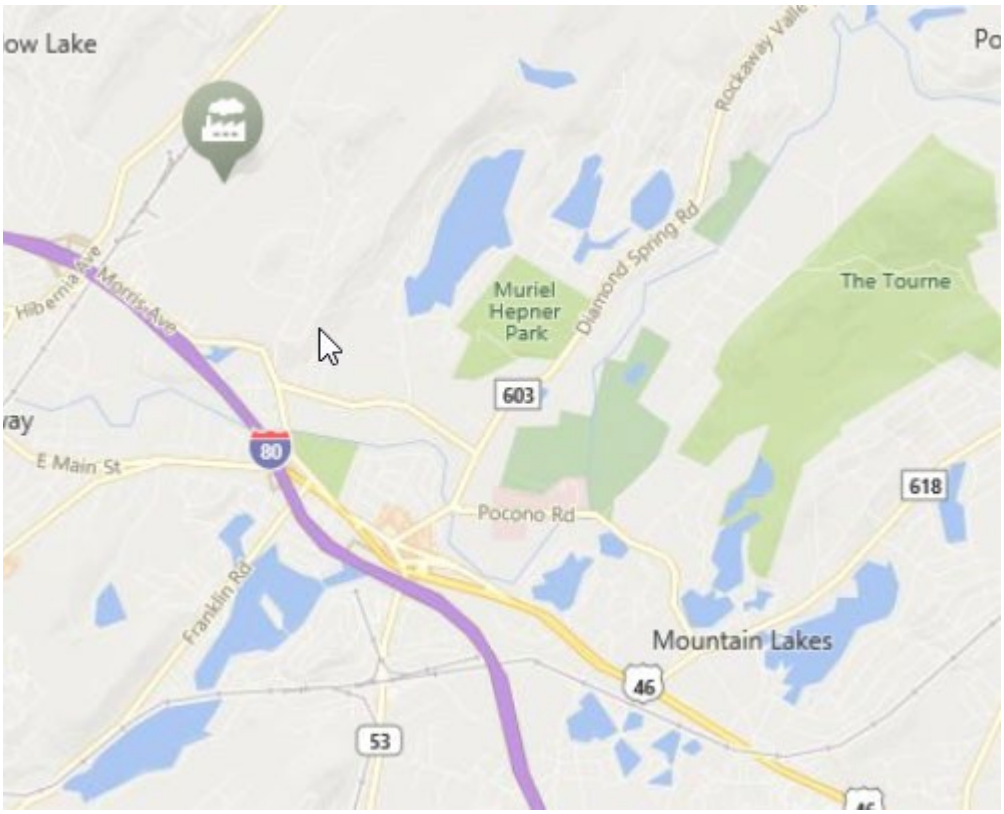
EJScreen. Accessed 2019. The User Specified Area (Denville Downtown Business District), NEW JERSEY, EPA Region 2 (Population: 801)									
#	Category	Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
1	EJ Index	EJ Index for Particulate Matter (PM 2.5)			49		44		44
2	EJ Index	EJ Index for Ozone			48		43		43
3	EJ Index	EJ Index for NATA Diesel PM			52		42		37
4	EJ Index	EJ Index for NATA Air Toxics Cancer Risk			50		43		43
5	EJ Index	EJ Index for NATA Respiratory Hazard Index			51		43		42
6	EJ Index	EJ Index for Traffic Proximity and Volume			3		7		2
7	EJ Index	EJ Index for Lead Paint Indicator			19		22		10
8	EJ Index	EJ Index for Superfund Proximity			13		8		3
9	EJ Index	EJ Index for RMP Proximity			55		52		53
10	EJ Index	EJ Index for Hazardous Waste Proximity			48		45		36
11	EJ Index	EJ Index for Wastewater Discharge Indicator			19		25		32
12	Environmental	Particulate Matter (PM 2.5 in ug/m3)	8.85	9.43	20	9.21	32	9.53	34
13	Environmental	Ozone (ppb)	43.2	43.6	39	41.9	69	42.5	57
14	Environmental	NATA Diesel PM (ug/m3)	0.68	1.31	21	1.88	<50th	0.938	<50th
15	Environmental	NATA Air Toxics Cancer Risk (risk per MM)	35	42	25	44	<50th	40	<50th
16	Environmental	NATA Respiratory Hazard Index	1.4	2.1	23	2.4	<50th	1.8	<50th
17	Environmental	Traffic Proximity and Volume (daily traffic count/distance to road)	2900	660	94	1800	86	600	95
18	Environmental	Lead Paint Indicator (% pre-1960s housing)	0.87	0.41	95	0.51	87	0.29	95
19	Environmental	Superfund Proximity (site count/km distance)	0.82	0.43	84	0.28	91	0.12	97
20	Environmental	RMP Proximity (facility count/km distance)	0.046	0.71	15	0.57	9	0.72	9
21	Environmental	Hazardous Waste Proximity (facility count/km distance)	0.26	4.9	22	34	19	4.3	41
22	Environmental	Wastewater Discharge Indicators (toxicity-weighted concentration/m distance)	2.40E-06	0.66	55	1.1	52	30	46
23	Demographic	Demographic Index	22%	34%	41	37%	39	36%	35
24	Demographic	Minority Population	31%	43%	45	44%	47	38%	52
25	Demographic	Low Income Population	13%	25%	37	30%	27	34%	18
26	Demographic	Linguistically Isolated Population	0%	7%	30	8%	32	4%	44
27	Demographic	Population with Less Than High School Education	4%	11%	29	13%	24	13%	24
28	Demographic	Population under Age 5	7%	6%	69	6%	69	6%	65
29	Demographic	Population over Age 64	19%	15%	77	15%	75	14%	75

U.S. Environmental Protection Agency. 2019. Envirofacts. EnviroMapper

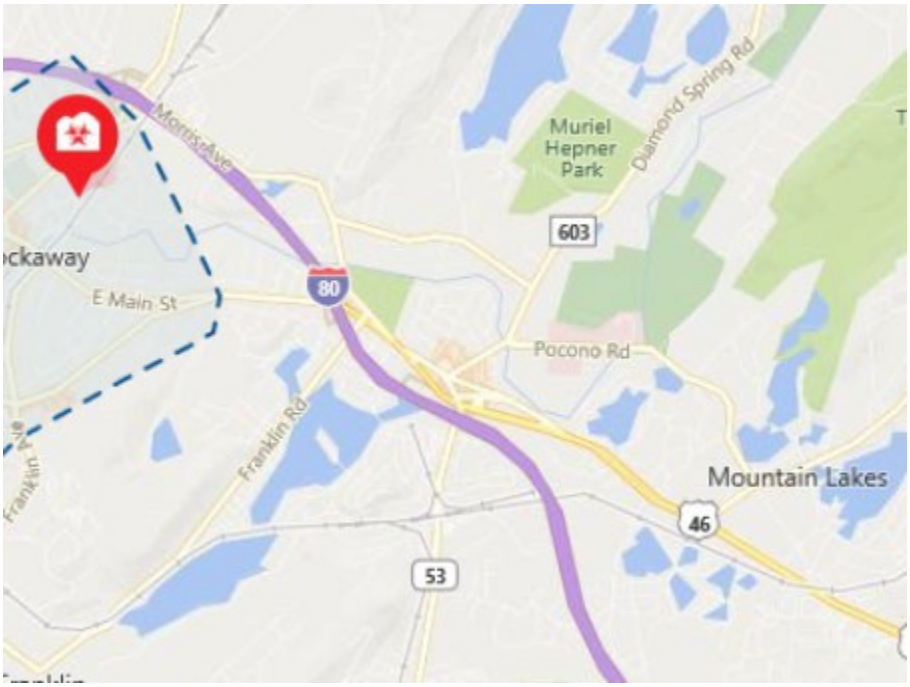


Superfund List (NPL) Sites (Note: none in Denville downtown business district)

