# Appendix E.05
# Hydrologic/Water Resources (Floodplains)

# APPENDIX E.05

## HYDROLOGIC/WATER RESOURCES (FLOODPLAINS) – ERRATA SHEET

No changes were made to the materials in this appendix. This Volume 2 file contains the same information as was presented in the Tier 1 Draft EIS published November 2015.

NEC FUTURE
A Rail Investment Plan for the Northeast Corridor

# Floodplains Effects Assessment Methodology

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FINAL

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# 1. Floodplains

## 1.1 INTRODUCTION

This methodology explains how the NEC FUTURE program will address the potential effects of the Tier 1 EIS Alternatives on floodplains in the Tier 1 EIS.

This methodology presents the regulatory framework, involved government agencies, expected regulatory and other outcomes of the Tier 1 EIS process, and relevance to Tier 2, project-level assessments. It also identifies data sources, metrics and methods to be used to document existing conditions and analyze environmental consequences. This methodology may be revised as the NEC FUTURE program advances and new information is available.

## 1.2 DEFINITIONS

A floodplain is an area susceptible to flooding. The Federal Emergency Management Agency (FEMA) defines the geographic area of floodplains according to varying levels of flood risk by designating special flood hazard areas (SFHA) on a Flood Insurance Rate Map (FIRM). SFHAs are those areas that are susceptible to being inundated by a flood event having a one percent chance (base flood or 100-year flood) of being equaled or exceeded each year, and are regulated by FEMA. This Tier 1 EIS will focus on the SFHAs (regulated floodplains). The definitions below relate to floodplains and the SFHAs that will be included in the analysis for the NEC FUTURE program.

- *Base Flood:* A flood having a one percent chance of being equaled or exceeded in any given year. This is also referred to as the 100-year floodplain.
- *Base Flood Elevations (BFE):* The elevation of surface water resulting from a flood that has a 1 percent chance of equaling or exceeding that level in any given year. The BFE is shown on the FIRM for zones AE, AH, A1–A30, AR, AR/A, AR/AE, AR/A1– A30, AR/AH, AR/AO, V1–V30, and VE (see definitions of flood zones below).
- *Advisory Base Flood Elevations (ABFE):* The elevation of surface water resulting from a flood from in-progress or approximate studies that are intended to offer guidance on elevating new and reconstructed buildings. ABFE maps provide interim information for reconstruction efforts and can be used until new Flood Insurance Surveys (FISs) and FIRMs, if under development, become effective.
- *Floodway:* A regulatory floodway is defined by FEMA as "…the channel of a watercourse and the adjacent land that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height."
- *Flood Zones:* Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's FIRM or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.
  - *Flood Zone A:* This category and its multiple subcategories, indicate high risk flooding areas. Within the Zone A, these areas have been calculated as having a 1 percent annual chance of

flooding and there are mandatory requirements for flood insurance for those communities that participate in the National Flood Insurance Program (NFIP). The subcategories within Zone A include: AO, AH, A1-A30, AE, A99, and AR. These subcategories are variations on the types of waterways with which flooding may be associated or those that have BFEs calculated and shown on the FIRMs. For purposes of this Tier 1 EIS analysis, anything within a Zone A category is included in the definition of a floodplain.

- *Flood Zone V:* This category and its subcategories (VE, V1-30), indicate high risk flooding areas within coastal areas. The Zone V designation includes coastal areas with a 1 percent or greater chance of flooding and an additional hazard associated with storm waves. For those communities that participate in the NFIP, mandatory insurance is required within Zone V. For purposes of this Tier 1 EIS analysis, anything within a Zone V category is included in the definition of a floodplain.

## 1.3 RELATED RESOURCES

The effects assessments from other resources evaluated as part of the Tier 1 EIS will be used to assess the effects on floodplains. These related resources are identified in Table 1. Note that the effects assessments for those related resources will be documented within their respective Tier 1 EIS sections.

