the period of construction. Following construction, bird species are expected to resume their normal habits consistent with post-construction habitat availability in and within the vicinity of the project area.

Mitigation
In order to comply with the Migratory Bird Treaty Act, a clearing restriction of shrubs and trees from April 1 through August 31 will be implemented during to avoid adverse impacts to any potential nesting birds that are covered under this act. The proposed riparian, streambank restoration, and wetland mitigation will benefit birds by restoring or enhancing foraging, shelter and nesting habitat.

Monitoring and Adaptive Management
Riparian zone and wetland mitigation will be subject to monitoring for a period of five years to ensure that success of the mitigation. Refer to Section 5.8 for the discussion of monitoring and adaptive management measures requirements. No specific monitoring plan will be developed for birds. However, bird species observed during mitigation monitoring investigations may be documented.

5.9.4 Mammals
Implementation of the nonstructural measures in Little Falls will not have significant temporary or permanent long term adverse effects to mammals.

Construction activities associated with the channel modifications and the levee construction along the Peckman River will result in temporary disturbance of habitat (e.g. vegetation and tree removal) that may cause the temporary displacement of these species due to increased human activity and habitat alternations. There is also a possibility of mortality to less mobile, burrowing and/or denning species of mammals. Tree clearing restrictions implemented to protect migratory bird and endangered and threatened bat species will provide some protection for tree-dwelling mammal species. Following construction, mammals are expected to resume their normal habits consistent with post-construction habitat availability in and within the vicinity of the project area.

The conversion of wetland and upland forest habitat to construct the levee along the Peckman River to maintained lawn will represent a long-term loss in a habitat type within the immediate project area. However, the majority of species inhabiting the project area are generalists that are adapted to a wide range of environmental conditions. In addition, off-site compensatory mitigation conducted by the District will provide habitat for these species. Therefore, significant adverse permanent impacts are not expected.

Mitigation
The re-establishment of upland, riparian and wetland vegetation as described in Sections 5.7 Wetlands and 5.8 Uplands and Riparian Corridor will provide foraging and cover habitat supportive of wildlife.

Monitoring and Adaptive Management
No specific monitoring plan will be developed for mammals. However, species observed during mitigation monitoring field investigations may be documented.

5.9.5 Reptiles and Amphibians
Implementation of non-structural measures within the project area will not have significant adverse temporary or permanent impacts on amphibian or reptile species.

The diversion culvert is located in disturbed upland habitat and will not adversely affect reptile and amphibian species. In addition, the stilling basin proposed along the right bank and riverbed of the Passaic River is small compared to the available habitat. Therefore, adverse effects will be negligible.

The use of the area located within the footprint of the levee along the Peckman River by reptile and amphibian species is not well documented. Construction activities to replace the levee and mitigation may cause mortality of individuals or less mobile species that reside in the project area. More mobile species will be temporarily displaced from the area and are expected to relocate to other, undisturbed locations of the project area. Following construction, reptile and amphibian species are expected to resume their normal habits consistent with post-construction habitat availability in and within the vicinity of the project area. Long term impacts from the levee along the Peckman River include effects on movement patterns of some amphibians and reptiles, and loss or modification of habitat. However, given that the levee is inset from the river the impacts will be minor.

Mitigation

The re-establishment of wetland, upland and riparian vegetation as described in Sections 5.7 and 5.8 will provide foraging and cover habitat supportive of reptiles and amphibians.

Monitoring and Adaptive Management

No specific monitoring plan will be developed for reptile and amphibian species. However, species observed during mitigation field surveys may be documented.

5.10 Threatened & Endangered Species

5.10.1 Federal Endangered, Threatened & Special Concern Species

The implementation of non-structural measures in the Township of Little Falls will not have any short term or long term adverse impacts to Federally endangered and threatened bat species or bald eagle. Although any tree clearing will be minimal, a tree clearing restriction from April 1 through September 30 will be implemented during construction to minimize any adverse impacts to these species during construction.

Tree clearing activities in the forested tract where the levee along the Peckman River is proposed could potentially remove Indiana bat and northern long eared bat summer roosting habitat. This is especially the case since northern long-eared bat maternity colonies are known to occur in the Borough of Woodland Park. In order to avoid adverse impacts to both species, a tree clearing restriction will be implemented during construction. This is a standard protocol in this region that does not require formal consultation with the USFWS. Informal ESA Section 7 consultation was completed as part of the Fish and Wildlife Coordination Act (FWCA) Report. USFWS concurred with the proposed tree clearing restrictions that will be implemented during construction in their Final FWCA Report dated October 30, 2018. Refer to Appendix A-4 for further information.

Because a known bald eagle nests are within approximately five miles from the project area, and bald eagles have been observed within and near the project area, the District will continue coordinating with the USFWS during PED and construction. If deemed warranted, the District will include recommendations for avoiding disturbance at foraging areas and communal roost sites as outlined in the National Bald Eagle Management Guidelines in the construction specifications. Should the guidelines be required and it is determined during construction that the recommendations cannot be followed, the District will initiate further consultation with the USFWS.

Mitigation

A tree clearing restriction extending from April 1 through September 30 will be implemented during construction to protect the Indiana bat and northern long eared bat. Alternatively, if clearing must occur within this timeframe, informal consultation with the USFWS will occur to determine if a presence/absence survey is required. A preference to tree species that provide roosting habitat for Indiana bat and northern long eared bat will be given during the development of mitigation plans.

Adherence to the April 1 through July 31 tree and shrub clearing restriction during will protect any bald eagles within project area. In addition, the District will continue to coordinate with the USFWS to determine if recommendations for avoiding disturbance at foraging areas and communal roost sites as outlined in the National Bald Eagle Management Guidelines will be required during construction.

The re-establishment of native vegetation within the project area and mitigation sites will restore bat and bald eagle habitat.

5.10.2 State Endangered, Threatened & Special Concern Species

Per NJDEP, there are no known occurrences of state-identified threatened or special concern species nor are there critical habitats within the project area. However, State endangered, threatened and special concern bird species may occur as transients within the project area. Impacts associated with the project area are similar to what was discussed in Section 5.10.1.

Mitigation

The April 1 through August 31 tree and shrub clearing restriction associated with Migratory Bird Treaty Act compliance will prevent adverse impacts to any state endangered, threatened and special concern species. A preference to tree species that provide roosting habitat for Indiana bat and northern long eared bat will be given during development of mitigation plans.

Monitoring

No post construction monitoring will be conducted for any State endangered, threatened, or special concern species.

5.11 Hazardous, Toxic & Radioactive Waste

Based on the review of the databases and the results of the geotechnical survey and associated soil testing, there are no anticipated impacts to the project elements from HTRW. The structural measures can be constructed with minimal additional protocols for excavation and movement of the lead impacted soil. The SVOA impacted soils should not need additional protocols during excavation. Prior to construction, additional soil borings may be taken to the areal extent of the lead impacted soil or at other segment locations not previously subjected to soil borings to determine if additional management controls are required.

In accordance with ER 1165-2-132 "HTRW Guidance for Civil Works Projects," if additional soil borings indicate the existence of any materials regulated by CERCLA within the project area that would be affected by construction, any necessary actions to remove these materials would be the responsibility of the non-Federal sponsor and are a full non-Federal cost. The non-Federal sponsor would be required to remove these materials prior to any construction activities being undertaken within the identified contaminated area.

According to USACE policy, no elevation or floodproofing can occur to structures with asbestos, ACM, or LBP if the proposed actions may affect these contaminants. Prior to any actions being conducted, the asbestos, ACM, or LBP that may be disturbed by the elevation or floodproofing activity must be removed. For all structures proposed for nonstructural activities, an asbestos investigation will be conducted to confirm the presence/absence of damaged or friable asbestos, ACM, or LBP. If damaged or friable asbestos, ACM, or exposed LBP are confirmed on a property and will be impacted by the implementation of nonstructural measures, the property owner and/or non-Federal sponsor will be obligated, at their sole expense, to conduct all necessary response and remedial activities in compliance with all applicable local, state, and Federal laws and regulations. Asbestos, ACM, and LBP that would not be affected by construction of the recommended nonstructural element(s) would not need to be removed prior to construction.

5.12 Cultural Resources

The Area of Potential Effect (APE) for the Recommended Plan represents the physical extent of the undertaking within which direct and/or indirect effects of the construction, operation and maintenance of the project, could be caused to the character or use of a historic property. For this project, the APE consists of the locations of the levees, floodwalls, diversion culvert, weir, and structures for floodproofing (see Figure 40). Currently no staging areas have been identified but those areas would be considered part of the APE as well. In addition, if wetland or other required mitigation cannot be accomplished within the bounds of the current proposed project, the mitigation locations outside the project area will form an additional APE or expand the current APE.

As currently proposed, the Recommended Plan will have no effect on the Marley Mill Dam site, the New Jersey Waterworks Valve House, or the Morris Canal Aqueduct alignment and extant features would also not be effected. Non-structural measures are proposed for homes in the vicinity along Cedar Grove Road and Charles Street, however the Morris Canal Aqueduct will not be affected by those measures. The Recommended Plan will also have no adverse effect on the Route 46 Bridge.

The channel modification and installation upstream and downstream of the Route 46 Bridge would not have an adverse effect on archaeological sites. The geotechnical survey indicated that this area has been disturbed therefore intact archaeological remains are not likely to survive within the APE for these features of the project.

The wooded area upstream of the Route 46 Bridge, adjacent to the shopping mall on the right bank of the Peckman River and the Little Falls High School were not included in the Phase I survey. As currently proposed, a levee/floodwall would be constructed in this area. Prior to any construction, a Phase I cultural resources survey will be required in this area. If any potentially eligible archaeological sites are identified, a subsequent Phase II would be required as well. Coordination with the NJHPO and any identified interested parties would be conducted to determine if sites can be avoided or if avoidance is not possible, to minimize or mitigate any adverse effects from the project (see Appendix A-5).

Along the culvert alignment from the Peckman River to the Passaic River, the geotechnical survey and shovel tests indicated no potential to recover intact archaeological deposits. One location, however, near the Passaic River under an existing parking lot, was not surveyed. This area will require mechanically assisted archaeological investigations during the Pre-construction, Engineering, and Design (PED) phase to determine if intact archaeological deposits are present and to conduct additional testing as necessary (see Appendix A-5).

As currently proposed, the Little Falls Laundry may be affected by the proposed non-structural measures. As part of the pre-construction, engineering and design, the nature of the proposed non-structural measures will be developed and continued coordination with the NJHPO will be conducted to avoid, minimize and/or mitigate potential adverse effects to the historic property (see Appendix A-5).

Based on the Phase I survey, the houses and commercial structures included in the survey, with the exception of the Little Falls Laundry, are not eligible for the National Register of Historic Places. It is assumed that the survey, which focused on the Township of Little Falls, surveyed the buildings and structures proposed for non-structural measures. If any buildings and/or structures identified for non-structural measures were not included in the Phase I survey, an additional survey will be required to determine the affected buildings' eligibility and the effect, in coordination with the NJHPO, the proposed measure would have on any historic properties if identified (see Appendix A-5).

Mitigation

In accordance with Section 106 of the NRHP and its implementing regulations (36 CFR 800) the District is addressing potential adverse effects to historic properties through a Programmatic Agreement (PA). A

preliminary draft Programmatic Agreement was prepared and released for public review and comment in 2018 with the DIFR/EA (see Appendix A-5). A revised draft PA based on the updated TSP and Recommended Plan has been coordinated with the NJSHPO and was provided to the Delaware Tribe of Indians, the Delaware Nation, and the Little Falls Historical Society for review and comment. The PA has since been revised based on comments received from the NJSHPO Requirements of the draft Programmatic Agreement currently include:

- Archaeological testing of the alignment of the levee that was not included in the Phase I survey as well as staging and access and mitigation areas;
- Archaeological testing of a portion of the diversion culvert in the vicinity of the parking lot along the Passaic River;
- Determination of effect of non-structural measures proposed at the Little Falls Laundry and efforts to avoid, minimize and/or mitigate any potential adverse effect;
- Additional archaeological and/or architectural investigations, as necessary, to identify and evaluate, if identified: 1) archaeological sites that might be affected by the construction of the project including the elevation of homes and construction of access roads and staging areas; and 2) buildings and structures not included in previous surveys; and
- Continued coordination with, at a minimum, the NJHPO and identified interested parties.

The PA will guide the actions the District will take through the Pre-Construction Engineering and Design and Construction phases of the project to ensure impacts to historic properties are avoided, minimized or mitigated and that the work is carried out in consultation with the NJSHPO and other identified consulting parties.

5.13 Recreation

The nonstructural measures in Little Falls will have no beneficial or adverse impacts on recreation. Because nonstructural measures are the only flood risk management measure being proposed in the Town of Little Falls, the Peckman Preserve will still be subject to flooding. No improvements to the park have been made since its acquisition in 2005 and conceptual plans.

The alignment of proposed diversion culvert is located within existing tennis courts and a baseball field that are part of the Township of Little Falls Recreation Center. These recreational amenities will be unavailable for use during construction. A cut and cover method will be employed, therefore the baseball field and tennis courts will be restored once construction is completed. The Little Falls Recreation Center is outside of the one percent floodplain and is not a candidate for nonstructural measures. Therefore the Recommended Plan will not have any long term beneficial effects.

