

ENVIRONMENTAL ASSESSMENT

Jefferson Avenue Bridge Removal Green Brook Flood Control Project Green Brook Township, Somerset County, NJ

Prepared By:



US Army Corps of Engineers
New York District

March 2015

Environmental Assessment
Jefferson Avenue Bridge Removal
Green Brook Flood Control Project
Green Brook, Somerset County, NJ

TABLE OF CONTENTS

1.0 Purpose and Need	1
2.0 Green Brook Flood Control Project Background	3
3.0 Alternatives Analysis	6
3.1 No Federal Action	6
3.2 Proposed Action – Bridge Removal	6
4.0 Affected Environment	7
4.1 Land Use	7
4.2 Soils and Topography	7
4.3 Water Resources	7
4.4 Upland and Riparian Vegetation	8
4.4.1 Wetlands	8
4.5 Fish and Wildlife	9
4.5.1 Fisheries Resources	9
4.5.2 Aquatic Macroinvertebrates	9
4.5.2 Wildlife	9
4.5.3 Federal and State Endangered, Threatened and Special Concern Species	9
4.6 Environmental Contamination	10
4.7 Cultural Resources	11
4.8 Air Quality	11
4.9 Socioeconomics	12
4.10 Recreation	13
4.11 Transportation	13
4.11.1 Emergency Services	13
4.11.2 School Bus Routes	13
5.0 Environmental Impacts	15
5.1 Land Use	15
5.2 Soils and Topography	15
5.3 Water Resources	15
5.4 Vegetation	15
5.4.1 Wetlands	15
5.5 Fish and Wildlife	15
5.5.1 Fishery and Aquatic Macroinvertebrate Resources	15
5.5.2 Wildlife	15
5.5.3 Federal and State Endangered, Threatened and Special Concern Species	16
5.6 Environmental Contamination	16
5.7 Cultural Resources	16

5.8 Air Quality and Noise	17
5.9 Socioeconomics	17
5.9.1 Environmental Justice	17
5.10 Recreation	18
5.11 Transportation	18
5.11.1 Emergency Services	19
5.11.2 School Bus Routes	19
5.12 Cumulative Impacts	19
6.0 Public and Agency Coordination	19
7.0 Conclusion	20
8.0 References	21
9.0 List of Preparers	23

LIST OF FIGURES:

Figure 1: Jefferson Ave Project Area.....	2
Figure 2: Green Brook Flood Risk Management Project, Element No. 1	4
Figure 3: Location of Schools and Emergency Response Facilities.....	14

LIST OF TABLES :

Table 1: Summary of Primary Federal and State Laws and Regulations Applicable to the Proposed Project	20
--	----

APPENDICES:

- Appendix A: Project Plans
- Appendix B: Pertinent Correspondence
- Appendix C: General Conformity Record of Non-Applicability
- Appendix D: Draft Finding of No Significant Impact

LIST OF ACRONYMS

Acronym Title

CEQ	Council of Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulation
Corps	United States Army Corps of Engineers
DEA	Draft Environmental Assessment
District	U.S. Army Corps of Engineers, New York District
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FSEIS	Final Supplemental Environmental Impact Statement
GBFCP	Green Brook Flood Control Project
HTRW	Hazardous, Toxic and Radioactive Waste
KCS	Known Contaminated Site
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NJDEP	New Jersey Department of Environmental Protection
NJDEP BFBM	New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring
NJDOT	New Jersey Department of Transportation
NJHPO	New Jersey Historical Preservation Office
NPL	National Priority List
PA	Programmatic Agreement
PM	Particulate Matter
RCRA	Resources Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
TRIS	Toxic Release Inventory System
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service

1.0 Purpose and Need

The U.S. Army Corps of Engineers (Corps), New York District (District), in partnership with the New Jersey Department of Environmental Protection (NJDEP), is proposing to remove the Jefferson Avenue Bridge located in Green Brook Township, the Borough of Dunellen and the City of Plainfield in the counties of Somerset, Middlesex, and Union, New Jersey (Figure 1) as part of the Green Brook Flood Control Project (GBFCP). Included in the proposed action will be the construction of a 15 foot wide emergency access lane within an existing right of way from the Green Brook Middle School to Maxal Street in order to provide buses/vehicles with an alternate ingress/egress point to the school in the event that access to the main entrance and exit drives along Jefferson Avenue is impeded.

The Jefferson Avenue Bridge is a one lane, steel truss bridge supported by stone masonry abutments that was originally constructed in 1900. Although the bridge underwent a major rehabilitation in 1938 and has undergone other subsequent maintenance and repair actions, the height of the bridge contributes to flooding by creating a hydraulic constriction in addition to causing debris to dam up behind it during flood events.

The GBFCP was authorized for construction in Section 401a of the Water Resources Development Act of 1986. The bridge was identified in the *August 1980 Feasibility Report for Flood Control, Green Brook Sub-Basin* to be removed as part of the overall flood risk management project. The removal of the bridge was reiterated in the *May 1997 Final General Reevaluation Report (GRR) and Final Supplemental Environmental Impact Statement (FSEIS) Green Brook Sub-Basin of the Raritan River Basin, Middlesex, Somerset, and Union Counties, State of New Jersey* (1997 GRR/FSEIS).

This Environmental Assessment was prepared as an update to the 1997 GRR/FSEIS and to incorporate the emergency access lane into the assessment to evaluate the significance of potential environmental impacts of the proposed action and determine if the proposed action warrants the preparation of an environmental impact statement.

Figure 1 Jefferson Ave Bridge Removal



2.0 Green Brook Flood Control Project Background

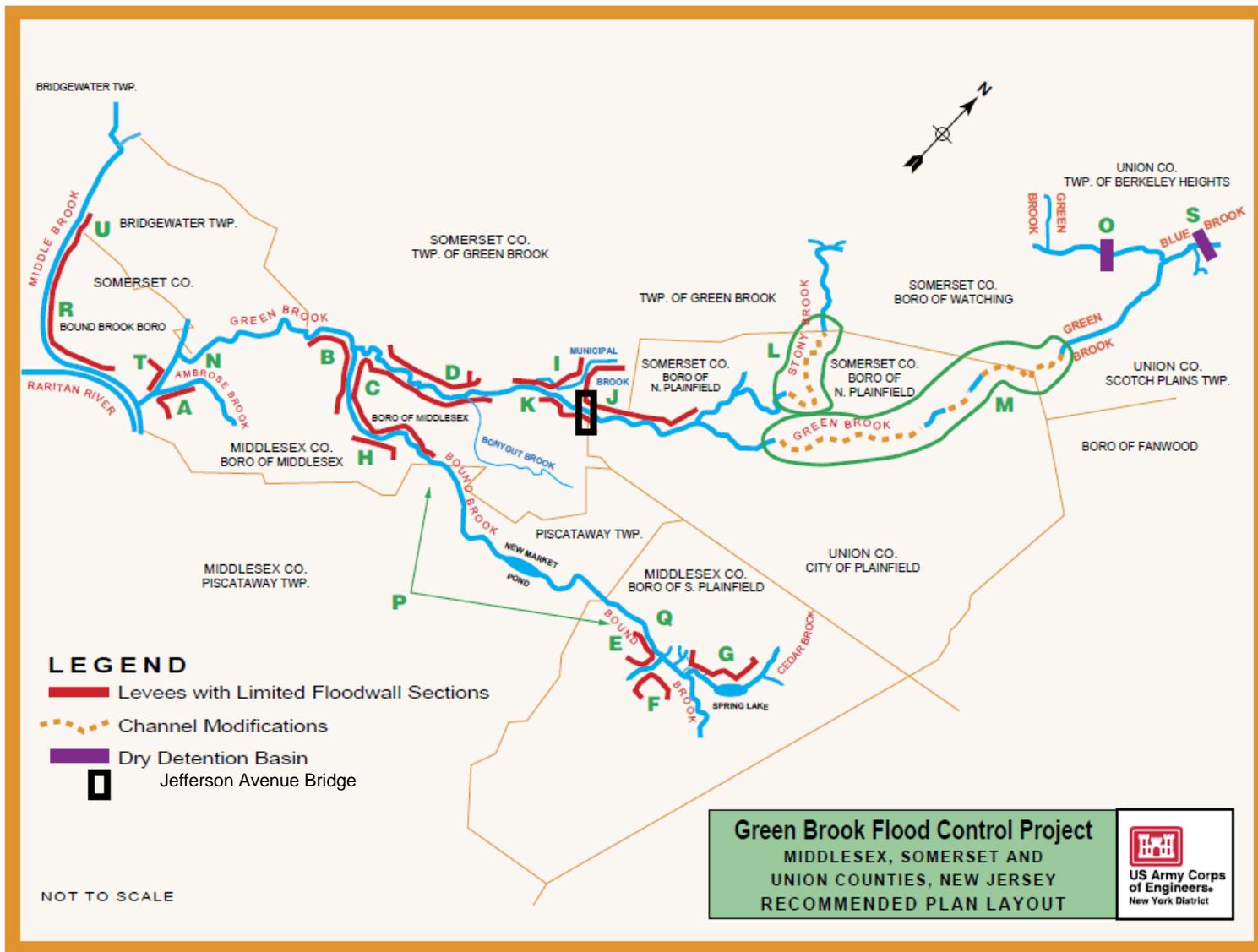
The overall Green Brook Basin encompasses sixty-five square miles within the State of New Jersey in the counties of Somerset, Middlesex and Union, and incorporates the Green Brook Sub-Basin of the Raritan River Basin, a short reach of the Raritan River along the border of the Borough of Bound Brook and the Middle Brook tributary to the Raritan River (Figure 2).

Flooding has been a longstanding problem in the Green Brook Sub-Basin. In September of 1999, Tropical Storm Floyd caused significant flood damages throughout the Sub-Basin, with the most extreme damages experienced in the Borough of Bound Brook. More recently, the April 2007 nor'easter caused significant flooding in Bound Brook and approximately \$200,000 in damages to the Segment T pump station.

The GBFCP was authorized for construction in Section 401a of the Water Resources Development Act of 1986 and involves the construction of seven different elements. Each element consists typically of multiple construction segments or contract reaches. Two of the elements in the Upper Basin have been deferred for reanalysis, but the other elements will be constructed as federal and state partnered funding becomes available.

The recommended plan for the GBFCP will provide flood protection to the lower portion of the basin and the Stony Brook portion of the basin through various structural and non-structural flood control elements including approximately 14 miles of levees and floodwalls along Green Brook with supporting pump stations and closure structures, bridge replacements and removals, approximately one mile of channel modification in the Stony Brook portion of the project, and various levels of flood proofing including buy-outs. Plans for the upper portion of the basin have been deferred for reevaluation at a later time.

FIGURE 2: Green Brook Flood Damage Reduction Project



*Jefferson Ave Bridge Removal
Green Brook, NJ
Environmental Assessment*

Element No. 1 - Bound Brook

Element No. 1 is comprised of Segments A, N, R, T, and U (See Figure 2). Segment R was subdivided into several construction contracts: Segment R-1 which includes the Talmadge Avenue Bridge Replacement, and Segment R-2. Construction of Element No. 1 started in 2001, and has continued with implementation of levees, floodwalls and associated pump stations and drainage features at Segments T, U, R-2, floodproofing of 500 Union Avenue residences and buy-outs at Prospect Place in Middlesex Borough. An additional component involving the removal of an abandoned Conrail Bridge over the Raritan River was included in Element 1 to reduce the potential of flooding during the completion of Segment R2. Segment R2, the last remaining segment to be completed, is currently under construction and is scheduled to be completed by the end of 2014.

Element No. 2- Green Brook and Middlesex

Element No. 2 is comprised of Segments B, C, H and D and is located in Green Brook Township and the Borough of Middlesex (See Figure 2). Proposed flood damage reduction measures for Element No. 2 include approximately 6,750 feet of floodwall, 24,100 feet of levee, a total of six buy-outs of residential structures, flood proofing of 26 commercial structures and the raising of the Sebrings Mills Road, South Lincoln Avenue, and Union Avenue bridges.

Segment B is further broken down into Segments B-1 through B5. Construction for Segment B1 was initiated in 2010 and is nearing completion. The District is currently designing Segment B2 and anticipates initiating construction sometime in 2015. The remaining segments will be designed in constructed in the future.

Mitigation

The Finderne Farms Mitigation Site, located in Bridgewater Township, serves as off-site wetland and habitat mitigation acreage for the environmental impacts of the Bound Brook construction segments that could not be mitigated for on-site, including the construction of future structural project elements in Middlesex County.

The total property size is 179 acres, with the mitigation project focused on approximately 130 acres of the floodplain portion of the site. Habitats created, restored, enhanced or preserved as part of the mitigation effort include 35 acres of forested wetland, six acres of scrub-shrub wetland, five acres of emergent wetland enhancement, preservation of six acres of palustrine emergent wetland, six acres of upland forest, 27 acres of riparian forest, and 800 linear feet of stream restoration. In addition, 12 acres of active and passive recreation including two soccer fields and trails that will become part of the Raritan River Greenway have been created. Construction of the mitigation site and recreational fields began in Fall 2005, and was completed in June 2006. Monitoring to evaluate the success of the mitigation site has been on-going since 2006. Additional Project Background Information can be viewed online at the District project website:

<http://www.nan.usace.army.mil/Missions/CivilWorks/ProjectsInNewJersey/GreenBrookSubBasi n.aspx>

3.0 Alternatives Analysis

Two alternatives considered in detail in this Environmental Assessment include No-Action and removal of the Jefferson Avenue Bridge. Both were evaluated for consistency with both the Federal objective and desires of the community. The alternative that best met the economic, environmental and technical criteria for this project site was selected as the proposed action. Criteria used in selecting the preferred alternative include:

- Provide flood damage risk reduction
- Provide an environmentally beneficial solution
- Constructability

3.1 No Federal Action

Analysis of the No-Action Alternative is prescribed by the National Environmental Policy Act and serves as the baseline against which the environmental and socioeconomic effects of the Proposed Action and other reasonable alternatives can be evaluated.

The bridge is currently operational although is in need of repairs. The bridge was originally constructed in 1900. Significant repairs included an overhaul completed in 1938 to strengthen the structure and add a dedicated pedestrian walkway. Additional repairs were performed in 1988 and involved replacing the wooden walkway with steel grates and reappointing the masonry substructure.

Somerset County has been the lead responsible authority for operating and maintaining the bridge. Inspections conducted in the 1990's and 2000 have revealed increasingly deteriorated bridge components such as cracking in the weld cracks and rust. The bridge was closed in 2011 for repairs in the amount of \$19,000. Additional structural issues with the bridge stringers and floor beams were observed in the bridge in 2013. The bridge was slated for approximately \$30,000 worth of repairs in 2014 but was delayed due to lack of availability of materials required for the repair work.

Therefore, under the No Action Plan, the bridge would remain in place. However, given the deteriorated state of the bridge, it could be closed temporarily while repairs are being made or be closed permanently if funds or materials are not available for the necessary repairs.

Should the bridge be closed temporarily or permanently, traffic would be detoured to streets paralleling Jefferson Avenue such as Washington Ave or Rock Avenue.

In addition, the repairs would not include raising the height of the bridge deck, therefore under the No Action Plan, the bridge would continue to pose as a flood hazard by constricting flows of the Green Brook during flood events and acting as a dam for any large debris within the brook.

3.2 Proposed Action – Bridge Removal

The proposed action involves removing the deck of the Jefferson Avenue Bridge. The District initially considered removing the stone masonry abutments as part of the bridge removal but determined that they do not pose a flood hazard as they are embedded within the stream bank.

The portion of Jefferson Avenue within the immediate vicinity of the bridge will serve as the construction staging area.

In order to provide alternate access to the Green Brook Middle School in the event of emergencies, an emergency access lane will be installed within an existing right of way from the school parking lot to Maxal Street. The emergency access lane will be approximately 15 feet wide, 350 feet long and will be constructed of a geo-cellular confinement material that will enable the area to remain as maintained lawn but will be able to bear the load of school buses during operation of the access lane. A 50 foot by 100 foot staging area will be created on the school property to accommodate construction equipment and construction materials.

The location of the emergency access lane and pertinent details of the geo-cellular confinement system can be found on Sheets C-104 and C-503 in Appendix A. The proposed action is anticipated to begin in August or September 2015 with a contract duration of six months.

4.0 Affected Environment

4.1 Land Use

Jefferson Avenue is located in Green Brook Township on the north side of the bridge, the Borough of Dunellen on the southwest side and the City of Plainfield on the southeast side. Land use along Jefferson Avenue is predominantly single family residences on parcels ranging on average from 1/4 to 1/2 acres in size. The Green Brook Middle School is located along Jefferson Avenue approximately .25 miles north of the bridge. In addition, Green Brook Township owns a large forested tract maintained as open space located on the immediate northeastern side of the bridge. New Jersey American Water owns a large forested tract of land on the immediate northwestern side of the bridge. The property is predominantly undeveloped and comprised of forest with the exception of a small pump house located near Jefferson Avenue.

4.2 Soils and Topography

The topography within the project area is relatively flat. The slope of the stream banks range from nearly vertical where the most severe erosion is occurring to a more moderate slope of 3:1 feet. The soil type mapped within the project area is Rowland silt loam, 0 to 2 percent slopes.

The Rowland series consists of deep, moderately well drained and somewhat poorly drained soils. Found on slopes ranging from 0 to 3 percent, Rowland soils are formed in alluvial sediments weathered from shale, sandstone and conglomerate (NRCS 2008). The Rowland series is considered partially hydric, meaning that components of that particular soil meet the criteria of those soils that are saturated through natural or artificial means sufficiently enough to support the growth and regeneration of hydrophytic vegetation (NRCS 2007).

4.3 Water Resources

Jefferson Avenue Bridge spans over the Green Brook, a tributary to the Raritan River. The Green Brook initially begins in Watchung Borough and has a drainage area of approximately 65 square miles. The Green Brook flows in a southwesterly direction for approximately 17.3 miles before discharging into the Raritan River near the Borough of Bound Brook (USACE, 1997).

The Green Brook is classified as a FW-2 NT or freshwater river not supporting trout spawning or maintenance (USFWS 2006). By definition, designated uses for FW2 waters include: 1. Maintenance, migration and propagation of the natural and established biota; 2. Primary contact recreation; 3. Industrial and agricultural water supply; 4. Public potable water supply after conventional filtration treatment and disinfection; and 5. Any other reasonable uses. Non-trout waters are those “not generally suitable for trout because of their physical, chemical or biological characteristics but are suitable for a wide variety of other fishes” (NJDEP, 2008).