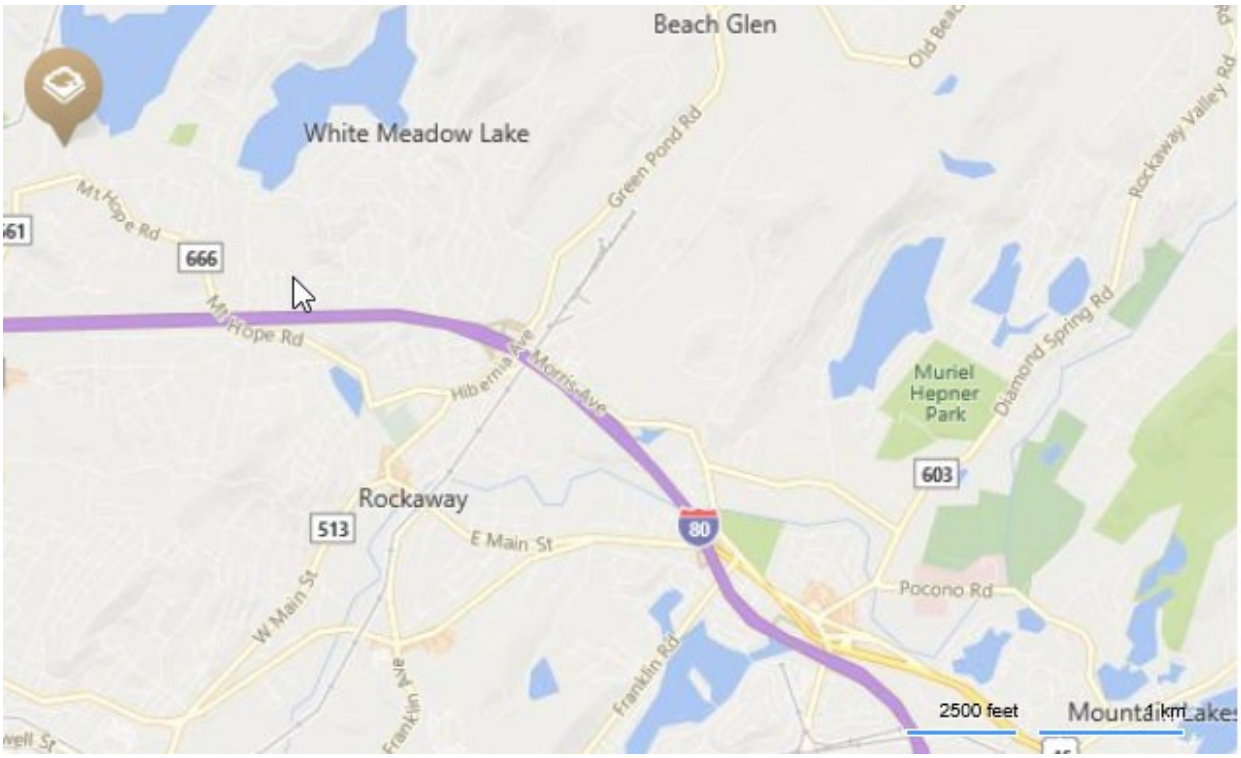
HomeFacts data (2019)



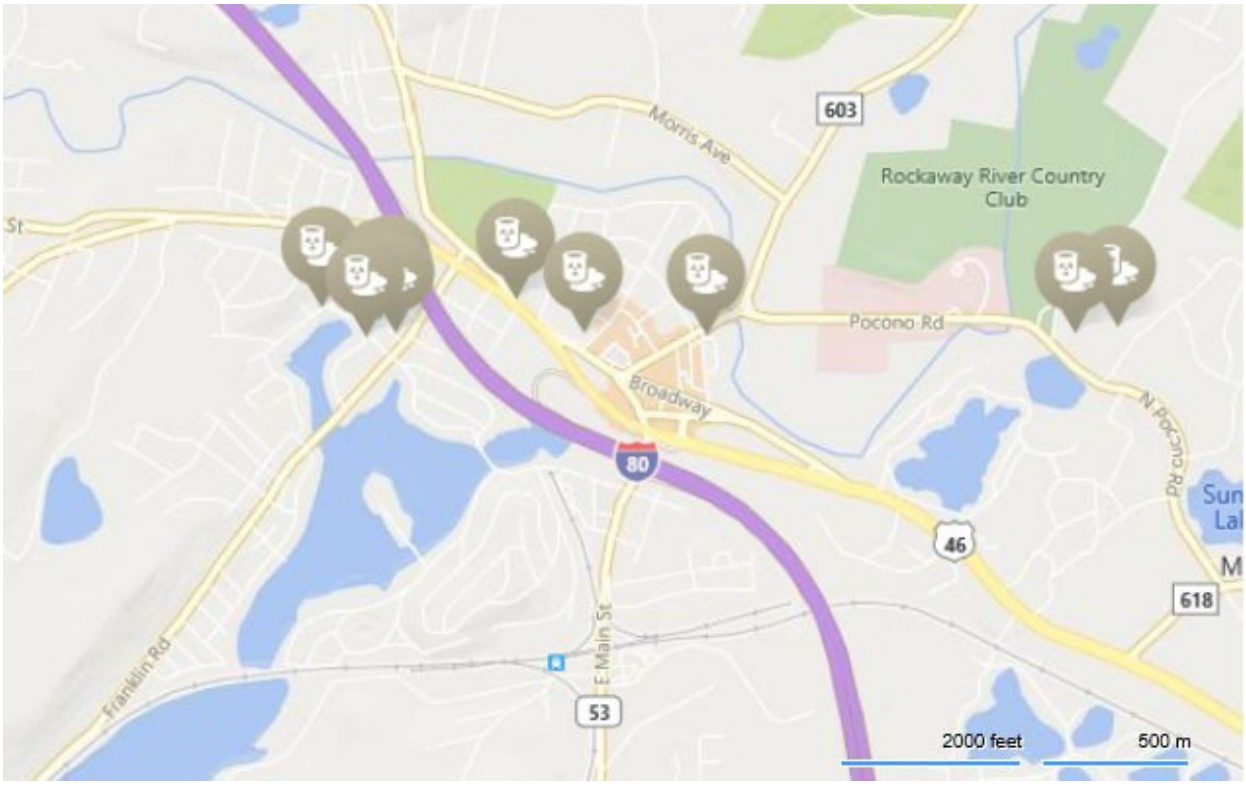
Polluters near project sight (Lockheed Electronics Co Inc) HomeFacts



Closest superfund site (Rockaway Borough Well Field) HomeFacts



Brownfield near Danville (Pyramid Service Station) HomeFacts



Tanks and Spills around Danville (213 cases across the township)

ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

ATTACHMENT 4: RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR CONFORMITY

Attachment 4: RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY

PROPOSED CONSTRUCTION OF NON-STRUCTURAL FLOOD-RISK MANAGEMENT MEASURES

DENVILLE, MORRIS COUNTY, NEW JERSEY.

UNITED STATES ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT

Proposed Action Exemption

The Proposed Action is located within a nonattainment area; therefore, the Proposed Action is not exempt from the General Conformity Rule based on degraded air quality. However, per 40 CFR § 93.153(c), the Proposed Action qualifies as an action where emissions do not exceed designated de minimis levels for criteria pollutants or priority precursors and is consistent with one of the USEPA's exemption categories. Therefore, the Proposed Action is exempt from a formal Conformity Determination.

Attainment Area Status and Emission Evaluation Conclusion

Morris County is designated as a moderate nonattainment area for ground-level ozone (8 hour Ozone 2008 and 2015 standards). Morris County is also located in the New York–Northern New Jersey–Long Island, NY-NJ-CT Air Quality Control Region which is in the Ozone Transport Region of the northeast United States. However, per 40 CFR § 93.153(c), the Proposed Action qualifies as an action where emissions do not exceed designated de minimis levels for criteria pollutants or their priority precursors, and therefore, is consistent with one of the USEPA's exemption categories. The projected emissions under the Proposed Action Alternative would be temporary and substantially less than the established de minimis emission thresholds (see Appendix xx). Generally, impacts on air quality from the Proposed Action Alternative would be temporary and less-than-significant. Moreover, the activities would comply with applicable regulatory requirements and appropriate BMPs would be incorporated. Therefore, there would be no significant effects to air quality and a change in the designation of the area with respect to NAAQS would not be expected.
USACE concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

RONA Approval

To the best of my knowledge, the information presented in this Record of Non-Applicability is correct and accurate and I concur with the finding that the Proposed Action does not require a formal Conformity Determination.

_____ _____

DATE COL Matthew W. Lozzatto
District Engineer

ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

ATTACHMENT 5: DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP CAP 205 STUDY

Attachment 5: DRAFT FINDING OF NO SIGNIFICANT IMPACT

ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP, CONTINUING AUTHORITIES SECTION 205, FLOOD RISK MANAGEMENT STUDY MORRIS COUNTY, NEW JERSEY

The U.S. Army Corps of Engineers, Baltimore and New York Districts (Corps) have conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The final Integrated Feasibility Report and Environmental Assessment (IFR/EA) dated DATE OF IFR/EA, for the Rockaway River and Den Brook Continuing Authorities Section 205 Study addresses flood risk management (FRM) opportunities and feasibility in the downtown business district of Denville, in Morris County, NJ.

The Final IFR/EA, incorporated herein by reference, evaluated various alternatives that would reduce flood risk in the study area. The recommended plan is the National Economic Development (NED) Plan and includes:

- Undertaking non-structural FRM improvements on 38 residential and commercial structures in the Denville downtown business district. A total of 30 structures were identified for elevation at least to the 100-year level of performance (1% Annual Exceedance Probability (AEP)) plus one foot. A total of 2 structures were identified for wet-floodproofing to the 100-year level of performance plus one foot. The remaining 6 structures were identified for dry-floodproofing to various levels of performance (LOP) ranging from 5-year to 25-year.
- The IFR/EA evaluated impacts to 54 structures in 5 clusters for undertaking non-structural FRM improvements. The Southeast cluster (4 structures) and Center cluster (12 structures) are not included in the Recommended Plan. If participation rates are below 100 percent for the Recommended Plan, USACE will reassess actual participation rates and determine if additional structures in the Southeast and Center Cluster can be reconsidered during construction to receive non-structural treatments through this project.