The Peckman River does not support any water-based recreation within the project area. In addition, it does not support any recreational or commercial fisheries. There are no access points for recreational fishing with the proposed footprint of the diversion culvert weir and channel modifications.

The Passaic River is supportive of water based recreation such as canoeing or kayaking. A boat launch is located along the Passaic River approximately 1.5 miles upstream of the discharge location of the proposed diversion culvert. However, the Beattie Dam serves as a barrier preventing boaters from traversing downstream towards the project area. The Passaic River is stocked with northern pike, a recreational fish species, within the vicinity of the discharge location of the diversion culvert. However, there are no access points for recreational boating and/or fishing within the proposed discharge location. Therefore, the Recommended Plan will not have significant adverse impacts on water related recreation.

Mitigation

Specific mitigation measures that will be evaluated may be implemented to reduce the limited short-term and long-term effects of the Recommended Plan on recreation include:

- Situating construction access and staging areas away from the park facilities such as the tennis courts and athletic fields to the greatest extent practicable. This evaluation will occur during the Preconstruction Engineering Design Phase
- Erecting temporary fences and other physical barriers to control movement through construction areas and maintain a safe distance for pedestrians
- Installing signage that informs residents and others using affected recreational spaces of the proposed action's purpose and closure duration

5.13.1 Green Acres Program

Under the Green Acres program, lands obtained or developed with Green Acres funding and lands held by a local government for recreation and conservation purposes must permanently remain in use for recreation and conservation purposes. In general, lands subject to the rules of the program cannot be disposed of or diverted unless it can be demonstrated to the State that the modification will protect or enhance the use of the area. By definition in the Green Acres Rules, land that is used for purposes other than recreation and conservation is considered a "diversion" while a "disposal" is the selling, donating, or some other form of permanent transfer of possession of parkland.

As mentioned in Section 2.14, the Little Falls Recreation Center is encumbered by Green Acres Rules. Although the diversion culvert will be underground, Green Acre encumbrances include the sub-surface. Based on comments received by Green Acres Program staff during the 30 day review of the 2018 DIFR/EA, the sub-surface impact from the diversion culvert would constitute as a diversion that would require compensation.

The Green Acres encumbered parcel near Turnberry Court is currently anticipated to be used for access to construct the channel modifications. The impact will be temporary in nature and will be restored with native vegetation upon completion of the project. Although it is not expected to be considered a diversion, further coordination with Green Acres Program staff will be required in PED Phase.

No structural or nonstructural measures will be implemented within or adjacent to the Peckman Preserve. As a result, the park will continue to be inundated during flood events. However, as the park is meant for passive recreation, no long term adverse impacts are expected.

The District is proposing to utilize the Peckman Preserve to, streambank restoration, and riparian mitigation to compensate resource impacts associated with the floodwalls and levee along the Peckman River and the outlet of the diversion culvert. The NJ Green Acres Rules typically consider the use of Green Acres encumbered lands for habitat mitigation sites as a change in land use unless the master plan for the subject property includes habitat restoration, creation and/or enhancement.

The master plan developed for the Peckman Preserve focuses on passive recreation and includes the creation/restoration of wetlands within the park to enhance such recreational opportunities. Therefore the streambank restoration and riparian mitigation proposed on this site of the project will be in conformance with the anticipated land use of the park and is not expected to be in conflict with the NJ Green Acre Rules. The proposed compensatory mitigation work at the Peckman Preserve will enhance the passive recreational opportunities at the park and will be in conformance with the master plan of the park. Further coordination with Passaic County as the owner of the Preserve and NJ Green Acres Program staff will occur in the PED phase.

Mitigation

Typically, compensation for diversions are in the form of replacement and or monetary compensation. As applications for diversions are the responsibility of the municipality, the District will coordinate with the Township of Little Falls and representatives from the Green Acres Program during the PED Phase to

verify if compensation for the impact the culvert will have on Green Acres encumbered land will be required.

Disturbed areas will be restored and their use returned to pre-construction conditions. The wetland and riparian mitigation performed within the Peckman Preserve will conform to the master plan for the park.

5.14 Aesthetics & Scenic Resources

The construction of the Recommended Plan will have short-term minor and long-term adverse impacts to aesthetics. In the short-term, the presence of construction equipment and active construction activities throughout the project area will result in minimal temporary impacts to each construction site's immediate aesthetics and scenic resources. However, the majority of the proposed action is located in areas comprised of business and industrial land use.

Negligible to potentially minor effects to aesthetics may occur through the implementation of nonstructural measures within the project area. For structures where elevation is proposed, the average height from ground level is four feet which could potentially make the structure more prominent within the viewshed. In addition, the structures that have been deemed as candidates for elevation may be intermingled with structures where a different nonstructural measure has been identified as appropriate. This will result in non-uniformity in overall structure height within the neighborhood. However, the measures proposed are necessary to provide the required flood risk management benefits. Nonstructural measures that effect the exterior of the homes, including elevation, will be implemented in a manner that compliments the structure and overall character of the neighborhood.

The levee and floodwall will have minor adverse effects to aesthetics and will mostly be visible high school and the several residences along Browertown Road near the far eastern segment of the proposed levee No vegetation is proposed on the high school property to act as a screen for the levee and/or floodwall. However, the levee will be stabilized with grass and stamped concrete and/or paint can be applied to the floodwall to enhance its aesthetics.

The channel modifications to the Peckman River will give the river an engineered appearance. Vegetation along the top of banks within the riparian zone will be restored to help reduce the visual impact. This impact will be greatest immediately after construction, but will reduce over time as vegetation matures. In addition, the aesthetics of the project area are already reduced to a degree by sediment deposition, eroded river banks and existing armoring measures implemented to reduce erosion. Therefore, the impact is considered minimal. The stream restoration measures proposed as compensatory mitigation for the channel modifications will enhance aesthetics through the stabilization of eroded streambanks with native vegetation.

The diversion culvert will be underground. Therefore, once construction is completed, the area will be restored to previous conditions. The proposed weir within the Peckman River is located in an area where the land use consists of a car dealer parking lot and the Little Falls municipal department of public works yard. Therefore, the impacts to aesthetics will be negligible.

The portion of the Passaic riverbank where the rip rap stilling basin is proposed is located near a parking lot. The viewshed of the stilling basin from the opposite bank is obscured by mature vegetation along the opposite bank as well as a vegetated a gravel bar that has formed in the river. In addition, there are no structures located on the opposite bank that could potentially see the stilling basin. Therefore, no long term adverse impacts to aesthetics are expected.

The bendway weirs and live stakes will initially have an engineered appearance following construction. However, over time (approximately two years), a more natural appearance will occur as sediment accumulates within the weirs and the vegetation grows. Overall, the proposed wetland, in-stream and

riparian mitigation will enhance the aesthetics of the project area by replacing invasive vegetative species with native species and reducing streambank erosion. Therefore, impacts to aesthetics are insignificant.

Mitigation

Mitigation measures that will be implemented to minimize impacts to aesthetics include:

- Replanting disturbed areas outside of the 15-foot vegetation free zone associated with the floodwall/levee with native vegetation. The District will consider the use of tree stock ranging from 8-14 foot in height in lieu of saplings; and
- Stabilizing the levee with grass.

5.15 Air Quality

The project will produce temporary localized emission increases from the diesel powered construction equipment working onsite. The localized emission increases from the diesel-powered equipment will last only during the project's construction period and then end when the project is over, thus any potential impacts will be temporary in nature.

As stated in the Air Quality Section (Section 2.17), Passaic County has been designated as: 1) a 'moderate' nonattainment area for the 2008 8-hour ozone standard; 2) in maintenance for the 2006 PM2.5 standard; and 3) in maintenance of the 1971 CO standard. The County is part of a larger Ozone Transport Region. Ozone is controlled through the regulation of its precursor emissions, which include NOx and VOCs. VOCs are emitted at a fractional rate compared to NOx emissions. SO_2 is a precursor for PM2.5. Because of these designations and since the project is a Federal Action taken by USACE, this project triggers a General Conformity Review under 40 CFR §93.154. General Conformity ensures that Federal Actions do not have a negative impact on SIPs. For the pollutants to be emitted as part of the project, the annual de minimis levels are: 100 tons for NOx, 50 tons for VOC, and 100 tons for CO_2, PM2.5, and SO_2 (each pollutant separately). Projects that do not have any annual emissions exceeding these threshold levels are considered to be in conformity with the SIP.

The Project's General Conformity-related annual emissions are significantly below all of the de minimis levels. Therefore, by rule (40 CFR §93.153 (b)), the Project is considered de minimis and will have only a temporary impact around the construction activities with no long-term impacts and no negative effects on the applicable SIP. Documentation of the emissions calculations is included in Appendix A-6.

Mitigation

Because the impact on air quality will be less than significant, no mitigation measures will be required outside of existing air quality regulations. NJDEP outlines requirements applicable to construction, such as controlling fugitive dust and open burning. All persons responsible for any operation, process, handling, transportation, or storage facility that could result in fugitive dust will take reasonable precautions to prevent such dust from becoming airborne. In addition, construction will be performed in full compliance with current New Jersey Air Pollution Control requirements (N.J.A.C. 7:27-1-34), with compliant practices and/or products. These requirements include the following:

- Control and Open Prohibition of Burning (N.J.A.C. 7:27-2.3B)
- Control and Prohibition of Air Pollution from Diesel-powered Motor Vehicles (N.J.A.C. 7:27-14 and N.J.A.C. 7:27-15)
- USACE and its contractors will use BMPs during construction and comply with all applicable air pollution control regulations

5.16 Noise

The implementation of the proposed action will result in an increase in short-term minor adverse impacts related to noise. The specific impact of construction activities on the nearby receptors will vary depending on the type, number, and loudness of equipment in use. Excavators and other heavy equipment, truck

removal of excavated material, and the delivery of riprap and concrete to workspaces will be the primary sources of noise. Individual pieces of heavy equipment typically generate noise levels of 80–90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high noise levels typically extends to distances of 400–800 feet from the site of major equipment operations. Locations more than 800 feet from construction sites seldom experience substantial levels (greater than 62 dBA) of noise.

Property owners within the footprint and vicinity of the nonstructural measures and the diversion culvert will experience appreciable amounts of noise from heavy equipment during construction. The total construction duration for nonstructural measures is approximately 1.4 years. However, the nonstructural measures are proposed within different neighborhoods of Little Falls. Therefore, the noise won't be concentrated to one specific location for the total estimated construction duration. In addition, the construction duration of specific individual nonstructural measures vary depending on the type of measure being implemented. Therefore, the extent of impacts is expected to be minor. The approximate construction duration of the diversion culvert is approximately two years. However, the work will not be concentrated in one location. Residences closest to the portion of the diversion culvert footprint near the Peckman River may be subject to construction noise for approximately one year until the work shifts further west towards its terminus at the Passaic River.

With the exception of the far eastern end of the levee and floodwall, the majority of the levee/floodwall is located within an undeveloped tract and is mostly isolated from businesses and residences. Moderate temporary adverse effects related to noise near the high school and the residences along Browertown Road near the eastern terminus of the levee are expected during construction.

There will be no permanent or ongoing sources of noise from the proposed action. Noise will end with the construction phase; therefore, there will be no long-term or significant impacts on the noise environment.

Mitigation

No specific mitigation measures are proposed. However, construction activities will adhere to the applicable noise ordinances within the municipalities in which the construction is occurring to minimize adverse effects to neighboring properties.

5.17 Comparison of Environmental Consequences of the No Action Plan and the Recommended Plan

Topography, Geology and Soils

No Action: Topography, geology and soils would remain unchanged under the No Action Plan.
Proposed Action: Minor topographical changes will occur within the immediate project footprint as a result of grading to create the channel modifications and construction of the levee. The proposed action will not have any significant adverse effects on soils as scour protection in the form of riprap will be installed to prevent erosion.

Land Use and Zoning

No Action: Land use and zoning would remain unaffected by the No Action Plan. However, in the long term, properties along the Peckman River, particularly those in flood prone areas, are likely to sustain continued damage during future storm events.
Proposed Action: The proposed action will serve to protect current land uses when combined with other past, current, and future flood risk management measures implemented in the basin.

Socioeconomics

No Action: Flooding damages would continue within the project area.

Proposed Action: Implementation of the proposed action will manage fluvial flood risk for up to the 2-percent flood within the project area. As there are no communities that meet Environmental Justice criteria, there are no adverse, disproportionate effects as it relates to environmental justice.

Infrastructure

No Action: Flood damages would continue within the project area.

Proposed Action: Although there would still be properties and infrastructure that are vulnerable to fluvial flood damages, annualized Peckman River flood damage would be reduced by approximately 94 percent with plan implementation.

Transportation

No Action: Disruption to transportation would continue to occur under the No Action Plan.

Proposed Action: Minor temporary impacts would occur during construction of the diversion culvert. In the long-term, the Recommended Plan will reduce disruption to traffic through flood risk management.

Water Resources

No Action: Water quality and habitat would remain unchanged. There would be no changes to wetland communities. The river would still be subject to flooding around the U.S. Route 1 bridges.