Within the project area, the Green Brook is approximately 30 feet wide. The southern stream bank just upstream of the bridge has been modified through the installation of a large stormwater drainage outlet that discharges directly into Green Brook. In addition, the bank appears to have been stabilized with rip rap although it has become overgrown with vegetation. The substrate of the Green Brook includes cobble, gravel, large rocks and pieces of concrete that has been embedded with fine sediment. An exposed pipe runs across the brook on the immediate upstream side of the bridge that could impede fish passage during times of low flow.

4.4 Upland and Riparian Vegetation

Vegetation within the project area varies from maintained lawn on the south side of Green Brook to mature deciduous forest on the north side of Green Brook.

The New Jersey Flood Hazard Area Control Act Rules, N.J.A.C. 13 (FHACAR) establishes and requires the preservation of riparian zones. The width of the established riparian zone is based on the environmental resources being protected and can range from 50, 150 or 300 feet as measured from the side of surface waters. The Green Brook is designated FW2-NT and does not support critical habitat for any threatened or endangered species; therefore, the riparian zone is 50 feet as described in N.J.A.C. 7:13-4.1(c) 3.

Species observed within the riparian zone include American elm (*Ulmus Americana*), Norway maple (*Acer platanoides*), locust (*Robinia* sp.) and poison sumac. Japanese knotweed (*Polygonum cuspidatum*) dominates both the north and south stream banks within the project area.

4.4.1 Wetlands

Federal (33 CFR 328.3(b); EO 11990) and State (N.J.A.C. 7:7A1.4) definitions of wetlands are similar, identifying wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” As defined above, wetlands generally include swamps, marshes, bogs, and similar areas. Both the federal and state wetland delineation methods require the identification of three parameters to confirm the presence of wetlands; hydric soils, hydrophytic vegetation, and wetland hydrology. All three parameters must be present for an area to qualify as a wetland under this method.

A review of New Jersey’s environmental mapping tool, NJ-Geoweb and the U.S. Fish and Wildlife Service National Wetland Inventory maps was conducted to determine the potential presence of wetlands within the project area.

The NJ-Geoweb indicates forested wetlands north east and west of the bridge. The U.S. Fish and Wildlife National Wetland Inventory Maps indicate forested wetlands on the northeast side of Green Brook and on the southwest and southeast side of Green Brook.

4.5 Fish and Wildlife

4.5.1 Fisheries Resources

The New Jersey Department of Environmental Protection Bureau of Freshwater and Biological Monitoring (NJDEP BFBM) conducts fish sampling studies in New Jersey waters as part of their long-term biomonitoring program to determine the level of water quality impairments to state waters. Two fish survey stations have been established in Green Brook; one (FIBI097a) approximately one mile north of Jefferson Avenue bridge near Clinton Avenue in North Plainfield and a second one approximately 4 miles downstream of Jefferson Avenue bridge near Union Avenue in Bound Brook.

Based on sampling efforts conducted by the NJDEP BFBM in 2009, fish species that utilize the Green Brook include American eel (*Anguilla rostrata*), banded killifish (*Fundulus diaphanous*), white sucker (*Catostomus commersoni*), redbreast sunfish (*Lepomis auritus*), longnose dace (*Rhinichthys cataractae*), bluegill sunfish (*Lepomis macrochirus*), tessellated darter (*Etheostoma olmstedii*), common shiner (*Luxilus cornutus*), blacknose dace (*Rhinichthys atratulus*), largemouth bass (*Micropterus salmoides*), swallowtail shiner (*Notropis procne*), satinfish shiner (*Cyprinella analostana*), pumpkinseed (*Lepomis gibbosus*), spottail shiner (*Notropis hudsonius*), green sunfish (*Lepomis cyanellus*), fallfish (*Semotilus corporalis*), smallmouth bass (*Micropterus dolomieu*), yellow bullhead (*Ameiurus natalis*), and pumpkinseed (*Lepomis gibbosus*) (NJDEP 2011).

4.5.2 Aquatic Macroinvertebrates

In addition to fish surveys, the NJDEP BFBM includes aquatic macroinvertebrate studies in their biomonitoring program. A macroinvertebrate survey station (AN0420) is located within the same vicinity as the fish sampling station. Based on surveys conducted in 2009, species found within Middle Brook include those in the caddisfly order (*cheumatopsyche*), (*leucotrichia*), (*lepidostoma*) and (*hydropsyche*), crustaceans (*gammarus*), (*caecidotea*) (*amphipod*), flatworms (*dugesia*), riffle beetle (*stenelmis*), water penny beetle (*psephenus*), fly (*hemerodromia*), (*caddisfly*), mayfly family (*baetis*), (*stenacron*) and (*caenis*), leech (*erpoibdellidae*), snail (*physella*), and dragonfly (*stylogomphus*) (NJDEP 2011).

4.5.2 Wildlife

Due to the level of disturbance at the project area and the overall lack of habitat, wildlife on the site would be limited to species acclimated to urban conditions (e.g. squirrel, raccoon).

4.5.3 Federal and State Endangered, Threatened and Special Concern Species

A review of the U.S. Fish and Wildlife Service's (USFWS) Information, Planning and Conservation System indicated the potential presence of the federally endangered Indiana bat (*Myotis sodalis*), the proposed federally endangered northern long-eared bat (*Myotis septentrionalis*) and the federally threatened bog turtle (*Clemmys muhlenbergii*) within the project area.

In addition, the USFWS is currently evaluating the little brown bat (*Myotis lucifugus*), tricolored bat (*Perimyotis subflavus*) and American eel to determine if listing under the Endangered Species Act (ESA) is warranted.

Regarding Indiana bat, USFWS has in the past required the District to conduct a survey for Indiana bat (*Myotis sodalis*), a federal and state endangered species, prior to the construction of Segment R2 and Segment B which are approximately five and two miles west, respectively, from the project area.

The survey was required due to the proximity of the GBFCP segments to Hibernia Mine, a confirmed hibernacula, and known Indiana bat maternity roosts. Although the survey results yielded no Indiana bats, for the purposes of this EA, it is assumed that Indiana bat could potentially occur within the Jefferson Avenue Bridge removal project area.

Indiana bats spend the winter hibernating in caves and mines. The Hibernia Mine located in Hibernia, New Jersey, is a known Indiana bat hibernaculum. Female Indiana bats occupy summer maternity roosts under the loose bark of dead or dying trees within riparian, floodplain, and upland forests. Tree species commonly used as roost sites include American elm, slippery elm (*Ulmus rubra*), shagbark hickory (*Carya ovate*), silver maple (*Acer saccharinum*), and green ash (*Fraxinus pennsylvanica*). Adult males usually roost in trees near maternity roosts, but some remain near the hibernaculum.

Preferred Indiana bat foraging areas are streams, associated flood plain forests, and impounded bodies of water such as ponds and reservoirs. However, they have been observed in upland forests; pastures and clearings with early successional vegetation; cropland borders; and wooded fencerows (USFWS 2007). The habitat for and life history of the northern long-eared bat is similar to the Indiana bat.

Bog turtles typically inhabit open, wet meadows and bogs with standing or slow-moving, shallow water over mucky substrate. Bog turtles also occur in emergent and scrub/shrub wetlands and spring-fed fens. Within the project area, the forested tract of land owned by Green Brook Township on the northeast side of the bridge would be the most likely location to contain bog turtle if that species does indeed inhabit the area.

4.6 Environmental Contamination

The area of the proposed work is an established residential area within Green Brook Township, Dunnellen Borough, and the City of Plainfield. There is no history of industrial or commercial activity within the area. A file search of several government maintained data bases was conducted and the NJDEP “Known Contaminated Sites” list (KCS) was reviewed. There are no KCS’s near the proposed work. Review of the US Environmental Protection Agency data bases, including the National Priority List (NPL), the Comprehensive Environmental Response, the Compensation and Liability Information System (CERCLIS), the Toxic Release Inventory System (TRIS), and the Resource Conservation and Recovery Information System (RCRIS), showed no site near the proposed work. The only potential source of contamination is possibly the existing paint on the bridge decking, which may be lead based paint. If testing confirms its presence additional protocols will be implemented to contain any debris during demolition..

4.7 Cultural Resources

As an agency of the federal government, the District has certain responsibilities concerning the protection and preservation of cultural resources within a project area. The federal statutes regarding these responsibilities include Section 106 of the National Historic Preservation Act of 1966, as amended, Executive Order 11593, and the Advisory Council on Historic Preservation Procedures for the Protection of Historic and Cultural Properties (36 CFR Part 800).

A cultural resources reconnaissance survey was conducted in 1989/90 for the overall Green Brook Flood Damage Reduction Project (GBFDRP) (Hunter Research 1990). In 1998 a Programmatic Agreement (PA) for the GBFDRP was signed by the District, New Jersey Historic Preservation Office (NJHPO) and the Advisory Council on Historic Preservation. A number of structures and archeological sites within the larger project's area of potential effect were identified in the PA as eligible for the National Register of Historic Places (NRHP). The District surveyed the Jefferson Avenue Bridge during the reconnaissance study and assessed that it was not eligible for the NRHP. The NJHPO requested additional photographs which the District provided however no eligibility determination was made at the time the additional material was submitted.

The subsequent New Jersey Historic Bridge Survey and resulting database includes the Jefferson Avenue Bridge (New Jersey Historic Bridge Database 1994, modified 2001). The bridge is described in the database as:

Built in 1900 as a pin-connected Pratt pony truss on ashlar abutments, the 4-panel bridge has been so altered with welded elements that it no longer functions as a pin-connected truss. The upper pins are not connected to the top chord. The first rebuilding of the bridge occurred in 1938. The span has little integrity of original design, and as a result is not technologically or historically distinguished. A modern steel grid deck has been added as has a cantilevered sidewalk.

The bridge survey determined the Jefferson Avenue Bridge not NRHP-eligible. The surrounding streetscape is a mix of 19th and 20th-century homes that do not form a historic district.

A proposed emergency access lane from the Green Brook Middle School to Maxal Street runs along an existing sidewalk. The location is likely partially disturbed by the construction of the pathway however testing will be undertaken to determine presence or absence of archaeological resources as per Section I of the PA.

4.8 Air Quality

In accordance with the Clean Air Act of 1977, as amended, the Environmental Protection Agency (EPA) developed National Ambient Air Quality Standards (NAAQS) to establish the maximum allowable atmospheric concentrations of pollutants that may occur while ensuring protection of public health and welfare, and with a reasonable margin of safety.

The USEPA measures community-wide air quality based on daily measured concentrations of six criteria air pollutants; carbon monoxide, sulfur dioxide, respirable particulate matter, lead, nitrogen dioxide, and ozone. Based on these measurements of air quality, the USEPA designates

attainment areas and non-attainment areas nationwide. Non-attainment areas are designated in areas where air pollution levels persistently exceed the national ambient air quality standards.

Somerset, Union and Middlesex Counties are located in the New York-New Jersey-Long Island Air Quality Control Region. Similar to most urban industrial areas, emissions from automobiles, manufacturing processes, utility plants, and refineries have impacted air quality in the Project area. Based on the National Ambient Air Quality Standards (NAAQS) six primary pollutants, Somerset County is designated as a non-attainment area for ozone and particulate matter (PM_{2.5}) and an attainment area for sulfur dioxide, carbon dioxide, particulate matter (PM₁₀), lead and nitrogen oxide.

4.9 Socioeconomics

Based on the 2010 Census, Green Brook Township has a population of 7,203 with a racial composition of 75.5% white, 3.4% black, and 4.6% Asian. Hispanics of any race comprise 6.9% of the population (U.S. Census Bureau 2010a). The U.S. Census Bureau's 2008-2012 American Community Survey indicates that the median age of the population is 41.6 (margin of error +/- 2.4 years) and the per capita income is \$52,512 (margin of error +/- \$7,051). Approximately 0.7% (margin of error +/- 1.1%) of families and 1.6% (margin of error +/- 1.6%) of individuals live below the poverty line. The highest areas of employment were service occupations at management and business at 55.7%, sales and office occupations at 20.2% and productions, transportation and material moving at 8.6% (U.S. Census Bureau 2012b).

According to the 2010 Census, the population of Dunellen Borough is 7,203 with a racial composition of 73.5% white, 8.6% black, and 4.5% Asian. Hispanics of any race comprise 26.7% of the population (U.S. Census Bureau 2010c). The U.S. Census Bureau's 2008-2012 American Community Survey indicates that the median age of the population is 35 (margin of error +/- 3.4 years) and the per capita income is \$31,060 (margin of error +/- \$2,508). Approximately 8.3% (margin of error +/- 6.4%) of families and 8.8% (margin of error +/- 4.8%) of individuals live below the poverty line. The highest areas of employment were service occupations at management and business at 34.2%, sales and office occupations at 22% and service occupations at 17% (U.S. Census Bureau 2012d).

Based on the 2010 Census the population of the City of Plainfield is 49,808 with a racial composition of 50.2% black, 23.5% white, and 1% Asian. Hispanics of any race comprised 40.4% of the population (U.S. Census Bureau 2010e). The U.S. Census Bureau's 2008-2012 American Community Survey indicates that the median age of the population is 33.7 (margin of error +/- 0.9 years) and the per capita income is \$23,117 (margin of error +/- \$1,073). Approximately 8.3% (margin of error +/- 6.4%) of families and 8.8% (margin of error +/- 4.8%) of individuals live below the poverty line. The highest areas of employment were sales and office occupations at 22.7%, management, business, science and arts occupations at 22.6% and production, transportation and material moving occupations at 21.7% (U.S. Census Bureau 2012f).

4.10 Recreation

The Jefferson Avenue Bridge contains a sidewalk on the east side to separate pedestrians from vehicular traffic. Based on discussions with local municipal officials and several residents living within the project area, the local residents utilize the bridge for walking and jogging. No recreational facilities are located in the project area.

4.11 Transportation

Jefferson Avenue runs in a north-south direction and connects with Greenbrook Road to the north and State highway Route 28 to the south. Limited access highways that are easily accessible from the project area include Interstate highway Route 287, U.S. Highway Route 22 and the Garden State Parkway.

Public transportation systems are well developed with the New Jersey Transit Raritan Valley Line providing rail service to New York City, New York State and Newark and Hoboken, New Jersey. New Jersey Transit also provides bus service along Route 28 with bus stops directly to New York City from the townships and boroughs in the vicinity of the Project Area.

The Somerset County Department of Public Works, Engineering Division conducted a traffic analysis as part of the evaluation to close the bridge. Based on traffic counts conducted on the week of May 19, 2014, the average daily traffic volumes in the vicinity of the bridge is 960 vehicles per day with peak hour flows of less than 60 vehicles per hour in either direction. The results of the traffic count are included in Appendix B.

4.11.1 Emergency Services

Green Brook Township, Dunellen Borough and the City of Plainfield each have their own emergency response services such as police, fire and emergency medical technicians (EMTs). A review of emergency service locations in relation to the Project Area indicates that they are located west or southwest of Jefferson Avenue. Based on coordination with Somerset County, given that the maximum allowable weight of the bridge is 15 tons, heavy emergency response vehicles such as fire trucks do not use the bridge. Figure 3 shows the locations of emergency services in relation to the project area.

4.11.2 School Bus Routes

The Green Brook Middle School is located approximately 0.15 miles north of the Jefferson Avenue bridge. Because the school District only encompasses Green Brook Township, school bus routes remain north of the bridge. Other educational facilities within the vicinity of the Jefferson Avenue Bridge include the Plainfield Academy of the Arts and Advanced Studies and the Jefferson Elementary Schools which are located approximately 0.25 miles from the bridge on Route 28 and Rock Avenue. These schools are located within and service the City of Plainfield. Therefore, any school bus routes would be south of and not utilize the Jefferson Avenue bridge.

Figure 3: Location of Schools and Emergency Response Facilities



Jefferson Ave Bridge Removal
Green Brook, NJ

5.0 Environmental Impacts

5.1 Land Use

Land use within the project area will not change. The proposed emergency access lane is located on land that is already owned by the school district and is established on tax maps as a right of way to the school. In addition, the lane will only be used in the event of emergencies and will otherwise be maintained as lawn.

5.2 Soils and Topography

There will not be any changes to soil or topography within the project area. Construction of the emergency access lane will entail excavation to install the geocellular confinement system that will serve to support vehicular traffic, however the area will be returned to existing grade. No excavation or grading is proposed as part of the bridge removal.

5.3 Water Resources

There will be no adverse impact to water resources. All work related to the bridge deck removal will take place on land with no in-channel work required.

5.4 Vegetation

The construction of the emergency access lane to Green Brook Middle School may require the unavoidable loss of several mature deciduous trees that are located within the footprint of the proposed access lane. It is not expected that any vegetation will need to be removed for the bridge removal.

5.4.1 Wetlands

No wetlands will be impacted as a result of removing the bridge or constructing the emergency access lane to the school.

5.5 Fish and Wildlife

5.5.1 Fishery and Aquatic Macroinvertebrate Resources

Given that no in-channel work will be conducted as part of the bridge deck removal, there will not be any adverse impacts to fish or aquatic macroinvertebrates.

5.5.2 Wildlife

During construction, increased noise levels, and earth moving activities may cause displacement of bird and mammal species. This disturbance will be temporary and will cease once the removal action is completed. No permanent adverse impacts will occur to wildlife as a result of project implementation.

The Migratory Bird Treaty Act, originally passed in 1918, prohibits the killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior (USFWS, 2011). As a result, there is a requirement to protect bird species that may potentially nest within the project areas by implementing a restriction on shrub and tree removal during construction activities. Compliance with the MBTA involves either implementing a restriction on the clearing of trees

and shrub species that extends from 15 March through 31 July to avoid adverse impacts to any species that are covered under this act or conducting surveys to verify the absence of nesting species.

Under the current construction schedule, should vegetation need to be cleared for the construction of the emergency access lane, it would occur outside the restricted clearing timeframe. However, the clearing restriction will be included within the construction specifications and a survey will be conducted to verify the absence of nesting protected species should the construction schedule change and vegetation removal is required during the restricted timeframe.

5.5.3 Federal and State Endangered, Threatened and Special Concern Species

In order to avoid adverse impacts to Indiana bat and northern long-eared bat that could potentially inhabit the project areas, a tree clearing restriction of 1 April through 30 September will be implemented for any trees six inches or greater than diameter at breast height.