Table 1 – Related Resource Inputs to Floodplains Assessment

| Resource | Input to Floodplains Assessment |
|---|---|
| Land Cover | ▪ Land cover assessment for areas where a "conversion" of land use may occur<br>▪ Land cover assessment to determine existing land cover types, such as residential areas, to identify potential flooding risk |
| Water Resources | ▪ Effects of water resources that overlap with floodplains and thus aggravate flooding conditions/risks |
| Coastal Zones & Saltwater Wetlands | ▪ Effects of coastal zones & saltwater wetlands that overlap with floodplains and thus aggravate flooding conditions/risks |
| Climate Change | ▪ Vulnerability assessment associated with flooding risks; qualitative evaluation of the potential impact climate change may have on changing flood zones |

Source: NEC FUTURE JV Team, 2013

## 1.4 AGENCY AND REGULATORY FRAMEWORK

Floodplains are subject to regulation by FEMA. Approvals or permits are issued by at the state or local level. Applicable legislation and regulations, listed in Table 2 will be considered, consistent with a Tier 1 level of assessment, in the evaluation of floodplains for the NEC FUTURE Program.

Table 2 –Management and Regulation of Floodplains

| Federal Agency | Regulatory Oversight | Description of Regulation | Regulated Resource |
|---|---|---|---|
| FEMA | ▪ Nation Flood Insurance Program (NFIP) | ▪ Identifies flood hazard areas throughout the U.S. and its territories and produces Flood Hazard Boundary Maps and FIRMs. These maps are used for floodplain management and to determine risk-based flood insurance premiums for the NFIP. | ▪ Floodplain mapping/floodplain management regulations |

Source: NEC FUTURE JV Team, 2013

Additionally, the following Executive Orders pertain to floodplains:

- *Executive Order (EO) 11988: Floodplain Management:* EO 11988 requires federal agencies to avoid, to the extent possible, the short-and long-term adverse impacts associated with the occupancy and modification of floodplains. Federal agencies are to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.
- *Floodplain Management Department of Transportation Order (DOT) 5650.2 "Floodplain Management and Protection":* The purpose of DOT Order 5650.2 is to ensure that proper consideration is given to the avoidance and mitigation of adverse floodplain impacts by DOT actions, planning programs and budget requests.

### 1.4.1 Regulatory Compliance

No formal agency approvals would be requested for the Tier 1 EIS. The requirements for subsequent Tier 2 evaluations, including compliance with EO 11988 as well as state and local regulations, will be described in the Tier 1 EIS. During the Tier 1 EIS process, the FRA will engage in dialogue with FEMA to discuss methodologies, assumptions and findings and how Tier 1 EIS Alternatives avoid or consider floodplains as well as identify potential opportunities to streamline subsequent Tier 2 environmental reviews (see Section 1.7). Coordination with FEMA will be consistent with the NEC FUTURE's Agency Coordination Plan and support the Statement of Principles (SOP) established between the FRA and federal regulatory agencies as part of the Council on Environmental Quality (CEQ) Pilot program.

## 1.5 METHODOLOGY TO ASSESS EFFECTS

This effects assessment methodology identifies the approach and assumptions for describing existing conditions of floodplains and environmental consequences of the Tier 1 EIS Alternatives on those resources. It identifies data sources, defines the Affected Environment and Context Area considered for floodplains, and the approach for evaluating potential direct effects[1] . Direct effects

[1] Direct Effects are caused by the action and occur at the same time and place (40 CFR § 1508.8)

include encroachment or fill within a floodplain. Indirect effects[2], those related to induced growth, will be addressed in a separate methodology (see Indirect Effects Assessment Methodology).

### 1.5.1 Existing Conditions

The data sources listed in Table 3 will be used to establish the existing conditions for floodplains.

Table 3 – Data Sources for the Evaluation of Floodplains

| Resource | Data Source | Data Application |
|---|---|---|
| Floodplains | ▪ Digital Geospatial Version of Flood Hazard Information published on Flood insurance Rate Maps (FIRMs)<br>▪ Advisory Base Flood Elevation and preliminary data where available | ▪ Data will be mapped in GIS and overlain on the Affected Environment |

Source: NEC FUTURE JV, 2013

The existing conditions for floodplains will be documented in the Tier 1 EIS for an established Affected Environment and Context Area. The Affected Environment is a 2,000-foot-wide swath centered on the Representative Route[3] for each of the Tier 1 EIS Alternatives. This 2,000-foot swath is sufficiently wide to:

- Encompass and account for the improvements associated with a Representative Route including infrastructure improvements (such as embankments, aerial structures, track improvements), ancillary facilities (such as stations, yards and parking structures), or service changes
- Account for contiguous floodplains and affiliated water features that may extend beyond the Representative Route

Within the Affected Environment, the total area (acres) of SFHAs, as defined in Section 1.2, will be estimated within each state on a county-by-county basis.