Proposed Action: Approximately 1,848 linear feet of the Peckman River equaling to approximately 1.7 acres open water habitat will be modified into a trapezoidal channel for flood risk management purposes. An additional 1,848 linear feet of the Peckman River will be restored/enhanced as part of compensatory mitigation. Minor temporary impacts to water quality are expected to occur within the immediate project footprint during construction of the channel modifications and compensatory mitigation actions. This will be minimized through the use of best management practices such as cofferdams and turbidity curtains. There will be a modification of aquatic habitat within the footprint of the channel modification through the installation of riprap.

Wetlands

No Action: No changes to wetland communities in the project area would be expected.

Proposed Action: 0.48 acres of forested wetlands will be permanently directly impacted through fill activities. Compensatory mitigation in the form of the purchase of mitigation credits from a state approved wetland mitigation bank or off-site mitigation through the creation/restoration of 0.96 acres of forested wetland habitat will be evaluated in the PED Phase. Approximately 0.7 acres of forested wetland will experience temporary impacts and will be restored on-site upon completion of construction.

Vegetation

No Action: Upland, riparian and wetland communities would remain as they are except for changes associated with natural disturbance events – including future flooding events – and community succession.

Proposed Action: Approximately one acre of upland forest and 2.14 acres of riparian vegetation will be directly impacted through implementation of the proposed action. Of the 2.14 acres of riparian zone impacted, approximately 1.37 acres is considered to be temporary and will be restored on-site upon construction completion. The remaining 0.77 acres will be permanently impacted and will be compensated for through off-site mitigation at the Peckman Preserve via planting native vegetation within 100 feet of the streambank. Other than planting related to general site restoration, no mitigation is being proposed for upland vegetation loss.

Fish and Wildlife

No Action: Fish and wildlife utilization of the project areas will be consistent with current conditions. The same is true for any state and/or federal endangered, threatened or special concern species that may occur within the project area.
Proposed Action: Implementation of the proposed action will predominantly have temporary impacts on fish and wildlife resources, with the impacts occurring during construction. Mammal and bird species are expected to leave the area during construction but are expected to return following construction completion and site restoration.

Hazardous, Toxic and Radioactive Waste

No Action: With the exception of the possible introduction of pollutants such as oil and/or general debris during flood events, the No Action Plan would not have any effect on HTRW sources.
Proposed Action: The Recommended Plan will not be affected by HTRW sources as there are no known HTRW sites within the project area.

Cultural Resources

No Action: Effects to historic properties would remain unchanged.
Proposed Action: Implementation of the proposed action could result in adverse effects to historic properties. However, implementation of the terms of the Programmatic Agreement and coordination between the District and the NJSHPO shall help to avoid or minimize adverse effects.

Recreation

No Action: Parks and other recreational opportunities within the project area would remain the same under the No Action alternative.
Proposed Action: There will be a temporary loss of use of the tennis courts and baseball fields. Long-term permanent impacts will not occur.

Aesthetics

No Action: Aesthetic and scenic resources would remain unchanged from current conditions.
Proposed Action: Construction activities will have short term minor adverse impacts to the aesthetics within and near the vicinity of the proposed action project footprint. Therefore, no long term adverse impacts resulting from Recommended Plan implementation will occur.

Air Quality

No Action: Ambient air quality would remain unchanged when compared to existing condition under the No Action alternative.
Proposed Action: Localized increases in emissions from construction equipment will occur during implementation of the Recommended Plan. However, project emissions are below the General Conformity de minimis levels. No long term adverse impacts to air quality will occur with implementation of the proposed action.

Noise

No Action: Noise conditions would remain unchanged when compared to existing conditions.
Proposed Action: An increase in noise will occur during construction of the proposed action. No long term significant adverse impacts to noise will occur from implementation of the Recommended Plan.

5.18 Summary of Mitigation

The various mitigation measures being considered to avoid, minimize, reduce or compensate for the adverse environmental impacts expected from implementation of the proposed action are summarized in Table 25.

Table 25. Summary of mitigation.

Land Use • Disturbed areas will be restored and their use returned to pre-construction land uses.
Soils • Implementation of Erosion and Sediment Control Best Management Practices (BMPs) during construction, including the installation of a cofferdam within the Peckman River to construct the weir component of the diversion culvert.
Water Resources • Implementation of Erosion and Sediment Control Best Management Practices (BMPs) during construction, including the installation of a cofferdam within the Peckman River to construct the weir component of the diversion culvert. • Restoration of 1,848 linear feet equaling to 1.70 acres of open water habitat via installation of bendway weirs and 0.85 acres of native streambank vegetation.
Wetlands • Implementation of Erosion and Sediment Control BMPs • Restoration of 0.71 acres of forested wetland habitat temporarily impacted by construction through the replanting of native vegetation. • Compensation of 0.96 acres of forested wetland habitat through either the purchase of wetland mitigation credits or off-site mitigation.
Vegetation • Compensation of a total 2.14 acres of riparian zone vegetation (0.77 acres of compensatory and 1.37 acres of restoration of temporary impacts) through creation/restoration of riparian zone with native vegetation. • 1.67 acres of forested wetland vegetation (0.96 acres through compensatory wetland mitigation; 0.71 acres through restoration of temporary impacts). • Restoration of 0.85 acres of native streambank vegetation. • Use of more mature tree stock to reduce maturation time.
Aquatic Resources and Wildlife • Tree and shrub clearing restriction from 1 April through 31 August to comply with the Migratory Bird Treaty Act • Tree clearing restriction from 1 April through 30 September to protect Endangered and Threatened bat species. • Re-establishment of native herbaceous, shrub and tree species in disturbed areas and compensatory mitigation sites. • In water work restriction from May 1 through July 31 to be extended to April 1 through July 31 if pickerel is present. • Restoration of 1,848 linear feet of stream via installation of bendway weirs and 0.85 acres of streambank vegetation. • Purchase of 0.48 acres of forested wetland mitigation credits or creation/restoration of 0.96 acres of forested wetland habitat.
Federal and State Endangered, Threatened and Special Concern Species • Implementation of a tree clearing restriction from 1 April through 30 September to protect roosting bat species. • Including tree species used by bats for summer roosting in mitigation plans.
Cultural Resources • A Programmatic Agreement between the District and the NJSHPO has been prepared to guide future identification and evaluation of effects of the undertaking on historic properties (Appendix A-5), including: ○ Evaluate effects of proposed non-structural measures on Little Falls Laundry and other structures/buildings not evaluated in the Phase I survey;

○ Mechanically assisted archaeological testing of the western end of the proposed diversion culvert; and ○ Phase I survey in area of levees/floodwalls across from diversion culvert
Recreation • Erecting temporary fences and other physical barriers to control movement through construction areas and maintain a safe distance for pedestrians • Installing signage that informs residents and others using the effected recreational spaces of the proposed actions purpose and closure duration.
Aesthetics and Scenic Resources • Replanting disturbed areas with native herbaceous, shrub and tree material after construction.
Transportation • Preparation of a Construction Traffic Management Plan. • Routing and scheduling construction vehicles to minimize conflicts with other traffic • Strategically locating localized staging areas to minimize traffic impacts; and • Establishing detours and alternate routes when it is important to close the work area to perform certain construction tasks or when diverting traffic will substantially reduce traffic volumes.
Air Quality • Because the air emissions are below de minimis levels for NOx, VOC, PM2.5 and SO2, no specific mitigation is required. Construction will be performed in compliance with current New Jersey Air Pollution Control requirements (N.J.A.C. 7:27-1-34).
Noise • Construction will occur within the timeframes allowed as per local noise ordinances.

5.18.1 Compensatory Mitigation

As discussed in Sections 5.7.2 Water Quality and Aquatic Habitat and 5.7.3 Wetlands, compensatory mitigation is being proposed for impacts to freshwater riverine and forested wetland resources.

USACE guidance requires mitigation plans be selected based on an analysis that determines the most cost effective plan through an incremental cost analysis (ICA). Based on the ICA, the most cost effective plan identified the restoration of a 1,848 linear feet of freshwater riverine system in the form of the installation of three bendway weir fields where severe bank erosion is occurring, revegetating 0.85 acres of streambank with native vegetation, and 0.77 acres of riparian zone. Refer to Appendix A-8 for additional details on the impact/mitigation assessment and A-9 for details on the CE/ICA analysis.

As coordinated within the HQUSACE, an ICA was not performed to determine compensatory mitigation measures for the wetland impacts due to the impacts being under one acre. For cost estimation purposes, the District assumed creating 0.96 acres of forested wetlands.. Effort assumed in the cost estimate includes invasive species management in the form of herbicide application, excavation to create the topographical conditions conducive to supporting the hydrologic regime for wetlands, planting native forested wetland species, and anti-herbivory measures.

As Federal mitigation requirements do not establish a definitive monitoring duration, the District will follow the NJDEP requirements which mandate a minimum five year monitoring period. Fish and macroinvertebrate surveys will occur on an annual basis. Monitoring of stream bank plantings included as the riverine compensatory mitigation and any off-site compensatory wetland mitigation implemented if credits are not purchased will occur in the spring and fall annually. The non-federal sponsor will be responsible for the monitoring. Monitoring is not to exceed ten years. Should success of the compensatory mitigation measures be achieved in less than five years, monitoring will either cease or be continued by the non-federal sponsor at their cost. Refer to Appendix A-10 for additional details on the proposed mitigation, monitoring and adaptive management measures. First Cost, Monitoring and Adaptive Management Costs for the proposed compensatory mitigation are included in Table 26.

Table 26: Riverine Habitat Mitigation Cost Summary (FY 20 P.L.).

Mitigation Feature	Cost
Construction	$2,249,196
Monitoring (5 years)	$86,000
Adaptive Management	$224,919

Chapter 6: Cumulative Impacts*

The Council of Environmental Quality (CEQ) defines cumulative effects as the impact on the environment, which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or individual takes the action.

The geographical area considered in the cumulative impact analysis includes the Peckman River watershed and 5.5 miles of the Passaic River extending from the portion that flows through Little Falls to the Paterson Falls (Refer to Figure 2 in Appendix A-1), in contrast to the impacts analysis within the project area in Chapter 5 of this report. The determination of the geographical scope was based on feedback received from interested parties throughout the course of the study and the presence of significant resources near the project area.

As stated in previous sections of the report, the Peckman and Passaic Rivers have experienced numerous modifications. In addition to the cumulative impacts associated with those disturbances, the cumulative impacts analysis evaluates the impacts associated with past, present and reasonably foreseeable future actions listed in Table 27 through Table 29. Identification of these actions were completed through internet research, the NEPA scoping process and coordination with study stakeholders. In addition, Passaic County updated their Hazard Mitigation Plan (HMP) in 2015. The HMP identifies flood risk management measures each municipality has undertaken, is in the process of implementing or will be implementing. For the purposes of the cumulative impact analysis, the actions identified in both Passaic County HMP is herein incorporated by reference (Passaic County, 2010).

Table 27. Status of other USACE actions within the cumulative impact geographic scope.

Project Name	Description	Location	Status
Passaic River Mainstem and Tributaries	General Re-evaluation Study	Passaic River Basin	Currently suspended

Table 28. Flood risk management actions taken by others.

Project Name	Description	Location	Responsible Entity	Status
Home Buyout	Acquisition and removal of homes within floodplain Purchase and removal of 59 homes in Singac section of Town of Little Falls	Town of Little Falls	Federal Emergency Management Agency (FEMA)	Ordinance passed in May 2017
Home Buyout	Acquisition and removal of homes within floodplain	Borough of Woodland Park	Borough of Woodland Park	Ongoing
Clearing and Snagging	Removing debris and sediment from Peckman River. Fallen trees	Town of Little Falls/Borough of Woodland Park	Passaic Valley Sewerage Commission	January 2017
USGS Stream gage installation (flood warning system)	Installation of three river gages within the Peckman River	Town of Little Falls	United States Geological Survey	First and second gage installed May 2017
Home Buyout	Acquisition and removal of four homes along the Passaic River	Norwood Terrace Totowa	Totowa Borough	Acquisition and demolition completed in 2016.

Table 29: Other actions within the defined cumulative impact geographic scope,

Project Name	Type	Description	Location	Responsible Entity	Status
Peckman Preserve	Open Space Preservation.	Preservation of 12 acres of land.	Along the left bank of the Peckman River in Little Falls	Property acquired and maintained by Passaic County	Property acquired in 2005, Plan developed in 2010, not constructed
Route 3, Route 46, Valley Road & Notch/Rifle Camp Road interchange Improvement Project	State transportation improvement project	Reconstruction of existing interchanges.	Township of Little Falls, Borough of Woodland Park and City of Clifton	New Jersey Department of Transportation	Final Design and Construction. Construction of Phase A began in 2015 and is scheduled to be completed in 2019. Phase B is in the final Design Phase.
Autumn Pointe Townhome Development	Residential Development	Construction of a 24 unit Townhome complex. Falls	Township of Little Falls	Private developer	Construction initiated in 2017, is on-going.
Planting in Singac Neighborhood	Ecosystem restoration	Planting trees in footprint of removed homes along the Passaic River	Township of Little Falls	Town of Little Falls and Rutgers University	2016
Peckman River Footbridge	Recreational development	Installation of a pedestrian bridge over the Peckman River to connect the eastern and western spurs of the Morris Canal Greenway.	Township of Little Falls	Passaic County	Conceptual Plans presented at public meeting July 2017. Permits submitted to NJDEP in early 2018.
Paterson Falls	Debris Removal	Diversion of Passaic River through wastewater facility located at falls to clean debris deposited along river banks and within the river near the falls.	City of Paterson	Passaic Valley Sewerage Commission and Eagle Creek Renewable Energy.	Project was conducted in 2016.
Peckman River Cleanup	Trash removal	Removal of litter, invasive species management	Verona Township	Verona Environmental Commission	Annual event occurring in the summer since 2014.