As with the MBTA, should the construction schedule change that requires clearing within the tree clearing restriction window, a survey will be performed to verify the absence of Indiana bat and northern long-eared bat as well as the two bat species that are currently under evaluation for listing under the ESA. No permanent impacts to these species as a result of project implementation will occur.

There will not be any construction equipment operating in any areas that could potentially serve as habitat for bog turtle. Therefore, no temporary or permanent adverse impacts to this species will occur from implementing the proposed action.

5.6 Environmental Contamination

There will be no impact of environmental contamination from this project. The scope of work as written to remove the bridge contains requirements to manage the bridge removal, including the handling and disposal of lead-based paint. Standard operating procedures and existing protocols will be sufficient to address any potential environmental contamination stemming from this work.

5.7 Cultural Resources

The Jefferson Avenue Bridge superstructure will be removed but the ashlar stone abutments will be left in place. A barrier will be installed on both sides of the brook within the roadbed to indicate that the road is a dead end. It is the District's opinion that the Jefferson Avenue Bridge is not eligible for the NRHP and its removal will have no effect on historic properties. Work will be limited to removal of the superstructure and installing barriers within the existing roadbed. Pending NJHPO concurrence no further cultural resources activities will be conducted related to the bridge removal. Archaeological testing along the emergency route will be undertaken when rights-of-entry are obtained. The results of the testing will be coordinated with NJHPO. Any additional work, if required, will be conducted in accordance with the existing PA.

5.8 Air Quality and Noise

5.8.1 Air Quality

The General Conformity Rule of the Clean Air Act requires federal agencies to ensure that any federal actions occurring in areas designated as nonattainment or maintenance for any of the NAAQS do not interfere with a state's plans to meet national standards for air quality.

Construction emissions for the proposed project were evaluated previously and have been estimated to be below the Federal de minimis thresholds of 100 tons/year for NO_x, 50 tons/year for VOC, and below 100 tons/year for PM 2.5 in accordance with the Clean Air Act. Additionally, the evaluation indicated that 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 State Implementation Plan. A General Conformity, Record of Non-Applicability (RONA) and the air emissions calculations are included in Appendix C of this document.

5.8.2 Noise

There will be an increase in noise levels in the immediate project area during operation of construction equipment. However these impacts are expected to be minimal and short-term and limited to the period of active construction. Any impacts from noise will be mitigated to the extent possible through restriction of work hours to within normal operating hours and by complying with any locally enforced noise ordinance or work periods. A long term beneficial impact will be the reduction of traffic noise to the residences along Jefferson Avenue, particularly to those homes south of the bridge due to the road closure.

5.9 Socioeconomics

5.9.1 Environmental Justice

Executive Order 12898, Federal Actions to address Environmental Justice in Minority and Low Income Populations mandates that each federal agency will identify and address potential disproportionately high and adverse effects of its activities human health and/or social or environmental factors on minority populations and low income populations.

A cursory analysis was conducted to determine the potential applicability of Environmental Justice issues. The analysis took into account a comparison of the percentage of low income and minority populations occurring within the Township of Green Brook, the Borough of Dunellen in relation to the counties in which they reside in addition to each other.

Based on a review of Census data, the City of Plainfield triggers Environmental Justice considerations. The combined minority population of the City of Plainfield Brook is greater than 50% and is higher than Union County (50.2% Plainfield, 35% County). The percentage of families and individuals living below the poverty threshold in City of Plainfield is 8.3% and 8.8% respectively while Union County has 2.5% of all families and 3.7% of all individuals below the poverty line.

The removal of the Jefferson Avenue Bridge will not impact emergency response times, public transportation routes or school bus routes. In addition, given the multiple existing roadways within the project area that can accommodate access to businesses within the City of Plainfield will not be adversely impacted. Therefore, a disproportionate negative impact on minority or low-income groups in the community is not anticipated and a full evaluation of Environmental Justice issues is not required for this EA.

5.10 Recreation

The removal of the bridge will prevent people an access route for individuals who use the pedestrian walkway for jogging or walking. However, it is expected that joggers and/or walkers will modify their routes to include other residential streets within the project area. Therefore, the bridge removal will not incur significant impacts on recreation.

5.11 Transportation

Somerset County conducted a traffic analysis to evaluate the impact on traffic patterns resulting from the bridge removal. Based on the analysis, vehicles traveling on Jefferson Avenue north of the Green Brook will be directed to the intersections of Washington Avenue and Greenbrook Road, and Rock Avenue and Greenbrook Road. As a result, Washington and Rock Avenues could experience a 3-4% increase in daily traffic volumes.

Somerset County is currently in the planning and design phase of several road improvements at these intersections that will mitigate the increase in traffic due to the bridge removal. At the intersection of Washington Avenue and Greenbrook Road, improvements will include dedicated left turn lanes. Construction is anticipated for the summer of 2015. A traffic signal is planned for the intersection of Rock Avenue and Greenbrook Road with construction anticipated in 2016.

The portion of Jefferson Avenue south of the Green Brook intersects with Route 28 and includes a network of roads that intersect with Washington and Rock Avenues. It is expected that the traffic redirected from the bridge removal will be spread across this network and that traffic signals at Route 28 (North Avenue) and Washington Avenue and Route 28 (West Front Street) and Rock Avenue will be able to accommodate the increase in traffic.

Traffic on Maxal Street will remain the same with the exception of if access to the school from its main entrance on Jefferson Avenue is somehow impeded. At that point, it would be expected that buses would utilize the emergency access lane. It is expected that local authorities would assist in directing traffic to maintain flow.

The traffic analysis is included in Appendix B.

5.11.1 Emergency Services

Based on a review of the location of each of the municipalities emergency services in relation to the Jefferson Avenue Bridge, the removal of the bridge will not adversely impact the response time of emergency services to residents or businesses near the project area.

5.11.2 School Bus Routes

School bus routes are not expected to change to neither the Green Brook Middle School nor the two schools located in the City of Plainfield as a result of the bridge removal.

5.12 Cumulative Impacts

Cumulative impacts refer to one or more individual impacts, which when considered together, are considerable or which compound or increase the other's impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the selected plan when added to other closely related past, present or reasonably foreseeable future projects.

Current and future actions that are appropriate to be considered against the proposed action include the construction of the GBFCP. Specific activities along the Green Brook related to the GBFCP include the construction of a sub-segment of Segment B and the raising of the Sebrings Avenue Bridge. Additional sub-segments of Segment are scheduled to commence construction within the next five years. In addition, a levee that is part of the GBFCP, Segment J, will be constructed in the vicinity of the Jefferson Avenue Bridge although construction is not expected to occur within the next ten years. As discussed previously, the removal of the bridge has been a component of the larger flood control project and will provide

Other future actions that would be appropriate to consider for this action include the road improvements proposed by Somerset County at the intersections of Washington Avenue and Greenbrook Road, and Rock Ave and Greenbrook Road. These planned improvements will provide a long term benefit to accommodating increased traffic as a result of the Jefferson Avenue Bridge closure.

Therefore, the proposed action will not result in additional or increased adverse environmental, cultural or sociological impacts.

6.0 Public and Agency Coordination

Design of the proposed project was coordinated with the NJDEP as the non-federal sponsor and with stakeholders of the Green Brook Flood Risk Management project. The stakeholders include representatives of Somerset and Middlesex Counties, Green Brook Township, and members of the Green Brook Flood Control Commission. Members of the Green Brook Flood Control Commission include representatives from Middlesex, Union and Somerset Counties, the Boroughs of Bound Brook, Dunellen, North Plainfield, South Plainfield Borough, and Watchung, the City of Plainfield, and the Townships of Bridgewater, Green Brook, Piscataway, Scotch Plains and Warren.

Somerset County lead the coordination of the bridge closure with Green Brook Township, Middlesex and Union Counties, and the New Jersey Department of Transportation. Correspondence documenting their coordination efforts is included in Appendix B.

The District is coordinating with the NJHPO. The circulation of this Environmental Assessment for public comment fulfills public coordination requirements in accordance with the National Environmental Policy Act of 1970.

7.0 Conclusion

The implementation of the proposed action is not anticipated to have significant impacts on the environment, cultural resources or socioeconomics and is therefore proposed to be documented with a Finding of No Significant Impact (FONSI). A draft FONSI is located in Appendix D. The proposed action is necessary as part of the overall Green Brook Flood Protection Project. Applicable laws and regulations related to federal actions are summarized in Table 1.

Table 1. Summary of Primary Federal and State Laws and Regulations Applicable to the Proposed Project

Federal		
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 C.
Clean Water Act	33 U.S.C. §§ 1251 et seq.	Non-applicable given that no work is proposed in any waterway or wetland.
Endangered Species Act of 1973	16 U.S.C. §§ 1531 et seq.	The EA will be used for informal coordination with the U.S. Fish and Wildlife Service to comply with ESA requirements. A tree clearing restriction of 1 April through 30 September will be implemented to protect Indiana bat and Northern long-eared bat.
Fish and Wildlife Coordination Act	16 U.S.C. § 661 et seq.	Non-applicable given that no work is proposed in any waterway or wetland.
National Environmental Policy Act of 1969	42 U.S.C. §§ 4321-4347	The circulation of the Draft EA fulfills requirements of this act.
National Historic Preservation Act of 1966	16 U.S.C. §§ 470 et seq.	The Corps has continued to coordinate with the State Historic Preservation Office to fulfill requirements of this act. Correspondence indicating SHPO's non objection to the project is located in Appendix B.
Executive Order 11990, Protection of Wetlands	May 24, 1977	Circulation of this report for public and agency review fulfills the requirements of this order.

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 this report for public and agency review fulfills the requirements of this order.
State		
Legislative Title and code/date		Compliance
Water Quality Certification (WQC)	33 USC §1341; Vt Code R. 12 004 052	Water Quality Certification is delegated to the State for review and approval of compliance with State water quality standards. As the Project will not take place within any waterway or wetland, a Water Quality Certification is not required.
Flood Hazard Area Control Act	N.J.S.A. 58:16A-50	Rule regulates activity in flood hazard areas. A portion of the emergency access lane to Green Brook Middle School is located within the NJDEP mapped Flood Hazard Area. The construction of the access lane will maintain existing grade and complies with the criteria for a Permit By Rule. The District will provide notice to NJDEP no later than 14 days prior to initiating construction.
Traffic Regulations and Standards for Traffic Control	NJAC 16:27	Somerset County submitted the necessary documentation to NJDOT and is awaiting response regarding whether agency approval is required. The documentation is located in Appendix B.

8.0 References

Hunter Research, Inc. 1990. A Cultural Resource Survey for the Green Brook Flood Control Project in the City of Plainfield, the Boroughs of Bound Brook, Middlesex, Dunellen and South Plainfield and the Townships of Green Brook and Bridgewater, Middlesex, Somerset and Union Counties, New Jersey. Report on file, US Army Corps of Engineers, New York District and New Jersey Historic Preservation Office.

New Jersey Historic Bridge Database

1994, modified 2001 New Jersey Historic Bridge Database Based on survey data and recommendations prepared by A.G. Lichtenstein & Associates, Inc. For The New Jersey Department of Transportation Bureau of Environmental Services And The Federal Highway Administration New Jersey Division With Modifications based on Consultation between The New Jersey Department of Environmental Protection Historic Preservation Office, The New Jersey Department of Transportation, and Others. Survey - September, 1994. Database Modifications 2001.

<http://www.state.nj.us/transportation/works/environment/HistBrIntro.shtm>

New Jersey Administrative Code (N.J.A.C.) 7:9B Surface Water Quality Standards. June 16, 2008 (40 N.J.R. 3630(b)).

New Jersey Department of Environmental Protection (NJDEP). March 2011. 2009 Fish IBI Report, Round 2, Year 5 of 5.

_____. December 2012. Ambient Biomonitoring Network, Raritan Water Region, Watershed Management Areas 7,8,9 and 10 Round 4 Benthic Macroinvertebrate Data.

Natural Resource Conservation Service, United States Department of Agriculture (NRCS). Web Soil Survey, Available online at <http://websoilsurvey.nrcs.usda.gov>. Accessed May 17, 2013.

United States Army Corps of Engineers (USACE). 1997. May 1997 Final General Reevaluation Report and Final Supplemental Environmental Impact Statement, Green Brook Sub-Basin of the Raritan River Basin, Middlesex, Somerset, and Union Counties, State of New Jersey (GRR/FSEIS).

U.S. Census Bureau. 2010a. 2010 Demographic Profile Data of Green Brook Township, New Jersey.

___ 2012b. 2008-2012 American Community Survey 5-Year Estimates, ACS Demographic and Housing Estimates and Selected Economic Characteristics of Green Brook Township, New Jersey.

___ 2010c. 2010 Demographic Profile Data of the Dunellen Borough, New Jersey. _____

_____ 2012d. 2008-2012. American Community Survey, 5-Year Estimates, ACS Demographic and Housing Estimates and Selected Economic Characteristics of Dunellen Borough.

_____ 2010e. 2010 Demographic Profile Data of Plainfield City, New Jersey.

_____ 2012f. 2008-2012 American Community Survey, 5-Year Estimates, ACS Demographic and Housing Estimates and Selected Economic Characteristics of Plainfield City, New Jersey.

United States Fish and Wildlife Service (USFWS). Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. April 2007. U.S. Fish and Wildlife Service, Fort Snelling, MN.

_____. Information, Planning and Conservation website (IPAC). Accessed March 6, 2015

9.0 List of Preparers

Kimberly Rightler Project Biologist, USACE, NY District
Lynn Rakos Project Archaeologist, USACE, NY District
Richard Dabal Project Physical Scientist, USACE, NY District

Appendix A
Project Plans

N

J E F F E R S O N C O U N T Y

J E F F E R S O N

S O M E R S E T C O U N T Y

M I D D L E S E X C O U N T Y

U N I O N C O U N T Y

46' Center Line of Truss

46' Center Line of Bridge

46' Center Line of Truss

2' + 2' + 42' = 46'

Plan of Masonry Substructure of BRIDGE OVER GREEN BROOK

on JEFFERSON AVENUE,

near

DUNELLEN, N.J.

F. J. Hubbard,

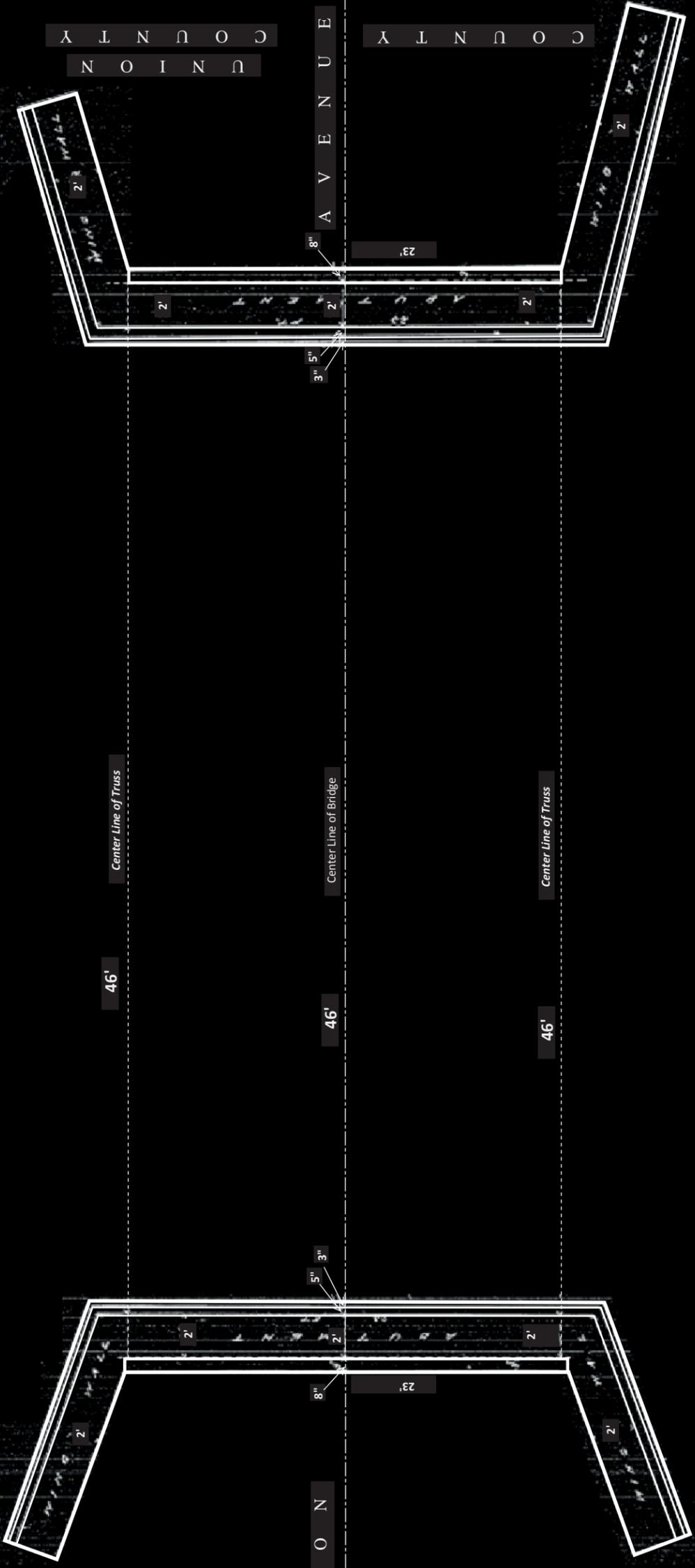
Union County Eng'r.

Joshua Doughty, Jr.

Somerset Co. Eng'r.

July, 1900.

