8. Attachments

8.1. Attachment A FTA Environmental Documentation

8.1.1. Attachment A-1 FTA FONSI, July 17, 2017 (including the executed Section 106 Memorandum of Agreement)

8.1.2. Attachment A-2 FTA Determination, September 19, 2019
FTA Environmental Re-evaluation Consultation Worksheet, July 2019

8.1.3. Attachment A-3 FTA Determination, March 12, 2021
FTA Environmental Re-evaluation Consultation Worksheet, February 2021

8.1.4. Attachment A-4 FTA Determination, June 15, 2021
CTDOT and FTA Correspondence, May – June 2021

8.2. Attachment B Summary Table of Project Mitigation Measures

8.3. Attachment C Summary Table of Project Benefits

8.4. Attachment D FRA Request

8.5. Attachment E Section 4(f) Findings

8.6. Attachment F List of Federal and State Permits and Approvals

8.7. Attachment G Coordination and Consultation

Attachment A FTA Environmental Documentation

A-1 FTA FONSI, July 17, 2017
(including the executed Section 106 Memorandum of Agreement)

A-2 FTA Determination, September 19, 2019
FTA Environmental Re-evaluation Consultation Worksheet, July 2019

A-3 FTA Determination, March 12, 2021
FTA Environmental Re-evaluation Consultation Worksheet, February 2021

A-4 FTA Determination, June 15, 2021
CTDOT and FTA Correspondence, May – June 2021

Attachment A-1 FTA FONSI, July 17, 2017

Including executed Section 106 Memorandum of Agreement

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION I
Connecticut, Maine,
Massachusetts,
New Hampshire,
Rhode Island, Vermont

Volpe Center
55 Broadway, Suite 920
Cambridge, MA 02142-1093
617-494-2055
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July 17, 2017

Mr. James Redeker
Commissioner
Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, Connecticut 06131-7546

**Re: Norwalk River Railroad Bridge Replacement - Environmental Assessment
Finding of No Significant Impact**

Dear Mr. Redeker:

Based upon a review of environmental documentation submitted by the Connecticut Department of Transportation (CTDOT), the Federal Transit Administration (FTA) has issued a Finding of No Significant Impact (FONSI) for the Norwalk River Railroad Bridge Replacement (Walk Bridge) project (attached). The purpose of this project is to replace the existing deteriorated bridge with a resilient bridge structure which will enhance the safety and reliability of rail service; offer operational flexibility and ease of maintenance; and provide for increased capacity and efficiencies of rail transportation along the New Haven Line/Northeast Corridor while maintaining or improving navigational capacity and dependability for marine traffic in the Norwalk River. With the issuance of this FONSI, CTDOT has complied with the National Environmental Policy Act (NEPA) for improvements for this project defined in the Environmental Assessment.

In addition, in accordance with Section 106 of the National Historic Preservation Act, the FTA, in consultation with the Connecticut State Historic Preservation Office, has determined that an adverse effect exists for this project. A Memorandum of Agreement (MOA) has been executed which identifies mitigation measures. Additionally, we have reviewed the Section 4(f) evaluation incorporated into the Walk Bridge Environmental Assessment and determined that there are no reasonable and prudent alternatives to the use of Section 4(f) protected properties that meet the project Purpose and Need, and all possible planning has been done to minimize harm.

Please be advised that in accordance with 23 CFR 771.121, CTDOT is required to transmit a notice of availability of this FONSI to all affected Federal, State and Local governmental entities; FTA further requests that it be posted on the project website. Please also note that the standard terms and conditions of the FTA's federal grant contracts applicable to the project require CTDOT to undertake any mitigation actions as identified in the FONSI and the Environmental Assessment.

This determination applies only to the proposed project as described in the aforementioned correspondence and supporting materials. Any changes to the proposed project not outlined in this documentation, including the disclosure of new information or previously unidentified environmental concerns, may require re-evaluation of this action.

This FONSI does not provide FTA commitment that future Federal funds will be approved for this proposed

project. Any costs incurred under FTA pre-award authority must meet all Federal requirements prior to those costs being incurred in order to retain eligibility of those costs for future FTA grant assistance.

Thank you for your cooperation in meeting the requirements of the National Environmental Policy Act. We appreciate your efforts in advancing this important transit project.

Sincerely,

Mary Beth Mello

Mary Beth Mello,
Regional Administrator

Attachment

FEDERAL TRANSIT ADMINISTRATION
REGION 1

Finding of No Significant Impact

Project: Walk Bridge Replacement Project
Bridge No. 04288R, State Project No. 0301-0176

Applicant: Connecticut Department of Transportation

Project Location: Norwalk, CT

Description of Project

Summary Description
Through federal assistance provided by the Federal Transit Administration (FTA), the Connecticut Department of Transportation (CTDOT) will replace the New Haven Line railroad bridge over the Norwalk River (the Walk Bridge – Bridge No. 04288R) in Norwalk, Connecticut with a new movable vertical lift bridge. The project will consist of removing the existing bridge structure and replacing it with two side-by-side 240-foot open-deck through truss vertical lift spans across the Norwalk River, each with separate mechanical and electrical equipment and controls so that each span can work independently of the other, or in unison with the other. The vertical lift bridge will provide approximately 170 feet of horizontal navigation clearance, approximately 25 feet of vertical clearance in the span-closed position, and a minimum of 60 feet of vertical clearance when the lift span is fully raised. The vertical clearance when the span is in the fully-raised position will match the vertical clearance, as posted in the National Oceanic and Atmospheric Administration (NOAA) Nautical Charts, of the I-95 crossing of the Norwalk River (Yankee Doodle Bridge), which is located approximately 3,300 feet upstream of Walk Bridge. To achieve a minimum of 60 feet of vertical clearance at mean high water, the lift span will be raised approximately 35 feet from its span down position. The total clear width of the lift span superstructure, including both trusses, will be approximately 70 feet. Construction of the selected Preferred Alternative, Option 11C of the Movable Bridge Replacement Alternative, also will include the installation of a new fender system.

Dredging of approximately 4,900 cubic yards of sediment will be required to remove accumulated sediments at the pivot pier and rest piers of the existing bridge. These portions of the river that are not maintained as part of the federal channel will be dredged to match the federal channel depth of ten feet and to tie into the existing 125-foot navigation channel, thereby making the horizontal opening of the new bridge fully navigable. The widened channel will improve the bridge's alignment with the Stroffolino Bridge, which is located approximately 500 feet downstream of Walk Bridge.

In addition to the vertical lift span replacement bridge over the Norwalk River, the Walk Bridge Replacement Project will include other improvements along the New Haven Line (NHL) and within the project vicinity. About one-half-mile of track, overhead catenary and supports, and signal work will be replaced, from approximately the Washington Street Bridge in South Norwalk to approximately 300 feet east of the Fort Point Street Bridge in East Norwalk. The railroad bridge over Fort Point Street will be replaced as part of the project to accommodate the new track alignment on the Walk Bridge. Additionally, the eastern abutment of the existing Walk Bridge will be retained and partially lowered to support an extension of the Harbor Loop Trail to areas south of the bridge.

The Walk Bridge Replacement Project Environmental Assessment and Section 4(f) Evaluation and Environmental Impact Evaluation (EA/EIE), Volumes 1 and 2 (August 2016), was prepared in accordance

with the National Environmental Policy Act (NEPA), 42 U.S.C. §4321 *et. seq.*; NEPA's implementing regulations, 40 CFR Part 1500 *et. seq.*; and FTA's regulations, "Environmental Impact and Related Procedures" (Federal Highway Administration and FTA, 23 CFR Part 771. Additionally, the EA/EIE was prepared in accordance with the Connecticut Environmental Policy Act (CEPA), Connecticut General Statutes (CGS) Sections 22a-1a through 22-1h. The Errata to the EA/EIE is included as Appendix 1.

Background

Walk Bridge is a critical transportation link on the Northeast Corridor (NEC), extending from Washington, D.C. to Boston, Massachusetts. Walk Bridge carries four tracks of Metro-North Railroad commuter railroad service, Amtrak inter-city passenger rail service, and freight service. The project is being conducted to address multiple deficiencies (needs) of the existing bridge. The existing bridge is approximately 120 years old and has deteriorated; both section loss (loss of original structural material) due to corrosion has been observed and cumulative fatigue damage (damage due to repetitive train loadings) of the main load carrying elements of the bridge has occurred. The existing bridge is increasingly unreliable. In 2011, Walk Bridge failed 12 times out of 138 openings, and in 2013, the bridge failed 16 times out of 271 openings. Failure means that the bridge fails to open or close properly in a timely manner. Failures have occurred in both the opened and closed positions. Without action to rehabilitate or replace the bridge, failures are expected to increase. The existing bridge is not designed to current standards for flooding events or storm events. In its current condition, the bridge is highly vulnerable to damage from a storm surge or high wind event, and it is also at risk for malfunction due to extreme temperatures. The bridge also does not meet current standards regarding its ability to withstand the magnitude of seismic forces and frequency of seismic events for this geographic area. The existing bridge does not meet current design standards which reflect improved safety aspects compared to when the bridge was originally designed and built. The existing bridge is not sustainable, as continued deterioration will cause bridge failures.

The project will be financed with state and federal funds. On January 29, 2013, the Disaster Relief Appropriations Act of 2013 (PL113-2) made funds available for public transportation systems impacted by Hurricane Sandy. On December 26, 2013, FTA announced the availability of funds from the Public Transportation Emergency Relief Program and the Disaster Relief Appropriations Act for projects that will reduce the risk of damage from future disasters in the areas impacted by Hurricane Sandy (78 FR 78486). On November 5, 2014, USDOT and FTA announced that the Walk Bridge Replacement Project would be allocated funds through the Act (79 FR 65762). The Preferred Alternative (Option 11C of the Movable Bridge Replacement Alternative) is entirely consistent with the intent of the Act and demonstrated needs of the infrastructure. The resiliency funds are being used to support the development of a critical and resilient infrastructure project on the New Haven Line/Northeast Corridor (NHL/NEC).

CTDOT is utilizing the innovative Construction Manager/General Contractor (CM/GC) project delivery method for the Walk Bridge Program. With the CM/GC process, the contractor acts as Construction Manager during design and advises CTDOT on schedule, phasing, constructability, materials availability, risk, and cost. This integrated team approach of involving the Contractor early in the project adds value by reducing construction duration, reducing impacts, improving construction sequencing, and reducing risk. The EA has sufficiently defined the nature and general elements of the project for the purposes of NEPA review and demonstrated that the project's environmental impacts are not significant. No further NEPA review is required. If additional mitigation measures are identified during the federal and state permitting process, as project design advances, CTDOT will carry out the project in accordance with all conditions and mitigation specified in the associated permits.

Purpose and Need

CTDOT worked closely with FTA, as well as other federal and state agencies and the City of Norwalk, in developing the Purpose and Need Statement for the project:

> The project Purpose and Need is to restore or replace the existing deteriorated bridge with a resilient bridge structure which will enhance the safety and reliability of rail service; offer operational flexibility and ease of maintenance; and provide for increased capacity and efficiencies of rail transportation along the New Haven Line/Northeast Corridor (NHL/NEC), while maintaining or improving navigational capacity and dependability for marine traffic in the Norwalk River. Upgrades to the Walk Bridge, through rehabilitation or replacement, are needed to increase bridge reliability, incorporate bridge redundancy, and provide a sustainable bridge for significant weather events, thereby accommodating current and future rail and marine traffic.

The Purpose and Need of the Walk Bridge Replacement Project incorporates multiple objectives. The Purpose and Need statement incorporates the primary purpose of the project: to rectify the deficiencies of the existing bridge, including its age and deterioration, decreasing reliability, safety standards, and difficulty of maintenance. It incorporates federal and state transportation goals for the NHL/NEC, including those enumerated by the NEC Commission and CTDOT. By improving the bridge's operational flexibility, enhancing the safety and reliability of rail service, and providing for increased efficiencies of rail transportation along the NHL/NEC, the project will advance policies and goals established in federal, state, regional, and local transportation plans. The project Purpose and Need statement incorporates the legislative intent of the Transportation Emergency Relief Program, by including bridge redundancy and sustainability as priority project elements. It also incorporates a secondary purpose of the project: to maintain or improve the navigational capacity in the Norwalk River, which is consistent with federal legislation and which advances the policies, plans, and goals of federal, state, and local agencies, including the water-dependent use policies of the Connecticut Coastal Management Act, as implemented by the Connecticut Department of Energy and Environmental Protection (CTDEEP), and the Norwalk Harbor Management Plan.

Alternatives Considered

Four groups of alternatives were identified by CTDOT and considered in the EA/EIE:

1. No Build (No Action) Alternative: continuing the existing operations and maintenance of the historic swing (movable) bridge;

2. Rehabilitation Alternative: rehabilitating the existing bridge to extend its useful life by 100 years, a timeframe comparable to the useful life of a new bridge;

3. Movable Bridge Replacement Alternative: constructing a new movable bridge, of either the bascule type or vertical lift type, on the same general alignment, and demolishing the existing bridge;

4. Fixed Bridge Replacement Alternative: constructing a new fixed (non-movable) bridge on the same or a different general alignment and demolishing the existing bridge. Three options were initially considered in the conceptual design screening process, consisting of a low-level replacement option, a mid-level replacement option, and a high-level replacement option. To address comments received on the EA/EIE, a fourth Fixed Bridge option was considered at the conceptual design level, consisting of a low-level rehabilitation option.

Multiple parameters were considered in the development and evaluation of alternatives and design options, including: horizontal and vertical navigation clearances; span length; pier locations; bridge aesthetics, including historic considerations; resiliency and redundancy; constructability; rail, marine, and local impacts during construction; and cost, including initial costs and life cycle costs; and environmental

impacts. More than 70 different design variations within the four groups of alternatives were initially investigated to identify representative options that consider these parameters and meet the project Purpose and Need.

After thorough consideration and analysis, neither the Rehabilitation Alternative nor any of the options of the Fixed Bridge Replacement Alternative were advanced for further evaluation beyond the initial screening process. The Rehabilitation Alternative would not meet the project Purpose and Need, primarily the resiliency and redundancy needs, which are very important given the long-term climate change predictions, including higher sea levels and storm surge flooding, greater storm intensities, and temperature extremes. The Rehabilitation Alternative would not meet other identified project needs such as incorporating updated safety standards and improving maintenance logistics. To strengthen the existing bridge while continuing to maintain rail service, the Rehabilitation Alternative would require construction of a temporary, two-track runaround bridge. As a result, the construction duration of the Rehabilitation Alternative is estimated to be 52-64 months, as opposed to an estimated construction duration of 40 months for the Preferred Alternative. Further, by using a temporary runaround track, the Rehabilitation Alternative would be more complicated and would have a larger construction footprint than the Preferred Alternative. Consequently, the Rehabilitation Alternative would create more rail and marine transportation impacts during construction. While the proposed construction costs of the Rehabilitation Alternative are comparable to the Preferred Alternative, due to the advanced age of the existing bridge and the anticipated need to perform large-scale retrofits in the near term, the annual life cycle costs of the Rehabilitation Alternative would be more than double those of the Preferred Alternative. Relative to project needs, construction schedule, footprint, impacts, and risk, the Rehabilitation Alternative does not compare favorably with the Preferred Alternative. Neither the low-level Fixed Bridge option nor the mid-level Fixed Bridge option would fully meet the project Purpose and Need. While the high-level Fixed-Bridge option would comply with the project Purpose and Need, this option also would result in the greatest impacts regarding cost, schedule, rail traffic, and environmental resources. Both the mid-level and high-level Fixed Bridge options would result in an extended construction period and would require extensive reconstruction of the NHL mainline. Both options would introduce additional construction risk and create further environmental impacts, including substantial impacts to adjacent properties.

The No Build Alternative was not advanced for further evaluation because it would not meet the project Purpose and Need. However, the EA/EIE includes the No Build Alternative as a baseline condition for comparison purposes; the No Build Alternative represents the transportation conditions that would exist if no actions other than normal maintenance of the bridge were conducted.

Project Needs/ Existing Bridge Deficiencies	Low-Level Fixed-Replace	Low-Level Fixed-Rehab	Mid-Level Fixed	High-Level Fixed	Pref. Alt. (Option 11C)
Structure Age and Deterioration	✓	⊙	✓	✓	✓
Decreasing Reliability	✓	×	✓	✓	✓
Lack of Resiliency	✓	⊙	✓	✓	✓
Safety Standards	✓	×	✓	✓	✓
Lack of Redundancy (dual spans)	✓	×	✓	✓	✓
Limited Operational Flexibility	✓	×	✓	✓	✓
Difficulty of Maintenance	✓	×	✓	✓	✓
Reduced Rail Capacity & Efficiency	✓	×	✓	✓	✓
Reduced Dependability & Capacity for Marine Traffic	×	×	×	✓	✓
Lack of Sustainability	✓	×	✓	✓	✓

✓ Indicates that this project need/existing bridge deficiency would be met by the option.
⊙ Indicates that this project need/existing bridge deficiency would not be fully met by the option.
× Indicates that this project need /existing bridge deficiency would not be met by the option.

The Movable Bridge Replacement Alternative and the high-level Fixed Bridge are the only alternatives that fully meet the project Purpose and Need. However, the high-level Fixed Bridge would have the greatest impacts while the Movable Bridge Replacement Alternative results in the least environmental impact, including rail, marine, and community impacts. Therefore, the Movable Bridge Replacement Alternative was advanced for further evaluation in the EA/EIE.

Three options of the Movable Bridge Replacement Alternative (the Build Alternative) were evaluated in the EA/EIE:

- Bascule Bridge (Option 4S), consisting of two side by side single-leaf rolling lift bascule spans, across the Norwalk River. Option 4S would provide a vertical clearance of approximately 27 feet above mean high water (MHW) when the movable span is in the closed position, a vertical clearance of at least 60 feet when the movable span is in the opened position, and a horizontal clearance of at least 120 feet. Based on conceptual design, the estimated construction duration of Option 4S would be 47 months.

- Vertical Lift Bridge, Short Span (Option 8A), consisting of two side by side vertical lift spans across the Norwalk River. Option 8A would provide a vertical clearance of approximately 27 feet when the movable span is in the closed position, and a vertical clearance of at least 60 feet when the movable span is in the opened position. With a 170-foot open deck through-truss lift span, Option 8A would provide a horizontal clearance of at least 120 feet. The tower heights would be determined in final design, and would range between 100 and 150 feet above the top of the support piers. Based on conceptual design, the estimated construction duration of Option 8A would be 44 months.

- Vertical Lift Bridge, Long Span (Option 11C), consisting of two side by side vertical lift spans across the Norwalk River. Option 11C would provide a vertical clearance of approximately 27 feet when the movable span is in the closed position, and a vertical clearance of at least 60 feet when the movable span is in the opened position. With a 240-foot open deck through-truss lift span, Option 11C would provide a horizontal clearance of at least 200 feet. The tower heights would be determined in final

design, and would range between 100 and 150 feet above the top of the support piers. Based on conceptual design, the estimated construction duration of Option 11C would be 40 months.

CTDOT determined that Option 11C, a long-span vertical lift bridge, is the Preferred Alternative. Option 11C will provide the most favorable balance of cost, operational redundancy, long-term reliability, and potential disruption. It will have the shortest construction duration, which will result in the least disruption to rail traffic on the NHL/NEC, the least disruption to marine traffic on the Norwalk River, and the least environmental impacts, including community disruption. In sum, it will require the shortest overall time from the start of Walk Bridge construction to restoration of four-track service and full operation capability for marine traffic.

Summary of Public Involvement and Agency Coordination

Public involvement and agency coordination for the Walk Bridge Replacement Project EA/EIE were conducted in accordance with NEPA and CEPA. Agency coordination and public involvement occurred during the CEPA public scoping process for the EA/EIE, during the preparation of the EA/EIE, and during and after the EA/EIE public review period.

Preparation of the Walk Bridge Replacement Project EA/EIE involved coordination with Federal and State agencies, the City of Norwalk, and other key stakeholders. A description of public involvement and agency coordination through the publication of the EA/EIE (August 2016) is provided in the EA/EIE (Chapter 8).

The following is a list of public involvement activities and stakeholder meetings conducted during the preparation of the EA/EIE:

EA/EIE Preparation Public Involvement/Stakeholder Meeting	Date
CEPA Public Scoping Session	February 24, 2015
First Design Charrette with Local Historic Stakeholders	August 13, 2015
Stakeholder Meeting for the Maritime Aquarium	October 13, 2015
Norwalk Seaport Association Meeting	November 18, 2015
Stakeholder Meeting for the Maritime Aquarium	November 19, 2015
Public Outreach Meeting	November 20, 2015
Project Partnering Workshop	December 2-3, 2015
Walk Bridge Stakeholders Meeting	February 8, 2016
Second Design Charrette with Local Historic Stakeholders	February 24, 2016
Rowers' Meeting	March 23, 2016
Upstream Businesses Coordination Meeting	May 3, 2016
Public Information Meeting	May 11, 2016
Project Partnering Workshop	June 23, 2016
Meeting with Legislators/City of Norwalk	July 14, 2106
Project Open House	August 16, 2016

A Notice of Availability for the Walk Bridge Replacement Project EA/EIE was published in the Connecticut Council on Environmental Quality *Environmental Monitor* and made available to the public on September 6, 2016. Additionally, the Notice was published in *The Norwalk Hour* on September 6 and September 14, 2016; in *El Sol News* (a weekly publication) on September 9, 2016 and October 7, 2016; and in *The Haitian Voice* online (www.haitianvoice.com) starting on September 11, 2016.

The EA/EIE was made available for public review at the following locations:

- The Connecticut Department of Transportation Bureau of Policy and Planning (Room 2155), 2800 Berlin Turnpike, Newington, CT;
- Norwalk City Hall, Town Clerk Office, 125 East Avenue, Norwalk, CT;
- Norwalk Public Library, 1 Belden Avenue, Norwalk, CT;
- East Norwalk Association Library, 51 Van Zant Street, Norwalk, CT;
- South Norwalk Branch Library, 10 Washington Street, Norwalk, CT; and
- Western Connecticut Council of Governments, 888 Washington Boulevard, Stamford, CT.

The EA/EIE was made available online via the project website and the CTDOT website as follows:

- www.walkbridgect.com/environmental;
- www.ct.gov/environmentaldocuments.

Additionally, a link to the EA/EIE on the project website was forwarded to federal, state, and local agencies; to interested parties; and to Cooperating and Participating Agencies.

The public review period, initially scheduled from September 6, 2016 through October 21, 2016, with a public hearing date of October 6, 2016, was extended through December 9, 2016 with a public hearing date of November 17, 2016. CTDOT extended the public comment period and rescheduled the public hearing date at the request of the City of Norwalk to allow additional time for the City and stakeholders to review the EA/EIE. In accordance with CEPA, CTDOT issued subsequent Notices in the *Environmental Monitor* on October 5, 2016 and November 28, 2016 to advise of a revision in the date of the public hearing and extension of the public review period. Additionally, revised legal notices were published in *The Norwalk Hour* (on October 5, 11, 18, 2016; November 15, 2016; and December 2 and 5, 2016); in *El Sol News* (on October 14, 2016); and in *The Haitian Voice* (a monthly publication) in October 2016 and online (from October 27, 2016 through November 17, 2016).

A public hearing was held at Norwalk City Hall (Concert Hall), 125 East Avenue, Norwalk, CT, on November 17, 2016. An open forum was held at 6:00 pm, followed by a brief presentation at 7:00 pm, and a public response period, from approximately 7:30 pm until 9:45 pm.

Written comments on the EA/EIE were received from seven state and local elected officials, five federal agencies, three state agencies, 13 municipal agencies and/or departments, 15 non-governmental organizations, 27 individuals, and 12 businesses. Additionally, 21 individuals, consisting of elected officials, City employees, organization and business representatives, and the public, provided testimony at the public hearing. In sum, CTDOT identified 593 individual comments received on the EA/EIE.

Many of the comments received on the EA/EIE addressed common themes. Of the total number of comments, over 100 comments addressed potential construction-period impacts, including potential socio-economic, transportation/traffic, air quality, and noise and vibration impacts. Approximately 80 comments were related to alternatives that were not further evaluated in the EA/EIE, including rehabilitation of the existing bridge and a fixed-bridge alternative. Over 80 comments addressed visual impacts and/or historic mitigation associated with the loss of the existing bridge. Slightly less than 80 comments focused on navigation, marine transportation, and/or existing and future water-dependent uses. Other frequent comments addressed water quality and aquatic resources, property acquisition, and the NEPA/CEPA process.

CTDOT identified and responded to all written and oral comments received on the EA/EIE. These comments and the CTDOT's responses to comments were compiled and formally submitted by CTDOT to FTA together with other materials supporting the EA/EIE on July 10, 2017 and they have been incorporated into this Finding of No Significant Impact by reference. The response to comments includes a table of

responses to individual comments as well as Issue Papers, which address five frequently made comments that were received during the public review period. The Issue Papers consist of detailed information on topics in the EA/EIE that have been further explained to include background data and additional information, with references to the specific EA/EIE chapters and sections as appropriate.

Following the public hearing on November 17, 2016, CTDOT conducted additional public involvement activities. CTDOT held a public information meeting on December 5, 2016 at the Maritime Aquarium IMAX Theater, 10 North Water Street, Norwalk. The purpose of the meeting was to provide attendees with additional information on how design alternatives for the replacement of the Walk Bridge were narrowed down and the criteria used to shape the selection of appropriate structure types that were evaluated in the EA/EIE. An open forum was held at 6:00 pm, followed by a presentation at 6:30 pm, and a question and answer period. The public information meeting was advertised at the November 17, 2016 public hearing and through the project website. CTDOT conducted meetings with the City of Norwalk and other key stakeholders to review EA/EIE comments, held from December 2016 through March 2017. In May 2017, CTDOT conducted a third Charrette with local historic stakeholders to review the mitigation measures for the Memorandum of Agreement (MOA), as a follow-up to the two previously-held design Charrettes.

The following is a list of public and stakeholder meetings and activities conducted after the November 17, 2016 public hearing for review of the EA/EIE:

EA/EIE Review Public Involvement/Stakeholder Meeting	Date
Public Information Meeting	December 5, 2016
Norwalk Economic Development Department	December 20, 2016
Norwalk Redevelopment Agency	December 20, 2016
Norwalk Harbor Management Commission	December 20, 2016
Norwalk Planning and Zoning Department	January 6, 2017
Norwalk Department of Public Works	January 6, 2017
Maritime Aquarium at Norwalk	January 9, 2017
Norwalk Historical Commission	January 9, 2017
Norwalk Arts Commission	January 9, 2017
Norwalk Common Council	January 19, 2017
Spinnaker Real Estate Partners, Inc.	January 26, 2017
Mayor's Bike/Walk Task Force	January 30, 2017
Norwalk River Valley Trail Committee	January 30, 2017
Norwalk Upstream Businesses	January 30, 2017
Norwalk Parking Authority	March 6, 2017
Norwalk Third Taxing District	March 6, 2017
Third Charrette with Local Historic Stakeholders	May 10, 2017

All comments received have been reviewed and responded to as documented in the compiled Walk Bridge Replacement Project EA/EIE Review Comments and Responses to Comments submitted by CTDOT to FTA on July 10, 2017. As a result of the comments, an Errata table with corrective revisions to the EA/EIE was developed (Appendix 1). There were no changes that alter the environmental impact information and determinations made in the original EA/EIE.

Summary of Environmental Impacts and Mitigation

The replacement of Walk Bridge will be a sustainable project; it will contribute to the long-term cultural, economic, and environmental health and vitality of the community and the NEC. Constructing a

replacement bridge over an active waterway in a densely developed urban area, while continuing to maintain train service on the NEC, will result in unavoidable adverse community impacts during project construction. These impacts are unavoidable regardless of the selected Build alternative. As the Preferred Alternative, CTDOT has selected a replacement bridge that will have the shortest construction duration and therefore will minimize impacts to intercity and intracity rail users and maritime traffic to the greatest extent practicable. Further, CTDOT has incorporated mitigation measures into the project to avoid, minimize, rectify, reduce, or compensate for potentially significant adverse environmental impacts. CTDOT will use FTA's Project Management Plan to track mitigation plans and permit conditions, as developed in final design, to which CTDOT has committed, working in coordination with the City of Norwalk, the local community, and regulatory agencies.

Mitigation Measures to Minimize Harm

The mitigation measures and other features of the project that reduce environmental impacts, to which the FTA and the CTDOT have committed to in the EA/EIE and FONSI, are included in a summary table of the environmental impacts and mitigation measures incorporated in Appendix 2-1 of the FONSI. CTDOT will implement the mitigation measures described in the EA and in this FONSI. The CTDOT will design and incorporate into the project the mitigation measures presented in the EA and this FONSI. The FTA will require in any grant documents for the Project that it be built in a manner consistent with that described in the EA and that all committed mitigation be implemented in accordance with the EA and this FONSI. FTA will require CTDOT to periodically submit written reports on its progress in implementing the mitigation commitments. FTA will monitor this progress through quarterly reviews of the project's progress.

Federal Uniform Relocation Act Compliance

The Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended, and its implementing regulations, 49 CFR 24, ensure the fair and equitable treatment of persons whose real property is acquired or who are displaced as a result of a Federal or Federally-assisted project.

The Corridor Preservation Exemption (CPE), 49 USC 5323(q), authorizes FTA under certain conditions to assist in the acquisition of ROW before the completion of the NEPA environmental review process for transit projects that eventually will use the ROW. The replacement of Walk Bridge and track, catenary, and signal improvements will occur within the existing state ROW. To the greatest extent possible, the Project will be located on an alignment that matches the alignment of the existing bridge. Minor shifts in alignment that may be necessary to meet geometric requirements will be accomplished within the existing ROW.

It is anticipated that the Project, as currently designed, will require acquisition of property, both for construction and operation. The EA, Table 3-5, identifies 23 parcels proposed for use in constructing and maintaining the Build Alternative. Required parcels include the following: two existing CTDOT owned parcels; one existing CTDOT easement and expansion of that easement; nine full-parcel acquisitions; and 11 full-parcel and partial-parcel temporary easements. CTDOT will require the parcels for laydown areas for the temporary storage of construction equipment and supplies, contractor assembly and staging of equipment, contractor access to the Norwalk River and streets for transport of equipment and materials, contractor access to the railroad ROW, and dredged/excavated sediment temporary storage and management. The EA, Table 3-5, presents the existing uses of the acquisition and easement parcels and the uses that will be displaced by the project. Section 5.3.4 of the EA discusses the temporary easements and temporarily displaced uses required for the project. As design progresses, property impacts, including parcel acquisitions and temporary and permanent easements, will continue to be refined. To the greatest extent possible, CTDOT will strive to minimize impacts.

CTDOT will provide monetary and other relocation assistance to displaced property owners in accordance with the procedures outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies

Act of 1970 and Connecticut's Uniform Relocation Assistance Act. Relocation assistance could include relocation services, moving payments, replacement housing payments, and other payments related to commercial and residential moving costs and displacement, and assistance regarding availability and rental costs of comparable dwellings and suitable business replacement properties. It is anticipated that suitable relocation sites are available in the project vicinity for the displaced residences and businesses. CTDOT will develop an implementation plan to address the details of relocation assistance to be provided to displaced property owners. In accordance with Federal and State guidelines, the CTDOT will pay fair market value for all parcels in private ownership that need to be acquired. In the case of certain property in public ownership, consistent with 23 CFR 710.509, CTDOT will offer and provide functional replacement to the City of Norwalk and specifically, to its Tenant, The Maritime Aquarium at Norwalk, Inc., for anticipated Project impacts to the Aquarium property.

Determinations and Findings

Section 106 Compliance
Section 106 of the National Historic Preservation Act of 1966, as amended, requires the review of federally assisted projects for impacts to districts, sites, buildings, structures, and objects listed in or eligible for inclusion in the National Register of Historic Places. Federal agencies must coordinate with the State Historic Preservation Office (SHPO) and potentially affected Tribes to make this determination. The Advisory Council on Historic Preservation (ACHP) has established procedures for the protection of historic and cultural properties in or eligible for the National Register, pursuant to 36 CFR 800.

In a letter dated October 12, 2016, the Connecticut SHPO (CTSHPO) concurred with FTA that the Walk Bridge Replacement Project will constitute an adverse effect to historic properties; including the National Register-listed Norwalk River Railroad Bridge (No. 04288R, Walk Bridge), and lattice high towers, catenary support structures, masonry retaining walls, and Fort Point Street Bridge, which are deemed to be eligible for the National Register as contributing elements to a linear historic district. CTSHPO requested that CTDOT delay finalizing the mitigation efforts for the project until the public was given additional opportunity to comment on the project's draft Memorandum of Agreement (MOA), included in the EA/EIE as Appendix 1.

Based upon recommendations from local historic stakeholders received during the EA/EIE public review period, and in consultation with CTSHPO, FTA and CTDOT finalized the mitigation measures for the adverse impact to historic properties in the MOA. To address known and potential areas of archaeological sensitivity, the MOA includes an Archaeological Treatment Plan (Appendix A).

In accordance with 36 CFR 800.6, the MOA was finalized and signed by FTA, CTDOT, CTSHPO as signatory parties, and the Tribal Historic Preservation Officer (THPO) of the Mashantucket Pequot Tribal Nation, THPO of the Mohegan Tribe of Indians of Connecticut, Norwalk Historical Commission, Norwalk Historical Society, Norwalk Preservation Trust, and SONO Switch Tower Museum were invited to sign as concurring parties. The final MOA is included as Appendix 2-2.

Section 4(f) Findings
Section 4(f) of the Department of Transportation Act of 1966, codified at 23 U.S.C. §138 and 49 U.S.C. §303, articulates a National policy affirming that a special effort shall be made to preserve the natural beauty of the countryside, public park and recreational lands, wildlife and waterfowl refuges, and historic sites. Pursuant to 23 CFR 774.3, the Secretary of Transportation may not approve transportation projects that require use of such resources unless a determination is made that there is no feasible and prudent alternative,

and that all possible planning has been done to minimize harm to Section 4(f) land(s) resulting from such use.

In a letter dated November 17, 2016, the U.S. Department of the Interior (USDOI) concurred with FTA that there is no prudent and feasible alternative to the use of Section 4(f) lands, which consist of the existing bridge, high electric towers, catenary support structures, stone retaining walls, Fort Point Street Railroad Bridge, and the Industrial Buildings historic district, all eligible for or listed on the National Register of Historic Places. USDOI advised that the measures to minimize harm must be explicitly consistent with the MOA.

FTA has concurred that exceptions to Section 4(f) use are applicable to the following: 1) temporary construction-related impacts that will occur to the Norwalk River Valley Trail (NRVT) on the east side and west side of the Norwalk River, pursuant to 23 CFR 774.13(d); and 2) project mitigation that will require the creation and/or restoration of wetlands within City of Norwalk parks near the project area, pursuant to 23 CFR 774.13(g)(1). On May 31, 2017, the City of Norwalk concurred with documentation from CTDOT that the temporary impacts to the NRVT and the use of selected City parks for wetland mitigation for the project qualify as exceptions to Section 4(f) under 23 CFR 774.13(g)(2).

Floodplains

CTDOT evaluated potential impacts to floodplains as a result of the Walk Bridge Replacement Project, in accordance with Connecticut's statutory and regulatory requirements for Floodplain Management for State Agencies, and Executive Order 11988, Floodplain Management, as amended by Executive Order 13690, Establishing a Federal Flood Risk Management Standard. Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Permanent beneficial impacts to the floodplain are anticipated from the removal of the existing bridge and replacement with the new bridge. The proposed hydraulic opening is anticipated to lessen hydraulic constraints and reduce upstream flooding. The project will decrease hydraulic constraints and reduce upstream flooding due to the increased hydraulic opening. The project will increase the flood storage volume of the Norwalk River due to removal of the existing large granite pivot pier and rest piers. Floodplain impacts would result in approximately 19,500 sf of impacts with the Vertical Lift Bridge. However, it is anticipated that flood storage loss will be negligible relative to the overall coastal floodplain.

Based upon the hydraulic improvements anticipated with the project, no mitigation is proposed. As stipulated in EO 11988, and in accordance with Section 404 of the Clean Water Act and CT Flood Management regulations, work proposed in the floodplain will be conducted with every effort to minimize any adverse effects, including flood storage loss and flood path obstruction. CTDOT will analyze both the temporary and permanent conditions to assess floodplain effects in compliance with Connecticut and FEMA floodplain management standards and criteria; if needed, CTDOT will take steps to mitigate effects. As part of permitting for the project, CTDOT will apply for a Section 404 permit from the US Army Corps of Engineers and all work will be conducted in accordance with the permit.

Air Quality Conformity

Since the Walk Bridge Replacement Project involves rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way and will not involve any change in service, the project is exempt from federal conformity requirements under 40 CFR 93.126. Therefore, the Build Alternative (applicable to all three Build options) will not have a measurable effect on air quality and no detailed analysis is required.

Noise and Vibration Findings

Potential noise impacts from the Project were assessed using FTA's noise and vibration impact criteria, following FTA's Transit Noise and Vibration Impact Assessment guidance manual which provides background information on transit noise and vibration, establishes and presents methodologies for assessing noise and vibration impacts. The detailed noise analysis procedures presented in the FTA manual were used to determine the potential change in Leq noise levels at the Maritime Aquarium at Norwalk and the potential Ldn noise level changes at residential areas abutting the area of the Build Alternative between the Norwalk River and the eastern terminus of the project. The Build Alternative would not increase operations and the operating speeds will remain similar to existing operations due to the presence of the bridge and the adjacent South Norwalk station. The Ldn noise levels for the residences in the vicinity of the project site would not change for the Vertical Lift Bridge. With no projected increases in operations, the vibration levels adjacent to the project area would not increase in any of the Build Alternative options.

Based on the analysis, FTA finds that the proposed Project does not result in significant long-term noise or vibration impacts.

Environmental Justice Findings

Executive Order 12898 provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations."

The project will not disproportionately impact EJ communities. Although all three Census Tracts and all four block groups encompassing the project site have similar EJ characteristics, as described in the EA, the proposed permanent property displacements for construction staging areas in East Norwalk will be located in the least urbanized and least developed portions of the project site. The affected census tract and census block group in East Norwalk have the lowest percentages of low income populations and minorities within the project study area.

The project will replace an existing bridge on an existing rail corridor and will represent an overall benefit to the entire community and is important to the continued economic prosperity of the region. The improved accessibility and reliability of the proposed bridge and navigational opening will also benefit EJ communities, which comprise a substantial portion of the local community.

Based on that analysis, FTA finds that the proposed Project would not have disproportionately high and adverse effects on minority or low-income populations.

Executive Order 11990, Wetlands Protection

The USDOT seeks to assure the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable during the planning, construction, and operation of transportation facilities and projects. (DOT Order 5660.1A; Executive Order 11990).

As a result of the Project, impact to portions of existing vegetated tidal wetlands along the shore of the Norwalk River will occur. Both temporary and permanent impacts to these wetlands are anticipated. Based on the current design, the installation of the new bridge abutments and the new pile-supported bridge piers will permanently impact vegetated tidal wetlands.

The Vertical Lift Bridge option would result in approximately 2,500 sf of permanent impact to tidal wetlands and approximately 2,400 sf of temporary impact to tidal wetlands. Since no eel grass beds will be impacted by the Build Alternative, no subtidal vegetated wetland mitigation is anticipated for the project. It is anticipated that the loss of vegetated intertidal wetlands will be mitigated through the restoration of degraded tidal wetlands dominated by common reed (Phragmites australis), currently existing along the river, proximal to but outside of the project's immediate vicinity.

The EA, Table 3-7 presents a summary of the mitigation requirements for the Build Alternative options. Based upon anticipated permanent and temporary impacts, and using applicable mitigation to impact factors, there are sufficient locations in the project vicinity to provide nearby compensation. The project will achieve a no-net-loss of wetlands by minimizing impacts to wetlands and mitigating for impacts that are unavoidable.

With the identified mitigation, FTA finds that the proposed Project will not result in a significant impact to tidal wetlands or jurisdictional waters of the United States.

Endangered Species Act (ESA)

The Endangered Species Act of 1973, as amended (ESA), intends to protect threatened and endangered species and the ecosystems on which they depend. The ESA requires a federal agency to ensure that any action it authorizes, funds or carries out is not likely to jeopardize the continued existence of any listed species or result in direct mortality or destruction or adverse modification of critical habitat of listed species. This requirement is fulfilled under Section 7 of the ESA by review of the proposed actions and consultation with the appropriate agency responsible for the conservation of the affected species. If necessary, mitigation will be required to avoid jeopardizing listed species or their habitat.

Section 7 of the ESA requires all federal agencies to consult with NMFS for marine and diadromous species, or with the USFWS for fresh-water species and inland flora and fauna. Listed species were identified and evaluated using state and federal consultation protocols, via a review of existing data sets and literature, and direct observation. For federally protected species, the NMFS Protected Resources Division was consulted in December 2014. For state regulated species, the CTDEEP Natural Diversity Database (NDDB) was consulted in November 2014. Section 7 ESA applicability was determined via on-line screening using the USFWS Information for Planning and Conservation (IPaC) tool (September 2015). Field reviews were conducted to assess the potential habitat suitability for state listed species known to occur within the project area. Additionally, direct observations of some state listed species made during field work within the project area supplemented information that was available in the literature or obtained via resource agency consultation. No impacts to listed species are anticipated in the Build Alternative.

The USFWS identified the federally threatened red knot as having a distributional range within the project area. However, this species is unlikely to be encountered in the project area during any time of year. It is a rare to uncommon coastal migrant in Connecticut. The few individuals that do occur from time to time in Connecticut during migration are known to occur on offshore barrier beaches and sand spits along the coast and the mud flats that typically form behind them. It is even rarer in the western portion of CT's Long Island Sound shoreline. No permanent impact to this species is anticipated due to the Build Alternative, and no temporary impact is expected as a result of construction activity.

The USFWS IPaC screening tool identified the federally threatened northern long-eared bat as having a distributional range that includes the project area. Tree clearing to expand the width of the bridge approach on the east side of the Norwalk River will result in the removal of tall trees from within the railroad ROW. In general, tree clearing within the range of the northern long-eared bat is a potential concern for the conservation of this species. However, pursuant to the Final 4(d) Special Rule under authority of the Endangered Species Act, USFWS would not require surveys to determine the presence of northern long-

eared bat if the project site does not occur within one-quarter-mile from a known hibernaculum or contain a maternity roost site. The USFWS defers to the state wildlife resource agencies for information on hibernacula and maternity site locations. CTDEEP NDDB did not identify northern long-eared bat as occurring within the project area. As of February 1, 2016, the known northern long-eared bat hibernaculum located nearest to Norwalk is in Greenwich County, CT. Based upon this information, it may be concluded that the project would result in a "not likely to effect" determination for the northern long-eared bat. CDOT and FTA will request USFWS concurrence with this conclusion via a hard copy letter with documentation to accompany project permit application filings and will comply with any necessary conservation measures.

Pursuant to the MBTA and the Bald and Golden Eagles Protection Act, any activity which results in the "take" of migratory birds or eagles is prohibited unless authorized by USFWS. According to the USFWS IPaC report generated for the project, there are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Therefore, FTA is required to analyze potential project impacts to these bird species and implement appropriate conservation measures. However, the Build Alternative is not likely to have any negative effects on the relevant species identified by USFWS, because these species either do not occur in the project area, or are only transient migrants within the project area and would avoid construction activity. Therefore, no takes of these species are anticipated.

NMFS has also identified the following federally-listed Threatened and Endangered species that may occur within the Norwalk River: Atlantic sturgeon, loggerhead sea turtle, shortnose sturgeon, Kemp's ridley sea turtle, green sea turtle, and leatherback turtle. CTDOT and FTA will consult with NMFS on any impacts to these species during the permitting phase of the project, and any necessary conservation and protection measures will be implemented.

There are no other permanent mitigation measures to Endangered, Threatened, or Special Concern species habitat anticipated for the Build Alternative. However, in-water work for any pier demolition, piledriving, and dredging activities are often subject to temporal or seasonal restrictions which are often made conditions of the requisite environmental permits. CTDOT will coordinate with USFWS, NMFS, and CTDEEP as the project design advances and the contractor's means and methods of construction are developed, and as the project progresses into the permitting phase to protect the species and their critical habitats. Additional site-specific measures may be imposed by regulatory agencies during the permitting phase of the project. At this time, no permanent, indirect impact to the 24 migratory bird species whose distributional ranges overlap the project area are anticipated, therefore, no mitigation for those species is proposed.

FTA anticipates that the proposed project will have no adverse effect on any listed species or their habitats beyond those potential, insignificant, and transient effects identified and discussed above. This will be verified through continued consultation with the U.S. Fish and Wildlife Service (USFWS), USACE, U.S. Environmental Protection Agency (USEPA), National Marine Fisheries Service (NMFS), and CTDEEP through the permitting process, as appropriate, to avoid and/or minimize impacts to endangered and threatened species. On-going coordination with state and federal agencies will ensure minimal disruption of the species. Any identified mitigation resulting from these consultations will be implemented by CTDOT.

Essential Fish Habitat (EFH)

EFH is designated for ten species in the area inclusive of Walk Bridge, and five additional species have designated EFH reaching the Stroffolino Bridge. The designated EFH includes various life stages for the different species. There will be very minor impacts to EFH at the project site, consisting of minor changes in water depth to widen the channel bottom in the subtidal estuarine area under the bridge. Aside from

limited vegetated wetlands in the intertidal zone, no other EFH, such as eel grass beds, tidal creeks, marsh pans, oyster reef, etc., will be lost due to the Build Alternative. Although there is the potential for temporary impacts to surface water quality in the immediate vicinity of the bridge during the in-water portion of construction, these potential impacts will be minimized through the use and implementation of BMPs. An EFH Assessment Checklist will be completed for the Build Alternative as part of the state and federal permitting process. The EFH Assessment will contain the specific detailed information on potential impacts to EFH and trust resources as a result of the Build Alternative, and will identify measures that will be implemented to minimize adverse impact to EFH. Since impact to EFH is not expected to be substantial, EFH mitigation is not anticipated for the project. However, this will be verified through coordination with the regulatory agencies during the permitting phase of the project.

National Environmental Policy Act (NEPA) Finding

FTA served as the lead federal agency under NEPA for the project. CTDOT submitted an Environmental Assessment/Section 4(f) Evaluation and Environmental Impact Evaluation (EA/EIE) in compliance with NEPA, 42 USC 4321 *et. seq.*; NEPA's implementing regulations, 40 CFR Part 1500 *et. seq.*; and FTA's regulations, 23 CFR Part 771. The EA/EIE describes the project's potential impacts and proposed mitigation measures to reduce impacts.

FTA has reviewed the EA/EIE and supporting documents, public and agency comments, and responses to comments. Pursuant to 23 CFR 771.121, FTA finds that the Walk Bridge Replacement Project, as described in the EA/EIE and with the mitigation measures committed to by CTDOT in the EA/EIE and further defined as presented in this FONSI, will result in no significant adverse impact on the environment. The record provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required.

Permits

As documented in Chapter 7 of the EA/EIE, CTDOT will be required to obtain all necessary federal and state permits and approvals prior to the project's start of construction. Appendix 3 contains lists of required federal and state permits and approvals.

Incorporation by Reference

The full text of the Walk Bridge Replacement Project EA/EIE, Volumes 1 and 2 (August 2016), accompanying EA/EIE documentation including technical reports, the Errata to the EA/EIE (Appendix 1), and all documentation of public comment and response to comments as provided by CTDOT are incorporated by reference into this Finding of No Significant Impact.