6.1 Land Use

The Recommended Plan will not contribute to significant adverse cumulative effects to land use. The Recommended Plan, when combined with other past, current and future flood risk management measures implemented in the basin will serve to protect current land uses.

6.2 Topography, Geology & Soils

The proposed action will not have any significant adverse cumulative impacts to topography, geology or soils. The Recommended Plan and other actions within the Peckman River Basin, and the Passaic River will be required to prevent soil erosion through the preparation and implementation of an erosion and sediment control plan. In addition, any activities proposing to change the existing grade within the floodway and flood hazard area as defined by the NJ Flood Hazard Area Control Act must obtain a permit from NJDEP and demonstrate that the action will not induce flooding to other properties. The Recommended Plan will provide a cumulative benefit of regional flood risk management within the Peckman River Basin when combined with changes in topography related to other past, current, and future flood storm risk management projects.

6.3 Water Resources

The Recommended Plan, current, and future actions as listed in Table 27 through Table 29 will be required to protect water quality in and adjacent to water bodies through the implementation through the acquisition of water quality certifications, wetland permits that include mitigation requirements for water resource impacts, State Pollution Discharge Elimination Systems permits and implementation of erosion and sediment control best management practices (BMPs). Therefore, the Recommended Plan will not contribute to adverse cumulative impacts to water resources.

In general, the flood risk management measures, stormwater management, habitat mitigation and ecosystem restoration actions when combined with each other could result in minor improvements in water quality and aquatic habitat. Flood risk management measures contribute to water quality and aquatic habitat improvements by reducing the amount of manmade debris and pollutants introduced into waterways during flood events. Stormwater management measures reduce the amount of urban runoff that typically has high levels of nutrients and other pollutants that contribute to water quality and habitat degradation, entering waterways.

The conversion of the approximately 0.48 acres of forested wetlands and loss of 0.85 acres of streambank vegetation will contribute to cumulative losses of wetland/open water values and functions within the watershed. However, these impact will be minimized through compensatory mitigation.

6.4 Vegetation

The Recommended Plan will result in short-term minor and long-term moderate adverse impacts to upland and wetland vegetation within the project area. Short-term impacts include removal of vegetation within construction workspaces. Vegetation will be reestablished within these areas after construction to minimize short term cumulative adverse impacts. The proposed mitigation discussed in previous sections of the report will minimize the Recommended Plan's contribution to significant adverse cumulative impacts to vegetation.

In addition to the proposed action, any current or future actions taken by others that require a Flood Hazard permit and disturb riparian vegetation is subject to the riparian mitigation requirements. Depending on the type of mitigation selected, this could lead to an increase in higher value riparian habitat for fish and wildlife, which will minimize cumulative impacts.

6.5 Fish & Wildlife

The Recommended Plan is expected to have minor cumulative impacts to fish and wildlife resources. The proposed riparian, wetland and riverine mitigation discussed in previous sections of the report will minimize significant adverse cumulative impacts. In addition, actions taken by others that affect aquatic, wetland and riparian habitat are subject to permit mitigation requirements. Any mitigation actions taken by others in conjunction with any ecosystem restoration projects could improve fish and wildlife habitat throughout the watershed.

The Recommended Plan will not have significant adverse cumulative impacts to state and/or Federal endangered, threatened, and special concern species that may occur in the project area.

6.6 Cultural Resources

There will not be a significant cumulative adverse effect on historic properties. The location of the project would not have an adverse effect on the identified eligible and listed properties. Any work requiring state funds that have the potential to impact listed properties would require coordination with the NJHPO. While the project area is sensitive for archaeological resources, the potential to identify intact sites is low throughout much of the project area.

6.7 Hazardous, Toxic & Radioactive Waste

The Recommended Plan will not contribute to the release and/or exposure of HTRW substances. All state and Federally-permitted actions, including the Recommended Plan, must implement measures such as erosion and sediment BMPs and/or an environmental protection plan to manage the risk of improper release, exposure and disposal of HTRW substances.

6.8 Socioeconomics & Environmental Justice

In general, the objective of the Recommended Plan and other flood risk management measures implemented within the Peckman River watershed is to provide long term risk management to decrease loss of life and property/infrastructure damages resulting from flood events.

The Recommended Plan will have no adverse cumulative impacts on the existing demographics, economy, housing and Environmental Justice communities in the geographical region analyzed for cumulative impacts. Increasing flood risk management will reduce damage to property and infrastructure within the project area; thus implementation of the Recommended Plan is expected to benefit the local economy and housing in the long term.

All of the actions considered could produce positive cumulative socioeconomic impacts within the watershed by reducing flooding, which is disruptive to socioeconomic conditions.

6.9 Aesthetics & Scenic Resources

Based on the location of the Recommended Plan and other actions listed in Table 27 through Table 29, it is not anticipated that there will be significant, cumulative long-term impacts to aesthetic and scenic resources. Most impacts will be short-term effects resulting from construction activities. The timing of the implementation of the Recommended Plan and any other actions is such that it is not anticipated that construction noted actions will be concurrent.

6.10 Recreation

The Recommended Plan will result in short term park closures and other construction related disruptions to recreation, but these impacts will have negligible cumulative impacts.

6.11 Transportation

The Recommended Plan will not have any adverse cumulative impacts on transportation. Positive cumulative impacts resulting from the combination of the Recommended Plan and with past, actively occurring or future flood risk management actions will be the reduction in road closures and damage to transportation infrastructure in some locations of the project area due to flooding within the Peckman River watershed.

6.12 Air Quality

The Recommended Plan will not have any adverse cumulative impacts on air quality. Air emissions related to land-based construction activities are a short-term and local impact accounted for in New Jersey's State Implementation Plan (SIP). There are no operable parts of the completed project that will result in air emissions.

There will be no ongoing sources of greenhouse gas emissions resulting from the Recommended Plan once the project is completed. All construction activities combined will generate 7,744 tons of CO_2, which will be below the CEQ threshold. These effects will be negligible.

6.13 Noise

The Recommended Plan will introduce short-term increases in the noise environment from construction. These changes will have a negligible cumulative effect. There will be no adverse long term cumulative impacts on the existing environment once construction is completed.

Chapter 7: Coordination & Compliance with Environmental Requirements*

A NEPA Scoping Meeting focused on the NED plan and the alternative that had been identified at the time as a LPP was held on November 29, 2017. The NEPA Scoping Meeting initiated a 30-day public comment period that was closed on December 29, 2017. A NEPA Scoping Document was prepared and distributed to the NJDEP Office of Permit Coordination and Environmental Review, USGS, USFWS, USEPA, and interested parties. The NJDEP Office of Permit Coordination and Environmental Review is responsible for coordinating the review of Federal NEPA documents, with other NJDEP Divisions such as Green Acres, Fish and Wildlife, Land Use Regulation, Air Quality, Water Resources Management, and the Historic Preservation Office (NJHPO).

No comments were received from the public. Comments were received from USEPA, NJDEP Office of Permit Coordination and Environmental Review, and the NJHPO regarding the study (Refer to Appendix A-7). A NEPA Scoping Meeting was also held in 2004 when the study was initiated. Throughout the feasibility study, the District met with staff from the NJDEP Bureau of Flood Control and Dam Safety, the Division of Land Use Regulation and the Green Acres Program, and study stakeholders.

Coordination with the USFWS has occurred throughout the life of the study. A Planning Aid Letter was developed for the initial array of alternatives in 2005. The USFWS submitted a draft FWCAR to the District July 2014 outlining concerns and recommendations related to the preliminary alternatives. The 2018 DIFR/EA was used as the main coordination vehicle for the USFWS to update the draft FWCAR. The final FWCAR was submitted to the District on October 20, 2018. Based on coordination with the USFWS, the District has provided a copy of the October 2019 Revised DIFR/EA for their review and comment.

Informal consultation under Section 7 of the Endangered Species Act of 1973 was completed via the FWCA. All relevant correspondence related to the FWCAR and Section 7 consultation is included in Appendix A-4.

The District has coordinated the results of the 2013 archaeological and architectural survey and the Recommended Plan with the NJHPO, Native American Tribes, and other interested parties (Appendix A.5). The NJHPO, Tribes, and interested parties have reviewed the Programmatic Agreement regarding the additional activities to be completed as part of project and all parties have concurred with the language in the document.

The Notice of Availability for the 2018 DIFR/EA underwent a 30-day public and agency comment period that closed June 5, 2018 (Appendix A.13). The Notice of Availability was posted on the study webpage located on the District website and sent to federal, state, local agencies, non-profit organizations and interested parties identified in the Distribution List located in Appendix A-11.

No comments from the public were received. Comments were received from EPA in June 15, 2018 and from the NJDEP Office of Permit Coordination and Review on June 5, 2018. A matrix of their comments and the District's responses as well as the Notice of Availability are located in Appendix A-13.

The October 2019 Revised DIFR/EA underwent a 30-day public and agency comment period that closed on November 8, 2019. The Notice of Availability was posted on the study webpage located on the District website and sent to federal, state, local agencies, non-profit organizations and interested parties identified in the Distribution List located in Appendix A-11.

Comments were received from the NJDEP, Township of Little Falls, and a member of the public. The Notice of Availability and summary of the comments and the District's responses are located in Appendix A-13.

Letters of support were received from Congressional Representatives Pascrell and Sherrill, and Senator Corrado, In addition, both the Town of Little Falls and Borough of Woodland Park passed resolutions supporting the Recommended Plan. The letters and resolutions of support are included in Appendix F.

A Conditional Water Quality Certification was received from the NJDEP of December 5, 2019. The Conditional WQC is located in Appendix A-7.

The status of compliance with Federal laws and Executive Orders is presented in Table 30. The status of compliance with state laws is presented in Table 31.

Table 30. Compliance with Federal laws and Executive Orders.

Legislative Title U.S. Code/Other		Compliance
Clean Air Act	42 U.S.C. §7401-7671g	An air quality analysis was completed for the project. Based upon the completed analysis, the emissions from the project are considered to have an insignificant impact on the regional air quality, and according to 40 CFR 93.153 (f) and (g) the proposed project is presumed to conform to the SIP. A Record of Non-Applicability is located in Appendix A-6.
Clean Water Act	33 U.S.C. §1251 et seq.	A 404(b)(1) Evaluation is located in Appendix A-3. The State of New Jersey assumed 404 authority in 1993 and is the responsible administering authority. USACE will submit a Freshwater Wetlands Individual Permit NJDEP to fulfill the requirements of Section 404 of this act prior to initiating construction. A conditional Water Quality Certification was obtained from NJDEP on December 5, 2019 and is located in Appendix A-7
Endangered Species Act of 1973	16 U.S.C. §1531 et seq.	The District completed informal consultation with the U.S. Fish and Wildlife Service. As the project may contain habitat supportive of Indiana bat and northern long-eared bat, a tree clearing restriction from 1 April – 30 September will be implemented during construction.
Fish and Wildlife Coordination Act (FWCA)	16 U.S.C. §661 et seq.	USACE completed coordination with the U.S. Fish and Wildlife Service. A FWCA report prepared in October 2018 is included in Appendix A-4.
National Environmental Policy Act of 1969	42 U.S.C. §4321-4347	The signing of the Finding of No Significant Impact fulfills requirements of this act.
National Historic Preservation Act of 1966	16 U.S.C. §470 et seq.	USACE has continued to coordinate with the NJ Historic Preservation Office to fulfill requirements of this act. Correspondence indicating SHPO concurrence to date is located in Appendix A.5 as well as a Programmatic Agreement (Appendix A-5).
Executive Order 11990, Protection of Wetlands	May 24, 1977	Circulation of the draft version of this report for public and agency review fulfills the requirements of this order.
Executive Order 11988 Floodplain Management	May 24, 1977	The proposed action is within the floodplain. However the project is designed to reduce damages to existing infrastructure located landward of the proposed project. The circulation of this report for public review satisfies the public coordination requirement under this EO.
Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks	April 21, 1997	Implementation of this project will reduce environmental health risks. Circulation of the draft version of this report for public and agency review fulfills the requirements of this order.
Executive Order 13112 Invasive Species	February 3, 1999	BMPs to prevent spread, proper disposal of invasive species during construction, replanting with native vegetation monitoring and adaptive management such as invasive species management until mitigation is determined to be successful.

Table 31. Compliance with state laws.