NOT TO SCALE



GREEN BROOK SUB-BASIN OF THE RARITAN RIVER
DUNELLEN & CITY OF PLAINFIELD, NEW JERSEY
SOMERSET, MIDDLESEX & UNION COUNTIES
JEFFERSON AVENUE BRIDGE DEMOLITION

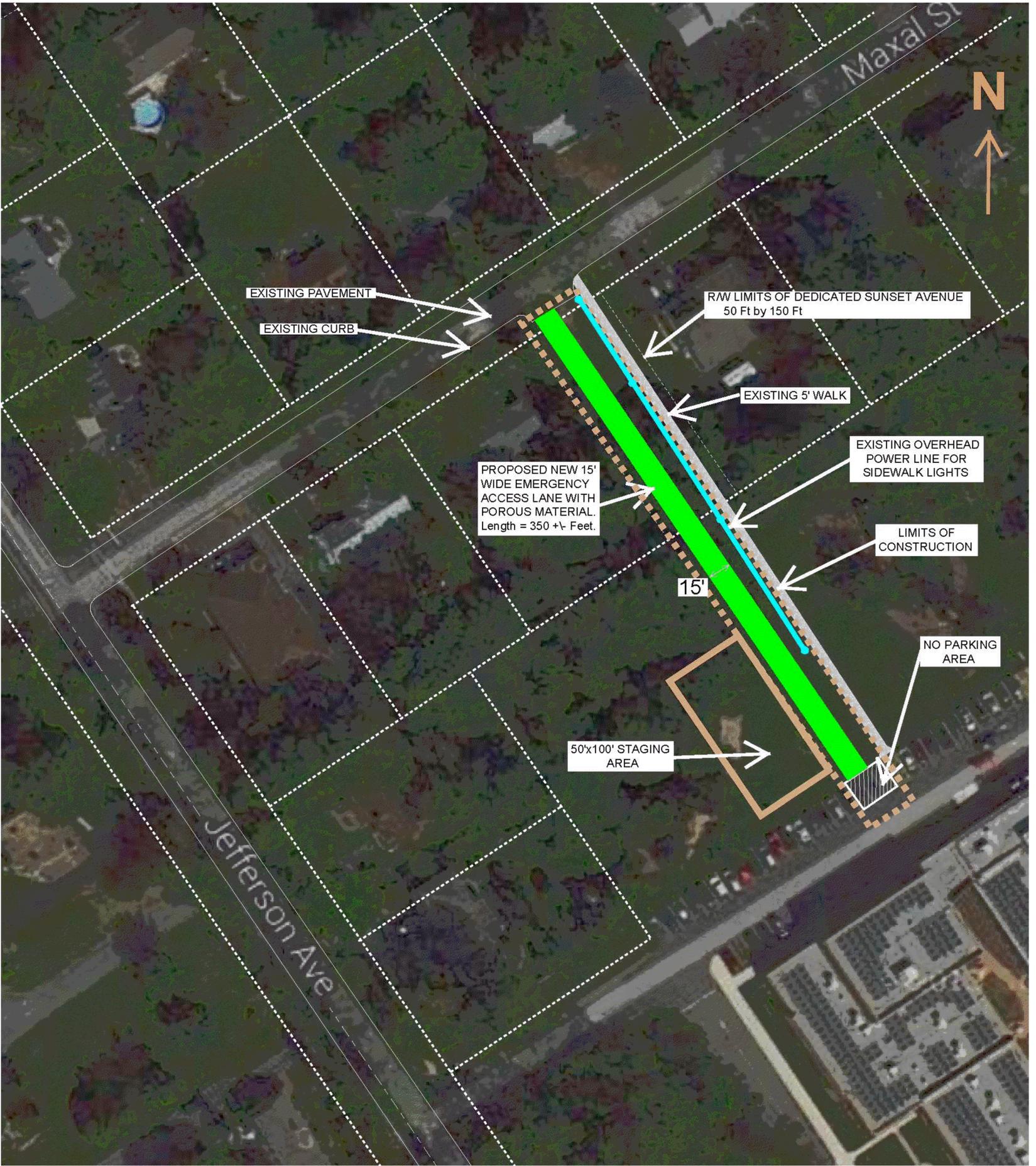
SHEET 3 OF 6
IDENTIFICATION
C-102

U.S. ARMY ENGINEER DISTRICT
NEW YORK
http://www.usace.army.mil

DESIGNED BY:	RSL
DATE:	7 OCT 2014
SOLICITATION NO.:	
CONTRACT NO.:	
FILE NUMBER:	
ISSUE DATE:	
FILE NUMBER:	
PLAT SCALE:	
FILE NAME:	C-102.dgn

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

US Army Corps of Engineers
New York District



Jefferson Avenue

Maxal St



EXISTING PAVEMENT
EXISTING CURB

R/W LIMITS OF DEDICATED SUNSET AVENUE
50 Ft by 150 Ft

EXISTING 5' WALK

EXISTING OVERHEAD
POWER LINE FOR
SIDEWALK LIGHTS

LIMITS OF
CONSTRUCTION

PROPOSED NEW 15'
WIDE EMERGENCY
ACCESS LANE WITH
POROUS MATERIAL.
Length = 350 +/- Feet.

15'

NO PARKING
AREA

50'x100'
STAGING
AREA

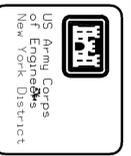
GREEN BROOK SUB-BASIN OF THE RARITAN RIVER
JEFFERSON AVENUE BRIDGE DEMOLITION
SOMERSET, MIDDLESEX & UNION COUNTIES
GREEN BROOK TOWNSHIP, BOROUGH OF
DUNELLEN & CITY OF PLAINFIELD, NEW JERSEY

**FIGURE 4 EMERGENCY
ACCESS LANE at SCHOOL**

U. S. ARMY ENGINEER DISTRICT
NEW YORK
<http://www.nan.usace.army.mil>

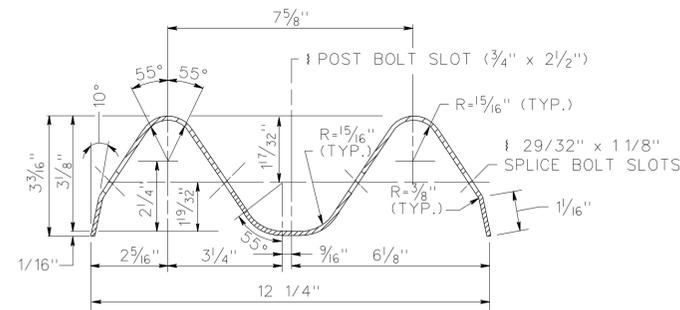
DESIGNED BY:	RSL	DATE:	7 OCT 2014
DWN BY:	RSL	CKD BY:	
SUBMITTED BY:	RSL	SOLICITATION NO.:	
		CONTRACT NO.:	
PLOT SCALE:		ISSUE DATE:	
SIZE:	FILE NAME:	FILE NUMBER:	
	C-104.dgn		

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.



SHEET IDENTIFICATION
C-104
SHEET 5 OF 8

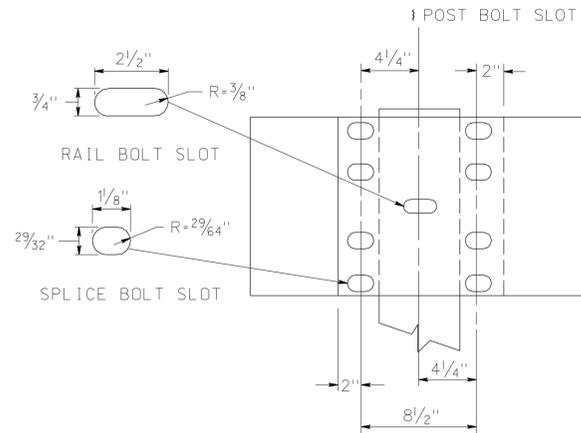
BEAM GUIDE RAIL



RAIL ELEMENT SHALL BE SUPPLIED IN STANDARD LENGTHS.

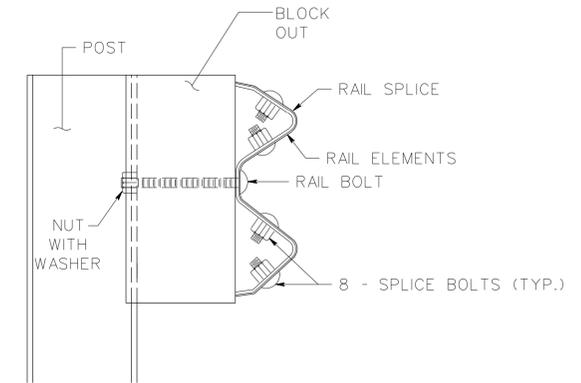
W-BEAM RAIL ELEMENT

N. T. S.



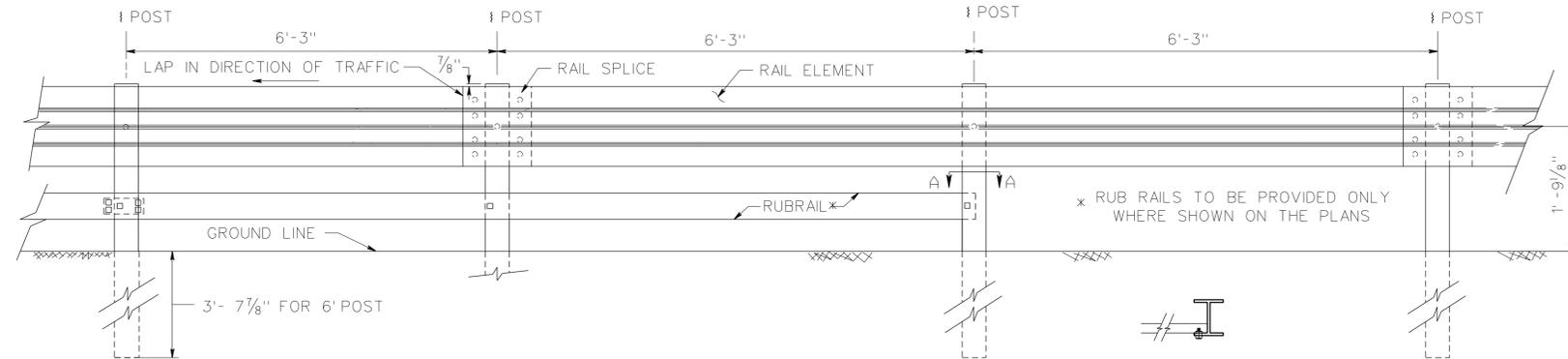
RAIL SPLICE

N. T. S.



BEAM GUIDE RAIL POST ASSEMBLY

N. T. S.

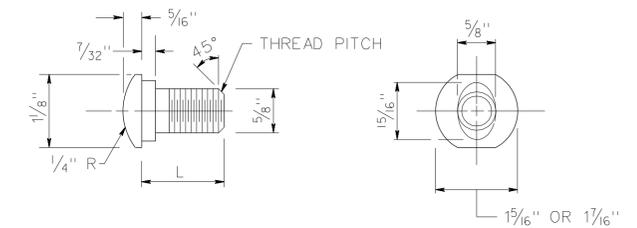


BEAM GUIDE RAIL

N. T. S.

SECTION A-A

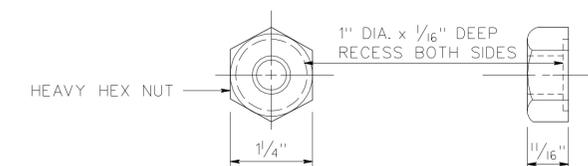
N. T. S.



5/8" DIA. BUTTON HEAD BOLT

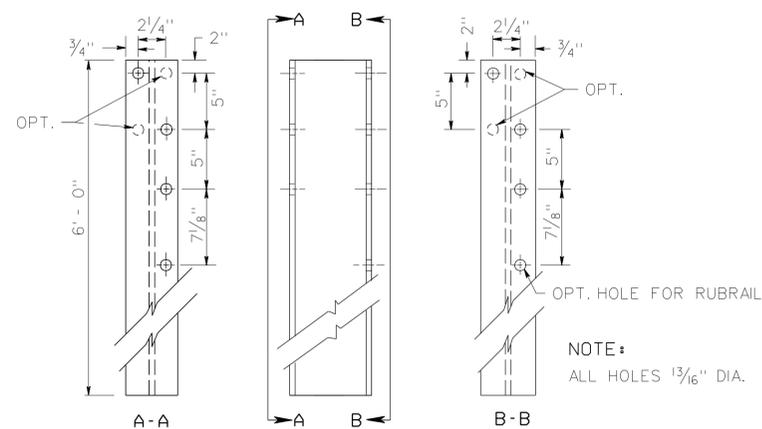
N. T. S.

TYPE	L	MIN. THREAD LENGTH
SPLICE	1 1/4"	FULL LENGTH THREAD
RAIL	9 1/2"	1 3/4"



**5/8" DIA. RECESS NUT
SPLICE & RAIL NUT & BOLT**

N. T. S.

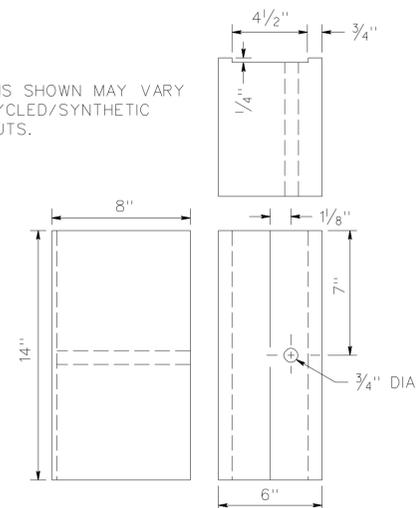


W6 x 8.5 OR W6 x 9 STEEL POST

6' POST

N. T. S.

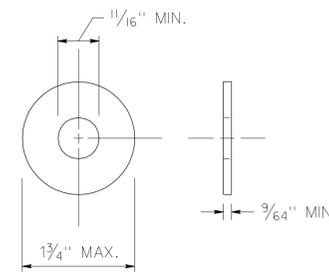
NOTE:
DIMENSIONS SHOWN MAY VARY FOR RECYCLED/SYNTHETIC BLOCK OUTS.



APPROVED RECYCLED/
SYNTHETIC MATERIALS

14" BLOCK OUT

N. T. S.



STEEL WASHER

N. T. S.

GENERAL NOTES:

- ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
- RAIL ELEMENTS SHALL BE FURNISHED SHOPCURVED, CONCAVE OR CONVEX, FOR EXISTING RADII
- THE STEEL FOR RAIL ELEMENTS AND BOLTS SHALL CONFORM TO NJDOT STANDARD SPECIFICATIONS AND ITS AMENDMENTS EXCEPT AS PER CONTRACT DOCUMENTS.
- BEAM GUIDE RAIL DETAILS FOR REPLACEMENT CONSTRUCTION OF EXISTING DAMAGED BY DEMOLITION.



US Army Corps
of Engineers
New York District

DESIGNED BY: SSR	DATE: 15 OCT 2014
DWN BY: SSR	SELECTION NO.:
SUBMITTED BY: SSR	CONTRACT NO.:
PLOT SCALE: 1" = 10'-0"	ISSUE DATE:
FILE NAME: C-501.dgn	FILE NUMBER:
ANSI D	ANSI D

GREEN BROOK SUB-BASIN OF THE RARITAN RIVER
JEFFERSON AVENUE BRIDGE DEMOLITION
SOMERSET, MIDDLESEX & UNION COUNTIES
GREEN BROOK TOWNSHIP, BOROUGH OF
DUNELLEN & CITY OF PLAINFIELD, NEW JERSEY

GUIDE RAIL DETAILS

SHEET IDENTIFICATION
C-501
SHEET 6 OF 6

Appendix B
Pertinent Correspondence



COUNTY OF SOMERSET DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

Director of Public Works
PAUL L. McCALL
(908) 231-7024
Fax (908) 231-7170

County Engineer
MATTHEW D. LOPER
(908) 231-7024

Assistant County Engineer
ADAM H. SLUTSKY

County Administration Building
20 Grove Street
P.O. Box 3000
Somerville, New Jersey 08876-1262
www.co.somerset.nj.us

July 30, 2014

Facilities & Services Director
CARL MEMOLI

Supervisor of Roads & Bridges
VINCENZO RUSSO

Director of Planning
WALTER C. LANE

Recycling Superintendent
JOHN T. KENDZULAK, JR.

Transportation Director
YVONNE C. MANFRA

Vehicle Maintenance Supervisor
MICHAEL F. ROMANELLO

Somerset Union Soil Conservation
District Manager
FRANK CALO

Mr. Richard Wallner, PE
Middlesex County Engineer
P.O. Box 871
333 Townsend Street
New Brunswick, NJ 08903

Mr. Thomas Mineo, PE
Union County Engineer
2325 South Avenue
Scotch Plains, NJ 07076

Re: Jefferson Avenue over the Green Brook
Somerset County Bridge 18L0904
Middlesex County Bridge 122B154
Union County Bridge 2012033

Dear Mr. Wallner and Mr. Mineo,

The Jefferson Avenue bridge over the Green Brook, on the border of Somerset, Middlesex and Union Counties is in poor condition and currently needs significant repairs. The last biannual inspection of 2013 resulted in a sufficiency rating of 25.1 out of 100, a Structural Deficiency rating, a continued recommendation of a load posting of 15 tons and a Priority Repair 1 notification.

The bridge was constructed in 1900, carrying Jefferson Avenue over the Green Brook. Approximately half of the structure is located in the Township of Green Brook in Somerset County, while Union County (City of Plainfield) and Middlesex County (Borough of Dunellen) each contain a quarter of the structure.

A major overhaul was completed in 1938, in order to strengthen the structure and add a dedicated pedestrian walkway. The next set of documented repairs was completed in 1988. The wooden walkway surface was replaced with steel grates atop all new stringers. In addition, the masonry substructure was repointed.

Throughout the 1990's and 2000's, Somerset County inspections revealed increasingly deteriorated bridge components. In 1993, cracking was noted in the

- Mission Statement -

The County of Somerset is committed to excellence and innovation in public service, promoting the well-being of all residents and communities by providing effective, efficient and responsive leadership.

Somerset County Is An Equal Opportunity Employer

floor beam cover welds. By 2001, all floor beams contained localized weld cracks, and rust was noted throughout nearly all components of the truss. Increasing section loss to the members accompanied this rust. Broken and missing batten plates and tie rods were also noted. The concrete deck contained spalls throughout.

In 2003, cracks in intermittent fillet welds on the bridge were observed during an inspection prompting a Priority 1 Repair notification and were subsequently repaired for a cost of \$13,400.

Following years of close monitoring, Somerset County closed the bridge for Priority 1 repairs in 2011. During this one month closure, the vertical truss connection to one of the floor beams was repaired with new angles and bolts. One of the stringers was also "sistered" to a new steel beam in order to mitigate extensive section loss. These repairs cost \$19,000.

In 2013 a new Priority 1 Repair notification occurred, with the bridge in need of repairs due to the condition of its stringers and floor beams. These repairs are estimated to cost approximately \$30,000 and have not been completed.