Approved: Mary Beth Mello **Date:** 7/17/17

Mary Beth Mello
Regional Administrator
Federal Transit Administration, Region 1

Concur: Charles J. Dyer **Date:** 7/17/17

Charles J. Dyer
Regional Counsel
Federal Transit Administration, Region 1

Appendix 1 Errata to the EA/EIE

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Errata to the EA/EIE

<table>
<tr><th>EA/EIE Section</th><th>Page</th><th>Revision</th></tr>
<tr><td>2.3.2</td><td>2-6</td><td>Fixed Span – Low-Level Option. Revise the first sentence of the last paragraph in this subsection to read: CTDOT estimated the construction and program cost of the low-level option to range between $290 and $340 million in year 2020 dollars, which is the anticipated mid-point of construction.</td></tr>
<tr><td>2.3.2</td><td>2-6</td><td>Fixed Span – Mid-Level Option. Revise the first sentence of the last paragraph in this subsection to read: CTDOT estimated the construction and program cost of the mid-level option to range between $320 and $370 million in year 2020 dollars, which is the anticipated mid-point of construction.</td></tr>
<tr><td>2.3.2</td><td>2-7</td><td>Fixed Span – High-Level Option. Revise the first sentence of the last paragraph in this subsection to read: CTDOT estimated the construction and program cost of the high-level option to be in excess of $1 billion in year 2020 dollars, which is the anticipated mid-point of construction.</td></tr>
<tr><td>2.4.2</td><td>2-21</td><td>Dredging for a Wider Navigation Channel. Revise the last sentence in this subsection to read: State and federal permits from CTDEEP and USACE will be required for dredging activities in the federal navigation channel, as described in Chapter 7.</td></tr>
<tr><td>3.1.3</td><td>3-11</td><td>Build Alternative subsection, second paragraph. Revise all references to “Cooper 80” to “Cooper E-80.”</td></tr>
<tr><td>3.6.2</td><td>3-38</td><td>Delete the following row from Table 3-5:
<table>
<tr><th>Map/ Block/ Lot</th><th>Address</th><th>Existing Uses on Parcels [a]</th><th>Displaced Uses</th><th>Parcel Size (acre)</th><th>Portion of Parcel to be Used</th><th>FTA CPE [b]</th></tr>
<tr><td>3/1/8</td><td>217 Liberty Square</td><td>Plastic fabrication company - 4,452 sf structure</td><td>Plastic fabrication company</td><td>0.16</td><td>Full</td><td>yes</td></tr>
</table></td></tr>
<tr><td>3.6.2</td><td>3-38</td><td>Revise the following row in Table 3-5 to read as follows (correction in bold print):
<table>
<tr><th>Map/ Block/ Lot</th><th>Address</th><th>Existing Uses on Parcels [a]</th><th>Displaced Uses</th><th>Parcel Size (acre)</th><th>Portion of Parcel to be Used</th><th>FTA CPE [b]</th></tr>
<tr><td>2/24/10</td><td>1 North Water St.</td><td>Mixed-use</td><td>None</td><td>1.89</td><td>Partial</td><td>yes</td></tr>
</table></td></tr>
<tr><td>3.6.2</td><td>3-38</td><td>Revise the following rows in Table 3-5 to read as follows (corrections in bold print):
<table>
<tr><th>Map/ Block/ Lot</th><th>Address</th><th>Existing Uses on Parcels [a]</th><th>Displaced Uses</th><th>Parcel Size (acre)</th><th>Portion of Parcel to be Used</th><th>FTA CPE [b]</th></tr>
<tr><td>2/84/63</td><td>70 Water Street</td><td>Warehouse (vacant) - 2,370 sf</td><td>Warehouse</td><td>0.46</td><td>Full</td><td>no</td></tr>
<tr><td>2/84/33</td><td>90 Water Street</td><td>Undeveloped commercial apparently used for employee and visitor parking</td><td>None</td><td>1.01</td><td>Full</td><td>no</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>3.17.5</td><td>3-105</td><td>Revise the second row in Table 3-13 to read as follows:

<table><tr><th>Potential Adverse Impact</th><th>Preliminary Assessment</th></tr><tr><td>Replacing an existing water-dependent use with a non-water-dependent use.</td><td>During construction of the bridge, the project will replace an existing water-dependent use, a commercial marina and community rowing facility, with a non-water dependent use, consisting of access to the waterfront for demolition of the existing bridge and construction of the replacement bridge. However, this will be a temporary condition. Upon completion of the project, CTDOT will sell the property. Per the Norwalk Building Zone Regulations, provisions for public access to the waterfront are required for new development on lots adjacent to the water.</td></tr></table></td></tr>
<tr><td>5.3.20</td><td>5-25</td><td>Add the following sentences to the end of the paragraph: There could be project-related actions that warrant work on or affecting South Norwalk Electric and Water (SNEW) and the Third Taxing District (TTD) utilities. As design advances, CTDOT will coordinate with SNEW and TTD to perform site-specific adjustments.</td></tr>
</table>

Appendix 2 Mitigation Measures

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Appendix 2-1 Summary Table of Impacts and Mitigation Measures

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Summary Table of Impacts, Mitigation, and Commitments

Appendix 2-1 provides the following summary table of mitigation and commitments for the Walk Bridge Replacement Project. To track mitigation plans and permit conditions to be developed in final design, CTDOT will use FTA's Project Management Plan, working in coordination with the City of Norwalk, the local community, and regulatory agencies. As the lead federal agency, FTA exercises continual oversight and independent review of the project. Additionally, the project's commitment to mitigation measures will be reviewed by federal and state regulators.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Rail Transportation (EA/EIE Sections 3.1 & 5.3.1)	Temporary two-track outage will be needed for up to 30 months. Limited four-track outages will be required for specific construction activities.	CTDOT will maintain weekday passenger train service by keeping at least two tracks in service throughout nearly all the construction period. CTDOT will schedule limited four-track outages required during construction time during an off-peak and/or weekend period, to the extent possible.
		CTDOT will complete planned independent NHL-improvement projects on the main line and Danbury Branch prior to implementing the long-term, two-track outages; these projects will facilitate considerable train movement flexibility on the NHL main line and minimize schedule adjustments associated with long-term two-track outages. Refer to CTDOT Issue Paper: Early-Action NHL Projects with Independent Utility.
		CTDOT will minimize temporary impacts to rail traffic by coordinating the construction of the project with the East Avenue Bridge Project (Bridge No. 42.14) and associated roadway and the Osborne Avenue Bridge Project (Bridge No. 41.96). Refer to CTDOT Issue Paper: Coordinating Construction with Osborne and East Avenue Projects.
		CTDOT will work with Metro-North, Amtrak, and freight service providers to ensure that train operations proceed in a manner that maintains service, facilitates passenger boarding and alighting at East Norwalk and South Norwalk Stations, and prioritizes the overall safety of the railroad corridor.
Marine Transportation (EA/EIE Sections 3.2 & 5.3.2)	For most of the 40-month construction period, one or both channels will be open to navigation, and the replacement bridge project footprint will not encroach upon the existing channels. Temporary navigation restrictions will occur. The swing span will remain operational until shortly before its removal. A limited number of full channel closures will be needed for specific construction activities.	CTDOT will coordinate channel closures with the City of Norwalk, Norwalk Harbor Management Commission, the Norwalk Harbor Master, the U.S. Coast Guard (USCG), the U.S. Army Corps of Engineers (USACE), and waterway users to the maximum extent possible.
		CTDOT will develop and implement a Marine Transportation Plan and a series of water-dependent use/waterfront access strategies, working in coordination with the affected marine-based businesses, the City of Norwalk, and the Norwalk Harbor Management Commission. The Plan will address temporary impacts to water-based businesses, marina users, rowers, and ferry and vessel operations. Individual plans or strategies may be developed with owners and water-users. As a component of the Marine Transportation Plan, CTDOT will coordinate with the City of Norwalk Police and Fire Departments, water-dependent businesses, the Connecticut Department of Energy and Environmental Protection (CTDEEP), and the USCG to develop and update emergency preparedness, communications and response measures for businesses and properties upstream of Walk Bridge through the construction period.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Traffic, Transit and Parking (EA/EIE Sections 3.3 & 5.3.3)	Temporary impacts to local roadways will include full closure to public access of a portion of Goldstein Place; periodic partial lane closures and full street closures of North Water Street; and partial lane closures of Fort Point Street of about a month and occasional full street closures. Road closures may affect existing routing to parking facilities.	CTDOT will prepare and implement a Transportation Management Plan (TMP) to accommodate the replacement of Walk Bridge and Fort Point Street Bridge in conjunction with the East Avenue Bridge replacement (and associated roadway) project and the Osborne Avenue Bridge replacement project. The TMP will include vehicle, pedestrian, and bicycle detour plans for the stages of the project; temporary bus routes; rail user updates; and construction material haul routes.
	Temporary impacts (including closure) of the Norwalk Parking Authority (NPA) North Water Street parking lot could occur due to a construction easement on the parcel.	CTDOT will work with the City of Norwalk, the NPA, and business community to develop and implement an Alternative/Replacement Parking Plan. The Plan will identify replacement parking due to temporary closures of parking facilities (including the North Water Street Lot), and identify access to available parking facilities unaffected by the project.
Pedestrian and Bicycle Facilities (EA/EIE Sections 3.4 & 5.3.3)	Temporary use of the City's Wastewater Treatment Plant (WWTP) site (Parcel 3/2/3) and construction of an extension of this trail connection along the east river bank will temporarily affect the southernmost terminus of the existing Harbor Loop Trail. Due to the temporary use of the Norwalk Parking Authority site (Parcel 2/19/1), the portion of the Norwalk River Valley Trail (NRVT) adjacent to this parking lot may be closed to the public during construction. North Water Street and its sidewalks can be used by pedestrians and bicyclists.	CTDOT will develop and implement a TMP which will include pedestrian and bicycle detour plans for the stages of the project, including bridge construction. CTDOT will restore the existing trails to pre-construction condition following completion of construction. CTDOT will include an extension of the Harbor Loop Trail on the east side of the Norwalk River in the Walk Bridge Replacement Project. CTDOT will work with the City of Norwalk, including the Bike-Walk Task Force and Norwalk River Valley Trail Steering Committee, to determine the preferred routing from the proposed north-south connector, as shown on EA/EIE Figure 3-10 or as determined through discussions with project stakeholders. CTDOT is supportive of an extension of the NRVT on the west side of the Norwalk River. The determination of the most appropriate location for this extension of the existing trail on the west side of the river will be made in coordination with the City and the Maritime Aquarium. Implementation specifics will be determined as the project progresses.
Property Acquisition and Displacement (EA/EIE Sections 3.6 & 5.3.4)	A total of eight full-parcel acquisitions will be required for project construction. A total of twelve full- and partial-parcel temporary easements	In accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended, and the Connecticut Uniform Relocation Assistance Act, CTDOT will aid businesses and residents whose properties are acquired by the project, including payment of fair market value for the parcels and appropriate relocation costs.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Property Acquisition and Displacement (EA/EIE Sections 3.6 & 5.3.4)	are currently anticipated for the project, and, of that total, permanent easements are anticipated on three parcels.	CTDOT is guided by Connecticut General Statutes when releasing excess property. Following project completion, any property determined to be in excess of CTDOT's needs will first be offered to other State Agencies in accordance with Connecticut General Statute (CGS) 4b-21. Thereafter, pursuant to CGS 3-14b, the City of Norwalk will have an opportunity to purchase property deemed in excess of the State's needs, prior to being offered to the public. The future use and development of these properties is determined by municipal zoning, the City's Plan of Conservation and Development, permit approvals, and for properties within the coastal zone boundary, municipal coastal site plan review.
Socioeconomics (EA/EIE Sections 3.8 & 5.3.5)	Temporary access impacts will occur to land-based businesses proximate to Walk Bridge and water-based businesses upriver from Walk Bridge over an approximate 40-month construction period. Temporary construction easements will adversely impact public and private parking facilities and facilities and operations of the Maritime Aquarium.	CTDOT will develop and implement Construction Period Coordination Plans to address concerns and develop mitigation plans as design advances and the contractor's construction means and methods are defined. The Plans will include a series of individual plans and strategies. The plans will identify project-specific tasks and mitigation measures to minimize impacts. The CTDOT design and construction team will develop and update these plans working in close coordination with the City of Norwalk, the business community, residents, and other affected parties. Refer to CTDOT Issue Paper: Construction Period Coordination Plans. CTDOT has developed a Communications Management Plan which outlines the objectives of the communications and public involvement efforts for the Walk Bridge Program. Through the project website - www.walkbridgect.com - CTDOT will continue to provide continuous updates to the community on the Walk Bridge Replacement Project and nearby projects. The Communications Management Plan includes strategic approaches for communicating accurate and timely information to all involved agencies and stakeholders, including residents, businesses, visitors, and rail and maritime users. The Plan will be reviewed vigorously and updated as necessary to support transparency and proactively engage stakeholders as design and construction progress. A variety of outreach tools is outlined in the Plan; these communication tools will be used through the duration of the project to facilitate meaningful dialogue.

Environmental Resource	Potential Impacts	Mitigation and Commitments
		CTDOT will develop and implement a Business Coordination Plan to identify the concerns of the business community and address construction-related impacts. By developing and maintaining ongoing communication with local businesses, CTDOT seeks to establish a two-way communication system where the project schedule is communicated, business concerns are identified, and strategies are put in place to minimize disruptions to businesses. Initially, personal interviews will be conducted with businesses in the immediate project construction area to assess existing conditions, including employee and patron parking areas, delivery schedules, hours of operation, and shopping patterns. From these discussions, potential temporary impacts will be determined and mitigation measures will be developed in coordination with businesses in South Norwalk and East Norwalk. Individual plans or strategies may be developed as required.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Socioeconomics (EA/EIE Sections 3.8 & 5.3.5)	Loss of property tax revenue of approximately $91,000 per year over the 4-year construction period will result from parcel acquisitions.	CTDOT does not have the statutory authority to reimburse municipalities for long term tax revenue losses resulting from property acquisitions. However, mitigation measures are incorporated into the project that will benefit the Norwalk community.
Water Quality (EA/EIE Sections 3.9 & 5.3.6)	Temporary impacts will include sediment disturbance due to waterway work and soil exposure due to land-based work.	CTDOT will develop and implement a construction-period water quality control plan, pursuant to the requirements of Section 401 Water Quality Certification and the National Pollutant Discharge Elimination System (NPDES) program.
		CTDOT will prepare and implement a Stormwater Pollution Control Plan (SWPCP) as part of the project's Construction Stormwater General Permit. The SWPCP will identify potential pollutant sources areas and Best Management Practices (BMPs) to be used for erosion and sedimentation control, temporary stormwater management, dust control, and site stabilization.
		CTDOT will comply with the requirements of the Municipal Separate Stormwater Sewer Systems (MS4) General Permit requirements for linear transportation infrastructure.
		CTDOT will identify opportunities to protect and improve water quality as feasible, as it continues to evaluate the types of approach spans in coordination with the City, as the project proceeds into final design, and as the contractor's means and methods of construction are defined. Some examples of BMPs include using marine enclosures for work around piers during construction and demolition; adding protective enclosures for work on the bridge to contain materials that could potentially fall to the water; stabilizing land-based soils; using erosion control measures; removing contaminated sediments from the river; and disposing of sediments following state regulations. Further, CTDOT will utilize its own Environmental Compliance specifications, which list specific BMPs for water pollution control, and address standards for the management and disposal of contaminated and/or hazardous materials.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Tidal Wetlands (EA/EIE Sections 3.10 & 5.3.7)	Indirect temporary impacts will occur to approximately 2,400 sf of vegetated tidal wetlands. Permanent Impacts will occur to approximately 2,500 sf of vegetated tidal wetlands.	CTDOT will provide compensatory mitigation for temporary direct impacts to intertidal and subtidal habitats, and for indirect shading impacts to tidal vegetated wetlands, consisting of in-place restoration or enhancement of temporary impact areas, and restoration of tidal marsh areas that may be temporarily impacted from trestle platform shading. CTDOT will provide compensatory mitigation for permanent impacts to vegetated tidal wetlands through restoration and/or enhancement of wetlands along the Norwalk River dominated by invasive species. Wetland restoration will produce a permanent community benefit.
Freshwater Wetlands (EA/EIE Sections 3.11 & 5.3.7)	Permanent loss of approximate 600-sf wetland will occur.	CTDOT will provide compensatory mitigation for the loss of a state-regulated freshwater wetland through restoration or replacement in-kind; out-of-kind wetland creation; invasive species removal; or any combination of these methods.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Floodplains (EA/EIE Sections 3.12 & 5.3.8)	Temporary impacts will occur to approximately 230,000 square feet of 100-year floodplain due primarily to construction staging and access to the railroad ROW. Permanent impacts will occur to approximately 19,500 sf of 100-year floodplain.	CTDOT will analyze both the temporary and permanent conditions to assess floodplain effects in compliance with Connecticut and Federal Emergency Management Agency (FEMA) floodplain management standards and criteria; if needed, CTDOT will take steps to mitigate effects.
Terrestrial Resources, Species, and Critical Habitats (EA/EIE Sections 3.13 & 5.3.9)	Temporary impacts will occur to terrestrial species due to loss of herbaceous coverage. Minor permanent impacts will occur due to loss of narrow upland habitat patch.	CTDOT will implement BMPs, use construction phasing or sequencing, and comply with seasonal restrictions to avoid impacts to terrestrial resources and habitats.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Aquatic Resources, Species and Critical Habitats (EA/EIE Sections 3.14 & 5.3.10)	Temporary impacts will occur to approximately 7,700 sf of intertidal habitat and approximately 8,400 sf of subtidal habitat. Conversion of approximately 300 sf of intertidal habitat to subtidal habitat and increased depth of subtidal areas will occur due to dredging. Permanent impacts will occur to approximately 900 sf of intertidal habitat and approximately 26,600 sf of subtidal habitat.	CTDOT will minimize impacts to finfish, shellfish, and other aquatic resources through the use of protective measures, including managing turbid water generated inside casing, sheet piles, or cofferdam containments; replacing contaminated native materials cut from the submarine conduits with clean material matching grain size of removed sediments; mechanically removing select existing bridge components; separating and removing sediment-laden water from containment areas; and avoiding construction blasting. CTDOT will provide compensatory mitigation for habitat displacement due to the construction-phase temporary direct impacts to intertidal and subtidal habitats, and for indirect shading impacts to tidal vegetated wetlands, in coordination with the USACE and CTDEEP.
Endangered and Threatened Species (EA/EIE Sections 3.15 & 5.3.11)	Potential temporary disruption of foraging habitat will occur due to work in the water and vegetation clearing.	CTDOT will continue to consult with the U.S. Fish and Wildlife Service (USFWS), USACE, U.S. Environmental Protection Agency (USEPA), National Marine Fisheries Service (NMFS), and CTDEEP through the permitting process, as appropriate, to avoid and/or minimize impacts to endangered and threatened species. On-going coordination with state and federal agencies will ensure minimal disruption of the species. Any identified mitigation resulting from these consultations will be implemented by CTDOT.
		CTDOT will conduct vegetation clearing during the off-season for protected bird species and will monitor the area for the presence of protected bird species during construction.
		CTDOT will incorporate a construction period BMP into the construction specifications to address the potential presence of the state-listed Peregrine Falcon nesting within the project area.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Consistency with CT Coastal Management Act (EA/EIE Section 3.16)	Unavoidable temporary and permanent impacts will occur to tidal wetlands, intertidal and subtidal habitat, coastal access, water-dependent uses, and historic resources.	CTDOT will incorporate mitigation measures for unavoidable impacts and refine the design to minimize impacts to be consistent with the CT Coastal Management Act's policies for the protection of coastal resources and policies on development of those resources. CTDOT will request Coastal Consistency Review as part of its application to CTDEEP for a Structures, Dredge and Fill and Tidal Wetlands Permit for the project.
Water-Dependent Uses (EA/EIE Sections 3.17 & 5.3.12)	Temporary impacts will occur to upstream uses and uses in immediate proximity to the bridge due to navigation restrictions	CTDOT will develop and implement a series of water-dependent use/waterfront access strategies, working in coordination with the affected marine-based businesses, the City of Norwalk, and the Norwalk Harbor Management Commission. The Plan will address temporary impacts to water-based businesses, marina users, rowers, and ferry and vessel operations. Individual plans or strategies may be developed with owners and water-users.

Environmental Resource	Potential Impacts	Mitigation and Commitments
	Temporary relocation of the Sheffield Ferry and Maritime Aquarium vessel operations will be required, as the current docking facilities will be temporarily removed due to anticipated project construction activities.	CTDOT is working with the Norwalk Seaport Association and the Maritime Aquarium to aid in relocating their respective vessels in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970 (Uniform Act).
	Permanent impact will occur through parcel acquisition of private marina.	Regarding the sale of properties with existing water-dependent uses, CTDOT will market the excess property indicating the highest priority and preference for water-dependent use of the site. With approval from the Commissioner of the Department of Energy and Environmental Protection, CTDOT will select the highest bid that best demonstrates an integrated, quality, water-dependent use. Water-dependent uses include, but are not limited to: marinas, recreational and commercial fishing and boating facilities, finfish and shellfish processing plants, waterfront dock and port facilities, shipyard and boat building facilities, and water-based recreational uses.
Parklands, Public Recreation, and Community Facilities (EA/EIE Sections 3.18 & 5.3.13)	Temporary impacts that will occur to the Norwalk River Valley Trail (NRVT) on the east side and west side of the Norwalk River. Permanent impacts will occur to City parks due to the creation and/or restoration of wetlands.	CTDOT will restore the existing trails to pre-construction condition following completion of construction. CTDOT's proposed wetland restoration will be a positive permanent impact: it will enhance the City's parks and waterfront and provide a permanent benefit to the community. The tidal wetland restoration that may be located adjacent to or within the boundaries of Oyster Shell Park is identified in the City of Norwalk's Oyster Shell Park Master Plan as part of planned waterfront improvements.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Parklands, Public Recreation, and Community Facilities (EA/EIE Sections 3.18 & 5.3.13)	Construction will impact the Maritime Aquarium, including animal exhibits and the IMAX Theatre. CTDOT is coordinating with the Maritime Aquarium and the City regarding the temporary and/or permanent nature of these impacts.	CTDOT is developing a specific coordination plan with the Maritime Aquarium. CTDOT is working with the City of Norwalk and the Aquarium to develop a plan to identify and address the impacts of the project upon the Aquarium's outdoor and indoor exhibits and its terrestrial and aquatic animals. CTDOT will compensate the City of Norwalk for the property rights to be acquired. In connection therewith, CTDOT will provide the City of Norwalk and/or the Aquarium the assistance necessary to relocate the animals affected by the acquisition.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Visual Resources (EA/EIE Sections 3.19 & 5.3.14)	Temporary impacts will occur due to construction staging, including use of temporary trestles and barges in the water. Permanent altered visual setting will occur due to loss of historic resources, and potential altered visual effect could occur due to new bridge in an historic setting.	CTDOT has initiated meetings with the City of Norwalk's Design Advisory Committee to review design and solicit feedback on those design elements that will contribute to the aesthetics of the replacement bridge, including (but not limited to) façade treatments, color, and landscaping. CTDOT has committed to working with the Design Advisory Committee, as well as local historic stakeholders, on the design elements of the bridge.
Air Quality (EA/EIE Sections 3.20 & 5.3.15)	Temporary minor impacts will occur from diesel equipment, fugitive dust.	CTDOT will develop and implement a construction-period air quality/dust control plan. It is anticipated that construction-related dust will be primarily controlled by using BMPs, and will build on the air quality/dust control measures identified for consideration in the EA/EIE (Section 5.3.15).
Noise and Vibration (EA/EIE Sections 3.21 & 5.3.16)	Temporary impacts will occur due to daytime and night-time noise proximate to the project site.	CTDOT will develop and implement a construction-period noise and vibration control plan to address potential impacts of land-based and water-based noise. It is anticipated that the construction noise and vibration control plan will build on the noise and vibration control measures identified for consideration in the EA/EIE (Section 5.3.16).
		CTDOT is developing a specific coordination plan with the Maritime Aquarium which they will work with the Aquarium to implement. CTDOT is working with the City of Norwalk and the Aquarium to develop a plan to identify and address the impacts of the project upon the Aquarium's outdoor and indoor exhibits and its terrestrial and aquatic animals.
		CTDOT will coordinate the need for vibration mitigation measures with the NMFS, including addressing potential vibration impacts on fish living/migrating in the Norwalk River.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Noise and Vibration (EA/EIE Sections 3.21 & 5.3.16)	Potential temporary impacts of ground-borne vibration to affect nearby buildings, including the Maritime Aquarium and historic structures that may not have the same physical resistance to vibration as modern buildings.	CTDOT will develop and implement an Historic Building Protection Plan in coordination with the Connecticut State Historic Preservation Office (CTSHPO) to minimize the effects of construction-period vibration upon nearby historic buildings. The historic buildings to be included in the Plan consist of the Interlocking Tower (South Norwalk Switch Tower Museum) and historic buildings on the north side of Washington Street in the South Main and Washington Streets Historic District, the Former Norwalk Lock Company, the Former Norwalk Iron Works, the circa 1910 commercial buildings at 68 Water Street, and the buildings that comprise the potentially eligible Liberty Square Historic District. The Plan will be based on FTA's vibration threshold criteria, and will consist of multiple elements, including (but not limited to) conducting pre-construction inspection of historic buildings, developing and implementing a vibration monitoring program, and conducting post-construction surveys of historic buildings. The plan will include protective measures to be implemented if monitoring indicates the potential for damage to historic buildings. CTDOT will prepare a draft technical memorandum documenting the results of the Plan's implementation and will submit it to CTSHPO and FTA. The final technical memorandum will be submitted to CTSHPO for permanent archiving and public accessibility.
Cultural Resources (EA/EIE Sections 3.22 & 5.3.17)	Adverse effects will occur due to demolition of National Register-listed Walk Bridge and Fort Point Street Bridge; and historic stone abutment retaining walls, high towers. and catenary support structures.	CTDOT has developed mitigation measures for impacts to historic resources, working in coordination with FTA, CTSHPO, and local historic stakeholders. CTDOT has determined that to the maximum amount practicable, mitigation measures for the loss of the landmark structure will be public in their scope and availability to the Norwalk community, particularly the South Norwalk and East Norwalk neighborhoods. The mitigation measures are memorialized in a Memorandum of Agreement (MOA) among FTA, CTSHPO and CTDOT (as signatory parties) and local historic stakeholders (as concurring parties), pursuant to Section 106 of the National Historic Preservation Act. Refer to Appendix 2-2.
		Prior to demolition, CTDOT will contact the Historic American Engineering Record (HAER) for advice as to the level of documentation that would be appropriate for recording the Walk Bridge. CTDOT will retain a qualified consultant to prepare the documentation of the Walk Bridge as specified in HAER's response. CTDOT will submit the documentation to FTA and CTSHPO for review, revise the documentation according to any comments, and submit the revised documentation to HAER and provide CTSHPO with two copies of the documentation upon completion.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Cultural Resources (EA/EIE Sections 3.22 & 5.3.17)	Adverse effects will occur due to demolition of National Register-listed Walk Bridge and Fort Point Street Bridge; and historic stone abutment retaining walls, high towers. and catenary support structures.	Prior to demolition, CTDOT will determine whether the documentation entitled "New Haven Railroad Catenary System," prepared by Historical Technologies in 2000 (the 2000 Documentation), adequately represents the catenary structures to be demolished as part of the project. If the catenary structures that were photographed and described in the 2000 Documentation are essentially identical to those proposed for demolition, CTDOT will notify CTSHPO of this determination and no further documentation will be necessary. If the catenary structures to be demolished are unique and not adequately represented in the 2000 Documentation, CTDOT will prepare additional written and photographic documentation of the catenary structures to the professional standards of CTSHPO. CTDOT will submit the documentation to the FTA and CTSHPO for review, revise the documentation according to any comments, and submit the revised documentation to CTSHPO for permanent archiving and public accessibility.
		CTDOT will prepare written and photographic documentation of other historic structures on the New Haven Line, within the limits of the project, to the professional standards of CTSHPO. The documentation will address the high towers, stone retaining walls, interlocking tower (South Norwalk Switch Tower Museum), Fort Point Street Railroad Bridge, and any historic trackside features such as mileposts. The documentation will also provide context views that incorporate the former Norwalk Lock Company buildings, the former Norwalk Iron Works buildings, and the buildings of the South Main and Washington Streets Historic District. CTDOT will submit the documentation to the FTA and CTSHPO for review, revise the documentation according to any comments, and submit the revised documentation to CTSHPO for permanent archiving and public accessibility.
		CTDOT will attempt to reuse/repurpose the stone masonry from the existing bridge abutments that will be demolished in the construction of the replacement bridge. If CTDOT determines that it is not feasible to reuse/repurpose the stone, CTDOT will notify FTA and CTSHPO of the reason(s) that reuse would not be feasible, and CTDOT's obligation to reuse the stone will cease. Subsequently, CTDOT will attempt to solicit interest in obtaining the stone masonry to be used for public education purposes, from local institutions identified in the MOA. If it is feasible to do so, CTDOT will use its best efforts to ensure that the salvaged material is removed in as intact a condition as possible. If CTDOT determines it is not feasible to salvage the stone masonry, CTDOT will notify FTA and CTSHPO of the reason(s) that salvaging the material would not be feasible and CTDOT's obligation to salvage the material will cease.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Cultural Resources (EA/EIE Sections 3.22 & 5.3.17)	Adverse effects will occur due to demolition of National Register-listed Walk Bridge and Fort Point Street Bridge; and historic stone abutment retaining walls, high towers. and catenary support structures.	CTDOT will attempt to solicit interest in obtaining salvaged material from the project, such as the catenary structures, to be used for public education purposes, from the institutions listed in the MOA. If it is feasible to do so, CTDOT will use its best efforts to ensure that the salvaged material is removed in as intact a condition as possible. If CTDOT determines it is not feasible to salvage the material, CTDOT will notify FTA and CTSHPO of the reason(s) that salvaging the material would not be feasible and CTDOT's obligation to salvage the material will cease.
		CTDOT will develop a maximum of two (2) exhibits and/or education programs for institutions and educators in the community, including the Maritime Aquarium. A maximum of $450,000 will be allocated to the development of the two (2) exhibits and/or education programs. CTDOT will solicit letters of interest (including scope of work and fee), select the institution(s) to develop the exhibits/education program(s), and submit the scope of work to FTA and CTSHPO for review. Following consultation with and approval by FTA and CTSHPO, CTDOT will oversee the development and implementation of the exhibits and/or education programs. One exhibit will be focused on historic and current movable bridge engineering. The exhibit will include information about the extant WALK Bridge, earlier rail bridges at this location, and the new lift bridge. The public will learn about bridge operation, construction, and function. Hands-on Science, Technology, Engineering, and Math (STEM) educational components will be developed and distributed to local schools to be used in conjunction with school trips to the Maritime Aquarium. Materials will also be provided to the Aquarium to share with and educate visitors. A second exhibit will focus on the history of the railroad in the City of Norwalk, especially the WALK Bridge and the archaeological work conducted as part of the project. Photographs, documents, and other materials will be compiled to create the exhibit narrative and visuals. An exhibit will be developed that could be accommodated in any of the historical museums in the City. Associated classroom information will be developed, as well as electronic media that can be shared online with the public.
		CTDOT will provide non-federal resources for the restoration of the original iron fencing, gates, and associated masonry located in Mathews Park at the original entrance to the Lockwood-Mathews Mansion on West Avenue in Norwalk. CTDOT will provide a maximum of $2,500,000 for the restoration. CTDOT will work with the City of Norwalk, the Norwalk Historical Commission, and the Lockwood Mathews Mansion Museum to develop the scope for the restoration of the original fencing, gates, and associated masonry.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Cultural Resources (EA/EIE Sections 3.22 & 5.3.17)	Adverse effects will occur due to demolition of National Register-listed Walk Bridge and Fort Point Street Bridge; and historic stone abutment retaining walls, high towers. and catenary support structures.	CTDOT will prepare documentation for listing the potentially eligible Liberty Square Historic District on the National Register of Historic Places. The Liberty Square Historic District to be listed consists of a row of late 19th-century and early 20th-century commercial buildings (195-201 Liberty Square, 203 Liberty Square, 205 Liberty Square, 207 Liberty Square, 209 Liberty Square, 211 Liberty Square, 213 Liberty Square, and 215 Liberty Square). CTDOT will submit the documentation to the FTA and CTSHPO for review, revise the documentation according to any comments, and submit the revised documentation to CTSHPO for submittal to the National Park Service in accordance with the requirements of the National Register of Historic Places. The documentation will be available for archiving and public accessibility.
		CTDOT will prepare permanent interpretative panels for outdoor display in the city of Norwalk that will be available for viewing by the public. It is anticipated that the subject of the panels will be related to the history of Walk Bridge, the railroad, railroad engineering and transportation history in Connecticut. CTDOT will consult with the City of Norwalk and the local historic stakeholders regarding the content and locations of the interpretative panels. CTDOT will prepare and install a maximum of ten (10) permanent interpretive panels.
		CTDOT will share Thirty (30), sixty (60), and ninety (90) percent design plans with CTSHPO and concurring parties who will have a thirty (30) day comment period in which to submit their comments to CTDOT. CTDOT will consider these comments as design further progresses.
	Potential archaeological sensitivity for pre-colonial/contact and historic periods exists on many of the construction parcels, requiring subsurface testing and/or monitoring.	CTDOT will implement an Archaeological Treatment Plan as attached to the MOA in areas with potential archaeological sensitivity. If it is determined that archaeological properties that are eligible for listing in the NRHP are present, CTDOT will consult with FTA and CTSHPO regarding measures to avoid affecting the properties or to mitigate adverse effects on the properties and will implement the agreed-upon measures.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Title VI and Environmental Justice (EA/EIE Sections 3.26 & 5.3.21)	No disproportionate temporary or permanent impacts will occur.	As part of its overall Communications Management Plan (included in the Project Management Plan), CTDOT developed an EJ and Title VI Outreach Plan to ensure that EJ and Title VI populations have equal access to information about the project. CTDOT has committed to implementing EJ and Title VI outreach for each major Walk Bridge Program event so these populations have equal access to information about the Program. CTDOT coordinated with the City of Norwalk to identify community organizations representing EJ communities and methods for outreach to EJ and LEP groups. Outreach methods included translating communications materials in appropriate languages (Spanish and Haitian Creole); advertising in multi-language publications (*El Sol News* and *The Haitian Voice*); and conducting grassroots outreach by establishing partnerships in low-income neighborhoods, including community organizations, neighborhood groups, and small neighborhood businesses. Community organizations with which CTDOT has initiated and/or established relationships include (but are not limited to) the South Norwalk Community Center, Open Door Shelter, Norwalk Senior Center, Norwalk NAACP, Norwalk Housing Authority, Make the Road CT, and Greater Norwalk Hispanic Chamber of Commerce. Outreach activities conducted for the EA/EIE public review period, the EA/EIE public hearing, and public meetings held after the public hearing included translated advertising, translated materials, and advance phone calls and emails to community organizations. On an ongoing basis, CTDOT tracks and addresses all concerns and issues voiced from EJ and Title VI stakeholders. For future Walk Bridge public meetings and outreach efforts, CTDOT has committed to: conducting phone calls, emails, and check-ins with community groups prior to meetings; offering translation services at all public meetings, and translating meeting materials and advertisements. Google Translate (into any language) is enabled on the Walk Bridge Program website (www.walkbridgect.com).
Secondary & Cumulative Impacts (EA/EIE Section 3.27)	Secondary impacts will occur due to relocation of the Eversource powerlines, currently on high towers abutting the existing bridge.	Eversource Energy, LLC, the utility owner, is responsible for the relocation of the powerlines and will be obtaining NEPA review (if required pursuant to the Federal Energy Regulatory Commission) and permits, including identifying impacts and mitigation measures. CTDOT is coordinating with Eversource Energy on the timing of its replacement project.

Environmental Resource	Potential Impacts	Mitigation and Commitments
Secondary & Cumulative Impacts (EA/EIE Section 3.27)	There are multiple CTDOT-sponsored and local municipal and private projects planned for construction in the greater Norwalk area over the next six years (prior to and during the Walk Bridge Replacement Project).	CTDOT is preparing a Regional Transportation Management Plan (Regional TMP) to address the potential cumulative impacts of these projects and is committed to implementing its recommendations. The Regional TMP, which will include Norwalk and surrounding communities, will address potential traffic impacts of the multiple projects, facilitate comprehensive public outreach efforts, and provide coordination with stakeholder agencies in the region. An early Regional TMP has been created that assesses viable mitigation strategies, prioritizes these based on the lead time required to implement them, identifies the responsible parties, and establishes coordination protocols for inter-agency coordination. CTDOT initiated several Regional TMP tools for implementation in 2017, including portable data collection units, Regional TMP coordination, website rollout, and public involvement strategies. CTDOT will continue to work with the City of Norwalk to determine appropriate traffic mitigation strategies for various stages of individual projects, as well as for projects with anticipated substantial impacts.
	Cumulative impacts will occur due to loss of a tangible example of historic movable bridge technology in Connecticut, and a bridge on the NRHP-listed Movable Railroad Bridges on the Northeast Corridor in Connecticut Thematic Resource.	CTDOT has identified mitigation measures for the loss of the historic bridge and other resources which could address the historic bridge technology in Connecticut. Mitigation measures include developing exhibits that are historic- and/or STEM-related; obtaining salvaged material from the project to be used for public education purposes; and creating permanent interpretative panels related to the history of Walk Bridge, the railroad, and railroad engineering and transportation history in Connecticut. (Refer to Cultural Resources Mitigation Measures and Commitments).

Appendix 2-2 Section 106 Memorandum of Agreement

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL TRANSIT ADMINISTRATION,
THE CONNECTICUT DEPARTMENT OF TRANSPORTATION,
AND
THE CONNECTICUT STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
STATE PROJECT 301-176

WHEREAS, the Connecticut Department of Transportation (CTDOT), an agency of the State of Connecticut, proposes the replacement of the Walk Bridge, also known as the Norwalk River Railroad Bridge and State Bridge No. 04288R, across the Norwalk River in Norwalk, Connecticut (the Undertaking); and

WHEREAS, the U.S. Department of Transportation, Federal Transit Administration (FTA) is providing funding for the Undertaking, making it subject to the provisions of Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108) (NHPA) and its implementing regulations, 36 C.F.R. Part 800, et. seq.; and

WHEREAS, the Undertaking is not a Tier 2 Project in accordance with the Programmatic Agreement regarding the Northeast Corridor (NEC) FUTURE Investment Program and is an independent project on the NEC; and

WHEREAS, CTDOT has prepared technical reports, *Historic Resources Evaluation Report, Walk Bridge Replacement Project* August 2016 and *Archaeological Sensitivity Assessment, Walk Bridge Replacement Project* August 2016 (collectively, the Technical Reports) for historic above-ground resources and archaeological resources potentially affected by the Undertaking, which Technical Reports have been reviewed and approved by FTA and the Connecticut State Historic Preservation Office (CTSHPO); and

WHEREAS, CTDOT has prepared an Archaeological Treatment Plan (Appendix A) to address areas of archaeological sensitivity identified in the archaeological technical reports, as well as areas of sensitivity that could be identified as part of ongoing actions associated with the Undertaking, which plan has been reviewed and approved by FTA and CTSHPO and has been incorporated into this Memorandum of Agreement (MOA) as Appendix A; and

WHEREAS, this Agreement was developed with appropriate public involvement (pursuant to 36 CFR 800.2[d] and 800.6[a]) both coordinated with the scoping, public review and public hearings conducted to comply with NEPA and its implementing regulations and through public meetings to comply with NHPA and its implementing regulations; and in consultation with the CTSHPO, the Advisory Council on Historic Preservation and (pursuant to 36 CFR 800.2[d] and 800.6[a]) additional invited Consulting Parties; and

WHEREAS, the public has had an opportunity to comment on the Undertaking and the findings set forth in the Undertaking's associated Technical Reports; and

WHEREAS, the Norwalk Historical Commission, the Norwalk Historical Society, the Norwalk Preservation Trust, and the SONO Switch Tower Museum have participated in the consultation process pursuant to 36 C.F.R. Part 800, have been invited to concur in this MOA, and will continue to be consulted in the implementation of the MOA; and

WHEREAS, the Tribal Historic Preservation Officers (THPOs) of the Mashantucket Pequot Tribal Nation and the Mohegan Tribe of Indians of Connecticut have participated in the consultation process pursuant to 36 C.F.R. Part 800, have been invited to concur in this MOA;

WHEREAS, FTA in consultation with CTSHPO has defined the Area of Potential Effect of the Undertaking as shown on the attached map (Appendix B); and

WHEREAS, FTA, in consultation with CTSHPO, has (i) determined that the Undertaking will have unavoidable adverse effects pursuant to 36 C.F.R. Part 800.5 to properties that are listed in or eligible for listing in the National Register of Historic Places (NRHP) and are enumerated in the attached table (Appendix C) (collectively, the Historic Properties); and

WHEREAS, FTA has notified the Advisory Council on Historic Preservation (the Council) of the adverse effects on the Historic Properties that were identified in the Technical Reports and the Council has elected not to participate in consultation; and

NOW, THEREFORE, FTA, CTDOT, and CTSHPO agree that the Undertaking shall be implemented with the following Stipulations to ensure that effects to the Historic Properties are taken into account:

STIPULATIONS:

FTA will ensure that the terms of this MOA are carried out and will require, as a condition of any approval of federal funding for the Undertaking, adherence to the stipulations set forth herein.

1. Prior to demolition, CTDOT shall contact the Historic American Engineering Record (HAER) for advice as to the level of documentation that would be appropriate for recording the Walk Bridge. CTDOT shall retain a qualified consultant to prepare the documentation of the Walk Bridge as specified in HAER's response. CTDOT shall submit the documentation to FTA and CTSHPO for review and shall revise the documentation according to any comments. CTDOT shall submit the revised documentation to HAER and provide CTSHPO with two copies of the documentation upon completion.

2. When track access is granted to view individual catenary structures and prior to demolition, CTDOT shall determine whether the documentation entitled "New Haven Railroad Catenary System," prepared by Historical Technologies in 2000 (the 2000 Documentation), adequately represents the catenary structures to be demolished as part of the Undertaking. If the catenary structures that were photographed and described in the 2000 Documentation are essentially identical to those proposed for demolition, CTDOT shall notify CTSHPO of this determination and no further documentation will be necessary. If the catenary structures to be demolished are unique and not adequately represented in the 2000 Documentation, CTDOT will prepare additional written and photographic documentation of the catenary structures to the professional standards of CTSHPO. CTDOT shall submit the documentation to the FTA and CTSHPO for review and revise the documentation according to any comments. CTDOT shall submit the revised documentation to CTSHPO for permanent archiving and public accessibility.

3. CTDOT shall prepare written and photographic documentation of other historic structures on the New Haven Line, within the limits of the Undertaking, to the professional standards of CTSHPO. The documentation will address the high towers, stone retaining walls, interlocking tower (South Norwalk Switch Tower Museum), Fort Point Street Railroad Bridge, and any historic trackside features such as mileposts. The documentation will also provide context views that incorporate the former Norwalk Lock Company buildings, the former Norwalk Iron Works buildings, and the buildings of the South Main and Washington Streets Historic District. CTDOT shall submit the documentation to the FTA and CTSHPO for review and revise the documentation according to any comments. Upon completion, CTDOT shall submit the revised documentation to CTSHPO for permanent archiving and public accessibility.

4. CTDOT shall implement the Archaeological Treatment Plan set forth in Appendix A attached to this MOA and hereby incorporated herein in its entirety. If it is determined that archaeological properties that are eligible for listing in the NRHP are present, CTDOT shall consult with FTA and CTSHPO regarding measures to avoid affecting the properties or to mitigate adverse effects on the properties and shall implement the agreed-upon measures.

5. CTDOT shall attempt to solicit interest in obtaining salvaged material from the Undertaking, such as the catenary structures, to be used for public education purposes, from the institutions listed in Appendix D. If it is feasible to do so, CTDOT shall use its best efforts to ensure that the salvaged material is removed in as intact a condition as possible. The recipient shall be required to accept the salvage material in its "AS-IS" condition and assume all liability, costs and expenses related to the salvaged material, including, without limitation, contamination, and storage. If CTDOT determines it is not feasible to salvage the material, CTDOT shall notify FTA and CTSHPO of the reason(s) that salvaging the material would not be feasible and CTDOT's obligation to salvage the material shall cease.

6. CTDOT shall attempt to reuse/repurpose the stone masonry from the existing bridge abutments that will be demolished in the construction of the replacement bridge. If CTDOT determines that it is not feasible to reuse/repurpose the stone, CTDOT shall notify FTA and CTSHPO of the reason(s) that reuse would not be feasible, and CTDOT's obligation to reuse the stone shall cease. Subsequently, CTDOT shall attempt to solicit interest in obtaining the stone masonry to be used for public education purposes, from the institutions listed in Appendix D. If it is feasible to do so, CTDOT shall use its best efforts to ensure that the salvaged material is removed in as intact a condition as possible. The recipient shall be required to accept the salvage material in its "AS-IS" condition and assume all liability, costs and expenses related to the salvaged material, including, without limitation, contamination, and storage. If CTDOT determines it is not feasible to salvage the stone masonry, CTDOT shall notify FTA and CTSHPO of the reason(s) that salvaging the material would not be feasible and CTDOT's obligation to salvage the material shall cease.

7. CTDOT shall develop an Historic Building Protection Plan in coordination with CTSHPO to minimize the effects of construction-period vibration upon nearby historic buildings. The historic buildings to be included in the Plan consist of the Interlocking Tower (South Norwalk Switch Tower Museum) and historic buildings on the north side of Washington Street in the South Main and Washington Streets Historic District, the Former Norwalk Lock Company, the Former Norwalk Iron Works, the circa 1910 commercial buildings at 68 Water Street, and the buildings that comprise the potentially eligible Liberty Square Historic District. The Plan shall be based on FTA's vibration threshold criteria, and shall consist of multiple elements, including (but not limited to) conducting pre-construction inspection of historic buildings, developing and implementing a vibration monitoring program, and conducting post-construction surveys of historic buildings. The plan shall include protective measures to be implemented if monitoring indicates the potential for damage to historic buildings. CTDOT shall prepare a draft technical memorandum documenting the results of the Plan's implementation and shall submit it to CTSHPO and FTA. The final technical memorandum shall be submitted to CTSHPO for permanent archiving and public accessibility.

8. CTDOT shall develop a maximum of two (2) exhibits and/or education programs for institutions and educators in the community, including the Maritime Aquarium. A maximum of $450,000 will be allocated to the development of the two (2) exhibits and/or education programs. CTDOT shall solicit letters of interest (including scope of work and fee), select the institution(s) to develop the exhibits/education program(s), and submit the scope of work to FTA and CTSHPO for review. Following consultation with and approval by FTA and CTSHPO, CTDOT shall oversee the development and implementation of the exhibits and/or education programs.

- One exhibit will be focused on historic and current movable bridge engineering. The exhibit will include information about the extant WALK Bridge, earlier rail bridges at this location, and the new lift bridge. The public will learn about bridge operation, construction, and function. Hands-on Science, Technology, Engineering, and Math (STEM) educational components will be developed and distributed to local schools to be used in conjunction with school trips to the Maritime Aquarium. Materials will also be provided to the Aquarium to share with and educate visitors.
- A second exhibit will focus on the history of the railroad in the City of Norwalk, especially the WALK Bridge and the archaeological work conducted as part of the project. Photographs, documents, and other materials will be compiled to create the exhibit narrative and visuals. An exhibit will be developed that could be accommodated in any of the historical museums in the City. Associated classroom information will be developed, as well as electronic media that can be shared online with the public.

9. CTDOT shall provide non-federal resources for the restoration of the original iron fencing, gates, and associated masonry located in Mathews Park at the original entrance to the Lockwood-Mathews Mansion on West Avenue in Norwalk. CTDOT shall provide a maximum of $2,500,000 for the restoration. CTDOT will work with the City of Norwalk, the Norwalk Historical Commission, and the Lockwood Mathews Mansion Museum to develop the scope, including the maximum funding amount, for the restoration of the original fencing, gates, and associated masonry.

10. CTDOT shall prepare documentation for listing the potentially eligible Liberty Square Historic District on the National Register of Historic Places. The Liberty Square Historic District to be listed consists of a row of late 19th-century and early 20th-century commercial buildings (195-201 Liberty Square, 203 Liberty Square, 205 Liberty Square, 207 Liberty Square, 209 Liberty Square, 211 Liberty Square, 213 Liberty Square, and 215 Liberty Square). CTDOT shall submit the documentation to the FTA and CTSHPO for review and revise the documentation according to any comments. Upon completion, CTDOT shall submit the revised documentation to CTSHPO for submittal to the National Park Service in accordance with the requirements of the National Register of Historic Places. The documentation shall be available for permanent archiving and public accessibility.

11. CTDOT shall prepare permanent interpretative panels for outdoor display in the city of Norwalk that will be available for viewing by the public. It is anticipated that the subject of the panels will be related to the history of Walk Bridge, the railroad, railroad engineering and transportation history in Connecticut. CTDOT shall consult with the City of Norwalk and the local historic stakeholders regarding the content and locations of the interpretative panels. CTDOT shall prepare and install a maximum of ten (10) permanent interpretive panels.

11. CTDOT will share Thirty (30), sixty (60), and ninety (90) percent design plans with CTSHPO and concurring parties who will have a thirty (30) day comment period in which to submit their comments to CTDOT. CTDOT will consider these comments as design further progresses.

12. Administrative Stipulations

A. Dispute Resolution

If at any time during the implementation of this MOA, CTDOT or CTSHPO objects to any action proposed or the manner in which the terms of this MOA are implemented and cannot resolve the issue between them, both parties shall immediately notify and consult with FTA in order to resolve the objection. If, within thirty (30) days of such written notice, FTA determines that such objection(s) cannot be resolved, FTA will forward all documentation relevant to the dispute to the Council. Within thirty (30)

days after receipt of all pertinent documentation, the Council will provide FTA with recommendations, which FTA will take into account in reaching a final decision regarding the dispute.

If the Council does not provide comments regarding the dispute within thirty (30) days after receipt of adequate documentation, FTA may render a decision regarding the dispute. In reaching its decision, FTA will take into account all comments regarding the dispute from the parties to this MOA.

Any recommendations or comments provided by the Council will be understood to pertain only to the subject of the dispute; FTA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remains unchanged.

FTA will notify all parties of its decision in writing before implementation of that portion of the Undertaking that was subject to dispute. FTA's decision will be final.

B. Amendments and Noncompliance

If any signatory to this MOA determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other signatories to develop an amendment to this MOA pursuant to 36 C.F.R. §§ 800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the original signatories is filed with the Council. If the signatories cannot agree to appropriate terms to amend this MOA, any signatory may terminate this MOA in accordance with Stipulation 12.C.

C. Termination

If this MOA is not amended following the consultation set out in Stipulation 12.B, it may be terminated by any signatory. Within thirty (30) days following termination, FTA shall notify the signatories if it will initiate consultation to execute a new MOA with the signatories under 36 C.F.R. § 800.6(c)(1) or request the comments of the Council under 36 C.F.R. § 800.7(a) and proceed accordingly.

D. Duration

If the terms of this MOA have not been implemented within fifteen (15) years of its execution, this MOA shall be considered null and void. In such event, FTA shall so notify the parties to this MOA and, if FTA chooses to continue with the Undertaking, shall reinitiate review of the Undertaking in accordance with 36 C.F.R. Part 800, et. seq.

E. Timely Review

Materials provided by CTDOT to FTA and CTSHPO under Stipulations 1 through 4 shall be reviewed in a timely fashion by FTA and CTSHPO. FTA and CTSHPO will provide CTDOT with requests for revision and any other comments within thirty (30) days of receiving a draft document. CTDOT will revise the materials accordingly and re-submit to FTA and CTSHPO for approval. Disputes regarding revisions shall be resolved as in Stipulation 12.A. If no response is received within the thirty (30) day period, the document will be considered to be approved by the non-responding party.

F. Unanticipated Discoveries

After the execution of this MOA if previously unidentified properties other than those discussed in this MOA are discovered that are eligible for the NRHP or that unanticipated effects on historic properties are found during the implementation of this MOA, CTDOT shall notify FTA, CTSHPO and appropriate concurring parties, and FTA shall follow the procedure specified in 36 C.F.R. 800.13.

G. Execution

Execution of this MOA by FTA, CTDOT, and CTSHPO and implementation of its terms are evidence that FTA has taken into account the effects of the Undertaking on the Historic Properties.

H. Counterparts

This MOA may be signed in counterpart copies, all of which, taken together, shall constitute but one and the same document.

I. Monitoring and Reporting

Each year following the execution of this MOA until it expires, is terminated, or the Stipulations have been fulfilled, CTDOT, on behalf of FTA, shall provide all parties and signatories to this MOA a summary report detailing work undertaken pursuant to its terms. Such report shall include, as applicable, status of mitigation activities, actions and accomplishments over the past year, any scheduling changes proposed, any problems encountered, and any disputes and/or objections received regarding CTDOT and FTA's efforts to carry out the terms of this MOA.

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL TRANSIT ADMINISTRATION,
THE CONNECTICUT DEPARTMENT OF TRANSPORTATION,
AND
THE CONNECTICUT STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
STATE PROJECT 301-176

Federal Transit Administration

By: Mary Beth Mello Date: 5/25/17
Mary Beth Mello, Regional Administrator, Region 1

Concur: Charles J Dyer Date: 5/25/2017
Charles J. Dyer, Regional Counsel

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL TRANSIT ADMINISTRATION,
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WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
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Connecticut Department of Transportation

By: Thomas J. Maziarz Date: 5-15-2017
Thomas J. Maziarz, Bureau Chief, Bureau of Policy and Planning

SIGNATORY PAGE

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WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
STATE PROJECT 301-176

Connecticut State Historic Preservation Officer

By: _____ Date: 5/16/17
Catherine Labadia, Deputy State Historic Preservation Officer

CONCURRING PARTY

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL TRANSIT ADMINISTRATION,
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AND
THE CONNECTICUT STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
STATE PROJECT 301-176

Tribal Historic Preservation Officer, Mashantucket Pequot Tribal Nation

By: _____ Date: _____
Marissa Turnbull, Tribal Historic Preservation Officer

CONCURRING PARTY

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL TRANSIT ADMINISTRATION,
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WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
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Tribal Historic Preservation Officer, Mohegan Tribe of Indians of Connecticut

By: _____ Date: _____
James Quinn, Tribal Historic Preservation Officer

CONCURRING PARTY

MEMORANDUM OF AGREEMENT
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THE FEDERAL TRANSIT ADMINISTRATION,
THE CONNECTICUT DEPARTMENT OF TRANSPORTATION,
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THE CONNECTICUT STATE HISTORIC PRESERVATION OFFICER
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WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
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Norwalk Historical Commission

By: _____ Date: 5/23/17
David Westmoreland, Chairman

CONCURRING PARTY

MEMORANDUM OF AGREEMENT
AMONG
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THE CONNECTICUT DEPARTMENT OF TRANSPORTATION,
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THE CONNECTICUT STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
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Norwalk Historical Society

By: Diane M. Jellerette
Diane Jellerette, Executive Director

Date: May 22, 2017

CONCURRING PARTY

MEMORANDUM OF AGREEMENT
AMONG
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THE CONNECTICUT DEPARTMENT OF TRANSPORTATION,
AND
THE CONNECTICUT STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
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Norwalk Preservation Trust

By: _____ Date: 5/19/2017
Tod Bryant, President

CONCURRING PARTY

MEMORANDUM OF AGREEMENT
AMONG
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THE CONNECTICUT STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
STATE PROJECT 301-176

SONO Switch Tower Museum

By: Anthony White
Anthony White, President

Date: 5/15/2017

MEMORANDUM OF AGREEMENT

REGARDING THE

WALK BRIDGE REPLACEMENT PROJECT

NORWALK, CONNECTICUT

STATE PROJECT 301-176

APPENDIX A

ARCHAEOLOGICAL TREATMENT PLAN

I. INTRODUCTION

The Connecticut Department of Transportation (CTDOT) proposes the replacement of the Norwalk River Railroad Bridge (State Bridge 04288R), also known as the Walk Bridge, across the Norwalk River in Norwalk, Connecticut (the Undertaking). The plans for the Undertaking involve numerous actions that may affect buried archaeological sites which may be eligible for listing in the National Register of Historic Places (NRHP). The actions include the acquisition of at least twenty (20) parcels for use as construction easements, access and staging areas, as well as shoreline, intertidal and underwater actions related to the erection of new bridge footings, submarine electric cables, and construction-related structures.

An archaeological sensitivity assessment (Phase IA) was undertaken of the terrestrial, intertidal and underwater areas that will be affected by the Undertaking. The assessment included review of historic maps, archaeological site files, local histories, census records, environmental data and bathymetric data, as well as a walkover survey. Twenty (20) terrestrial parcels were assessed as having the potential for containing intact buried archaeological remains. Most of the terrestrial parcels are sensitive for historic-period resources based on the land-use history and 19th century development on both sides of the Norwalk River. However, the survival of pre-colonial Native American site remains cannot be ruled out, because substantial portions of the project area were formerly marshlands, inclusive of a mapped "ancient Indian fort" within a current marina formed by filling in the marsh around the fort site. Intertidal and underwater portions of the Area of Potential Effect (APE), outside of the deep regularly-dredged channel, were also assessed as having archaeological sensitivity for pre-colonial Native American sites.

A combination of geoprobe investigation, machine-assisted and manual testing, and archaeological monitoring is recommended for terrestrial parcels to determine whether potentially significant archaeological resources have survived. A combination of vibracores and hand cores is recommended to determine whether potentially significant submerged archaeological resources have survived in intertidal and underwater portions of the APE.

Additional evaluation of areas of archaeological sensitivity will occur as outlined below.

II. EVALUATION OF AREAS OF ARCHAEOLOGICAL POTENTIAL

A. Further Analysis of Archaeological Sensitivity

Additional geotechnical information may become available that indicates that areas designated as archaeologically sensitive in the project-wide archaeological sensitivity report have little or no potential for containing intact archaeological resources. CTDOT shall notify the U.S. Department of Transportation, Federal Transit Administration (FTA) and the Connecticut State Historic Preservation Office (CTSHPO) of these findings. No further archaeological investigations will be undertaken for these areas.

B. Standards for Archaeological Documentation

All archaeological survey, assessment, documentation and mitigation will be conducted according to the CTSHPO's *Environmental Review Primer for Connecticut's Archaeological Resources* and the United States Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation.*

C. Assessment of Additional Sensitive Areas

Additional areas of archaeological sensitivity may also be identified as part of ongoing actions associated with the Undertaking. Specific areas of the Undertaking impact identified after completion of the Undertaking-wide archaeological sensitivity assessment survey will be evaluated for their potential to contain NRHP-eligible subsurface terrestrial, intertidal and underwater resources. The assessment survey for additional areas will include documentary research, walkover survey, and evaluation of historical, environmental and bathymetric data. Sensitive areas will undergo testing as per Section II.D. below.