The Context Area is five miles wide, centered on the Representative Route for each of the Tier 1 EIS Alternatives. Within the Context Area, floodplains will be mapped but acreage will not be quantified in order to qualitatively characterize the floodplains that could be affected should the Representative Route shift. For resources within the Context Area, relative size and location of floodplains will be presented; this information will be used to supplement the quantitative assessment of effects within the Affected Environment.

[2] Indirect Effects are those effects that occur later in time or are further removed in distance (40 CFR § 1508.8)

[3] Representative Route refers to a proposed route or potential alignment for a Tier 1 EIS Alternative. The Representative Route includes the physical footprint of the improvements associated with the Tier 1 EIS Alternatives. The horizontal and vertical dimensions of the footprint of the Representative Route are based on prototypical cross-sections for these improvements. The Representative Route is used as a proxy for estimating the potential effects of a route whose location could shift during subsequent project-level reviews.

### 1.5.2 Environmental Consequences

Within the Affected Environment, environmental consequence will be determined for those areas where a Representative Route of a Tier 1 EIS Alternative overlaps with a designated floodplain. A qualitative assessment of resources present in the Context Area will be used to supplement that effects assessment.

Environmental consequences on floodplains within the Affected Environment will be identified as follows:

1. Overlay available floodplain data for the Affected Environment with the Representative Route associated with the Tier 1 EIS Alternatives to identify portions of the floodplain that could be directly impacted by the alternatives. The area (in acres) of potentially directly-impacted floodplain will be mapped and presented for each Tier 1 EIS Alternative by county and state.
2. To assess potential alterations to floodplains associated with the Tier 1 EIS Alternatives, floodplains affected by a Tier 1 EIS Alternative will be further reviewed and compared to the proposed prototypical cross sections of the Representative Route for that portion of the Tier 1 EIS Alternative. Areas where earth moving activities, such as tunneling, structures and excavation, are proposed will be noted and the potential effects related to typical construction methods on the floodplain will be qualitatively described and mapped.
3. Where the analysis indicates that alterations to the floodplain may occur, a review of the existing and contiguous land cover will be undertaken to qualitatively assess the flooding risks. For example, alterations to floodplains adjacent to developed areas may result in an increased risk to humans whereas alterations to floodplains adjacent to undeveloped areas may not.
4. Overlay identified effects on freshwater water resources, coastal zones and saltwater wetlands with floodplain data to qualitatively discuss areas where flooding conditions/risks may be aggravated.
5. Flooding risks and resulting vulnerabilities are subject to increase due to climate change and sea level rise and are analyzed in the Climate Change and Sea Level Rise Methodology. Drawing on the climate change vulnerability analysis, any proposed infrastructure or NEC reconstruction associated with the Tier 1 EIS Alternatives located within a floodplain or an area that has been identified as being susceptible to an increase in flooding or expanded floodplain will be qualitatively discussed and mapped.

For the Context Area, the potential for floodplains to be impacted should there be a shift in a Representative Route will be qualitatively discussed.

Temporary construction-related effects to floodplains will be described as to the location, duration and type of activity. The NEC FUTURE program overall approach to assessing construction-related effects at the Tier 1 EIS level is further described in a separate Construction Effects Assessment Approach document. Construction methods and activities for Tier 1 EIS Alternatives will be the basis of this assessment and will be descried in Chapter 2.

### 1.5.3 Mitigation Strategies

A menu of potential mitigation measures will be developed on a programmatic scale for further consideration in Tier 2. An example of a programmatic mitigation measure would be to incorporate the use of pervious materials for proposed rail infrastructure within floodplains.