Legislative Title and code/date		Compliance
NJDEP Rules and Regulations – Flood Hazard Area	N.J.A.C. 7:13 (N.J.S.A 58:16A)	The District is in continued coordination with NJDEP. Permits will be obtained during the preconstruction, engineering and design phase.
NJDEP Rules and Regulations – Freshwater Wetland Rules	N.J.A.C. 7:7A (N.J.S.A. 13:9B)	The State of New Jersey assumed 404 authority in 1993 and is the responsible administering authority. The District is in continued coordination with NJDEP. Although permits will be obtained during the PED phase, a conditional water quality certification has been obtained and is included in Appendix A-7.
New Jersey Erosion and Sediment Control Act	N.J.A.C. 2:90-1.1 (N.J.S.A. 4:24-39)	An erosion and sediment control plan will be developed and submitted to the Hudson, Essex, Passaic Soil Conservation District for approval prior to construction.
New Jersey Pollution Discharge Elimination System Permit (NJPDES)	N.J.A.C. 7:14A (N.J.S.A. 58:10A-58:12A-1)	The NJPDES permit will be applied for by the construction contractor once the E&S Plan is approved by the Hudson, Essex, Passaic Soil Conservation District.

Chapter 8: Plan Implementation

The implementation process would carry a plan that is recommended through the PED phase of a project, including development of plans and specifications, and construction. Funding by the Federal government to support these activities would have to meet USACE Civil Works budgeting criteria.

8.1 Consistency with Laws & Policies

This report has been prepared in accordance with relevant laws and USACE policy. Specifically, this section of the report addresses:

- the specific requirements necessary to demonstrate that the project is technically feasible, economically justified and environmentally acceptable
- the costs and cost-sharing to support a PPA

Economics Justification and Environmental Compliance. This report demonstrates that the Recommended Plan is technically feasible. It also identifies the Recommended Plan at this point in the study to have benefits greater than costs. This report has been prepared to meet the requirements of NEPA and demonstrate that the Recommended Plan is compliant with environmental laws, regulations, and policies and has effectively addressed any environmental concerns of resource and regulatory agencies.

8.2 Cost Sharing & Non-Federal Sponsor Responsibilities

In accordance with the cost share provisions in Section 103 of the WRDA of 1986, as amended (33 U.S.C. 2213), project design and implementation are cost shared 65 percent Federal and 35 percent non-Federal. The estimated Total Project Cost is $172,701,000, cost-shared $112,256,000 Federal and $60,445,000 non-Federal (Table 32).

Table 32. Cost apportionment table (FY 20 P.L.).

Cost Category	Federal Share	Non-Federal Share	Total
Total Project Cost	$114,775,000	$61,802,000	$176,577,000
Initial Project Costs	$95,011,000	$51,160,000	$146,170,000
Real Estate Costs[1]	$0	$5,255,000	$5,255,000
Cash Contribution	$95,011,000	$45,905,000	$49,106,000

[1] LERRDs are a non-Federal sponsor responsibility creditable towards the 35 percent non-Federal cost share.

Operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) requirements are considered in the economic analysis for the project. The non-Federal sponsor is responsible for 100 percent of annual OMRR&R requirements, estimated at $575,000 per year. The Federal government is responsible for preparing and providing an OMRR&R manual to the sponsor.

8.3 Institutional & Local Cooperation Requirements

The non-Federal Sponsor supports the Recommended Plan described in this report and intend to execute a PPA for the project once it is authorized and Federal funding is appropriated.

Federal implementation of the recommended project would be subject to the non-Federal sponsor agreeing to comply with applicable Federal laws and policies, including but not limited to:

1. In coordination with the Federal government, who shall provide 65 percent of the initial project cost,
   a. Provide 35 percent of the total nonstructural flood damage reductions costs and a minimum of 35 percent, but not to exceed 50 percent, of the total structural flood damage reduction costs and, as further specified below:

i. Provide, during design, 35 percent of design costs allocated to nonstructural flood damage reduction and 35 percent of design costs allocated to structural flood damage reduction in accordance with the terms of a design agreement entered into prior to commencement of design work for the project;
ii. Pay, during construction, a contribution of funds equal to five percent of total structural flood damage reduction costs;
iii. Provide all lands, easements, and rights-of-way, including those required for relocations, the borrowing of material, and the disposal of dredged or excavated material; perform or ensure the performance of all relocations; and construct all improvements required on lands, easements, and rights-of-way to enable the disposal of dredged or excavated material as determined by the Federal government to be required or to be necessary for the construction, operation, and maintenance of the project;
iv. Pay, during construction, any additional funds necessary to make its total contribution equal to 35 percent of total nonstructural flood damage reduction costs and at least 35 percent of total structural flood damage reduction costs;

b. Prevent obstructions or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) such as any new developments on project lands, easements, and rights-of-way or the addition of facilities which might reduce the outputs produced by the project, hinder operation and maintenance of the project, or interfere with the project's proper function;
c. Inform affected interests, at least annually, of the extent of risk management afforded by the structural flood damage reduction features;
d. Participate in and comply with applicable floodplain management and flood insurance programs;
e. Comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12);
f. Publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with performance levels provided by the flood damage reduction features;
g. Operate, maintain, repair, rehabilitate, and replace the project at no cost to the Federal government, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and state laws and regulations and any specific directions prescribed by the Federal government;
h. Give the Federal government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the project for the purpose of completing, inspecting, operating, maintaining, repairing, rehabilitating, or replacing the project;
i. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, rehabilitation, and replacement of the project and any betterments, except for damages due to the fault or negligence of the United States or its contractors;
j. Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of three years after completion of the accounting for which such books, records, documents, and other evidence are required, to the extent and in such detail as will properly reflect total cost of the project, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments at 32 CFR, Section 33.20;
k. Perform, or ensure performance of, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal government determines to be necessary for the construction or operation and maintenance of the project;

l. Assume, as between the Federal government and the non-Federal sponsor, complete financial responsibility for all necessary cleanup and response costs of any hazardous substances regulated under CERCLA that are located in, on, or under lands, easements, or rights-of-way required for construction, operation, maintenance, repair, rehabilitation, or replacement of the project;
m. Agree, as between the Federal government and the non-Federal sponsor, that the non-Federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and to the maximum extent practicable, operate, maintain, repair, rehabilitate, and replace the project in a manner that will not cause liability to arise under CERCLA;
n. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, (42 U.S.C. 1962d-5b) and Section 101(e) of the WRDA 1986, Public Law 99-662, as amended, (33 U.S.C. 2211(e)) which provide that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;
o. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended, (42 U.S.C. 4601- 4655) and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way necessary for construction, operation, and maintenance of the project including those necessary for relocations, the borrowing of material, or the disposal of dredged or excavated material; and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;
p. Comply with all applicable Federal and state laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.), and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c); and
q. Not use funds from other Federal programs, including any non-Federal contribution required as a matching share therefore, to meet any of the non-Federal sponsor's obligations for the project unless the Federal agency providing the funds verifies in writing that such funds are authorized to be used to carry out the project.

8.4 Real Estate Requirements

USACE projects require that the non-Federal sponsor provide lands, easements, rights-of-way and relocations, and disposal/borrow areas (LERRDs) for a project. Currently, the Recommended Plan will require the non-Federal sponsor to acquire temporary and permanent easements for construction. The project would impact up to 29 parcels (17 privately-owned and 12 publicly-owned). The project would necessitate the acquisition of 5.84 acres of property. Permanent easements totaling 11.35 acres, and 6.20 acres of temporary easements would also be required. In some instances, more than one estate may be required to be obtained over the lands of the same owner. Required Lands, Easements, and Rights-of-Way total 23.39 acres. Details are provided in the Appendix E.

The sponsor possesses sufficient general and legal acquisition authority to acquire all the real estate required for the project. They maintain the professional capability for land acquisitions and can reasonably obtain contract services, if needed. The sponsor has successfully completed real estate acquisition for similar cost-shared USACE projects at Elberon to Loch Arbor, Newark (Minish), Greenbrook, and Port Monmouth, New Jersey, among others. The sponsor is aware of Public Law 91-646 requirements as well as the requirement to document all LERRD expenses for the claim of credit. It is unlikely for the sponsor to require the assistance from USACE for real estate acquisition.

The NED plan requires temporary easements. Since the project is currently at a feasibility-level design, the size of the real estate interests required are preliminary estimates only based on available Geographic Information System (GIS) data. The precise size and location of the required real estate interests will be identified during the PED phase when Plans and Specifications, and detailed drawings are prepared. As a result, the require acreage are subject to change with project refinements.

Once the real estate requirements are finalized during PED, prior to real estate acquisition, the sponsor is advised to obtain property line surveys with a corresponding legal description for each different estate acquired for the project to mitigate against potential boundary disputes. The sponsor is also advised to obtain title insurance after signature of the PPA on all acquired property to protect against "defects" in title and to identify potential encumbrances.

8.5 Design & Construction Considerations

In order for PED and construction to be initiated, USACE must sign a PPA with a non-Federal sponsor to cost share PED and construction. This project would require congressional authorization for PED and implementation. Implementation would then occur, provided that sufficient funds are appropriated to design and construct the project.

Implementation Schedule. The schedule for plan implementation was developed for planning and cost estimating purposes (Table 33). The schedule assumes that the project will be authorized and funded for construction by the Congress in a Water Resources Development Act or similar legislation (expected 2020). All dates are dependent upon this authorization. Dates for design and construction are also dependent upon appropriation of Federal and non-Federal funding. See Appendix D for a detailed proposed construction schedule.

Table 33. Recommended Plan implementation schedule.

Chief of Engineering Report Approval	April 2020
Pre-Construction Engineering & Design (PED)	
Design start	September 2020
Design end	September 2022
Real estate acquisition start	September 2022
Real estate acquisition end	September 2024
Construction	
Construction start	October 2024
Construction complete	June 2027

Construction years are assumed for the economics evaluation in this study, but are subject to future project approval and funding requirements.

8.6 Views of the Non-Federal Sponsor & Other Agencies

NJDEP, as the non-Federal sponsor, has indicated its support of Alternative 10b-40 as the Recommended Plan in a letter dated December 2, 2019. The agency has also documented in a December 6, 2019 memorandum that it has the financial capability to act as the non-Federal cost-share sponsor for project implementation (Appendix F). In addition, the Township of Little Falls and the Borough of Woodland Park have expressed their support for Alternative 10b-40 as the Recommended Plan (Appendix F).

8.7 Implementation Authority

Implementation of the Recommended Plan would be made through an individual authorization of the project and in response to a Congressional Resolution from the House Committee on Public Works and Transportation, the Senate Committee on the Environment and Public Works, or a Public Law. After authorization, USACE would jointly implement the project with a non-Federal sponsor. This approach requires that Congress provide USACE authority and funds to construct the project. PED is the first phase of construction. After a feasibility study is completed, part of the PED phase can be completed while waiting for authority to construct. USACE would execute a PPA with the non-Federal sponsor to design and construction the project. Based on non-Federal sponsor support of the Recommended Plan it is anticipated that NJDEP would serve as the non-Federal sponsor during PED and construction.

Chapter 9: Public Coordination & Views

A public notice announcing the availability of the Revised DIFR/EA for public review was placed on the USACE New York District website on October 9, 2018. Public and agency comments received are included in Appendix A-13.

Chapter 10: Recommendations

In making the following recommendations, I have given consideration to all significant aspects in the overall public interest, including environmental, social and economic effects, engineering feasibility and compatibility of the project with the policies, desires, and capabilities of the State of New Jersey and other non-Federal interests.

I recommend that the selected plan for flood risk management in the Peckman River Basin, New Jersey, as fully detailed in this final integrated feasibility report and environmental assessment, be authorized for construction as a Federal project, subject to such modifications as may be prescribed by the Chief of Engineers. The Recommended Plan includes a combination of a diversion culvert connecting the Peckman and Passaic Rivers; associated weirs; levees and floodwalls; channel modifications; and nonstructural measures within the ten percent floodplain upstream of Route 46. The plan is designed to manage flood risk up to the two percent flood event.

The recommendations contained herein reflect the information available at this time and current departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of highest review levels within the Executive Branch. Consequently, the recommendations may be modified by the Chief of Engineers before they are transmitted to the Congress as proposals for authorization and implementing funding. However, prior to transmittal to Congress, the partner, the State, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

_____

Thomas D. Asbery
Colonel, U.S. Army
District Engineer

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Figure 3: Welcome sign to Little Falls. Image from: http://www.njmls.com/NJ/PASSAIC/LITTLE%20FALLS-community-information. Accessed April 3, 2018.

Figure 4: Overview of Woodland Park. Screen capture from: https://www.youtube.com/watch?v=06G42rtB7Ok. Accessed April 3, 2018.

Figure 5: Peckman River. Image from: https://en.wikipedia.org/wiki/West_Essex_Trail. Accessed on April 3, 2018.

Figure 6: Passaic River at the Hillery Street Bridge. Image from: https://www.flickr.com/photos/jag9889/3488975447/. Accessed on April 3, 2018.

Figure 16. High flows & water levels due to Tropical Storm Floyd at a bridge abutment along the Peckman River (Little Falls Historical Society September 1999). Source: Little Falls Historical Society. Accessed on April 3, 2018.

Figure 17: Two men use yellow trash bags to wade through flood waters after Hurricane Irene in Little Falls. Image from: http://newyork.cbslocal.com/2011/09/08/as-flood-damage-mounts-weary-nj-residents-seek-aid-answers/. Accessed on April 3, 2018.