D. Field Testing to Determine Presence or Absence of Archaeological Resources

In areas determined to have terrestrial, intertidal and underwater sensitivity, CTDOT, in consultation with CTSHPO and FTA, shall undertake field testing to identify the presence or absence of archaeological resources (Phase Phase IB) as follows:

1. Phase IB testing will begin with geoprobe, vibracore and hand-testing in terrestrial and intertidal areas already identified as sensitive in the Phase IA survey. This testing will rule out certain areas as too disturbed to contain intact archaeological deposits and will help guide development of a focused, more intensive Phase IB testing plan that will conclusively determine the presence or absence of archaeological resources. These determinations will be included in the Phase IB testing plan identified in section D.2.

2. Prior to intensive Phase IB field testing, CTDOT will submit a plan outlining the proposed methodology for CTSHPO's concurrence. The plan will likely include machine-stripping followed by manual shovel testing, expanded shovel testing in non-paved areas, and underwater archaeological investigation.

3. Subsequent to field testing in sensitive areas, CTDOT shall provide a technical memorandum to FTA, CTSHPO, and local stakeholders in which one of the following conclusions is reached:

a) The APE does not appear to contain potentially significant NRHP-eligible archaeological resources; or

b) The APE does contain potentially significant NRHP-eligible archaeological resources.

E. Field Testing to Determine Significance and Extent of Archaeological Resources

If Phase IB testing determines that potentially significant archaeological resources exist in areas that will be impacted by the Undertaking, Phase II field investigations shall be undertaken immediately in order to identify the physical extent of such resources and to determine their significance.

Subsequent to Phase II field testing in sensitive areas, CTDOT shall provide a combined Phase I/II survey technical report to FTA and CTSHPO in which one of the following conclusions is reached:

1. The APE contains significant NRHP-eligible archaeological resources; or
2. The APE does not contain significant NRHP-eligible archaeological resources.

F. Mitigation Data Recovery and Curation

If Phase II field testing determines that significant archaeological resources exist in areas that will be impacted by the Undertaking and that such impacts cannot be avoided, CTDOT, in consultation with FTA and CTSHPO, shall develop and implement appropriate measures to minimize and/or mitigate adverse effects on archaeological resources in the APE. These measures will be implemented prior to any construction or demolition of the area of significant archaeological resources.

1. CTDOT and FTA, in consultation with CTSHPO, shall consider measures, such as design modification, for avoidance of significant archaeological resources.

2. Should mitigation of an unavoidable archaeological site be required, stipulations may be amended to the MOA to address the mitigation, if deemed necessary by CTDOT and FTA in consultation with CTSHPO.

3. In advance of any mitigation or data recovery efforts undertaken for significant archaeological sites in the APE, CTDOT, in consultation with CTSHPO and in coordination with local stakeholders, will develop, in accordance with 36 CFR Part 79, an Analysis and Curation of Material and Records Plan for any archaeological excavations. CTDOT shall be responsible for the implementation of such plan.

MEMORANDUM OF AGREEMENT
REGARDING THE
WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
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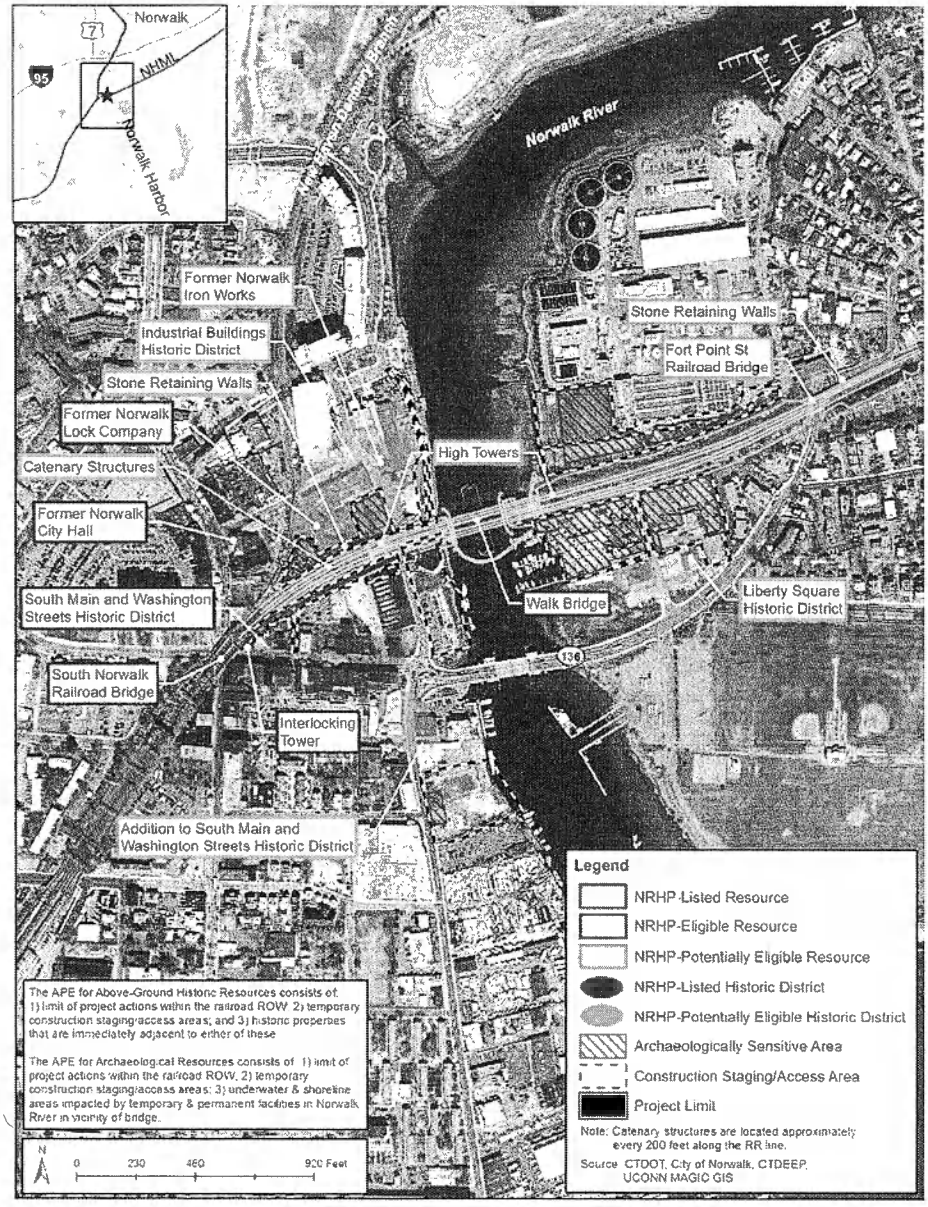
APPENDIX B:

Area of Potential Effect Map



MEMORANDUM OF AGREEMENT
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WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
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APPENDIX C:

Historic Properties Adversely Affected by the Undertaking

Property	National Register Status	Effects
Norwalk River Railroad Bridge (Walk Bridge)	Listed	To be replaced: Adverse Effect.
High Towers	Contributing to an eligible linear historic district	To be removed: Adverse Effect.
Catenary Support Structures	Contributing to an eligible linear historic district	Some or all of the existing catenary support structures will be removed: Adverse Effect.
Stone Retaining Walls	Contributing to an eligible linear historic district	To be removed: Adverse Effect.
Fort Point Street Railroad Bridge	Contributing to an eligible linear historic district	To be removed: Adverse Effect.
South Main and Washington Streets Historic District	Listed	Removal/replacement of bridge and high towers will have a visual impact on the district's setting: indirect (visual) Adverse Effect.
Industrial Buildings Historic District	Eligible	Removal of the high towers and removal and replacement of the Walk Bridge, catenary support structures, and stone retaining walls will have a visual impact on the setting of the potentially eligible historic district: Indirect (Visual) Adverse Effect.
Former Norwalk Lock Company, 18 Marshall St.	Eligible	Removal of the high towers and removal and replacement of the Walk Bridge, catenary support structures, and stone retaining walls will have a visual impact on the building's setting: Indirect (Visual) Adverse Effect.
Former Norwalk Iron Works (Maritime Aquarium), 10 North Water St.	Contributing to an eligible historic district	Removal of the high towers and removal and replacement of the Walk Bridge, catenary support structures, and stone retaining walls will have a visual impact on the building's setting: Indirect (Visual) Adverse Effect.

MEMORANDUM OF AGREEMENT
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APPENDIX D

INSTITUTIONS THAT MAY BE INTERESTED IN OBTAINING SALVAGED MATERIALS FROM THE WALK BRIDGE REPLACEMENT PROJECT

City of Norwalk
Norwalk City Hall
125 East Avenue
Norwalk, CT 06851-5125

SONO Switch Tower Museum
77 Washington Street
Norwalk, CT 06854

Norwalk Historical Society
Mill Hill Historic Park
2 East Wall Street, P. O. Box 1640
Norwalk, CT 06851

Lockwood-Mathews Mansion Museum
295 West Avenue
Norwalk, CT 06851

Maritime Aquarium at Norwalk
10 North Water Street
Norwalk, CT 06854

Connecticut Eastern Railway Museum
Eastern CT Chapter, National Railway
Historical Society
P.O. Box 665
Willimantic, CT 06226-0665

Connecticut Trolley Museum
P.O. Box 360
East Windsor, CT 06088

Danbury Railway Museum
120 White Street
Danbury, CT 06810

Railroad Museum of New England
P.O. Box400
Thomaston, CT 06787-0400

The Shoreline Trolley Museum
17 River Street
East Haven, CT 06512

The Valley Railroad Company
One Railroad Avenue
P.O. Box 452
Essex, CT 06426

Vernon Depot Park
Vernon Parks and Recreation Department
14 Park Place
Vernon, CT 06066

Appendix 3 Permits and Approvals

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Federal Requirements for Project Construction and Operation

Federal Regulation	Issuing Agency	Approval/Permit
National Environmental Policy Act (42 USC 4321 et seq)	FTA	Review and Finding
Section 4(f), U.S. Department of Transportation Act (49 USC 303)	FTA	Individual Evaluation and Finding for potential use of Section 4(f) properties
Executive Order 11988, Floodplain Protection, as amended by Executive Order 13690, Federal Flood Risk Management	FTA	Review for impact to floodplain
Executive Order 11990, Wetlands Protection	FTA	Review for impact to wetlands
Executive Order 12898, Environmental Justice	FTA	Review for assessment of impact to EJ communities
Clean Air Act (42 USC 7401 et seq)	FTA	Conformity Determination
Section 106, National Historic Preservation Act (36 CFR 800)	FTA	Memorandum of Agreement
Section 7, Endangered Species Act (16 USC 1531 et seq)	NOAA/NMFS	Biological Evaluation
Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq)	NOAA/NMFS	Essential Fish Habitat Assessment
Coastal Zone Management Act/Connecticut Coastal Management Act (16 USC 1451 et seq)	CTDEEP	Consistency Review
Section 9 of the Rivers and Harbors Act (33 USC 491)	USCG	Permit for construction of new bridge
Section 10 of the Rivers and Harbors Act (33 USC 403)	USACE	Permit for dredging and filling in navigable waters/ impacts to waters and wetlands of the U.S.
Section 404 of the Clean Water Act (33 USC 1344)		
Section 14 of the Rivers and Harbors Act (33 USC 408)	USACE	Permit for impact to federal navigation channel (USACE civil works project)
49 CFR 77: Safe, Efficient Use and Preservation of the Navigable Airspace	FAA	Notice of Proposed Construction or Alteration

State Requirements for Project Construction and Operation

Federal/State Regulation	Issuing Agency	Approval/Permit
Connecticut Environmental Policy Act (CGS Section 22a-1-22a-1h)	CTDOT/CT Office of Policy and Management	Record of Decision/Review and Concurrence
Title VI Program/FTA Circular 4702.1B of October 1, 2012	CTDOT	Environmental Equity Review
Connecticut Endangered Species Act (CGS Section 26-303)	CTDEEP	Natural Diversity Database Review
Connecticut Coastal Management Act; and Tidal Wetlands Regulations (CGS Section 22a-30-1)	CTDEEP	Structures, Dredge and Fill, and Tidal Wetlands Permit
Section 401 of the Clean Water Act (33 USC 1341); Connecticut Surface Water Quality Standards (CGS Section 221-426)	CTDEEP	Water Quality Certification
Connecticut Flood Management Program (CGS Sections 25-68b - 25-68h)	CTDEEP	Flood Management Certification
CGS Section 22a-36 to 22a-45	CTDEEP	Inland Wetlands General Permit
Section 402 of the Clean Water Act (33 USC 1342); General Conditions Applicable to Water Discharge Permits and Procedures and Criteria for Issuing Water Discharge Permits(CGS Section 22a-430b)	CTDEEP	General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activity
Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (42 USC 4601 et seq); Uniform Relocation Assistance Act (CGS Section 8-266 et seq)	CTDOT	Review/relocation assistance
CGS Section 22a-134, Hazardous Materials	CTDEEP	Review of potential for hazardous material impacts, including identification of high-risk sites, site investigations, and environmental audits
CGS Section 22a-133z and 22a-208a	CTDEEP	General Permit for Contaminated Soil and/or Sediment Management
CGS Chapter 446d and 446k, RCSA Sections 22a-208a-1, 22a-209-1, and 22a-209-8	CTDEEP	Authorization for Disposal of Special Waste
CGS Section 22a-430(b)	CTDEEP	General Permit for the Discharge of Groundwater Remediation Wastewater

STATE OF CONNECTICUT

OFFICE OF POLICY AND MANAGEMENT

OFFICE OF THE SECRETARY

TO: James Redeker
Commissioner
Department of Transportation

FROM: Susan Weisselberg, Deputy Secretary
Office of Policy and Management

DATE: July 6, 2017

SUBJECT: Environmental Impact Evaluation (EIE) for the Replacement of Walk Bridge and Record of Decision (ROD)

Based on a review of the subject environmental impact evaluation conducted pursuant to C.G.S. 22a-1e, I am herewith advising you of my finding that this evaluation satisfies the requirements of the Connecticut Environmental Policy Act (CEPA).

OPM notes that, in proceeding from CEPA Scoping to the EIE, DOT chose to elevate maritime access above other economic and social considerations. OPM challenged that decision in its EIE comments and a number of commenters continued to raise other concerns. In reviewing this ROD, OPM considered DOT's interest in maritime access to carry no more weight than other concerns.

OPM's determination of adequacy is based on a finding that the cost and benefits of maintaining or even improving maritime access by means of a new movable bridge can justify other local impacts, particularly the new bridge structure's aesthetic impacts, but DOT must make every effort to mitigate such impacts.

Given the very limited amount of maritime activity impacted by the choice of bridge for this location, DOT's determination that it can complete the movable bridge project at a cost comparable to rehabilitating and locking the existing bridge in place, with long-term operational costs not being higher, played a key role in OPM determining the environmental review to be adequate.

The state and its infrastructure face various economic, environmental and other challenges, so it is important that potentially reasonable and cost-effective alternatives are considered prior to committing state funding.

Please contact Bruce Wittchen (860-418-6323) if there are any questions with regard to this finding.

cc: Paul Potamianos, OPM
Frederick Riese, DEEP
Karl Wagener, CEQ

Attachment A-2 FTA Verification of FONSI, September 19, 2019

FTA Environmental Re-evaluation Consultation Worksheet, July 2019

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION I
Connecticut, Maine,
Massachusetts,
New Hampshire,
Rhode Island, Vermont

Volpe Center
55 Broadway Suite 920
Cambridge, MA 02142-1093
617-494-2055
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September 19, 2019

Mr. Joseph Giulietti
Commissioner
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06111

Subject: Re-Evaluation of the Walk Bridge Replacement Project Environmental Assessment – Finding of No Significant Impact

Dear Mr. Giulietti:

Thank you for submitting the *Environmental Re-Evaluation Consultation Form for the Walk Bridge Replacement Project* received on July 12, 2019 (referred to as the Re-Evaluation). The Federal Transit Administration (FTA) has completed our review of the Connecticut Department of Transportation's (CTDOT) request for a re-evaluation of the Finding of No Significant Impact (FONSI) issued on July 17, 2017 for the Walk Bridge Replacement Project. As part of the Project, CTDOT proposes to make changes to the following elements of the Project:

- Vertical and horizontal clearances of the Walk Bridge Replacement have been refined since conceptual design;
- Alignment and location of the Fort Point Street Bridge replacement;
- The routing of the traction power and communication and signals power has been refined;
- New retaining walls will be required within the right-of-way (ROW) on both sides of the railroad;
- Refinements for ferry and research vessel dock relocations;
- Storm water run-off and water discharged due to dredging will be pretreated to maximum extent;
- Revised property acquisitions.

The Re-Evaluation was submitted to provide information on potential impacts of the proposed changes to determine if the changed Project will result in significant environmental impacts and to provide information requested by the FTA. CTDOT's Re-Evaluation concluded that the proposed changes to design and construction are consistent with the approved FONSI and would not result in any significant environmental impacts, that the approved environmental determination remains valid and recommended no supplemental environmental review be required.

Based on FTA's independent review of the Re-Evaluation, attached hereto, FTA concurs that the proposed changes to the Project, as described in the Re-Evaluation, will not result in significant adverse environmental impacts. The completed Re-Evaluation document satisfies the NEPA requirements as outlined in 23 C.F.R. § 771.129 and no supplemental environmental review is necessary for the proposed changes. FTA affirms that the July 17, 2017 FONSI associated with Walk Bridge Replacement Project remains valid.

Going forward, if any further changes to the Project are proposed, CTDOT must notify the FTA in writing prior to implementing the change so that FTA can determine whether additional environmental studies or analysis will be necessary before the changes are approved. Should you have any questions concerning this Project, please contact Leah Sirmin at 617-494-2459.

Sincerely,

Peter Butler
Regional Administrator

Enclosures: CTDOT's *Environmental Re-Evaluation Consultation form for the Walk Bridge Replacement Project*, dated July 12, 2019

FTA Memorandum, dated September 19, 2019

cc: Jim Fallon, CTDOT
Kim Lesay, CTDOT

FEDERAL TRANSIT ADMINISTRATION
ENVIRONMENTAL RE-EVALUATION CONSULTATION

For Agency Use *Date Received:*	
Recommendation by Planner or Engineer: ☐ *Accept* ☐ *Return for Revisions* ☐ *Not Eligible*	*Reviewed By:* *Date:*
Comments:	
Concurrence by Regional Counsel: ☐ *Accept Recommendation* ☐ *Return with Comments*	*Reviewed By:* *Date:*
Comments:	
Concurrence by Approving Official:	*Date:*

Please answer the following questions, fill out the impact chart and attach project area and site maps
Figures have been prepared for this Environmental Re-evaluation Consultation to show project revisions; the figures are numbered to correspond with similar figures presented in the EA/FONSI (e.g., Figures 2-14a and 2-14b compare with EA/FONSI Figure 2-14).

PROJECT TITLE
Walk Bridge Replacement Project
Bridge No. 042884, Norwalk, Connecticut
Connecticut State Project No. 0301-0176

LIST CURRENT, APPROVED ENVIRONMENTAL DOCUMENTS (e.g. EIS/ROD, EA/FONSI, CE, RE-EVALUATION, etc.) If Re-evaluation, briefly describe.		
Title: Walk Bridge Replacement Project Environmental Assessment/Section 4(f) Evaluation and Environmental Impact Evaluation (EA/EIE) Date: August 2016 Type and Date of Last Federal Action: Finding of No Significant Impact (EA/FONSI), July 17, 2017		
Title:	**Date:**	**Type and Date of Last Federal Action**
Title:	**Date:**	**Type and Date of Last Federal Action**

HAS THE MOST CURRENT AND OTHER PERTINENT APPROVED ENVIRONMENTAL DOCUMENTS BEEN *RE-READ* TO COMPARE PROPOSED PROJECT CHANGES?

☐ **NO (STOP! The most current approved environmental document MUST be re-read prior to completing a re-evaluation.)**

☒ **YES NAME: Walk Bridge Replacement Project EA/EIE DATE: August 2016**

IS THE PROJECT CURRENTLY UNDER ☒ **DESIGN** **OR** ☐ **CONSTRUCTION?**

REASON FOR RE-EVALUATION

The design of the Walk Bridge Replacement Project has advanced since the 15% conceptual level that was analyzed in the EA/FONSI. This design advancement beyond 60% since the conceptual design has resulted in limited design modifications, while also refining the construction methodology of the Construction Manager/General Contractor (CM/GC). Additionally, since the issuance of the EA/FONSI, CTDOT has conducted multiple meetings with federal regulatory, state, and local regulatory agencies to refine project mitigation and advance permitting. These refinements in engineering design and construction methods necessitate a re-evaluation of potential environmental impacts.

DESCRIPTION OF PROJECT CHANGES OR NEW INFORMATION

The following presents a description of project modifications. Table 1 (page 19) presents an assessment of impacts due to the project modifications.

Engineering Design Refinement - Walk Bridge Design. The bridge type presented in the EA/FONSI and in the refined 60% design - two 240-foot long, side-by-side vertical lift spans across the Norwalk River – remains the same. Two of the navigation clearances of the vertical lift span have been refined since conceptual design.

The EA/FONSI indicates that the replacement bridge will have 60 feet of vertical clearance (from mean high water [MHW]) in the open position, and approximately 27 feet of vertical clearance in the closed position. A new fender system will be constructed approximately 10 feet from the new vertical lift span piers to protect them, providing 200 feet of horizontal clearance in the navigation channel. The bridge will be supported by new abutments at each end and five intermediate bridge piers, including the vertical lift bridge piers. Both piers supporting the vertical lift span towers will be placed outside the span length limits of the existing swing span, with no new foundation construction occurring in either the west or east navigation channels, as currently defined by the existing swing span. Both lift span piers will be located within the limits of the Norwalk River, with each pier consisting of a foundation comprised of four drilled shafts installed into bedrock.

In the 60% Design, the vertical and horizontal clearances of the replacement bridge are updated to reflect agency coordination, design refinement, and constructability analysis. In the 60% design, the replacement bridge still provides approximately 60 feet of vertical clearance (from MHW) in the open position and slightly less vertical clearance in the closed position - approximately 26 feet. The change in vertical clearance (movable span closed) from the EA/FONSI to 60% design is less than one foot. The proposed bridge provides less horizontal clearance - 170 feet of horizontal clearance between the limits of the pier protection system. Although this represents a 30-foot reduction from the EA/FONSI horizontal clearance, the proposed bridge's horizontal clearance does represent a substantial navigational increase from existing conditions and provides improved realignment with the Stroffolino Bridge. The design and construction of the two lift span piers, Pier 2 and Pier 3, are consistent with the EA/FONSI. The locations of the lift span piers remain unchanged from the previous arrangement and are located outside of the 170-foot navigation channel.

Summary of Impact: The proposed bridge plan in 60% design is consistent with the EA/FONSI and the impact of the changes in vertical and horizontal clearances is not significant. While the replacement

bridge's clearances are less than those proposed in the EA/FONSI, the proposed clearances still represent a substantial improvement from existing conditions.

Engineering Design Refinement – Fort Point Street Bridge Relocation and Roadway Realignment. The EA/FONSI indicates that Fort Point Street Bridge will be replaced, including replacement of the existing superstructure and bridge abutments. The abutments could be constructed in the same general location as the existing bridge abutments or could be pulled back to accommodate a wider Fort Point Street below. Additionally, the vertical clearance of the new bridge structure could be increased. The replacement will not require parcel acquisitions but could require temporary easements. The EA/EIE states that CTDOT is refining its requirements for temporary easements.

Like the EA/FONSI design, in the 60% Design, Fort Point Street Bridge is replaced; however, the replacement bridge is located approximately 100 feet west of the existing bridge. After evaluating construction costs and risks and in response to the City of Norwalk's concerns with closing Fort Point Street during construction, CTDOT decided to replace the Fort Point Street Bridge via a realignment of the bridge and roadway. CTDOT determined that a realigned configuration of Fort Point Street improves construction staging and traffic control, reduces design and construction risks, and reduces costs. The new location for the Fort Point Street Bridge enables the existing roadway to remain in service during construction, as the new bridge and relocated Fort Point Street are constructed off-alignment while traffic is maintained on the existing Fort Point Street, with only very limited street closures and reduced impacts to the local roadway traffic network.

Just north of Van Zant Street, Fort Point Street is realigned to connect with South Smith Street to the north and existing Fort Point Street northeast of the railroad, providing a standard T-type intersection alignment which improves safety at the intersection of Fort Point Street and South Smith Street. Fort Point Street is reconstructed, and utilities and storm sewer in existing Fort Point Street are relocated to the new alignment. The existing bridge superstructure is dismantled and the area beneath the existing bridge, formerly occupied by Fort Point Street (the actual street), is backfilled. Figures 2-14a and 2-14b show the project limits per the refined 60% design, revised from EA/EIE Figure 2-14 (Attachment A). Attachment B provides a plan of the Fort Point Street Bridge relocation and roadway realignment.

Summary of Impact: The Fort Point Street Bridge relocation and roadway realignment presents new impacts; however, the impact of the changes is not significant. The realignment provides both short-term and long-term traffic improvements. During construction, the realignment reduces construction-related traffic impacts. In the long-term, the realignment improves the functionality and safety of the intersection of Fort Point Street and South Street. Realignment of Fort Point Street requires a full-parcel acquisition at 21 Fort Point Street (Parcel 3/1/11) and displaces an existing restaurant and multi-family structure, for a total displacement of one business and up to three residences in two buildings. Additionally, CTDOT requires temporary and permanent easements at 19 Fort Point Street (Parcel 3/1/27) and 15 Fort Point Street (Parcel 3/1/21), and a permanent easement at 2 South Smith Street (Parcel 3/3/1) for construction and/or operation of the relocated bridge and realigned roadway. The displacement of a business and up to three residences does not alter overall land use trends or zoning. The affected business and residences are located within a Census Tract identified as an Environmental Justice (EJ) Community of Concern. In the EA/FONSI, FTA determined that the proposed Project would not have disproportionately high and adverse effects on minority or low-income populations. The additional displacements due to the Fort Point Street Bridge and roadway realignment do not disproportionately affect EJ populations. Affected property owners will be provided with relocation assistance. CTDOT assessed the impacts of the Fort Point Street Bridge relocation and roadway realignment upon historic resources. These changes have substantially the same effect as the previous design. Mitigation of adverse effects stipulated in the project's Section 106 Memorandum of Agreement (MOA), consisting of documentation of the historic structures on the New Haven Line, including Fort Point Street Bridge, was completed in August 2018.

One other National Register of Historic Places (NRHP)-eligible property was identified in the Fort Point Street Bridge portion of the Area of Potential Effects (APE); the roadway realignment does not have adverse effects on this property. No other buildings within or adjacent to this portion of the APE were determined eligible for the NRHP. Based on the results of a Phase IA Assessment of the bridge relocation and roadway realignment, no intact archaeological resources will be impacted by the construction of the Fort Point Street Bridge relocation and roadway realignment. Further, no supplementary archaeological surveys are recommended, as they would be highly unlikely to document additional archaeological resources within the project area.

Engineering Design Refinement – Additional Retaining Walls.
The EA/FONSI indicates that west of Walk Bridge, new retaining walls will be required within the right-of-way (ROW) for 350 feet parallel to the tracks on both sides of the railroad, extending to approximately 250 feet east of the Washington Street Bridge. East of Walk Bridge, a new retaining wall will be constructed south of the railroad, parallel to the tracks, within the ROW.

In the 60% Design, the Walk Bridge approach has been further refined with the construction of new retaining walls west of Walk Bridge, as shown on Figures 2-14a and 2-14b. The area directly east of the west abutment of Walk Bridge is graded to accommodate future bridge maintenance access. Two additional walls are located under the west approach of Walk Bridge to accommodate this access; these walls (Walls 104 and 105) are located on either side of the railroad and within the ROW.

Summary of Impact: The additional retaining walls do not result in significant environmental impacts: the walls are located within the existing ROW and do not impact resources.

Engineering Design Refinement – Railroad Power and Communication Signals.
The EA/FONSI indicates that the existing Metro-North Railroad (MNR) communication utilities will require replacement and will potentially be located on the new bridge to the north or south of the movable span, transitioning to under the river at the navigation channel. Further, the EA/FONSI states that the MNR wires will be transferred to an underground duct bank and submarine cable early in construction.

Based on coordination with MNR, in the 60% Design, the routing of the traction power and communication and signals (C&S) power has been refined. In the permanent condition, the cables are located along an alignment on the south side of the bridge. Like the EA/FONSI, on the east side of the river, the existing overhead contact system (OCS) power cable transitions into a duct bank from Goldstein Place to the Norwalk River bank (at Parcel 3/1/25). It then transitions to a buried cable crossing the river via a cut and cover installation , to a duct bank on the west side of the river at 10 North Water Street (Parcel 2/19/2). CTDOT is continuing to evaluate options for temporary placement of the C&S power in coordination with MNR and the City of Norwalk.

Summary of Impact: Temporary impacts are anticipated due to the submarine crossing. An alternatives analysis was prepared to assess the installation alternative with the least amount of environmental impacts; a summary of the analysis is provided in Table 1. The U.S. Army Corps of Engineers (USACE) will review and approve the submarine crossing, including the appropriate depth below river bottom and management of dredged sediment, via the Section 10/Section 404 permit. To accommodate the duct bank at Parcel 2/19/2, CTDOT is expanding its permanent easement. The expansion of the easement does not result in significant environmental impacts.

Engineering Design Refinement - Ferry and Research Vessel Dock Relocations.
The EA/FONSI indicates that temporary relocation of the Sheffield Island Ferry and Maritime Aquarium vessel operations docks will be required. During construction, the existing docks will be temporarily closed and relocated elsewhere in Norwalk Harbor. The EA/FONSI indicates that CTDOT will coordinate

with water-dependent users, including the City of Norwalk, the Norwalk Harbor Management Commission, the Norwalk Seaport Association, and the Maritime Aquarium, to explore mitigation opportunities.

In the 60% Design, CTDOT has preliminarily identified a temporary location for the docks south of their existing location and is coordinating with the City of Norwalk and the Norwalk Harbor Management Commission to finalize their location during construction. Following bridge construction, new docks are re-constructed and vessel operations resume at their original locations. The City of Norwalk has requested that CTDOT retain one of the relocated docks as the final condition, providing a permanent water-dependent use and amenity for the public. CTDOT is finalizing the design of the vessel dock relocation, which will be included in permit applications.

Summary of Impact: Similar to the approach described in the EA/FONSI, CTDOT is coordinating the relocation of the docks in Norwalk Harbor with the City of Norwalk; the temporary location will be finalized as permitting progresses.

Engineering Design Refinement – Revised Bridge Stormwater Design.
The EA/FONSI indicates that Walk Bridge will include both open and closed drainage. The movable span will be open drainage, allowing runoff to fall directly into the Norwalk River untreated via the same means as the existing bridge. Drainage for both approach spans will consist of closed systems.

The Walk Bridge stormwater drainage in the 60% Design consists of open drainage for the movable span and closed systems for the approach spans. Water incorporated into the drainage systems is treated to the maximum extent practicable before discharge to the Norwalk River.

Summary of Impact: The approach to stormwater design in the 60% design is consistent with the EA/FONSI.

Construction Methods Refinement – Revised Property Acquisitions and Development.
The EA/FONSI indicates that Walk Bridge construction and operation will require the use of 22 parcels for temporary storage of construction equipment and supplies, contractor assembly and staging of equipment, contractor access to the Norwalk River and streets for transport of equipment and materials, contractor access to the railroad ROW, dredged/excavated sediment temporary storage and management, and access to the bridge for maintenance. The EA/EIE states that the sizes of temporary and permanent easements required for construction and maintenance of the Build Alternative will be determined and refined as design advances and in cooperation with property owners.

In the 60% Design, CTDOT will use the 22 parcels identified in the EA/FONSI for project construction. Refined construction methods have resulted in changes to three of the 22 parcels, as follows:

68 Water Street (Parcel 2/84/19), 70 Water Street (Parcel 2/84/63), and 90 Water Street (Parcel 2/84/33). Parcels 2/84/63 and 2/84/33 were identified in the EA/FONSI as full-parcel temporary easements. Due to the development of the Marine Staging Yard and anticipated construction duration, CTDOT anticipates that these full-parcel temporary easements will be revised to full-parcel acquisitions. Additionally, CTDOT will construct a bulkhead waterside of 68 Water Street – 90 Water Street to provide a mooring location for barge deliveries of large assembly components and to transfer the equipment and materials from land to construction barges. When construction is complete, the bulkhead will remain in place for future use by the property owner.

10 North Water Street (IMAX Theater) - Parcel 2/19/2. The temporary easement for this parcel was identified in the EA/FONSI as Partial/To be Determined (TBD), and the parcel's permanent easement was identified as TBD for bridge operation and maintenance. To accommodate construction equipment and staging needs, CTDOT determined that it requires full use of this parcel as a temporary easement. CTDOT anticipates that an expanded permanent easement is needed to accommodate a duct bank for MNR power and communication signals, in addition to the previously-identified bridge operation and maintenance.

In addition to the 22 parcels identified in the EA/FONSI for construction and operation of the project, five temporary easements previously secured for advance projects are retained for the Walk Bridge Project, as follows:

21, 23, 29, 41 North Main Street (Parcels 2/24/3, 2/24/4, 2/24/5, and 2/24/8). The temporary easements on the North Main Street parcels, previously acquired for the Danbury Dock Yard Improvements Project, are required for Eversource transmission pole removal.

10 Norden Place (Parcel 3/17/40). The parking area at 10 Norden Place, previously acquired for the CP-243 Interlocking Project, is required for construction staging and track access.

Additionally, as previously cited in **Engineering Design Refinement – Fort Point Street Bridge Relocation and Roadway Realignment**, CTDOT requires a full-parcel acquisition at 21 Fort Point Street (Parcel 3/1/11); temporary and permanent easements at 19 Fort Point Street (Parcel 3/1/27) and 15 Fort Point Street (Parcel 3/1/21); and a permanent easement at 2 South Smith Street (Parcel 3/3/1) for construction and/or operation of the relocated bridge and realigned roadway.

Summary of Impact: The refined construction method in the 60% design results in changes to CTDOT's needs for acquisitions or easements at three of the 22 parcels identified in the EA/FONSI, as well as continued use of previously acquired construction easements. Following construction completion, temporary easements will be extinguished and CTDOT will restore the areas to preconstruction conditions. The acquired properties at 70 and 90 Water Street will be sold (as opposed to returning to pre-construction conditions). The sale of the waterfront property (90 Water Street) will give priority to water-dependent uses, as described in the EA/FONSI. The full use of Parcel 2/19/2 as a temporary easement will result in the displacement and demolition of the IMAX Theater. To mitigate impacts and compensate for the loss of the facility, CTDOT has entered into an agreement with the City of Norwalk allowing for the future development of a replacement facility. Table 1 provides additional information about the impacts of the closure and demolition of the existing facility and the construction and occupancy of the replacement facility. The expanded permanent easement on Parcel 2/19/2 may result in less available area for future development.

As noted in the EA/FONSI, as the project progresses, CTDOT may require additional, minor ROW easements for construction.

HAVE ANY NEW OR REVISED LAWS OR REGULATIONS BEEN ISSUED SINCE APPROVAL OF THE LAST ENVIRONMENTAL DOCUMENT THAT AFFECTS THIS PROJECT? If yes, please explain.

☐ **NO**
☒ **YES**
Executive Order (EO) 13690, Establishing a Federal Flood Risk Management Standard and amending EO 11988, was revoked on August 15, 2017. EO 13690 required that the mechanical system of the bridge (defined as a critical action) be designed at least to 3 feet above the FEMA 100-year flood elevation [12

feet (NAVD88)]. EO 11988, Floodplain Management, requires that CTDOT assess the impacts of the bridge upon the 100-year flood elevation.

Connecticut Public Act No. 18-82, An Act Concerning Climate Change Planning and Resiliency, was approved by the Governor on June 6, 2018. The Act mandates the consideration of sea level change scenarios upon infrastructure planning and development. It requires the publication of a sea level change scenario for the State of Connecticut based upon the NOAA's analysis. On March 27, 2018, the Connecticut Institute for Reliance and Climate Adaptation (CIRCA) released a draft report, *Sea Level Rise in Connecticut*. The report modified the results of federal scenarios for sea level rise to include the effects of local conditions and indicates that the planning threshold for sea level rise for the Connecticut coast is 0.5 meters (approximately 2 feet). Further, Public Act No. 18-82 requires that State projects in coastal zones incorporate "flood-proofing," defined as incorporating an additional two feet of freeboard above base flood and any additional freeboard necessary to account for the most recent sea level change scenario. Freeboard is defined as a safety factor, expressed in feet above a calculated flood level, that compensates for unknown factors contributing to flood heights greater than the calculated height, including ice jams, wave actions, obstructions of bridge openings and floodways, the effects of urbanization on the hydrology of a watershed, loss of flood storage.

The following table compares the elevations of key bridge elements on the vertical lift bridge to the freeboard elevation level as required by Public Act No. 18-82. Freeboard elevation equals 14 feet NAVD 88, which is the base flood elevation (12 ft NAVD88) of the downstream face of the bridge plus an additional 2 feet, per Public Act No. 18-82. As shown in the table, the elevations of key bridge elements of the replacement bridge will be higher than the freeboard elevation mandate of Public Act No. 18-82.

Bridge Element	Elevation (+/-)	Meets Freeboard Elevation (El. 14)
Main Span Low Chord	29.14	yes
Eastern Approach Span Low Chord	24.1	yes
Western Approach Span Low Chord	23.1	yes
Control House Platform	24.0	yes
Electric Room Lowest Floor	156.0	yes
Machine Room (Drive Machinery & Motors) Lowest Floor	156.0	yes

Attachment C provides an assessment of existing and proposed Walk Bridge relative to Public Act No. 18-82. The passage of Public Act No. 18-82 does not affect the design of the replacement bridge; as currently designed, the replacement bridge complies with Public Act No. 18-82. The elevations of key bridge elements on the vertical lift bridge were compared to the freeboard elevation level and anticipated hurricane inundation levels with a 2-foot sea level rise as required by Public Act No. 18-82. The elevations of key bridge elements of the replacement bridge will be higher than the freeboard elevation mandate of Public Act No. 18-82. Compared to existing Walk Bridge, the resistance to hurricane inundation levels with a 2-foot sea level rise will be substantially improved with the replacement bridge.

WILL THE NEW INFORMATION HAVE THE POTENTIAL TO CAUSE A CHANGE IN THE DETERMINATION OF IMPACTS FROM WHAT WAS DESCRIBED IN THE ORIGINAL ENVIRONMENTAL DOCUMENT FOR ANY OF THE AREAS LISTED BELOW? For each impact category, please indicate whether there will be a change in impacts. For all categories with a change, continue to the table at the end of this worksheet (Table 1) and provide detailed descriptions of the impacts as initially disclosed, new impacts and a discussion of the changes. The change in impact may be beneficial or adverse.

Transportation		
Rail Transportation	☐ **Yes**	☒ **No**
Marine Transportation	☒ **Yes**	☐ **No**
Traffic, Transit and Parking	☒ **Yes**	☐ **No**
Land Use and Economics		
Land Use and Zoning	☒ **Yes**	☐ **No**
Socioeconomics	☒ **Yes**	☐ **No**
Acquisitions, Displacements, & Relocations	☒ **Yes**	☐ **No**
Neighborhoods & Populations (Social)		
Title VI and Environmental Justice	☒ **Yes**	☐ **No**
Visual Resources & Aesthetics	☒ **Yes**	☐ **No**
Air Quality	☐ **Yes**	☒ **No**
Noise & Vibration	☐ **Yes**	☒ **No**
Ecosystems (Vegetation & Wildlife)	☐ **Yes**	☒ **No**
Water Resources		
Water Quality/Stormwater	☒ **Yes**	☐ **No**
Aquatic Resources, Species, Critical Habitats	☒ **Yes**	☐ **No**
Energy & Natural Resources	☐ **Yes**	☒ **No**
Geology & Soils	☐ **Yes**	☒ **No**
Hazardous Materials	☒ **Yes**	☐ **No**
Public Services	☐ **Yes**	☒ **No**
Utilities	☐ **Yes**	☒ **No**
Historic, Cultural & Archaeological Resources	☒ **Yes**	☐ **No**
Parklands & Recreation and Community Facilities	☐ **Yes**	☒ **No**
Construction	☒ **Yes**	☐ **No**
Secondary and Cumulative	☒ **Yes**	☐ **No**

Will the changed conditions or new information result in revised documentation or determination under the following federal regulations?

Endangered Species Act	☐ **Yes**	☒ **No** Explanation included
Magnuson-Stevens Act	☐ **Yes**	☒ **No** Explanation included
Farmland Preservation Act	☐ **Yes**	☒ **No**
Section 404-Clean Water Act	☐ **Yes**	☒ **No**
Floodplain Management Act	☐ **Yes**	☒ **No** Explanation included
Hazardous Materials	☐ **Yes**	☒ **No**
Section 106 National Historic Preservation Act	☒ **Yes**	☐ **No**
Uniform Relocation Act	☒ **Yes**	☐ **No**
Section 4(f) Lands	☐ **Yes**	☒ **No** Explanation included
Section 6(f) Lands	☐ **Yes**	☒ **No**
Wild & Scenic Rivers	☐ **Yes**	☒ **No**
Coastal Barriers	☐ **Yes**	☒ **No**
Coastal Zone	☐ **Yes**	☒ **No**
Sole Source Aquifer	☐ **Yes**	☒ **No**
National Scenic Byways	☐ **Yes**	☒ **No**
Other EO12898 – Environmental Justice	☐ **Yes**	☒ **No** Explanation included

If you checked yes to any of these, describe how the changes impact compliance and any actions needed to ensure compliance of the new project:

Section 106 of the National Historic Preservation Act. Investigations were conducted to determine if the Fort Point Street Bridge relocation and roadway realignment would impact above-ground historic resources or archaeological resources. New Areas of Potential Effects (APEs) were delineated for the proposed bridge and roadway realignment. Attachment D includes the supplemental cultural resource reports documenting these findings, which are summarized as follows:

The APE for above-ground resources includes the railroad ROW between the existing Fort Point Street Bridge and the location of the new bridge, the area where the realigned Fort Point Street will be constructed, and all associated street improvements to Fort Point Street and South Smith Street. Properties within or adjacent to the APE were evaluated for NRHP eligibility and for possible adverse effects. The only adverse effects on above-ground historic properties result from the loss of the historic bridge itself and the introduction of a modern element (the replacement bridge) within the historic rail line. These effects were considered in the Walk Bridge Project's previous Section 106 consultation and mitigation of the effects was included in the project's MOA. No buildings within or adjacent to the APE of the roadway realignment, including 21 Fort Street, are determined to be eligible for the National Register of Historic Places (NRHP). One property which is close to Fort Point Street (25 Van Zant Street) is eligible for the NRHP; however, the realignment will not adversely impact this property. None of the buildings within or adjacent to the APE that are less than 50 years old appears to have any "exceptional importance" that would make it eligible for the NRHP.

The APE for archaeological resources includes the railroad ROW between the existing Fort Point Street Bridge and the location of the new bridge, the area where the re-aligned Fort Point Street will be constructed, and all associated street improvements. A Phase IA survey was conducted to assess the potential for the proposed actions in the APE to affect undisturbed archaeological resources. Based on the results of the Phase IA Assessment, no intact archaeological resources will be impacted by the Fort Point Street Bridge relocation and roadway realignment. The only potential archaeological resources are

located at least 10 feet below the existing ground surface, are outside of the APE, and protected by 10 feet of disturbed overlying soil sequences.

Uniform Relocation Act. Modifications to design and construction methods will result in additional displacements. Due to the realignment of Fort Point Street, the project will require the acquisition of 21 Fort Point Street and displacement of a business and up to three residences. The full-parcel use of 10 North Water Street (Parcel 2/19/2) and 70 Water Street for project construction will displace/demolish the IMAX Theatre and a vacant warehouse, respectively. As described in the EA/FONSI, CTDOT will provide monetary and other relocation assistance to displaced property owners in accordance with the procedures outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Connecticut's Uniform Relocation Assistance Act. Relocation assistance could include relocation advisory services, moving payments, replacement housing payments, other payments related to commercial and residential moving costs and displacement, and assistance regarding availability and rental costs of comparable dwellings and suitable business replacement properties. Regarding the residential and business displacements at 21 Fort Point Street and the displaced use at 70 Water Street, it is anticipated that suitable relocation sites are available in the project vicinity.

To mitigate for the displacement of the IMAX Theatre, CTDOT has entered into an agreement with the City of Norwalk and is providing State funding for the future development of a replacement facility. In coordination with the City of Norwalk, the Maritime Aquarium of Norwalk is responsible for constructing the functional replacement facility. The replacement facility, a new 4D Theatre, will be built on the existing Maritime Aquarium Complex (10 North Water Street, Parcel 2/19/3). The Maritime Aquarium is progressing the development of the replacement facility, including conducting environmental evaluations and preparing permit applications. The new 4D Theatre is scheduled to be constructed and ready for occupancy by mid-December 2020; per CTDOT's agreement with the City, the existing IMAX Theatre will be vacated by December 31, 2020. CTDOT will continue to work with the Maritime Aquarium and the City to coordinate the schedules of the new facility construction and existing facility vacancy and demolition. Table 1 provides additional information on the functional replacement project.

Additional Explanation for Regulations checked No:

Endangered Species Act, Magnuson-Stevens Act, Section 404-Clean Water Act. Consultation with the National Oceanic and Atmospheric Administration/ National Marine Fisheries Service (NOAA/NMFS) and USACE is ongoing and will continue through design. Directives of the agencies will be incorporated in applications for required approvals and permits, listed in Attachment E.

Floodplain Management Act, FTA Floodplain Management Conditions. The project complies with EO 11988, Floodplain Management. To ensure that the proposed bridge will not have an adverse impact to the 100-year design floodplain, the proposed conditions hydraulic flood model (60% design) was compared to the existing conditions flood model. The results of the models indicate that the 100-year water surface elevations will be reduced throughout the study area, except at the downstream face of Walk Bridge where water surfaces will increase by 0.01 feet. Due to the removal of the large existing pivot pier, combined with the removal of the existing rest piers and the placement of the proposed lift span piers, the 100-year flood velocities will decrease between 0.02 and 0.38 feet/second through the project area. Therefore, the project will reduce the risk to future damage including property and loss of human life. During the 500-year storm event, modeling indicates that water surface elevations in the proposed conditions are within 0.03 feet of the existing elevations. Similar to the 100-year storm event, the proposed bridge will provide over 15 feet of under clearance during the 500-year storm event.

The project complies with FTA's floodplain management conditions. Since the receipt of the FONSI in July 2017, CTDOT has continued to coordinate with USACE and the U. S. Coast Guard (USCG)

regarding the vertical and horizontal clearances of the replacement bridge; the USACE and USCG will approve the clearances as part of their permit review and approval. The vertical clearance of the replacement bridge (from approximately 27 feet in the EA/FONSI design to approximately 26 feet in the refined [60%] design) will not affect compliance with the Floodplain Management conditions (shown in italics), as listed in Grants CT-44-X004 and CT-2017-015-00:

11a.) The Recipient agrees to follow Executive Order (EO) 11988, as amended, Floodplain Management, and any other guidance that FTA develops or amends regarding floodplain management, except as FTA determines otherwise in writing. The project exceeds the requirements of EO 11988; it was designed to be in compliance with EO 13690, Establishing a Federal Flood Risk Management Standard, prior to the repeal of EO 13690.

11b.) The Recipient agrees that it will not use FTA funds for any construction activity or any permanent repairs in an area delineated as a "special flood hazard area," or equivalent, as labeled in FEMA's most recent and current data source, unless, prior to seeking FTA funds for such action, the Recipient designs or modifies its actions in a manner that minimizes potential harm to or within the floodplain. The project is located in a Special Flood Hazard Area (Zone AE). In the FONSI, FTA determined that based upon the hydraulic improvements anticipated with the project, no mitigation is proposed; further, permanent beneficial impacts to the floodplain are anticipated from the project. Advanced design has not changed the overall scope of the project since seeking FTA funds and the issuance of the FONSI. In accordance with the pending environmental permit applications to the USACE, USCG, and Connecticut Department of Energy and Environmental Protection (CTDEEP), the project has been designed to minimize or avoid impacts within the floodplain.

11c.) The Recipient agrees that it will use the "best available information" as identified by FEMA, which includes advisory data such as Advisory Base Flood Elevations (ABFE), preliminary and final Flood Insurance Rate Maps (FIRM), and Flood Insurance Studies. The project references the latest available FEMA maps and studies (effective July 2013). No ABFE mapping or preliminary studies are available for the project area.

11d.) If FTA and the Recipient determine that FEMA data is unavailable or insufficiently detailed, then other Federal, State, or local data may be used as the "best available information." Not applicable; FEMA data is available and sufficiently detailed for the project area.

11e.) If an FTA funded project activity is located in a floodplain, then the "best available information" requires a minimum baseline standard for elevation of no less than that found in FEMA's ABFEs, where available, plus one foot (ABFE+1), or if that is not available, then a minimum baseline standard for elevation of no less than FIRM plus one foot (FIRM+1). The project exceeds the FIRM + 1 requirement. In the vicinity of the bridge, the FEMA FIRM Base Flood Elevation (BFE) varies from elevation 10 to 14 feet NAVD88. The low chord elevation of the main span will be 29.1 feet NAVD88 while the eastern approach span will have a low chord elevation of 24.1 and the western approach spans will have low chord elevations of 23.1 feet NAVD88. The low chord is approximately 11 feet above the FEMA BFE

Section 4(f) Evaluation/Exception to Section 4(f) Use. The EA/FONSI identified ten candidate wetland mitigation sites; in the 60 % design, wetland mitigation design has been advanced and refined to six sites (while still retaining the required mitigation ratios as identified in the EA/FONSI). FTA previously issued an exception to Section 4(f) use for access through local parks for wetlands restoration, all of which were described in the EA/EIE. The City of Norwalk concurred with the requirements of the Section 4(f) exception on May 31, 2017. This is still valid.

EO 12898, Environmental Justice. As stated in the EA/FONSI, the Walk Bridge Project area is within three U.S. census tracts – Tracts 440, 441 and 442 (Figure 1). Per the 2010 Decennial Census and 2008-2013 American Community Survey (ACS) data, the EA/FONSI identifies Census Tracts 440 and 441 as Title VI/Limited English Proficiency (LEP) areas, and the three census tracts as Environmental Justice (EJ) Communities of Concern. The following table provides updates to the ACS data; based on 2013-2017 ACS 5-Year Estimates, the three Walk Bridge area census tracts are both LEP areas and EJ Communities of Concern.

In accordance with South Western Region Metropolitan Planning Organization's (SWRMPO's) ***2019-2045 Long-Range Transportation Plan (LRTP)*** (Draft, March 2019), for SWRMPO planning efforts to comply with EJ mandates, characteristics of the area populations are evaluated against three criteria at the census tract level: 1) percent minority, measured by an MPO minority threshold of 33.8% of the population; 2) per capita income, measured by an MPO per capita income threshold of $65,632; and 3) percent below poverty level, measured by an MPO below poverty level threshold of 7.2%. The criteria for a Limited English Language Proficiency (LEP) area is either 1,000 speakers or 5% of the population in an area with limited English proficiency.

Characteristic	SWRMPO/Title VI Thresholds*	City of Norwalk	Tract 440	Tract 441	Tract 442
Total Population	------	88,537	6,380	3,350	3,997
Percent Minority	33.8 %	48.0%	77.8%	66.1%	59.4%
Per Capita Income	$65,632	$44,888	$28,640	$50,649	$33,162
Percent Below Poverty Level	7.2%	9.2%	18.5%	18.9%	10.1%
Limited English Proficiency (LEP)	5%	16.0%	28.9%	27.8%	18.9%

*Threshold levels have increased from those identified in the EA/EIE.