While currently serviceable, the bridge continues to display deterioration, rust, and section loss throughout. A complete replacement or removal would be the most viable options at this point, as opposed to repairing the structure every few years. The bridge is not historic per a SHPO consultation in 1995.

Green Brook Flood Project

Construction of the Green Brook Flood Project has been underway since 1999. Currently, construction of the Borough of Bound Brook element of the project is essentially complete. Construction of the project is currently proceeding upstream through Green Brook, Middlesex Borough, and Dunellen, and with additional segments under final design.

The removal of the Jefferson Avenue bridge is a component of the Green Brook Flood Damage Mitigation Project, as noted in the Final General Reevaluation Report (GRR) dated May 1997.

When it became apparent that additional repairs were necessary for the bridge from the 2013 inspection, Somerset County reached out to the Army Corps of Engineers (ACOE) regarding their plans for the bridge. The ACOE expressed an interest in making the removal of the Jefferson Avenue bridge a current project, due to funding availability. Since the ACOE has the resources to decommission this bridge, they have made the decision to move ahead with plans to remove the superstructure in late 2014/early 2015.

With removal of the bridge imminent under the ACOE plan, it may become prudent to close the bridge in the near future rather than spend any additional money on repair/maintenance of the structure. If that determination is made, I will coordinate with your office.

If you have any questions or concerns regarding this, please feel free to contact me at (908) 231-7113 or loper@co.somerset.nj.us.

If you have any questions or concerns regarding the ACOE project, please feel free to contact:

Robert M. Greco
Project Manager
Civil Works Branch
Programs and Project Management Division U.S. ACOE, New York District
(917) 790-8394
Robert.Greco@usace.army.mil.

Sincerely,

A handwritten signature in black ink that reads "Matt L". The signature is written in a cursive, flowing style.

Matthew D. Loper, PE
County Engineer

cc: Freeholder Patricia Walsh, Public Works Liaison
Michael Amorosa, Administrator
Paul McCall, Public Works Director
Adam Slutsky, Assistant County Engineer
Carl Andreassen, Principal Hydraulic Engineer
Brian Maurer, Principal Bridge Engineer
Kelly Cupit, Administrator, Green Brook Township
Robert M. Greco, ACOE



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

July 30, 2014

Environmental Assessment Section
Environmental Analysis Branch

Mr. Daniel Saunders
Deputy State Historic Preservation Officer
Historic Preservation Office
New Jersey Department of Environmental Protection
PO Box 404
Trenton, New Jersey 08625-0404

Dear Mr. Saunders:

The U.S. Army Corps of Engineers, New York District (Corps) in partnership with New Jersey Department of Environmental Protection Office of Engineering and Construction, is proceeding with the construction of the Green Brook Flood Damage Reduction Project (HPO-C2003-4; 03-0308-1). A Programmatic Agreement for the project was signed in 1998. As part of the original plan, the Jefferson Avenue Bridge was proposed to be removed. The bridge spans the Green Brook in the Township of Green Brook, Somerset County, Borough of Dunellen, Middlesex County and the City of Plainfield, Union County (Enclosure 1). Somerset County maintains and operates the bridge. The Corps surveyed this 2-lane structure during the reconnaissance phase of the project and assessed that it was not eligible for the National Register of Historic Places (NRHP) (Hunter Research 1990). Your office requested additional photographs which the Corps provided (Enclosure 2). No eligibility determination was made at the time the additional material was submitted.

The New Jersey Historic Bridge Database includes the Jefferson Avenue Bridge (New Jersey Historic Bridge Database 1994, modified 2001; see Enclosure 3). The bridge is described in the database as:

Built in 1900 as a pin-connected Pratt pony truss on ashlar abutments, the 4-panel bridge has been so altered with welded elements that it no longer functions as a pin-connected truss. The upper pins are not connected to the top chord. The first rebuilding of the bridge occurred in 1938. The span has little integrity of original design, and as a result is not technologically or historically distinguished. A modern steel grid deck has been added as has a cantilevered sidewalk.

The bridge survey determined the Jefferson Avenue Bridge not eligible for the NRHP. The surrounding streetscape is a mix of 19th and 20th-century homes that do not form a historic district. Enclosures 4 through 8 show the bridge in July 2014. The superstructure will be

removed but the abutments will be left in place. A barrier will be installed on both sides of the brook within the roadbed to indicate that the road is a dead end.

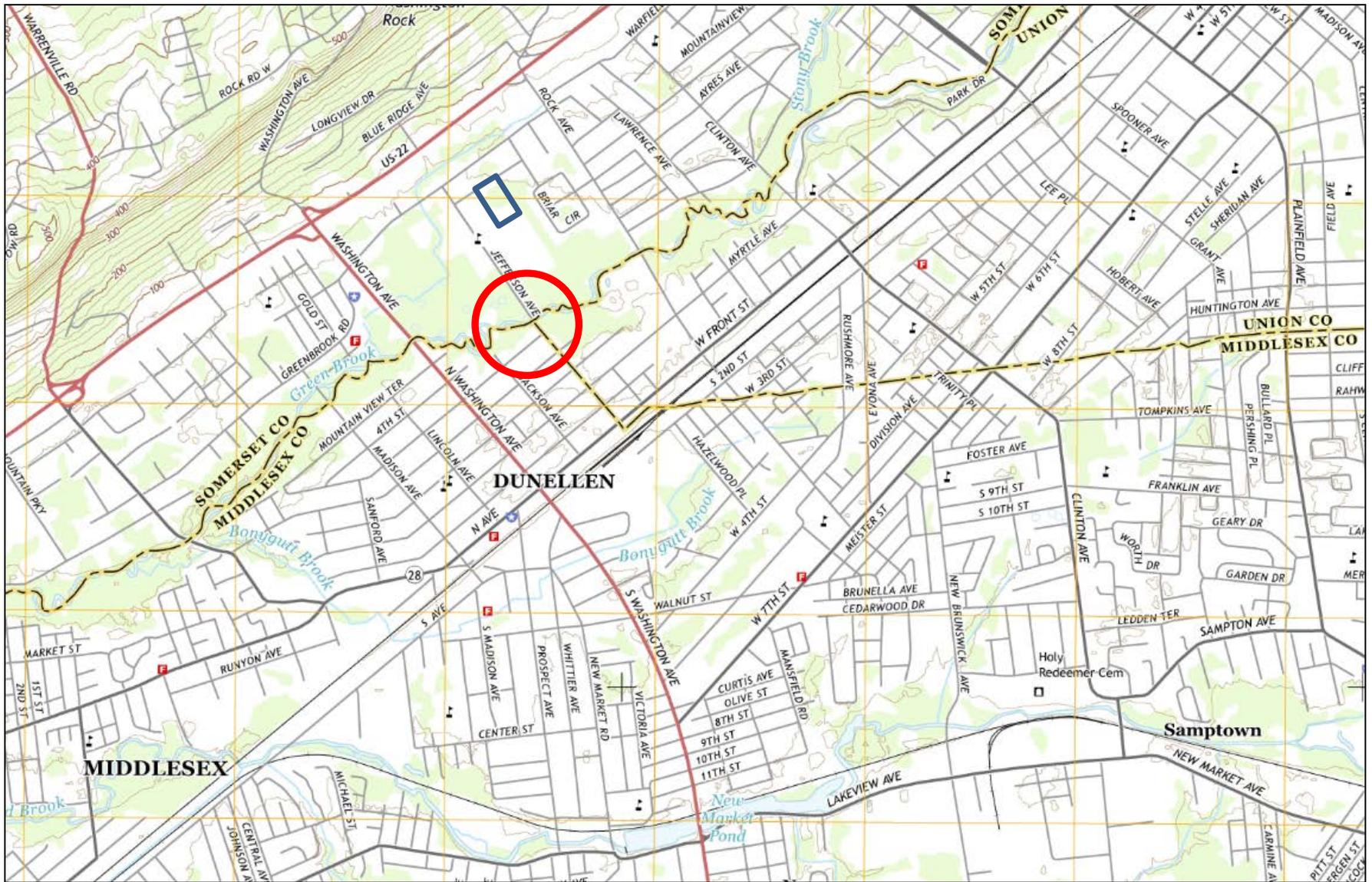
To allow for an emergency route to the Green Brook Middle School on Jefferson Avenue an existing sidewalk from the school to Maxal Street will be widened to 15 feet and paved with grass pavers (see Enclosures 1 and 9). The location is likely partially disturbed by the construction of the existing pathway however testing will be undertaken to determine presence or absence of archaeological resources as per Section I of the PA.

It is the Corps' opinion that the Jefferson Avenue Bridge is not eligible for the NRHP. As work will be limited to removal of the superstructure and installing barriers within the existing roadbed no further cultural resources activities related to the bridge removal itself will be conducted. The archaeological testing along the emergency route will be undertaken when rights-of-entry are obtained. The results of this work will be coordinated with your office. Please review the enclosed material and provide Section 106 comments pursuant to 36 CFR 800.5. If you or your staff require additional information or have any questions, please contact Lynn Rakos, Project Archaeologist, at (917) 790-8629.

Sincerely,


Peter M. Weppner
Chief, Environmental Analysis Branch

Enclosures



Enclosure 1. Location of Jefferson Avenue Bridge (red) and emergency access route (blue).
Source: USGS 2014: 7.5 minute Plainfield, NJ quadrangle.

Enclosure 2

1990 New Jersey SHPO letter to Corps

1994 Additional Material submitted on Jefferson Avenue Bridge

Let's protect our earth



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF PARKS AND FORESTRY

OFFICE OF NEW JERSEY HERITAGE

CN 404

TRENTON, N.J. 08625-0404

(609)292-2023

ONJH-C90-55

March 7, 1990

Mr. Bruce Bergmann
Chief, Planning Division
New York District, Corps of Engineers
Jacob K. Javits Federal Building
New York, New York 10278-0090

Re: Middlesex, Somerset and Union Counties, New Jersey
Green Brook Flood Control, Lower Basin
New York District
Corps of Engineers
Department of the Army

Dear Mr. Bergmann:

Thank you for the opportunity to comment upon a draft report by Hunter Research Associates, Trenton, on cultural resource investigations for the project referenced above.

My technical comments on this excellent report are brief:

1. The legibility of Figures 1.2 and 4.2 would be improved by better linework and screening that distinguishes between the several kinds of information. Graphical scales and north arrows are needed.
2. Reproductions of historical maps are on the poor side.
3. My guidelines have long required that photographic prints be 4 by 6 inches or larger and keyed to maps or plans. As was requested in your letter of transmittal, I am returning a draft copy of the report so that larger photographic prints can be mounted in it.
4. I am requesting more information than has been presented in the draft report on these resources:

North Avenue Extension Residential District

Streetscape photographs of the entire district (also Pulaski Street?) and maps to show relation of workers' neighborhood to the Aluminum Press plant; Sanborn or municipal plat maps.

Vehicular Bridges

- Jefferson Avenue
- Clinton Avenue
- South Lincoln Avenue
- X West Second Street — Replaced
- ✓ Lincoln Boulevard

For each, oblique aerial photographs, if available; photographs from each bridge end outward and two diagonal views toward each end from, say, a block's distance; good views of each elevation; late 19th -early 25th century maps or municipal plats showing the bridge's setting.

Railroad Bridges

Central Railroad of New Jersey and Lehigh Valley Railroad Bridges in Middlesex Borough.

Good photographic views of each elevation of each bridge and two longitudinal views.

~~Handwritten scribble~~

Photographs should be keyed to maps or sketch diagrams.

copy
plates
PLATS

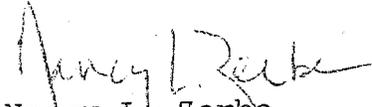
I would like to have a matter of archaeological strategy addressed. Sections of the study area were not tested because of flooding, a high water-table, alluvial deposits, or burial by colluvial accumulation. The problem may be framed so:

Those four states of terrain are the products of processes, natural and cultural; some constantly, others episodically; steadily or accelerated, that have shaped the channel and the valley of Green Brook. Disregarding the difficulty of prospecting in such terrains, I recommend consideration, by specific location, of the proposition that terrain where sites had been formed during ten millennia of prehistory and three and a half centuries of Euro-American occupation did survive, to be buried or submerged, and are still present.

Prehistoric site 28-Mi-150 should be preserved by an engineering design that avoids its destruction. Should there be no prudent and feasible alternative thereto, and it becomes necessary to undertake archaeological mitigation of an unavoidable adverse impact, I recommend that the experience of the past decade be drawn upon. That has shown us the advisability of supplementing the "Stage II" investigation with soundings preparatory to devising the strategy of the "Stage III" and fixing the cost and allocating the several components of a "mitigation" campaign. The results from "Stage II", whose purpose is to determine Register-eligibility, in many cases do not support the decisions that must be made for good and effective salvaging of information from a source that is shortly to vanish.

The same comment applies to the Vail-Randolph Mill, 28-Mi-106.

Sincerely yours,


Nancy L. Zerbe
Deputy State Historic
Preservation Officer

bc

c: Bernard Moore
Clark Gilman
Charles Defendorf

Jefferson Avenue Bridge (HRI site 49):

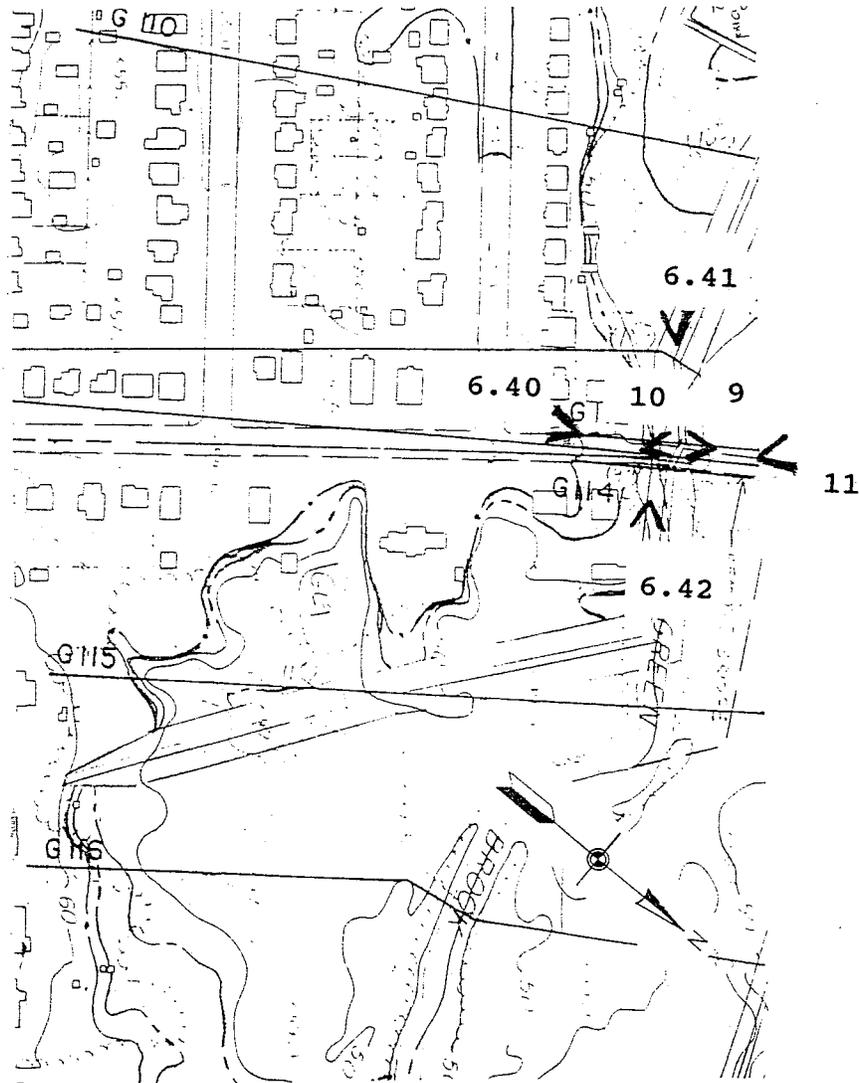
Historic Maps:

The alignment of Jefferson Avenue dates to 1868 (Hunter Research, Inc 1990:6-144). This crossing is depicted on 1882 map of Union County (Figure 6). This area does not appear on the 1910 Sanborn map of Plainfield but is shown on the 1927 map of Dunellen (Figure 7).

Photographs:

- See Hunter Research, Inc. 1990
Plates 6.40, 6.41 and 6.42.
- Also see the following Figures 8 - 11.

- Draft New Jersey Historic Bridge Survey Form



Jefferson Avenue Bridge (HRI site 49)
 Key map to photographs.
 Scale 1 inch: approx 272 feet.

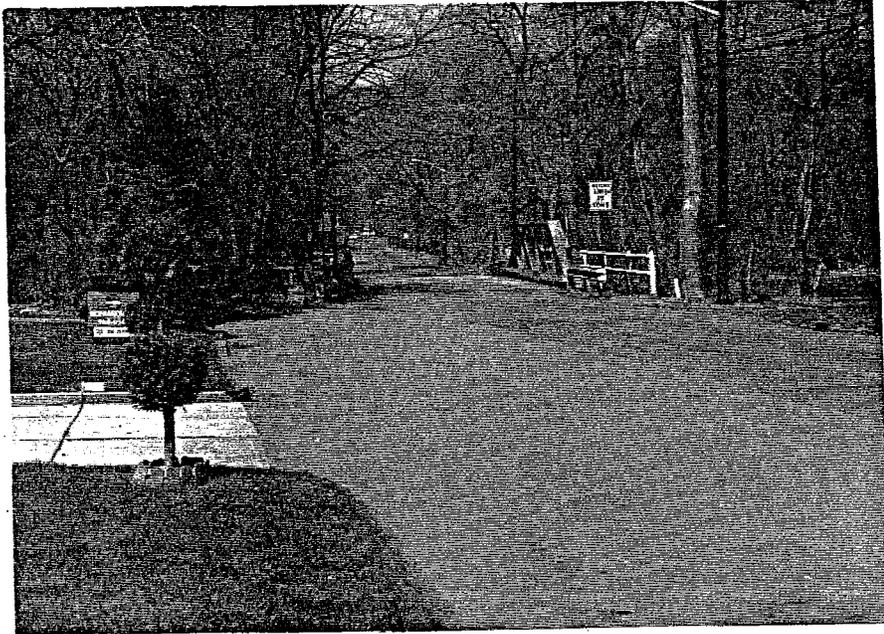


Plate 6.40 Site 49, Jefferson Avenue Bridge over
Green Brook, City of Plainfield, Dunellen
Borough and Green Brook Township; general
view of bridge looking north-northwest *east*
(Photographer: Lynn Rakos, April 1990).