## 1.6 TIER 1 EIS OUTCOMES

The Tier 1 EIS floodplain assessment will:

- Quantify acres of floodplains within the Affected Environment to establish the existing conditions
- Map the distribution of floodplains within the Affected Environment and Context Area
- Identify portions of the Representative Route of the Tier 1 EIS Alternatives that lie within the floodplains and calculate potential acreages of floodplain encroachment (fill within a floodplain)and potential alterations to floodplains
- Qualitatively assess and map further potential alterations to floodplains associated with proposed prototypical cross sections
- Qualitatively assess potential flooding risks on existing and contiguous land use cover as identified in Table 1
- Qualitatively assess and map areas where flooding conditions may be aggravated due to identified effects on freshwater resources, coastal areas and saltwater wetlands
- Qualitatively assess and map infrastructure vulnerabilities within identified floodplains as they relate to the climate change vulnerability analysis
- Identify if the Tier 1 EIS Alternatives avoid direct effects on floodplains
- Identify a menu of potential mitigation measures to be applied at Tier 2
- Describe regulatory compliance requirements for subsequent Tier 2 evaluations

## 1.7 APPLICABILITY TO TIER 2 ASSESSMENTS

The Tier 1 analysis will identify areas where there is potential for encroachment and fill of floodplains. Tier 2 analysis would further define the effects on floodplains and determine the actual results of encroaching/filling identified floodplains at specific locations, as well as include the development of mitigation measures and designs that would avoid or minimize the effects on floodplains.

Additionally, FRA will identify ways in which agency coordination during the Tier 1 EIS process could create efficiencies and help streamline subsequent Tier 2 reviews and approvals. For example, if a particular portion or element of a Tier 1 EIS Alternative avoids direct effects on floodplains, FRA would coordinate with FEMA to determine whether or not those portions need further evaluation of floodplains during the Tier 2 environmental review process.

# Application of Effects-Assessment Methodology

## 5.2 FLOODPLAINS: APPLICATION OF EFFECTS-ASSESSMENT METHODOLOGY

### 5.2.1 Variations to Effects-Assessment Methodology

There were no variations to the Effects-Assessment Methodology during the Tier 1 Draft EIS analysis.

### 5.2.2 Data Variations

There were no variations from the identified data sources in the Effects-Assessment Methodology during the development of the Tier 1 Draft EIS analysis.

### 5.2.3 Criteria for Analysis

#### Existing Conditions

- The FRA calculated the total number of acres of Special Flood Hazard Area (SFHA) within the Affected Environment by overlaying the Affected Environment of each Action Alternative with the National Flood Hazard Layer (NFHL) for each county and state.
- The FRA calculated the average total number of acres of SFHA within the Affected Environment by county. All counties encompassing the average of 700 or more acres of SFHA within the Affected Environment of each Action Alternative and the existing NEC were further identified as having the most potential impacts to floodplains. Waterbodies within those counties and the Affected Environment of each Action Alternative were also identified.
- The FRA calculated the total number of acres of SFHA present within each county and separately for each state as a percentage of the total area of the Affected Environment of each Action Alternative within that same county or state.

#### Environmental Consequences

- The FRA calculated the total number of acres of SFHA within the Representative Route by overlaying the Representative Route of each Action Alternative with the NFHL for each county and state.
- The FRA calculated the average total number of acres of SFHA within the Affected Environment by county. All counties encompassing the average 50 or more acres of SFHA within the Representative Route were further identified as having the most potential impacts to floodplains. Waterbodies within those counties and the Representative Route of each Alternative were also identified.
- For each Action Alternative and the existing NEC, the FRA calculated the total number of acres of SFHA present within the Representative Route for each county and separately for each state as a percentage of the total area of the Representative Route within that same county or state.

#### Environmental Consequences – Stations

- The FRA calculated the number of acres of SFHA present within station areas for each county and state using the same GIS data layers and processes as described earlier in this section for the Environmental Consequences analysis.