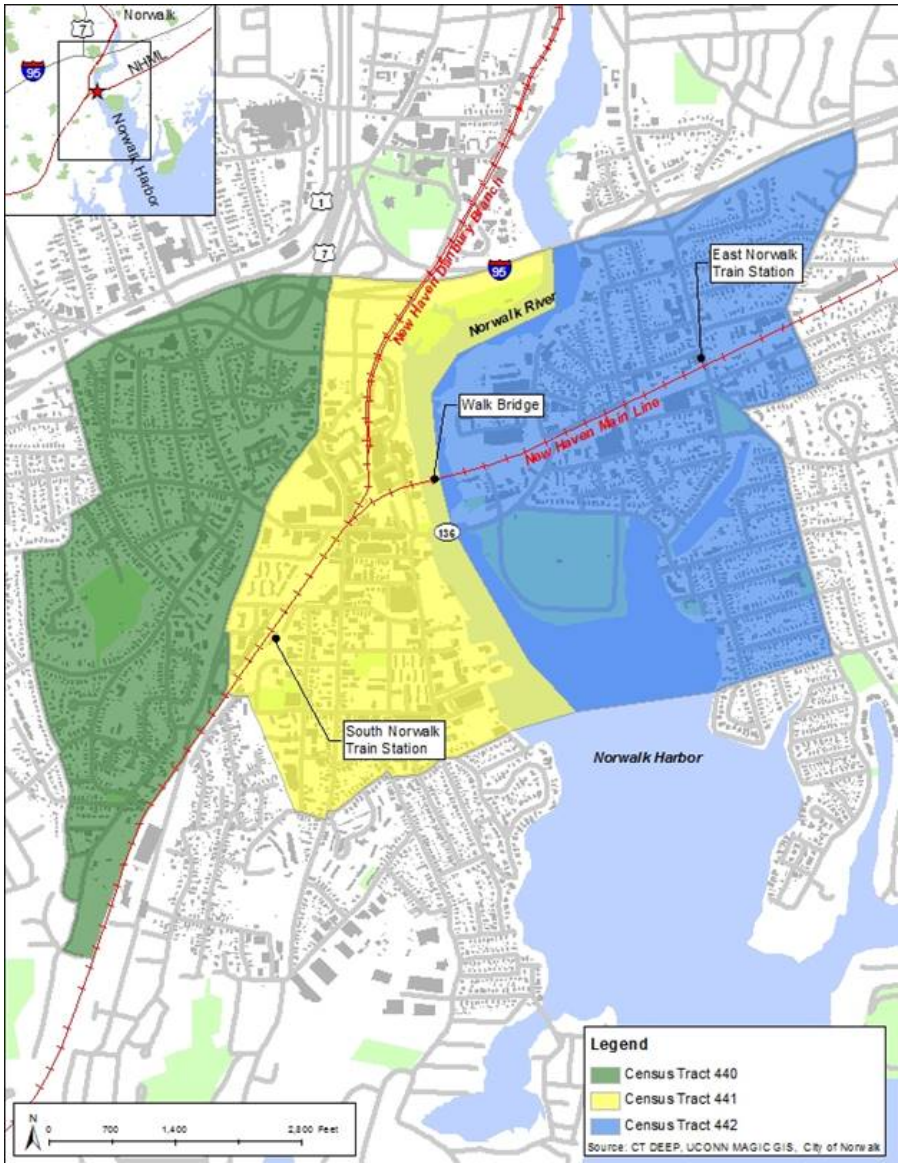


Figure 1 – Walk Bridge Project Census Tracts and EJ Communities of Concern

Revisions to the Walk Bridge Project resulting from the 60% design will not create disproportionately adverse impacts to EJ Communities of Concern. As stated in the EA/FONSI, the project consists of replacing Walk Bridge and Fort Point Street Bridge on an existing rail corridor located in an EJ Community of Concern. All the properties to be acquired for the project, by parcel acquisition or easement, are therefore located within EJ Communities of Concern. The project will create a substantial benefit to New Haven Line (NHL) and Norwalk River users equally; the project represents an overall benefit to the entire community and is important to the continued economic prosperity of the region. Further, the Fort Point Street Bridge and roadway realignment will directly benefit the East Norwalk community, an EJ Community of Concern, by easing Walk Bridge Project construction impacts and by improving the functionality of the Fort Point Street/South Street interchange.

Eligible displaced owner-occupants and tenants are entitled to receive relocation benefits as outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. At this time, specific relocation benefits have not been determined. Should CTDOT proceed with the

acquisition, the Division of ROW will conduct relocation surveys with all displaced individuals to fully assess their potential relocation benefits.

The Walk Bridge Program Communications Management Plan includes an EJ Outreach Plan. The three city-wide public information meetings held since the FONSI were advertised in minority language publications and translation services were offered for the meetings. CTDOT translates the project factsheets and annual Walk Bridge Program brochure into both Spanish and Haitian Creole (which are available at the public meetings and Welcome Center), and the project website is ADA-accessible and includes a Google translate feature for over 50 languages. Additionally, all program notices have been updated to include the following statements (provided in English, Spanish and Haitian/French Creole): "*The Walk Bridge Program offers translation services for all Spanish and French Creole speakers. Please contact the Program's Public Information Office for more information by sending us an email at info@walkbridgect.com, or calling (833) 462-9255 (GO2-WALK).*"

In anticipation of Walk Bridge construction, CTDOT is partnering with local community organizations that can provide insight on EJ communities in Norwalk. The following coordination meetings have been held in 2019:

- Norwalk Hispanic Chamber of Commerce – March 20
- Norwalk Transit District – March 29
- Norwalk Housing Authority – April 12
- Norwalk Human Relations Commission – April 18

Will these changes or new information likely result in substantial public controversy?

☐ **Yes** ☒ **No**

Comments: The design changes with the potential to result in public controversy focus on the Fort Point Street Bridge and roadway realignment and the additional use of parcels during construction, including the loss of the IMAX Theater. However, neither design change appeared to generate public controversy over the course of CTDOT's extensive public outreach efforts.

The Fort Point Street Bridge relocation and roadway realignment introduces new impacts not previously identified; however, the design refinements will facilitate Walk Bridge project construction by reducing costs and impacts, and displaced property owners will be compensated. Further, the realignment of Fort Point Street will provide long-term transportation infrastructure and traffic improvements in East Norwalk. CTDOT incorporated City Engineering design requirements and requests into the bridge and roadway realignment, including modifying the roadway design to better accommodate trucks and improving pedestrian movements through South Smith/Fort Point Streets.

At the time of the EA/FONSI publication, CTDOT had not determined that its construction requirements at 10 North Water Street (Parcel 2/19/2) would be full-parcel use, resulting in displacement and demolition of the IMAX Theater. To mitigate for the loss of the IMAX Theater, CTDOT has entered into an agreement with the City of Norwalk allowing for the future development of a replacement facility. Both the City of Norwalk and the Maritime Aquarium of Norwalk have responded favorably to CTDOT's agreement to provide funds for a new IMAX theater. Per CTDOT's agreement with the City of Norwalk, the existing IMAX Theatre will be vacated to correspond with the occupancy of its functional replacement. CTDOT will continue to coordinate with the Maritime Aquarium and the City of Norwalk as the new 4D Theater is designed and constructed to sync project construction schedules. Additionally, CTDOT had not determined that full-parcel acquisition of 70 and 90 Water Street would be needed. CTDOT will provide monetary and other relocation assistance to displaced property owners as required. Following project completion, there are opportunities for the parcels to be redeveloped with water-

dependent uses, a priority use of waterfront parcels per the Norwalk Harbor Plan and the Connecticut Coastal Management Act.

Since the issuance of the FONSI in July 2017, CTDOT has conducted ongoing meetings with the City of Norwalk and community stakeholders to discuss project design refinement and receive input, as shown in the following table. The 60% design changes, including the proposed realignment of Fort Point Street bridge and roadway, were specifically addressed in public meetings held on June 5, 2018, November 28, 2018, December 8, 2018 and April 15, 2019. The removal of the IMAX Theater (and potential redevelopment of 10 North Water Street by the City) and proposed construction staging were discussed through public questions at the September 27, 2017 and June 5, 2018 public meetings, and more specifically addressed in the November 28, 2018 and December 8, 2018 meetings.

The Walk Bridge Program (www.walkbridgect.com) received no written inquiries regarding the Fort Point Street bridge and roadway realignment. At stakeholder and public meetings, questions were asked about whether the landscaping business at 19 Fort Point Street would be acquired. There will be a small construction easement and a small permanent acquisition of this parcel required for the roadway realignment, however, the landscaping business will remain. Recent outreach meetings with EJ stakeholder groups and key stakeholders such as the Norwalk Transit District have been met with positive reactions regarding the Fort Point Street bridge and roadway realignment, with comments about how the realignment will improve safety in this area.

In 2016, the Program received two written inquiries opposing the removal of the IMAX Theater. The demolition of the IMAX was a common question at public meetings and community events in 2017 and 2018. Once Program staff explained that the Theater's replacement will be constructed on the Maritime Aquarium complex to the north, in coordination with the Maritime Aquarium, the public had no further comment. In 2019, no inquiries about the IMAX Theater removal have been received.

CTDOT has committed to working with the City and stakeholders throughout the project design and construction process. Presentations and meeting materials from public and stakeholder meetings are posted on the project website immediately following the meetings. CTDOT exhibits at local community-wide events annually to present updated project information and answer questions, including the Norwalk STEM Expo, Norwalk International Cultural Exchange Festival, the SoNo Arts Festival, and the Norwalk Oyster Festival. The project website provides updated information on design refinement details (such as the Fort Point Street bridge and roadway re-alignment), proposed staging activities, and community benefits (such as the IMAX Theater replacement). As part of the Business Coordination Plan, CTDOT is implementing door-to-door outreach to over 300 businesses with project brochures that include information of design elements such as the bridge design, Fort Point Street realignment and IMAX relocation. The door-to-door efforts were conducted in South and East Norwalk in April/May 2018 and Late April/Early May 2019.

On February 27, 2018, the Walk Bridge Project opened the Walk Bridge Welcome Center, a walk-in facility located in South Norwalk which allows the public to obtain current project information on an ongoing basis. Visual exhibits and marketing materials about the design updates are present in the Welcome Center. Kiosks with project factsheets and brochures are updated bi-weekly in key locations throughout Norwalk including City Hall, the Maritime Garage, SoNo Train Stations and the Maritime Aquarium/IMAX Theater.

Meeting	Date	Meeting Type
City Recreation, Parks, and Cultural Affairs Council	6/12/2019	City coordination
Norwalk Men's Group Meeting	4/16/2019	Requested stakeholder presentation

Meeting	Date	Meeting Type
East Norwalk Neighborhood Association Meeting	4/15/2019	Requested public meeting
Norwalk Aquarium Coordination Meeting	4/3/2019	Stakeholder coordination
City Engineering Meeting	4/1/2019	City coordination
Norwalk Harbor Management Commission	3/27/2019	Permit coordination
Norwalk Shellfish Commission	3/7/2019	Permit coordination
Norwalk Harbor Management Commission	2/27/2019	Permit coordination
City Engineering Meeting	2/13/2019	City coordination
Norwalk Shellfish Commission	2/7/2019	Permit coordination
Shellfish Commission Meeting	1/3/2019	Permit coordination
Walk Bridge Welcome Center Open House	12/8/2018	Public open house
Shellfish Commission Meeting	12/6/2018	Permit coordination
Public Information Meeting	11/28/2018	Public meeting *
Norwalk Westport Regional TMP Progress Meeting	11/14/2018	Construction coordination
Norwalk Transit District Meeting	11/6/2018	Construction coordination
City Engineering Meeting	11/6/2018	City coordination
Shellfish Commission Meeting	11/1/2018	Permit coordination
Marine Police/Rower's Coordination Meeting	10/17/2018	Stakeholder coordination
City Engineering Meeting	10/16/2018	City coordination
Liberty Square Public	9/12/2018	Stakeholder coordination
City Engineering Meeting	7/12/2018	City coordination
City Engineering Meeting	6/12/2018	City coordination
Aquarium/IMAX Functional Replacement	6/6/2018	Stakeholder coordination
Shellfish Commission Meeting	6/7/2018	Permit coordination
Walk Bridge Construction Public Meeting	6/5/2018	Public meeting*
Maritime Aquarium Meeting	5/31/2018	Stakeholder coordination
Spinnaker Coordination Meeting	5/31/2018	Stakeholder coordination
Open House for City Council	5/31/2018	City coordination
Rower's Meeting	5/31/2018	Stakeholder coordination
Harbor Management Commission Meeting	5/23/2018	Permit coordination
Mayor Walk Bridge Update	5/10/2018	City coordination
Design Advisory Committee Meeting	5/10/2018	Stakeholder coordination
City Engineering Meeting	5/8/2018	City coordination
Construction Coordination Plan with City	4/24/2018	City coordination
City Engineering Meeting	4/3/2018	City coordination
Business Coordination Meeting	3/29/2018	Stakeholder coordination
City Engineering Meeting	3/14/2018	City coordination
Partnering Stakeholder Session	2/28/2018	Stakeholder coordination
Partnering Team Session	2/27/2018	Stakeholder coordination
Utilities Follow-up with City of Norwalk Meeting	2/20/2018	City coordination
City Engineering Meeting	2/8/2018	City coordination
Norwalk Tourism Meeting	2/6/2018	Requested stakeholder presentation
Spinnaker Meeting	1/31/2018	Stakeholder coordination
City Engineering Meeting	12/11/2017	City coordination
Design Advisory Committee Meeting	11/28/2017	Stakeholder coordination
Business Coordination Plan Update Meeting	11/28/2017	Stakeholder coordination
City Engineering Meeting	10/18/2017	City coordination

Meeting	Date	Meeting Type
Design Advisory Committee Meeting	10/17/2017	Stakeholder coordination
Public Information Meeting	9/27/2017	Public meeting +
Aquarium Coordination Meeting	8/24/2017	Stakeholder coordination
Design Advisory Committee Meeting	8/15/2017	Stakeholder coordination
*Advertised in *La Voz* and *El Sol* publications +Advertised in *La Voz*, *El Sol*, and *The Haitian Voice* publications		

CTDOT is participating in ongoing meetings with the Norwalk Harbor Management and Shellfish Commissions as part of pre-permit application coordination. Both Commissions have had the opportunity to provide valuable input and are up-to-date regarding construction in regulated areas; further, coordination with the Commissions will continue as the permit applications are reviewed by state and federal agencies and the conditions of the permit approvals are implemented.

In fulfilment of Section 106 of the National Historic Preservation Act, a Memorandum of Agreement (MOA) has been executed among FTA, CTDOT, and CTSHPO. CTDOT has initiated all twelve stipulations of the project MOA, including implementing mitigation data recovery and curation at an NRHP-eligible archaeological site. In accordance with the Archaeological Treatment Plan of the MOA, and in consultation with CTSHPO and the Tribes, CTDOT has determined the limits of the archaeological site. CTDOT conducted mitigation data recovery through winter 2018 and is currently curating (processing, cleaning, cataloguing, and preserving) the excavated findings of the site. CTDOT is continuing to coordinate with FTA, CTSHPO, and the Tribes to implement the Archaeological Treatment Plan as stipulated in the MOA. Therefore, the conclusions reached in the original document remain valid.

As stated in the EA/FONSI, CTDOT has committed to working with the City of Norwalk and the local community to develop multiple Construction Coordination Plans and other tools during final design and prior to the start of construction. These plans are living documents that are reviewed and updated as needed working in close coordination with the City of Norwalk, the business community, residents, and other affected parties. As part of its Business Coordination Plan, CTDOT is conducting a local business survey to inquire about relevant business operations that may be impacted by construction and provide businesses an opportunity to provide open ended feedback, concerns and/or suggestions to address construction impacts. Preliminary survey responses have identified the following concerns: (1) maintenance and protection of traffic, (2) building access, (3) parking, (4) river navigation, (5) transparency and (6) construction duration. Based on the results of the survey and in coordination with the City of Norwalk, CTDOT will develop mitigation measures to be implemented through construction. CTDOT will continue its community outreach through the duration of the project.

COMMENTS:

Federal and state permits and approvals required for the 60% design are consistent with those identified in the EA/FONSI (Attachment E), with one exception. The EA/FONSI identified an Inland Wetlands General Permit; subsequent field visits by CTDOT's Office of Environmental Planning (OEP) determined that no freshwater wetlands exist on the site, therefore a freshwater wetlands permit is not required.

Project mitigation proposed in the refined design is consistent with that presented in the EA/FONSI. The EA/FONSI identified ten candidate sites for tidal wetland restoration. Working with the Connecticut Department of Energy and Environmental Protection (CTDEEP) and USACE, CTDOT has advanced wetland mitigation design and refined the wetland mitigation sites (while still retaining the required

mitigation ratios as identified in the EA/FONSI) and restoration program to consist of marsh restoration, Phragmites treatment, and restoration regrading. The selected mitigation sites will provide compensation at or exceeding required ratios.

CONCLUSIONS AND RECOMMENDATIONS:

After review of the proposed refinements in engineering design and construction methods and assessment of their potential impacts, CTDOT has concluded that these changes do not represent a significant impact to the environment. CTDOT is implementing the project mitigation measures, including ongoing coordination with federal and state agencies, in compliance with federal and state environmental regulations. CTDOT is implementing the stipulations of the project MOA in cooperation with local stakeholders and the Connecticut State Historic Preservation Office (CTSHPO). Further, CTDOT is continuing to develop construction coordination plans in cooperation with the City of Norwalk, to minimize construction impacts upon the local community. It is our recommendation that FTA determine that the project FONSI issued on July 17, 2017 remains valid.

LIST OF ATTACHMENTS:

Attachment A Revised Project Limits
Figure 2-14a, Revised Project Limits – South Norwalk
Figure 2-14b, Revised Project Limits – East Norwalk
Attachment B Plan of Fort Point Street Bridge Relocation and Roadway Realignment
Attachment C CEPA Update for Sea Level Rise
Attachment D Cultural Resources Supplemental Reports
Attachment E Required Federal and State Permits and Approvals

SUBMITTED BY:

By signing this, I certify that to the best of my knowledge this document is complete and accurate.

Name Title	Date

Table 1 – Assessment of Potential Impacts

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
Transportation - Marine Transportation	EA/FONSI design provided a replacement bridge vertical clearance (in the closed position) of approximately 27 feet, increasing the existing vertical clearance by approximately 11 feet. The USCG determined that the EA/EIE adequately addressed bridge permit concerns regarding navigation.	Refined design provides a replacement bridge vertical clearance (in the closed position) of approximately 26 feet, increasing the existing vertical clearance by approximately10 feet. The update reflects agency coordination, design refinement, and constructability analysis. The net change in clearance is less than one foot and is not significant.	CTDOT is updating the USCG on the bridge design on a continuous basis. While the replacement bridge's vertical clearance in the closed position is less than that proposed in the EA/FONSI, the proposed clearance still represents a substantial improvement from existing conditions. In multiple pre-application coordination meetings, the USCG has indicated preliminary approval of the proposed vertical clearance, and that the Preliminary Navigation Determination will be provided upon receipt and review of 60% design plans. CTDOT is applying for a bridge permit from the USCG; the USCG will review and approve the vertical clearances (in the open and closed position) as part of the bridge permit approval.
	EA/FONSI design provided at least 200 feet of horizontal clearance in the navigation channel, substantially increasing the existing clearances provided by the west channel (58 feet) and the east channel (55 feet). USCG determined that the EA/EIE adequately addressed bridge permit concerns regarding navigation.	Refined design provides 170 feet of horizontal clearance in the navigation channel. The update reflects agency coordination, design refinement, and constructability analysis. While this increase is less than the horizontal clearance initially proposed, it represents a substantial navigational clearance increase from existing conditions and provides for improved vessel alignment with the Stroffolino Bridge.	While the replacement bridge's horizontal clearance is less than that proposed in the EA/FONSI, the proposed clearance still represents a substantial improvement from existing conditions. The proposed 170-foot horizontal clearance matches the existing federal navigational channel width at the bridge. The horizontal clearance will be reviewed by the USACE during its review of the Section 408 permit application.
Transportation - Traffic, Transit and Parking	EA/FONSI design of Fort Point Street Bridge replacement at existing location indicated no permanent impacts to traffic.	Refined design of Fort Point Street Bridge replacement realigns Fort Point Street with South Smith Street to the north and	The realignment provides both short-term and long-term traffic improvements. During construction, the realignment reduces

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
	Temporary impacts consisted of partial lane closures of Fort Point Street for about a month and occasional full street closures.	existing Fort Point Street northeast of the railroad. During construction, the realignment reduces potential construction-related traffic impacts. Rather than closing Fort Point Street Bridge for an extended period as the bridge is replaced (EA/FONSI design), in the refined design, the new bridge and Fort Point Street roadway can be constructed off-line while traffic is maintained on the existing Fort Point Street. Only very limited temporary closures are required when the traffic is shifted from the existing alignment to the new alignment. The realignment improves the functionality and safety of the intersection of Fort Point Street and South Smith Street.	construction-related traffic impacts. While Fort Point Street replacement requires temporary closures during periods when traffic is shifted from the existing Fort Point Street alignment to the proposed Fort Point Street alignment, for most of the construction duration, existing Fort Point Street remains open to traffic. In the long-term, the Fort Point Street realignment improves the functionality and safety of the intersection of Fort Point Street and South Street and addresses a traffic improvement priority of the City of Norwalk.
Land Use and Economics – Land Use and Zoning	EA/FONSI design indicated no permanent impact to the land use pattern or zoning due to limited parcel-specific land use changes resulting from parcel acquisitions. Following project completion, CTDOT's Office of Rights of Way Property Management Division will be responsible for managing the properties acquired for the project, including the sale or lease of the properties. Regarding the sale of the waterfront property, upon construction completion, CTDOT will market the excess property indicating the highest priority and preference for water-dependent use of the site.	Refined design and construction methods result in three parcel-specific land use changes. The Fort Point Street Bridge relocation and roadway realignment results in a land use change at 21 Fort Point Street from mixed use to transportation. Acquisition of 70 and 90 Water Street results in a temporary land use change from commercial to transportation-support. Displacement of the IMAX Theater does not change the existing land use designation of Institutional/ Government of the Maritime Aquarium Complex (10 North Water Street, Parcels 2/19/2 and 2/19/3).	Refined design results in three additional parcel-specific land use changes; however, these limited land use changes do not alter the land use pattern or zoning in the City of Norwalk. Following project completion, acquired parcels will be sold. The sale of the waterfront property (90 Water Street) will be consistent with the procedures described in the EA/FONSI: CTDOT will indicate the highest priority and preference for a future water-dependent use of the site.
Land Use and Economics - Socioeconomics	EA/FONSI design indicated loss of property tax revenue of approximately $82,000 per year over the 4-year construction period due	Refined design of Fort Point Street Bridge requires acquisition of 21 Fort Point Street; refined construction methods requires	With the acquisitions of three additional parcels, the total loss of property tax revenue is approximately $118,000 per year

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
	to (full) parcel acquisitions. The combined assessed value of these displaced properties comprised less than 0.03% of the City's net taxable Grand List for real property (total aggregate valuation of taxable real property in Norwalk), and the annual tax revenue from these affected properties comprised approximately 0.03% of the City's total annual tax revenues in 2015-2016.	acquisition of 70 and 90 Water Street. The three additional parcel acquisitions represent a loss of property tax revenue of approximately $36,000 per year over the 4-year construction period.	over the 4-year construction period. The combined assessed value of these displaced properties comprised approximately 0.04 % of the City's net taxable Grand List for real property, and the annual tax revenue from these affected properties also comprised approximately 0.04% of the City's total annual tax revenues in 2015-2016. The 0.01% change represents a negligible impact upon total City revenues. Following construction completion, CTDOT will sell the properties, returning them to the City's Grand List.
	EA/FONSI design and construction methods resulted in adverse impacts to some facilities and operations of the Maritime Aquarium (Imax Theater, Parcel 2/19/2) due to temporary construction and permanent easements. The extent of impacts was identified as To be Determined (TBD); CTDOT would work in coordination with the City and the Maritime Aquarium to determine parcel uses.	Refined construction methods require full use of Parcel 2/19/2 to facilitate construction, displacing the Imax Theater. Refined design of the MNR power and communication signals and future bridge maintenance have expanded permanent easement requirements. CTDOT is coordinating the closure and displacement of the IMAX Theater with the construction and occupancy of its functional replacement, a new 4D Theater. The new 4D Theatre is scheduled to be constructed and ready for occupancy by mid-December 2020; per CTDOT's agreement with the City, the existing IMAX Theatre will be vacated by December 31, 2020. CTDOT will continue to work with the City to coordinate the schedules of the new facility construction and existing facility vacancy and demolition to minimize economic impacts to the City and Maritime Aquarium.	To mitigate for the loss of the IMAX Theater, CTDOT has entered into an agreement with the City of Norwalk allowing for the future development of a replacement facility. The occupancy of replacement facility will be phased with the vacancy of the existing facility to avoid adverse economic impacts. The expanded permanent easement requirement at 10 North Water Street may impact the future development and revenue-generation of the parcel, as less of the 0.85-acre parcel may be available for future development.

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
Acquisitions, Displacements & Relocations	EA/FONSI design and construction methods required the use of 22 parcels for constructing and maintaining the replacement bridge. Uses included: 2 existing CTDOT-owned parcels, expansion of 1 existing CTDOT-easement, 8 full-parcel acquisitions; 11 full-parcel and partial-parcel temporary easements for replacement bridge construction; and 3 permanent easements for access to and maintenance of the replacement bridge. Proposed use of Parcels 2/19/2 and 2/19/3 (10 North Water Street) was TBD. Further, the EA/FONSI stated that as design progresses, property impacts, including parcel acquisitions and temporary and permanent easements, will continue to be refined. CTDOT will provide monetary and other relocation assistance to displaced property owners in accordance with the procedures outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Connecticut's Uniform Relocation Assistance Act. Upon project completion, acquired parcels will be sold per CTDOT's Office of Rights of Way Property Management Division. For waterfront parcels, CTDOT will select the highest bid that best demonstrates an integrated, quality, water-dependent use, in coordination with CTDEEP.	Refined design (Fort Point Street Bridge realignment) requires the following new acquisitions: ***New Parcel Acquisition*** - 21 Fort Point Street (Parcel 3/1/11), displacing an existing restaurant and up to three residences in two buildings. ***New Temporary Easements:*** 19 Fort Point Street (Parcel 3/1/27) and 15 Fort Point Street (Parcel 3/1/21). ***New Permanent Easements*:** 19 Fort Point Street (Parcel 3/1/27), 15 Fort Point Street (Parcel 3/1/21), and 2 South Smith Street (Parcel 3/3/1). Refined construction methods have resulted in changes to three parcels of the 22 parcels identified in the EA/FONSI, as follows: ***70 Water Street (Parcel 2/84/63) and 90 Water Street (Parcel 2/84/33)***. These parcels were identified in the EA/FONSI as full-parcel temporary easements. Due to the development of the Marine Staging Yard and anticipated construction duration, CTDOT anticipates that these full-parcel temporary easements will be revised to full-parcel acquisitions. ***10 North Water Street - Parcel 2/19/2***. The temporary easement for this parcel was identified in the EA/FONSI as Partial/To be Determined (TBD), and the parcel's permanent easement was identified as TBD for bridge operation and	Upon project completion, acquired parcels will be sold. For the waterfront property (90 Water Street), CTDOT will use the same approach as described in the EA/FONSI: CTDOT will select the highest bid that best demonstrates an integrated, quality, water-dependent use, in coordination with CTDEEP. Eligible displaced owner-occupants and tenants are entitled to receive relocation benefits as outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. At this time, specific relocation benefits have not been determined. Should CTDOT proceed with the new parcel acquisition, the Division of ROW will conduct relocation surveys with all displaced individuals to fully assess their potential relocation benefits. Following project completion, temporary easements will cease, and properties will be restored to pre-construction conditions.

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
		maintenance. To accommodate construction equipment and staging needs, CTDOT determined that it requires full use of this parcel as a temporary easement. CTDOT anticipates that an expanded permanent easement is needed to accommodate a duct bank for MNR power and communication signals, in addition to the previously-identified bridge operation and maintenance. In addition to the 22 parcels identified in the EA/FONSI, five temporary easements previously secured for advance projects are retained for the Walk Bridge Project, as follows: ***21, 23, 29, 41 North Main Street*** (Parcels 2/24/3, 2/24/4, 2/24/5, and 2/24/8). The temporary easements on the North Main Street parcels, previously acquired for the Danbury Dock Yard Improvements Project, are required for Eversource transmission pole removal. ***10 Norden Place*** (Parcel 3/17/40). The parking area at 10 Norden Place, previously acquired for the CP-243 Interlocking Project, is required for construction staging and track access. As the project advances, minor additional ROW may be needed.	

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
Neighborhoods & Populations (Social) - Title VI and Environmental Justice	EA/FONSI design indicated no disproportionate temporary or permanent impacts to Environmental Justice (EJ) populations. While the three residential property displacements (including up to six residences) and four businesses affected by the project are located within a Census Tract identified as an EJ Community of Concern, the entire study area (three Census Tracts) are EJ Communities of Concern, and the permanent property displacements are in the least urbanized and least developed portions of the project site. Affected uses/ landowners will be provided with relocation assistance.	The Walk Bridge Project, replacing Walk Bridge and Fort Point Street Bridge, is on an existing rail corridor and is located entirely within EJ Communities of Concern. Refined design of the Fort Point Bridge replacement results in up to four additional displacements, consisting of a restaurant, and up to three residences. Like those identified in the EA/FONSI, the additional affected business and residences are located within a Census Tract identified as an EJ Community of Concern. The Fort Point Street Bridge and roadway realignment will directly benefit the East Norwalk community, an EJ Community of Concern, by easing Walk Bridge Project construction impacts and by improving the functionality of the Fort Point Street/South Street interchange. The project will improve accessibility and reliability of the bridges and the navigational opening of the Norwalk River, providing an overall benefit to the entire community. The affected uses/landowners will be provided with relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970. For these reasons, the project does not disproportionately affect EJ populations.	Refined design indicates no disproportionate temporary or permanent impacts to EJ populations. The project is important to the continued economic prosperity of the community and the region and will benefit EJ communities, which comprise the study area as well as a substantial portion of the local community.

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
Visual Resources & Aesthetics	EA/FONSI design indicated permanent altered visual setting due to loss of historic resources, and potential altered visual effect due to location of new bridge in an historic setting. The EA/FONSI indicated that the design has been developed to minimize aesthetic impacts to the extent possible. The design of the bridge, abutments, and other elements will be performed in coordination with the CTSHPO, the City of Norwalk's Design Review Committee, and other stakeholders. Measures such as treatments of retaining walls and abutments and landscaping will be considered to improve the appearance of the new bridge and project site.	Refined design requires displacement of the IMAX Theatre (10 North Water Street, Parcel 2/19/2) and grading of the site, resulting in an altered visual setting.	Displacement of the IMAX Theater results in an altered visual setting; however, the altered setting does not result in an adverse visual effect.
Water Resources – Water Quality	EA/FONSI design indicated temporary impacts due to dredging and other waterway work; however, CTDOT will employ Best Management Practices (BMPs) while conducting all work within the water to minimize releases of sediment to the water. Measures could include cofferdams, sheet pile marine enclosures, or oversized pipe enclosures, or other containment measures such as turbidity curtains, sheeting, and geotextile encapsulation, per CTDEEP and USACE requirements. Attachment H provides required federal and state permits and approvals. EA/FONSI design indicated that drainage swales may be used in locations where drainage requires conveyance, and where applicable, the closed deck approach span sections of the bridge will include drainage	Refined design requires additional dredging to accommodate new docking facilities for the Maritime Aquarium and Sheffield Island ferry vessels, and to install a new sheet pile bulkhead at 68 and 90 Water Street. As indicated in the EA/FONSI, dredging will occur with BMPs per federal and state permit requirements. The additional dredging will not require additional permits. Refined drainage for the approach spans consists of closed systems, consistent with the EA/FONSI design. Stormwater discharged into the Norwalk River will be pre-treated per the Connecticut Stormwater Quality Manual to the extent practicable prior to discharge.	Using BMPs included in federal and state permit applications, CTDOT will demonstrate that dredging, including additional dredging due to refined design, will not adversely impact water quality. No additional permits are required due to the design modification. Refined stormwater design is consistent with the EA/FONSI design. Stormwater discharging to the Norwalk River will be pre-treated to the maximum extent practicable in accordance with the Connecticut Stormwater Quality Manual.

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
	methods to direct water away from the river.		
Water Quality – Aquatic Resources, Species and Critical Habitats	EA/FONSI design indicated a permanent loss of intertidal flat and subtidal habitat due to various new bridge footprint components and associated activity. The removal of the existing west rest-pier, existing east rest-pier, and the existing center-pivot pier resulted in the reclamation of estuarine subtidal unconsolidated channel bottom habitat. EA/FONSI design indicated impacts to subtidal habitat and intertidal habitat due to dredging, including conversion of intertidal habitat to subtidal habitat, and increase in depth of subtidal areas within the dredging footprint. CTDOT to provide compensatory mitigation for habitat displacement in coordination with USACE and CTDEEP.	Refined design requires additional foundational elements for Piers 2 and 3, resulting in increased impact to subtidal habitat. As a result, the reclamation of estuarine subtidal unconsolidated channel bottom habitat is smaller than initially disclosed. Refined design requiring additional dredging increases permanent loss of subtidal habitat and intertidal habitat and increases depth of subtidal areas within the expanded dredging footprint. An alternatives analysis was conducted to refine design for the MNR communication utilities cable crossing of the Norwalk River. The analysis evaluated installing the cables within two separate 42-inch diameter pipes by horizontal directional drilling (HDD) or cut and cover (CAC)	CTDOT will provide compensatory mitigation for habitat displacement due to the construction phase impacts to intertidal and subtidal habitats in coordination with the NMFS, USACE and CTDEEP. Attachment E identifies required federal and state approvals. No additional permits or approvals are required due to the design modifications. Coordination with federal and state agencies is ongoing.

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
		design. HDD would use guided drill rigs to install piping underground, and CAC would place pipes at the desired elevation by excavating and removing material to create a trench, placing the pipes, and then backfilling the trench. CTDOT determined that the CAC option has lower cost and lower risk than the HDD option. While the HDD option would not disturb the river bottom or water quality of the Norwalk River habitat, the HDD could result in frac-out due to drilling complications, presenting a serious environmental concern. The temporary environmental impacts of the CAC option primarily occur in proposed dredging areas, with an additional minimal footprint of disturbance restricted to the intertidal zone (with no additional impact to mudflats or vegetated tidal wetland). Further, the impacts of the CAC option can be mitigated based on the final staging and installation method. No additional permits are required.	
Hazardous Materials	EA/FONSI design indicated dredging required disposal of approximately 15,100 cubic yards of dredged sediment. CTDOT will manage dredged sediments on-site, dispose of materials off-site at an approved location, and obtain approvals as required. Attachment H provides required federal and state permits and approvals.	Refined design requires disposal of additional dredged sediment. No additional permits or approvals are required due to increased dredging amount.	CTDOT will manage dredged sediments on-site, dispose of materials off-site at an approved location, and obtain approvals as required.
Historic, Cultural & Archaeological Resources	EA/FONSI design indicated adverse effects **d**ue to the demolition of National Register-listed Walk Bridge and Fort Point Street Bridge; and historic stone abutment retaining walls, high towers, and catenary	Refined design requiring realignment of Fort Point Street does not impact above-ground historic resources or intact archaeological resources, nor does it impact the project MOA. The	Impacts of the refined design and construction methods relative to **Historic, Cultural & Archaeological Resources** are consistent with the EA/FONSI and the project MOA.

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
	support structures. No adverse effects to historic buildings and settings due to temporary construction staging/access areas or permanent access areas, provided no physical damage occurs to the historic buildings. The project MOA provides mitigation to address project impacts, including an Archaeological Treatment Plan.	realignment of Fort Point Street at the revised location has substantially the same adverse effect as the previous design. Mitigation stipulated in the project MOA, consisting of documentation of the historic structures on the New Haven Line, including Fort Point Street Bridge, was completed in August 2018.	In fulfilment of Section 106 of the National Historic Preservation Act, a Memorandum of Agreement (MOA) has been executed among FTA, CTDOT, and CTSHPO. CTDOT has initiated all twelve stipulations of the project MOA, including implementing mitigation data recovery and curation at an NRHP-eligible archaeological site. In accordance with the Archaeological Treatment Plan of the MOA, and in consultation with CTSHPO and the Tribes, CTDOT has determined the limits of the archaeological site. CTDOT conducted mitigation data recovery through winter 2018 and is currently curating (processing, cleaning, cataloguing, and preserving) the excavated findings of the site. CTDOT is continuing to coordinate with FTA, CTSHPO, and the Tribes to implement the Archaeological Treatment Plan as stipulated in the MOA. Therefore, the conclusions reached in the original document remain valid.
Construction	Construction methods as initially disclosed required parcel acquisitions and temporary easements, as described in **Acquisitions, Displacements & Relocations.**	Refined construction method requires a different configuration of parcel use (acquisitions and easements) than initially disclosed, as described in **Acquisitions, Displacements & Relocations.**	Change in impacts due to refined construction methods is described in **Acquisitions, Displacements & Relocations.**
Secondary and Cumulative Impacts	EA/FONSI design indicated that the project will provide regional secondary economic benefits on a temporary basis due to increased construction spending. The project will provide cumulative benefits on a permanent basis through improved NHL performance and reliability, improved	As indicated in the EA/FONSI, Eversource is responsible for relocating its utility lines and is applying for federal and state permits for the relocation of its electrical power lines. independent of the Walk Bridge Replacement Project.	Secondary and cumulative impacts proposed in the refined design are consistent with those identified in the EA/FONSI design. The Maritime Aquarium conducted environmental reviews for the proposed 4D

Impact Category	Impacts as Disclosed in EA/FONSI	Impacts – 60% Design	Change in Impacts
	marine conditions in Norwalk Harbor, and an expanded NRVT network in Norwalk. Further, secondary impacts will occur due to relocation of the Eversource power, currently on high towers abutting the existing bridge; and cumulative impacts will occur due to loss of a tangible example of historic movable bridge technology in Connecticut, and a bridge on the NRHP-listed Movable Railroad Bridges on the Northeast Corridor in Connecticut Thematic Resource.	The refined design is consistent with the secondary and cumulative impacts and benefits identified in EA/FONSI design. Additional secondary impacts will occur associated with the redevelopment of waterfront parcels, due to the demolition and displacement of the IMAX Theater at 10 North Water Street (Parcel 2/19/2) and the temporary acquisition and resale of the waterfront parcel at 90 Water Street (Parcel 2/84/33). Following project completion, there are opportunities for the parcels to be redeveloped with water-dependent uses, a priority use of waterfront parcels per the Norwalk Harbor Plan and the Connecticut Coastal Management Act. Water-dependent uses include, but are not limited to; marinas, recreational and commercial fishing and boating facilities, finfish and shellfish processing plants, waterfront dock and port facilities, shipyard and boat building facilities, and water-based recreational uses. An additional secondary impact will occur due to the construction of a new 4D Theater within the existing Maritime Aquarium complex, 10 North Water Street, Parcel 2/19/3. In coordination with the City of Norwalk, the Maritime Aquarium of Norwalk is responsible for constructing the functional replacement facility, including conducting associated environmental evaluations and obtaining permits.	Theatre and associated renovations to the existing facility at 10 North Water Street (Parcel 2/19/3) to comply with the requirements of the City Department of Planning and Zoning. Reviews included architectural and historic, parking, traffic, stormwater drainage, floodplain, endangered species, and coastal site planning. The proposed 4D Theater will consist of an addition to the current main entrance to the facility (constructed in the 1980s) and will not result in adverse impacts to existing structures. The 4D Theater will be constructed of brick to complement existing building façades. The Maritime Aquarium obtained required approvals from the City of Norwalk for the functional replacement project.

FEDERAL TRANSIT ADMINISTRATION
ENVIRONMENTAL RE-EVALUATION CONSULTATION

ATTACHMENTS

Attachment A **Revised Project Limits**

Figure 2-13a Elevation View of the Long-Span Vertical Lift Bridge, Refined Design
Figure 2-14a Illustration of the Project Limits, South Norwalk, Refined Design
Figure 2-14b Illustration of the Project Limits, East Norwalk, Refined Design

Attachment B **Plan of Fort Point Street Bridge Relocation and Roadway Realignment**

Attachment C **CEPA Update for Sea Level Rise**

Attachment D **Cultural Resources Supplemental Reports**

- Supplementary Historic Resources Evaluation Report: Relocation of the Fort Point Street Railroad Bridge
- Supplementary Technical Memorandum, Archaeological Sensitivity Assessment, Relocation of the Fort Point Street Railroad Bridge

Attachment E **Required Federal and State Permits and Approvals**

Attachment A Revised Project Limits

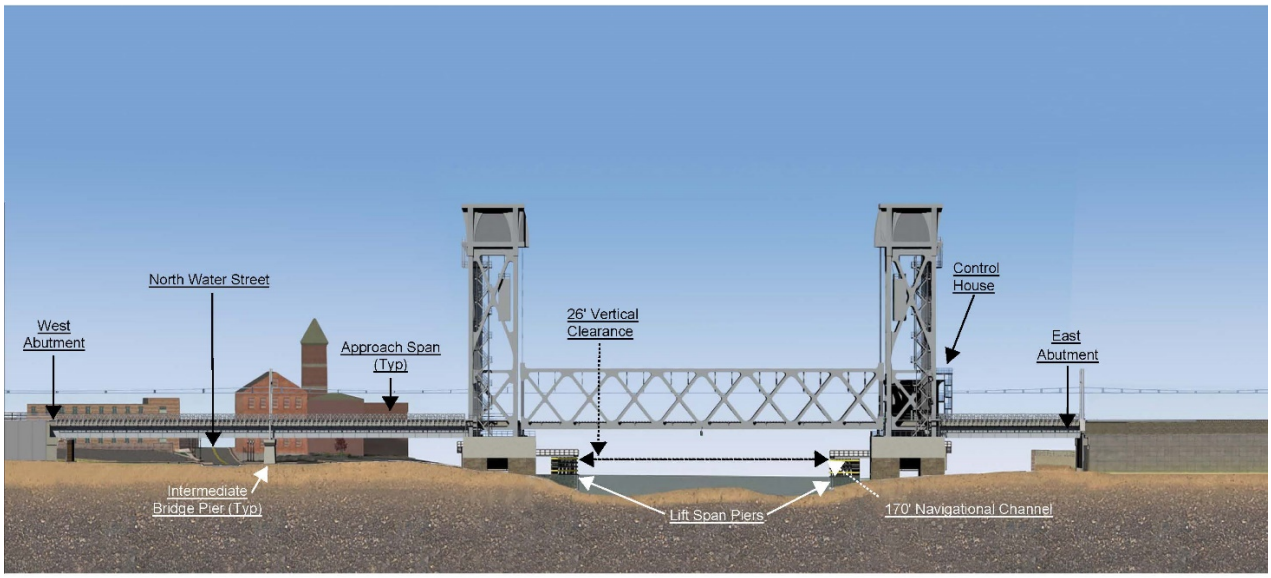


Figure 2-13a Elevation View of the Long Span Vertical Lift Bridge, Refined Design

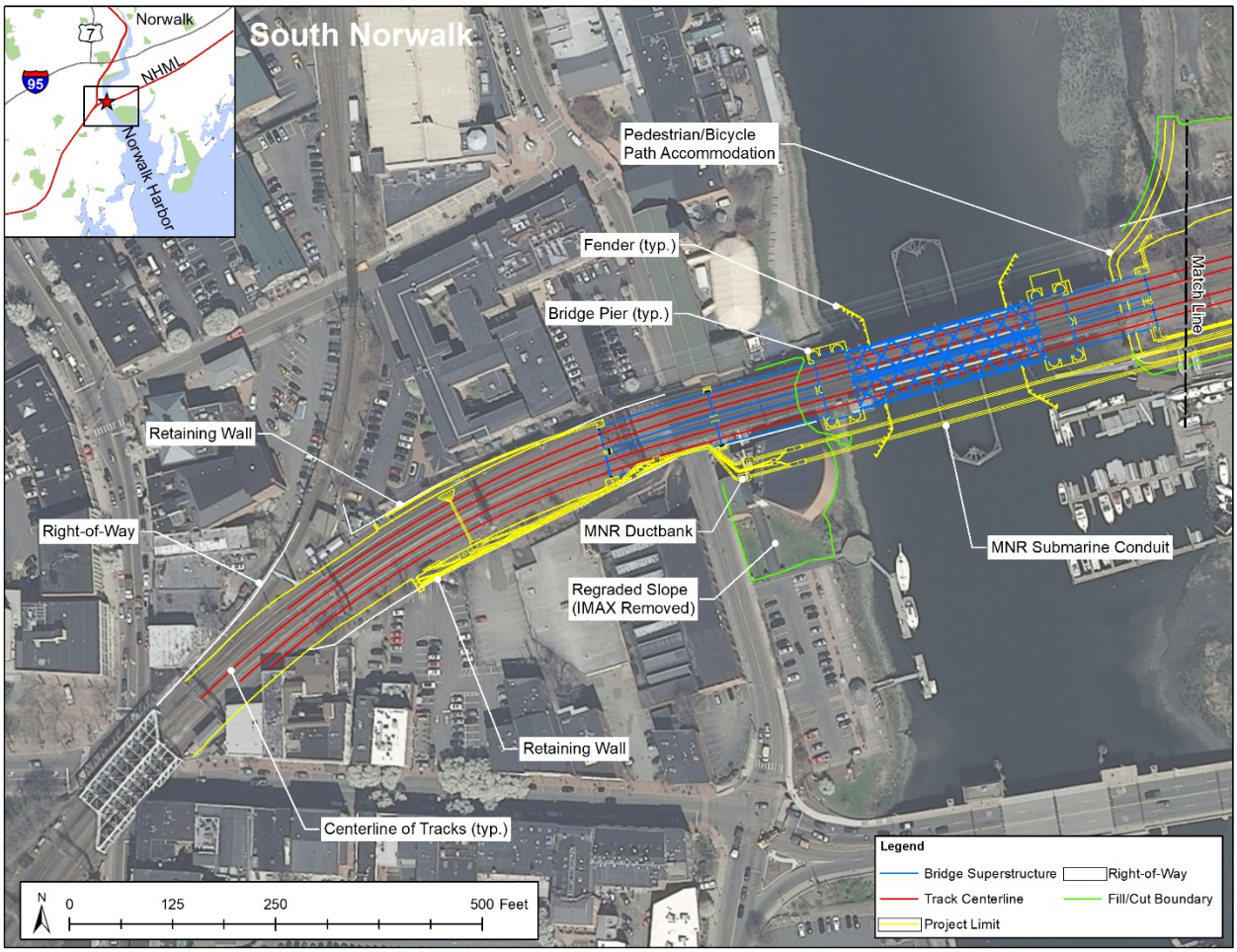


Figure 2-14a Illustration of the Project Limits, South Norwalk, Refined Design

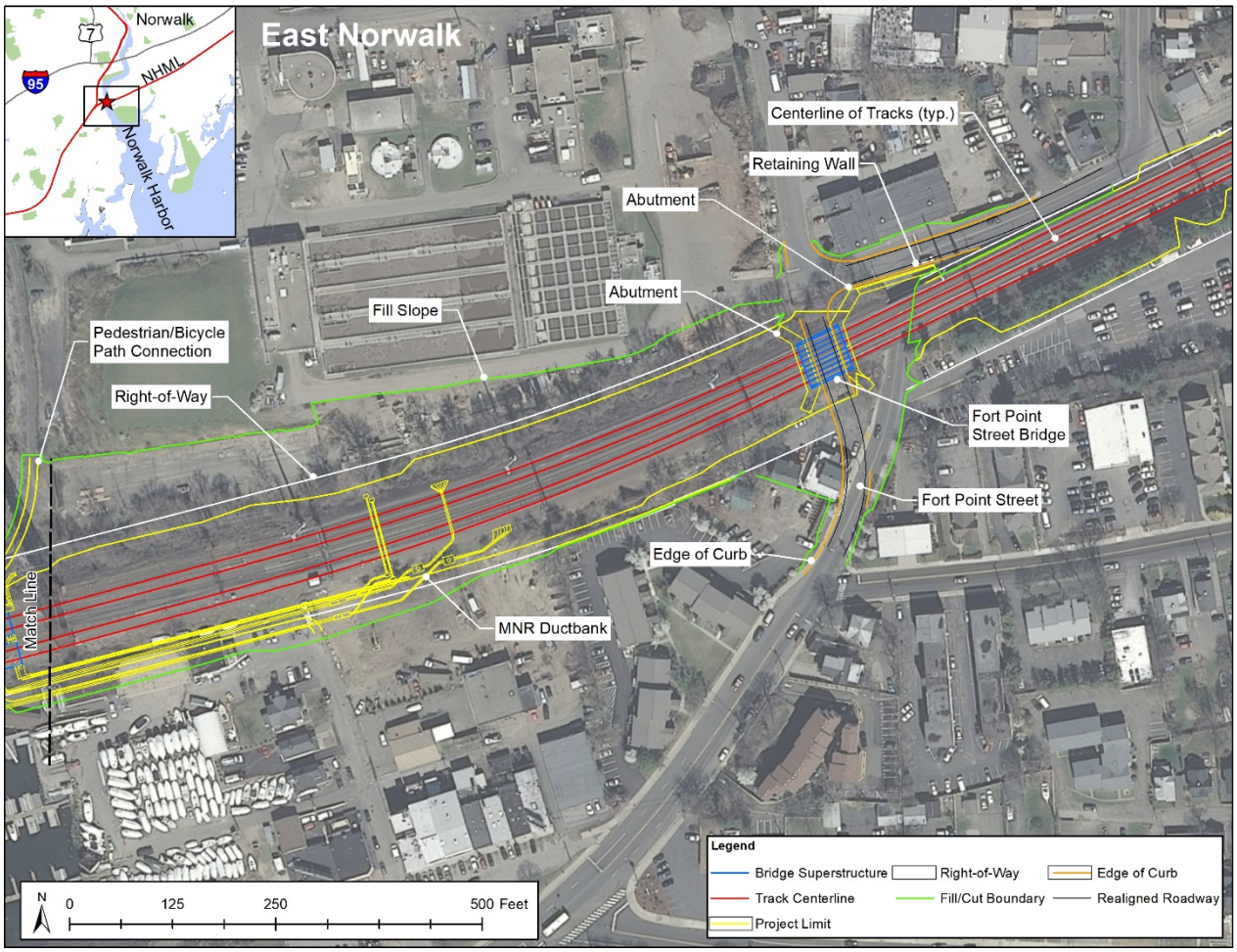
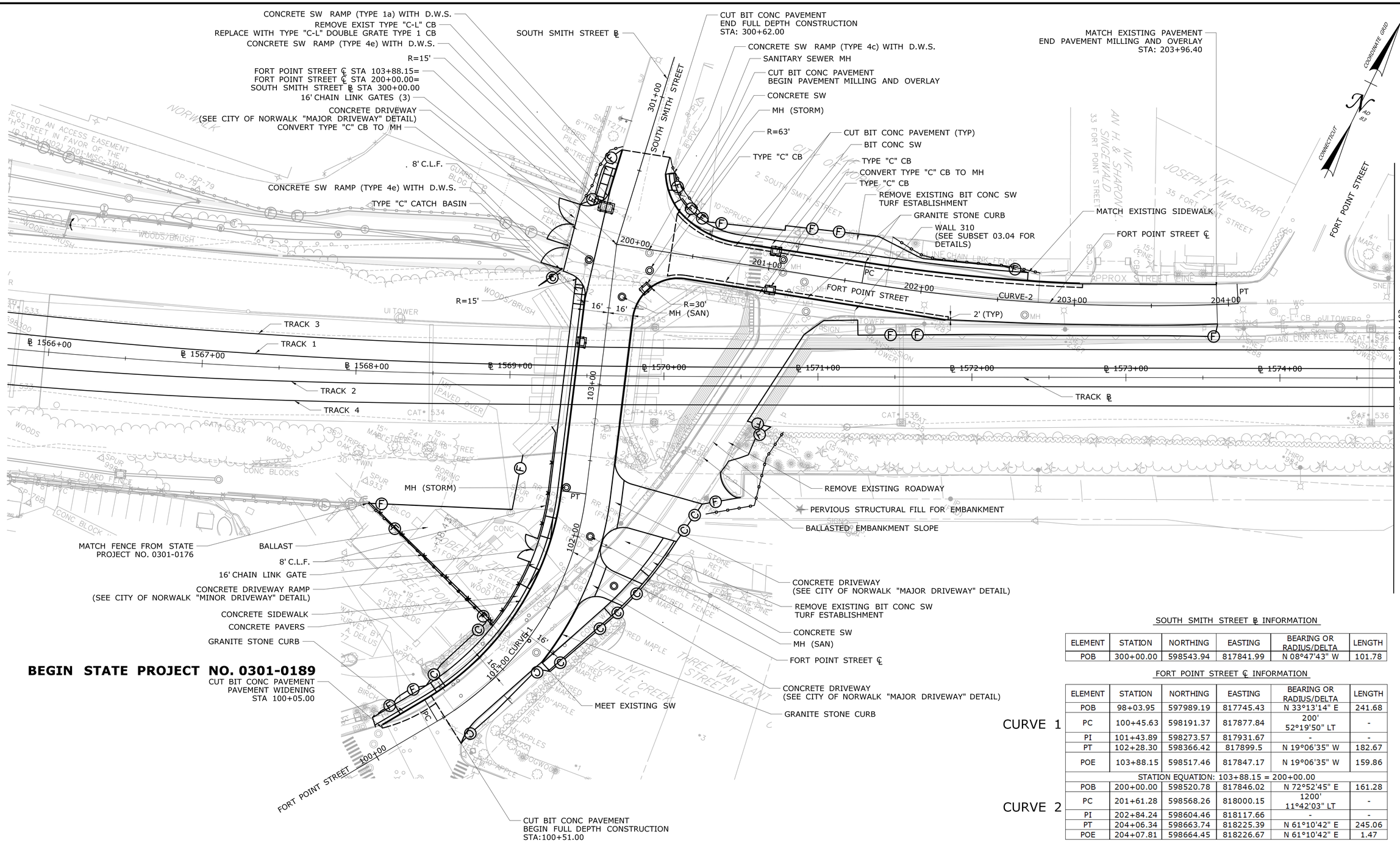


Figure 2-14b Illustration of the Project Limits, East Norwalk, Refined Design

Attachment B Plan of Fort Point Street Bridge Relocation and Roadway Realignment



SOUTH SMITH STREET ℄ INFORMATION

ELEMENT	STATION	NORTHING	EASTING	BEARING OR RADIUS/DELTA	LENGTH
POB	300+00.00	598543.94	817841.99	N 08°47'43" W	101.78

FORT POINT STREET ℄ INFORMATION

	ELEMENT	STATION	NORTHING	EASTING	BEARING OR RADIUS/DELTA	LENGTH
	POB	98+03.95	597989.19	817745.43	N 33°13'14" E	241.68
CURVE 1	PC	100+45.63	598191.37	817877.84	200' 52°19'50" LT	-
	PI	101+43.89	598273.57	817931.67	-	-
	PT	102+28.30	598366.42	817899.5	N 19°06'35" W	182.67
	POE	103+88.15	598517.46	817847.17	N 19°06'35" W	159.86
	STATION EQUATION: 103+88.15 = 200+00.00					
	POB	200+00.00	598520.78	817846.02	N 72°52'45" E	161.28
CURVE 2	PC	201+61.28	598568.26	818000.15	1200' 11°42'03" LT	-
	PI	202+84.24	598604.46	818117.66	-	-
	PT	204+06.34	598663.74	818225.39	N 61°10'42" E	245.06
	POE	204+07.81	598664.45	818226.67	N 61°10'42" E	1.47