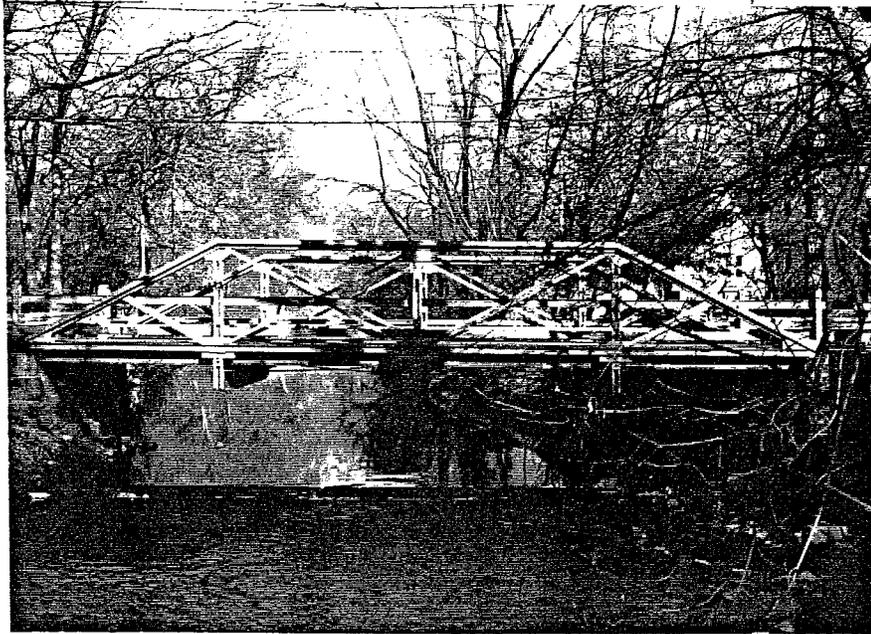


Plate 6.41 Site 49, Jefferson Avenue Bridge over Green Brook, City of Plainfield, Dunellen Borough, and Green Brook Township; view looking east (upstream) (Photographer: Lynn Rakos, January 1989).



Plate 6.42 Site 49, Jefferson Avenue Bridge over Green Brook, City of Plainfield, Dumellen Borough and Green Brook Township; view looking southwest at the east elevation (Photographer: Lynn Rakos, April 1990).

Site 49. Jefferson Avenue Bridge

Location (Sheet 36):

Present bridge carries Jefferson Avenue over Green Brook; Green Brook Township, Somerset County, Dunellen Borough, Middlesex County and City of Plainfield, Union County.

Historical Detail:

The present Jefferson Avenue was opened up as a connection between North Avenue and Green Brook Road shortly after the new town of Dunellen was laid out by the Central Railroad of New Jersey in 1868 (Figures 5.19 and 5.21). The existing steel bridge was put into service at the Green Brook crossing in 1900 (Ott 1987:134).

Architectural Detail:

This bridge is an open truss steel girder structure. It is single-span with a natural stone masonry abutment and wing walls (Plates 6.40-6.42).

Evaluation of Significance:

This bridge is not eligible for the National Register of Historic Places.

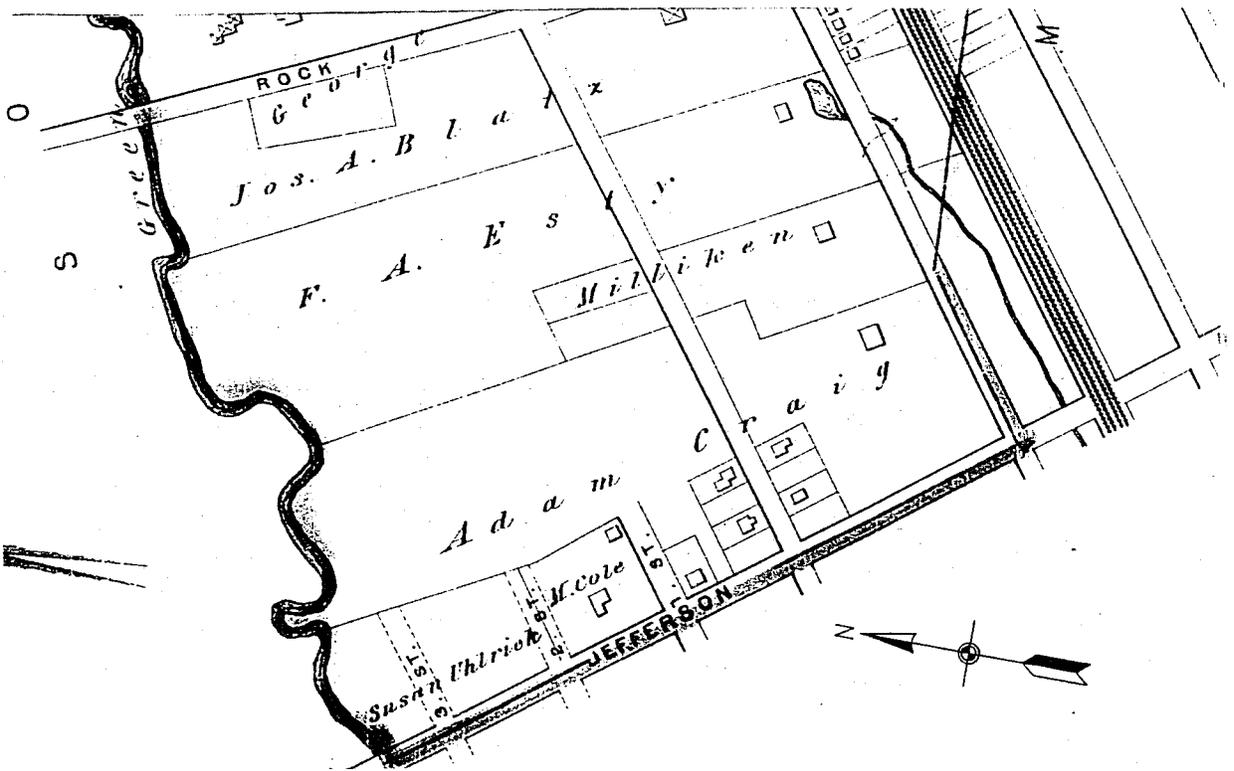


Figure 6. Robinson and Pidgeon. 1882. Atlas of Union County. Scale 1 inch: approx. 680 feet.

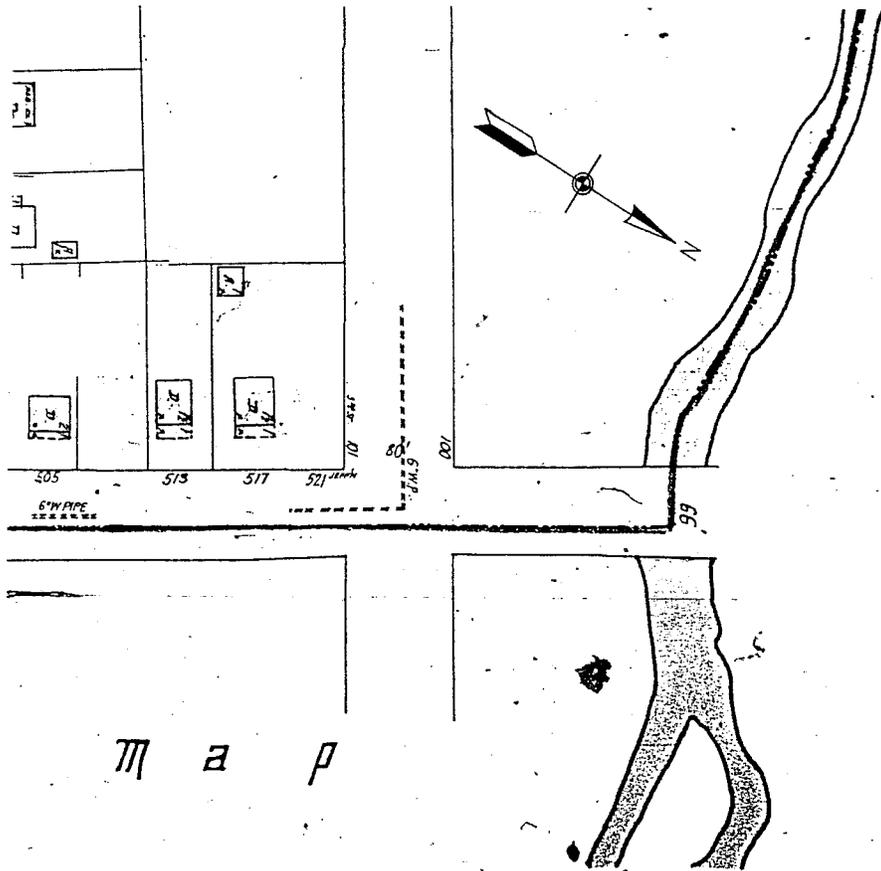


Figure 7. Sanborn Map Company. 1927. Dunellen.
 Scale 1 inch: approx. 145 feet.



Figure 8. Jefferson Avenue Bridge (HRI site 49):
Aerial view looking east northeast
(Photographer: J. Debler, April 1992).



Figure 8. Jefferson Avenue Bridge (HRI site 49):
Aerial view looking east northeast
(Photographer: J. Debler, April 1992).



Figure 9. Jefferson Avenue Bridge (HRI site 49):
View looking northwest from bridge
(Photographer: L. Rakos, August 1994).



Figure 10. Jefferson Avenue Bridge (HRI site 49):
View looking south southeast from bridge
(Photographer: L. Rakos, August 1994).



Figure 11. Jefferson Avenue Bridge (HRI site 49):
View looking south southeast to bridge
(Photographer: L. Rakos, August 1994).

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL ANALYSIS

A.G. LICHTENSTEIN
& ASSOCIATES, INC.

NEW JERSEY HISTORIC BRIDGE SURVEY

STRUCTURE #: 18L0904 COUNTY: SOMERSET OWNER: COUNTY ROUTE: 9018

MILEPOINT: 000000 TOWNSHIP: GREEN BROOK TOWNSHIP

FACILITY CARRIED: JEFFERSON AVENUE

NAME/FEATURE INTERSECTED: JEFFERSON AVENUE OVER GREEN BROOK

TYPE: PONY TRUSS DESIGN: PRATT

MATERIAL: METAL # SPANS: 001 LENGTH: 000051 WIDTH: 0192

DATE OF CONSTRUCTION: 1900 ALTERATION: 1938 SOURCE: COUNTY RECORDS

DESIGNER/PATENT: UNKNOWN BUILDER: UNKNOWN

SETTING/CONTEXT: The bridge carries a 2-lane street over a small stream that serves as the boundary between Somerset and Middlesex counties. The surrounding area is dotted with late-19th and early-20th century houses. A cantilevered sidewalk is on the upstream side of the bridge.

CURRENT NATIONAL REGISTER STATUS: Not Previously Evaluated

NATIONAL REGISTER RECOMMENDATION: Not Eligible

SUMMARY: Built in 1900 as a pin-connected Pratt pony truss on ashlar abutments, the 4-panel bridge has been so altered with welded elements that it no longer functions as a pin-connected truss. The upper pins are not connected to the top chord. The first rebuilding of the bridge occurred in 1938. The span has little integrity of original design, and as a result is not technologically or historically distinguished. A modern steel grid deck has been added as has a cantilevered sidewalk.

PHOTO INDEX: 109:34-36 REVIEWED BY: MEM/AGL DATE: 10/27 QUAD: Plainfield

DRAFT

Enclosure 3

Jefferson Avenue Bridge, Somerset County

New Jersey Historic Bridge Database 1994, modified 2001 New Jersey Historic Bridge Database
Based on survey data and recommendations prepared by A.G. Lichtenstein & Associates, Inc. For The
New Jersey Department of Transportation Bureau of Environmental Services And The Federal Highway
Administration New Jersey Division With Modifications based on Consultation between The New Jersey
Department of Environmental Protection Historic Preservation Office, The New Jersey Department of
Transportation, and Others. Survey - September, 1994. Database Modifications 2001.

<http://www.state.nj.us/transportation/works/environment/HistBrIntro.shtm>



Enclosure 4. Jefferson Avenue Bridge view looking southeast. Photographer: Lynn Rakos, July 2014.



Enclosure 5. Jefferson Avenue Bridge view looking northeast. Photographer: Lynn Rakos, July 2014.



Enclosure 6. Jefferson Avenue Bridge view looking north.
Photographer: Lynn Rakos, July 2014.



Enclosure 7. Jefferson Avenue Bridge looking to southern abutment. The bridge abutments will remain in place. Photographer: Lynn Rakos, July 2014.



Enclosure 8. Jefferson Avenue Bridge view to east truss line of handmade plaque reading “1936;” likely a year the bridge was rebuilt or repaired. Photographer: Lynn Rakos, July 2014.



Enclosure 9. Green Brook Middle School emergency access route location (outlined in red)



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

July 30, 2014

03-0308-35 MAIL

HPO - H2014-570

RECEIVED

AUG - 6 2014

HISTORIC PRESERVATION OFFICE

Environmental Assessment Section
Environmental Analysis Branch

Mr. Daniel Saunders
Deputy State Historic Preservation Officer
Historic Preservation Office
New Jersey Department of Environmental Protection
PO Box 404
Trenton, New Jersey 08625-0404

Dear Mr. Saunders:

The U.S. Army Corps of Engineers, New York District (Corps) in partnership with New Jersey Department of Environmental Protection Office of Engineering and Construction, is proceeding with the construction of the Green Brook Flood Damage Reduction Project (HPO-C2003-4; 03-0308-1). A Programmatic Agreement for the project was signed in 1998. As part of the original plan, the Jefferson Avenue Bridge was proposed to be removed. The bridge spans the Green Brook in the Township of Green Brook, Somerset County, Borough of Dunellen, Middlesex County and the City of Plainfield, Union County (Enclosure 1). Somerset County maintains and operates the bridge. The Corps surveyed this 2-lane structure during the reconnaissance phase of the project and assessed that it was not eligible for the National Register of Historic Places (NRHP) (Hunter Research 1990). Your office requested additional photographs which the Corps provided (Enclosure 2). No eligibility determination was made at the time the additional material was submitted.

The New Jersey Historic Bridge Database includes the Jefferson Avenue Bridge (New Jersey Historic Bridge Database 1994, modified 2001; see Enclosure 3). The bridge is described in the database as:

Built in 1900 as a pin-connected Pratt pony truss on ashlar abutments, the 4-panel bridge has been so altered with welded elements that it no longer functions as a pin-connected truss. The upper pins are not connected to the top chord. The first rebuilding of the bridge occurred in 1938. The span has little integrity of original design, and as a result is not technologically or historically distinguished. A modern steel grid deck has been added as has a cantilevered sidewalk.

The bridge survey determined the Jefferson Avenue Bridge not eligible for the NRHP. The surrounding streetscape is a mix of 19th and 20th-century homes that do not form a historic district. Enclosures 4 through 8 show the bridge in July 2014. The superstructure will be

03-0308-35
HPO - H2014 - 570

removed but the abutments will be left in place. A barrier will be installed on both sides of the brook within the roadbed to indicate that the road is a dead end.

To allow for an emergency route to the Green Brook Middle School on Jefferson Avenue an existing sidewalk from the school to Maxal Street will be widened to 15 feet and paved with grass pavers (see Enclosures 1 and 9). The location is likely partially disturbed by the construction of the existing pathway however testing will be undertaken to determine presence or absence of archaeological resources as per Section I of the PA.

It is the Corps' opinion that the Jefferson Avenue Bridge is not eligible for the NRHP. As work will be limited to removal of the superstructure and installing barriers within the existing roadbed no further cultural resources activities related to the bridge removal itself will be conducted. The archaeological testing along the emergency route will be undertaken when rights-of-entry are obtained. The results of this work will be coordinated with your office. Please review the enclosed material and provide Section 106 comments pursuant to 36 CFR 800.5. If you or your staff require additional information or have any questions, please contact Lynn Rakos, Project Archaeologist, at (917) 790-8629.

Sincerely,

Peter M. Weppeler
Peter M. Weppeler
Chief, Environmental Analysis Branch

Enclosures

CONCUR

D. Squawer 9/29/14
DATE

DEPUTY STATE HISTORIC
PRESERVATION OFFICER
DANIEL D. SQUAWER



Director of Public Works
PAUL L. McCALL
(908) 231-7024
Fax (908) 231-7170

County Engineer
MATTHEW D. LOPER
(908) 231-7024

Assistant County Engineer
ADAM H. SLUTSKY

COUNTY OF SOMERSET DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

County Administration Building
20 Grove Street
P.O. Box 3000
Somerville, New Jersey 08876-1262
www.co.somerset.nj.us

Facilities & Services Director
CARL MEMOLI

Supervisor of Roads & Bridges
VINCENZO RUSSO

Director of Planning
WALTER C. LANE

Recycling Superintendent
JOHN T. KENDZULAK, JR.

Transportation Director
YVONNE C. MANFRA

Vehicle Maintenance Supervisor
MICHAEL F. ROMANELLO

Somerset Union Soil Conservation
District Manager
FRANK CALO

September 18, 2014

David Martin
Supervising Engineer, Traffic
New Jersey Department of Transportation
1035 Parkway Avenue
PO Box 600
Trenton, NJ, 08625-0600

Re: Jefferson Avenue over Green Brook, Bridge L0904
Green Brook Township, Somerset County;
Dunellen Borough, Middlesex County;
Plainfield City, Union County

Dear Mr. Martin:

As part of the US Army Corp of Engineers Green Brook Flood Control Project, bridge L0904, Jefferson Avenue over the Green Brook, has been identified for removal. The structure straddles the jurisdiction of three counties and municipalities; Green Brook Township, Somerset County; Dunellen Borough, Middlesex County; and Plainfield City, Union County. Somerset County is the lead agency for the structure.

Consistent with NJAC 16:27-4.3(c), Somerset County is providing the following information with regard to the permanent closure of Bridge L0904, Jefferson Avenue over the Green Brook.