In addition to a “no action” plan, several alternatives other than the non-structural recommended plan were evaluated. The alternatives included constructing floodwalls and levees, rerouting high flows in the Rockaway River through the historic Morris Canal away from the downtown business district, and acquisition of flood-prone structures. Alternatives formulation is discussed in Section 4 of the integrated feasibility report. No distinct locally preferred plan was identified nor evaluated. For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Aesthetics	☒	☐	☐
Air quality	☒	☐	☐
Aquatic resources/wetlands	☐	☐	☒

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Invasive species	☒	☐	☐
Fish and wildlife habitat	☐	☐	☒
Threatened/Endangered species/critical habitat	☐	☐	☒
Historic properties	☐	☐	☒
Other cultural resources	☐	☐	☒
Floodplains	☒	☐	☐
Hazardous, toxic & radioactive waste	☒	☐	☐
Hydrology	☐	☐	☒
Noise levels	☒	☐	☐
Public infrastructure	☒	☐	☐
Socio-economics	☒	☐	☐
Environmental justice	☐	☐	☒
Soils	☒	☐	☐
Tribal trust resources	☐	☐	☒
Water quality	☒	☐	☐
Climate change	☒	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the IFR/EA per the stormwater management and sediment erosion control regulations of the State of New Jersey and Morris County will be implemented, if appropriate, to minimize impacts. A traffic management plan will be developed with Denville Township. Construction would be undertaken in accordance with stormwater management and sediment/erosion control regulations of NJ and Morris County. Construction work would abide by noise control ordinances of Denville Township. Construction debris and solid waste would be managed in accordance with Morris County sustainability regulations. These topics are discussed in the "Compliance" section of the integrated feasibility report.

No compensatory mitigation is required as part of the recommended plan.

Public review of the draft IFR/EA and FONSI was completed on **DATE DRAFT EA AND FONSI REVIEW PERIOD ENDED**. All comments submitted during the public review period were responded to in the Final IFR/EA and FONSI. A 30-day state and agency review of the Final IFR/EA was completed on **DATE SAR PERIOD ENDED**. **PICK OPTION BASED ON RESULTS OF STATE AND AGENCY REVIEW**.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan will have no effect on federally listed species or their designated critical habitat.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers is unable to fully identify and evaluate cultural resources and determine the effects of the Recommended Plan on historic properties prior to completion of the Environmental Assessment. Therefore, pursuant to 54 U.S. C. 306108 and 36 CFR 800.4(b)(2), USACE is deferring final identification and evaluation of historic properties until after Project approval and prior to construction by executing a Programmatic Agreement to ensure Section 106 compliance.

Pursuant to the Clean Water Act of 1972, as amended, no discharge of dredged or fill material associated with the recommended plan would occur.

The proposed action does not lie within NJ's coastal zone. Accordingly, no determination of consistency with the NJ Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972 is necessary.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed. No substantial advance environmental or social concerns were identified. However, structures to be removed likely contain minor quantities of contaminants associated with buildings and infrastructure (lead, asbestos, and oil). USACE would conduct an assessment of each structure and utilities in the design phase, identify potential contaminants, possible sampling, and develop appropriate mitigation measures (handling, removal, transport, and disposal) in coordination with USEPA and NJDEP (and county or municipal agencies, if applicable). In the unlikely event any structure presents a substantial risk, it could be eliminated from consideration for non-structural FRM work. Overall though, while some release of minor quantities of pollutants into the environment is expected, contaminants or hazardous, toxic, or radioactive substances are not anticipated to be released at levels of concern.

Technical, environmental, and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____ _____

Date

Alexander Young
Colonel, U.S. Army
Commander and District Engineer

ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

ATTACHMENT 6: DRAFT PROGRAMMATIC AGREEMENT FOR CAP 205 STUDY

DRAFT PROGRAMMATIC AGREEMENT
AMONG THE UNITED STATES ARMY CORPS OF ENGINEERS, NEW YORK, THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICE, AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION REGARDING THE PROPOSED NON-STRUCTURAL PLAN FOR THE DENVILLE FLOOD RISK MANAGEMENT PROJECT IN DENVILLE TOWNSHIP, MORRIS COUNTY, NEW JERSEY

WHEREAS, the U.S. Army Corps of Engineers, New York District (USACE) is studying the feasibility of designing and constructing the Denville Flood Risk Management Project (Project); and,

WHEREAS, the Project authority is provided by Section 205 of the Flood Control Act of 1948 (Public Law 80-858), as amended, and also referred to as Section 205 under the Continuing Authorities Program (CAP); and,

WHEREAS, CAP Section 205 authorizes the USACE to partner with a non-federal sponsor to plan and construct small flood damage reduction projects that have not previously been specifically authorized by Congress and are not part of a larger project; and,

WHEREAS, Denville Township requested that the USACE study flood risk management (FRM) alternatives in Denville Township, Morris County, New Jersey; and,

WHEREAS, the USACE began studying FRM alternatives under CAP Section 205 for Denville Township, New Jersey in 2018; and,

WHEREAS, Denville Township is the non-Federal sponsor for this project responsible for 35 percent of the total cost of design and construction of the Project; and,

WHEREAS, the USACE determined that Denville Township has experienced significant damage to property and risk to human life and safety because of riverine flooding, exacerbated by development throughout the watershed, dense development in urban areas, and human alterations to natural flood stages; and,

WHEREAS, the USACE has drafted an Integrated Feasibility Report and Environmental Assessment that has identified a Recommended Plan that includes a non-structural alternative with flood damage risk reduction measures for residential and non-residential structures; and,

WHEREAS, the non-structural alternative is a voluntary FRM non-structural program for 38 buildings located within Denville Township; and,

WHEREAS, all of the 38 buildings in the non-structural alternative are either residential dwellings or commercial buildings; and,

WHEREAS, each of the 38 buildings are eligible for one of the following nonstructural flood damage risk reduction measures: elevation, dry proofing, and wet-floodproofing; and,

WHEREAS, none of the 38 buildings in the Recommended Plan have been evaluated for the National Register of Historic Places (NRHP); and,

WHEREAS, due to the voluntary nature of the non-structural alternative, determinations of eligibility (DOEs) of all 38 buildings are not economically feasible at this time; and,

WHEREAS, the USACE is the lead Federal Agency for compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA) for the Project pursuant to 36 CFR Part 800.2(a)(2); and,

WHEREAS, the Project is a federally funded undertaking, as defined in 36 CFR Part 800.16(y), and is therefore subject to the requirements of Section 106 of the NHPA (54 U.S.C. § 306108; Section 106); and,

WHEREAS, the USACE has determined that the proposed undertaking may have the potential to cause an adverse effect on properties eligible for or listed in the NRHP pursuant to Section 106 and 36 CFR Part 800; and,

WHEREAS, the Feasibility Study must be approved by a USACE higher authority prior to the receipt of additional project funding and advancement of the Project to the Pre-Construction Engineering and Design (PED) Phase; and,

WHEREAS, pursuant to 36 CFR §800.14(b)(1)(ii), the purpose of this Programmatic Agreement (PA) is to establish the procedures that the USACE will follow to comply with the requirements of 36 CFR §800.4 through 800.13 for the Project, including identification of historic properties in the Project's Area of Potential Effects (APE), evaluation of the effect of the undertaking on historic properties, and resolution of adverse effects, if applicable, thereby completing the Section 106 process and satisfying applicable State and Federal historic preservation laws, and allowing the USACE to approve the Feasibility Report and advance the Project to the next project phase; and,

WHEREAS, the USACE is consulting with the New Jersey State Historical Preservation Office (NJ SHPO), pursuant to 36 CFR Part 800, the regulations implementing Section 106; and,

WHEREAS, schedule and budgetary constraints, including Section 1001 of the Water Resources Reform and Development Act (WRRDA) of 2014 (Public Law 113-121) (limiting duration and cost of USACE final feasibility reports), limit the detailed engineering design of the Project features during the feasibility phase such that the USACE cannot conduct all of the necessary surveys to fully identify and evaluate historic and cultural resources, fully determine adverse effects of the Project on historic properties, or fully avoid, minimize, or mitigate those adverse effects, prior to completing the appropriate National Environmental Policy Act (NEPA) documentation for the feasibility phase; and,

WHEREAS, because implementation of the Preconstruction, Engineering, and Design (PED) phase (where detailed engineering design will occur) is contingent on either authorization of funds by Congress, and execution of a Design Agreement between the USACE and Denville Township, the USACE may implement PED in phases to the extent that design and/or construction authority is phased and funds are appropriated, so that efforts to identify and evaluate historic properties, determine effects from Project components, identify appropriate avoidance, minimization or mitigation, and conduct related consultation may occur over a period of multiple years as the design for each Project construction phase and/or features is finalized; and,

WHEREAS, 36 CFR § 800.14(b)(1)[ii] allows federal agencies to fulfill their obligations under Section 106 through the development and implementation of programmatic agreements when effects on historic properties cannot be determined prior to approval of an undertaking; and,

WHEREAS, the NJ SHPO has concurred with the use of a Programmatic Agreement and agreed to be a Signatory to this Agreement; and,

WHEREAS, the USACE has determined that as Project components are further designed during the PED phase of the Project, the APE may be further refined, cultural resources surveys to be conducted may identify additional historic properties within the APE, and effects on historic properties may be further identified; and,

WHEREAS, in accordance with 36 CFR Part 800.6(a)(1)(i)(C) and in accordance with 36 CFR Part 800.14(b), the USACE has invited the Advisory Council on Historic Preservation (ACHP) to participate in consultation via the ACHP's e106 submission on (WILL BE ENTERED ONCE SUBMITTED); and,

WHEREAS, the USACE has invited Denville Township to sign this Agreement as an Invited Signatory and they have elected to/not to participate; and,