SEMI FINAL DESIGN REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/15/2018

DESIGNER/DRAFTER: Z.HELLYAR
CHECKED BY: T.SANDERS
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\CIV-101_FA_CIV_SHEET_0301-0189

SIGNATURE/ BLOCK:

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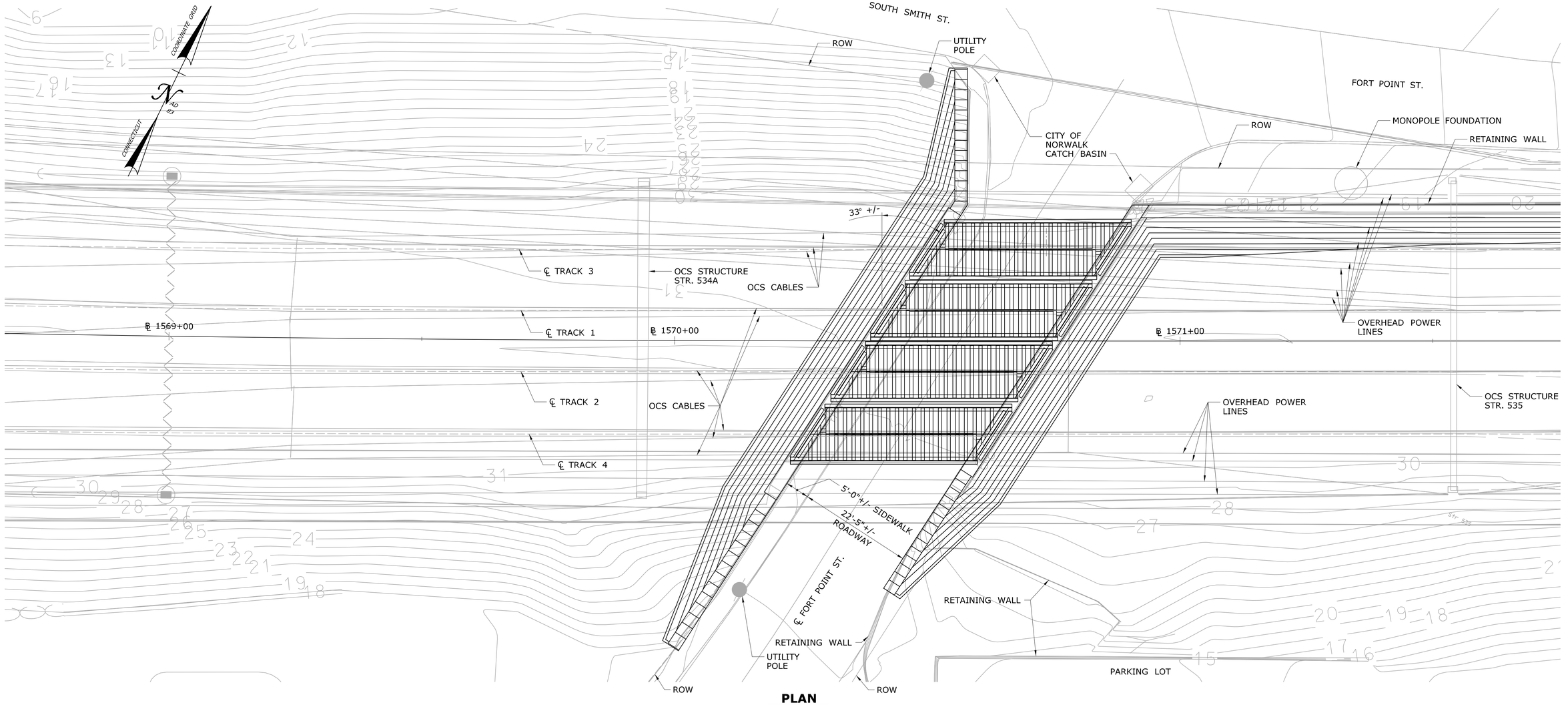
PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

TOWN: **NORWALK**

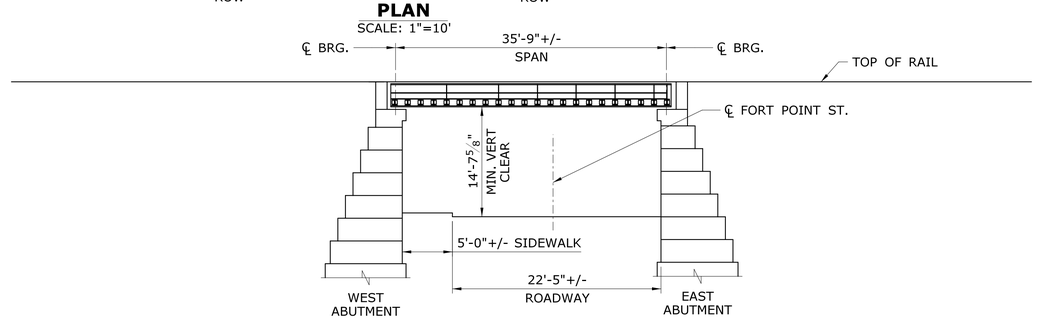
DRAWING TITLE: **CIVIL PLAN (1 OF 4)**

PROJECT NO. **0301-0189**
DRAWING NO. **CIV-101**
SHEET NO. **03.02.005**



PLAN

SCALE: 1"=10'



ELEVATION

(ALONG ℄ TRACK 1)

SCALE 1" = 10'

20 10 0 10 20

SEMI FINAL DESIGN REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 6/13/2018

DESIGNER/DRAFTER: T. ADINOLFI

CHECKED BY: N. WILD

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-003_SB_Sheet Model_0301-0189.dgn

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PROJECT TITLE:

BRIDGE NO. 04131R REPLACEMENT
METRO-NORTH RAILROAD MP 41.79
OVER FORT POINT STREET

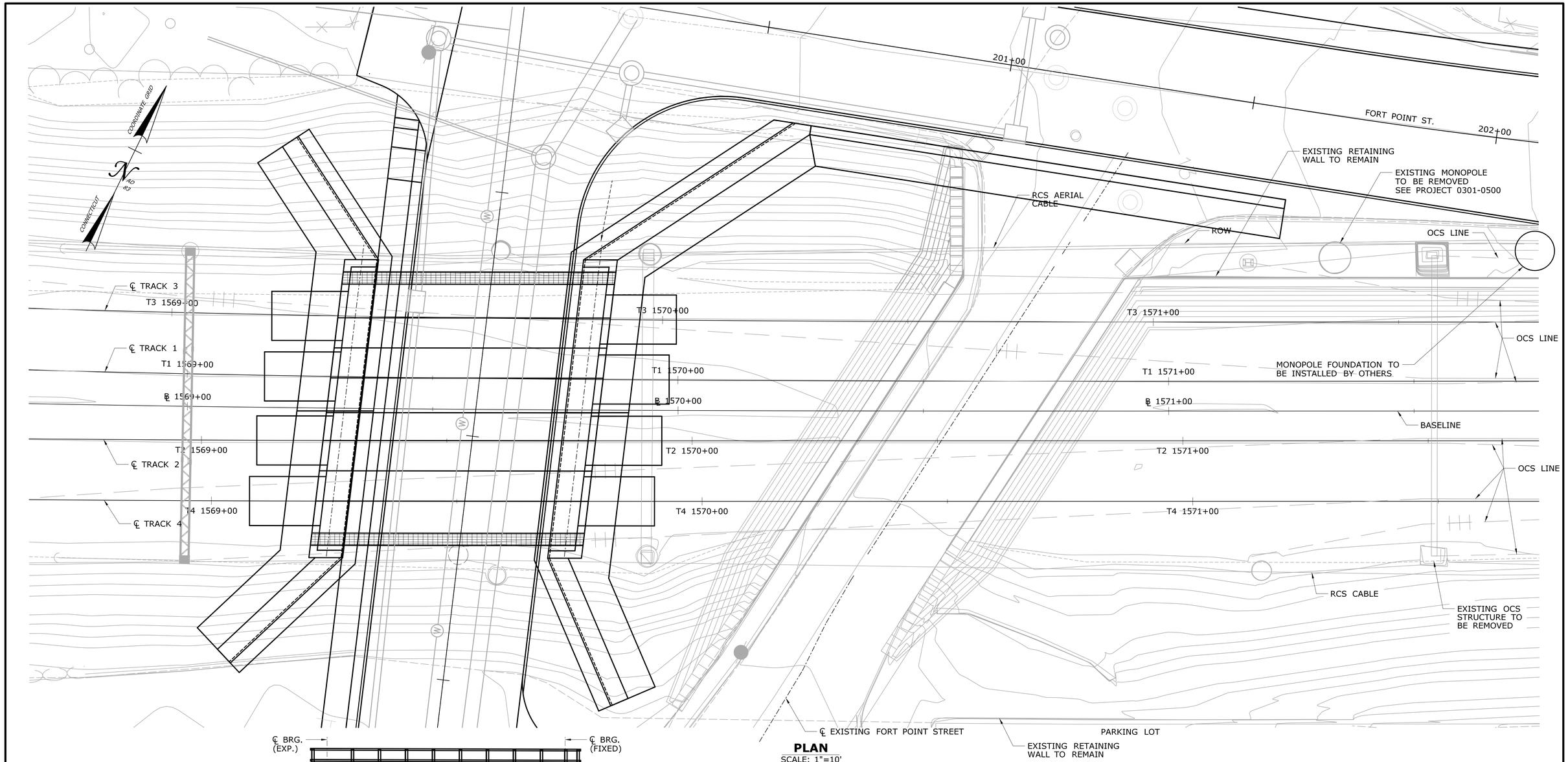
TOWN: **NORWALK**

DRAWING TITLE: **EXISTING PLAN AND ELEVATION**

PROJECT NO. **0301-0189**

DRAWING NO. **STR-003**

SHEET NO. **03.04.003**



PLAN
SCALE: 1"=10'

ELEVATION
(ALONG BASELINE)

SCALE 1" = 10'
20 10 0 10 20

NOTES:

1. FOR PROPOSED FT. POINT ST. ROADWAY DETAILS, SEE SUBSET 03.02

SEMI FINAL DESIGN REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/13/2018

DESIGNER/DRAFTER: T. ADINOLFI
CHECKED BY: N. WILD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-004_SB_Sheet Model_0301-0189.dgn

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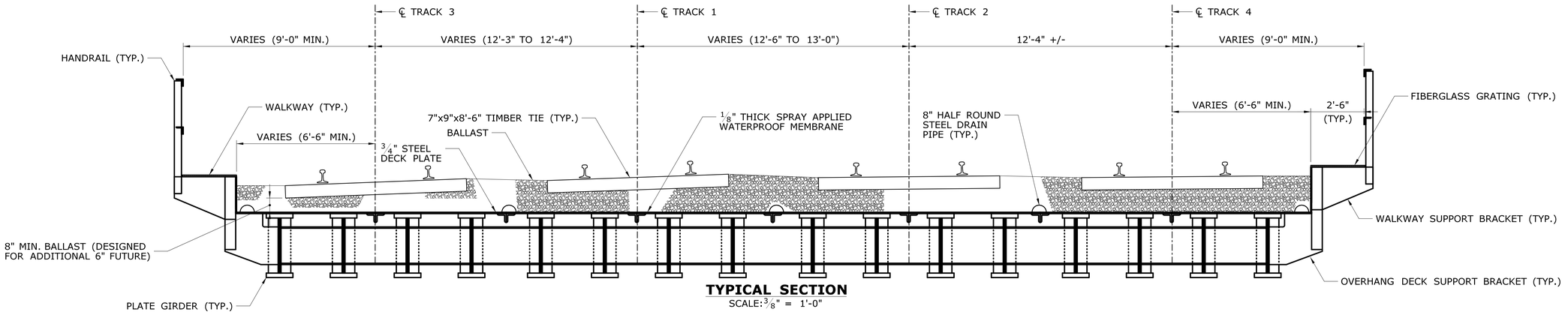
PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

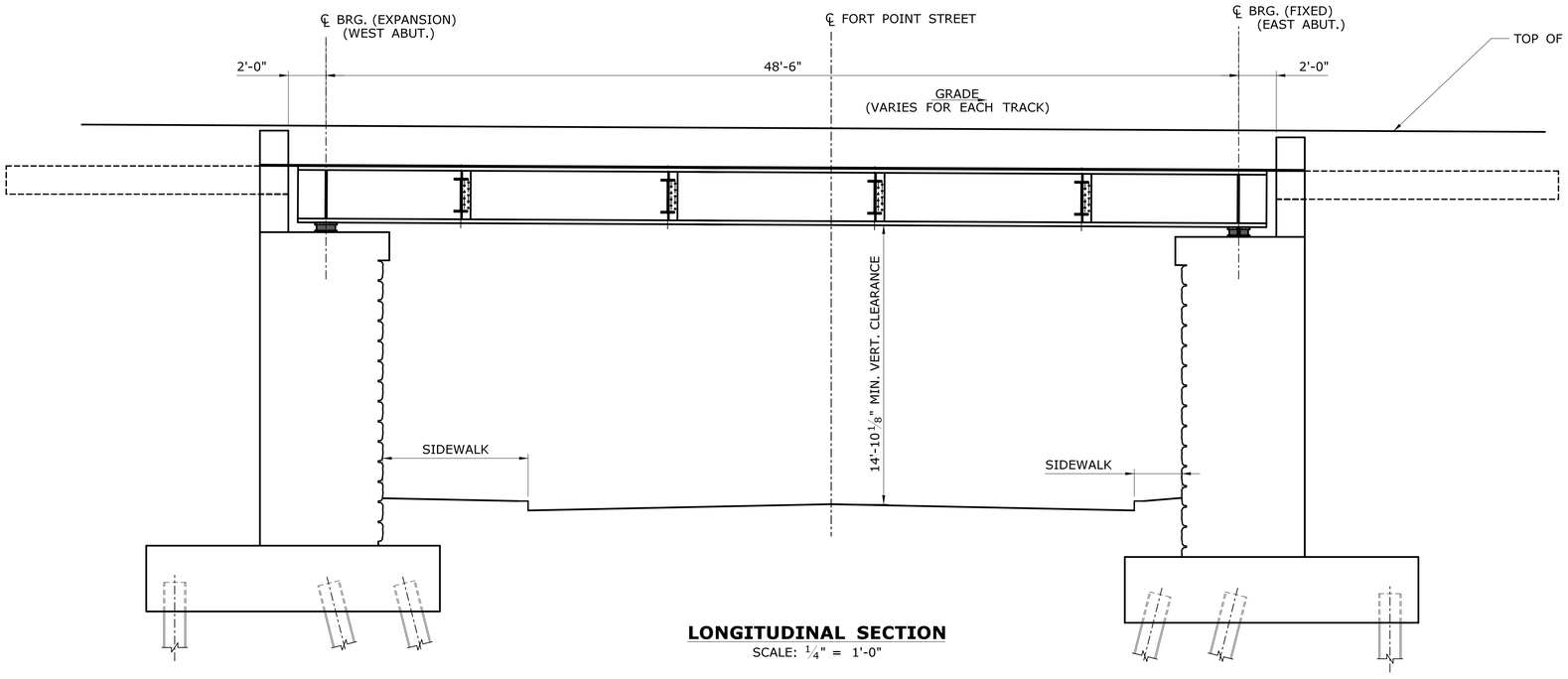
TOWN: **NORWALK**

DRAWING TITLE: **GENERAL PLAN AND ELEVATION**

PROJECT NO. 0301-0189
DRAWING NO. STR-004
SHEET NO. 03.04.004



TYPICAL SECTION
SCALE: 3/8" = 1'-0"



LONGITUDINAL SECTION
SCALE: 1/4" = 1'-0"

SEMI FINAL DESIGN REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/18/2018

DESIGNER/DRAFTER: T. ADINOLFI
CHECKED BY: N. WILD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-05_SB_SHEET_0301-0189.dgn

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Fax (860) 257-7394

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

TOWN: **NORWALK**

DRAWING TITLE: **TYPICAL BRIDGE SECTIONS**

PROJECT NO. **0301-0189**
DRAWING NO. **STR-005**
SHEET NO. **03.04.005**

Attachment C CEPA Update for Sea Level Rise

CEPA Update for Sea Level Rise

Connecticut Public Act No. 18-82, *An Act Concerning Climate Change Planning and Resiliency*, was approved by the Governor on June 6, 2018. The Act mandates the consideration of sea level change scenarios upon infrastructure planning and development. It requires the publication of a sea level change scenario for the State of Connecticut based upon the NOAA's analysis. On March 27, 2018, the Connecticut Institute for Reliance and Climate Adaptation (CIRCA) released a draft report, S*ea Level Rise in Connecticut*. The report modified the results of federal scenarios for sea level rise to include the effects of local conditions and indicates that the planning threshold for sea level rise for the Connecticut coast is 0.5 meters (approximately 2 feet), the center of the range of predictions at 2050.

Table 1 presents the elevations of key bridge elements on existing Walk Bridge and their ability to withstand inundation levels of the four categories of hurricanes, based upon the peak water surface elevations of different events, and incorporating a projected 2-foot sea level rise. The bridge's mechanical equipment for the center (pivot) pier is housed within the engine (machine) room. Additional mechanical equipment for the swing span is located below the engine (machine) room, very close to the top of pivot pier.

Table 1 — Existing Walk Bridge Structural Elevations and Hurricane Resistance, with a 2-foot Sea Level Rise

Bridge Element	Approx. Elevation [a]	Resistance to Hurricane Inundation Levels [a, b]			
		Category 1 El. 11.2	Category 2 El. 16.1	Category 3 El. 21.0	Category 4 El. 26.4
Main Span Low Chord	19.8	yes	yes	no	no
Approach Span Low Chord	18.0	yes	yes	no	no
Control House Lowest Floor	36.0	yes	yes	yes	yes
Engine (Machine) Room Floor	19.7	yes	yes	no	no
Top of Pivot Pier	9.0	no	no	no	no

Notes:
a. Elevations shown in (NAVD88).
b. Elevation shown for peak water surface elevation (NAVD88) with incorporation of 2-foot sea level rise.

As shown in Table 1, the top of pivot pier and the mechanical equipment in its vicinity are impacted by inundation levels of all categories of hurricanes. Except for those mechanical elements located at the top of the pivot pier, the critical bridge elements can withstand inundation levels of Category 1 and Category 2 hurricanes in a 2-foot sea level rise scenario. Except for the Control House, the mechanical elements of the existing bridge would be impacted by inundations levels of Category 3 and Category 4 hurricanes in a 2-foot sea level rise scenario. While the planning and design guidelines of Public Act No. 18-82 do not apply to existing infrastructure, Table 1 shows the adverse impacts of sea level rise upon existing Walk Bridge.

Public Act No. 18-82 requires that State projects in coastal zones incorporate "flood-proofing," defined as incorporating an additional two feet of freeboard above base flood and any additional freeboard necessary to account for the most recent sea level change scenario. Freeboard is defined as a safety factor, expressed in feet above a calculated flood level, that compensates for unknown factors

contributing to flood heights greater than the calculated height, including ice jams, wave actions, obstructions of bridge openings and floodways, the effects of urbanization on the hydrology of a watershed, loss of flood storage.

Table 2 presents the elevations of key bridge elements on the Vertical Lift Bridge in comparison to the freeboard elevation level and hurricane inundation levels. As shown in Table 2, the elevations of key bridge elements of the replacement bridge will be higher than the freeboard elevation mandate of Public Act No. 18-82. Compared to existing Walk Bridge, the resistance to hurricane inundation levels with a 2-foot sea level rise will be substantially improved with the replacement bridge.

Table 2 — Vertical Lift Bridge - Structural Elevations and Resiliency Measures, with a 2-foot Sea Level Rise

Bridge Element [a]	Elevation (+/-)	Freeboard Elevation (El. 14) [b]	Resistance to Hurricane Inundation Levels [c]			
			Category 1 El. 11.2	Category 2 El. 16.1	Category 3 El. 21.0	Category 4 El. 26.4
Main Span Low Chord	29.14	yes	yes	yes	yes	yes
Approach Span Low Chord	22.35	yes	yes	yes	yes	no
Control House Platform	24.0	yes	yes	yes	yes	no
Electric Room Lowest Floor	156.0	yes	yes	yes	yes	yes
Machine Room (Drive Machinery & Motors) Lowest Floor	156.0	yes	yes	yes	yes	yes

Notes:
a. Elevations of the bridge elements are based on Final Design.
b. Freeboard elevation equals the base flood elevation (at 12 ft NAVD88) plus an additional 2 feet, per Public Act No. 18-82.
c. Elevation shown for peak water surface elevation (NAVD88) with incorporation of 2-foot sea level rise.

CTDOT is designing the Vertical Lift Bridge as a tower-driven bridge. In a tower-driven configuration, the machinery is mounted on top of the tower. As shown in Table 2, the elevation of the machinery will be substantially higher than the mandate of Public Act 18-82 to incorporate freeboard. All critical elements of the replacement bridge will be able to withstand Category 3 hurricane levels with a two-foot sea level rise. Except for the approach span low chord and the control house platform, the critical elements of the replacement bridge will be able to withstand Category 4 hurricane levels with a two-foot sea level rise.

Attachment D Cultural Resources Supplemental Reports

Supplementary Historic Resources Evaluation Report: Relocation of the Fort Point Street Railroad Bridge (State Bridge No. 04131R)

Walk Bridge Replacement Project
Norwalk, Connecticut

State Project No. 0301-0176

Prepared for HNTB Corporation
Boston, Massachusetts

by

Archaeological and Historical Services, Inc.
Storrs, Connecticut

for submission to

The Connecticut Department of Transportation

Author:

Bruce Clouette, Ph.D.

February 2019

ABSTRACT AND MANAGEMENT SUMMARY

The State of Connecticut, through the Department of Transportation (CTDOT), is planning to replace the 1896 Norwalk River Railroad Bridge (State Bridge No. No. 04288R, also known as the Walk Bridge) in Norwalk, Connecticut. A report presenting the historic properties that would be affected by the project was completed in 2016 (Clouette et al. 2016) and a Memorandum of Agreement (MOA) was executed by the Federal Transit Administration (FTA), CTDOT, the Connecticut State Historic Preservation Office (CTSHPO), and other interested parties.

One of the project's components at that time was the replacement of the Fort Point Street Railroad Bridge (State Bridge No. 04131R), a 1941 steel-beam structure built on earlier stone abutments, with a new bridge at the same location. The project has now been revised to include realigning Fort Point Street north of its intersection with Van Zant Street so as to line up with South Smith Street on the north side of the railroad right-of-way (ROW), resulting in a new location for the replacement railroad bridge approximately 100' to the west. An Area of Potential Effects (APE) for the revised project was delineated to include the railroad ROW between the existing Fort Point Street Railroad Bridge and the location of the new bridge, the area where the re-aligned Fort Point Street will be constructed, and all associated street improvements.

This report presents an analysis of the impacts of the revised project on above-ground historic properties, i.e., properties within or adjacent to the APE that meet the criteria of eligibility for listing in the National Register of Historic Places (NRHP). The project's MOA identified the former New Haven Railroad rail line within the project limits as an NRHP-eligible linear historic district. The MOA provided for written and photographic documentation to CTSHPO standards as mitigation for adverse effects to contributing components of the NRHP-eligible historic rail line, including the Fort Point Street Railroad Bridge (State Bridge No. 4131R). The realignment of Fort Point Street, resulting in a new location for the replacement bridge 100' west of the current crossing, has substantially the same adverse effect as the replacement of the bridge at its current location. The mitigation stipulated in the MOA has already been completed.

One other NRHP-eligible property was identified, the former Crofut & Knapp Hat Factory at 25 Van Zant Street. Because a narrow strip of the property fronts on Fort Point Street, it was included in this analysis. However, the factory complex on the property has only minimal physical proximity and no visual relationship to the project area. The project will have no adverse effects on this property.

No other buildings more than 50 years old within or adjacent to the APE were judged to be eligible for the NRHP, primarily because extensive alterations resulted in a lack of integrity of design, materials, feeling, and association. This conclusion applies to the buildings at 21 Fort Point Street that lie in the path of the proposed realignment.

None of the buildings within or adjacent to the APE that are less than 50 years old appears to have any "exceptional importance" that would make it eligible for the NRHP.

The conclusions and recommendations herein are the opinion of the historic-preservation consultant. Actual determinations of NRHP eligibility and assessment of effects are properly part of the ongoing consultative process among FTA, CTDOT, CTSHPO and other stakeholders.

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I. INTRODUCTION

A. Introduction

The State of Connecticut, through the Department of Transportation (CTDOT), is planning to replace the 1896 Norwalk River Railroad Bridge (State Bridge No. 04288R, also known as the Walk Bridge) in Norwalk, Connecticut. A report presenting the historic properties that would be affected by the project was completed in 2016 (Clouette et al. 2016) and a Memorandum of Agreement (MOA) was executed by the Federal Transit Administration (FTA), the Connecticut Department of Transportation (CTDOT), the Connecticut State Historic Preservation Office (CTSHPO), and other interested parties.

One of the project's components at that time was the replacement of the Fort Point Street Railroad Bridge (State Bridge No. 04131R), a 1941 steel-beam structure built on earlier stone abutments, with a new bridge at the same location. The project has now been revised to include realigning Fort Point Street north of its intersection with Van Zant Street so as to line up with South Smith Street on the north side of the railroad right-of-way (ROW), resulting in a new location for the replacement railroad bridge approximately 100' to the west (see Figure 1, Location Map, and Figure 2, Site Plan, Appendix A). The realigned Fort Point Street will be constructed with 11-foot lanes, 5-foot bike lanes, and curb. Sidewalks are provided on the east and west sides of the roadway south of the bridge, except under the bridge where a 2-foot safety walk is provided. North of the bridge, a sidewalk is provided on the north side where Fort Point Street runs east-west. Utilities and storm sewers in the existing Fort Point Street will be relocated to the new alignment. The existing bridge will be removed and the gap between the abutments filled in to top-of-rail elevation. The pavement for the old alignment of Fort Point Street will be removed and new driveways leading to the new alignment will be constructed for the properties on the east side. The primary purpose of the realignment is to improve the functionality of the intersection of Fort Point Street and South Smith Street. In addition to the safety improvements, the Fort Point Bridge realignment will alleviate bridge construction impacts, as the new bridge and relocated Fort Point Street will be constructed off-line while traffic is maintained on the existing Fort Point Street, with only very limited street closures.

This report presents an analysis of the impacts of the revised project on above-ground historic properties; archaeological impacts are addressed in a separate memorandum. Funding will be provided in part by FTA, requiring the project to comply with the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act of 1966, as amended, and Section 4(f) of the United States Department of Transportation Act. These federal laws require consultation with CTSHPO regarding possible project-related impacts to archaeological and historical resources listed in or eligible for listing in the National Register of Historic Places (NRHP). In addition, the project will receive state funding, requiring it to comply with the Connecticut Environmental Policy Act (CEPA), which mandates consideration of possible impacts to significant historic and archaeological resources, including those listed on the NRHP and State Register of Historic Places (SRHP).

The report was prepared by Archaeological and Historical Services, Inc. (AHS), under contract to HNTB Corporation, the project's consulting engineers. AHS Senior Historian Bruce Clouette, Ph.D., and Architectural Historian Marguerite Carnell, M. Phil., inspected the project area in October 2018 and January 2019. A thorough survey of the vicinity of the project was conducted on foot, resulting in field notes and several dozen photographs of potentially impacted historic properties. The results of the historic resources evaluation will be incorporated into an Environmental Re-evaluation Consultation for FTA pursuant to NEPA and Section 4(f).

B. Delineation of the Area of Potential Effects (APE)

For historic properties, the Area of Potential Effects (APE) for the Fort Point Street realignment project was delineated so as to include the railroad ROW between the existing Fort Point Street Railroad Bridge and the location of the new bridge, the area where the realigned Fort Point Street will be constructed, and all associated street improvements to Fort Point Street and South Smith Street. Properties within or adjacent to the APE were evaluated for NRHP eligibility and for possible adverse effects.

C. Format of the Report

Because this report is a supplement to the Historic Resources Evaluation Report, August 2016, the Methodology and Historical Background sections are not included. The methodology, including field inspection, background research using published histories of Norwalk and historic maps, and evaluation of significance using the criteria of the NRHP and SRHP, was identical to that of the earlier survey, reference to which will provide greater detail. The entire area associated with the realignment and bridge replacement was included in the Historic Background section of the earlier report, so none of that history is repeated here. Section II of this report presents the historic properties that were identified within or adjacent to the APE; Section III evaluates the effect of the Fort Point Street realignment and bridge-relocation on NRHP-eligible properties (no properties eligible only for the SRHP were identified); Section IV presents conclusions and recommendations; and Section V includes all references.

II. IDENTIFIED HISTORIC RESOURCES

A. Railroad-Related Structures

The earlier report identified the railroad ROW within the Walk Bridge project area as an NRHP-eligible linear historic district significant for its role in the transportation history of Connecticut (NRHP Criterion A) and for its numerous historic engineering features (Criterion C). Among the district's contributing components that are within or adjacent to the APE for the street realignment and bridge relocation are the existing **Fort Point Street Railroad Bridge** (Photographs 1-3, Appendix B) and a section of **stone retaining wall** along the south side of Fort Point Street, north of the bridge (Photograph 4). These components of the NRHP-eligible linear historic district are described in greater detail in the earlier report and in the state-level written and photographic documentation prepared for the project (Carnell and Clouette 2018), pursuant to the Memorandum of Agreement (MOA) among FTA, CTDOT, and CTSHPO. The only catenary-related feature between the locations of the existing and relocated bridge is Catenary Bridge 534A, which is a modern structure. Catenary Bridges 534 and 535 lie outside the limits of the bridge relocation (see Figure 3).

B. Other Historic Properties

Only one property within or adjacent to the APE was identified as potentially NRHP-eligible, the former **Crofut & Knapp Hat Factory, 25 Van Zant Street** (Photograph 5), a large four-story reinforced-concrete brick-faced factory complex built in 1923. Its NRHP eligibility is based upon the importance of the hat industry in the economic history of Norwalk (Criterion A). In 19th and early 20th-century Norwalk, hat manufacturing employed thousands of workers and accounted for a substantial share of the national market for headwear. Like other manufacturers, the hat industry started out in South Norwalk but expanded into East Norwalk in the early 20th century. This particular factory employed 1,000 people when it opened, making 15 million hats a year; employment peaked at around 3,000 workers at mid-century (Karmazinas 2015). The property, which is currently being renovated, was included in this analysis because the rear parking area extends to Fort Point Street (see Figure 3).

C. Properties More Than 50 Years Old But Not NRHP-Eligible

Several other properties that are more than 50 years old were identified within or adjacent to the APE; none is recommended as NRHP-eligible:

- **Restaurant and house, 21 Fort Point Street** (Photographs 6-7), 2½ stories, 21'-by-27' in plan with numerous one-story additions, three-bay gable-end façade. The building has composition siding and modern replacement windows throughout. The shed-roofed front porch, brick planters, and brick facing on the lower part of the front all appear to be of relatively recent construction. The Sanborn maps show the building in use as a store in 1922 and as a restaurant in 1950 (Figures 5 and 6). Directory listings indicate the store was vacant in 1928. In the 1930s and 1940s, it was occupied by the Louis Novak tavern and later by Kenny's Bar & Grill (*Norwalk Directory* 1928, 1935, 1951).

  At the rear of the property is a second two-story frame gable-roofed building (Photograph 8), measuring 28'-by-31' in plan, with a sided exterior, modern windows, a wooden exterior stairway, and an added external chimney. The only indication of its

date of construction (1900 in the Norwalk Assessor records) is the stone foundation. The building probably started out as a barn; it is shown as a garage on the 1922 Sanborn insurance map and as a dwelling on the 1950 map (Figures 5 and 6).

As simple vernacular buildings with no apparent historical significance, the two structures do not rise to the level of NRHP eligibility. Moreover, the extent of alterations on both the front building and the rear building result in a lack of integrity of design, materials, feeling, and association. The property is not recommended as NRHP-eligible.

The realignment of Fort Point Street passes through this property, requiring the demolition of both buildings on the parcel.

- **House, 35 Fort Point Street** (Photograph 9), 2½ stories, 34'-by-35' in plan, three-bay gable-end façade. The partly-enclosed front porch features square columns and a solid railing. The house has been sided and has modern one-over-one and six-over-one windows. The two-story flat-roofed portion at the southeast corner formerly accommodated a small store; directory listings in the 1920s and 1930s indicate the store as vacant (*Norwalk Directory* 1928, 1932).

  As a simple vernacular house of the late 19th century with no apparent historical significance, this property does not appear to rise to the level of NRHP eligibility. Moreover, the siding, window replacement, and front-porch alterations have resulted in a loss of integrity of design, materials, feeling, and association. The property is not recommended as NRHP-eligible.

  Paving improvements on Fort Point Street terminate in front of this property.

- **City of Norwalk Waste Water Treatment Plant, 15 South Smith Street** (Photograph 10). The oldest part of the plant, built in 1931, is a flat-roofed brick building, two stories tall, with its overall plan measuring 74' by 85'. The older part is embedded in later additions on three sides, obscuring it from view. The two soda-ash tanks originally associated with the building (see Figure 7) are no longer in place, superseded by more modern water-treatment facilities. The interior of the building was converted to office space in the 1990s, and no historic equipment remains (Kolb 2019).

  At one time, this property may have had some claim to NRHP eligibility as a representative first-generation sewage-treatment plant. However, the extensive additions to the original building, the removal of pumps, valves, piping and other historical equipment, and changes in the associated outside treatment facilities have resulted in a lack of integrity of materials, design, setting, and association. Overall, the complex dates from the late 20th century, with only a partially visible building shell to suggest its 1930s origins. The property is not recommended as NRHP-eligible.

  This property is adjacent to street improvements planned for South Smith Street.

D. Properties Less than 50 Years Old

Ordinarily, properties that have achieved significance within the past 50 years are eligible for the NRHP only if they are "of exceptional importance," a high threshold that requires a well-developed historic context, comparison with similar properties, and a record of scholarly

analysis. The following less-than-50-year-old properties are within or adjacent to the APE but do not meet the definition of exceptional importance:

- **Seaview Apartments, 11 Fort Point Street** (Photograph 11), three three-story buildings, each approximately 36'-by-100' in plan, gable roofs, clapboard exteriors, built in 1980. Street improvements associated with the realignment of Fort Point Street begin at the northeast corner of this property.
- **Perfect Plantings, commercial garage, 19 Fort Point Street** (Photograph 12), two stories, 40'-by-50' in plan, gable roof, prefabricated metal construction, built in 2015. The realignment of Fort Point Street begins at the northeast front corner of this property.
- **Public-Works Garage (Wallace Bell Garage), 2 South Smith Street** (Photograph 13), one and two stories, 70'-by-150' in plan, flat roof, concrete block construction, built ca. 1980. This property is adjacent to street improvements planned for South Smith Street.
- **Commercial garage, 1 Van Zant Street**, two stories, 35'-by-65' in plan, gable roof, prefabricated metal construction, built in 2003 (Photograph 14). This property is adjacent to the south terminus of the project at the corner of Fort Point Street and Van Zant Street.

III. ANTICIPATED PROJECT EFFECTS

The project's adverse effects on NRHP-eligible historic properties are limited to the demolition of the existing **Fort Point Street Railroad Bridge**, a contributing component of the rail line as an NRHP-eligible linear historic district, and the introduction of the modern replacement bridge within the historic rail line. These adverse effects were anticipated in the earlier report and were addressed in the MOA, which contained the following stipulation for mitigation:

> CTDOT shall prepare written and photographic documentation of other historic structures on the New Haven Line, within the limits of the Undertaking, to the professional standards of CTSHPO. The documentation will address the high towers, stone retaining walls, interlocking tower (South Norwalk Switch Tower Museum), Fort Point Street Railroad Bridge, and any historic trackside features such as mileposts.

The state-level written and photographic documentation of historic structures, including the Fort Point Street Railroad Bridge, has been completed (Carnell and Clouette 2018).

The **stone retaining wall** east of the bridge is not expected to be impacted by the Fort Point Street realignment; in any case, it too was included in the state-level written and photographic documentation cited above.

The former **Crofut & Knapp Hat Factory**, 25 Van Zant Street, is not physically or visually related to the project area, even though a driveway for the rear parking area leads from present-day Fort Point Street. The complex's main elevation faces south toward Van Zant Street, with no part less than 400' away from Fort Point Street. The only project effect on the property is the longer driveway needed to reach the realigned street (see Figure 2). A finding of No Adverse Effect is recommended with regard to this property.

Other than the bridge itself, demolition associated with the Fort Point Street realignment is limited to the property at 21 Fort Point Street, which is not recommended as NRHP-eligible. For this project action, and for the associated street improvements along Fort Point Street and South Smith Street, a finding of No Historic Properties Affected is recommended.

IV. CONCLUSIONS AND RECOMMENDATIONS

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The only adverse effects on above-ground historic properties arising from the replacement of the Fort Point Street Railroad Bridge and the realignment of Fort Point Street are the loss of the historic bridge itself and the introduction of a modern element (the replacement bridge) within the historic rail line. These effects were considered in the project's earlier Section 106 consultation and mitigation of the effects was included in the project's MOA.

Only one other NRHP-eligible property within or adjacent to the APE was identified, the former Crofut & Knapp Hat Factory, 25 Van Zant Street. The property's physical proximity and visual relationship to the project area is minimal; it was included in this analysis only because a small portion of the property, a narrow strip for a driveway leading from present-day Fort Point Street to the rear parking area, is adjacent to the APE.

None of the other buildings within or adjacent to the APE that are more than 50 years old appear to be NRHP-eligible. All have been substantially altered from their historic appearance, including the buildings at 21 Fort Point Street that lie in the path of the realignment.

None of the buildings within or adjacent to the APE that are less than 50 years old appears to have any "exceptional importance" that would make it eligible for the NRHP.

The conclusions presented in this report represent the opinions of the project's historic preservation consultants. Actual determinations of NRHP eligibility, assessment of effects, and consideration of mitigative actions are all properly part of the ongoing consultative process among FTA, CTSHPO, and CTDOT, and will be further developed as the project progresses.

V. REFERENCES

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2015 "Crofut & Knapp Co., Norwalk," Mills: Making Places, a Project of the Connecticut Trust for Historic Preservation, online at https://connecticutmills.org/find/details/crofut-knapp-co, retrieved January 2018.

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1926- *Norwalk Directory*. New Haven, CT: Price & Lee Company.

Sanborn Map and Publishing Company [company name varies]
1922 - Insurance maps of Norwalk. Microfilm, Connecticut State Library, Hartford, CT.

APPENDIX A:

FIGURES

Figure 1: Location of bridge-relocation project (shaded), shown on USGS Norwalk South Quadrangle, Scale 1:24000.

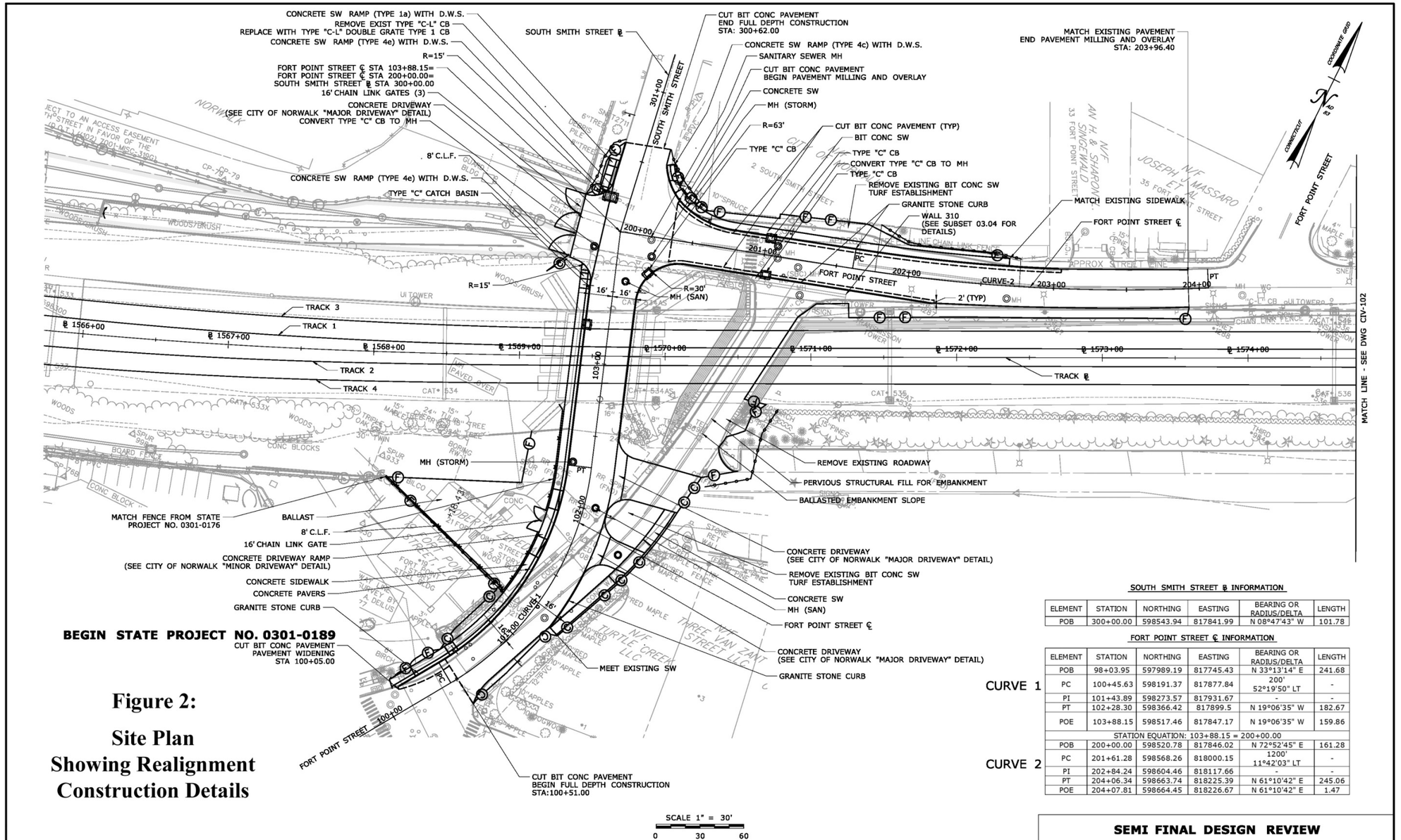


Figure 2:

Site Plan Showing Realignment Construction Details

SOUTH SMITH STREET ℄ INFORMATION

ELEMENT	STATION	NORTHING	EASTING	BEARING OR RADIUS/DELTA	LENGTH
POB	300+00.00	598543.94	817841.99	N 08°47'43" W	101.78

FORT POINT STREET ℄ INFORMATION

	ELEMENT	STATION	NORTHING	EASTING	BEARING OR RADIUS/DELTA	LENGTH
	POB	98+03.95	597989.19	817745.43	N 33°13'14" E	241.68
CURVE 1	PC	100+45.63	598191.37	817877.84	200' 52°19'50" LT	-
	PI	101+43.89	598273.57	817931.67	-	-
	PT	102+28.30	598366.42	817899.5	N 19°06'35" W	182.67
	POE	103+88.15	598517.46	817847.17	N 19°06'35" W	159.86
	STATION EQUATION: 103+88.15 = 200+00.00					
	POB	200+00.00	598520.78	817846.02	N 72°52'45" E	161.28
CURVE 2	PC	201+61.28	598568.26	818000.15	1200' 11°42'03" LT	-
	PI	202+84.24	598604.46	818117.66	-	-
	PT	204+06.34	598663.74	818225.39	N 61°10'42" E	245.06
	POE	204+07.81	598664.45	818226.67	N 61°10'42" E	1.47

SEMI FINAL DESIGN REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/15/2018

DESIGNER/DRAFTER: Z.HELLYAR
CHECKED BY: T.SANDERS
SCALE AS NOTED

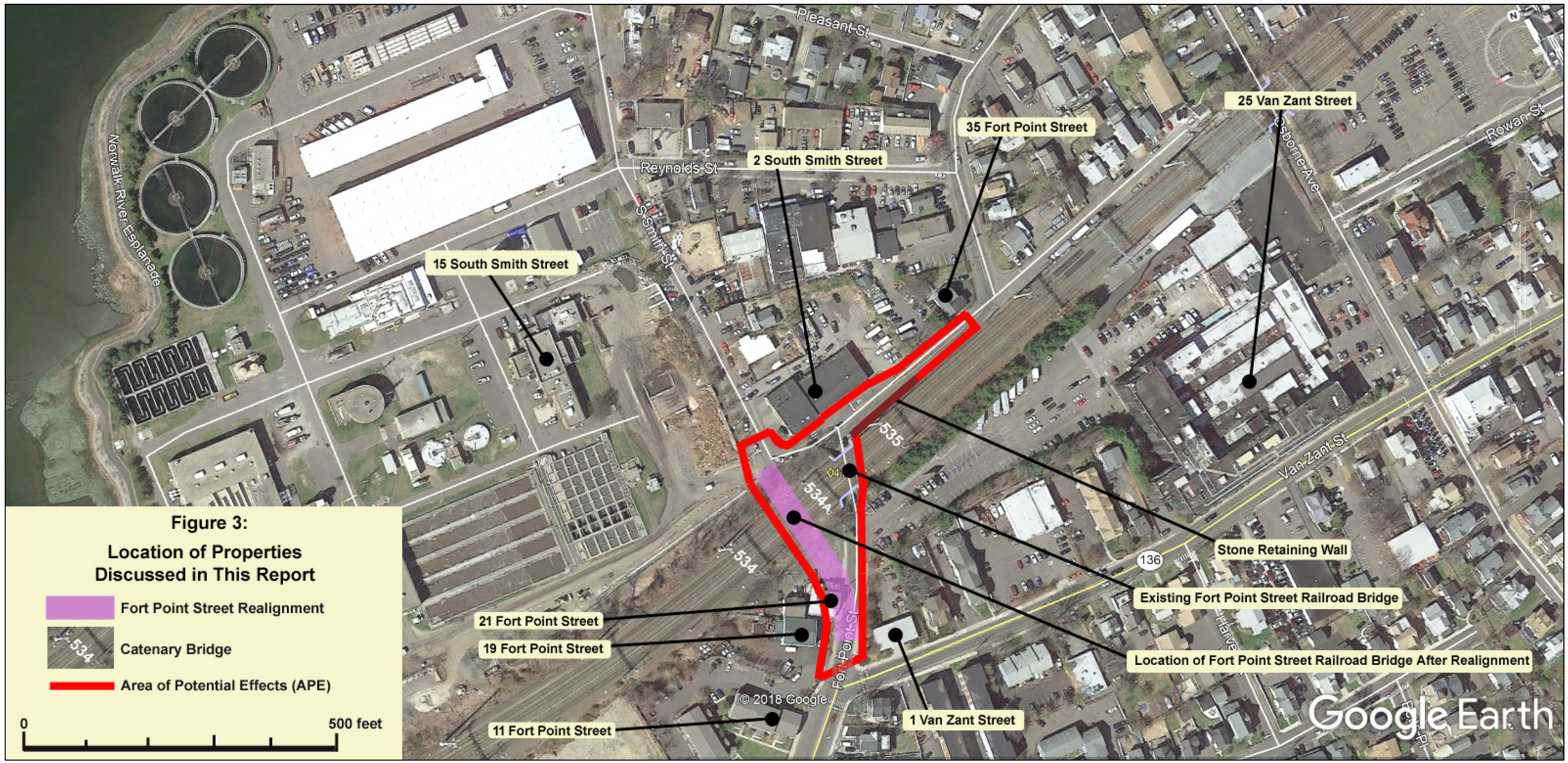
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
Filename: ...\CIV-101_FA_CIV_SHEET_0301-0189

SIGNATURE/BLOCK:
HNTB Corporation
Engineers Architects Planners
55 Capital Boulevard, 4th Floor
Rocky Hill, CT 06067
Tel (860) 257-7377
Fax (860) 257-7394

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT
METRO-NORTH RAILROAD MP 41.79
OVER FORT POINT STREET

TOWN: **NORWALK**
DRAWING TITLE: **CIVIL PLAN (1 OF 4)**

PROJECT NO. 0301-0189
DRAWING NO. CIV-101
SHEET NO. 03.02.005


Pleasant St
Norwalk River Esplanade
Reynolds St
S Smith St
15 South Smith Street
2 South Smith Street
35 Fort Point Street
25 Van Zant Street
Osborne Ave
Rowan St
535
534A
534
Van Zant St
136
Stone Retaining Wall
Existing Fort Point Street Railroad Bridge
Location of Fort Point Street Railroad Bridge After Realignment
21 Fort Point Street
19 Fort Point Street
11 Fort Point Street
1 Van Zant Street
Fort Point St
© 2018 Google
Google Earth
Figure 3:
Location of Properties
Discussed in This Report
Fort Point Street Realignment
534
Catenary Bridge
Area of Potential Effects (APE)
0
500 feet

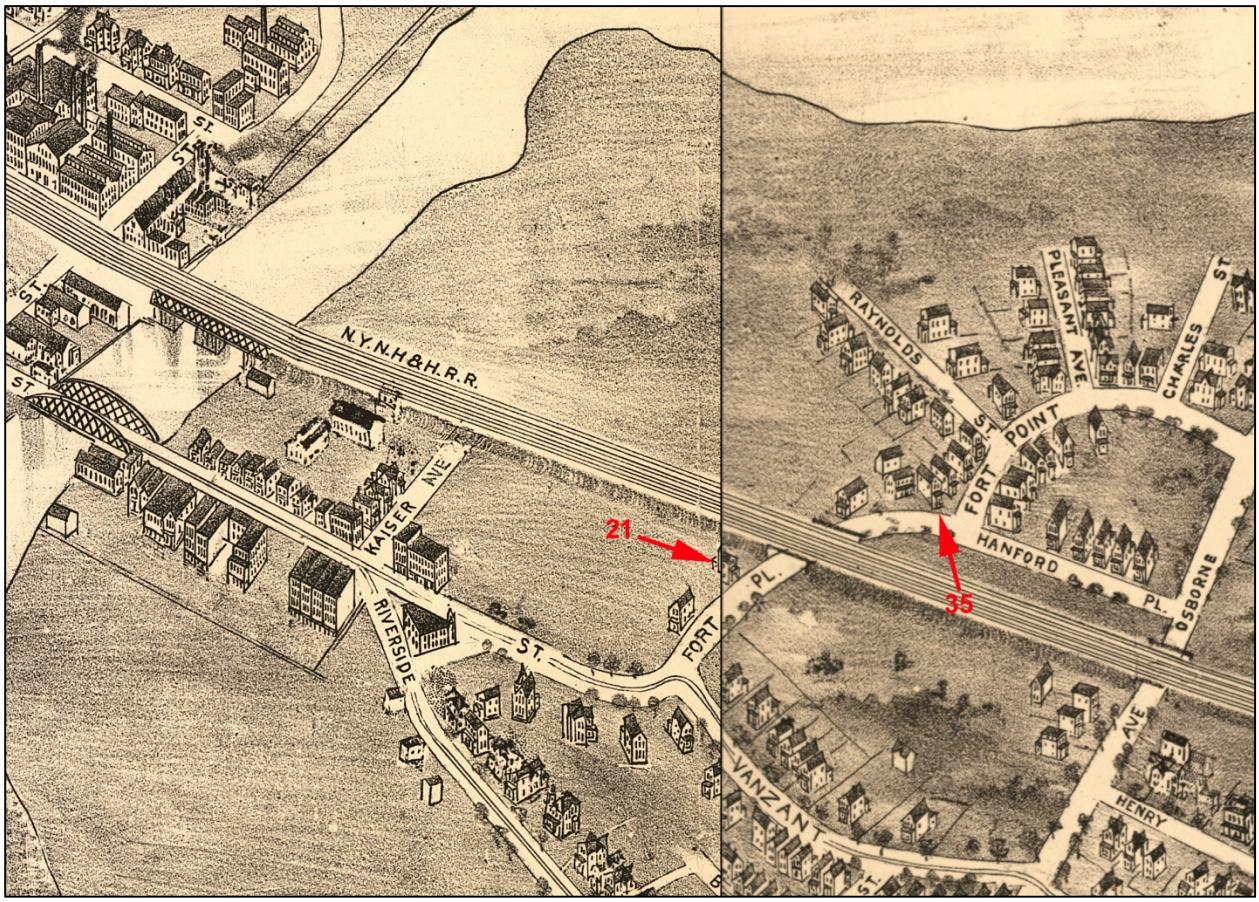


Figure 4: Project vicinity as shown on the 1899 Landis and Hughes bird's-eye view. The houses at 21 and 35 Fort Point Street appear to be present (arrows).