(c) Certification reports regarding non-State highway closures for durations greater than 48 hours shall include:

1. A written description of the reason for the non-State highway closure, the anticipated duration of the non-State highway closure, and a description of the non-State highway and State highways that are proposed to serve as a detour route;

Bridge L0904, Jefferson Avenue over the Green Brook is to be closed permanently as part of the Green Brook Flood Control Project. Additional information is provided in the May, 1997 US Army Corp of Engineer's Final General Reevaluation Report (excerpts attached).

- Mission Statement -

The County of Somerset is committed to excellence and innovation in public service, promoting the well-being of all residents and communities by providing effective, efficient and responsive leadership.

Somerset County Is An Equal Opportunity Employer

The traffic which currently crosses bridge L0904 will utilize Greenbrook Road (CR 634) or North Avenue / West Front Street (NJ 28) to Washington Avenue (CR 529) or Rock Avenue (CR 645).

2. *Plans depicting the non-State highway being closed and the non-State highway or State highways that are proposed to serve as a detour route; and*

A map showing the location of the proposed closure and proposed detour routes is attached.

3. *A recommendation regarding the non-State highway closure in the form of a certification by the engineer, bearing the engineer's New Jersey Professional Engineer's seal, that:*

i. The engineer has conducted an analysis of the data submitted pursuant to this subsection;

ii. The engineer has conducted an investigation of traffic movements and conditions on the non-State highway being closed and those non-State highway or State highways that are proposed to serve as a detour route;

iii. The engineer's recommendation is based on the analysis and investigation; and

iv. The engineer's recommendation regarding the non-State highway closure is in the interest of safety and the expedition of traffic on the public highways.

A certification from Matthew Loper, Somerset County Engineer, is attached.

Thank you for your attention to this matter. If you have any questions please feel free to contact me at 908-231-7619 or via email at fishinger@co.somerset.nj.us.

Sincerely,



Joseph A. Fishinger, Jr., PE, PP, PTOE
Principal Engineer (Traffic)

Enclosures

Cc: M. Loper, A. Slutsky, B. Maurer, C. Andreassen
Robert Greco, ACOE
Richard Wallner, Middlesex County Engineer
Thomas Mineo, Union County Engineer
File: L0904



ALT ROUTE (Rock Ave)

BRIDGE L0904

ALT ROUTE (Washington Ave)

West End Elementary School

Green Brook Middle School

Green Brook Buick GMC

Somerset County - Warrenbrook

GREEN BROOK TOWNSHIP

Crystal Auto Mall

Bonefish Grill

Columbia Park

Rock Ice Center

Second Street Park

Green Brook Park

Dunellen

DUNELLEN

Schwartz Pl

Woodman Ave

W 2nd St

W 3rd St

W 4th St

W 5th St

W 6th St

W 7th St

W 8th St

W 9th St

W 10th St

W 11th St

W 12th St

W 13th St

W 14th St

W 15th St

W 16th St

W 17th St

W 18th St

W 19th St

W 20th St

W 21st St

W 22nd St

W 23rd St

W 24th St

W 25th St

W 26th St

W 27th St

W 28th St

W 29th St

W 30th St

W 31st St

W 32nd St

W 33rd St

W 34th St

W 35th St

W 36th St

W 37th St

W 38th St

W 39th St

W 40th St

W 41st St

W 42nd St

W 43rd St

W 44th St

W 45th St

W 46th St

W 47th St

W 48th St

W 49th St

W 50th St

W 51st St

W 52nd St

W 53rd St

W 54th St

W 55th St

W 56th St

W 57th St

W 58th St

W 59th St

W 60th St

W 61st St

W 62nd St

W 63rd St

W 64th St

W 65th St

W 66th St

W 67th St

W 68th St

W 69th St

W 70th St

W 71st St

W 72nd St

W 73rd St

W 74th St

W 75th St

W 76th St

W 77th St

W 78th St

W 79th St

W 80th St

W 81st St

W 82nd St

W 83rd St

W 84th St

W 85th St

W 86th St

W 87th St

W 88th St

W 89th St

W 90th St

W 91st St

W 92nd St

W 93rd St

W 94th St

W 95th St

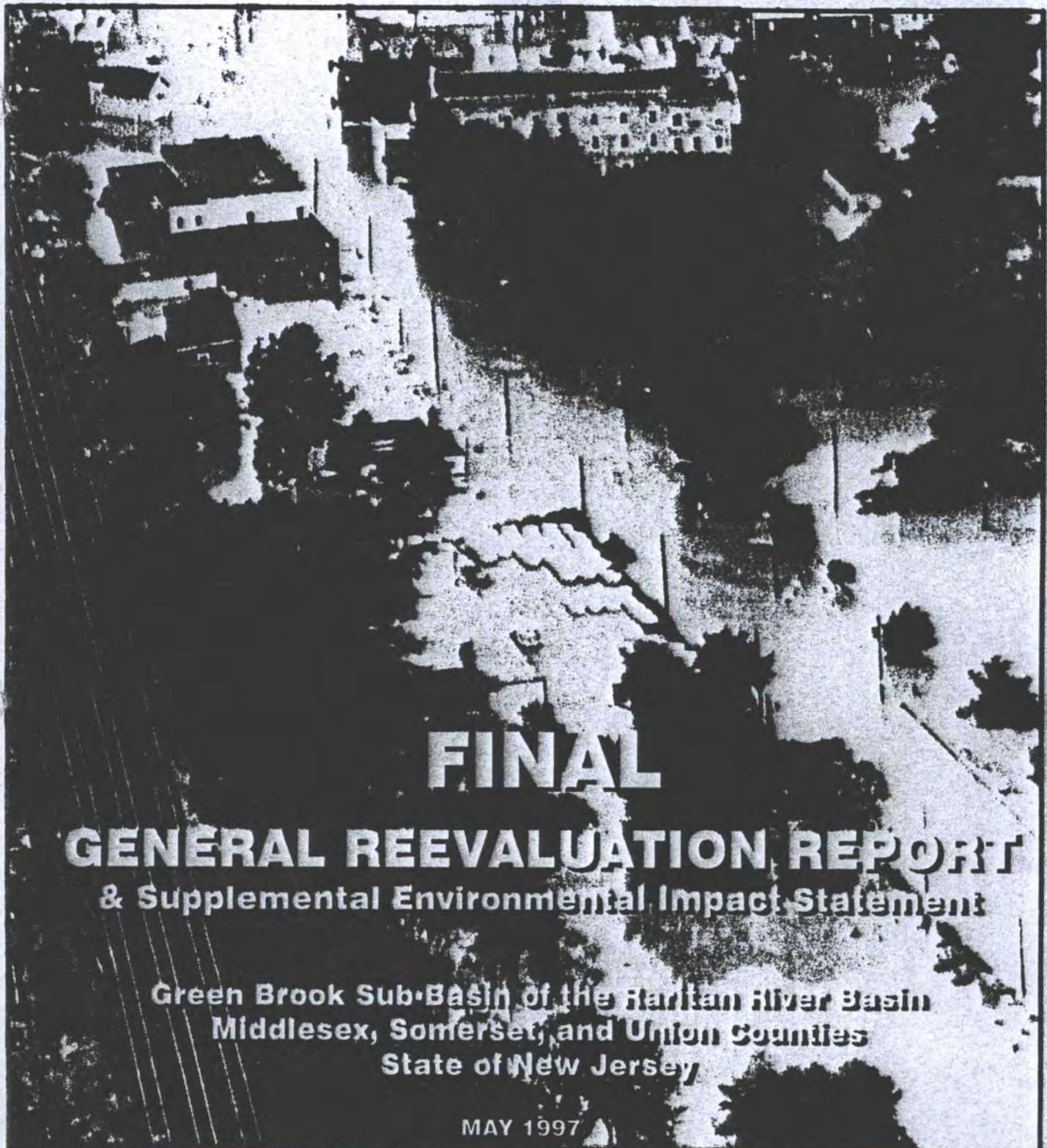
W 96th St

W 97th St

W 98th St

W 99th St

W 100th St



gbfca1.cdr-ey24



US Army Corps
of Engineers ®
New York District

Green Brook Flood Control Project

Volume 1 of 2

FINAL GENERAL REEVALUATION REPORT

& Supplemental Environmental Impact Statement

**Green Brook Sub-Basin of the Raritan River Basin
Middlesex, Somerset and Union Counties
State of New Jersey**

MAY 1997

Green Brook Flood Control Project



**US Army Corps
of Engineers**
New York District

Cover Photo: Bound Brook Borough - Main Street looking west
from Middlesex Borough following Hurricane Doria
August 1971
Photo Courtesy of Forbes Newspapers

INTRODUCTION

General

1. This General Reevaluation Report is a major step in the implementation of the Green Brook Flood Control Project authorized by Congress in the Water Resources Development Act of 1986. It updates the studies performed for the 1980 Feasibility Report and affirms the validity of the authorized project. The report:

- a. Describes the planning and decision-making process which leads to this conclusion,
- b. Updates and re-scales the components of the project,
- c. Presents the estimates of costs and benefits,
- d. Specifies the responsibilities of the Federal government and non-Federal sponsor,
- e. Outlines the implementation process and the project schedule through construction, and
- f. Recommends approval to construct the New York District recommended plan.

Project Authorization

2. This report was prepared under the construction authorization of the Green Brook Flood Control Project enacted as Section 401a of the Water Resources Development Act of 1986, which states:

The following works of improvement for the control of the destructive floodwaters are adopted and authorized to be prosecuted by the Secretary substantially in accordance with the plans subject to conditions recommended in the respective reports designated in this subsection.... "Green Brook Sub-basin, Raritan River basin, New Jersey: Report of the Chief of Engineers, dated September 4, 1981 at a total cost of \$203,000,000 with an estimated first Federal cost of \$151,000,000 and an estimated first non-Federal cost of \$52,000,000. Such project shall include flood protection in the upper Green Brook Sub-basin and the Stony Brook tributary, as described in Plan A in the report of the District Engineer, New York, dated August 1980"



239. **Green Brook - Municipal Brook Confluence Area**. Flooding within this area impacts the municipalities of Dunellen and Green Brook.

240. The flood control features in the Green Brook-Municipal Brook confluence area consist primarily of levees and floodwalls along the north and south banks of Green Brook with tie-back levees up Municipal Brook. The flood protection system begins at a tie-off point on the north bank of Green Brook, approximately 600 feet west of the Madison Avenue bridge, continues along the north bank of Green Brook to Madison Avenue where a closure structure will be employed as part of the line of protection. From here the line of protection continues eastward across the existing mouth of Municipal Brook onto the Washington Avenue bridge approach road. Municipal Brook will be cut off from its existing channel and will be relocated to the east. The proposed Municipal Brook channel will enter Green Brook just upstream of the Washington Avenue bridge.

241. Levees extend north on either side of the relocated Municipal Brook channel from Washington and Jefferson Avenues and tie into Green Brook Road either side of its crossing over Municipal Brook. A floodwall along the west side of Municipal Brook continues to high ground an estimated 250 feet upstream of Green Brook Road. A levee and floodwall system extends along the east and south side of Municipal Brook through rear yards of a residential area along Green Brook Road. This levee continues eastward to a tie-off point at an access drive approximately 500 feet west of the Green Brook Road-Rock Avenue intersection.

242. Flood protection along Green Brook upstream of the Municipal Brook confluence is provided by a levee which is a continuation of the tie back levee up Municipal Brook and extends along the north bank of Green Brook, to Rock Avenue, onto Clinton Avenue, and eventually to a tie-off point along the northeast bank of Stony Brook, approximately 500 feet upstream of the Stony Brook-Green Brook confluence. Additional protection is provided along the south bank of Green Brook by a levee/floodwall system which begins at a tie-off point approximately 500 feet west of Washington Avenue and continues east through Washington Avenue and across Jefferson Avenue. The Jefferson Avenue bridge is to be permanently removed. Approximately 300 feet upstream of Jefferson Avenue, the levee turns southward and ties off into high ground at a point just north of First Street, approximately 500 feet north of the



First Street-Jefferson Avenue intersection. The levee/floodwall system on the south bank completes the line of protection within the Green Brook-Municipal Brook confluence area.

243. The flood protection plan in this area also includes one swing gate closure structure across Madison Avenue on the north bank of Green Brook. In addition, the following bridges will be replaced:

- a. Washington Avenue over Green Brook;
- b. Green Brook Road over Municipal Brook; and,
- c. Clinton Avenue over Green Brook.

244. As noted previously, the Jefferson Avenue bridge over Green Brook will be removed as part of the Flood Control Project, but will not be replaced at the expressed desire of the local interests. Rock Avenue bridge will not be altered. See Table 13 for a summary of the NED Plan elements within this confluence area. See Figures 12 and 13 for a schematic of the proposed flood protection plan in this area.

245. **Bound Brook-Cedar Brook Confluence Area.** Flooding within this area impacts the municipality of South Plainfield.

246. The flood control elements can be described in two distinct sections. Levees and floodwalls along the north bank of Cedar Brook and levees and floodwalls along the east and west banks of a Bound Brook tributary (hereinafter referred to as Bound Brook Tributary #3) which drains into Bound Brook from the south, approximately 1,200 feet downstream of the Cedar Brook-Bound Brook confluence.

247. The flood protection system along the north bank of Cedar Brook begins approximately 100 feet east of the foot of Dunham Avenue and extends southeast around the foot of Oakmoor Avenue where the alignment turns eastward to tie into the raised approach road of Plainfield Avenue. At Plainfield Avenue, the levee again runs eastward along the north shore of Spring Lake and ultimately ties into high ground at the southeast corner of the South Plainfield High School. In addition to the structural elements in this area, approximately 32 structures along Allen Drive, Norway Lane, and Sampton Avenue near the intersection with Clinton Avenue require flood proofing. The levee and floodwall system along Bound Brook Tributary #3 begins as a floodwall along the south bank of Bound Brook at a point approximately 300 feet west of



TABLE 13
DESCRIPTION OF NED PLAN ELEMENTS AT THE
GREEN BROOK MUNICIPAL BROOK CONFLUENCE AREA
150-Year Level of Protection

Stream	Bank	Type of Protection	Location	Pertinent Dimensions	Bridge Alterations
Green Brook/ Municipal Brook	North/ West	Levees & Floodwalls	From a point 600' west and downstream of Madison Ave. bridge to point 250' northwest of Green Brook Rd. bridge on Municipal Brook. One flood proofing, several hundred feet downstream of levee segment.	Length: 5,010 feet Height range: 7 - 13 feet Closure Structure: - Madison Avenue	N. Washington Ave. (Replace) Green Brook Rd. (Replace)
Green Brook/ Municipal Brook	North/ East	Levees & Floodwalls	From 500' downstream of the Rock Ave. bridge along east bank of Municipal Brook to north bank Green Brook upstream to high ground at Stony Brook confluence with Green Brook.	Length: 10,850 feet Height range: 4 - 12 feet	Green Brook Rd. (Replace) Jefferson Ave. (Remove) Rock Ave. (Remain) Clinton Ave. (Replace)
Green Brook	South	Levees	From a point 500' downstream of the N. Washington Ave. bridge to approx. 500' north of First St.-Jefferson Ave. intersection. One flood proofing near Madison Ave. bridge.	Length: 3,880 feet Height range: 9 - 12 feet	N. Washington Ave. (Replace) Jefferson Ave. (Remove)





Director of Public Works
PAUL L. McCALL
(908) 231-7024
Fax (908) 231-7170

County Engineer
MATTHEW D. LOPER
(908) 231-7024

Assistant County Engineer
ADAM H. SLUTSKY

COUNTY OF SOMERSET DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

County Administration Building
20 Grove Street
P.O. Box 3000
Somerville, New Jersey 08876-1262
www.co.somerset.nj.us

September 17, 2014

CERTIFICATION

Facilities & Services Director
CARL MEMOLI

Supervisor of Roads & Bridges
VINCENZO RUSSO

Director of Planning
WALTER C. LANE

Recycling Superintendent
JOHN T. KENDZULAK, JR.

Transportation Director
YVONNE C. MANFRA

Vehicle Maintenance Supervisor
MICHAEL F. ROMANELLO

Somerset Union Soil Conservation
District Manager
FRANK CALO

Closure of Bridge L0904, Jefferson Avenue over the Green Brook
Green Brook Township, Somerset County; Dunellen Borough, Middlesex County;
Plainfield City, Union County

The office of the Somerset County Engineer has conducted an analysis of the closure of bridge L0904, Jefferson Avenue over the Green Brook, summarized in the attached memorandum, and:

The office of the Somerset County Engineer has conducted an investigation of traffic movements and conditions on Jefferson Avenue and the surrounding roadways that are proposed to serve as a detour route as a consequence of the closure, and;

The office of the Somerset County Engineer recommends that based on this analysis bridge L0904, Jefferson Avenue over the Green Brook be closed consistent with the May, 1997 "Final General Reevaluation Report for the Green Brook Flood Control Project" prepared by the Us Army Corps of Engineers, and;

The office of the Somerset County Engineer recommends this course of action in the interest of public safety and the expedition of traffic on the public highways.

Matthew D. Loper, PE
County Engineer

- Mission Statement -

The County of Somerset is committed to excellence and innovation in public service, promoting the well-being of all residents and communities by providing effective, efficient and responsive leadership.

Somerset County Is An Equal Opportunity Employer



COUNTY OF SOMERSET DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

Director of Public Works
PAUL L. McCALL
(908) 231-7024
Fax (908) 231-7170

County Engineer
MATTHEW D. LOPER
(908) 231-7024

Assistant County Engineer
ADAM H. SLUTSKY

County Administration Building
20 Grove Street
P.O. Box 3000
Somerville, New Jersey 08876-1262
www.co.somerset.nj.us

Facilities & Services Director
CARL MEMOLI
Supervisor of Roads & Bridges
VINCENZO RUSSO
Director of Planning
WALTER C. LANE
Recycling Superintendent
JOHN T. KENDZULAK, JR.
Transportation Director
YVONNE C. MANFRA
Vehicle Maintenance Supervisor
MICHAEL F. ROMANELLO
Somerset Union Soil Conservation
District Manager
FRANK CALO

MEMORANDUM

TO: Matthew D. Loper, PE, County Engineer

FROM: Joseph A. Fishinger, Jr., PE, PP, PTOE, Principal Engineer (Traffic)

DATE: September 18, 2014

RE: Closure of Bridge L0904, Jefferson Avenue over the Green Brook

Background

This memorandum represents the findings related to an engineering study to permanently close bridge L0904, Jefferson Avenue over the Green Brook, as identified in the May, 1997 Final General Revaluation Report for the Green Brook Flood Control Project, prepared by the US Army Corps of Engineers, New York District.