WHEREAS, the USACE invited the Delaware Nation, Delaware Tribe of Indians, and the Shawnee Tribe to participate in the development of this Programmatic Agreement regarding effects of the Project on historic properties in accordance with 36 CFR §800, and the Delaware Tribe of Indians has elected to participate; and,

WHEREAS, the USACE, NJ SHPO, and Denville Township are collectively referred to as Signatories in the Agreement; and,

WHEREAS, the USACE is coordinating, and shall continue to coordinate a public outreach program for this Project which in the past has consisted of a number of public meetings and the circulation of cultural resource and environmental documents related to the Section 106 and National Environmental Policy Act review processes; and,

WHEREAS, the Feasibility Study will undergo public review in 2023 and will be advertised in on the USACE public website; and,

WHEREAS, the Signatories and Consulting Parties agree that it is advisable to accomplish compliance with Section 106 of the NHPA through the development and execution of this Agreement in accordance with 36 CFR § 800.6 and § 800.14 (b)(1)(ii); and,

WHEREAS, in accordance with 36 CFR §800.6(b)(1)(iv), the USACE will submit this PA, along with the appropriate documentation specified in 36 CFR §800.11(f), to the Council prior to approving the undertaking in order to meet the requirements of Section 106 and 36 CFR §800;

NOW, THEREFORE, the Signatories [add ACHP if they accept] agree that the Project shall be administered in accordance with the following stipulations to satisfy the USACE's Section 106 responsibility.

DRAFT STIPULATIONS

The USACE shall ensure that the following measures are carried out prior to implementation of the Project:

I. Timeframes and Review Procedures

For all draft and final documents and deliverables produced in compliance with this Agreement, the USACE shall provide documents electronically for formal review and for communications among the Signatories and Consulting Parties. Upon request, a hardcopy via mail may be provided to any Consulting Party, time and size permitting. Any written comments provided on draft documents by the Consulting Parties within 30 calendar days from the date of receipt shall be considered in the revision of the document or deliverable. The USACE shall document and report the written comments received for the document or deliverable and how comments were addressed. The USACE shall provide a revised final document or deliverable to the Consulting Parties. The Consulting Parties shall have 30 calendar days to respond. Failure of the Consulting Parties to respond within 30 calendar days of receipt of any document or deliverable shall not preclude the USACE from moving to the next step of this Programmatic Agreement. A copy of the final document or deliverable shall be provided to the Consulting Parties subject to the limitations in Stipulation X (Confidentiality).

II. Area of Potential Effect

A. The preliminary APE for the Project was determined by the USACE based on feasibility-level design and in consultation with the Consulting Parties. The preliminary APE is comprised of Project components and corresponding viewsheds to include direct, indirect, and cumulative effects and is depicted in Appendix A of this Agreement. Design and construction of the Project may occur in phases in which various components of the Project shall be funded and designed separately. The USACE shall refine and consult on the development of each Project phase and consult on the APE for each project feature throughout PED as designs are developed that either expand or contract direct and indirect areas of effect.

B. The APE shall be revised where necessary as project designs and details become available to incorporate all areas, including staging areas and travel routes, that will be directly, indirectly, or cumulatively affected by the Project. If the USACE revises the APE, or an individual component of the APE, the USACE shall consult with the Consulting Parties on that revision in accordance with Stipulation I. Pursuant to Stipulation III.C, Project designs will be reviewed by the Consulting Parties at 35%, 65%, and 95% levels of design. The Consulting Parties may recommend revisions to the APE based on design changes. The USACE shall consult with the Consulting Parties on recommended revisions in accordance with Stipulation I and make a

determination of the final APE for each Project component. After consultation with the Consulting Parties, the new amended APE will be appended to this Agreement in Appendix A.

C. The USACE shall determine the potential for the Project to affect historic properties in a revised APE in consultation with the Consulting Parties pursuant to 36 CFR Part 800.3 – 800.5. If the USACE assesses the Project as proposed and determines that Project designs may cause additional/different effects, of a direct, indirect, or cumulative nature, then the APE should be modified and the USACE shall consult on the modified APE and its assessment of effects in accordance with Stipulation I. Revisions to the APE will not necessitate amendments to this Programmatic Agreement.

D. Through consultation with property owners, the USACE will continue to seek participation in the Project to determine the final number of buildings that will be subject to nonstructural measures within the APE. Due to the voluntary nature of the Project, the USACE and NJ SHPO have agreed to the following actions for the various types of nonstructural measures:

1. If the property owner(s) do not volunteer to participate in the Project, no further consultation is required.

2. If the property owner(s) volunteer to participate in the Project and the building is proposed for elevation, wet-floodproofing, or dry floodproofing, the USACE will consult with the NJ SHPO and follow the historic property identification efforts described in Stipulation III below.

III. Treatment of Historic Properties

A. Identification and Evaluation

The USACE shall complete the identification and evaluation of historic properties as early as practicable, following Project authorization and receipt of funding, to assist in the avoidance and minimization of adverse effects to historic properties well in advance of Project construction. The USACE will begin consultation with the Consulting Parties regarding PED timeframes, cultural resources surveys, proposed construction schedules, how each Project component will be identified, delineated, and effects assessed, and development of a detailed consultation and document delivery schedule to be appended to this Agreement in Appendix C within six (6) months of receiving funding at the New York District level.

1. *Above-Ground Structures*. As design details and funding becomes available, the USACE shall initiate a historic properties identification survey of all above-ground historic and architectural resources that will reach 50 years or older within the duration of the project and are within the APE described in Stipulation II (Area of Potential Effect). Any surveys will be consistent with the SOI's Standards and Guidelines for Archeology and Historic Preservation.
    a. Prior to initiation of a survey, the USACE shall submit a scope of work for the proposed survey to the Consulting Parties for review and comment consistent with Stipulation I (Timeframes and Review Procedures). Surveys and associated reporting will comply with all applicable guidelines and requirements listed in Stipulation VIII (Qualifications). Surveys shall ensure that above-ground and architectural resources are recorded using the appropriate NJ SHPO site form.

    b. Surveys will identify historic properties within the APE and determine if these properties are eligible for inclusion in the NRHP individually or as a contributing element to a historic district and/or National Historic Landmark (NHL) as appropriate.

    c. The USACE shall submit identification and evaluation survey reports to the Consulting Parties for review and comment in accordance with Stipulation I.

2. *Archaeological Resources*. As design details and funding becomes available, the USACE will consult with the Consulting Parties regarding the need for a historic properties identification survey of archaeological resources within the APE described in Stipulation II (Area of Potential Effect). Any surveys will be consistent with the SOI's Standards and Guidelines for Archeology and Historic Preservation.

    a. Prior to initiation of a survey, the USACE shall submit a scope of work for the proposed survey to the Consulting Parties for review and comment consistent with Stipulation I (Timeframes and Review Procedures). Surveys and associated reporting will comply with all applicable guidelines and requirements listed in Stipulation VIII (Qualifications). Recordation of any archaeological sites shall be prepared using the appropriate NJ SHPO site form.

    b. Surveys will identify archaeological resources within the APE and determine if these properties are eligible for inclusion in the NRHP individually or as a contributing element to a district and/or NHL as appropriate.

c. The USACE shall submit identification and evaluation survey reports to the Consulting Parties for review and comment in accordance with Stipulation I (Timeframes and Review Procedures).

3. *NRHP Eligibility Determinations*. The USACE shall determine NRHP eligibility based on identification and evaluation efforts and consult with Consulting Parties regarding these determinations. Should any Consulting Party(s) disagree in writing to the USACE's findings of NRHP eligibility and/or findings of effect within a final document or deliverable, the USACE will immediately notify the Consulting Parties of the objection and proceed to consult with the objecting Consulting Party(s) for a period of time, not to exceed 30 calendar days, to resolve the objection. Should the objecting Consulting Party(s) and the USACE be unable to agree on the issues to which the Consulting Party(s) has objected, the USACE shall proceed in accordance with Stipulation XI (Dispute Resolution); or,

   a. Through mutual agreement of the Signatories, elect to consult further with the objecting Consulting Party(s) until the objection is resolved, or dispute resolution is exercised through the process set forth in Stipulation XI (Dispute Resolution); or,

   b. Treat the property as eligible for the NRHP; or,

   c. Obtain a formal determination of eligibility from the Keeper of the NRHP. The Keeper's determination will be final in accordance with 36 CFR Part 63.4.

B. Assessment of Effects

If historic properties meeting the criteria for listing in the NRHP are identified as a result of the activities described in Stipulation III.A, the USACE shall assess the effects of the Project on these properties in a manner consistent with 36 CFR Part 800.5, and submit its findings to the NJ SHPO and other Consulting Parties for review and comment pursuant to Stipulation I (Timeframes and Review Procedures).