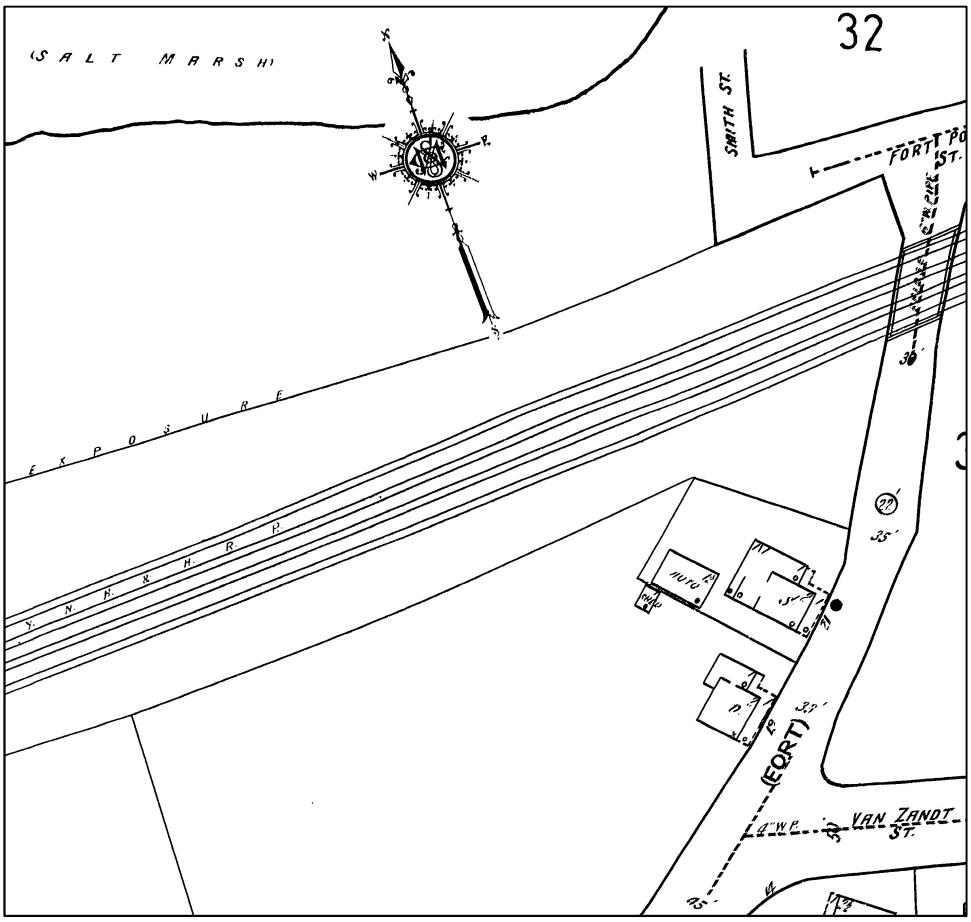


Figure 5: Buildings at 21 Fort Point Street, as shown on the 1922 Sanborn insurance map. The rear building is in use as a garage and the front building is in use as a store.

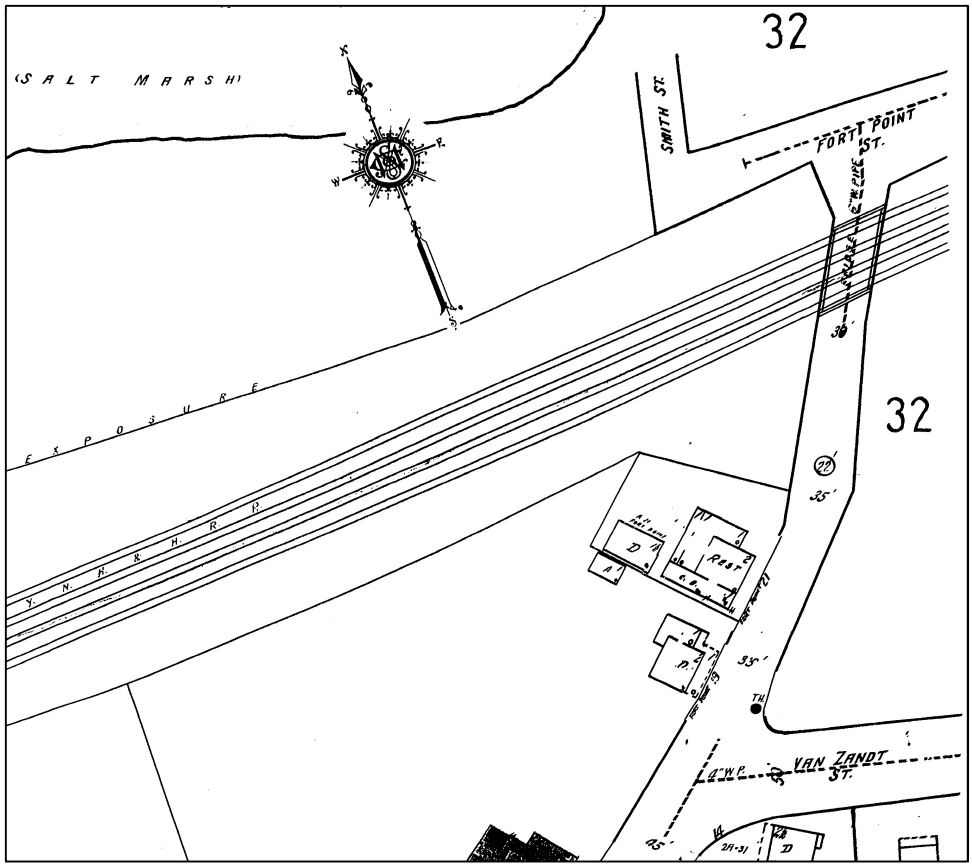


Figure 6: The buildings at 21 Fort Point Street as shown on the 1950 update of the 1922 Sanborn insurance map. The rear building is indicated as a dwelling, and the front building is in use as a restaurant.

Figure 7: The water treatment plant as shown on the 1934 Fairchild aerial photograph.

APPENDIX B:

PHOTOGRAPHS

Photograph 1: Fort Point Street Railroad Bridge (1941), south elevation, camera facing north.

Photograph 2: Fort Point Street Railroad Bridge, detail of south end of east abutment, camera facing east.

Photograph 3: **Track level view of Fort Point Street Bridge, showing historic catenary support structure from the 1914 electrification, camera facing southwest.**

Photograph 4: **Retaining wall east of Fort Point Street Railroad Bridge, camera facing southwest.**

Photograph 5: Former Crofut & Knapp Hat Factory (1923), 25 Van Zant Street (parking area at rear extends to Fort Point Street), camera facing northeast.

Photograph 6: **House at 21 Fort Point Street (ca. 1875), currently in use as a restaurant, camera facing northwest.**

Photograph 7: **Rear of house at 21 Fort Point Street, currently in use as a restaurant, camera facing southeast.**

Photograph 8: **Building at the rear of 21 Fort Point Street (ca. 1900), camera facing southwest.**

Photograph 9: House at 35 Fort Point Street (ca. 1880), camera facing northeast.

Photograph 10: Norwalk Waste-Water Treatment Plant (1931, with later additions), 60 South Smith Street, camera facing northwest.

Photograph 11: Seaview Apartments (1980), 11 Fort Point Street, camera facing west.

Photograph 12: Commercial garage (2015), 19 Fort Point Street, camera facing northwest.

Photograph 13: Public-Works Garage (Wallace Bell Garage, ca. 1980), 2 South Smith Street, camera facing northwest.

Photograph 14: Commercial garage (2003), 1 Van Zant Street, camera facing east.

SUPPLEMENTARY TECHNICAL MEMORANDUM

ARCHAEOLOGICAL SENSITIVITY ASSESSMENT RELOCATION OF THE FORT POINT STREET RAILROAD BRIDGE (State Bridge No. 04131R)

WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT

State Project No. 0301-0176

Prepared for

HNTB Corporation
31 St. James Street, Suite 300
Boston, Massachusetts

by

Archaeological and Historical Services, Inc.
569 Middle Turnpike
Storrs, Connecticut

Author:

David E. Leslie, Ph.D.

March 2019

I. INTRODUCTION

The State of Connecticut, through the Department of Transportation (CTDOT), is planning to replace the 1896 Norwalk River Railroad Bridge (State Bridge No. 04288R, also known as the Walk Bridge) in Norwalk, Connecticut. A 2016 report assessed archaeological resources that would be affected by the project as then conceived (Sportman 2016) and a Memorandum of Agreement (MOA) was executed by the Federal Transit Administration (FTA), the Connecticut Department of Transportation (CTDOT), the Connecticut State Historic Preservation Office (CTSHPO), and other interested parties regarding archaeological and historical resources.

One of the project's components at that time was the replacement of the Fort Point Street Railroad Bridge (State Bridge No. 04131R), a 1941 steel-beam structure built on earlier stone abutments, with a new bridge at the same location. The project has now been revised to include realigning Fort Point Street north of its intersection with Van Zant Street so as to line up with South Smith Street on the north side of the railroad right-of-way (ROW), resulting in a new location for the replacement railroad bridge approximately 100' to the west (see Figure 1, Location Map, and Figure 2, Site Plan, Appendix A). An Area of Potential Effects (APE) for the revised project was delineated to include the railroad ROW between the existing Fort Point Street Railroad Bridge and the location of the new bridge, the area where the re-aligned Fort Point Street will be constructed, and all associated street improvements. The realigned Fort Point Street will be constructed with 11-foot lanes, 5-foot bike lanes, and curbing. Sidewalks will be provided on the east and west sides of the roadway south of the bridge, except under the bridge where a 2-foot safety walk will be provided.

North of the bridge, a sidewalk is provided on the north side where Fort Point Street runs east-west. Utilities and storm sewers in the existing Fort Point Street will be relocated to the new alignment. The existing bridge will be removed and the gap between the abutments filled in to top-of-rail elevation. The existing bridge superstructure will be completely removed along with approximately the top 6 feet of the existing abutments. The area between the existing abutments will be backfilled to the top of track ballast elevation; the existing abutment will not be visible upon completion of construction. The pavement for the old alignment of Fort Point Street will be removed and new driveways leading to the new alignment will be constructed for the properties on the east side. The primary purpose of the realignment is to improve the functionality of the intersection of Fort Point Street and South Smith Street. In addition to the safety improvements, the Fort Point Bridge realignment will alleviate bridge construction impacts, as the new bridge and relocated Fort Point Street will be constructed off-line while traffic is maintained on the existing Fort Point Street, with only very limited street closures.

This technical memorandum presents an analysis of the impacts of the revised project on archaeological resources; above-ground historic properties are addressed in a separate report (Clouette 2019). Funding will be provided in part by FTA, requiring the project to comply with the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act of 1966, as amended, and Section 4(f) of the United States Department of Transportation Act. These federal laws require consultation with CTSHPO regarding possible project-related impacts to archaeological and historical resources listed in or eligible for listing in the National Register of Historic Places (NRHP). In addition, the project will receive state funding, requiring it to comply with the Connecticut Environmental Policy Act (CEPA), which mandates consideration of possible impacts to significant historic and archaeological resources, including those listed on the NRHP and State Register of Historic Places (SRHP).

The memorandum was prepared by Archaeological and Historical Services, Inc. (AHS), under contract to HNTB Corporation, the project's consulting engineers. AHS Senior Archaeologist David Leslie conducted the fieldwork and wrote the memorandum. The results of the memorandum will be incorporated into an Environmental Re-evaluation Consultation for FTA pursuant to NEPA and Section 4(f).

II. SCOPE OF SERVICES

The purpose of the Phase IA survey was to assess the potential for the proposed project actions in the APE, shown in Figure 3, to affect undisturbed archaeological resources. Previous archaeological surveys (Sportman 2016), including geotechnical cores (Geoprobes), have been conducted within the project vicinity (Leslie and Ouimet 2017) (Figure 3). These soil cores were extracted from a Genuine Geoprobe machine, facilitated by Terracon, in the Fall of 2016 and Winter of 2017. In total, 37 geoprobes were extracted to a depth of approximately 28 to 36 feet below the ground surface, depending on whether they met with refusal. The first five feet of the core extraction were vacuum extracted using a Vac-Truck, and soils were described separately from analyzed cores (see Leslie and Ouimet 2017).

The survey was a "desktop" and walkover assessment, which included a visual inspection of the APE and the collection and analysis of available data regarding previously recorded cultural (i.e., archaeological and historical) resources in the APE and vicinity and the evaluation of potential impacts of proposed project actions. The survey included review of recorded archaeological sites in the Office of State Archaeology (OSA)/CTSHPO archaeological site files database; review of NRHP-listed and SRHP-listed districts and structures; review of historic-period and aerial maps; and review of modern aerials, photographs, Natural Resource Conservation Service (NRCS) soil maps, topographic maps, and previous Geoprobes collected in the project APE. Data from these sources was synthesized in order to assess archaeological sensitivity of the APE.

III. RESULTS OF ASSESSMENT

Previous work in the project area (Figure 2) included three geoprobes, Geoprobes #20, 21, and 26 which are within or near the APE, although only #20 is within the APE (Figures 3 and 4). In short, Geoprobes #20 and 21 contained disturbed soil sequences with urban refuse overlying a more ancient glacio/fluvial layer; these probes do not indicate any areas of archaeological sensitivity. Geoprobe #26, however, did contain a buried intact paleosol (old soil sequences), which likely indicates an area of archaeological sensitivity; this paleosol is located approximately 10 feet below the ground surface, but beneath significant landfill disturbed soils, similarly to Geoprobes #20 and 21. Paleosols are older soils that were interrupted by past events such as increased flooding or erosion; these soils are often very similar to those that form in a modern area, but are simply buried or capped. In Geoprobe #26, the paleosol sequence was a dark black, organic rich upper soil with a secondary weathered clay-rich horizon preserved as well (see Leslie and Ouimet 2017). Based on a visual inspection of the APE (Photographs 1-3, Appendix B), updated project plans (Figure 2), and overlaying the geoprobes with the APE (Figure 4), AHS is confident that the proposed realignment of Fort Point Street Bridge will not impact any intact archaeological resources. The only potential archaeological resources are located at least 10 feet below the existing ground surface, are outside of the APE, and protected by 10 feet of disturbed overlying soil sequences.

IV. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Phase IA assessment, no intact archaeological resources will be impacted by the construction of the Fort Point Street Bridge realignment. Supplementary archaeological surveys are not recommended, as they would be highly unlikely to document additional archaeological resources within the project area.

V. REFERENCES

Clouette, Bruce
2019 *Supplementary Historic Resources Evaluation Report: Relocation of the Fort Point Street Railroad Bridge (State Bridge No. 04131R).* Storrs, CT: Archaeological and Historical Services, Inc

Leslie, David E. and William Ouimet.
2017 *Interim Report. Phase I Terrestrial, Intertidal, and Underwater Georarchaeological Investigations.* Storrs, CT: Archaeological and Historical Services, Inc.

Sportman, Sarah
2016 *Technical Report. Archaeological Sensitivity Assessment of the Walk Bridge Replacement Project.* Storrs, CT: Archaeological and Historical Services, Inc

Appendix A

Figures

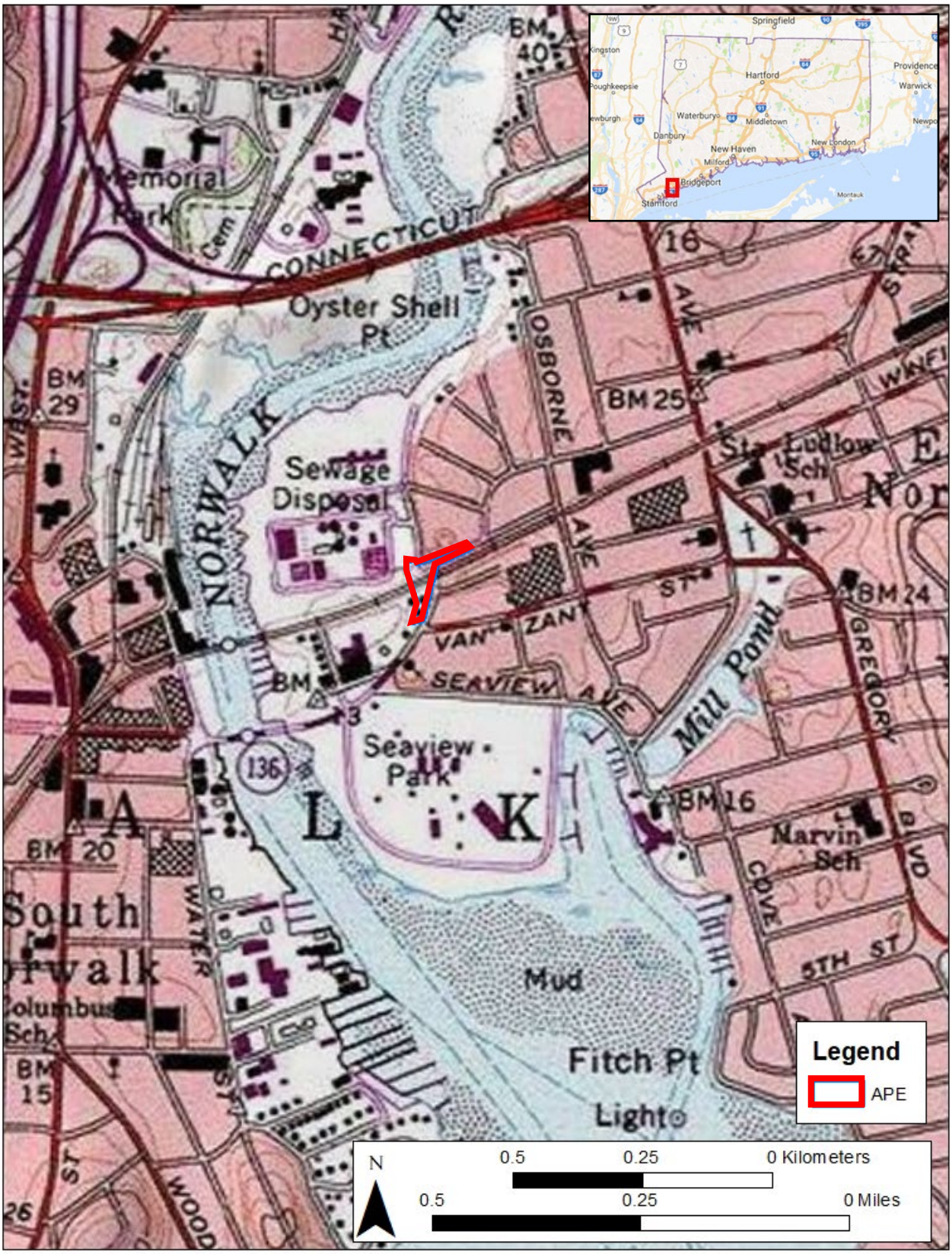


Figure 1: USGS topographic map of APE and vicinity.

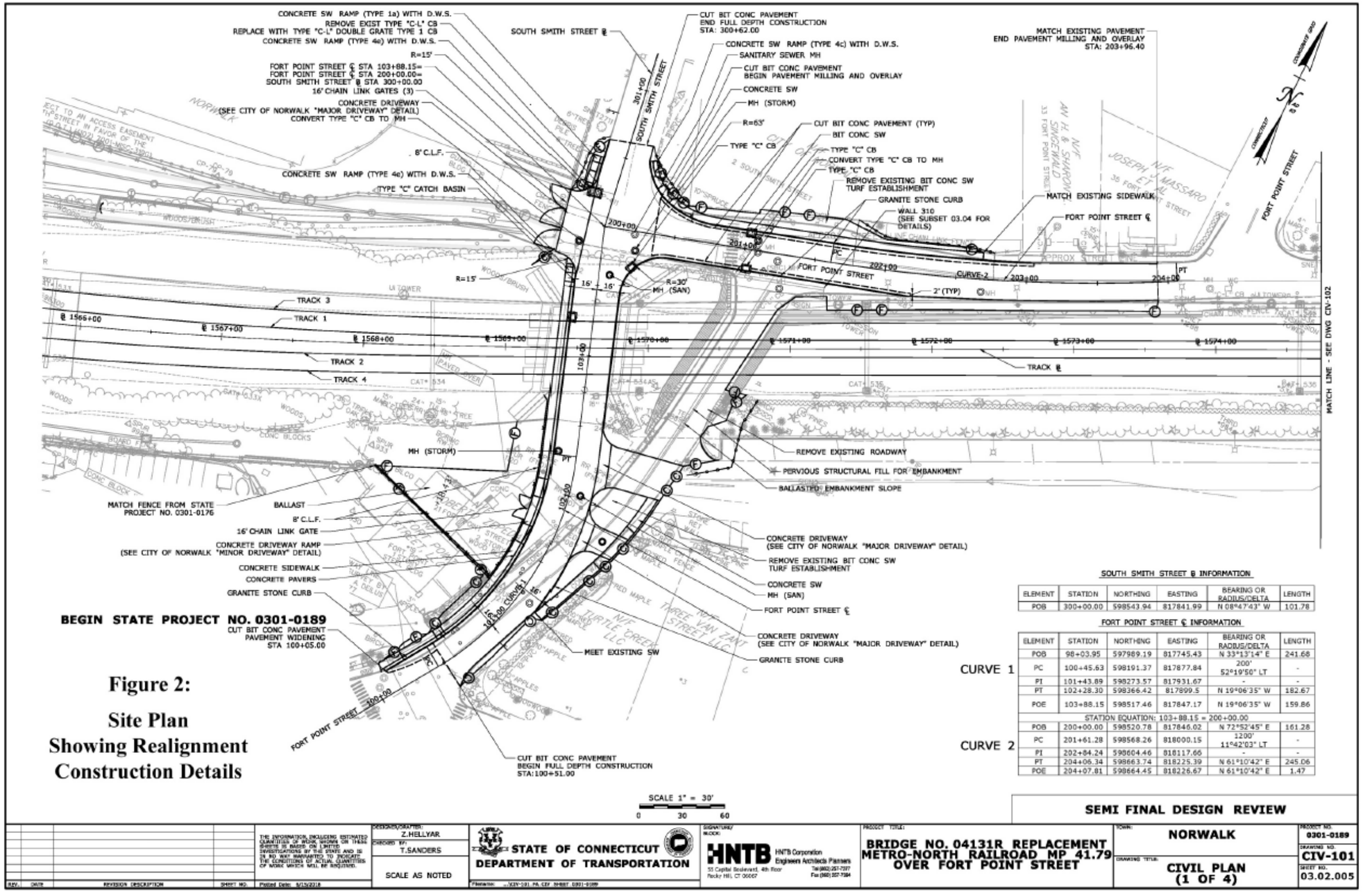


Figure 2:

Site Plan
Showing Realignment
Construction Details

SOUTH SMITH STREET ℄ INFORMATION

ELEMENT	STATION	NORTHING	EASTING	BEARING OR RADIUS/DELTA	LENGTH
POB	300+00.00	598543.94	817841.99	N 08°47'43" W	101.78

FORT POINT STREET ℄ INFORMATION

	ELEMENT	STATION	NORTHING	EASTING	BEARING OR RADIUS/DELTA	LENGTH
	POB	98+03.95	597989.19	817745.43	N 33°13'14" E	241.68
CURVE 1	PC	100+45.63	598191.37	817877.84	200' 52°19'50" LT	-
	PI	101+43.89	598273.57	817931.67	-	-
	PT	102+28.30	598366.42	817899.5	N 19°06'35" W	182.67
	POE	103+88.15	598517.46	817847.17	N 19°06'35" W	159.86
	STATION EQUATION: 103+88.15 = 200+00.00					
	POB	200+00.00	598520.78	817846.02	N 72°52'45" E	161.28
CURVE 2	PC	201+61.28	598568.26	818000.15	1200' 11°42'03" LT	-
	PI	202+84.24	598604.46	818117.66	-	-
	PT	204+06.34	598663.74	818225.39	N 61°10'42" E	245.06
	POE	204+07.81	598664.45	818226.67	N 61°10'42" E	1.47

SEMI FINAL DESIGN REVIEW

DESIGNED/DRAWN:	Z.HELLYAR
CHECKED BY:	T.SANDERS
	SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

HNTB Corporation
Engineers Architects Planners
55 Capital Boulevard, 4th Floor
Rocky Hill, CT 06067
Tel:(860) 257-7377
Fax:(860) 257-7384

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT
METRO-NORTH RAILROAD MP 41.79
OVER FORT POINT STREET

TOWN: NORWALK

DRAWING TITLE:
CIVIL PLAN
(1 OF 4)

PROJECT NO. 0301-0189
DRAWING NO. CIV-101
SHEET NO. 03.02.005

Figure 2: Fort Point Street Realignment project plans.

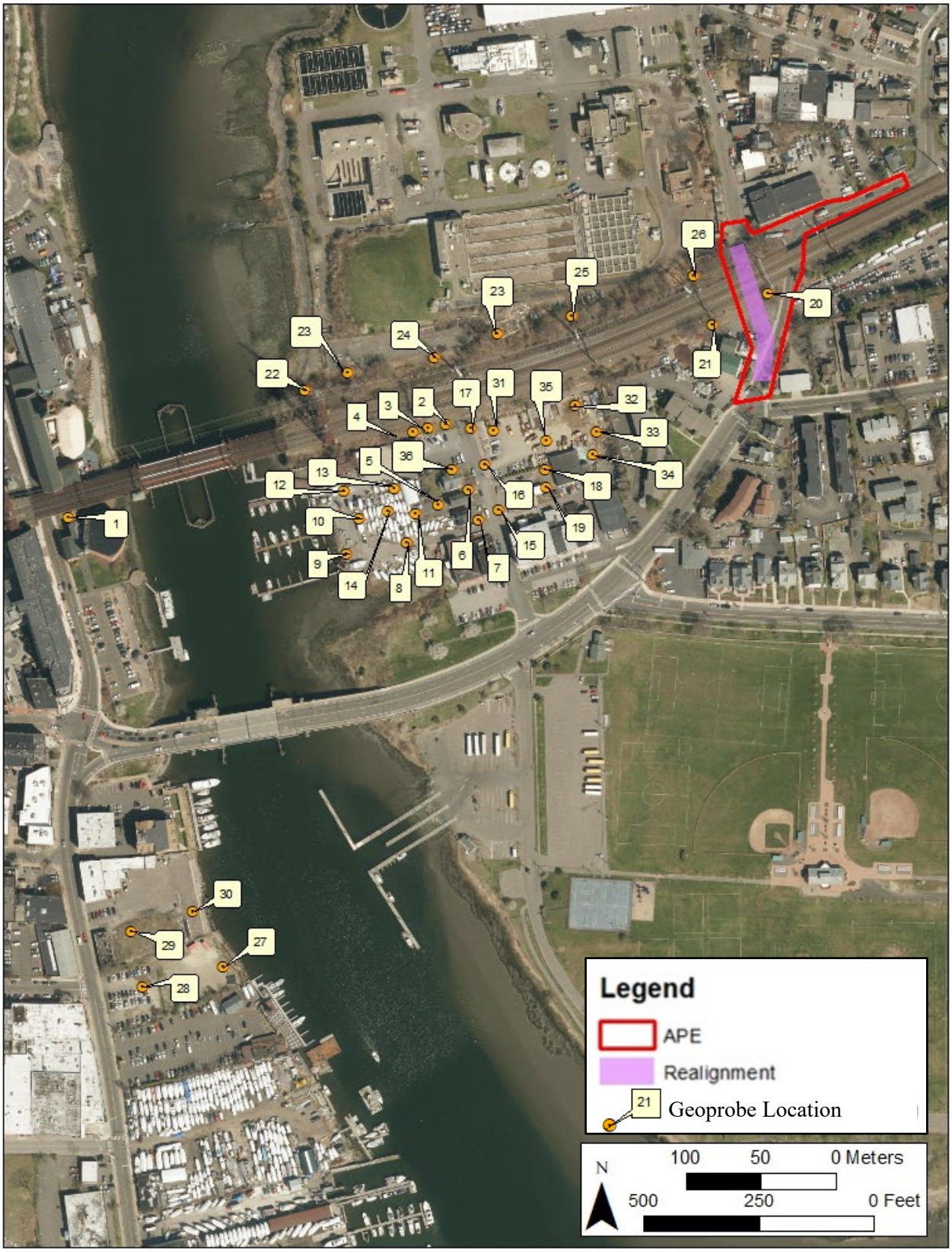


Figure 3: Project APE and previous Geoprobes coring locations.

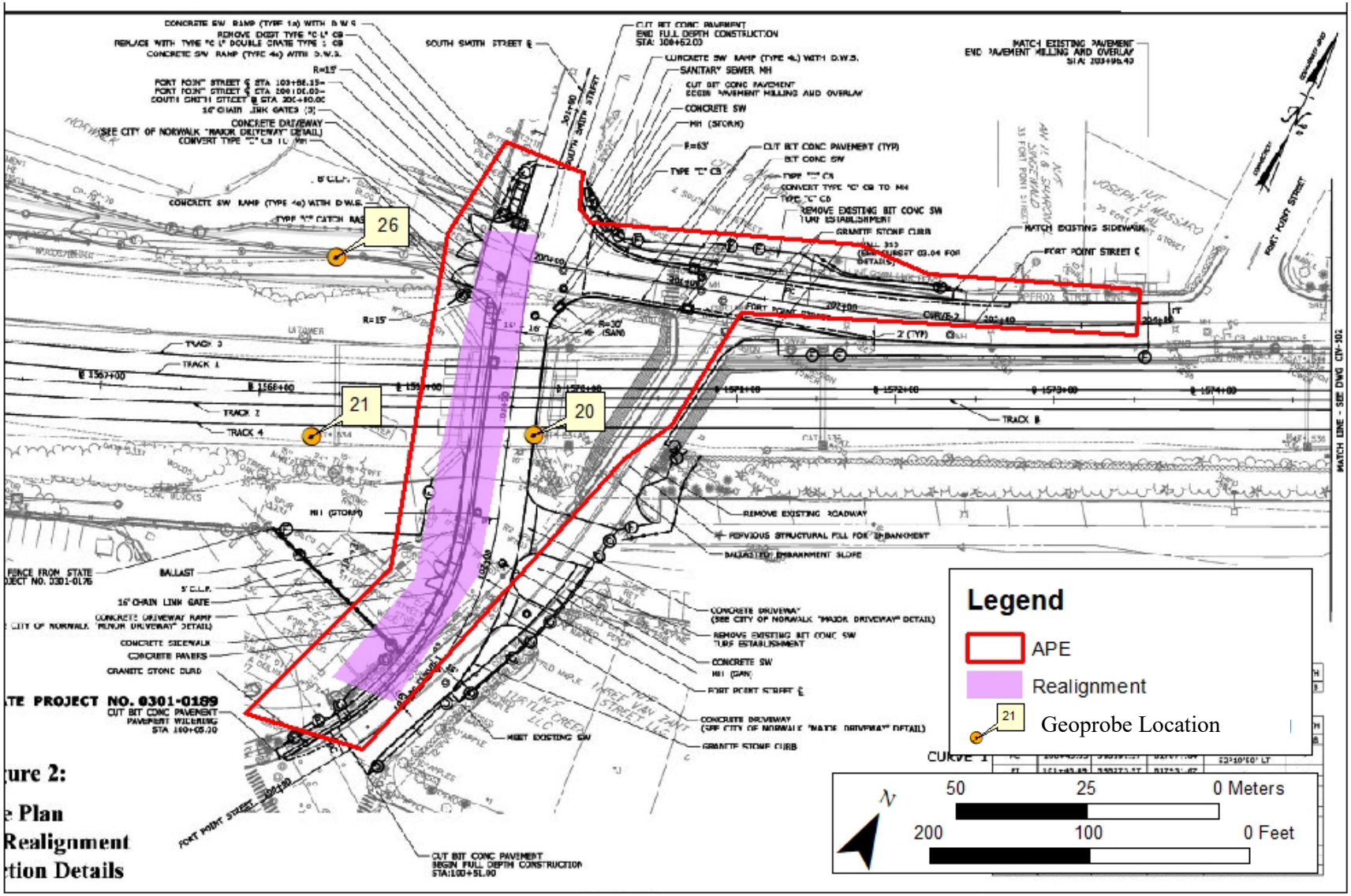


Figure 4: Project plans, shown with geoprobe locations.

Appendix B

Photographs

Photograph 1: Existing Fort Point Street Bridge, looking north to area of relocation and where Geoprobe #20 was collected.

Photograph 2: Existing Fort Point Street Bridge and relocation area looking south.

Photograph 3: Fort Point Street relocation area looking southwest.

Attachment E Required Federal and State Permits and Approvals

Table of Required Federal and State Approvals

Federal/State Regulation	Review/Approval/Permit
National Environmental Policy Act (42 USC 4321 et seq)	Finding of No Significant Impact #
Connecticut Environmental Policy Act (CGS Section 22a-1-22a-1h)	Record of Decision
Section 4(f), U.S. Department of Transportation Act (49 USC 303)	Individual Evaluation and Finding for potential use of Section 4(f) properties
Executive Order 11988, Floodplain Protection, as amended by Executive Order 13690, Federal Flood Risk Management	Review for impact to floodplain
Executive Order 11990, Wetlands Protection	Review for impact to wetlands
Executive Order 12898, Environmental Justice	Review for assessment of impact to EJ communities
Title VI Program/FTA Circular 4702.1B of October 1, 2012	Environmental Equity Review
Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (42 USC 4601 et seq); Uniform Relocation Assistance Act (CGS Section 8-266 et seq)	Review/relocation assistance
Clean Air Act (42 USC 7401 et seq)	Conformity Determination
Section 106, National Historic Preservation Act (36 CFR 800)	Memorandum of Agreement
Section 7, Endangered Species Act (16 USC 1531 et seq)	Finding/Not Likely to Adversely Affect #
Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq)	Finding and Recommendations #
Coastal Zone Management Act/Connecticut Coastal Management Act (16 USC 1451 et seq)	Consistency Review
Section 9 of the Rivers and Harbors Act (33 USC 491)	Permit for construction of new bridge
Section 10 of the Rivers and Harbors Act (33 USC 403)	Permit for dredging and filling in navigable waters/ impacts to waters and wetlands of the U.S.
Section 404 of the Clean Water Act (33 USC 1344)	
Section 14 of the Rivers and Harbors Act (33 USC 408)	Permit for impact to federal navigation channel
Section 401 of the Clean Water Act (33 USC 1341); Connecticut Surface Water Quality Standards (CGS Section 221-426)	Water Quality Certification
Section 402 of the Clean Water Act (33 USC 1342); General Conditions Applicable to Water Discharge Permits and Procedures and Criteria for Issuing Water Discharge Permits (CGS Section 22a-430b)	General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activity
49 CFR 77; Safe, Efficient Use and Preservation of the Navigable Airspace	Notice of Proposed Construction or Alteration (pending siting of bridge-related utilities)
Connecticut Endangered Species Act (CGS Section 26-303)	Natural Diversity Database Review
Connecticut Coastal Management Act; and Tidal Wetlands Regulations (CGS Section 22a-30-1)	Structures, Dredge and Fill, and Tidal Wetlands Permit

Federal/State Regulation	Review/Approval/Permit
Connecticut Flood Management Program (CGS Sections 25-68b - 25-68h)	Flood Management Certification
CGS Section 22a-134, et seq., Hazardous Materials	Review of potential for hazardous material impacts, high-risk sites, site investigations, and environmental audits
CGS Section 22a-133z and 22a-208a	General Permit for Contaminated Soil and/or Sediment Management
CGS Chapter 446d and 446k, RCSA Sections 22a-208a-1, 22a-209-1, and 22a-209-8	Authorization for Disposal of Special Waste
CGS Section 22a-430(b)	General Permit for the Discharge of Groundwater Remediation Wastewater
# Determination made after EA/EIE	

Attachment A-3 FTA Verification of FONSI, March 12, 2021

FTA Environmental Re-evaluation Consultation Worksheet, February 2021

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION I
Connecticut, Maine,
Massachusetts,
New Hampshire,
Rhode Island, Vermont

Volpe Center
55 Broadway Suite 920
Cambridge, MA 02142-1093
617-494-2055
617-494-2865 (fax)

March 12, 2021

Mr. Joseph Giulietti
Commissioner
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06111

Subject: Re-Evaluation of the Walk Bridge Replacement Project Environmental Assessment – Finding of No Significant Impact

Dear Commissioner Giulietti:

Thank you for submitting the *Environmental Re-Evaluation Consultation Form for the Walk Bridge Replacement Project* dated February 4, 2021 (referred to hereinafter as the Re-Evaluation). The Federal Transit Administration (FTA) has completed our review of the Connecticut Department of Transportation's (CTDOT) proposed changes to the Project and its request for a re-evaluation under the National Environmental Policy Act (NEPA) of the Finding of No Significant Impact (FONSI) issued on July 17, 2017 for the Walk Bridge Replacement Project. FTA completed a previous NEPA re-evaluation documented in a determination letter dated September 19, 2019. As part of the Project, CTDOT now proposes to make changes described and detailed more fully in the February 4, 2021 Re-Evaluation to the following elements of the Project:

- Abandonment and replacement of the Fort Point Street/Railroad Corridor stone retaining wall;
- Completion of Marshall Street Pedestrian Improvements to provide a pedestrian detour route compliant with the Americans with Disabilities Act (ADA);
- Fabrication of the replacement bridge lift spans at a staging and storage yard at Manresa Island instead of fabricating them at parcels located on Water Street;
- Changes to the ferry and research vessel dock relocations including replacing the existing docks of the Sheffield Island Ferry and Maritime Aquarium with a single new dock to remain in place at the completion of construction; and,
- Refinements to the plans for using waste stockpile areas and reuse stockpile areas.

The Re-Evaluation was submitted to provide information on potential impacts of the proposed changes to determine if the changed Project will result in significant environmental impacts and to

provide information requested by the FTA. CTDOT's Re-Evaluation concluded that the proposed changes to design and construction are consistent with the approved FONSI and would not result in any significant environmental impacts, that the approved environmental determination remains valid and recommended no supplemental environmental review be required.

Based on FTA's independent review of the Re-Evaluation, attached hereto, FTA concurs that the proposed changes to the Project, as described in the Re-Evaluation, will not result in significant adverse environmental impacts. The completed Re-Evaluation document satisfies the NEPA requirements as outlined in 23 C.F.R. § 771.129 and no supplemental environmental review is necessary for the proposed changes. FTA affirms that the July 17, 2017 FONSI associated with Walk Bridge Replacement Project remains valid.

CTDOT is reminded that changes made to bring facilities into compliance with the ADA cannot be reversed once the Project is completed. Going forward, if any further changes to the Project are proposed, CTDOT must notify the FTA in writing prior to implementing the change so that FTA can determine whether additional environmental studies or analysis will be necessary before the changes are approved. Should you have any questions concerning this Project, please contact Leah Sirmin at 617-494-2459 or leah.sirmin@dot.gov.

Sincerely,

Peter Butler
Regional Administrator

Enclosures: CTDOT's *Environmental Re-Evaluation Consultation form for the Walk Bridge Replacement Project*, dated February 4, 2021
FTA Memorandum, dated March 12, 2021

cc: Bartholomew Sweeney, CTDOT
Kevin Carifa, CTDOT

ENVIRONMENTAL RE-EVALUATION CONSULTATION

Note: The purpose of this worksheet is to assist sponsoring agencies in gathering and organizing materials for re-evaluations required under the National Environmental Policy Act (NEPA). It is designed to provide FTA with information needed to do a re-evaluation. In lieu of the worksheet, the sponsoring agency may submit the same information in a different format. Submission of the worksheet by itself does not meet NEPA requirements. FTA must concur in writing with its determination and/or the sponsoring agency's NEPA recommendation.

For Agency Use *Date Received:*	
Recommendation by Planner or Engineer: ☐ *Accept* ☐ *Return for Revisions* ☐ *Not Eligible*	*Reviewed By:* *Date:*
Comments:	
Concurrence by Regional Counsel: ☐ *Accept Recommendation* ☐ *Return with Comments*	*Reviewed By:* *Date:*
Comments:	
Concurrence by Approving Official:	*Date:*

Please answer the following questions, fill out the impact chart and attach project area and site maps. Figures have been prepared for this Environmental Re-evaluation Consultation to show project revisions and are provided in Attachment A. The figures are numbered to correspond with similar figures presented in the EA/FONSI (e.g., Figure 3-11a compares with EA/FONSI Figure 3-11).

PROJECT TITLE
Walk Bridge Replacement Project
Bridge No. 042884, Norwalk, Connecticut
Connecticut State Project No. 0301-0176

LIST CURRENT, APPROVED ENVIRONMENTAL DOCUMENTS (e.g. EIS/ROD, EA/FONSI, BA, RE-EVALUATION, etc.) If Re-evaluation, briefly describe.
Title: Walk Bridge Replacement Project Environmental Assessment/Section 4(f) Evaluation and Environmental Impact Evaluation (EA/EIE) Date: August 2016 **Type and Date of Last Federal Action: Finding of No Significant Impact (EA/FONSI), July 17, 2017**
Title: Environmental Re-evaluation Consultation Date: July 12, 2019 **Type and Date of Last Federal Action: Affirmation that July 17, 2017 FONSI remains valid, September 19, 2019**
Title: Date: Type and Date of Last Federal Action

HAS THE MOST CURRENT AND OTHER PERTINENT APPROVED ENVIRONMENTAL DOCUMENTS BEEN *RE-READ* TO COMPARE PROPOSED PROJECT CHANGES?

☐ **NO (STOP! The most current approved environmental document MUST be re-read prior to completing a re-evaluation.)**

☒ **YES** **NAME:** **Walk Bridge Replacement Project EA/EIE** **DATE:** **August 2016**
Environmental Re-evaluation Consultation **July 12, 2019**

IS THE PROJECT CURRENTLY UNDER ☒ **DESIGN** **OR** ☐ **CONSTRUCTION?**

REASON FOR RE-EVALUATION

A Value Engineering (VE) Study for the Walk Bridge Replacement Project was prepared for the Connecticut Department of Transportation (CTDOT) and the Federal Transit Administration (FTA) to identify opportunities to improve project value (HNTB Corporation and Strategic Value Solutions, Inc., September 2019). The VE Study includes a recommendation for an alternative construction concept for the fabrication of the replacement bridge lift spans. This VE recommendation to facilitate construction (FC-14) consists of the following: fabricate the replacement bridge lift spans off-site at a steel fabricator's facility and deliver to the bridge site in lieu of constructing the lift spans at the Marine Staging Yard (68-90 Water Street). CTDOT is proposing to construct the lift spans at an existing storage and staging area with waterfront access: the site of the de-commissioned NRG Energy power plant at Manresa Island. Improved project value will result from using a smaller, pre-existing staging and storage area for assembling the lift spans, as opposed to constructing a Marine Staging Yard that was proposed in the 60 percent project design. This refinement in the proposed construction approach necessitates a re-evaluation of potential environmental impacts.

Design refinements of the Fort Point Street Bridge relocation and roadway realignment will replace a stone retaining wall potentially eligible for the National Register of Historic Places (NRHP). Also, proposed pedestrian improvements on Marshall Street are located in two potentially eligible NRHP-districts. These design refinements necessitate additional review of potential impacts to Section 106 resources and a re-evaluation of potential environmental impacts.

Construction requirements relative to sediment and soil management have been refined. In addition to the proposed waste stockpile area, CTDOT will use two re-use stockpile areas for recycling and re-using soils on the project site. This refinement in the construction approach necessitates a re-evaluation of potential environmental impacts.

DESCRIPTION OF PROJECT CHANGES OR NEW INFORMATION

Construction Methods Refinement – Fabricate the Replacement Lift Spans at a Staging and Storage Yard at Manresa Island

The ***EA/FONSI*** indicates that Walk Bridge construction and operation will require the use of 22 parcels, including Parcels 2/84/19, 2/84/3, and 2/84/63 (68, 70 and 90 Water Street), for temporary storage of construction equipment and supplies, contractor assembly and staging of equipment, and dredged/excavated sediment temporary storage and management, among other uses.

The concept presented in the ***September 2019 Environmental Re-evaluation Consultation*** is to construct the lift spans for the replacement bridge at a marine staging yard at 68, 70 and 90 Water Street [identified as Serials # 7, 8 and 9 per Program Right of Way (ROW) maps], which is located less than 0.2 nautical mile south of the existing bridge. The construction materials and equipment would be stored landside, and

the lift spans would be constructed on a barge and then floated into position. A bulkhead would be constructed along the waterfront of 68 and 90 Water Street to provide a mooring location for the barges that would support assembly of the two lift spans. The placement of the assembly barges adjacent to the bulkhead would enable transfer of equipment and materials from land to construction barges. The bulkhead would remain in place at the completion of the project. Dredging in vegetated tidal wetlands would be required for the bulkhead construction.

In the ***revised construction approach***, CTDOT proposes a new location to construct the lift spans for the replacement bridge: the existing wharf and adjacent work area at Manresa Island, the site of the decommissioned NRG Energy power plant located approximately 2.1 nautical miles south of the existing bridge. A small portion of the developed southern parcel on Manresa Island (approximately 15 percent of the 33-acre parcel) will be used as a Staging and Storage Yard during project construction only. Once the lift spans are constructed, the spans will be floated by barge to the bridge site to be put into place. The following summarizes the plan for the proposed Staging and Storage Yard at Manresa Island, which is shown in Attachment B:

CTDOT will acquire a construction easement in the southern parcel of Manresa Island (Parcel 5/86/1) for approximately 48 months for use as a Staging and Storage Yard for the project. Construction and employee vehicle access to the Staging and Storage Yard will be provided from Longshore Avenue via the existing paved site access road (Figure B-1). The approximate 4.7+-acre Staging and Storage Yard will consist of two general areas on this previously disturbed site: an approximate 120,000 square foot (sf) work area and an approximate 87,500 sf construction equipment and material laydown area (Figure B-2). The work area will include potential use of an existing industrial office building as a project construction office and use of an existing parking area for employee parking. No buildings will be constructed. Storage containers (approximately 8-foot x 40-foot) will be required for construction tools and materials. A lift span assembly barge, a work barge, and miscellaneous material barges will be stationed at the existing dock. The barges will be anchored by spud piles. Based on a water-side inspection of the existing bulkhead, the marine structure can be used in its "as is" condition without improvements. No dredging will be required for use of the existing dock/wharf area.

Proposed uses of the work area will include:
1) Pre-assembly of structural components (i.e. lift tower);
2) Full assembly of both lift span trusses (south and north trusses) before float-in to the final location;
3) Berthing of safety boat vessel(s) and emergency rescue operations that are associated with construction of the lift spans; and
4) Temporary berthing of construction vessels and barges.

Proposed uses of the laydown area will include:
1) Storage of construction materials for trestles (pipe piles, girders, etc.) and sheet piles for marine enclosures (if space is available), including transfer of materials from trucks and/or barges and to barges;
2) Temporary storage of components from demolition of the existing bridge that are free of hazardous materials, such as stone masonry and concrete debris, including off-loading and transfer of materials from barges to trucks for off-site disposal; and
3) Off-loading and temporary storage of components from demolition of the existing bridge and the project site that contain hazardous materials, such as treated or painted timber cribbing/pilings, structural steel members, and timber ties. Existing bridge components will be barged to Manresa Island as needed. (No dredged material will be transported to or stored on the site.)

Protective measures/best management practices (BMPs) will be incorporated into the Manresa Staging and Storage Yard. In addition to a layer of geotextile fabric covered with six inches of crushed stone that will

be placed over the non-paved areas of the Staging and Storage Yard, in the material laydown area, a polyethylene covering will be placed directly beneath any existing bridge component delivered to the site that is characterized as containing potentially hazardous materials (e.g., lead paint; creosote) as an additional layer of protection against contact with the ground surface. The contractor will also perform site testing for lead before and after staging and storage operations. The entire Storage and Staging Yard will be surrounded with temporary construction fencing to segregate the site from pre-existing uses; access to the site will be from a secure access gate. Table 1 (pages 18 - 32) includes additional description of the contractor's proposed means and methods and BMPs.

The Water Street parcels (Serials #7, 8 and 9) will continue to be used for the project construction, as previously cited in the ***EA/FONSI***. A bulkhead may be constructed along the waterfront of 68 and 90 Water Street, as cited in the ***September 2019 Environmental Re-evaluation Consultation***. In the ***revised construction approach***, with the planned assembly of the replacement lift spans at the Manresa Staging and Storage Yard, the Water Street parcels will not be used for marine based construction, and elimination of the bulkhead will be considered. The primary purpose of the Water Street parcels will be for storage of land-based construction equipment and material; construction equipment and material will be transferred to and from the site by truck.

Summary of Impact: The revised construction approach increases the total number of parcels required for the construction and operation of the project from 22 to 23 parcels (shown in Attachment A, Figures 3-12a and 3-12b). It does not change the method of lift span construction; only the location of the lift span construction is changed. This revised construction approach will not result in permanent impacts. By relocating the lift span assembly location to Manresa Island, this revised approach will reduce the temporary impacts in downtown Norwalk. Table 1 presents an assessment of impacts associated with the fabrication of the replacement lift spans at Manresa Island.

In response to public comments received during and following the public meeting to present the proposed temporary use, CTDOT provided documentation of alternative lift span assembly locations and completed evaluations of potential impacts to the neighborhoods north of the staging and storage yard at Manresa Island. Table 1 summarizes the results of the evaluations and anticipated traffic and noise impacts of the temporary staging and storage yard. Attachment C provides the evaluations. Attachment D provides an assessment of the proposed temporary staging and storage yard upon existing cultural resources and the Connecticut State Historic Protection Office's (CTSHPO's) concurrence with CTDOT's recommendation.

Engineering Design Refinements – Abandonment and Replacment of Fort Point Street/Railroad Corridor Stone Retaining Wall

Subsequent to the presentation of the Fort Point Street Bridge Relocation and Roadway Realignment in the ***July 2019 Re-evaluation Consultation Worksheet***, design has advanced. The concept presented in the ***September 2019 Environmental Re-evaluation Consultation*** is to replace the Fort Point Street Bridge via a realignment of the bridge and roadway, with the replacement bridge located approximately 100 feet west of the existing bridge. Based on this concept, a portion of the existing stone masonry wall located along a short section of Fort Point Street running east-west and extending north of the railroad bridge would be demolished, and a new wall would be constructed to tie into the remaining existing stone wall.

Based on the outcomes of the Value Engineering study and other design and future maintenance parameters, the entire existing wall will require a functional replacement, described as follows. ***In advanced design,*** the entirety of the existing northeast stone masonry retaining wall between Fort Point Street and the rail corridor will be abandoned in place and replaced with a new soil nail wall (Wall 310), to be installed immediately in front of the existing masonry wall, with soil nails extending through the existing wall. While the existing wall will not be removed, a new retaining wall is required to accommodate added loading due to a raise in track profile necessary to tie in to the proposed Fort Point Street Bridge and Walk Bridge,

as well as a future raise in vertical alignment (6-inch track raise) requested by Metro-North Railroad for future maintenance purposes. While the existing stone retaining wall will not be removed, it will be functionally replaced.

Analysis of the existing wall based on available core data indicates that the wall is unlikely to satisfy American Railway Engineering and Maintenance-of-Way Association (AREMA) stability factor of safety requirements under the revised loading conditions. Alternatives were analyzed to maintain and reinforce the existing retaining wall, including installation of post-tensioned ground anchors and repointing of masonry joints, but the reinforcement options resulted in excessive quantities of anchors and would require construction of multiple rows of steel or concrete wales across the front face of the existing wall, resulting in significant aesthetic implications. Any option that would maintain the existing wall also would require reliance on existing mortar in rubble masonry backfill to ensure stability of the masonry for the remaining service life of the structure. To satisfy design life requirements and ensure the safety of the public, it was determined that the existing Fort Point Street stone retaining wall is not adequate and will be faced and strengthened with construction of a new wall (Wall 310).

Summary of Impact: The existing stone masonry wall is a contributing component to the railroad ROW as a National Register of Historic Places (NRHP)-eligible linear historic district. Abandonment in place and construction of a new wall directly in front of the existing stone retaining wall would be a functional replacement of the wall. CTDOT recommends that this change would constitute an adverse effect to historic resources. Table 2 (page 33) provides an assessment of impacts due to advanced design. Attachment D provides an assessment of the design change upon existing historical resources and CTSHPO's concurrence with CTDOT's recommendation.

Mitigation Design Requirements – Marshall Street Pedestrian Improvements

To accommodate pedestrian traffic during limited closures of North Water Street during construction, CTDOT proposes improvements and alterations along the south side of Marshall Street to develop a pedestrian route compliant with Americans with Disabilities Act (ADA) requirements. Changes in the streetscape include removing several existing light poles on Marshall Street and replacing them after construction and constructing permanent sidewalk and driveway improvements. Additionally, prior to construction, the existing brick pavers at the Marshall Street/North Water Street intersection will be removed and replaced with asphalt pavement. Upon construction completion, the intersection will remain asphalt, and the asphalt pavement at the three crosswalks will be removed and then restored with brick pavers. CTDOT is designing improvements in coordination with the City of Norwalk.

Summary of Impact: Marshall Street is located in the South Main and Washington Streets Historic District and the Former Norwalk Iron Works NRHP-eligible Historic District, as identified in the Historic Resources Evaluation Report prepared for the project (AHS, August 2016). CTDOT recommends that these pedestrian improvements would not result in an adverse effect on the historic buildings or their settings, however. Table 2 provides an assessment of impacts due to the mitigation design. Attachment D provides an assessment of the changes relative to the existing historic properties and settings and CTSHPO's concurrence with CTDOT's recommendation.