# Data Matrices

| Geography | | Floodplains | | | | | | | Floodplains | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Environmental Consequences (Acres) | | | | | | | Affected Environment (Acres) | | | | | | |
| | | | | | Alternative 3 | | | | | | | Alternative 3 | | | |
| State | County | Existing NEC | Alternative 1 | Alternative 2 | via CC and PVD (3.1) | via LI and PVD (3.2) | via LI and WOR (3.3) | via CC and WOR (3.4) | Existing NEC | Alternative 1 | Alternative 2 | via CC and PVD (3.1) | via LI and PVD (3.2) | via LI and WOR (3.3) | via CC and WOR (3.4) |
| DC | District of Columbia | 7 | 7 | 7 | 23 | 23 | 23 | 23 | 121 | 121 | 121 | 127 | 127 | 127 | 127 |
| MD | Prince George's | 32 | 32 | 32 | 98 | 98 | 98 | 98 | 547 | 547 | 547 | 561 | 561 | 561 | 561 |
| MD | Anne Arundel | 49 | 49 | 49 | 159 | 159 | 159 | 159 | 745 | 745 | 745 | 774 | 774 | 774 | 774 |
| MD | Howard | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 8 | 8 | 8 | 8 |
| MD | Baltimore County | 12 | 12 | 12 | 68 | 68 | 68 | 68 | 374 | 374 | 374 | 695 | 695 | 695 | 695 |
| MD | Baltimore City | 14 | 14 | 14 | 19 | 19 | 19 | 19 | 83 | 88 | 88 | 204 | 204 | 204 | 204 |
| MD | Harford | 61 | 61 | 61 | 179 | 179 | 179 | 179 | 948 | 948 | 946 | 1,498 | 1,498 | 1,498 | 1,498 |
| MD | Cecil | 34 | 34 | 66 | 109 | 109 | 109 | 109 | 606 | 606 | 860 | 862 | 862 | 862 | 862 |
| DE | New Castle | 51 | 51 | 109 | 201 | 201 | 201 | 201 | 1,643 | 1,643 | 2,339 | 2,368 | 2,368 | 2,368 | 2,368 |
| PA | Delaware | 7 | 7 | 40 | 30 | 30 | 30 | 30 | 291 | 291 | 487 | 589 | 589 | 589 | 589 |
| PA | Montgomery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 21 | 21 | 91 | 30 | 30 | 30 | 30 | 478 | 478 | 1,411 | 1,057 | 1,057 | 1,057 | 1,057 |
| PA | Bucks | 21 | 21 | 21 | 71 | 71 | 71 | 71 | 535 | 535 | 534 | 555 | 555 | 555 | 555 |
| NJ | Salem | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Gloucester | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Camden | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Burlington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Mercer | 33 | 33 | 33 | 93 | 93 | 93 | 93 | 440 | 440 | 440 | 459 | 459 | 459 | 459 |
| NJ | Middlesex | 43 | 43 | 45 | 155 | 155 | 155 | 155 | 994 | 994 | 1,037 | 1,063 | 1,063 | 1,063 | 1,063 |
| NJ | Somerset | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Union | 5 | 5 | 10 | 18 | 18 | 18 | 18 | 158 | 158 | 161 | 161 | 161 | 161 | 161 |
| NJ | Essex | 23 | 23 | 45 | 63 | 63 | 63 | 63 | 366 | 366 | 377 | 379 | 379 | 379 | 379 |
| NJ | Bergen | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Hudson | 37 | 43 | 43 | 106 | 106 | 106 | 106 | 1,188 | 1,219 | 1,232 | 1,656 | 1,656 | 1,656 | 1,656 |
| NY | New York | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 264 | 282 | 299 | 490 | 490 | 490 | 490 |
| NY | Richmond | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Queens | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 161 | 161 | 247 | 247 | 305 | 305 | 247 |
| NY | Kings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 63 | 63 | 147 | 147 | 63 |
| NY | Bronx | 50 | 50 | 57 | 110 | 50 | 50 | 110 | 497 | 497 | 502 | 519 | 497 | 497 | 519 |
| NY | Westchester | 2 | 2 | 4 | 24 | 2 | 2 | 24 | 232 | 232 | 252 | 870 | 232 | 232 | 870 |
| NY | Putnam | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 0 | 0 | 86 |
| NY | Nassau | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 |
| NY | Suffolk | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 222 | 222 | 0 |
| CT | Fairfield | 63 | 70 | 84 | 78 | 70 | 70 | 79 | 1,288 | 1,397 | 1,549 | 1,788 | 1,397 | 1,397 | 1,788 |
| CT | Litchfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | New Haven | 104 | 104 | 176 | 108 | 169 | 169 | 108 | 2,015 | 2,015 | 2,578 | 2,393 | 2,805 | 2,805 | 2,393 |
| CT | Hartford | 0 | 0 | 110 | 25 | 40 | 56 | 41 | 0 | 0 | 882 | 596 | 538 | 681 | 739 |
| CT | Tolland | 0 | 0 | 1 | 1 | 1 | 27 | 27 | 0 | 0 | 237 | 237 | 237 | 391 | 391 |
| CT | Windham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| CT | Middlesex | 46 | 58 | 46 | 46 | 46 | 46 | 46 | 820 | 859 | 820 | 820 | 820 | 820 | 820 |
| CT | New London | 235 | 266 | 235 | 235 | 235 | 235 | 235 | 3,332 | 3,754 | 3,332 | 3,332 | 3,332 | 3,332 | 3,332 |
| RI | Washington | 48 | 69 | 48 | 48 | 48 | 48 | 48 | 1,479 | 1,712 | 1,479 | 1,479 | 1,479 | 1,479 | 1,479 |
| RI | Kent | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 488 | 488 | 488 | 488 | 488 | 488 | 488 |
| RI | Providence | 14 | 14 | 22 | 25 | 25 | 14 | 14 | 217 | 217 | 560 | 557 | 557 | 217 | 217 |
| MA | Hampden | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Worcester | 0 | 0 | 0 | 0 | 0 | 55 | 55 | 0 | 0 | 0 | 0 | 0 | 977 | 977 |
| MA | Middlesex | 0 | 0 | 0 | 0 | 0 | 17 | 17 | 0 | 0 | 0 | 0 | 0 | 349 | 349 |
| MA | Bristol | 9 | 9 | 10 | 33 | 33 | 9 | 9 | 464 | 464 | 501 | 513 | 513 | 513 | 513 |
| MA | Norfolk | 12 | 12 | 21 | 52 | 52 | 12 | 12 | 393 | 393 | 386 | 399 | 399 | 399 | 399 |
| MA | Suffolk | 2 | 2 | 1 | 3 | 3 | 3 | 3 | 84 | 84 | 84 | 89 | 89 | 181 | 181 |
| DC | Total | 7 | 7 | 7 | 23 | 23 | 23 | 23 | 121 | 121 | 121 | 127 | 127 | 127 | 127 |
| MD | Total | 202 | 202 | 234 | 631 | 631 | 631 | 631 | 3,308 | 3,313 | 3,566 | 4,601 | 4,601 | 4,601 | 4,601 |
| DE | Total | 51 | 51 | 109 | 201 | 201 | 201 | 201 | 1,643 | 1,643 | 2,339 | 2,368 | 2,368 | 2,368 | 2,368 |
| PA | Total | 49 | 49 | 152 | 131 | 131 | 131 | 131 | 1,304 | 1,304 | 2,432 | 2,201 | 2,201 | 2,201 | 2,201 |
| NJ | Total | 141 | 147 | 177 | 435 | 435 | 435 | 435 | 3,146 | 3,177 | 3,248 | 3,717 | 3,717 | 3,717 | 3,717 |
| NY | Total | 64 | 64 | 73 | 145 | 69 | 69 | 145 | 1,165 | 1,183 | 1,363 | 2,275 | 1,896 | 1,896 | 2,275 |
| CT | Total | 448 | 498 | 652 | 493 | 560 | 602 | 535 | 7,454 | 8,025 | 9,397 | 9,166 | 9,129 | 9,428 | 9,465 |
| RI | Total | 77 | 98 | 84 | 88 | 88 | 77 | 77 | 2,185 | 2,417 | 2,527 | 2,525 | 2,525 | 2,185 | 2,185 |
| MA | Total | 22 | 22 | 32 | 88 | 88 | 95 | 95 | 941 | 941 | 972 | 1,000 | 1,001 | 2,418 | 2,418 |
| Grand Total | | 1,060 | 1,137 | 1,521 | 2,234 | 2,225 | 2,262 | 2,272 | 21,268 | 22,124 | 25,966 | 27,980 | 27,564 | 28,939 | 29,355 |