1. Findings of No Historic Properties Affected.

   a. Basis for Finding. The USACE shall make findings of "no historic properties affected" under the following circumstances:

      i. If no historic properties are present in the APE; or,

      ii. The Project component shall avoid effects to historic properties.

b. The USACE shall notify the Consulting Parties of each finding and provide supporting documentation in accordance with 36 CFR Part 800.11(d). Unless a Consulting Party objects to a finding within 30 calendar days, the Section 106 review of the Project component will have concluded.

c. If a Consulting Party(s) objects within 30 calendar days to a finding of "no historic properties affected," the USACE shall consult with the objecting Consulting Party(s) to resolve the disagreement.

   i. If the objection is resolved, the USACE either may proceed with the Project component in accordance with the resolution or reconsider effects on the historic property by applying the criteria of adverse effect pursuant to 36 CFR Part 800.5(a)(1).
   ii. If the USACE is unable to resolve the disagreement within 30 calendar days, it will forward the finding and supporting documentation to the ACHP and request that the ACHP review the USACE's finding in accordance with the process described in 36 CFR Part 800.4(d)(1)(ii). If the USACE's final determination is to reaffirm its "no historic properties affected" finding, the Section 106 review of the Project component will have concluded. If the USACE revises its finding, then it shall proceed to Stipulation III.B.2 or Stipulation III.B.3 as applicable.

2. Findings of No Adverse Effect

a. Basis for Finding. If the USACE determines that a Project component does not meet the adverse effect criteria, the USACE shall propose a finding of "no adverse effect" and consult with the Consulting Parties in accordance with 36 CFR Part 800.5(b) and following steps i-iii below:

   i. The USACE shall notify all Consulting Parties of its finding; describe any project specific conditions and/or modifications required to the undertaking to avoid adverse effects to historic properties; and provide supporting documentation pursuant to 36 CFR Part 800.11(e).

   ii. Unless a Consulting Party disagrees with the finding within 30 calendar days, the USACE shall proceed with its "no adverse effects" determination and conclude the Section 106 review process.

iii. If a Consulting Party(s) disagrees with the finding of "no adverse effect," the USACE will consult with the objecting Consulting Party(s) to resolve the disagreement.

a) If the objection is resolved, the USACE shall proceed with the Project component in accordance with the resolution; or,

b) If the objection cannot be resolved, the USACE shall request that the ACHP review the findings in accordance with 36 CFR Part 800.5(c)(3)(i)-(ii) and submit the required supporting documentation. If the USACE's final determination is to reaffirm its "no adverse effect" finding, the Section 106 review of the Project component will have concluded. If the USACE will revise its finding, then it shall proceed to Stipulation III.B.3 below.

3. Determination of Adverse Effect

a. If the USACE determines that a Project component may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association resulting in an adverse effect to a historic property, the USACE shall notify the Consulting Parties of the determination.

b. Avoidance and Minimization of Adverse Effects. Avoidance of adverse effects to historic properties is the preferred treatment approach. The USACE will consider redesign of Project components in order to avoid and/or minimize historic properties and Project effects that may be adverse. Provisions for avoidance and minimization of adverse effects are outlined in Stipulation III.C. If the USACE determines that the Project component cannot be modified to avoid or minimize adverse effects, the USACE will make a determination of "adverse effect."

C. Avoidance and Minimization of Adverse Effects

1. Project components may be avoided or minimized through adherence to the SOI's Standards for Rehabilitation and/or other appropriate historic resource standards and guidelines. Avoidance and minimization of adverse effects to historic properties may include, but are not limited to, improvements to

overall alignment, use of high-quality construction materials, contextualization of design and materials specific to location, integrated public art or landscape features, and an enhanced community experience. The USACE shall prioritize identifying and implementing avoidance and minimization measures and approaches in consultation with the Consulting Parties.

a. The USACE will develop Project plans and specifications for each Project component at completion intervals of 35%, 65%, and 95% levels of design. At each level of design, the USACE will provide the draft plans and specifications to the Consulting Parties for review and comment in accordance with Stipulation I (Timeframes and Review Procedures).

b. If, through consultation with the Consulting Parties, adverse effects to historic properties are avoided at the 35% or 65% level of design, the USACE shall make a determination of effect on the Project component in accordance with Stipulation III.B.2.a. The 95% level of design shall still be provided for review and comment in accordance with Stipulation I regardless of effects determination.

c. If an effects determination has not been made at the 35% or 65% level of design the USACE shall make a determination of effect in accordance with Stipulation III.B after consultation with the Consulting Parties is complete for the 95% design review of the Project.

2. If the USACE, during its initial review of a Project component, finds the undertaking may adversely affect historic properties, the USACE shall develop and evaluate alternatives or modifications to the undertaking that could avoid or minimize adverse effects on historic properties. If an effect cannot be avoided or minimized, the USACE will follow Stipulation III.C.3 of this Agreement.

a. Alternatives or modifications to the Project component that would avoid or minimize adverse effects on historic properties shall be provided to the Consulting Parties for review and comment in accordance with Stipulation I (Timeframes and Review Procedures).

b. After all comments provided by Consulting Parties in accordance with Stipulation I have been considered, the USACE shall make a determination of effect in accordance with the process described Stipulation III.B.2.a or Stipulation III.B.3.

3. In the event that an effect cannot be avoided or minimized, documentation will be provided to explain why the effect cannot be avoided or minimized and outline the alternatives considered to avoid or minimize, and the USACE will consult with the Consulting Parties to resolve the effects in accordance with Section III.D.

D. Mitigation of Adverse Effects

1. The mitigation of adverse effects to historic properties shall be funded by the USACE and COG as part of the construction budget. If adverse effects cannot be practicably avoided or minimized, the USACE, in consultation with the Consulting Parties, shall develop a treatment plan for the affected historic property in accordance with Stipulation III.D.2 below.

2. Historic Properties Treatment Plan

a. If the USACE determines that the Project will result in an adverse effect, they shall develop a Historic Properties Treatment Plan (HPTP) or Plans to resolve adverse effects. An HPTP would be developed after the USACE notifies the Consulting Parties of a determination of "adverse effect" for the Project or Project component, but before construction of the component commences as outlined in Stipulation IV (Notices to Proceed with Construction).

b. An HPTP shall outline the mitigation measures necessary to resolve the adverse effects to historic properties. Proposed mitigation measures may include, but are not limited to, data recovery, HABS/HAER/HALS documentation, educational programs, informative websites, donation of preservation easements, contributions to preservation funds, historic markers, interpretive brochures, publications, and other forms of creative mitigation or combinations of these measures depending on the historic property's criterion for eligibility. An HPTP shall include a general schedule of work for each Project component, and provide a schedule of key project milestones, and decision points at which to discuss opportunities for Project modification(s) with Consulting Parties.

c. Where a historic property is under private ownership, the Consulting Parties shall to the maximum extent practicable involve the private owner(s) in the development of measures for the HPTP, provided that the HPTP measures to be developed are no more costly or extensive than would be for a comparable property under public ownership. Where a private owner refuses to participate in the development of an HPTP, the Consulting Parties may elect to develop an HPTP without

the owner's participation. Under no circumstances will the USACE be responsible for a private owner's refusal to participate in the development of an HPTP or the refusal to conduct onsite mitigation. Mitigation options may be constrained to offsite or non-invasive approaches (e.g., documentation, offsite interpretation, or further support to other larger scale mitigation measures, etc.) and must be consistent with parameters for use of Federal funds.

d. An HPTP shall define the process and conditions under which monitoring is appropriate, as applicable. An HPTP will outline the curation process and storage criteria for all artifacts and data recovered from historic properties. An HPTP will detail the means and methods of public outreach and dissemination of the results of data recovery excavations to the general public.

e. The USACE shall ensure that the provisions of an HPTP, as developed in consultation with the Consulting Parties and agreed to by the Signatories are documented in writing and implemented. An HPTP shall be appended to this Agreement in Attachment D without amending the Agreement. The use of an HPTP to resolve adverse effects resulting from the Project shall not require the execution of an individual Memorandum of Agreement or Programmatic Agreement and would follow the provisions below (i-vi).

   i. Development: The USACE shall develop an HPTP in consultation with the Consulting Parties after a determination of adverse effect is made in accordance with Stipulation III.B.3.
   ii. Review: The USACE shall submit the draft HPTP to the Consulting Parties for review and comment pursuant to Stipulation I (Timeframes and Review Procedures).
   iii. Concurrence: Following review and acceptance of the HPTP, all Consulting Parties will be provided the final HPTP, which will be appended to this Agreement in Appendix D and implemented in a manner consistent with the procedures outlined in this Agreement and the HPTP. Per Stipulation IV (Notices to Proceed with Construction) below, the HPTP shall be implemented prior to any construction or other activity associated with the undertaking that would adversely affect a historic property. Should the Consulting Parties be unable to agree on an HPTP, the USACE shall proceed in accordance with Stipulation XI (Dispute Resolution).

iv. Reporting: Reports and other data pertaining to the treatment of effects to historic properties will be distributed to the Consulting Parties and other members of the public, consistent with Stipulation X (Confidentiality), unless the Consulting Parties have indicated through consultation that they do not want to receive a report or data. Reports will be consistent with the procedures outlined in the appropriate NJ SHPO and SOI standards and guidelines.

v. Amendments/Addendums/Revisions: If a historic property, which is not covered by an existing HPTP, is discovered within the APE subsequent to the initial inventory effort, if there are previously unanticipated effects to a historic property, or if the USACE and Consulting Parties mutually agree that a modification to the HPTP is necessary, the USACE shall prepare an addendum to the HPTP. If necessary, the USACE shall then submit the addendum to the Consulting Parties for review in accordance with Stipulation I (Timeframes and Review Procedures), and if necessary, shall follow the provisions of Stipulation V (Inadvertant Discoveries). The HPTP may cover multiple discoveries for the same property type. Should the Consulting Parties be unable to agree on an HPTP addendum, the USACE shall proceed in accordance with Stipulation XI (Dispute Resolution).

vi. Final Report Documenting Implementation of HPTP(s): Within one year after the completion of all construction for the Project, the USACE shall submit to the Consulting Parties a final report, or reports if multiple HPTPs were used, documenting the results of all work prepared under the HPTP. The USACE may extend this period through written consent of the Consulting Parties. The submittal of the Final Report shall be in addition to the annual report required under Stipulation XIV (Monitoring and Reporting) of this Agreement and in accordance with Stipulation I (Timeframes and Review Procedures) and Stipulation X (Confidentiality).