Construction Methods Refinement - Ferry and Research Vessel Dock Relocations

The ***EA/FONSI*** and the ***September 2019 Environmental Re-evaluation Consultation*** indicate that temporary relocation of the Sheffield Island Ferry and Maritime Aquarium vessel operations and docks will be required. During construction, the existing docks and vessel operations will be temporarily closed and relocated elsewhere in Norwalk Harbor. CTDOT has been coordinating and will continue to coordinate with water-dependent users, including the City of Norwalk, the Norwalk Harbor Management Commission, the Norwalk Seaport Association, and the Maritime Aquarium, to discuss solutions which will minimize impact to operations and explore mitigation where warranted and feasible.

In the revised construction approach, the Construction Manager/General Contractor (CM/GC) has revised the design of the southwest construction platform (trestle) to allow the existing docks of the Sheffield Island Ferry and Maritime Aquarium to remain in their general current location (waterward of 4 North Water Street, Parcel 2/19/1) during project construction. The existing docking facilities will be replaced with a single new dock and accessible gangway to provide operational flexibility as needed. The new docking facility is expected to remain in place when construction is completed. In coordination with the owners, the City of Norwalk, the Norwalk Harbor Management Commission, and federal and state regulators, CTDOT is evaluating options for passenger loading and unloading and vessel storage that will minimize impacts on vessel operations while maintaining safety for waterway users. Options include: 1) maintaining all passenger operations at the current location; 2) temporarily relocating passenger operations during certain construction activities and vessel storage to a new temporary docking facility waterward of 68 and 90 Water Street (Parcels 2/84/19 and 2/84/33); or 3) a combination of 1) and 2). Following bridge construction, all operations of the Sheffield Island Ferry and the Maritime Aquarium vessel will resume waterward of Parcel 2/19/1 and the temporary docking facility at the Marine Staging Yard will be removed.

Summary of Impact: Similar to the approach described in the EA/FONSI and the September 2019 Environmental Re-evaluation Consultation, CTDOT is continuing to coordinate these options for the vessel operations in Norwalk Harbor with the owners, the City of Norwalk, and other stakeholders; the selected option will be made in coordination with these stakeholders.

Construction Methods Refinement – Waste Stockpile Areas and Reuse Stockpile Areas

The ***EA/FONSI*** indicated that the Walk Bridge Replacement Project will generate sediment, groundwater, soil, ballast, and sub-ballast that will require testing, management and disposal. For the handling of controlled (impacted) material, the ***EA/FONSI*** indicated that temporary waste stockpile area(s) (WSAs) will be constructed, managed and dismantled in accordance with CTDEEP regulatory and permit requirements. The EA/FONSI does not identify specific sites but notes that CTDOT has identified approved upland facility sites for the disposal of excess soil and sediments.

In the refined construction approach, CTDOT will use both WSAs and Reuse Stockpile Areas (RSAs) for the project construction. CTDOT anticipates that approximately two acres in total will be needed for sediment management (including staging and transfer) for the Walk Bridge Program, which includes the Walk Bridge Replacement Project and other nearby New Haven Line (NHL) infrastructure improvement projects. The WSAs will be used to stockpile, manage, and test controlled material for disposal at out-of-state landfills. Additionally, CTDOT will use RSAs to stockpile borrow and to test and approve, or blend if needed, excavated embankment material for reuse as pervious structural backfill on the project site. Three CTDOT-owned areas in the city of Norwalk, currently used for sediment management for ongoing CTDOT-projects, are identified for use: 1) as a WSA - the I-95/Route 7 interchange area, located south of I-95 off the Route 7 southbound off-ramp and adjacent to West Avenue; 2) as a WSA/RSA - the Route 7 Exit 2 (New Canaan Avenue) northbound infield area and adjacent to the northbound on-ramp; and 3) as a RSA - the Glover Avenue Construction Yard, near the terminus of Route 7 at Grist Mill Road.

Summary of Impact: As design and the construction approach have advanced, CTDOT has clarified the sediment management approach for the project. In addition to the need for a WSA for the project as previously identified in the EA/FONSI, CTDOT will use two existing areas as WSAs/RSAs for the Walk Bridge Program. Table 2 provides an assessment of impacts due to this construction methods refinement.

HAVE ANY NEW OR REVISED LAWS OR REGULATIONS BEEN ISSUED SINCE APPROVAL OF THE LAST ENVIRONMENTAL DOCUMENT THAT AFFECTS THIS PROJECT? If yes, please explain.

☒ **NO**
☐ **YES**

WILL THE NEW INFORMATION HAVE THE POTENTIAL TO CAUSE A CHANGE IN THE DETERMINATION OF IMPACTS FROM WHAT WAS DESCRIBED IN THE ORIGINAL ENVIRONMENTAL DOCUMENT FOR ANY OF THE AREAS LISTED BELOW? For each impact category, please indicate whether there will be a change in impacts. For all categories with a change, continue to the table at the end of this worksheet and provide detailed descriptions of the impacts as initially disclosed, new impacts and a discussion of the changes. The change in impact may be beneficial or adverse. **Table 1 provides an assessment of the temporary construction-related impacts due to the use of Parcel 5/86/1 on Manresa Island as a staging and storage yard. Table 2 provides an assessment of impacts due to advanced design.**

The table below identifies both temporary and permanent impacts addressed in this Re-evaluation Consultation Worksheet.

Transportation	☒ **Yes**	☐ **No** (temporary; Tables 1 & 2)
Land Use and Economics	☒ **Yes**	☐ **No** (temporary; Table 1)
Acquisitions, Displacements, & Relocations	☒ **Yes**	☐ **No** (temporary; Table 1)
Neighborhoods & Populations (Social)	☒ **Yes**	☐ **No** (temporary; Table 1)
Visual Resources & Aesthetics	☒ **Yes**	☐ **No** (Table 2)
Air Quality	☐ **Yes**	☒ **No**
Noise & Vibration	☐ **Yes**	☒ **No**
Ecosystems (Vegetation & Wildlife)	☒ **Yes**	☐ **No** (temporary; Table 1)
Water Resources	☐ **Yes**	☒ **No**
Energy & Natural Resources	☐ **Yes**	☒ **No**
Geology & Soils	☐ **Yes**	☒ **No**
Hazardous Materials	☒ **Yes**	☐ **No** (temporary; Table 1)
Public Services	☐ **Yes**	☒ **No**
Utilities	☐ **Yes**	☒ **No**
Historic, Cultural & Archaeological Resources	☒ **Yes**	☐ **No** (Table 2)
Parklands & Recreation	☐ **Yes**	☒ **No**
Construction	☒ **Yes**	☐ **No** (Tables 1 & 2)
Secondary and Cumulative	☐ **Yes**	☒ **No**

Will the changed conditions or new information result in revised documentation or determination under the following federal regulations?

Endangered Species Act	☐ **Yes**	☒ **No** Explanation included
Magnuson-Stevens Act	☐ **Yes**	☒ **No** Explanation included
Farmland Preservation Act	☐ **Yes**	☒ **No**
Section 404-Clean Water Act	☐ **Yes**	☒ **No**
Floodplain Management Act	☒ **Yes**	☐ **No**
Hazardous Materials	☐ **Yes**	☒ **No** Explanation included
Section 106 National Historic Preservation Act	☒ **Yes**	☐ **No**
Uniform Relocation Act	☐ **Yes**	☒ **No**
Section 4(f) Lands	☐ **Yes**	☒ **No** Explanation included
Section 6(f) Lands	☐ **Yes**	☒ **No**
Wild & Scenic Rivers	☐ **Yes**	☒ **No**
Coastal Barriers	☐ **Yes**	☒ **No**
Coastal Zone	☐ **Yes**	☒ **No** Explanation included
Sole Source Aquifer	☐ **Yes**	☒ **No**
National Scenic Byways	☐ **Yes**	☒ **No**
Other EO12898 Environmental Justice	☐ **Yes**	☒ **No** Explanation included

If you checked yes to any of these, describe how the changes impact compliance and any actions needed to ensure compliance of the new project:

Floodplain Management Act, FTA Floodplain Management Conditions. The project complies with EO 11988, Floodplain Management and FTA's Floodplain Management Conditions (shown in italics), as listed in Grants CT-44-X004 and CT-2017-015-00:

11a.) The Recipient agrees to follow Executive Order (EO) 11988, as amended, Floodplain Management, and any other guidance that FTA develops or amends regarding floodplain management, except as FTA determines otherwise in writing. The project exceeds the requirements of EO 11988; it was designed to comply with EO 13690, Establishing a Federal Flood Risk Management Standard, prior to the repeal of EO 13690.

11b.) The Recipient agrees that it will not use FTA funds for any construction activity or any permanent repairs in an area delineated as a "special flood hazard area," or equivalent, as labeled in FEMA's most recent and current data source, unless, prior to seeking FTA funds for such action, the Recipient designs or modifies its actions in a manner that minimizes potential harm to or within the floodplain. Parcel 5/86/1 is in a Special Flood Hazard Area (Zone AE). CTDOT will develop a Flood Contingency Plan for the 4.7+-acre Staging and Storage Yard, will incorporate floodproofing into design as needed, and will include the additional construction parcel in its application to the Connecticut Department of Energy and Environmental Protection (CTDEEP) for Flood Management Certification for the project.

11c.) The Recipient agrees that it will use the "best available information" as identified by FEMA, which includes advisory data such as Advisory Base Flood Elevations (ABFE), preliminary and final Flood Insurance Rate Maps (FIRM), and Flood Insurance Studies. The project references the latest available FEMA maps and studies (effective July 2013). No ABFE mapping or preliminary studies are available for the proposed construction area at Manresa Island.

11d.) If FTA and the Recipient determine that FEMA data is unavailable or insufficiently detailed, then other Federal, State, or local data may be used as the "best available information." Not applicable; FEMA data is available and sufficiently detailed for the project area.

11e.) If an FTA funded project activity is located in a floodplain, then the "best available information" requires a minimum baseline standard for elevation of no less than that found in FEMA's ABFEs, where available, plus one foot (ABFE+1), or if that is not available, then a minimum baseline standard for elevation of no less than FIRM plus one foot (FIRM+1). The project exceeds the FIRM + 1 requirement.

Section 106 National Historic Preservation Act. Investigations were conducted on Manresa Island to determine if the use of Parcel 5/86/1 as a Staging and Storage Yard could potentially impact above- or below-ground historic resources. Parcel 5/86/1 consists of ten NRG Energy Power Plant buildings constructed during the late 1950s. New Areas of Potential Effects (APEs) for above-ground and below-ground resources were delineated for Parcel 5/86/1. CTDOT Cultural Resources staff conducted desktop and field assessments of the proposed Staging and Storage Yard to determine the potential for impacts related to proposed alterations to existing buildings and compaction of subsurface conditions due to the application of a 6-inch crushed stone overlay of the Staging and Storage Yard (Figure B-2). Attachment D-1 contains the Supplemental Cultural Resources Evaluation Memorandum documenting the historical and archaeological evaluations conducted for the proposed Staging and Storage Yard.

The area to be occupied by the proposed Staging and Storage Yard on Manresa Island was developed as a Jesuit retreat center known as the Manresa Institute during the early 1900s. The Institute was relocated to Staten Island in 1911 and the property fell vacant until 1952 when it was purchased by the Connecticut Light & Power Company (CL&P). Maps from the early 1920s indicate that the compound consisted of 17 buildings, these were located in an area to the south of the extant main power plant building. CL&P redeveloped the property for use as a coal-fired powerplant during the late 1950s. At that time, the entirety of the parcel was cleared of all structures, and tidal flats to the north of the former retreat center were filled in. The portion of the property proposed to be used as parking and work areas will be located on areas of previously placed artificial fill, while the entirety of the area proposed to be used for storage was occupied by a large, open coal dump. After the plant was converted to burn fuel oil in 1972, the coal dump was cleared, graded, and backfilled with gravel and topsoil, and three large fuel oil tanks constructed, thus creating the conditions visible today.

It is the opinion of CTDOT Cultural Resources staff that the proposed use of Parcel 5/86/1 as a Staging and Storage Yard would result in No Historic Properties Affected. All of the structures formerly associated with the Manresa Institute were cleared when the power plant was constructed during the late 1950s, and while the power plant buildings themselves are over 50 years of age, they do not possess historical, architectural, or technological significance worthy of listing on the NRHP. Furthermore, the entirety of the APE has experienced extensive soil disturbances, associated with the construction and subsequent demolition of the Manresa Institute, construction of the power plant and infilling of adjacent wetlands by CL&P, regrading of the former coal storage area, and construction of the oil-storage tanks after conversion to that fuel type. Given the aforementioned conditions, it is the opinion of CTDOT's Cultural Resources staff that there is minimal foreseeable potential to impact intact archaeological resources within the project area and no further study is recommended. The CTSHPO concurred with the conclusion of No Historic Properties Affected, provided as Attachment D-2.

Design advancement from 60 to 100 percent has required two additional evaluations to determine the potential effect of design upon existing Section 106 resources, documented in the *Historic Resources Evaluation Report, Walk Bridge Replacement Project* (Archaeological and Historical Services, Inc., August 2016). The first evaluation is required due to design requirements associated with functional replacement of the entirety of an historic stone masonry wall in the Fort Point Street area with a new retaining wall (Wall 310), which would constitute an adverse effect on historic resources. The stone retaining walls along the rail line between the New York/Connecticut border and New Haven are contributing to a National Register of Historic Places (NRHP)-eligible linear historic district. The *Historic Resources Evaluation Report* indicated that the removal of the high towers, catenary support structures, stone retaining walls, and Fort

Point Street Railroad Bridge will be adverse effects on the overall rail line as an eligible historic district. CTDOT's recommends that the additional loss of stone masonry and replacement with Wall 310 would further contribute to the adverse effect on the overall rail line as an eligible historic district; however, mitigation of adverse effects due to this design change have been addressed through the Walk Bridge Replacement Project Memorandum of Agreement (MOA). Per Stipulation No. 3 of the MOA, the stone retaining wall was included in *Written and Photographic Documentation: New York, New Haven & Hartford Railroad, South Norwalk and East Norwalk, Norwalk Connecticut* (Archaeological and Historical Services., Inc. (AHS), August 2018). Attachment D-3 provides documentation of CTDOT's assessment and recommendation.

The second evaluation is required due to proposed alterations that accommodate an ADA-compliant sidewalk on the south side of Marshall Street. Properties along the west end of Marshall Street are included in the NRHP-listed South Main and Washington Streets Historic District. Additionally, the Norwalk Lock Company Factory, on the south side of Marshall Street, was determined to be NRHP-eligible. CTDOT recommends that the proposed improvements and alterations not be considered as an adverse effect on the NRHP-listed or NRHP-eligible properties or their settings. Attachment D-4 provides documentation of CTDOT's assessment and recommendation.

Attachment D-5 provides CTSHPO's concurrence with CTDOT's recommendations for the two evaluations.

Additional Explanation for Regulations checked "No":

Endangered Species Act/Magnuson-Stevens Act. CTDOT has consulted with the National Oceanic and Atmospheric Administration/ National Marine Fisheries Service (NOAA/NMFS) Greater Atlantic Regional Office (GARFO) Protected Resources Division for Endangered Species Act (ESA) Section 7 species and the Habitat Conservation Division for Essential Fish Habitat (EFH) regarding the project action area, which includes construction barge traffic from vessel mooring locations in outer Norwalk Harbor (proximate to and south of Manresa Island) north on the Norwalk River to approximately 1.3 miles north of the bridge site. Coordination with the United States Fish & Wildlife Service (USFWS) regarding the Northern Long Eared Bat has been concluded under the 4(d) rule. Attachments E-1 and E-2 include coordination with NMFS and USFWS on the addition of Parcel 5/86/2 as a construction use parcel. Coordination with federal and State agencies will continue through design. Directives of the agencies will be incorporated in applications for required approvals and permits, listed in Attachment E-3.

Hazardous Materials. The following information on existing impacted areas at Manresa Island is summarized from the *Norwalk Power Economic Impact Analysis Findings & Recommendations Report* (City of Norwalk and Manresa Association, 12/14/18). The Manresa Island site was previously identified as a large quantity generator of hazardous waste. The entire site, consisting of the northern parcel (Parcel 5/86/2) and the southern parcel (Parcel 5/86/1), is currently enrolled in the U.S. Environmental Protection Agency (USEPA)/CTDEEP's Property Transfer Program/Resource Conservation Recovery Act (RCRA) program. USEPA/CTDEEP have been addressing investigations and remedial activities under the combined program since 2006. Site-wide groundwater has been impacted by the former power plant operations; RCRA closure groundwater monitoring has been completed since 1989. Deep excavations could encounter and generate impacted groundwater (wastewater). Depth to groundwater ranges from 6 to 15 feet below ground. There are twelve Areas of Concern (AOCs) or locations/areas where hazardous substances and/or hazardous substances (including petroleum) could have been used, treated, handled, disposed of or spilled and released to the environment in both the northern and southern parcels.

As shown in Figure F-1 (Attachment F), there are four AOCs located within or with boundaries overlapping the proposed Staging and Storage Yard: AOC-1, a former ash disposal area; AOC-2, a former gasoline underground storage tank (UST); AOC-4, a former coal storage area; and AOC-10, a former RCRA impoundment. The current remediation approach focuses on an Engineering Control for AOC-1 and AOC-4, including (but not limited to): installation of 6-inch earth covers and 5-inch aggregate covers in the southern portion of AOC-1 (in the vicinity of the polishing basin and equalization basins) and within AOC-4. No remediation was recommended for AOC-2 or AOC-10.

In accordance with direction from CTDOT's Office of Environmental Compliance (OEC), provided the Staging and Storage Yard activities avoid the AOCs, then coordination with CTDEEP is not required. CTDOT has designed the activities at the site to limit the disturbance of existing soils. To provide a layer of separation from AOC-1 and AOC-4, the ground surface of the Staging and Storage Yard will be covered with 6-inches of crushed stone over geotextile fabric. Additional BMPs for temporary staging and storage operations are presented in Table 1. The type of construction fencing, including the amount and location of excavation associated with installation of fence and gate posts, will be reviewed and approved by OEC. If allowed, minimal excavation will occur associated with installing the temporary construction fence surrounding the construction area, and as required to install a secure construction access gate. Gate posts will be drilled into the ground and filled with concrete. Per CTDOT OEC, excess materials from fencing posts will be handled in accordance with project specifications, including transport to the project WSA for temporary staging, characterization and off-site disposal. As needed, CTDOT OEC will coordinate with Norwalk Energy, the property owner, regarding any issues related to the Property Transfer Act and RCRA closure.

Section 4(f) of the Department of Transportation Act. With no adverse effects to Section 4(f) resources proposed at Manresa Island, Section 4(f) would not apply. While the design refinements in the Fort Point Street area would result in an adverse effect to a cultural resource, the existing stone masonry wall is a feature of the rail line and therefore exempt from Section 4(f) pursuant to provisions in the FAST Act. In the Marshall Street area, the permanent pedestrian improvements would not require ROW takings from the individually listed resources or resources contributing to the Historic District, therefore Section 4(f) would not apply.

Coastal Zone. Manresa Island is located within the coastal boundary; coastal resources in proximity to the Staging and Storage Yard include developed shorefront, tidal and freshwater wetlands, coastal hazard area, and shellfish concentration area (shown in Figure 3-24a in Attachment A). In compliance with the Connecticut Coastal Management Act, CTDOT will demonstrate consistency with coastal uses and activities and address any potential impacts upon coastal resources in the Structures, Dredge and Fill application to be submitted to CTDEEP.

EO 12898, Environmental Justice. The EA/FONSI identifies three U.S. census tracts, Tracts 440, 441 and 442, as comprising the Walk Bridge Project Area (Figure 1a). Based on the 2013 - 2017 American Community Survey (ACS) 5-year estimates, Tracts 440, 441 and 442, are identified as Environmental Justice (EJ) Communities of Concern and as Title VI/Limited English Proficiency (LEP) areas. In the ***revised construction approach***, through the addition of an easement at Manresa Island for the Staging and Storage Yard, a fourth U.S. Census tract, Tract 444, will be included in the Walk Bridge Project area, as shown in Figure 1b.

In accordance with South Western Region Metropolitan Planning Organization's (SWRMPO's) *2019-2045 Long-Range Transportation Plan (LRTP)* (Draft, March 2019), for SWRMPO planning efforts to comply with EJ mandates, characteristics of the area populations are evaluated against three criteria at the census tract level: 1) percent minority, measured by an MPO minority threshold of 33.8% of the population; 2) per capita income, measured by an MPO per capita income threshold of $65,632; and 3) percent below poverty

level, measured by an MPO below poverty level threshold of 7.2%. The criteria for a Limited English Language Proficiency (LEP) area is either 1,000 speakers or 5% of the population in an area with limited English proficiency. The following table identifies the Walk Bridge Project census tracts relative to SWRMPO's Title VI thresholds. As shown in the table below, Tract 444 is an EJ Community of Concern and an LEP area.

Characteristic	SWRMPO/ Title VI Thresholds[a]	City of Norwalk	Census Tract 440	Census Tract 441	Census Tract 442	Census Tract 444
Total Population	------	88,537	6,380	3,350	3,997	3,760
Percent Minority	33.80%	48.00%	77.80%	66.10%	59.30%	77.23%
Per Capita Income	$65,632	$44,888	$28,640	$50,649	$33,162	$30,100
Percent Below Poverty Level	7.20%	9.20%	18.50%	18.90%	10.10%	22.40%
Limited English Proficiency (LEP)[b]	5%	16.00%	28.90%	27.80%	18.90%	21.00%

a. *Threshold levels have increased from those identified in the EA/EIE.
b. Census Tract 444 provides the percentage of Spanish or Spanish Creole persons that speak English less than "very well."

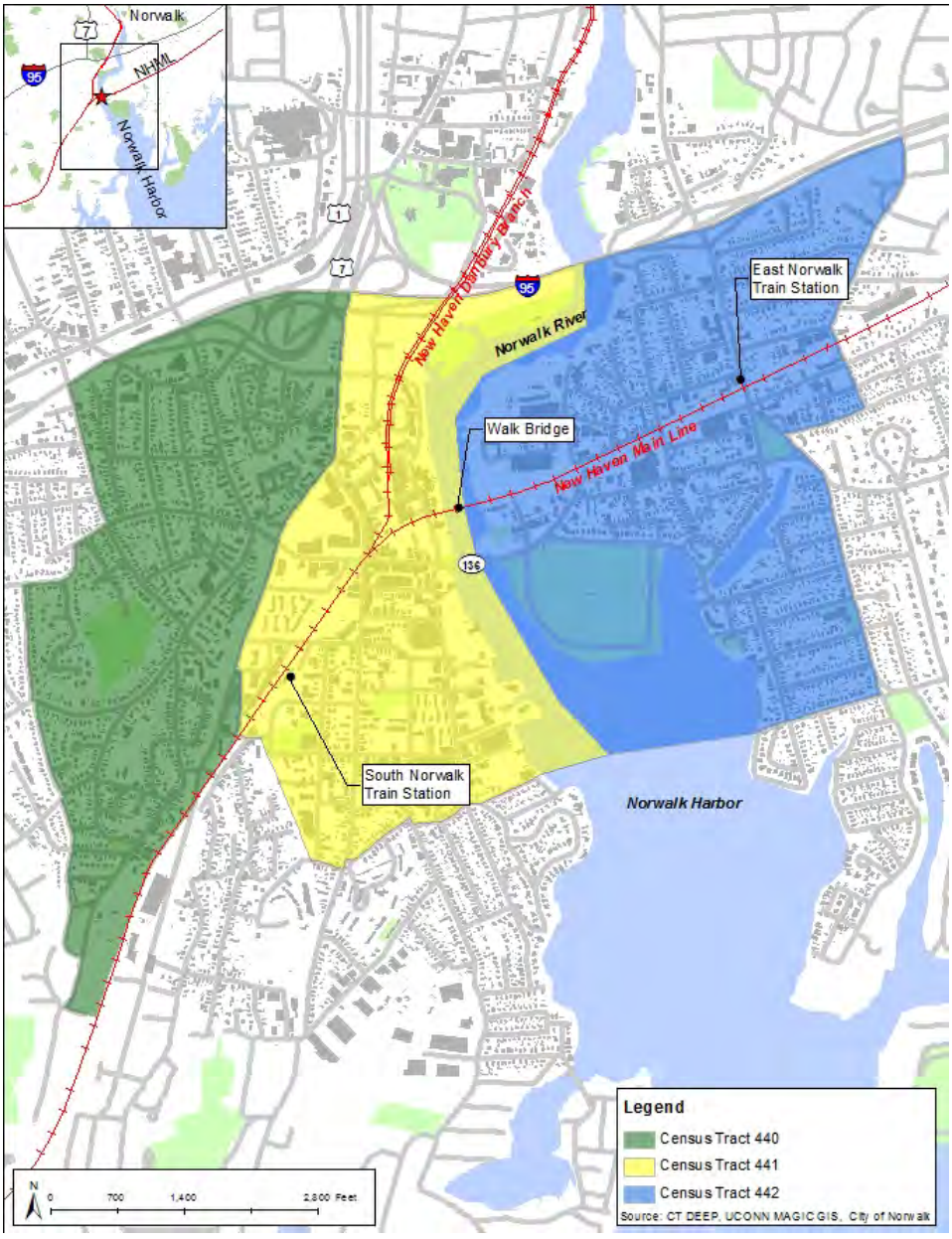


Figure 1a – Walk Bridge Project Census Tracts and EJ Communities of Concern

Figure 1b – Manresa Island Census Tract and EJ Communities of Concern

Revisions to the Walk Bridge Project resulting from the ***revised construction approach*** will not create disproportionately adverse impacts to EJ Communities of Concern. Table 1 presents an assessment of potential impacts of the Staging and Storage Yard at Manresa Island upon the community relative to traffic, noise, air quality, and safety. The proposed Staging and Storage Yard is relatively isolated from neighborhoods and community uses; as shown in Figure E-2, the closest neighborhood/residence is approximately 0.4 mile from the work area to the north. Impacts on the neighborhoods northwest of the site (and Tract 444 in general) will be limited to traffic to and from the Staging and Storage Yard and will occur mainly during typical daytime business hours. Relative to existing truck traffic on Woodward Avenue, the additional traffic on surrounding roads due to the Staging and Storage Yard will have minimal impact on existing conditions.

By using the southern tip of Manresa Island, a site relatively distant from sensitive receptors, for the replacement bridge lift span assembly, as opposed to the downtown Norwalk Water Street parcels, there will be less construction noise impacts upon Tract 441, a densely populated downtown area and also an EJ Community of Concern [*Manresa Island Construction Noise Study* (WSP USA, October 2020), provided as Attachment C-3].

As stated in the EA/FONSI, the project is located on an existing rail corridor located in an EJ Community of Concern. As shown in Figures 1a and 1b, the bridge site and all the construction properties to be used for the project, by parcel acquisition or easement, including the southern portion of Manresa Island, are located within EJ Communities of Concern. The project will create a substantial benefit to New Haven Line (NHL) and Norwalk River users equally; the project represents an overall benefit to the entire community and is important to the continued economic prosperity of the region. Further, the use of a small portion of Parcel 5/86/1 as a temporary Staging and Storage Yard parcel will not displace any existing uses.

The Walk Bridge Program Communications Management Plan includes an EJ Outreach Plan. An Online Public Information meeting was held on June 16, 2020 to discuss the potential use of Manresa Island as a construction-period staging and storage yard. The meeting was conducted in conformance with the guidance provided by FTA, including providing a report of the meeting and meeting materials. The interactive meeting was available online and included a telephone alternative for those without internet connection. Advance hard copies of the presentation were available upon request. The meeting was advertised in minority language publications and translation services and Americans with Disabilities Act (ADA) accommodations were offered in advance of the meeting.

For updates on the project, CTDOT translates the project factsheets and annual Walk Bridge Program brochure into both Spanish and Haitian Creole (which are available at the public meetings and Welcome Center), and the project website (www.walkbridgect.com) is ADA-accessible and includes a Google translate feature for over 50 languages. Additionally, all program notices have been updated to include the following statements (provided in English, Spanish and Haitian/French Creole): "The Walk Bridge Program offers translation services for all Spanish and French Creole speakers. Please contact the Program's Public Information Office for more information by sending us an email at info@walkbridgect.com, or calling (833) 462-9255 (GO2-WALK)."

Will these changes or new information likely result in substantial public controversy?

☐ **Yes** ☒ **No**

Comments: To facilitate public comment regarding the potential temporary use of a portion of the southern parcel at Manresa Island for construction of the Walk Bridge Replacement Project, CTDOT held an Online Public Information Meeting on June 16, 2020 to present the proposed construction use and to address community questions. The meeting was advertised on the Walk Bridge Program's website and social media accounts. Print and online advertisements were posted in the following media outlets: *The Hour, El Sol, La Voz*, News 12 CT and Nancy on Norwalk; and targeted mailers were sent to residents in neighborhoods directly abutting or proximate to Manresa Island. A total of 149 people attended the Online Public Meeting, which consisted of a live/recorded presentation followed by an open question and answer period. During the meeting, attendees posted 70 questions through the online chat feature. The Walk Bridge Program Team answered approximately 36 questions live during the meeting. CTDOT received a variety of questions related to land-based and water-based traffic, hours of operation, selection of the site, site security, lighting, visibility of the construction from the water and the surrounding areas, noise, existing wildlife habitat, and environmental concerns. The Walk Bridge Program Team responding to comments included the Office of

Environmental Planning, the Office of Environmental Compliance, and the Construction Manager/General Contractor. A public comment period was held following the meeting. The public had the opportunity to submit questions or comments through the Program's website until July 3, 2020. The Program received a total of 106 questions and comments between those submitted during the meeting and through the public comment period. On August 31, 2020, CTDOT sent written responses to those who submitted questions and comments regarding the potential use of Manresa Island as a construction staging and storage yard and posted comments and responses on the Program website. These responses are provided as Attachment C-5.

Prior to the Online Public Information Meeting, on June 16, 2020, CTDOT conducted a similar meeting with State and local elected officials on June 11, 2020 to present the proposed use plan and address questions.

In addition to providing specific comment responses, CTDOT provided documentation of the alternatives siting study on the lift span construction location, prepared a Factsheet of *Environmental Frequently Asked Questions*, and conducted an assessment of potential traffic impacts and an assessment of potential noise impacts associated with the proposed staging and storage yard.

As documented in the *Assessment of Lift Span Assembly Yard Locations* (Cianbro/Middlesex Joint Venture, 10/15/2020). CTDOT determined that the use of an existing dock facility at Manresa Island as an off-site lift span assembly location, as opposed to development of an on-site North Water Street location (Marine Staging Yard) or use of a non-local site, will be most cost-effective; will create less environmental impacts; will minimize adverse impacts to river navigation and marine users; and will optimize the coordination, logistics and risks associated with the lift span assembly.

Based on a traffic operations and safety analysis (*Manresa Island Traffic Study*, WSP USA, October 2020), CTDOT determined that the expected increase in trucks and vehicles destined for Manresa Island will have only minor impacts in terms of traffic operations. CTDOT will implement mitigation measures to address these impacts. Based on an analysis of existing and anticipated noise from the proposed lift span assembly activities at Manresa Island (*Manresa Island Construction Noise Study*, WSP USA, October 2020), CTDOT determined that although noise from the Staging and Storage Yard will be audible at times, the construction noise levels will be below CTDOT noise limits for the Walk Bridge Project at all modeled community locations, and well below noise limits at the Manresa Island locations. In addition, noise increases from construction-related traffic along the proposed Woodward Avenue truck route are not expected to be significant.

Table 1 contains summaries of the evaluations, which are provided in their entirety as Attachment C. These evaluations were posted to the Program website. As of 11/9/2020, CTDOT has received one request for a hard copy of a study report. CTDOT will continue to monitor comments and address any inquiries sent directly to the Program website. All inquiries and responses will be documented.

COMMENTS:

CONCLUSIONS AND RECOMMENDATIONS:

After review of the proposed refinements in construction methods and advanced design, and assessment of their corresponding potential impacts, CTDOT has concluded that these changes do not represent a significant impact to the environment.

CTDOT determined that, in comparison to on-site city locations and non-local sites, the use of an existing dock facility at Manresa Island as an off-site lift span assembly location in the City of Norwalk will result in the least amount of environmental impacts and risks and maximize coordination and logistics associated with construction of the replacement bridge. The proposed staging and storage yard at Manresa Island will require a temporary easement at Parcel 5/86/1 anticipated to be actively used for less time than the duration of the project. Use of a small portion of the parcel will not impact the site's current use as a decommissioned power plant, nor will it impact Eversource Energy's current operations on the site. Additionally, the CTSHPO concurred with CTDOT's recommendation that no further study is required regarding intact archaeological resources at Manresa Island. Following project completion, Parcel 5/86/1 will be restored to pre-construction conditions and the construction easement will be released. The proposed use of Manresa Island as a construction Staging and Storage Yard will be included within applications for federal and state permits and approvals as listed in Attachment E-3; this revised construction approach will not trigger additional permits.

After review of the design refinements and potential impacts to Section 106 resources, CTDOT recommended that there is no reasonable alternative to the adverse impact to the additional section of stone retaining wall in the Fort Point Street area, and that the impact has been adequately addressed in the existing project MOA. Additionally, CTDOT recommended that the Marshall Street pedestrian improvements will not adversely affect the NRHP-listed or NRHP-eligible properties or their settings. The CTSHPO concurred with both of these recommendations.

For the Walk Bridge Replacement Project, CTDOT is implementing BMPs and time of year restrictions as resource protection measures, developing a wetland mitigation plan, and conducting ongoing coordination with federal and state agencies in compliance with federal and state environmental regulations. CTDOT is implementing the stipulations of the project MOA in cooperation with local stakeholders and the CTSHPO. Further, CTDOT is continuing to develop construction coordination plans in cooperation with the City of Norwalk to minimize construction impacts upon the local community. The construction coordination plans, applicable to the bridge site, the railroad corridor, and all construction use parcels, include an Air Quality-Dust Control Plan, Materials Management Plan, Land-Based Noise and Vibration Control Plan, and Safety and Security Management Plan.

It is our recommendation that FTA determine that the project FONSI issued on July 17, 2017 remains valid.

LIST OF ATTACHMENTS:

Attachment A Revised EA/EIE Figures

- Figure 3-11a Land Use and Zoning in Vicinity of Manresa Island Staging and Storage Yard
- Figure 3-12a Locations of Proposed Parcel Use in Vicinity of Walk Bridge
- Figure 3-12b Location of Proposed Parcel Use in Vicinity of Manresa Island
- Figure 3-15a Water Quality Classification in Vicinity of Manresa Island Staging and Storage Yard
- Figure 3-16a Tidal and Freshwater Wetlands in Vicinity of Manresa Island Staging and Storage Yard
- Figure 3-20a Floodplains in Vicinity of Manresa Island Staging and Storage Yard
- Figure 3-22a Aquatic Resources in Vicinity of Manresa Island Staging and Storage Yard
- Figure 3-24a Coastal Boundary in Vicinity of Manresa Island Staging and Storage Yard
- Figure 3-26a Parklands and Public Recreation Areas in Vicinity of Manresa Island Staging and Storage Yard
- Figure 4-2a Hurricane Inundation Existing Conditions – Manresa Island

Attachment B Proposed Staging and Storage Yard, Manresa Island (Parcel 5/86/1)

- Figure B-1 Proposed Work Area and Site Access, Manresa Island (Parcel 5/86/1)
- Figure B-2 Proposed Staging and Storage Yard Activities, Manresa Island (Parcel 5/86/1)

Attachment C Manresa Island Evaluations and Responses to Comments

- Attachment C-1 Assessment of Lift Span Assembly Yard Locations, 10/15/20
- Attachment C-2 Manresa Island Traffic Study, October 2020
- Attachment C-3 Manresa Island Construction Noise Study, October 2020
- Attachment C-4 Environmental Frequently Asked Questions, October 2020
- Attachment C-5 Manresa Island Public Meeting Responses to Questions, August 2020

Attachment D Section 106 Assessments

- Attachment D-1 Supplemental Cultural Resources Evaluation Memorandum, 5/1/2020
- Attachment D-2 CTSHPO's Concurrence, Temporary Use of Manresa Island, 6/15/2020
- Attachment D-3 Supplemental Information, Fort Point Street Wall 310, 11/23/2020
- Attachment D-4 Supplemental Information, Marshall Street Pedestrian Detour Improvements, 11/23/2020
- Attachment D-5 CTSHPO's Concurrence, Walk Bridge Supplemental Information, 12/24/2020

Attachment E Federal and State Reviews, Approvals, and Permit Requirements

- Attachment E-1 Coordination with NOAA/NMFS, June 2020 – January 2021
- Attachment E-2 USFWS No Effect Determination, 6/24/2020
- Attachment E-3 Table of Federal and State Permits and Approvals
- Attachment E-4 CTDEEP Natural Diversity Data Base Determination, 4/16/2020
- Attachment E-5 Coordination with CTDEEP Division of Wildlife, 3/18/2020

Attachment F Environmental Effects Mapping

- Figure F-1 Areas of Concern at Manresa Island Staging and Storage Yard
- Figure F-2 Proximity of Sensitive Receptors to Manresa Island Staging and Storage Yard
- Figure F-3 Manresa Island Staging and Storage Yard Barge Berthing Layout
- Figure F-4 Habitat at Manresa Island

SUBMITTED BY:

By signing this, I certify that to the best of my knowledge this document is complete and accurate.

Name Kevin F. Carifa Title Transportation Assistant Planning Director, Office of Environmental Planning	Date February 4, 2021

Table 1 – Assessment of Potential Temporary Impacts: Use of Parcel 5/86/1 as Manresa Staging and Storage Yard

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
Marine Transportation	The existing bulkhead and slip developed for the NRG Energy Power Plant previously was used for loading and offloading of American Bureau of Shipping ABS-classified ocean-going barges. The NRG Energy Power Plant has been decommissioned since 2013, with no use of the existing dock or marine transportation.	Barges to be used for the construction and transport of the lift span include equipment, material, and lift span barges, as shown in Figure E-3. The barges will be anchored by spud piles. The estimated number and type of barges required for project construction will not change; only the barge travel distance will increase with the use of Manresa Island as a Staging and Storage Yard. The assembled lift spans will be transported via barge from Manresa Island to the existing bridge site, and bridge demolition materials will be transported via barge from the existing bridge site to Manresa Island, approximately 2.1 nautical miles from Walk Bridge. A hydrographic survey of Manresa basin indicates that the existing water depth is adequate for berthing and movement of construction barges. Deep water vessels drawing more than 7-feet would need to enter and exit the dock area only at high tide.	Using Manresa Island as a water-based construction Staging and Storage Yard, as opposed to parcels at the bridge site, will minimize encroachment into the Norwalk River navigation channel. At Manresa Island, berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel, as shown in Figure E-3. In comparison, berthing of these barges at 68-90 Water Street (the 60% design marine staging yard), would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location). The spud piles required to anchor the barges will produce minimal impacts to the river bottom. Barge movements in and around Manresa Basin will take place such that there will be no impact to the river bottom.
Transportation - Traffic, Transit and Parking	The NRG Energy power plant has been decommissioned since 2013, with no traffic. Minimal traffic is associated with the Eversource Energy electrical substation. Within the southern parcel, there is an employee parking lot (71 spaces). Access to the southern parcel from Woodward Avenue (Ave.) and Longshore Ave., local roads that are primarily	Traffic to and from the site will increase temporarily from employee and construction vehicles associated with the Staging and Storage Yard. Employee and construction vehicle-related traffic will generally occur during a 6-day work week, during daytime hours (e.g., 8:00 am to 4:00 pm), for up to 60 months, with substantial work occurring for 48 months. Night and weekend deliveries to and from the site will be rare. Truck traffic using two truck routes	Roadways within and immediately northwest of Manresa Island are deemed adequate for the proposed construction vehicles, and the roadways have previously sustained truck traffic associated with building and maintaining components of the Manresa Island Power Plant. The *Manresa Island Traffic Study* concluded that the expected increase in trucks and vehicles destined for Manresa

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
	residential, is via a paved concrete driveway. Longshore Ave. is paved and wide enough (30-35 feet) for continuing truck traffic. CTDOT's *Manresa Island Traffic Study* (WSP USA, October 2020) identified the existing conditions along the proposed truck haul routes (for trucks under 13'-9" and trucks over 13'-9") between Manresa Island and Interstate (I)-95, including the intersections of Martin Luther King Jr. Drive & Monroe Street (St.); South Main St. & Monroe St.; South Main St. & Henry St.; South Main St. & Woodward Ave./Concord Place; Woodward Ave. & Grove St. Route 136-south leg (Woodward Ave.) & Route 136 (Burritt Ave.); Route 136-north leg (Woodward Ave.) & Route 136 (Meadows St.) as follows: • Overall operational conditions for each intersection are acceptable in the future 2024 conditions. • The Woodward & Grove St./Route 136 (Burritt Ave.) location is the most crash prone intersection in the area. • The Route 136 (Burritt Ave.) westbound approach currently experiences high delays and failed level of service (LOS F) in the weekday morning and afternoon peak hours. • The acute angle of the intersection of Route 136 (Meadows Street) and Woodward Ave. presents difficulties for oversize truck movements.	(for trucks under 13'-9" and trucks over 13'-9") is estimated between Manresa Island and I-95. Use of Parcel 5/86/1 will generate a maximum of three construction truck trips per day and 20 vehicle (employee) trips per day, for a total of 23 trips in the morning peak period and 23 trips in the afternoon peak period. The *Manresa Island Traffic Study* included a traffic operations and safety analysis for the proposed use of Manresa Island for the lift span construction and determined the following: • The additional 20 vehicles (employees) on the Route 136 (Burritt Ave.) westbound approach will slightly increase existing delays. • Except for the Woodward Ave. & Route 136 (Burritt Ave.) intersection, the overall operational conditions for each intersection are acceptable for the 2024 conditions with the additional Manresa Island traffic. This intersection will experience the longest delays during the morning peak with the additional Manresa Island traffic. • There are no expected impacts to transit.	Island will have only minor impacts in terms of traffic operations. The proposed mitigation measures will improve current and anticipated traffic conditions due to the proposed staging and storage yard at Manresa Island: • Add pavement markings for the crosswalks on Grove St. and Burritt Ave. and trim vegetation that interferes with the sight line from Burritt St. • Provide flaggers to assist with navigation of oversize trucks through the Route 136 (Meadows St.)/ Woodward Ave. intersection. Attachment C-2 provides the *Manresa Island Traffic Study*.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
Land Use, Temporary Easements, and Displacements	Manresa Island consists of two parcels that occupy 125 acres of the Norwalk shoreline. Both parcels are owned by Norwalk Power LLC (a subsidiary of NRG Energy) and are zoned for B Residence. Per the City of Norwalk, land use for the entire site is utility (Figure 3-11a). The 92-acre northern parcel contains historic fill (contaminated material), dense forest cover, tidal and freshwater wetlands, and critical habitat. Due to the level of contamination, it is not considered suitable for development. The 33-acre southern parcel contains the decommissioned NRG Energy Manresa Island Power Plant and supporting facilities, an active Eversource Energy electrical substation, dock, and harbor. Prior to the closure of the power plant, the site was an active plant for over 50 years. In 1960, a power plant was commissioned by Connecticut Light & Power. The plant began operations as a coal fired plant but was converted to oil in 1972. In 1999, the property was acquired by NRG Energy and operated as a power plant until 2012. In 2013, the power plant was de-commissioned and has been dormant ever since. Manresa Island abuts three neighborhoods to the north - Village Creek, Harbor Shores and Harborview - consisting primarily of single-family homes. Figure 3-26a shows park and recreational facilities proximate to Manresa Island.	CTDOT will acquire a construction easement on the southern parcel (Parcel 5/86/1) from Norwalk Power LLC for 60 months, to accommodate the use as a temporary Staging and Storage Yard. The use of the property will be for a lesser period (estimated 48 months) than the overall project construction period. Following completion of the project, the site will revert to its pre-construction use.	Use of Parcel 5/86/1 will result in an additional partial-parcel construction easement for project construction that will be eventually released, resulting in 23 parcels required for the Walk Bridge Replacement Project construction and/or operation (as shown in Figures 3-12a and 3-12b). The Staging and Storage Yard activities will be consistent with existing industrial-type land uses. Because the proposed use will require only a construction easement, there will be no impact on existing zoning. No existing uses will be impacted by the project; the Staging and Storage Yard will not affect the existing land uses as a decommissioned power plant and as an Eversource electrical substation. Following project completion, the property will be restored to pre-construction conditions and the construction easement will be released.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
	A large industrial area on Route 136 (Meadows Street) and on Woodward Avenue (south of Route 136), northwest of Manresa Island, brings truck volume to the area.		
Socioeconomics	Parcel 5/86/1 is a substantial source of tax revenue to the city. The 2018 assessed value of Parcel 5/86/1 (land and improvements) is $38,653,771. The parcel generates $761,838 in property tax revenue annually, representing 0.26 percent of the Norwalk Grand List.	Use of 4.7+-acre area on the Manresa Island southern parcel as a partial-parcel Construction Easement for project construction that will be acquired for 60 months (with substantial construction activity for approximately 48 months) and eventually released.	The parcel will be encumbered with a construction easement temporarily acquired from Norwalk Power LLC. Use of approximately 4.7+acres on Parcel 5/86/1 as a Staging and Storage Yard will not impact its current use as a decommissioned power plant, nor will it impact Eversource Energy's current operations on the site. The parcel will be returned to its pre-construction conditions following project completion.
Water Quality	Figure 3.15a shows the current water quality classifications proximate to/on Manresa Island. Site-wide groundwater has been impacted by historic power plant operations. The site was previously characterized as a large quantity generator of hazardous waste. It is currently enrolled in USEPA/CTDEEP's Property Transfer Program and RCRA Corrective Action Program, requiring regular groundwater monitoring. RCRA closure groundwater monitoring has been completed since 1989. A Technical Impracticability Variance submitted in 2012 concluded the groundwater plume is stable and has a low potential for environmental risk. CTDEEP currently is reviewing this determination.	Staging and Storage Yard activities will not result in impacts to water quality, including groundwater, on the site.	No impacts to the existing water quality are anticipated due to Staging and Storage Yard activities. CTDOT will adhere to proper erosion and sedimentation control measures on site in accordance with the Connecticut 2002 Erosion & Sediment Control Guidelines. Further, water quality will be ensured through CTDOT's Standard Specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with the Department's Required Best Management Practices (BMPs), which are standard practice for CTDOT and are designed to protect water quality. Additionally, CTDOT's Construction Inspectors and Environmental Coordinators will verify site conditions to ensure that the Contractor

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
			upholds the environmental requirements on the project.
Tidal Wetlands	Tidal wetlands are present in the Manresa Island northern parcel, Parcel 5/86/2. CTDOT OEP confirmed in a site walk conducted in March 2020 that there are no tidal wetlands in the proposed Staging and Storage Yard; however, tidal wetlands are in the southern parcel, Parcel 5/86/1 adjacent to the north side of the work area. Adjacent tidal marshes include low marsh vegetation consisting of smooth cordgrass (*Spartina alterniflora*) and high marsh vegetation consisting of salt hay (*Spartina patens*) and high tide bush (*Iva frutescens*), with a common reed (*Phragmites australis*) perimeter as the marsh slopes to the upland area. Figure 3-16a presents tidal wetlands on Manresa Island.	There will be no additional tidal wetland impacts associated with the use of Manresa Island. The boundary of the Staging and Storage Yard is south and outside of the existing tidal wetland. Existing access roadway widths have been determined to be wide enough to accommodate anticipated truck and equipment traffic without roadway widening (and wetland impacts).	No additional impacts to tidal wetlands are anticipated.
Freshwater Wetlands	CTDOT OEP confirmed in a site walk conducted in March 2020 that there is one freshwater wetland complex located in Parcel 5/86/2, the northern parcel, just north of the site boundary with Parcel 5/86/1, the southern parcel (Figure 3-16a).	There will be no freshwater wetland impacts associated with the use of Manresa Island.	No additional impacts to freshwater wetlands are anticipated.
Floodplains	Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the entire southern parcel (Parcel 5/86/1) is located within the 100-year Flood Zone AE – Special Flood Hazards Area, which also extends into the parcel's intertidal area (Figure 3-20a). Figure 4-2a presents current hurricane inundation conditions.	Additional fill associated with the storage of material and equipment will be placed on the site. The materials and equipment will be properly secured or removed, if flooding or coastal storms are anticipated. Flood-proof containers will be used on the site for secure storage and to provide weather protection. Critical activities, such as petroleum fuels, oil tanks for site generators, and other construction related hazardous or flammable materials, will be stored within double-walled and flood-proof containers. The size of containers will be	CTDOT will develop a Flood Contingency Plan for Parcel 5/86/1, incorporate additional flood proofing into the project design and operation as needed, and include the proposed Staging and Storage Yard activities in its application for Flood Management Certification for the project.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
		limited to less than 1,300 gallons. In the event of a forecasted storm, containerized materials will be moved off-site.	
Terrestrial Resources	Figure E-4 shows habitat at Manresa Island. According to the December 2019 CTDEEP Natural Diversity Database (NDDB) map, state and federal listed species exist on Manresa Island; the area generally west of Manresa Island Road is identified by CTDEEP NDDB as critical habitat (Figure E-4). The USFWS Northeast Coastal Areas Study lists the Tidal Wetlands Complex (Site 20), which includes Manresa Island, as a significant and unique coastal habitat (1991).	The Staging and Storage Yard will be limited to approximately 4.7 acres of mowed grass and previously disturbed area in the southern-most portion of Manresa Island. Except for traversing the access road to and from the yard, no construction activities will occur outside of the designated Staging and Storage Yard. To protect listed species during Staging and Storage Yard operations, CTDOT will use protection protocols and time of year (TOY) restrictions, as referenced in Attachments E-4 and E-5.	No impacts to terrestrial resources are anticipated. In its NDDB Determination, CTDEEP concurred with CTDOT's use of the species protection protocols (Attachment E-4) as a means to lessen adverse impact on identified species. CTDOT re-initiated consultation with CTDEEP Wildlife and will implement protection strategies as required for identified species (Attachment E-5).
Aquatic Resources	The waters of the Long Island Sound, adjacent to Manresa Island, are designated as Essential Fish Habitat for species under jurisdiction of the New England Fisheries Management Council and the Mid-Atlantic Fisheries Management Council. The portion of Norwalk Harbor between Manresa Island and Walk Bridge is closed to recreational shell fishing. Aquatic resources are shown in Figure 3-22a. Coastal boundaries are shown in Figure 3-24a.	Transfer of the lift span assembly activities from the Water Street parcels to Manresa Island will not change the number or schedule of barges to traverse the Norwalk River between the Staging and Storage Yard and bridge site, but the transfer will increase the barge travel distance from 0.2 nautical mile to approximately 2.1 nautical miles, thereby increasing the potential for impacts upon the aquatic environment. Consultation with NOAA/NMFS regarding potential impacts to EFH and Section 7 species included the Norwalk River and Harbor proximate to and south of Manresa Island.	Shell fishing is prohibited on this portion of the Norwalk estuary as it is deemed impaired by CTDEEP [indicating bacteria exceeding the State's total maximum daily load (TMDL)]. Because shell fishing is prohibited, no adverse impacts to harvestable shellfish will result from the use of the southern portion of Manresa Island as a Staging and Storage Yard. The project will incorporate mitigation measures and best management practices to protect EFH within the Norwalk River and special concern species within the surrounding wetlands. The use of Manresa Island as a Staging and Storage Yard will not affect the other prior commitments that CTDOT will implement to protect aquatic resources. There will be no additional natural aquatic resources affected by the use

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
			of this area. Confirmation by NOAA/NMFS is included in Attachment E-1.
Endangered, Threatened, & Special Concern Species	Endangered, threatened, and special concern species occur on Manresa Island. Per the NDDB Determination of 4/16/20, CTDEEP has records for State Threatened Peregrine falcon *(Falco peregrinus*) and State Special Concern Northern diamondback terrapin *(Malaclemys t. terrapin*) in the project vicinity. The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPAC) tool (2/24/20) identified the following species: • Northern Long-Eared Bat (*Myotis septentrionalis*), Threatened; • Red Knot (*Calidris canutus rufa*), Threatened; • Roseate Tern (*Sterna dougallii dougalii*), Endangered. IPaC mapping did not identify critical habitat on Manresa Island. The IPaC resource list (3/9/20) identifies 29 migratory birds that are of particular concern either because they occur on the USFWS Birds of Conservation Concern list or warrant special attention in the project location. Five of the bird species are protected under the Migratory Bird Treaty Act and six are protected under the Bald and Golden Eagle Protection Act. The National Marine Fisheries Greater Atlantic Region Endangered Species Act (ESA) mapper identified potential for the following species:	The Staging and Storage Yard will be limited to approximately 4.7 acres in the southern-most and heavily disturbed and developed portion of Manresa Island. Except for traversing the access road to and from the site, no construction activities will occur outside of the designated Staging and Storage Yard. Use of the Manresa Island Site as a Staging and Storage Yard will increase the barge travel distance on the Norwalk River from 0.2 nautical mile to approximately 2.1 nautical mile. Consultation with NOAA/NMFS regarding Section 7 species included the Norwalk River and Harbor proximate to and south of Manresa Island. NOAA/NMFS reviews and approvals are provided as Attachment E-1. Attachment E-2 provides the USFWS' No Effect determination for the Northern long-eared bat. The proposed Staging and Storage Yard has the potential to intersect nesting habitat areas for the Northern diamondback terrapin in the vicinity of the access roads, as the turtles may utilize habitat in close proximity during breeding season. To protect the State-listed peregrine falcon and northern diamondback terrapin, CTDOT will use protection protocols for both species during Staging and Storage	The proposed Staging and Storage Yard is within an already disturbed portion of the parcel, and the site itself will not result in direct impact to species or their habitat. Construction noise and human presence for the duration of construction does have the potential to temporarily disrupt species adjacent to the area. In its NDDB Determination, CTDEEP concurred with CTDOT's use of the species protection protocols (Attachment E-4) as a means to lessen adverse impact on identified species. As required by CTDEEP Wildlife (Attachment E-5), CTDOT will implement TOY restrictions to protect species. Protection protocols and TOY restrictions will be incorporated into permit applications and the contract specifications. By utilizing avoidance and minimization measures such as TOY restrictions for the various species, no adverse impacts to listed species or their habitat are anticipated. Confirmation by NOAA/NMFS is provided as Attachment E-1.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
	• Atlantic sturgeon (*Acipenser oxyriynchus oxyriynchus*), Endangered. • Shortnose sturgeon (Acipenser *brevirostrum*). Endangered. • Green sea turtle (*Chelonia mydas*). Threatened. • Leatherback sea turtle (*Dermochelys coriacea.* Endangered. • Loggerhead sea turtle (*Caretta caretta*). Threatened. • Kemp's ridley sea turtle (*Lepidochelys kempii*). Endangered. The NMFS ESA Mapper did not identify any critical habitat at or adjacent to Manresa Island. A field investigation conducted by CTDOT on 03/12/20 revealed a Peregrine Falcon pair and nest in the area of the proposed Staging and Storage Yard. Additionally, up to three potentially active osprey (*Pandion haliaetus*) nests in proximity to the proposed Staging and Storage Yard were observed, as shown in Figure E-4.	Yard operations, as included in Attachment E-4. The osprey nests observed during a March 2020 field visit may be within distance to be affected by the Staging and Storage Yard activities. CTDOT has re-initiated consultation with CTDEEP Wildlife and will implement protection strategies as required for identified species. Mitigative measures include implementing speed restrictions along the access roads and educating personnel on site regarding the possible occurrence of the Northern diamondback terrapin. Specific work Time of year (TOY) restrictions will be implemented as requested by CTDEEP Division of Wildlife to avoid disruption to listed bird species or their nests during the active breeding/nesting season. Attachment E-5 includes coordination with CTDEEP Wildlife. .	
Water-Dependent Uses	The existing dock area of 150-feet wide, 850-feet long, and 12-feet deep connects directly to existing Norwalk Harbor navigation channel. The bulkhead and slip are water-dependent uses which are currently inactive. The existing wharf at the Manresa Island site can receive large / heavy deliveries via ocean-going barges; however, barge maneuvers and berthing configurations can be complicated as there is only one	Proposed use of the Staging and Storage Yard includes utilizing the existing dock area for various barges necessary for construction and transport of the lift spans to the bridge site. A water-side inspection of the existing bulkhead indicated that there are no existing condition issues that would prohibit its use during Staging and Storage Yard operations. Spuds will be used as needed for anchoring the barges and will be included in permit applications.	The temporary use of the existing bulkhead and slip at Manresa Island for a proposed Staging and Storage Yard will not impact the future use of the facility as a water dependent use.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
	entrance to the wharf and the wharf slip is relatively narrow (approximately 150 feet wide).		
Visual Resources	The *Norwalk Power Economic Impact Analysis Findings and Recommendations Report* indicated that approximately 300 properties, including those from the northern neighborhoods, Bell Island, and Calf Pasture Park, have a view of the NRG Energy power plant building and/or smokestack. However, other features on the property, such as the substation, are far less visible.	The barges and construction equipment will result in temporary changes to the views of the site, but the overall utility/industrial character of the site will not change. Neighborhoods and other sensitive receptors with views of the site (Figure E-2) include: • Longshore Avenue neighborhood, 0.4 mile to the north; • Harbor View Beach, 0.5 mile to the north; • Outer Road neighborhood, 0.5 mile to the northwest; • Village Creek Harbor, 0.6 mile to the north west • Woodward Avenue Park, 0.8 mile to the northwest; • Valley Road neighborhood, 0.8 mile to the west; • Calf Pasture Beach, 0.8 miles to the northeast; • Bell Island, 1.1 mile to the southwest.	The temporary altered visual setting will not result in an adverse visual effect. Due to the distance of the Staging and Storage Yard from the neighboring communities and the smaller scale of the proposed Staging and Storage Yard activities compared to the existing power plant and smokestack, changes in visual impacts will be negligible.
Air Quality	Since 2013, the NRG Energy power plant has been closed with no activity. However, prior to its closure, the site had been an active power plant since 1960. The Eversource electrical substation does not generate air emissions.	Emissions will result from construction activities at the Staging and Storage Yard and construction vehicle traffic to and from the site. Construction activities generally will be limited to weekday day-light hours; night-time and weekend work will be rare. Figure E-2 shows distances of sensitive receptors to the Staging and Storage Yard.	Per USEPA's *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (November 2015), emissions from construction-related activities are not required to be included in PM hot-spot analysis if such emissions are considered temporary, per 40 CFR 93.123(c)(5).