Figure 26. Flash flooding in the Peckman River during Hurricane Floyd near Little Falls, NJ (1999). Source: Little Falls Historical Society. Accessed on April 3, 2018.

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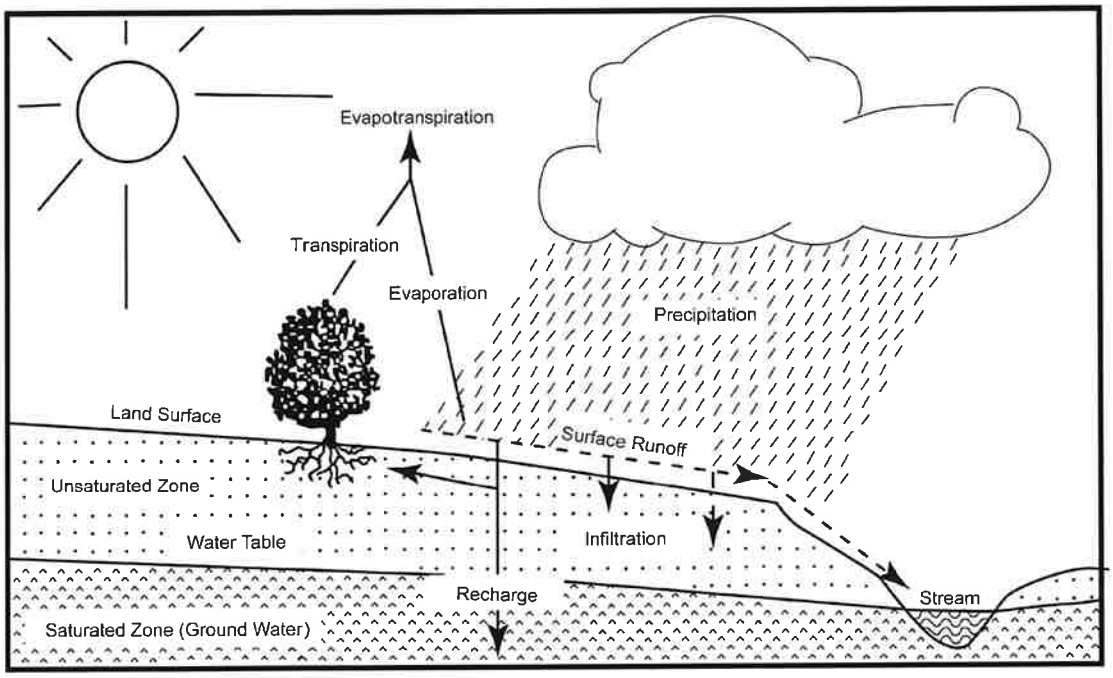

Source: New Jersey Geological Survey Report GSR-32.

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Figure C-1
Groundwater Recharge in the Hydrologic Cycle
Township of Cedar Grove
Essex County, NJ

NEGLIA

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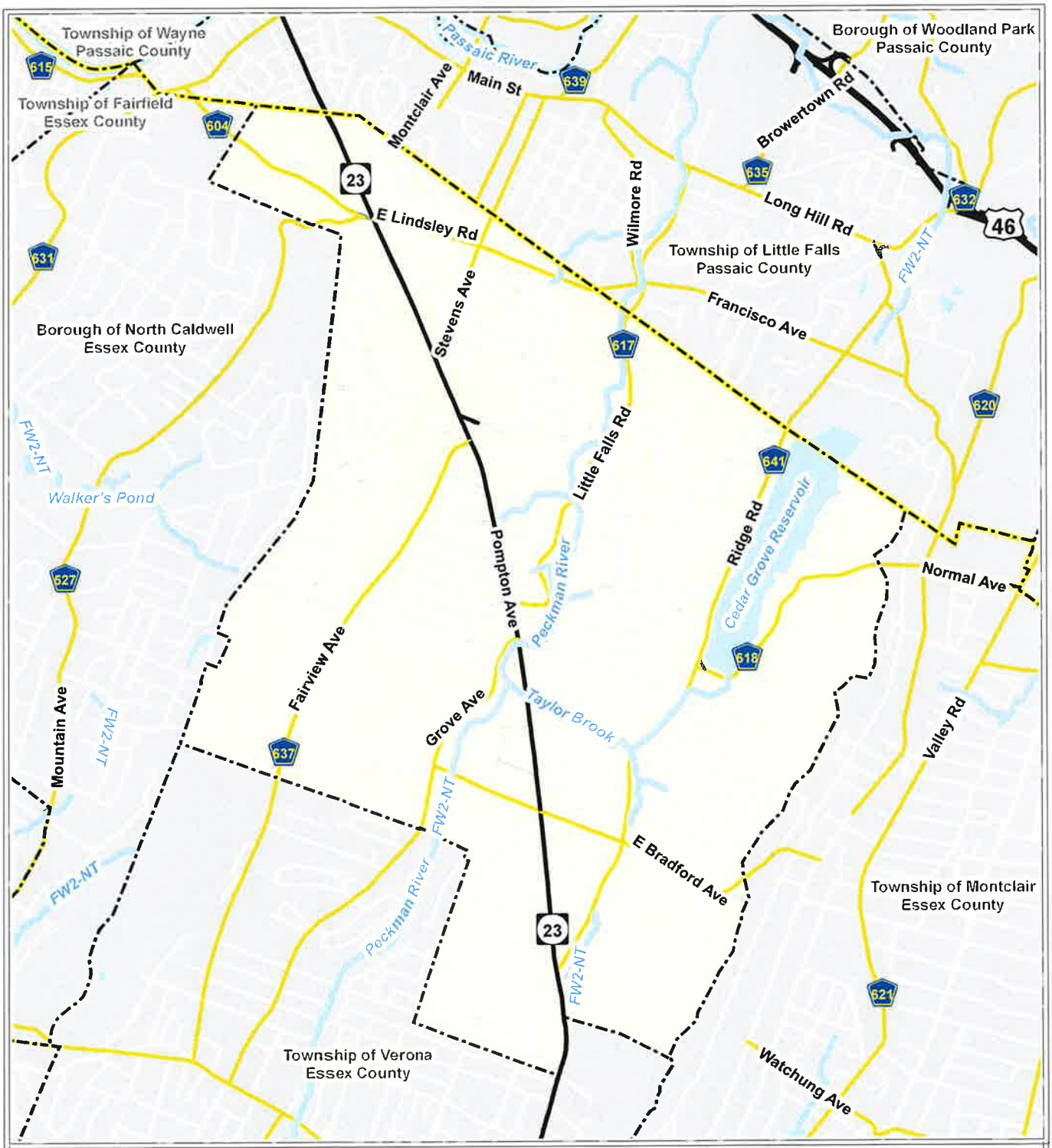
Field Book No:	Date: July, 2022			



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0 1,250 2,500 5,000 Feet

Figure C-2
Waterways
Stormwater Management Plan
Township of Cedar Grove
Essex County, NJ

Legend

- Waterbodies
- Township of Cedar Grove

NEGLIA

Drawn By: A.E.R	Checked By: R.K.C	Project No: CDGRMUN21.010	Sheet No: Figure C-2	Map References: New Jersey Office of GIS, NJDEP
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Field Book No:	Date: July 2022			

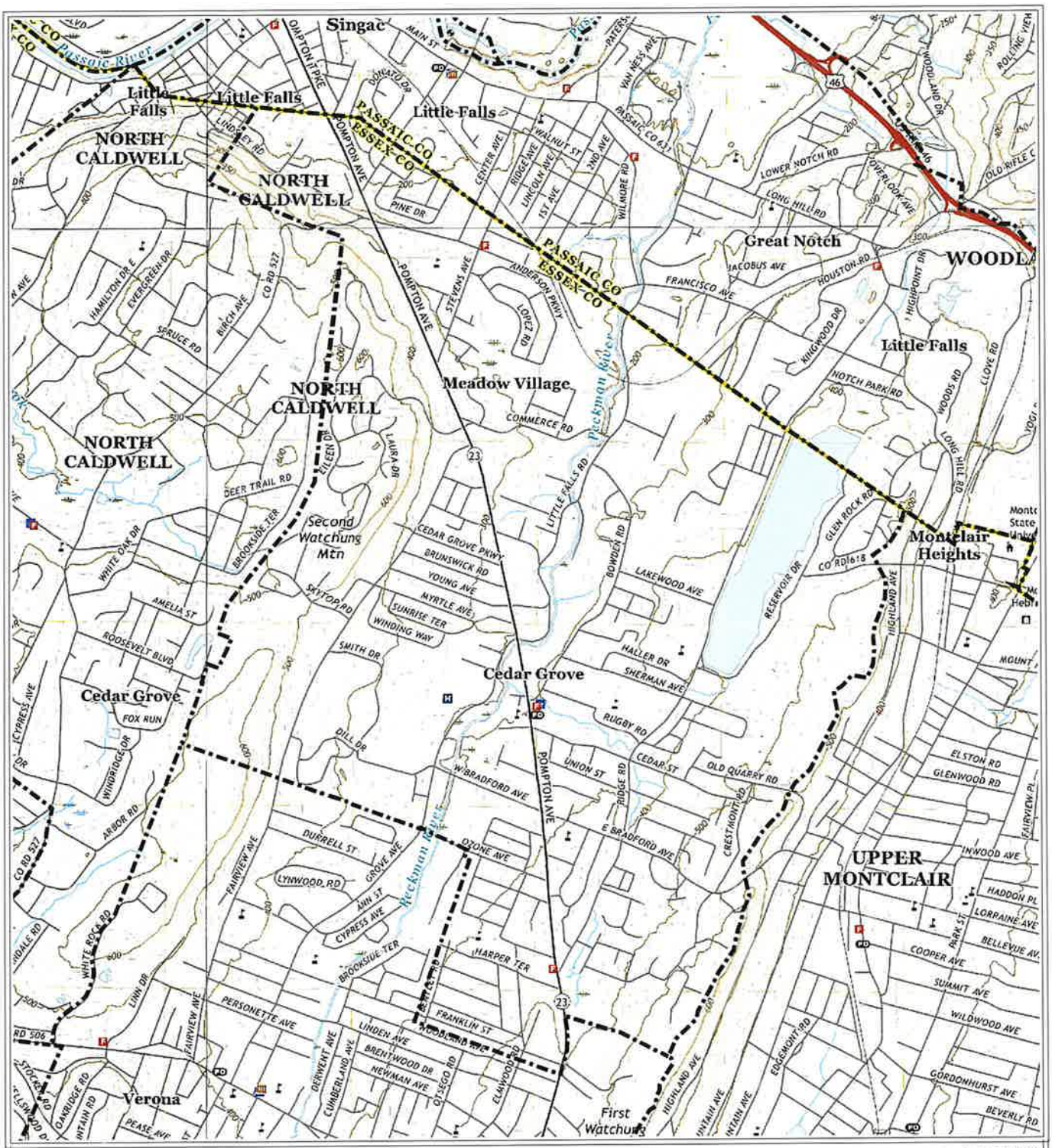

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Figure C-3
USGS Quadrangle Maps
Stormwater Management Plan
Township of Cedar Grove
Essex County, NJ

Legend

Municipal Boundary

NEGLIA

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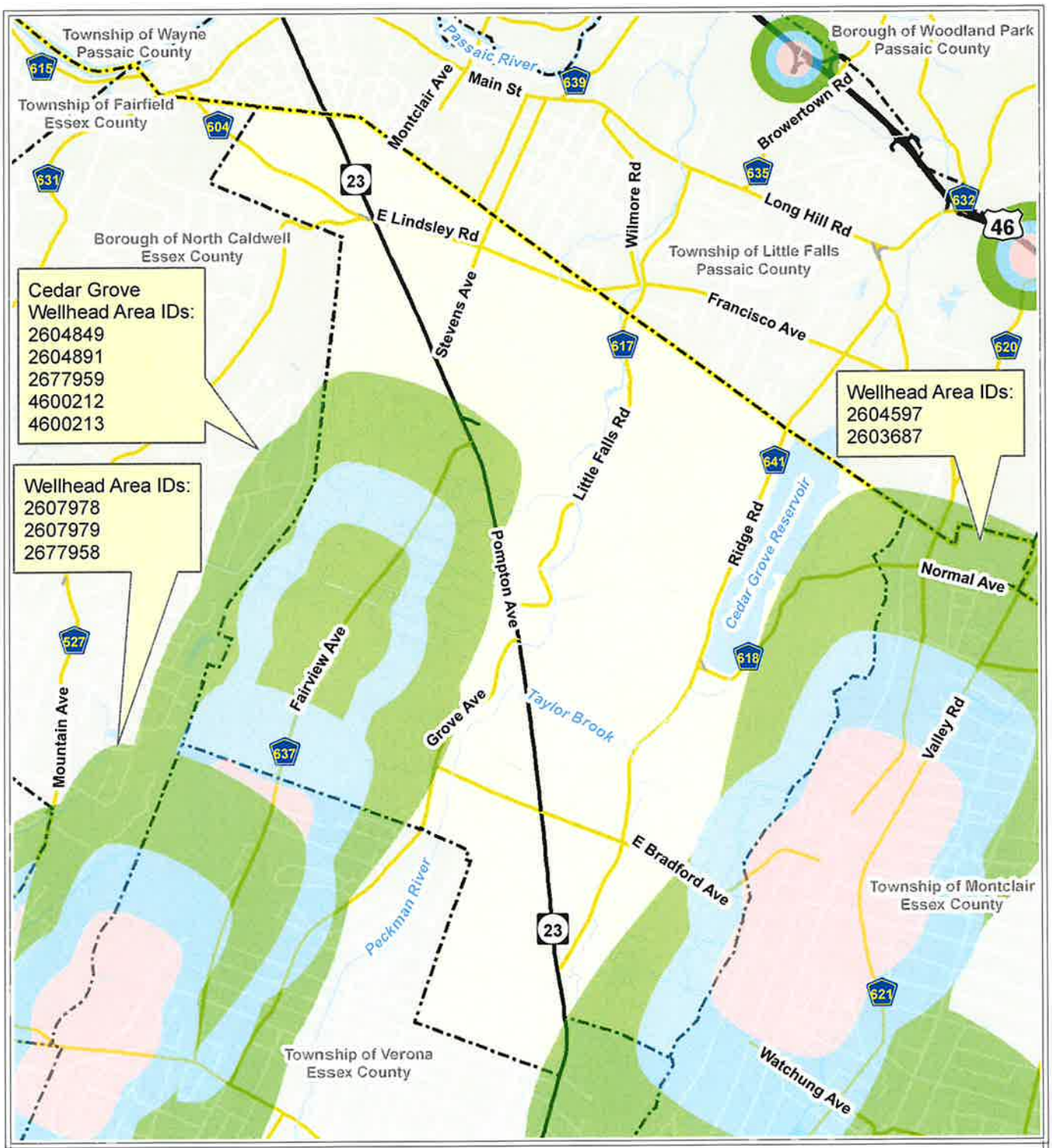