II. Notices to Proceed with Construction

A. After the identification and evaluation of historic properties have been completed for the undertaking, and an effects determination has been made per Stipulation III (Treatment of Historic Properties), the USACE may issue a notice to proceed (NTP) for Project components, defined by the USACE in its construction plans

and specifications, prior to resolution of the adverse effects on historic properties, provided that:

1. The HPTP has been finalized for the undertaking in accordance with Stipulation III.D and that the construction would not impact or prevent implementation of the HPTP; and,

2. Ground-disturbing activities associated with the undertaking do not encroach within 50 feet of the known boundaries of any historic property as determined from archaeological site record forms, other documentation, or as otherwise defined in consultation with the Consulting Parties, as appropriate; and,

3. If an archaeological monitor is deemed necessary by the USACE after consultation with the Consulting Parties, an archaeological monitor that meets the professional qualifications described in Stipulation VIII (Qualifications) will be present during any activities that are anticipated to extend either vertically or horizontally into any areas designated as archaeological sensitive.

B. Notification of the USACE's intent to provide an NTP for Project components will be provided to the Consulting Parties thirty days before the NTP is issued to the construction contractor. Notification of the NTP to Consulting Parties will only occur in instances where an adverse effects determination was made for a Project component.

III. Inadvertent Discoveries

A. If historic properties are inadvertently discovered or if unanticipated adverse effects to known historic properties are made during implementation of a Project component the USACE will ensure that the following stipulations are met, and that the following provisions will be included in all construction, operations, and maintenance plans.

B. When a previously unidentified cultural resource, including but not limited to, archaeological sites, standing structures, and properties of traditional religious and cultural significance to Indian Tribes, are discovered during the execution of the undertaking, the individual(s) who made the discovery shall immediately notify the USACE and the undertakings' Contracting Officer (CO), secure the vicinity, make a reasonable effort to avoid or minimize harm to the resource and comply with the following:

1. All ground-disturbing activities shall cease within a minimum of 50 feet from the inadvertent discovery until the USACE's agency official issues the NTP following the procedure outlined in Stipulation IV (Notices to Proceed with Construction).

2. The USACE will notify the Consulting Parties by email or telephone within 48 hours of the discovery or unanticipated effect.

3. The USACE will consult with the Consulting Parties by email, virtual meeting, or telephone to determine whether additional investigations are needed to determine if the resource is a historic property or if the available information is sufficient to make such a determination.

    a. If the UACE determines through consultation that the resource does not warrant further investigation, they will provide written notification by email to the Concurring Parties, outlining the Corps' justification and requesting concurrence. If no comments are received within 72 business hours of acknowledged receipt, construction may resume.

    b. If the USACE determines through consultation that the site warrants further investigation, a scope of work will be developed consistent with Stipulation III (Treatment of Historic Properties).

        i. The scope of work will be submitted to the Consulting Parties for review and comment within a timeframe established in the scope of work. If no comments are received within this period, work shall be implemented in accordance with the scope. If comments are received, the USACE shall take them into account and carry out the scope of work. A report of the investigations will be completed within the timeframe established by the scope of work and copies provided to all Consulting Parties. Should any party object to the proposed work plan or results, the USACE will proceed in accordance with Stipulation XI (Dispute Resolution), except that the calendar day periods in the timeframe for resolution in XI.A, shall be reduced from 30 calendar to not to exceed 10 business days.

        ii. If the resources are found to be ineligible for listing in the NRHP, construction may proceed as planned.

        iii. If the resources are determined to be eligible for listing in the NRHP, the USACE shall then initiate communication with the Project design team to determine if alternative design or construction methods can be implemented to avoid, protect, or minimize adverse effects to the resource. If the resources cannot be avoided by construction

activities, then a mitigation/treatment plan or other measures will be adopted in accordance with Stipulation III.D.2. Undertaking activities in the 50-foot buffer, or other appropriate distance determined by the USACE, will remain suspended until the USACE resolves the adverse effect.

c. Inadvertent discovery and the treatment of human remains is governed by Stipulation VI (Tribal Consultation and Treatment of Human Remains).

C. If unanticipated effects to historic properties are made during implementation of a Project phase or feature where a "no adverse effects" determination was previously made through development of Project feature design, monitoring, and/or protection plan in accordance with Stipulation III.C, the individual(s) who made the discovery shall immediately notify the USACE and the undertakings' CO, secure the vicinity, make a reasonable effort to stop and avoid further harm to the resource and comply with the following:

1. All ground-disturbing activities shall cease within a minimum of 50 feet from the inadvertent effect until the USACE's agency official issues the NTP following the procedure outlined in Stipulation IV (Notices to Proceed with Construction).

2. The USACE will notify the Consulting Parties by email or telephone within 48 hours of the discovery or unanticipated effect.

3. The USACE will consult with the Consulting Parties by email or telephone to determine the sources of the effect and whether the feature design, monitoring plan, and/or protection plan should be amended to avoid adverse effects.

a. If the USACE determines through consultation that an amendment to the feature design, monitoring plan, and/or protection plan can be made to protect the historic property from further effect, they will provide written notification by email to the Consulting Parties, outlining the USACE's justification and requesting concurrence. If no comments are received within 72 business hours of acknowledged receipt, construction may resume.

b. If, through consultation with the Consulting Parties, the USACE determines that damage occurred to a historic property as a result of the unanticipated effect constitutes an adverse effect as defined in Stipulation III.B.3, or that further effects cannot be avoided

through an amendment to the feature design, monitoring plan, and/or protection plan, a determination of adverse effect will be made and a HPTP will be developed in accordance with Stipulation III.D.2.

i. A construction buffer will be made in consultation with the Consulting Parties and construction will be allowed to continue outside of the buffer.

ii. After the HPTP has been finalized in accordance with Stipulation V.D, a NTP will be issued for the remainder of the Project feature impacted by the unanticipated effect in accordance with Stipulation IV (Notices to Proceed with Construction).

IV. Tribal Consultation and Treatment of Human Remains

A. During any point during design or construction of a Project component that may affect historic properties, particularly TCPs or human remains of Native American Origin, any Indian Tribe(s) may request to consult on the undertaking whether or not the Tribe(s) is a Concurring Party to this Agreement. If requested, the USACE will consult with the Tribe(s) on a government-to-government basis in recognition of their sovereign status.

B. The USACE will make every effort to avoid the disturbance of historic and prehistoric human remains. If human remains are identified, consultation would occur with any Indian Tribe(s) that claim cultural affiliation with the identified human remains and any associated funerary objects, sacred objects, and objects of cultural patrimony.

C. If encountered, human skeletal remains and the artifacts found in association with human remains, whether in association with marked graves or unmarked burials, will be left in situ, and all ground-disturbing work within 50 feet of the remains will cease. The contractor will contact the CO immediately. When human remains are encountered, all activity that might disturb the remains shall not resume until authorized by the District Medical Examiner or the State Archaeologist.

1. If, upon inspection by the appropriate legal authorities, the remains are determined to be a criminal matter and not archaeological, the USACE will ensure that appropriate legal and contractual requirements are followed.

2. If the remains are determined to be archaeological, the State Archaeologist has jurisdiction to determine the appropriate treatment and

options for the remains following additional coordination with the Consulting Parties.

a. Human remains will be left in place and protected from further disturbance with security fencing and if necessary, a security guard until a site-specific work plan for their avoidance or, if necessary, their removal can be developed.

b. The USACE will coordinate with all Consulting Parties, Interested Tribe(s), and other interested parties or descendent communities to develop a treatment or avoidance plan consistent with Stipulation V (Inadvertent Discoveries).

D. If human remains are identified during analysis of archaeological materials, the Consulting Parties will be immediately contacted to determine the appropriate treatment of the remains. No photographs or scientific analysis beyond the identification of the remains are permitted. Minimal contact with such remains is permitted by those conducting fieldwork or laboratory analysis.

V. Curation

A. The USACE shall ensure that all original archaeological records (research notes, field records, maps, drawings, and photographic records) and all archaeological collections recovered from the Project produced as a result of implementing the Stipulations of this Agreement are provided for permanent curation. The USACE shall ensure that the records, and collections and curation facility, as applicable, comply with standards set forth in 36 C.F.R. 79, Curation of Federally Owned and Administered Archaeological Collections.

B. Any collection resulting from investigations undertaken as part of this PA are the property of the landowner at the time the collection was retrieved. The USACE does not retain ownership of any collection removed from land(s) it does not own.

C. The final disposition of collected material will be specifically outlined in the HPTP and Consulting Parties will be notified in writing when records and collections have been placed in the permanent curation facility as agreed to in the HPTP.