| Geography | | Station ID | Station Type | Floodplains | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stations (Acres) | | | | | |
| | | | | | | Alternative 3 | | | |
| State | County | | | Alternative 1 | Alternative 2 | via CC and PVD (3.1) | via LI and PVD (3.2) | via LI and WOR (3.3) | via CC and WOR (3.4) |
| DC | District of Columbia | 1 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Prince George's | 2 | Existing | 2 | 2 | 2 | 2 | 2 | 2 |
| MD | Prince George's | 3 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Prince George's | 4 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Anne Arundel | 5 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Anne Arundel | 6 | Existing | 0 | 11 | 11 | 11 | 11 | 11 |
| MD | Anne Arundel | 6 | New | 11 | 0 | 11 | 11 | 11 | 11 |
| MD | Baltimore County | 7 | Existing | 4 | 4 | 4 | 4 | 4 | 4 |
| MD | Baltimore County | 15 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Baltimore City | 8 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Baltimore City | 9 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Baltimore City | 10 | Existing | 14 | 14 | 14 | 14 | 14 | 14 |
| MD | Baltimore City | 11 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Baltimore City | 12 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Baltimore City | 13 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Baltimore City | 14 | New | 0 | 0 | * | * | * | * |
| MD | Harford | 16 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Harford | 17 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Cecil | 22 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MD | Cecil | 23 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| DE | New Castle | 24 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| DE | New Castle | 25 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| DE | New Castle | 26 | New | 1 | 1 | 1 | 1 | 1 | 1 |
| DE | New Castle | 27 | Existing | 12 | 12 | 12 | 12 | 12 | 12 |
| DE | New Castle | 28 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| DE | New Castle | 29 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| PA | Delaware | 30 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 31 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 31 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 32 | Existing | 7 | 7 | 7 | 7 | 7 | 7 |
| PA | Delaware | 33 | Existing | 5 | 5 | 5 | 5 | 5 | 5 |
| PA | Delaware | 34 | New | 3 | 3 | 3 | 3 | 3 | 3 |
| PA | Delaware | 35 | Existing | 4 | 4 | 4 | 4 | 4 | 4 |
| PA | Delaware | 36 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 37 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 38 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 39 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 40 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 41 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| PA | Delaware | 42 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Delaware | 43 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 44 | Existing | 0 | 6 | 5 | 5 | 5 | 5 |
| PA | Philadelphia | 45 | Existing | 44 | 44 | 44 | 44 | 44 | 44 |
| PA | Philadelphia | 46 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 47 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 48 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 49 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 50 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 51 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Philadelphia | 52 | Existing | 2 | 2 | 2 | 2 | 2 | 2 |
| PA | Bucks | 53 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Bucks | 54 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Bucks | 55 | Existing | 3 | 3 | 3 | 3 | 3 | 3 |
| PA | Bucks | 56 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| PA | Bucks | 57 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Mercer | 58 | Existing | 12 | 12 | 12 | 12 | 12 | 12 |
| NJ | Mercer | 60 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |