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0 1,250 2,500 5,000 Feet

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Figure C-4
Wellhead Protection Areas
Stormwater Management Plan
Township of Cedar Grove
Essex County, NJ

Community and Non-Community Well Head Protection Areas

Water Travel Time to Well

- 2-year
- 5-year
- 12-year

Township of Cedar Grove

NEGLIA

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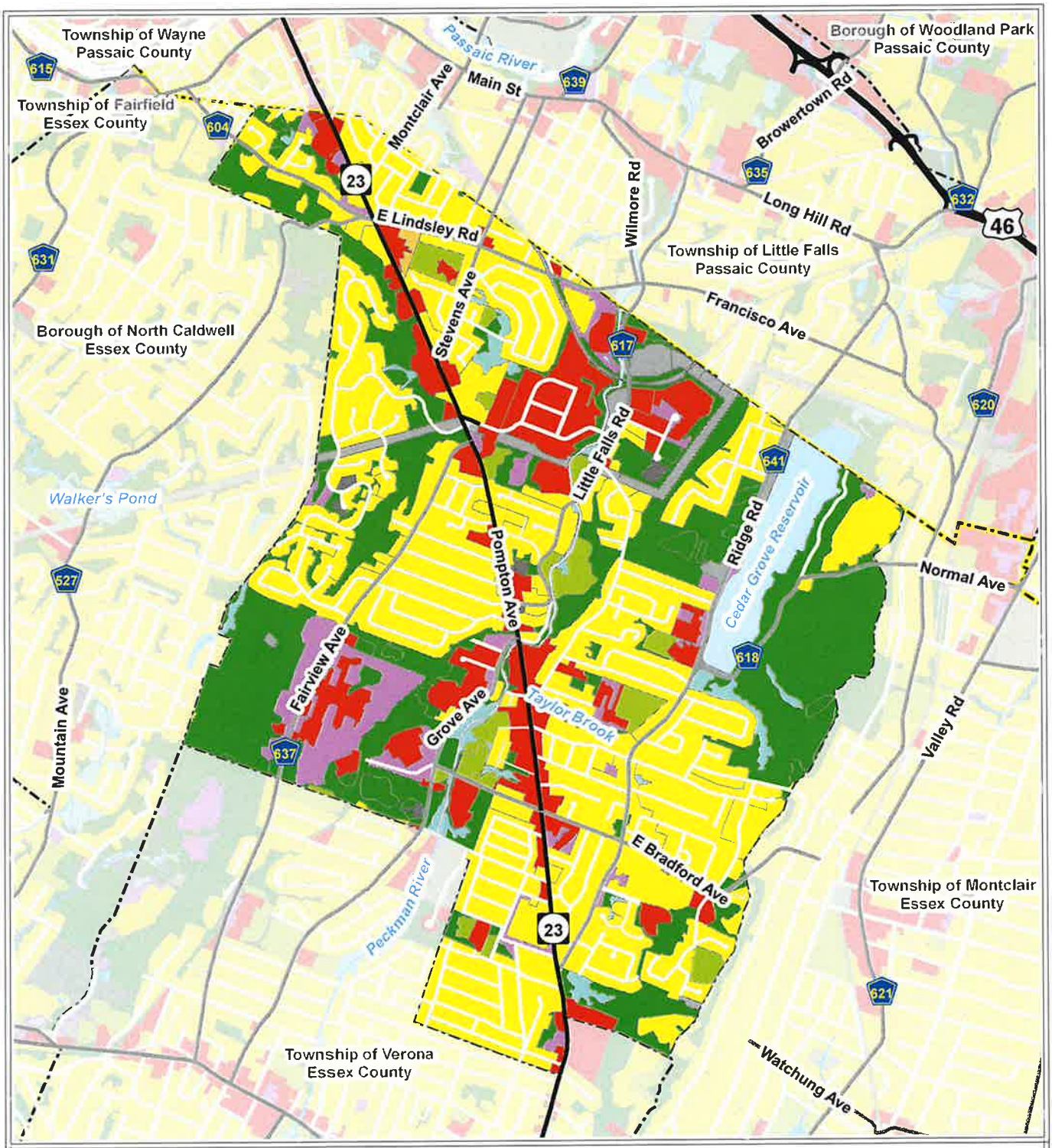

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0 1,250 2,500 5,000 Feet

N

Figure C-5
Land Use / Land Cover
Stormwater Management Plan
Township of Cedar Grove
Essex County, NJ

Land Use / Land Cover

Generalized Land
- Agriculture
- Forest
- Residential
- Wetlands

- Cemetery / Transportation / Utilities
- Urban Land
- Commercial / Industrial
- Recreational Land
- Water
- Barren Land

NEGLIA

Drawn By: A.E.R	Checked By: R.K.C	Project No: CDGRMUN21.010	Sheet No: Figure C-5	Map References: New Jersey Office of GIS, NJDEP Anderson Classification LULC 2015
Designed By: R.K.C.	Page:			
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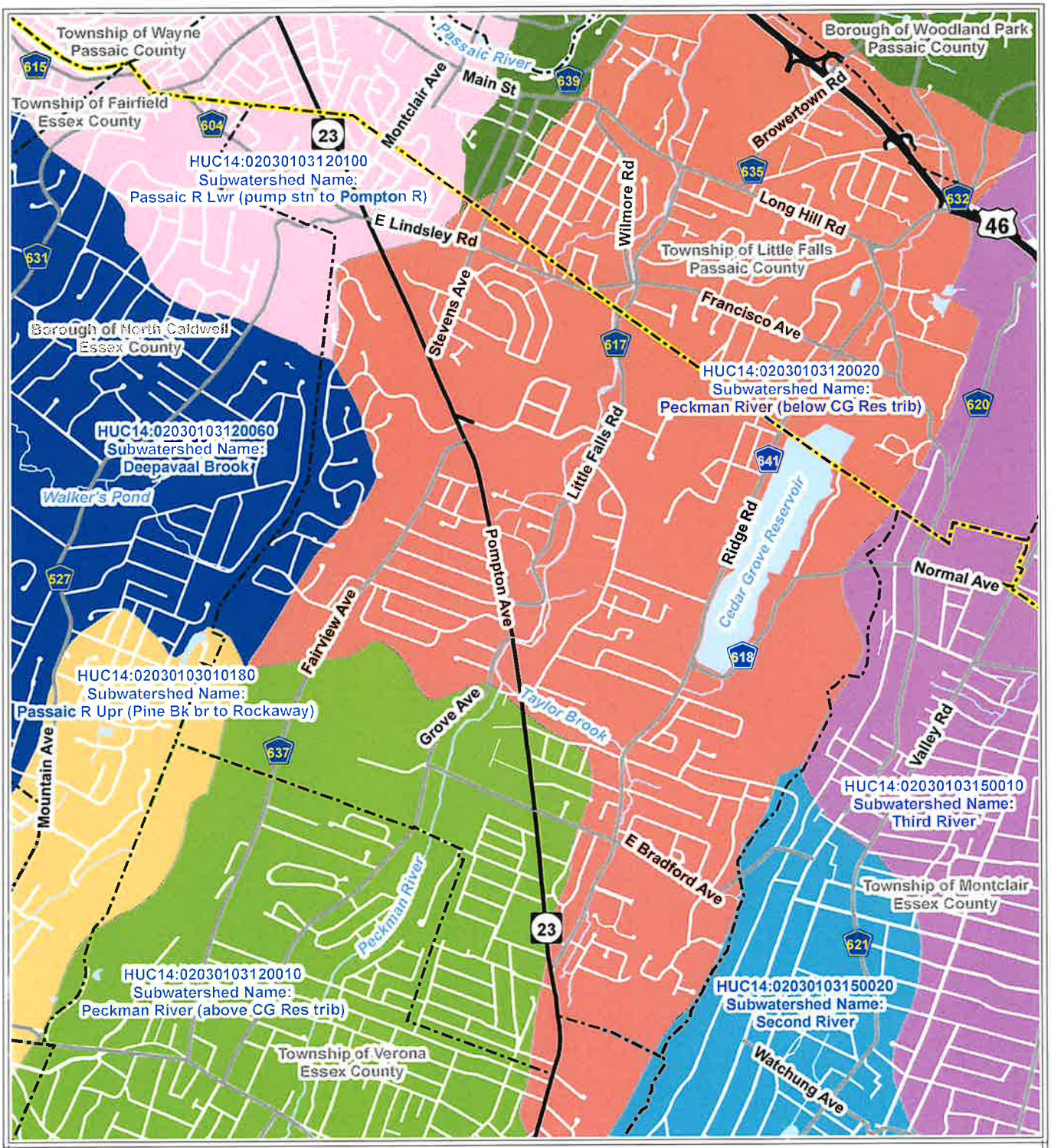

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0 1,250 2,500 5,000 Feet

Figure C-6
NJDEP HUC14 Watersheds
Stormwater Management Plan
Township of Cedar Grove
Essex County, NJ

Subwatersheds

NJ Data
- Deepavaal Brook
- Passaic R Lwr (Goffle Bk to pump stn)
- Passaic R Lwr (pump stn to Pompton R)
- Passaic R Upr (Pine Bk br to Rockaway)
- Peckman River (above CG Res trib)
- Peckman River (below CG Res trib)
- Second River
- Third River

NEGLIA

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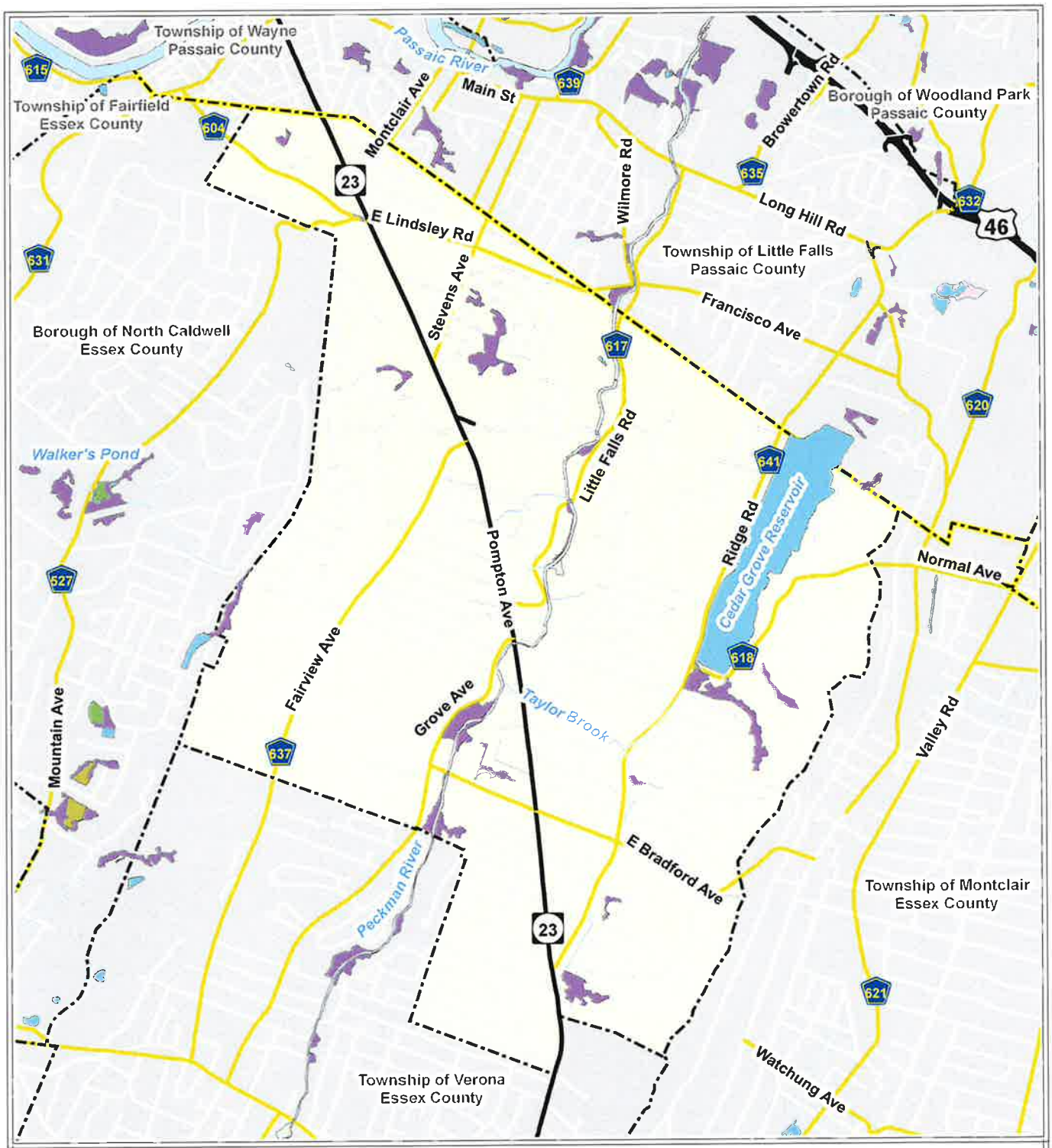