VI. Qualifications

A. Professional Qualifications
All key personnel (e.g. Principal Investigator, Bioarchaeologist/Osteologist, Architectural Historian, etc.) for technical work and specialized analysis, required for historic preservation activities implemented pursuant to this Agreement and

outlined in research designs or HPTPs, shall meet or exceed the SOI's Historic Preservation Professional Qualifications Standards, as specified in 36 CFR Part 61 for archaeology, history, architectural history, architecture, or historic architecture as appropriate (48 FR 44739). The term "technical work" is defined as all efforts to inventory, evaluate, and perform subsequent treatment of potential historic properties that is required under this Agreement such as cultural resources surveys, architectural inventory, data recovery excavation or recordation. This stipulation shall not be construed to limit peer review, guidance, or editing of documents by Consulting Parties.

B. Historic Preservation Standards
Historic preservation activities carried out pursuant to this Agreement shall meet or exceed the Archaeology and Historic Preservation; Secretary of Interior's Standards and Guidelines (48 FR 44716-44740, September 29, 1983), as well as standards and guidelines for historic preservation activities established by the NJ SHPO. The USACE shall ensure that all reports prepared pursuant to this Agreement are provided to the Consulting Parties, distributed in accordance with Stipulation X (Confidentiality), and meet the published standards of the NJ SHPO or subsequent guidelines provided by the State of Virginia.

C. Monitoring Standards

1. Archaeological monitoring activities required for exploratory, construction, or construction-related, ground disturbing activities implemented pursuant to this Agreement shall be carried out by an individual meeting, at a minimum, the SOI's Historic Preservation Professional Qualifications Standards for archaeology or history, as appropriate (48 C.F.R. 44739). The term "archaeological monitoring" is defined as monitoring ground-disturbing activities that have been determined by the USACE to be occurring in areas potentially sensitive for historic properties or buried resources.

2. Archaeological monitoring will comply with all applicable guidelines and requirements specified in NJ SHPO Standards and Guidelines.

3. Other monitoring required as a result of implementing the Stipulations of this Agreement shall be carried out by individuals meeting specific criteria outlined in the appropriate HPTP.

VII. Public Comment and Public Notice

The interested public shall be invited to provide input at appropriate times during the implementation of this Agreement. The USACE may carry this out through letters of notification, public meetings, site visits, and by utilizing the USACE's Public Website

and will provide a link to that location through social media and/or a press release. The USACE shall ensure that any comments received from members of the public are considered and incorporated where appropriate. Review periods for such comments shall be consistent with Stipulation I (Timeframes and Review Procedures). In seeking input from the interested public, locations of historic properties will be handled in accordance with Stipulation X (Confidentiality).

VIII. Confidentiality

Signatory Parties to this Agreement acknowledge that information about historic properties is subject to the provisions of Section 304 of the NHPA (54 U.S.C. § 307103) and 36 C.F.R. § 800.11(c), relating to the disclosure of information about the location, character or ownership of an historic property, and will ensure that any disclosure under this Agreement is consistent with the terms of this Agreement and with Section 304 of the NHPA, 36 C.F.R. § 800.11(c), the Freedom of Information Act (5 U.S.C. § 552), as amended, and S.C. Code Ann. § 30-4-10, et al, as applicable. Confidentiality regarding the specific nature and location of the archaeological sites and any other cultural resources discussed in this Agreement shall be maintained to the extent allowable by law. Dissemination of such information shall be limited to appropriate personnel within the Corps (including their contractors), Consulting Parties and those parties involved in planning, reviewing, and implementing this Agreement. When information is provided to the USACE by the NJ SHPO or others who wish greater control over the discretionary dissemination of that information, the USACE will make a good faith effort to do so, provided the information to be controlled and the rationale for withholding is clearly identified, to the extent consistent with applicable law.

IX. Dispute Resolution

A. At any time during the term of the Agreement, should any Signatory or Concurring Party object to any actions proposed or the manner in which the terms of this Agreement are implemented, the USACE will immediately notify the Consulting Parties of the objection and proceed to consult with the objecting party(s) for a period of time, not to exceed 30 calendar days, to resolve the objection. If the objection is resolved through consultation, the USACE may authorize the disputed action to proceed in accordance with the terms of such resolution. If the USACE determines that such objection cannot be resolved, the USACE will:

1. Forward all documentation relevant to the dispute, including the USACE's proposed resolution, to the ACHP. The ACHP shall provide the USACE with its recommendation on the resolution of the objection within 30 calendar days of receiving adequate documentation (See 36 CFR Part 800.11). Prior to reaching a final Agency decision, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, and other relevant

Consulting Parties, and provide the objecting party with a copy of this written response. The USACE will then proceed according to its final Agency decision.

2. If the ACHP does not provide its recommendation regarding the dispute within the 30-day time period, the USACE Commander may make a final Agency decision and proceed accordingly. Prior to reaching such a final Agency decision, the USACE shall prepare a written response that takes into account any timely comments regarding the dispute from the Consulting Parties to the Agreement and provide them and the ACHP with a copy of such written response.

3. The USACE's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.

B. At any time while this Agreement is in effect, should a substantial objection pertaining to the implementation of this Agreement be raised by a member of the public, the USACE shall notify the Consulting Parties and take the objection under consideration. The USACE will consult with the Consulting Parties to this Agreement, regarding the objection for no longer than 15 calendar days. The USACE shall consider the objection and all comments provided by the Consulting Parties in reaching its decision. Within 15 calendar days following closure of the Consulting Parties' comment period, the USACE will render a written decision regarding the objection and respond to the objecting party. The USACE will promptly provide written notification of its decision to the Consulting Parties, including a copy of the response to the objecting party. The USACE's decision regarding resolution of the objection will be final. Following issuance of its final decision, the USACE may authorize the action that was the subject of the dispute to proceed in accordance with the terms of that decision. The USACE's responsibility to carry out all other actions under this Agreement shall remain unchanged.

X. Notices

A. Unless otherwise agreed by all Consulting Parties, notices, demands, requests, consents, approvals or any other types of communications regarding this Agreement, shall be sent digitally, requiring confirmation of receipt. If a party to this Agreement requests communication sent by United States Mail, that party shall be considered in receipt of the communication five (5) calendar days after the initial communication is deposited in the United States Mail, certified and postage prepaid, return receipt requested.

B. The ACHP has requested electronic documents and/or electronic communications be used for formal communication among themselves for activities in support of Stipulation I (Timeframes and Review Procedures) as well as all notices, demands, requests, consents, or approvals. Any Consulting Party may consent to electronic documents and/ or electronic communications used in lieu of hard copies.

XI. Amendments, Termination, and Duration

A. Amendment
Any Signatory Party to this Agreement may propose that the Agreement be amended, whereupon the USACE shall consult with the Signatories to consider such amendment. This Agreement may only be amended when all Signatories agree in writing to such an amendment. The amendment will be effective as of the date the amendment is signed by all the Signatories and filed with the ACHP.

B. Amended Appendices
All appendices to this Agreement, and other instruments prepared pursuant to this Agreement, may be revised or updated by the USACE through consultation consistent with Stipulation I (Timeframes and Review Procedures) and written agreement of the Signatory Parties without requiring an amendment to this Agreement. In accordance and Stipulation IX (Public Comment and Public Notice), the Consulting Parties will receive copies and interested members of the public will receive notice of any amendment(s) to the Agreement.

C. Termination
If any Signatory to this Agreement determines that its terms will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation XIII.A, above. If within thirty (30) days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the Agreement upon written notification to the other Signatories.

Once the Agreement is terminated, and prior to work continuing on the undertaking, the USACE must either (a) execute an Agreement pursuant to 36 CFR Part 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR Part 800.7. The USACE shall notify the Signatories as to the course of action it will pursue.

D. Duration
This Agreement shall remain in effect for a period of 15 years after the date it takes effect and shall expire at the end of this 15-year period, unless it is terminated prior to that time. No later than 90 calendar days prior to the expiration date of the Agreement, the USACE shall initiate consultation with all Signatory

Parties to determine if the Agreement should be allowed to expire or whether it should be extended. Unless the Signatories unanimously agree in accordance with Stipulation XIII (Amendments, Termination, and Duration), this Agreement shall automatically expire and have no further force or effect.

XII. Monitoring and Reporting

Each year following the execution of this Agreement until it expires or is terminated, the USACE shall provide all parties to this Agreement, on or about the annual anniversary date of execution, a summary memorandum detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in the USACE's efforts to carry out the terms of this Agreement. The annual report shall specify how Project/Project component design has been utilized to minimize harm to affected historic properties to the maximum extent possible pursuant to 36 CFR Part 800.10. The annual report also shall include an updated digital copy of the Agreement that includes approved HPTPs, as well as APE revisions and updates to Attachments A through D.

XIII. The Anti-Deficiency Act

The USACE's and other Federal agencies' obligations under this Agreement are subject to the availability of appropriated funds, and the stipulations of the Agreement are subject to the provisions of the Anti-deficiency Act, 31 U.S.C. Part 1341, et seq. The USACE and other Federal agencies shall make reasonable and good faith efforts to secure the necessary funds to implement their obligations under this Agreement. If compliance with the Anti-deficiency Act alters or impairs the USACE's ability to implement its obligations under this Agreement, the USACE shall consult in accordance with the amendment and termination procedures found in Stipulation XIII (Amendments, Termination, and Duration), or proceed in accordance with the procedures found in Stipulation III.D.2.e.(v), if the USACE and Consulting Parties agree that an addendum to an HPTP is appropriate.