| Geography | | Station ID | Station Type | Floodplains | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stations (Acres) | | | | | |
| | | | | | | Alternative 3 | | | |
| State | County | | | Alternative 1 | Alternative 2 | via CC and PVD (3.1) | via LI and PVD (3.2) | via LI and WOR (3.3) | via CC and WOR (3.4) |
| NJ | Mercer | 61 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Middlesex | 62 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Middlesex | 63 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| NJ | Middlesex | 64 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Middlesex | 65 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Middlesex | 66 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Middlesex | 67 | Existing | * | * | * | * | * | * |
| NJ | Middlesex | 68 | New | 0 | 0 | 2 | 2 | 2 | 2 |
| NJ | Union | 69 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| NJ | Union | 70 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Union | 71 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Union | 72 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NJ | Essex | 73 | Existing | 26 | 0 | 26 | 26 | 26 | 26 |
| NJ | Essex | 74 | Existing | 5 | 5 | 5 | 5 | 5 | 5 |
| NJ | Essex | 75 | Existing | 0 | 0 | 5 | 5 | 5 | 5 |
| NJ | Hudson | 76 | Existing | 22 | 22 | 22 | 22 | 22 | 22 |
| NY | New York | 77 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | New York | 9993 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Queens | 144 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Queens | 145 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Bronx | 78 | New | 2 | 2 | 2 | 2 | 2 | 2 |
| NY | Bronx | 79 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Bronx | 80 | New | 3 | 3 | 3 | 3 | 3 | 3 |
| NY | Bronx | 81 | New | 13 | 13 | 13 | 13 | 13 | 13 |
| NY | Westchester | 82 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Westchester | 83 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Westchester | 84 | Existing | 6 | 6 | 6 | 6 | 6 | 6 |
| NY | Westchester | 85 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Westchester | 86 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| NY | Westchester | 87 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Westchester | 88 | Existing | 3 | 3 | 3 | 3 | 3 | 3 |
| NY | Westchester | 151 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Putnam | 153 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Nassau | 146 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Suffolk | 148 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| NY | Suffolk | 149 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 89 | Existing | 5 | 5 | 5 | 5 | 5 | 5 |
| CT | Fairfield | 90 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 91 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 92 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 93 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 94 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 95 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 96 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 97 | Existing | 3 | 3 | 3 | 3 | 3 | 3 |
| CT | Fairfield | 98 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 99 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 100 | Existing | 5 | 5 | 5 | 5 | 5 | 5 |
| CT | Fairfield | 101 | Existing | 8 | 8 | 8 | 8 | 8 | 8 |
| CT | Fairfield | 102 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| CT | Fairfield | 103 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 104 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 105 | Existing | 24 | 24 | 24 | 24 | 24 | 24 |
| CT | Fairfield | 107 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Fairfield | 108 | Existing | 3 | 3 | 3 | 3 | 3 | 3 |
| CT | Fairfield | 154 | New | 0 | 0 | 0 | 0 | 0 | 0 |