0 1,250 2,500 5,000 Feet

Figure C-7
Wetlands - Stormwater Management Plan
Township of Cedar Grove
Essex County, NJ

CERTIFICATE OF AUTHORIZATION (N.J.S.A. 45:8-56) 24GA27927000

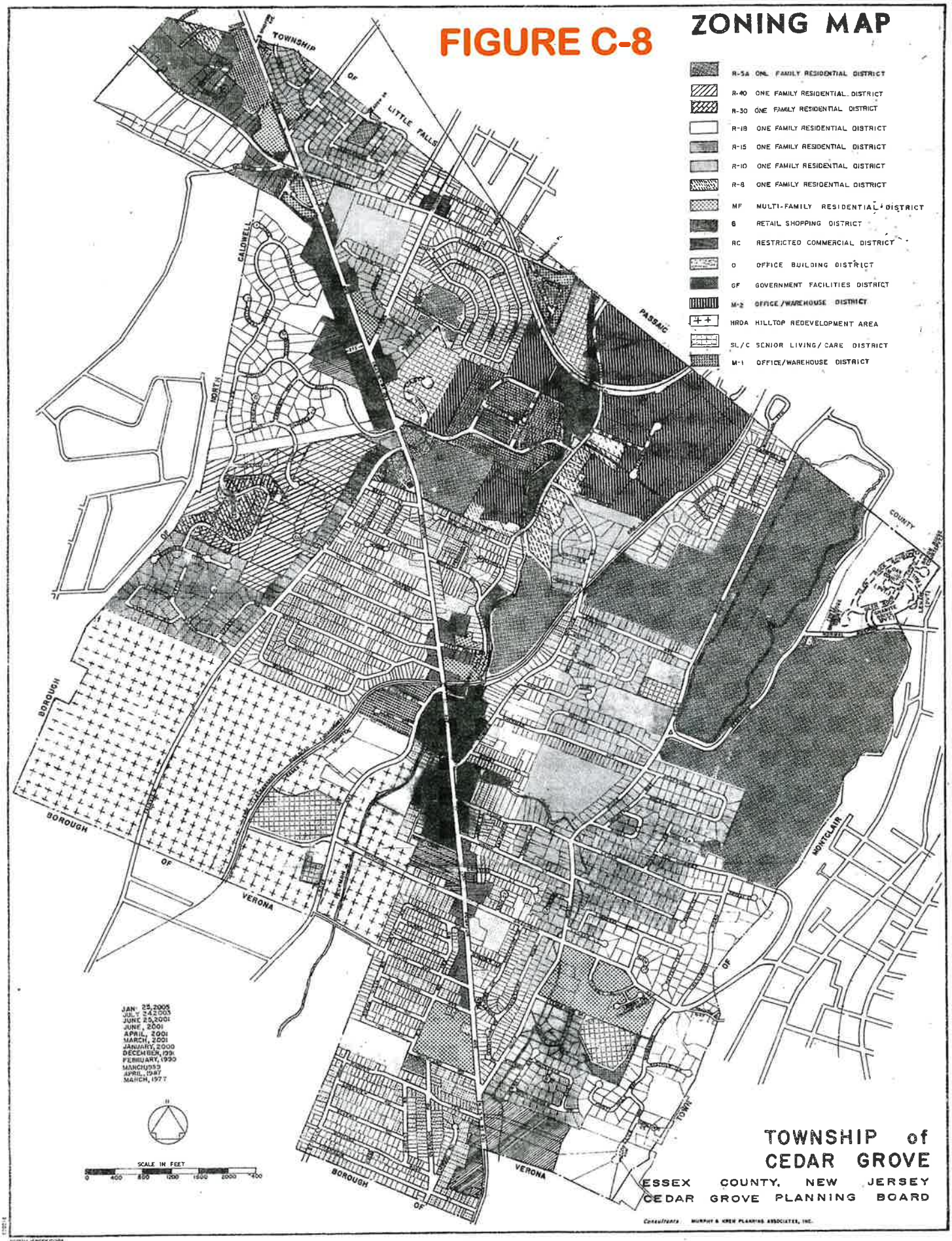
Wetlands and Water Land Uses

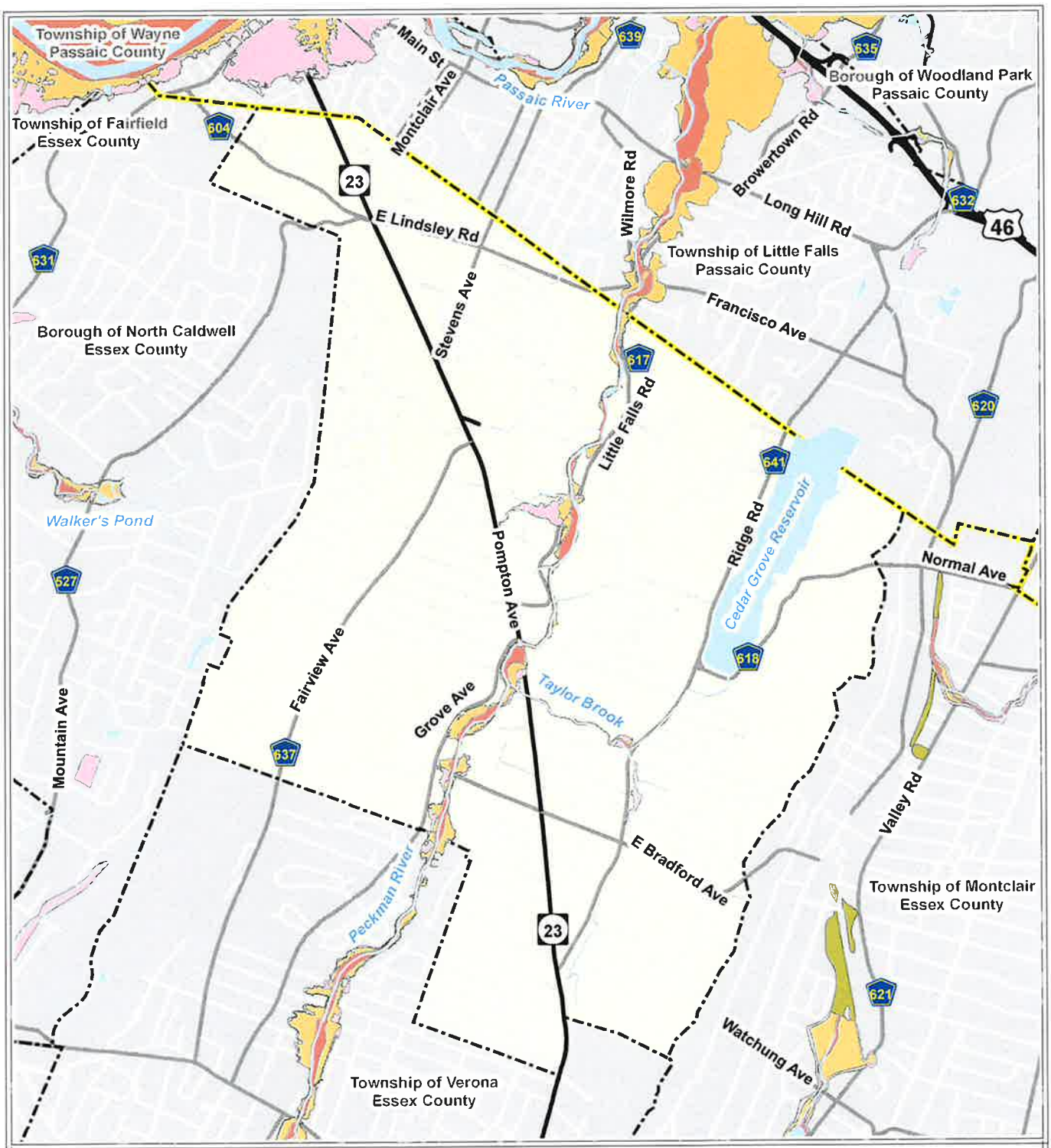
- Deciduous Wooded Wetlands
- Herbaceous Wetlands
- Water - Natural Lakes
- Water - Streams and Canals
- Water - Artificial Lake
- Water - Bridge over Water
- Wetlands - Deciduous Scrub/Shrub Wetlands
- Wetlands - Deciduous Wooded Wetlands
- Wetlands - Managed Wetland In Built-Up Maintained Rec Area
- Wetlands - Herbaceous Wetlands
- Wetlands - Managed Wetland In Maintained Lawn Greenspace
- Wetlands - Mixed Wooded Wetlands (Deciduous Dom.)
- Wetlands - Phragmites Dominate Interior Wetlands

NEGLIA

Drawn By: A.E.R	Checked By: R.K.C	Project No: CDGRMUN21.010	Sheet No: Figure C-7	Map References: New Jersey Office of GIS, NJDEP HUC14, Essex County GIS, Passaic County GIS
Designed By: R.K.C.	Page:			
Field Book No:	Date: July 2022			

FIGURE C-8


ZONING MAP
R-5A ONE FAMILY RESIDENTIAL DISTRICT
R-40 ONE FAMILY RESIDENTIAL DISTRICT
R-30 ONE FAMILY RESIDENTIAL DISTRICT
R-18 ONE FAMILY RESIDENTIAL DISTRICT
R-15 ONE FAMILY RESIDENTIAL DISTRICT
R-10 ONE FAMILY RESIDENTIAL DISTRICT
R-8 ONE FAMILY RESIDENTIAL DISTRICT
MF MULTI-FAMILY RESIDENTIAL DISTRICT
B RETAIL SHOPPING DISTRICT
RC RESTRICTED COMMERCIAL DISTRICT
O OFFICE BUILDING DISTRICT
GF GOVERNMENT FACILITIES DISTRICT
M-2 OFFICE/WAREHOUSE DISTRICT
HRDA HILLTOP REDEVELOPMENT AREA
SL/C SENIOR LIVING/CARE DISTRICT
M-1 OFFICE/WAREHOUSE DISTRICT
TOWNSHIP OF LITTLE FALLS
CALDWELL
NORTH
PASSAIC
COUNTY
BOROUGH
BOROUGH OF VERONA
MONTCLAIR
TOWN OF
VERONA
BOROUGH OF
JAN. 25,2005
JULY 24,2003
JUNE 25,2001
JUNE, 2001
APRIL, 2001
MARCH, 2001
JANUARY, 2000
DECEMBER, 1991
FEBRUARY, 1990
MARCH1989
APRIL, 1987
MARCH, 1977
SCALE IN FEET
0 400 800 1200 1600 2000 4000
TOWNSHIP of
CEDAR GROVE
ESSEX COUNTY, NEW JERSEY
CEDAR GROVE PLANNING BOARD
Consultants MURPHY & KREW PLANNING ASSOCIATES, INC.



CERTIFICATE OF AUTHORIZATION (N.J.S.A. 45:8-56) 24GA27927000

0 1,250 2,500 5,000 Feet

Figure C-9
FEMA Flood Hazard Areas
Stormwater Management Plan
Township of Cedar Grove
Essex County, NJ

Flood Zone Descriptions

- Zone AE, Special Flood Hazard Area, Floodway
- Zone AE, Special Flood Hazard
- Zone A, Special Flood Hazard
- Zone X, 0.2% Annual Chance Flood Hazard Area

NEGLIA

Drawn By: A.E.R	Checked By: R.K.C	Project No: CDGRMUN21.010	Sheet No: Figure C-9	Map References: New Jersey Office of GIS, NJDEP FEMA NFHL Passaic County 04/2020 FEMA NFHL Essex County 09/2020
Designed By: R.K.C.	Page:			
Field Book No:	Date: July 2022			