XIV. Communications

Electronic mail (email) may serve as the official correspondence method for all communications regarding this Agreement and its provisions. See Appendix B for a list of contacts and email addresses. Contact information in Appendix B may be updated as needed without an amendment to this Agreement. It is the responsibility of each party to the Agreement to immediately inform the USACE of any change in name, address, email address, or phone number of any point-of-contact. The USACE shall forward this information to all parties to this Agreement by email.

XV. Electronic Copies

Within one (1) week of the last signature on this Agreement, the USACE shall provide the SHPO and other consulting parties with one (1) high-quality, legible, color, electronic copy of this fully-executed Agreement and all of its appendices fully integrated into one, single document. Internet links shall not be used as a means to provide copies of the appendices since web-based information often changes. If the electronic copy is too large to send by email, the USACE shall provide the NJ SHPO and other consulting parties with a copy of this Agreement on a compact disc or other appropriate means.

XVI. Effective Date

This Agreement shall take effect on the date that it has been fully executed by the Signatory Parties.

XVII. Execution

By execution of this Agreement in the pages provided below, the Signatory Parties agree to the terms of this Agreement, and the execution and the implementation of the terms of this Agreement by the Signatory Parties evidence that the USACE has taken into account the effects of this Project on historic properties and afforded the ACHP an opportunity to comment.

Appendix A – Area of Potential Effects
Appendix B – Contact Information
Appendix C – Project Schedule (to be appended once funding is available at the New York District level)
Appendix D – Historic Property Treatment Plans (to be appended once finalized)

Signatures Follow on Separate Page

SIGNATORY:

U.S. Army Corps of Engineers, New York District

_____ _____

Alexander Young Date
Colonel, U.S. Army
Commander and District Engineer

SIGNATORY:

New Jersey State Historic Preservation Officer

_____ _____

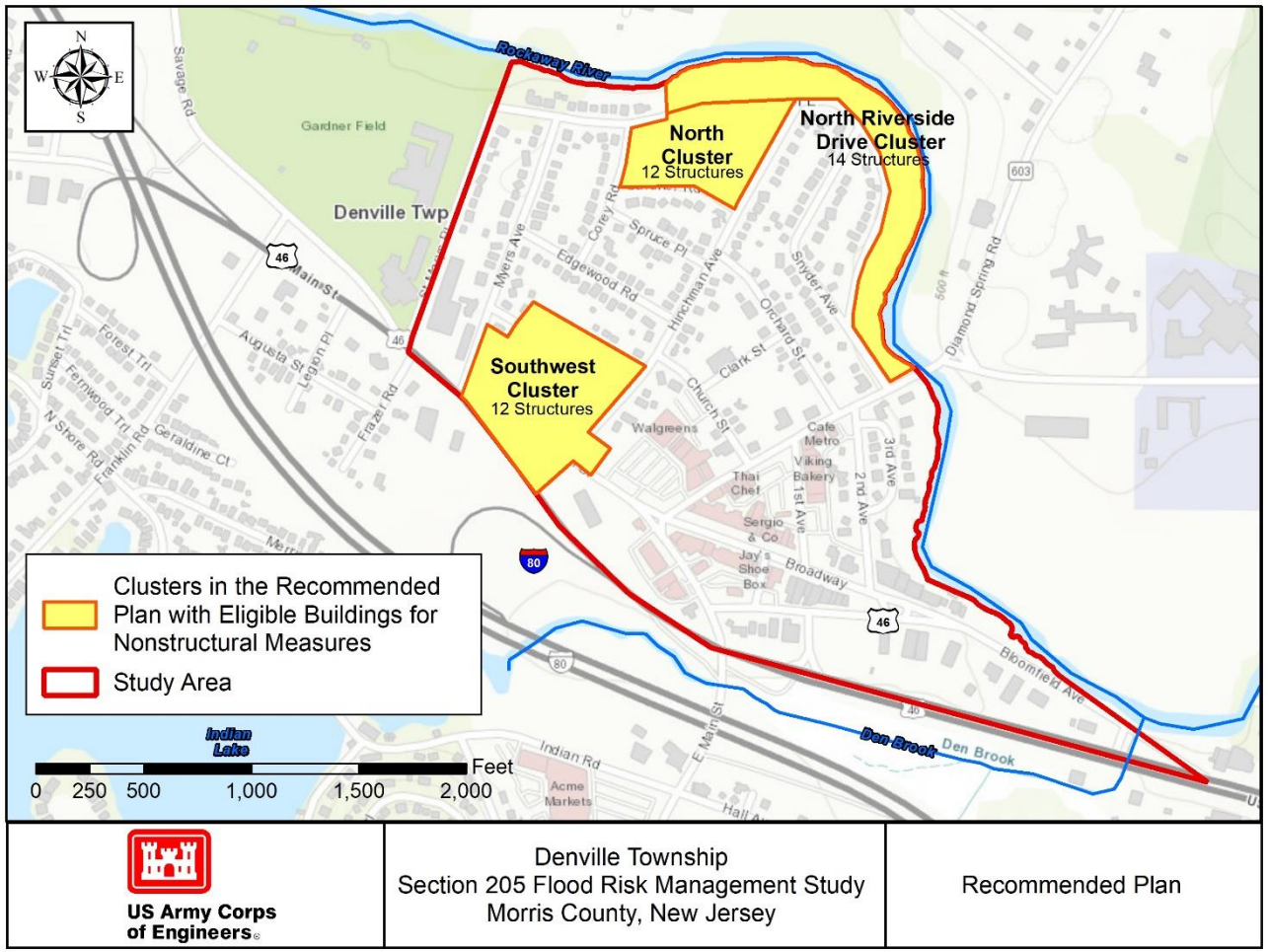
Katherine Marcopul Date
Deputy State Historic Preservation Officer
New Jersey Historic Preservation Office

CONCURRING PARTY:

Delaware Tribe of Indians

_____ _____

Appendix A – Area of Potential Effects*



*Eligibility in this figure refers to the eligibility of buildings to be modified with nonstructural measures, and not eligibility for the NRHP.

Appendix B – Contact Information

U.S. Army Corps of Engineers, Baltimore District (as of January 2022)

Bethany McClanahan
Project Manager
U.S. Army Corps of Engineers, Baltimore District (NAB)
2 Hopkins Plaza, Baltimore, MD 21201
Office: (917) 750-3325
Bethany.M.McClanahan@usace.army.mil

Ethan A. Bean
Cultural Resources Specialist
U.S. Army Corps of Engineers, Baltimore District (NAB)
2 Hopkins Plaza, Baltimore, MD 21201
Office: (410) 962-2173
Ethan.A.Bean@usace.army.mil

DRAFT APPENDIX C
PROJECT SCHEDULE (to be appended once funding is available at the NAB level)

DRAFT APPENDIX D
HISTORIC PROPERTY TREATMENT PLAN (to be appended if used and/or once finalized)

ROCKAWAY RIVER AND DEN BROOK, DENVILLE TOWNSHIP
MORRIS COUNTY, NEW JERSEY CAP SECTION 205
FLOOD RISK MANAGEMENT STUDY

ENVIRONMENTAL AND CULTURAL RESOURCES APPENDIX

ATTACHMENT 7: LETTER OF SUPPORT FOR THE PROJECT FROM THE TOWNSHIP OF DENVILLE, NEW JERSEY

TOWNSHIP OF DENVILLE

MAYOR THOMAS W. ANDES
973-625-8300 Ext. 224
E-mail: Mayor@denvillenj.org

STEVEN WARD
Township Administrator
(973) 625-8300 Ext. 222
E-mail:
Administration@denvillenj.org

Website:
http://www.denvillenj.org
FAX: (973) 625-2491

1 ST. MARY'S PLACE
DENVILLE, N. J. 07834

Council President
ANGELA COTÉ

Council Members:
GARY BOROWIEC
GLENN R. BUIE
HARRY FAHRER
CHRISTOPHER P. GOLINSKI
CHRISTINA V. KOVACS
JOHN MURPHY

TARA M. PETTONI, RMC
Municipal Clerk
973-625-8300 Ext. 232
E-mail: clerk@denvillenj.org

March 3, 2023

Colonel Matthew W. Luzzatto Commander
United States Army Corp of Engineers New York District
26 Federal Plaza New York, NY 10278

RE: Denville Feasibility Study

Dear Colonel Luzzatto,

I am writing this letter to confirm our support for the Denville Flood Risk Management Study. The Town of Denville supports the Recommended Plan described in the final feasibility report.

We are willing to work with the U.S. army Corps of Engineers (USACE), New York District and the New Jersey Department of Environmental Protection (NJDEP)) on future funding needs and cost share obligations for the design and construction phases of the project which will be delineated in a Project Partnership Agreement (PPA). The Town of Denville will participate as the Non-Federal Sponsor for the Project. The Town of Denville also will enter into a local agreement with the NJDEP, a Non-Federal Party to the PPA.

We look forward to working with the New York District to finalize this next important step which will provide flood risk management for the community. If you have any questions, please contact Steven Ward at 973.625.8300x222 or sward@denvillenj.org or John Ruschke 973.432.8309 or John.Ruschke@mottmac.com

Sincerely,

Thomas W. Andes

CC: Steve Ward
John Ruschke