Existing Conditions

Jefferson Avenue is a local roadway with a general north/south orientation which connects Greenbrook Road (CR 634) in Greenbrook Township to North Avenue / West Front Street (NJ 28) in Dunellen Borough and the City of Plainfield. Based on traffic counts conducted on the week of May 19, 2014 (attached) average daily traffic volumes in the vicinity of bridge L0904 are 960 vehicles per day with peak hour flows of less than 60 vehicles per hour in either direction.

Green Brook Middle School is located on Jefferson Avenue north of bridge L0904 and Jefferson Elementary School is located southeast of the bridge at the corner of West Front Street (NJ 28) and Rock Avenue. Dunellen High School is also located approximately three blocks west of the bridge on Lincoln Avenue. There is very little school related traffic on Jefferson Avenue, however, since Jefferson Avenue and the Green brook serve as the corporate line separating Somerset, Union, and Middlesex Counties and municipalities within each county have separate school systems.

Impact on Adjacent Roadways

Washington Avenue (CR 529) and Rock Avenue (CR 645) run parallel to Jefferson Avenue approximately 0.5 miles to the east and west, respectively. Washington Avenue has an ADT of approximately 14,000 vpd with peak hour volumes of between 1400 and

- Mission Statement -

The County of Somerset is committed to excellence and innovation in public service, promoting the well-being of all residents and communities by providing effective, efficient and responsive leadership.

Somerset County Is An Equal Opportunity Employer

1450 vph. Rock Avenue has an ADT of approximately 12,000 vpd with peak hour volumes between 1,000 and 1,200 vph. Each roadway will experience a 3-4% increase in daily traffic volumes as a result of the bridge closure.

South of the Green Brook, Jefferson Avenue is part a grid street network with multiple roadways accessing Washington Avenue, Rock Avenue, and North Avenue / West Front Street. The traffic volumes redirected from the closure will be spread across this grid network. Traffic signals at North Avenue & Washington Avenue and West Front Street and Rock Avenue are present to accommodate the modest increase in traffic volumes resulting from the closure.

North of the Green Brook, the additional traffic from the closure will be directed to the intersections of Washington Avenue & Greenbrook Road and Rock Avenue & Greenbrook Road. Intersection improvements at Washington Avenue & Greenbrook Road, including dedicated left turn lanes and left turn phasing are currently in the final stages of design with construction anticipated for summer of 2015. A traffic signal is also planned for the intersection of Rock Avenue & Greenbrook Road with construction anticipated in 2016. While the increase in traffic associated from the bridge closure is not expected to have an appreciable impact on these intersections, the planned improvements will mitigate any increases in traffic associated with the closure of bridge L0904.

Conclusions

The closure of bridge L0904, Jefferson Avenue over the Green Brook, will redirect a modest amount of traffic to the surrounding roadways. Planned improvements and the current local street network can accommodate these increases without significantly adversely affecting the traffic in the area.

Somerset County Engineering Department

20 Grove Street
Somerville, NJ 08876
908-231-7024

Site Code: Apollyon
Station ID: SN:024239
Jefferson Avenue
Bridge No. L0904
Latitude: 0' 0.000 Undefined

Start Time	19-May-14		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	Northbound	Southbound	Northbound	Southbound												
12:00 AM	*	*	3	5	3	3	4	3	3	3	5	3	3	3	4	4
01:00	*	*	1	3	5	4	4	0	4	3	3	3	3	3	2	4
02:00	*	*	0	2	1	2	1	2	2	1	2	2	2	0	1	2
03:00	*	*	0	2	2	2	0	0	1	1	3	0	0	1	0	2
04:00	*	*	0	0	1	0	0	2	2	3	4	0	0	0	1	1
05:00	*	*	10	1	12	1	9	9	9	0	1	2	2	0	7	1
06:00	*	*	28	21	24	20	26	17	28	13	7	4	1	3	19	13
07:00	*	*	54	26	47	28	49	29	46	27	19	8	10	4	38	20
08:00	*	*	33	27	34	23	26	19	28	33	23	16	11	14	26	22
09:00	*	*	23	21	23	21	22	17	25	20	31	30	30	24	26	22
10:00	*	*	28	36	27	24	26	29	26	26	26	28	42	29	29	29
11:00	*	*	18	21	21	20	22	17	26	28	35	37	27	37	25	27
12:00 PM	*	*	20	36	11	20	19	22	38	19	41	36	37	44	28	30
01:00	*	*	30	29	36	26	28	23	29	25	33	22	44	41	33	28
02:00	34	39	28	24	34	32	31	36	34	40	44	44	32	31	33	35
03:00	26	34	31	41	36	41	24	36	35	56	41	41	27	42	29	42
04:00	39	53	39	56	35	53	35	39	37	55	20	31	19	56	32	49
05:00	27	49	30	50	42	58	30	52	32	53	25	30	25	33	30	46
06:00	30	39	46	46	41	48	39	36	42	39	16	25	13	21	32	36
07:00	29	38	39	44	26	37	24	44	36	40	16	15	20	27	27	35
08:00	12	31	13	43	23	44	18	40	20	33	15	9	17	10	17	30
09:00	13	15	18	20	7	29	17	19	12	16	16	10	14	14	14	19
10:00	13	15	18	28	12	9	8	9	16	17	10	13	5	4	12	14
11:00	7	10	1	9	9	14	9	11	10	10	6	6	8	3	7	9
Lane	230	323	511	591	512	559	472	506	536	572	412	424	392	446	472	520
Day	553	1102	1071	978	1108	836	992	838	992	992	992	992	992	992	992	992
AM Peak	07:00	10:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	08:00	11:00	11:00	10:00	11:00	07:00	10:00
Vol.	54	36	47	28	29	46	33	35	37	42	37	38	29	37	38	29
PM Peak	16:00	16:00	17:00	17:00	18:00	15:00	14:00	14:00	14:00	15:00	12:00	14:00	13:00	16:00	13:00	16:00
Vol.	39	53	42	58	52	42	56	41	44	44	56	56	44	56	33	49

Appendix C
Record of Non-Applicability

GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY

Project/Action Name: *Jefferson Avenue Bridge Removal Green Brook Flood Damage Reduction Project,*

Project/Action Identification Number:*N/A*

Project/Action Point of Contact: *Kimberly Rightler, (917) 790-8722*

Estimated Begin Date: *Summer 2015*

Estimated End Date: *Winter 2015*

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project/action because:

The project/action is an exempt action under 40 CFR 93.153(c) or (d), (*SPECIFY APPLICABLE EXEMPTION CATEGORY AND REGULATORY CITATION*)

OR

Total direct and indirect emission from this project/action have been estimated at 0.35 tons CO, 0.06 tons VOC, 0.12 tons NOx and 0.02 tons PM, and are below the conformity threshold value established at 40 CFR 93.153(b) of *100 tons CO, 100 tons NOx, 100 tons PM and 50 tons VOC.*

AND

The project/action is not considered regionally significant under 40 CFR 93.153(i).

Supporting documentation and emissions estimates are

ATTACHED

APPEAR IN THE NEPA DOCUMENTATION (*PROVIDE REFERENCE*)

OTHER _____.

SIGNED _____.

(Leonard Houston, Chief, Environmental Branch, Planning Division)

**Green Brook Flood Damage Reduction Project
Equipment Specifications and Hours of Operation**

Nonroad Vehicles - Equipment Description	Equip Hrs	Horsepower	Fuel Type	Sources and Assumptions
ASPHALT DISTRIBUTOR, 3,000 GAL (11,355 L) (ADD 45,000 LB (20,412 KG) GVW TRUCK)	40.00	245	Diesel	Truck hp from specifications from equipmentwatch.com; fuel type assumed
ASPHALT FINISHER, 10' WIDE SCREED, WHEEL, W/19' 6" SCREED EXTENSION, 215 CF HOPPER	40.00	158	Diesel	USACE Construction Equipment Ownership and Operating Expense Schedule EP 1110-1-8
CHAINSAW, 16" - 24" (406-610 MM) BAR	240.00	5.7	Gasoline	Specifications from Husqvarna.com
CRANES, HYDRAULIC, TRUCK MTD, 70 TON, 115' BOOM, 8X4	160.00	400	Diesel	USACE Construction Equipment Ownership and Operating Expense Schedule EP 1110-1-8
LOADER / BACKHOE, WHEEL, 0.80 CY FRONT END BUCKET, 24" DIP, 4.3 CF, 12' DIGGING DEPTH, 4X4	80.00	67	Diesel	USACE Construction Equipment Ownership and Operating Expense Schedule EP 1110-1-8
PAVING BREAKER, 66 LB (30 KG) (ADD 100 CFM (2.8 CMM) COMPRESSOR)	40.00	35	Diesel	USACE Construction Equipment Ownership and Operating Expense Schedule EP 1110-1-8
ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 2.9 TON, 47.2" WIDE, 2X1, ASPHALT COMPACTOR	40.00	33	Diesel	USACE Construction Equipment Ownership and Operating Expense Schedule EP 1110-1-8

Highway Vehicles - Equipment Description	Equip Hrs	Horsepower	Fuel Type	Sources and Assumptions
DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4	40.00	400	Diesel	USACE Construction Equipment Ownership and Operating Expense Schedule EP 1110-1-8

**Green Brook Flood Damage Reduction Project
Emission Factors and Operation Load**

Nonroad Vehicles - Equipment Description	Fuel Type	hp	Load Factor (%)	Emission Factors (g/hp-hr)*						Sources and Assumptions
				THC (VOC)	NOx	PM-10	PM-2.5	CO	SO2	
ASPHALT DISTRIBUTOR, 3,000 GAL (11,355 L) (ADD 45,000 LB (20,412 KG) GVW TRUCK)	Diesel	245	59%	0.19	2.61	0.22	0.21	1.14	0.00492	EPA Nonroad 2008a; SCC Code 2270002021; Diesel Paving Equipment; 175-300 hp; Tier 3
ASPHALT FINISHER, 10' WIDE SCREED, WHEEL, W/19' 6" SCREED EXTENSION, 215 CF HOPPER	Diesel	158	59%	0.19	2.61	0.32	0.31	1.33	0.00492	EPA Nonroad 2008a; SCC Code 2270002021; Diesel Paving Equipment; 100-175 hp; Tier 3
CHAINSAW, 16" - 24" (406-610 MM) BAR	Gasoline	5.7	70%	47.98	0.91	7.7	7.7	283.4	0	EPA Nonroad 2008a; SCC Code 2260004021; 2-Stroke Chainsaws <6hp Commercial; Gasoline 2-stroke Handheld Class 5 Meeting Phase 2 Standards (G2H52); Assume PM10 = PM2.5
CRANES, HYDRAULIC, TRUCK MTD, 70 TON, 115' BOOM, 8X4	Diesel	400	43%	0.17	2.5	0.15	0.15	0.84	0.00487	EPA Nonroad 2008a; SCC Code 2270002045; Diesel Cranes; 300-600 hp; Tier 3
LOADER / BACKHOE, WHEEL, 0.80 CY FRONT END BUCKET, 24" DIP, 4.3 CF, 12' DIGGING DEPTH, 4X4	Diesel	67	21%	0.42	3.64	0.71	0.69	6.08	0.00698	EPA Nonroad 2008a; SCC Code 2270002066; Diesel Tractors/Loaders/Backhoes; 50-75 hp; Tier 3
PAVING BREAKER, 66 LB (30 KG) (ADD 100 CFM (2.8 CMM) COMPRESSOR)	Diesel	35	43%	0.28	4.73	0.34	0.33	1.53	0.00541	EPA Nonroad 2008a; SCC Code 2270002006; Diesel Tampers/Rammers (unused) 25-50 hp; Tier 3
ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 2.9 TON, 47.2" WIDE, 2X1, ASPHALT COMPACTOR	Diesel	33	59%	0.29	4.48	0.42	0.41	2.34	0.00547	EPA Nonroad 2008a; SCC Code 2270002015; Diesel Rollers; 25-50 hp; Tier 3

Highway Vehicles - Equipment Description	Vehicle Class	hp	Miles @ 15 mph**	Emission Factors (g/mi)*						Notes/Sources
				VOC	NOx	PM-10	PM-2.5	CO	SO2	
DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4	HDDV8B	400	600	0.824	9.67	0.2524	0.202	4.51	0.0151	EPA Mobile6.2 run for Northeast US (Massachusetts); Heavy Duty Diesel Vehicles >60,000 lb GVW (Class HDDV8B); average speed 15 mph (assumed typical for construction sites)

*Emission factors for nonroad construction equipment were extracted from U.S. EPA's Nonroad2008a emission model. Tier 3 emission factors for diesel equipment and Phase 2 emission factors for gasoline equipment were used because these standards are in effect as of 2010. Emission factors for highway vehicles were developed using Mobile 6.2

** Highway vehicle emission factors are given per mile traveled rather than per hours of operation. In order to estimate the miles traveled by the highway vehicles, it is assumed that they operate at an average of 15 mph while on the construction site for the duration of the estimated equipment hours

Green Brook Flood Damage Reduction Project
Total Project Emissions

Equipment Description	THC (VOC) (lbs)	NOx (lbs)	PM-10 (lbs)	PM-2.5 (lbs)	CO (lbs)	SO2 (lbs)
Nonroad Equipment						
ASPHALT DISTRIBUTOR, 3,000 GAL (11,355 L) (ADD 45,000 LB (20,412 KG) GVW TRUCK)	2.42	33.27	2.80	2.68	14.53	0.06
ASPHALT FINISHER, 10' WIDE SCREED, WHEEL, W/19' 6" SCREED EXTENSION, 215 CF HOPPER	1.56	21.46	2.63	2.55	10.93	0.04
CHAINSAW, 16" - 24" (406-610 MM) BAR	101.29	1.92	16.26	16.26	598.29	0.00
CRANES, HYDRAULIC, TRUCK MTD, 70 TON, 115' BOOM, 8X4	10.31	151.68	9.10	9.10	50.96	0.30
LOADER / BACKHOE, WHEEL, 0.80 CY FRONT END BUCKET, 24" DIP, 4.3 CF, 12' DIGGING DEPTH, 4X4	1.04	9.03	1.76	1.71	15.09	0.02
PAVING BREAKER, 66 LB (30 KG) (ADD 100 CFM (2.8 CMM) COMPRESSOR)	0.37	6.28	0.45	0.44	2.03	0.01
ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 2.9 TON, 47.2" WIDE, 2X1, ASPHALT COMPACTOR	0.50	7.69	0.72	0.70	4.02	0.01
Highway Vehicles						
DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4	1.09	12.79	0.33	0.27	5.97	0.020
Total Project Emissions (lbs)	118.59	244.11	34.06	33.70	701.82	0.45
Total Project Emissions (tons)	0.06	0.12	0.02	0.02	0.35	0.00

Appendix D

Draft Finding of No Significant Impact

Finding of No Significant Impact

Environmental Assessment for Jefferson Avenue Bridge Removal
Green Brook Township, Somerset County, NJ

The U.S. Army Corps of Engineers (Corps), New York District (District), in partnership with the New Jersey Department of Environmental Protection (NJDEP), is proposing to remove the Jefferson Avenue Bridge located in Green Brook Township, the Borough of Dunellen and the City of Plainfield in the counties of Somerset, Middlesex, and Union, New Jersey as part of the Green Brook Flood Control Project (GBFCP).

The Jefferson Avenue Bridge is a one lane, steel truss bridge supported by stone masonry abutments that was originally constructed in 1900. Although the bridge underwent a major rehabilitation in 1938 and has undergone other subsequent maintenance and repair actions, the height of the bridge contributes to flooding by creating a hydraulic constriction in addition to causing debris to dam up behind it during flood events. In addition to the bridge removal, an emergency access lane consisting of a geocellular confinement system will be constructed within an existing right of way from the Green Brook Middle School to Maxal Street in order to provide buses/vehicles with an alternate ingress/egress point to the school in the event that access to the main entrance and exit drives along Jefferson Avenue is impeded.

The GBFCP project is authorized under Section 401a of the Energy and Water Appropriations Act of 1986. The environmental impacts of the bridge removal were previously addressed in the District's *Final Environmental Impact Statement (FEIS) for the Proposed Plan for the Green Brook Flood Control in the Green Brook Sub-Basin, Somerset, Middlesex and Union Counties, New Jersey*, filed August, 1980 and the *Final Supplemental Environmental Impact Statement (FSEIS) for the Proposed Plan for the Green Brook Flood Control in the Green Brook Sub-Basin, Somerset, Middlesex and Union Counties, New Jersey*, filed in May 1997.

The District has completed an Environmental Assessment (EA) according to the requirements of the National Environmental Policy Act (NEPA) in order to evaluate the potential impacts to environmental, cultural and socio-economic resources associated with the proposed action. The Environmental Assessment with this Finding of No Significant Impact (FONSI) was prepared as an update to the 1997 FSEIS and to incorporate the emergency access lane into the assessment.

No significant impacts to the environment are anticipated. My determination of a FONSI is based on the Environmental Assessment and the following considerations:

- The project will not negatively impact the quality of the human environment. The bridge will be tested for lead paint prior to its removal and appropriate protocols for removal and disposal will be followed should testing indicate the presence of lead-based paint.
- The project is not expected to have significant long-term impact on endangered, threatened or special concern State and Federal species.
- Implementation of a vegetation removal restriction window of 15 March through 31 July to comply with the Migratory Bird Treaty Act and 1 April through 30 September to protect the Indiana bat, a federally endangered species and the northern long-eared bat, a proposed federally endangered species.
- Employing standard erosion control techniques during bridge removal will minimize excess sedimentation to the Green Brook.
- No wetlands will be impacted by the bridge removal or installation of the emergency access lane at the Green Brook Middle School.

- No known archaeological or historical resources will be affected by this project.
- The project will not adversely impact air quality.

Based on my review and evaluation of the environmental, cultural resource and socio-economic effects as presented in the Environmental Assessment, I have determined that the proposed project is not a major Federal action significantly affecting the quality of the human environment. I have reviewed the proposed action in terms of overall public interest and have found the proposed action does not warrant the preparation of an environmental impact statement.

Date

Paul E. Owen
Colonel, U.S. Army
Commander