| Geography | | Station ID | Station Type | Floodplains | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stations (Acres) | | | | | |
| | | | | | | Alternative 3 | | | |
| State | County | | | Alternative 1 | Alternative 2 | via CC and PVD (3.1) | via LI and PVD (3.2) | via LI and WOR (3.3) | via CC and WOR (3.4) |
| CT | New Haven | 109 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | New Haven | 110 | Existing | 2 | 2 | 2 | 2 | 2 | 2 |
| CT | New Haven | 111 | Existing | 15 | 15 | 15 | 15 | 15 | 15 |
| CT | New Haven | 112 | New | 0 | 18 | 0 | 18 | 18 | 0 |
| CT | New Haven | 113 | Existing | 2 | 2 | 2 | 2 | 2 | 2 |
| CT | New Haven | 156 | New | 0 | 6 | 0 | 6 | 6 | 0 |
| CT | New Haven | 114 | Existing | 6 | 6 | 6 | 6 | 6 | 6 |
| CT | New Haven | 115 | Existing | 15 | 15 | 15 | 15 | 15 | 15 |
| CT | New Haven | 116 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | New Haven | 155 | New | 0 | 0 | 1 | 0 | 0 | 1 |
| CT | Middlesex | 117 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Middlesex | 118 | Existing | 3 | 3 | 3 | 3 | 3 | 3 |
| CT | Middlesex | 119 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Middlesex | 120 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | New London | 121 | Existing | 18 | 18 | 18 | 18 | 18 | 18 |
| CT | New London | 124 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | New London | 122 | Existing | 38 | 38 | 38 | 38 | 38 | 38 |
| CT | Hartford | 160 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Hartford | 160 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Hartford | 161 | New | 0 | 3 | 3 | 3 | 3 | 3 |
| CT | Hartford | 164 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Tolland | 165 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| CT | Tolland | 166 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| RI | Washington | 123 | Existing | 4 | 4 | 4 | 4 | 4 | 4 |
| RI | Washington | 125 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| RI | Washington | 126 | Existing | 5 | 5 | 5 | 5 | 5 | 5 |
| RI | Kent | 127 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| RI | Providence | 128 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| RI | Providence | 129 | New | 0 | 1 | 1 | 1 | 1 | 1 |
| RI | Providence | 130 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Bristol | 131 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Bristol | 132 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Bristol | 133 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| MA | Worcester | 172 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Worcester | 173 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Worcester | 174 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Worcester | 175 | New | 0 | 0 | 0 | 0 | 17 | 17 |
| MA | Middlesex | 176 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Middlesex | 178 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Middlesex | 181 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Suffolk | 182 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Norfolk | 134 | Existing | 6 | 6 | 6 | 6 | 6 | 6 |
| MA | Norfolk | 135 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Norfolk | 136 | Existing | 9 | 9 | 9 | 9 | 9 | 9 |
| MA | Suffolk | 137 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Suffolk | 138 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Suffolk | 139 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Suffolk | 140 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Suffolk | 141 | Existing | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Suffolk | 142 | New | 0 | 0 | 0 | 0 | 0 | 0 |
| MA | Suffolk | 143 | Existing | 1 | 1 | 1 | 1 | 1 | 1 |
| Grand Total | | | | 386 | 394 | 415 | 439 | 456 | 432 |