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
		Emissions from Staging and Storage Yard activities at Parcel 5/86/1 are considered temporary per 40 CFR 93.123(c)(5): they will occur only during the construction phase and will last five years or less at any individual site.	Air quality will be ensured via CTDOT's Standard Specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with CTDOT's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs comprise CTDOT's standard practice and are designed to protect air quality. During construction, CTDOT's Construction Inspectors and Environmental Coordinators will verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.
Noise & Vibration	Since 2013, NRG Energy power plant has been closed with no activity. However, prior to its closure, the site had been an active power plant since 1960. In general, any noise generated by the existing electrical substation would be local to the substation and not at an amplitude that would extend beyond the parcel boundaries; neither noise nor vibration is an existing issue. Ambient noise measured at five residential locations proximate to Manresa Island indicate that daytime background noise levels (L_{90}) are in the range of 42-45 dBA, mostly attributed to local neighborhood activities, beach sounds, motor-vehicle traffic on nearby streets, and biogenic sources such as bird song and insect noises (*Manresa Island Construction Noise Study*, WSP USA, October 2020).	Noise will result from activities at the Storage and Staging Yard and construction vehicle traffic to and from the site. Construction activities generally will be limited to day-light hours during a 6-day work week; night-time work will be rare. Figure E-2 shows distances of sensitive receptors to the Staging and Storage Yard. Noise and vibration will result from barges traversing the Norwalk River between the Manresa Island Storage and Staging Yard and the bridge site. CTDOT's *Manresa Island Construction Noise Study* used FTA's "Transit Noise and Vibration Impact Assessment Manual" (FTA Report No. 0123, September 2018) to predict construction noise levels generated by lift span assembly activities at the Manresa Island Staging and Storage Yard.	The results of the *Manresa Island Construction Noise Study* indicate that although noise from the Staging and Storage Yard will be audible at times, the construction noise levels will be below CTDOT's noise limits for the Walk Bridge Replacement Project at all modeled community locations, and well below noise limits at the Manresa Island locations. In addition, noise increases from construction-related traffic along the Woodward Avenue truck route are not expected to be significant. CTDOT will maintain on-going dialogue with the community through construction completion. CTDOT will investigate community complaints and will implement revisions to construction means and methods as needed.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
		The results indicate projected worst-case construction noise levels, limited to daytime hours, in the range of 50-64 dBA, which are well below CTDOT's noise limit of 90 dBA. Given that the daytime background noise levels (L_{90}) are in the range of 42-45 dBA at the ambient measurement sites, construction activities at Manresa Island are likely to be audible at some outdoor locations during quiet periods of time. CTDOT's *Manresa Island Construction Noise Study* used Federal Highway Administration (FHWA) procedures to predict and assess construction traffic noise in comparison to ambient noise measurement results proximate to Woodward Avenue. The predictions indicated that construction-related traffic will result in an increase of no more than one decibel at locations along the proposed truck route, which is an insignificant change. Furthermore, the exposure to construction-related traffic will occur during a limited number of hours during the day.	The use of Manresa Island as a Staging and Storage Yard will not affect CTDOT's previous commitments to protect species relative to noise and vibration.
Cultural Resources	Manresa Island (formerly also known as Bouton's Island or Keyser Island) was developed as a Jesuit retreat center known as the Manresa Institute during the early 1900s. The center relocated to Staten Island in 1911, and the property was acquired by CL&P for use as a coal-fired power plant in 1952. The plant's ten existing industrial buildings and structures were built during the late 1950s and completed by ca. 1960. The	An existing industrial building (built ca. 1960) may be altered for use as a construction office for the Staging and Storage Yard. Site preparation for the Staging and Storage Yard will include fill of 6-inches of crushed stone atop an area currently consisting of introduced gravel fill topped with topsoil. To secure the Staging and Storage Yard's perimeter fencing and gate posts, a minimal amount of sub-surface drilling may be required.	The proposed use of Parcel 5/86/1, including potential alteration of existing buildings and soil impacts resultant of site compaction and limited sub-surface drilling associated with the preparation of the Staging and Storage Yard and construction fencing, will result in No Historic Properties Affected. All of the buildings associated with the former Manresa Institute have been demolished and cleared and the structures associated with the existing power plant

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
	facility converted to oil fuel in 1972 and remained in operation until 2013.		have been determined to be Not Eligible for the NRHP. Furthermore, the soils throughout the entirety of the Archaeological APE have been heavily disturbed during the construction and demolition of the Manresa Institute, and the construction and continued development of the power plant. As such, there is also minimal foreseeable potential to impact intact archaeological resources within the project area. Attachment D contains the Supplemental Cultural Resources Evaluation Memorandum documenting the historical and archaeological evaluations conducted for the proposed Staging and Storage Yard and CTSHPO's concurrence with the finding of No Historic Properties Affected.
Hazardous & Contaminated Materials	Currently a Brownfield site, the site has been enrolled in USEPA/CTDEEP's Property Transfer Program/RCRA Closure since 2006. The northern parcel contains contaminated fill and is not suitable for development. There are 12 Areas of Concern (AOCs) or locations/areas where hazardous substances and/or hazardous substances (including petroleum) could have been used, treated, handled, disposed of or spilled and released to the environment in both the northern and southern parcel (Figure F-1).	The proposed work area will overlap with existing AOC-1 and AOC-4, as shown on Figure F-1. To provide a layer of separation from AOC-1 and AOC-4, the ground surface of the Staging and Storage Yard will be covered with 6-inches of crushed stone over geotextile fabric. In the material laydown area, a polyethylene covering will be placed directly beneath existing bridge components with potentially hazardous materials (e.g., lead paint; creosote) as an additional layer of separation from the ground surface. The contractor will also perform site testing for lead before and after staging and storage operations. CTDOT will implement additional BMPs into the daily operations of the Staging and Storage Yard to contain hazardous materials. The steel members of the	CTDOT will coordinate with Norwalk Power LLC regarding the acquisition of a temporary construction easement and potential impacts relative to the Property Transfer Program/RCRA Closure. CTDOT's use of temporary construction easements instead of full parcel acquisitions will not require remediation of existing hazardous substances at either the Water Street parcels or Parcel 5/86/1. In accordance with project permits and contract specifications, CTDOT will manage and characterize excess materials and dispose of materials off-site at approved locations.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
		existing bridge brought to the Staging and Storage Yard via barge will be cut (sheared) to smaller pieces which will allow them to be transported over the road for off-site disposal. The lead-containing fragments from the shearing process will be stored in drums that will be removed from the site at the end of every workday. Timber piles and other bridge and railroad components (including railroad ties and catenary components as needed) with hazardous materials will be stored on site until removal. Hazardous material will include petroleum fuels/oil tanks for site generators, which will be stored in double-walled and flood-proof containers and will be sized less than 1,300 gallons. In the event of a forecasted storm, containerized materials will be moved off-site. Minimal excavation will occur due to the temporary fence installation: gate posts will be drilled into the ground and filled with concrete. Per CTDOT OEC, excess materials from fencing posts will be handled in accordance with project specifications, including transporting material to the project Waste Stockpile Area for characterization and disposal.	
Safety and Security	The Manresa Island Power Plant is not open to the public.	Temporary construction fencing will be installed around perimeter of work area with construction gate access. Only construction employees and people associated with the Walk Bridge Project will access the site. There will be no public access.	The use of Manresa Island (Parcel 5/86/1) as a construction staging parcel will be incorporated into the project safety and security documents, including the Safety and Security Management Plan (SSMP), Preliminary Hazard Analysis (PHA), Threat, Vulnerability and Risk Assessment (TVRA), Health and Safety Plan (HASP),

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
			Construction Site Safety and Security Plan, and Emergency Response Plan.
Public Utilities & Service	No natural gas or sewer infrastructure exists on the site. A septic leach field exists on Parcel 5/86/1; septic discharges are directed to an existing septic leach field located within southwest corner of the southern parcel. Water and electrical service are available to the site. Electrical power is no longer supplied to the light poles.	Pending agreement with Norwalk Power LLC, water and electrical service will be provided by the site owner. Alternatively, potable water will be provided via a water truck, and electrical service will be provided via a portable generator. Portable toilets will be used.	The temporary use of existing utilities and services on Manresa Island is not anticipated to result in adverse impacts.
Neighborhoods & Populations (Social) Title VI and Environmental Justice	Parcel 5/86/1 is located within a Census Tract (Tract 444) identified as an Environmental Justice (EJ) Community of Concern.	The Walk Bridge is on an existing rail corridor; the bridge and all construction staging parcels, including the Staging and Storage Yard at Manresa Island, are located within EJ Communities of Concern. The project will improve accessibility and reliability of both Walk Bridge and Fort Point Street Bridge, as well as the navigational opening of the Norwalk River, providing an overall benefit to the entire community. Use of Parcel 5/86/1 will not adversely affect any existing uses, located on site or abutting the site. The proposed Staging and Storage Yard at Manresa Island is relatively isolated from neighborhoods and community uses; as shown in Figure E-2, the closest neighborhood/residence is approximately 0.4 mile from the work area to the north. Impacts on the community northwest of the site (and Tract 444 in general) will be limited to traffic to and from the Staging and Storage Yard. Relative to existing truck traffic on Woodward Avenue, the additional traffic on surrounding roads due to the Staging and	The EA/FONSI design and previous NEPA Re-evaluation concluded that the project will not create disproportionate temporary or permanent impacts to EJ populations in the study area, inclusive of Census Tracts 440, 441, and 442. The EA/FONSI concluded that the project is important to the continued economic prosperity of the community and the region and will benefit EJ communities, which comprise the study area as well as a substantial portion of the local community. The finding of the EA/FONSI continues to be valid with this proposed refinement in construction approach.

Impact Category	Existing Conditions – Manresa Island (southern portion)	New Impacts: Use of Parcel 5/86/1 (portion) – Manresa Island	Assessment of Impacts
		Storage Yard will have minimal impact on existing conditions. Further, by using an isolated site for the replacement bridge lift span assembly, as opposed to the downtown Norwalk Water Street parcels, there will be less construction traffic, noise, and air quality impacts upon Tract 441, a densely development downtown area and an EJ Community of Concern. For these reasons, the use of Parcel 5/86/1 as a Staging and Storage Yard will not disproportionately affect EJ populations.	

Table 2 - Assessment of Potential Impacts: Design Refinements and Refined Construction Approach

Impact Category	Impacts as Previously Presented	Impacts – Advanced Design; Refined Construction	Change in Impacts
Transportation - Traffic, Transit and Parking	**Marshall Street Pedestrian Improvements.** Pedestrian access during construction was not presented in prior design submittals.	To accommodate pedestrian traffic during limited closures of North Water Street during construction, CTDOT proposes improvements and alterations along the south side of Marshall Street to develop a pedestrian access compliant with Americans with Disabilities Act (ADA) requirements, including sidewalk and driveway improvements and signage as needed. These permanent improvements will not require ROW takings. CTDOT will coordinate with the City of Norwalk as the design for Marshall Street improvements is finalized.	The sidewalk and driveway improvements on the south side of Marshall Street will be retained in the permanent condition, thereby expanding ADA accessibility in downtown Norwalk.
Visual Resources	**Abandonment and Replacment of Fort Point Street/Railroad Corridor Stone Retaining Wall.** The existing stone retaining wall along Fort Point Street consists of irregular rubble stone. It adjoins Fort Point Street Bridge's east abutment, which is composed of ashlar masonry.	The entirety of the existing stone retaining wall between Fort Point Street and the rail corridor will be abandoned in place and a new wall (Wall 310) will be installed directly in front of the wall, with soil nails extending through the existing wall. The face of the new concrete wall (prefabricated modular wall) will be stamped and colored to resemble the Fort Point Bridge's east abutment ashlar masonry stone wall in dimension and color.	The face of Wall 310 will be designed to resemble in dimension and color the east abutment of the Fort Point Bridge. While it will be a change from existing conditions, the continuity of appearance between the east abutment and Wall 310 will result in minimal visual impact.
	Marshall Street Pedestrian Improvements. Pedestrian access during construction was not presented in prior design submittals.	The Marshall Street improvements will be limited to upgrading existing modern paving and curb cuts to current ADA standards. Pole-mounted streetlights on the south side of Marshall Street will be removed during construction and replaced in-kind following project completion. CTDOT is coordinating the streetlight replacement with the City of Norwalk.	The pole-mounted streetlights will be replaced in-kind. Their replacement, and the limited sidewalk and driveway improvements, will result in minimal changes to the overall visual character of Marshall Street.

Impact Category	Impacts as Previously Presented	Impacts – Advanced Design; Refined Construction	Change in Impacts
Historic, Cultural & Archaeological Resources	**Abandonment and Replacment of Fort Point Street/Railroad Corridor Stone Retaining Wall.** As reported in the Historic Resources Evaluation Report prepared for the Walk Bridge Replacement Project, (AHS, August 2016), the stone retaining walls along the rail line between the New York/Connecticut border and New Haven are contributing to a NRHP-eligible linear historic district. The Historic Resources Evaluation Report indicated that the removal of the high towers, catenary support structures, stone retaining walls, and Fort Point Street Railroad Bridge will be adverse effects on the overall rail line as an eligible historic district. Attachment D-3 provides documentation and Attachment D-4 provides the CTSHPO's concurrence.	CTDOT recommends that the additional loss of stone masonry and replacement with Wall 310 will further contribute to the adverse effect on the overall rail line as an eligible historic district. Under the provisions of the FAST Act, CTDOT recommends that Section 4(f) would not apply to this action.	It is CTDOT's opinion that mitigation of adverse effects due to this design change in the Fort Point Street area has been addressed through the Walk Bridge Replacement Project MOA. Per Stipulation No. 3, the stone retaining wall was included in *Written and Photographic Documentation: New York, New Haven & Hartford Railroad, South Norwalk and East Norwalk, Norwalk Connecticut* (Archaeological and Historical Services., Inc. (AHS), August 2018).
	Marshall Street Pedestrian Improvements. Pedestrian access during construction was not presented in prior design submittals.	CTDOT recommends that the proposed sidewalk and other pedestrian improvements not be considered as an adverse effect on the NRHP-listed or NRHP-eligible properties or their settings. Further, the permanent pedestrian improvements would not require ROW takings from the individually listed resources or resources contributing to the Historic District, therefore Section 4(f) would not apply.	CTDOT recommends no adverse effect to Section 106 resources. CTDOT recommends that Section 4(f) would not apply to the improvements.
Construction	The EA/FONSI indicated that the Walk Bridge Replacement Project will generate sediment, groundwater, soil, ballast, and sub-ballast that will require testing, management and disposal. The EA/FONSI indicated that temporary WSA(s) will be constructed, managed and dismantled in accordance with CTDEEP regulatory and	Three CTDOT-owned areas are proposed for use as WSAs and RSAs for the Walk Bridge Program, which includes the Walk Bridge Replacment Project and other nearby NHL improvement projects: 1) WSA: I-95/Route 7 interchange area, located south of I-95 off the Route 7	The use of RSAs will facilitate the reuse of existing on-site materials as structural fill needed for the project. The recycling will allow the diversion of minimally impacted materials from landfills. It will also reduce the air pollution caused both by trucking this

Impact Category	Impacts as Previously Presented	Impacts – Advanced Design; Refined Construction	Change in Impacts
	permit requirements. The EA/FONSI did not identify specific RSA sites, but noted that CTDOT has identified approved upland facility sites for the disposal of excess soil and sediments.	southbound off-ramp and adjacent to West Avenue; 2) WSA/RSA: Route 7 Exit 2 (New Canaan Avenue) northbound infield area and adjacent to the northbound on-ramp; 3) RSA: Glover Avenue Construction Yard, near the terminus of Route 7 at Grist Mill Road. The three proposed areas currently are in use by CTDOT as sediment management areas for other ongoing construction projects. The three areas are outside the 100-year and 500-year floodplains. None of the areas are located within wetlands or protected habitat, per CTDEEP NDDB current mapping. All of the sites have immediate highway (I-95 or Route 7) access. Access to and from the sites would not require travel through residential streets, thereby avoiding impacts to sensitive receptors. Project-generated material at the WSAs and RSAs will be managed in accordance with the CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). When not actively being used, stockpiled materials at the WSAs and RSAs will be covered with polyethylene plastic sheeting and secured with sandbags. Sorbent booms will be placed along the perimeter of the WSAs and RSAs if needed. The Contractor will prepare a specific operations and management plan for the project-generated material, which will include tracking procedures, emergency and preparedness	material to out-of-state landfills and importing new material onto the project site. CTDOT will manage the operation of the WSAs and RSAs in accordance with project permits and contract specifications. The WSAs and RSAs will be included in the Walk Bridge Program's Construction General Permit and General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer).

Impact Category	Impacts as Previously Presented	Impacts – Advanced Design; Refined Construction	Change in Impacts
		plans, and inspection and maintenance procedures. Wastewater generated during dewatering activities will be managed in accordance with CTDEEP requirements. The WSAs and RSAs will be included in the Walk Bridge Program Stormwater Pollution Control Plan (SWPCP) and covered under the Program's General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activity (Construction General Permit). CTDOT's Office of Construction/ District 5 will be responsible for directing and overseeing the operation of the WSAs and RSAs, in coordination with the Construction Engineering and Inspection (CE&I) team.	

FEDERAL TRANSIT ADMINISTRATION
ENVIRONMENTAL RE-EVALUATION CONSULTATION

ATTACHMENTS

Attachment A Additional EA/EIE Figures

Figure 3-11a Land Use and Zoning in Vicinity of Manresa Island Staging and Storage Yard
Figure 3-12a Locations of Proposed Parcel Use in Vicinity of Walk Bridge
Figure 3-12b Location of Proposed Parcel Use in Vicinity of Manresa Island
Figure 3-15a Water Quality Classification in Vicinity of Manresa Island Staging and Storage Yard
Figure 3-16a Tidal and Freshwater Wetlands in Vicinity of Manresa Island Staging and Storage Yard
Figure 3-20a Floodplains in Vicinity of Manresa Island Staging and Storage Yard
Figure 3-22a Aquatic Resources in Vicinity of Manresa Island Staging and Storage Yard
Figure 3-24a Coastal Boundary in Vicinity of Manresa Island Staging and Storage Yard
Figure 3-26a Parklands and Public Recreation Areas in Vicinity of Manresa Island Staging and Storage Yard
Figure 4-2a Hurricane Inundation Existing Conditions – Manresa Island

Attachment B Proposed Staging and Storage Yard, Manresa Island (Parcel 5/86/1)

Figure B-1 Proposed Work Area and Site Access, Manresa Island (Parcel 5/86/1)
Figure B-2 Proposed Staging and Storage Yard Activities, Manresa Island (Parcel 5/86/1)

Attachment C Manresa Island Evaluations and Responses to Comments

Attachment C-1 Assessment of Lift Span Assembly Yard Locations, 10/15/20
Attachment C-2 Manresa Island Traffic Study, October 2020
Attachment C-3 Manresa Island Construction Noise Study, October 2020
Attachment C-4 Environmental Frequently Asked Questions, October 2020
Attachment C-5 Manresa Island Public Meeting Responses to Questions, August 2020

Attachment D Section 106 Assessments

Attachment D-1 Supplemental Cultural Resources Evaluation Memorandum, 5/1/2020
Attachment D-2 CTSHPO's Concurrence, Temporary Use of Manresa Island, 6/15/2020
Attachment D-3 Supplemental Information, Fort Point Street Wall 310, 11/23/2020
Attachment D-4 Supplemental Information, Marshall Street Pedestrian Detour Improvements, 11/23/2020
Attachment D-5 CTSHPO Concurrence, Walk Bridge Supplemental Information, 12/24/2020

Attachment E Federal and State Reviews, Approvals, and Permit Requirements

Attachment E-1 Coordination with NOAA/NMFS, June 2020 – January 2021
Attachment E-2 USFWS No Effect Determination, 6/24/2020
Attachment E-3 Table of Federal and State Permits and Approvals
Attachment E-4 CTDEEP Natural Diversity Data Base Determination, 4/16/2020
Attachment E-5 Coordination with CTDEEP Division of Wildlife, 3/18/2020

Attachment F Environmental Effects Mapping

Attachment A Additional EA/EIE Figures

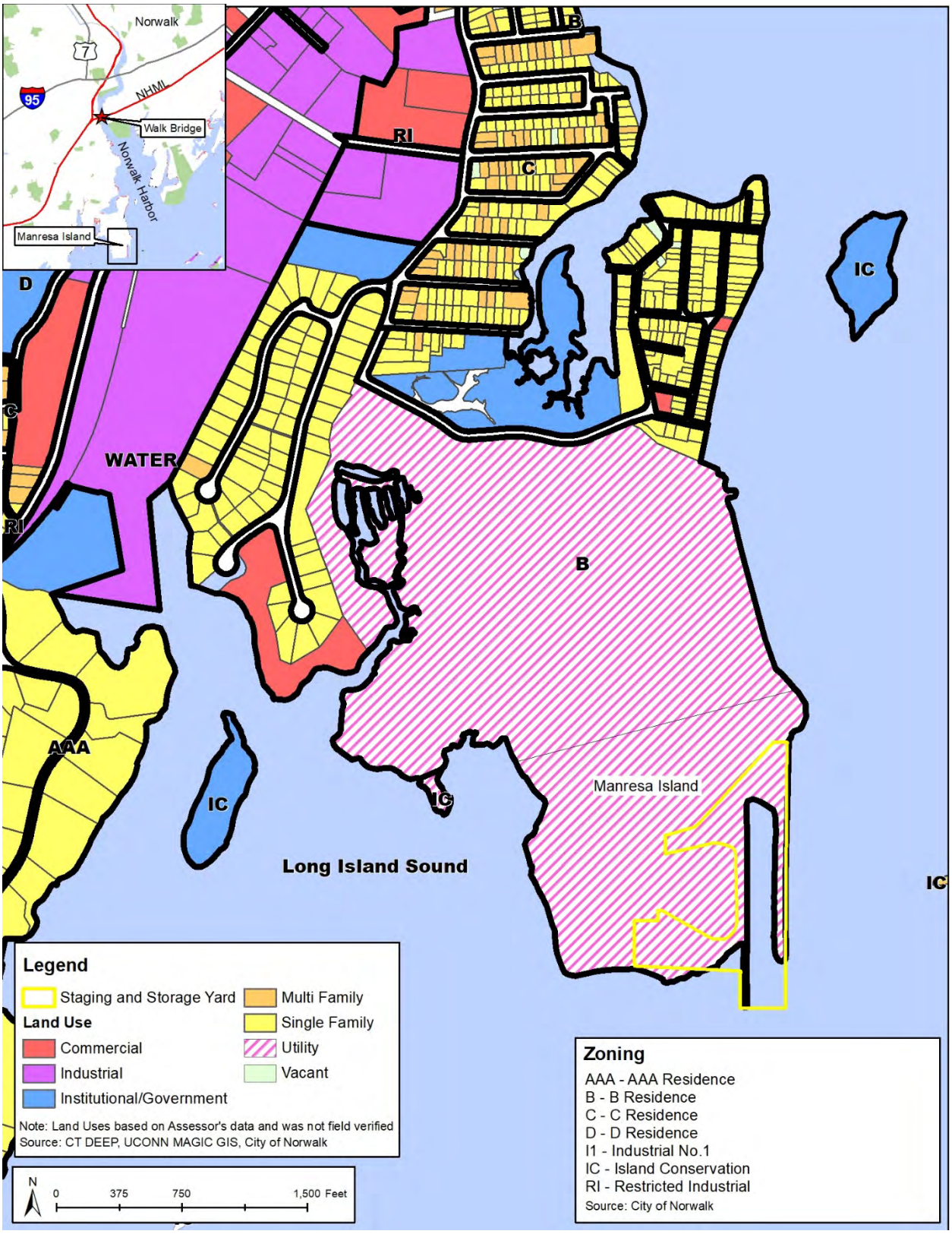


Figure 3-11a—Land Use and Zoning in Vicinity of Manresa Island Staging and Storage Yard

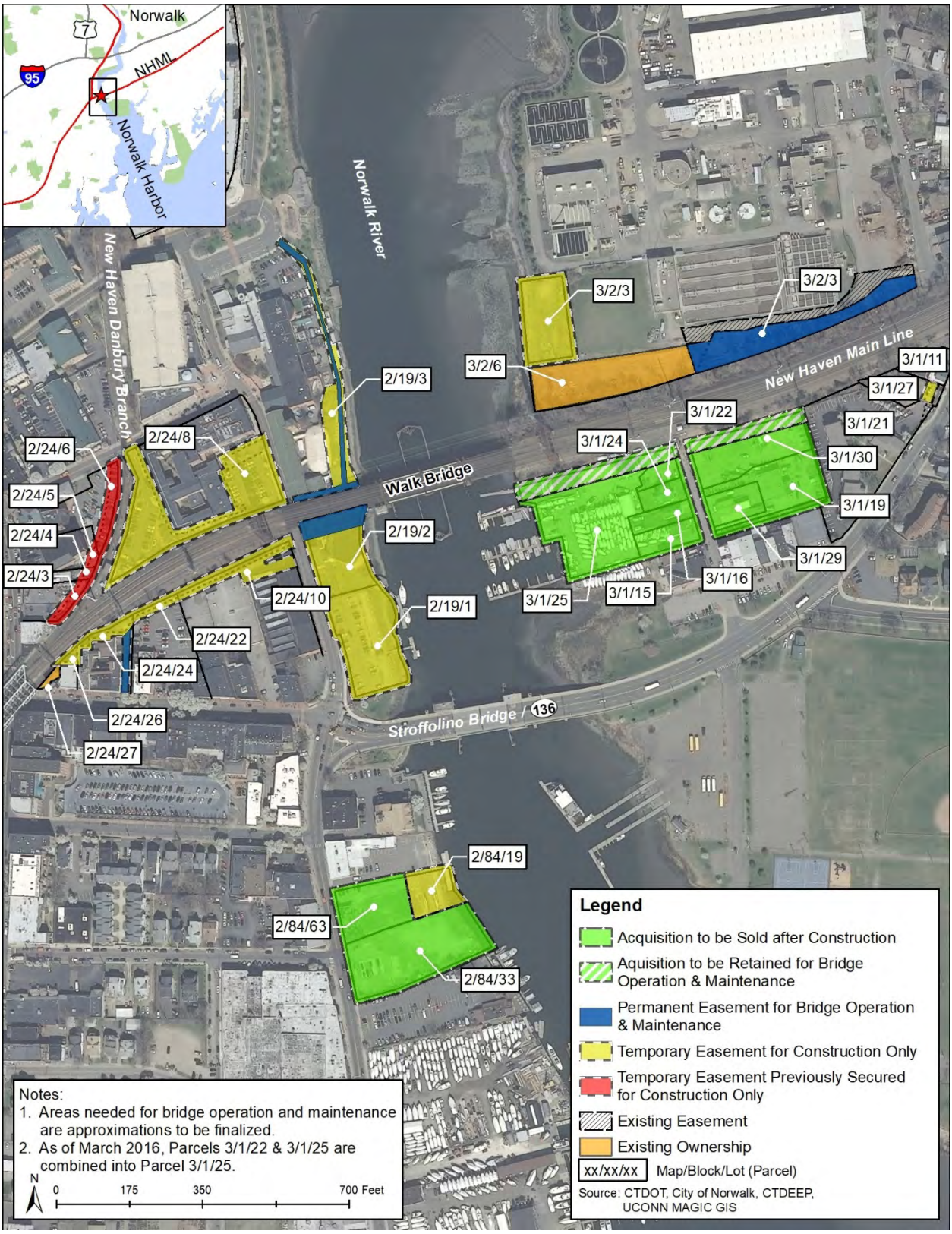


Figure 3-12a—Locations of Proposed Parcel Use in Vicinity of Walk Bridge

Figure 3-12b—Locations of Proposed Parcel Use in Vicinity of Manresa Island

Figure 3-15a—Water Quality Classification in Vicinity of Manresa Island Staging and Storage Yard

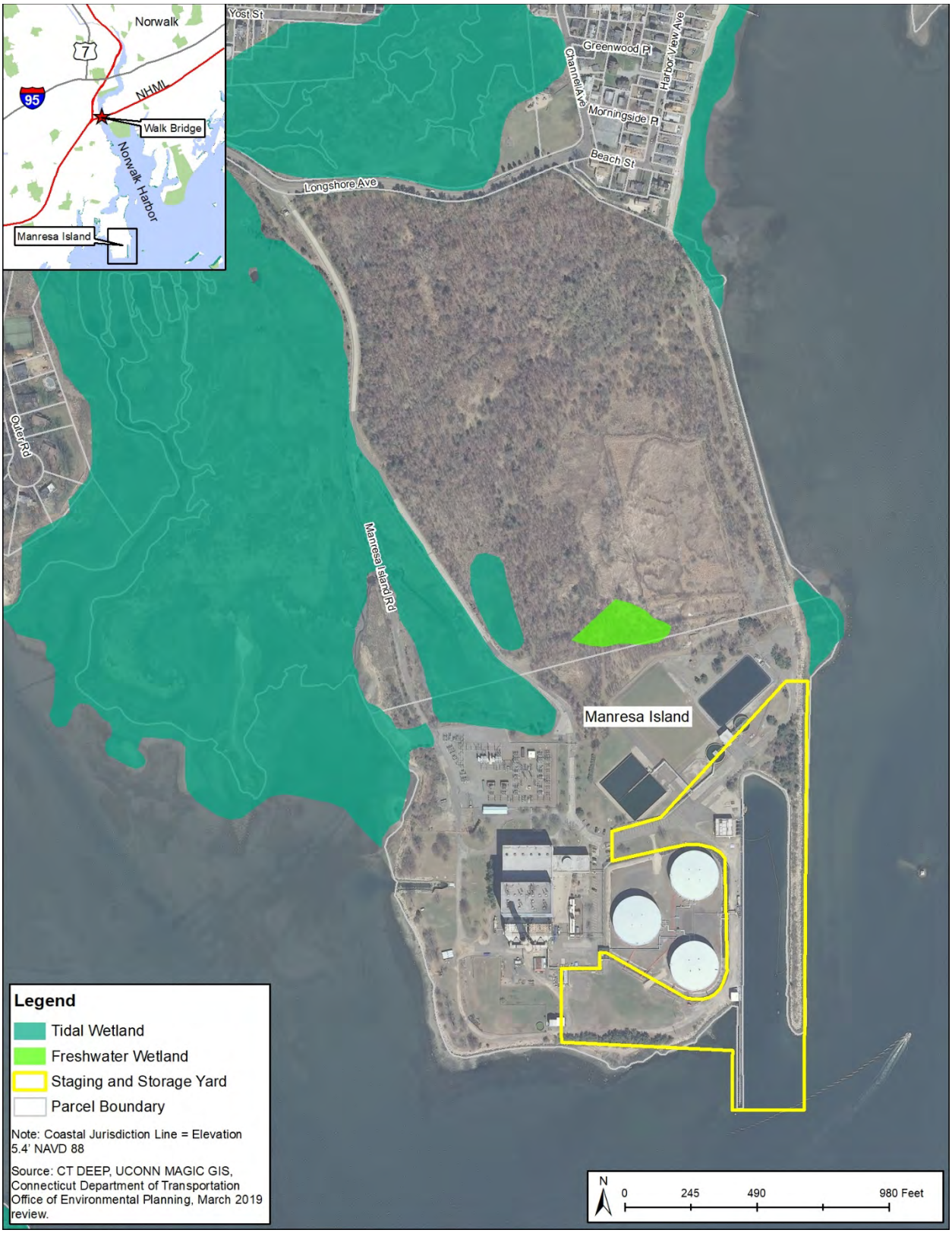


Figure 3-16a—Tidal & Freshwater Wetlands in Vicinity of Manresa Island Staging and Storage Yard

Figure 3-20a—Floodplains in Vicinity of Manresa Island Staging and Storage Yard

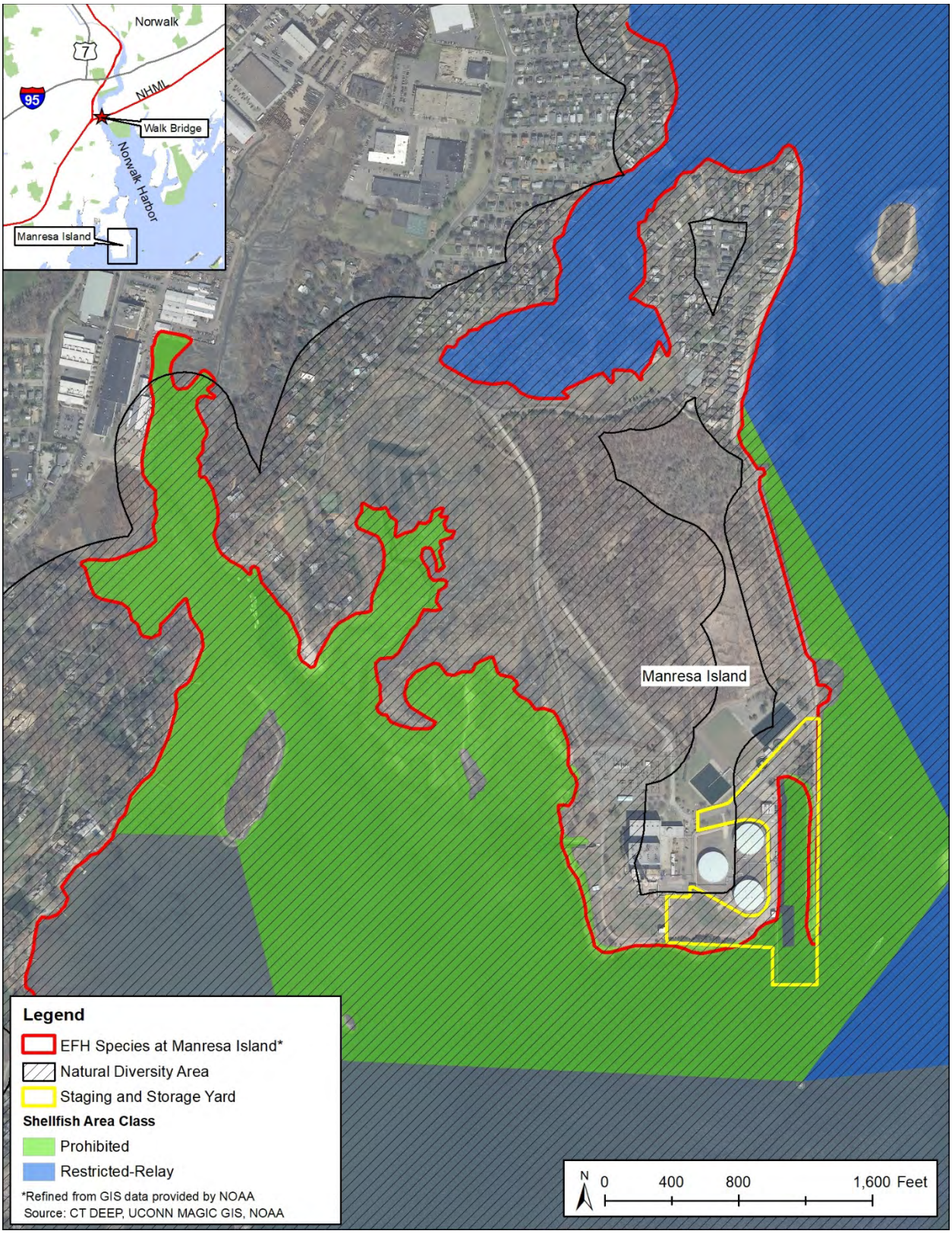


Figure 3-22a—Aquatic Resources in Vicinity of Manresa Island Staging and Storage Yard

Figure 3-24a—Coastal Boundary in Vicinity of Manresa Island Staging and Storage Yard

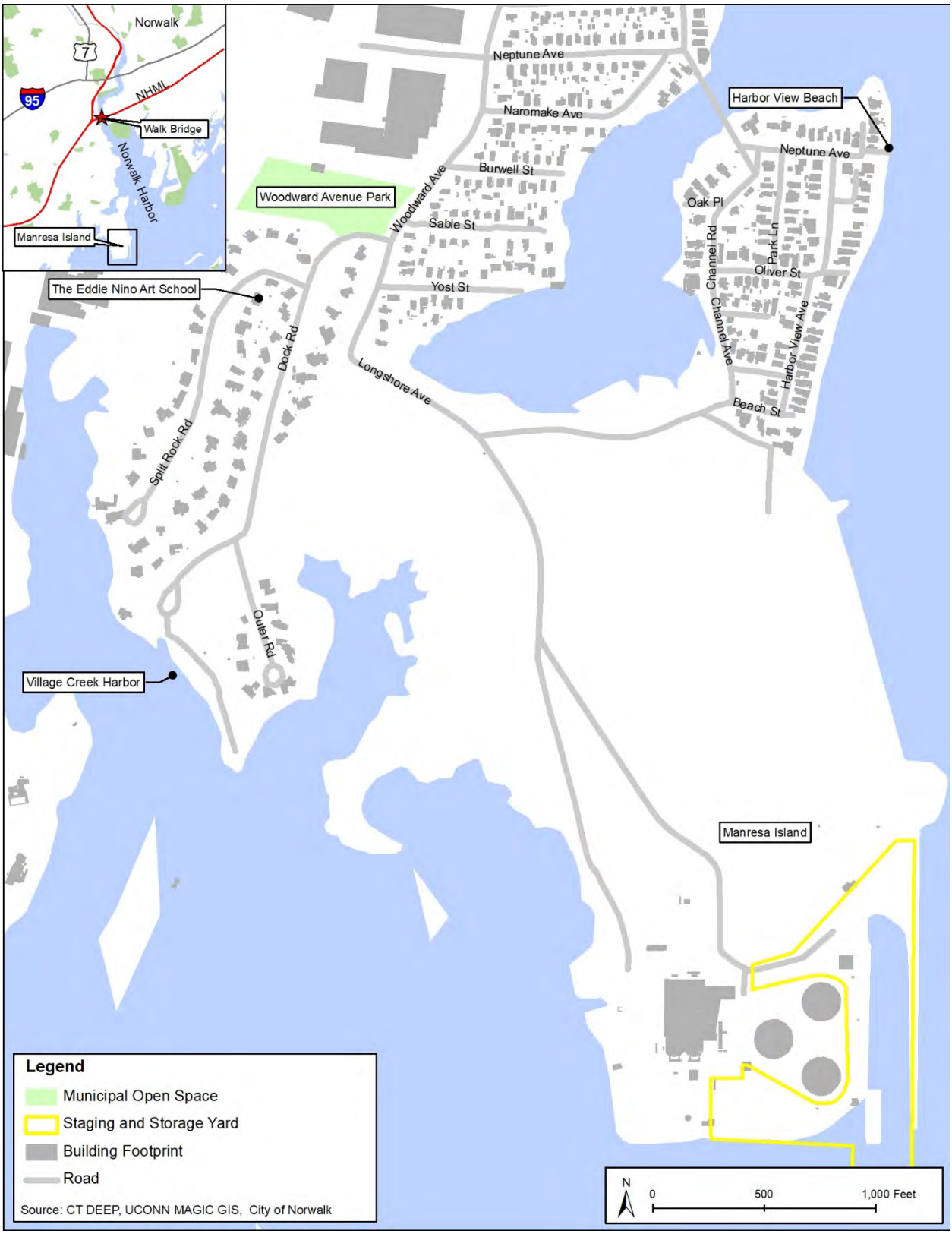


Figure 3-26a—Parklands & Public Recreation in Vicinity of Manresa Island

Staging and Storage Yard

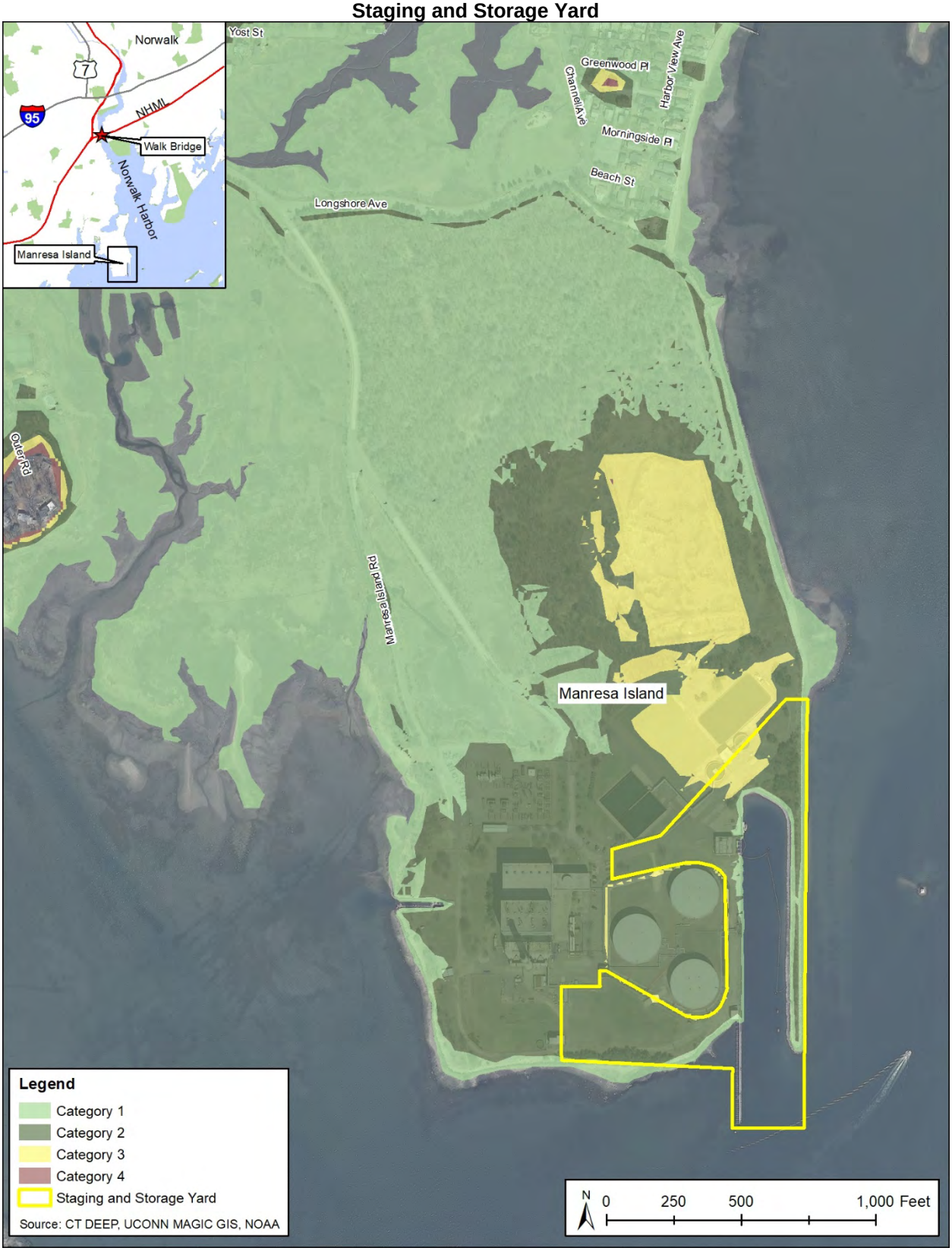


Figure 4-2a—Hurricane Inundation Existing Conditions – Manresa Island

Attachment B Proposed Staging and Storage Yard, Manresa Island (Parcel 5/86/1)

Figure B1—Proposed Work Area and Site Access, Manresa Island (Parcel 5/86/1)

Figure B2—Proposed Staging and Storage Yard Activities, Manresa Island (Parcel 5/86/1)

Attachment C Manresa Island Evaluations and Responses to Comments

Attachment C-1 - Assessment of Lift Span Assembly Yard Locations, 10/15/20

Location of Lift Span Assembly Yard

Assessment and Recommendation

The Walk Bridge Program is a large-scale project in Norwalk, CT funded by the State of Connecticut, the Federal Railroad Administration and the Federal Transit Administration. The major project in the Program is the replacement of the existing swing railroad bridge (Walk Bridge) over the Norwalk River. The new bridge is comprised of two, side-by-side, vertical lift span bridges installed in two phases, south span in phase 1 and north span in phase 2, to maintain railroad operations on a minimum of two tracks at all times. Each lift span will be fully assembled, including the installation of the track and overhead catenary systems, and the completed span will be transported to the project location via a barge. Once the barge is floated into place, the new span will be lifted into its final position. The Program favors offsite assembly compared to in-place assembly because of the marine vessel impacts associated with river construction; constructability difficulties when working on the water; and noise implications from the steel assembly's proximity to SONO. The Program identified an assembly location near the project site that would be cost effective; created limited impacts to the area's environmental resources, river navigation and river-users; and would optimize the coordination, logistics and risks associated with the lift span assembly.

When the Program first began researching potential local properties to be used as an assembly area and barge transfer location, the construction manager (CM) suggested renting space at the abandoned NRG power plant (i.e. Manresa Island). The CM noted that the property had enough space for a staging yard, and by utilizing the existing bulkhead and slip, an assembly barge could be docked adjacent to the property - removing the need to transfer the assembly from land to barge.

The Program also identified a set of properties along the west bank of the Norwalk River, south of the Stroffolino bridge, as a potential assembly yard location and proceeded with a feasibility analysis of using these properties. The analysis indicated the following: a significant bulkhead would need to be constructed along the waterfront; the river bottom adjacent to the properties would need to be dredged to increase the draft needed for the loaded barge next to the bulkhead; and the barge would encroach on the river navigational channel in the approach leading to the Stroffolino bridge. In addition, the properties' proximity to SONO would create additional environmental impacts and impacts to river navigation and river-users. The Program concluded that the use of these sites as an assembly yard would require significant additional costs compared to other locations.

Subsequently, the Program entered discussions with NRG to use the property, bulkhead and slip at the abandoned power plant site (Manresa Island) as an assembly yard. The Program advanced the concept of using Manresa Island for an offsite assembly yard and brought the proposal to a public meeting.

While the Program had previously discussed utilizing non-local assembly yards, local yards were preferred by the Program. As a result of concerns raised during the public meeting, foremost being the noise pollution and additional traffic, the Program and CM revisited the concept of utilizing non-local locations for an assembly yard and proceeded with traffic and noise studies at the Norwalk sites. Several assembly yards and transfer sites along the East Coast (U.S.) and Gulf of Mexico, as well as the Hudson River, were identified and information was gathered on the transportation costs, assembly and barge transfer costs, quality control complications, and associated risk with open water transportation of the assembled spans.

The preliminary review of the information indicates the estimated cost for material transportation, offsite assembly and marine transport of the lift spans were similar to the estimated cost for using Manresa Island – which can be seen in Figure 1. However, what is not captured in the cost comparison are the risks associated with the marine transportation, as well as the increased complexities to inspection and construction logistics that would add costs to the Program due to the use of a non-local assembly location. In addition, the non-local sites are subject to future availability considerations and prioritization of work, while a local location can be permitted and provided to the contractor.

Assembling the lift spans near Norwalk removes the risk of transporting the structure on ABS (ocean-going) barges. Transporting material in open water increases the risk of damage to the structure during transport, or even the complete loss of material. In recent years, the number of tropical storms and hurricanes has increased substantially

with appearances as early as May and as late as November. While additional insurance would be added to the Program to cover said damage/loss, these policies will only cover the cost for materials, not the labor to repair/replace the structure. Any damage/loss would also impact the schedule of the Program and would result in a delay to the completion of the project. In addition to schedule delays caused by damage/loss, severe storms could delay the shipping date of the structure, once again impacting the Program schedule. Normally, to mitigate the potential schedule delay, the structure would be shipped a month or two in advance of the "required-by" date. However, there is limited docking space in Norwalk for a shipment this large; therefore, the ABS barge would need to be docked at a location that has the capacity for such a large barge/structure (e.g. Bridgeport or New Haven), adding additional risk of damage/loss and additional cost for docking. By using Manresa Island as the assembly yard, the lift span structure is better protected from severe storms because it is docked in the existing slip that was used for the loading/offloading of ABS barges when the power plant was operational.

In addition, by moving the assembly to a non-local location, the field inspection staff onsite who are involved with the day-to-day construction of the Walk Bridge are not as involved with the inspection staff of the lift span assembly. While these activities can work independently of one another, the communication between the two entities is reduced drastically when they are not in the same general area. This lack of communication means that when conflicts arise in the field, they are not always relayed to the assembly team. If the assembly yard is close to the Walk Bridge, when issues, questions, and conflicts arise as the work progresses, the Walk Bridge field team can easily visit the lift span assembly team and resolve any open items quickly and face-to-face. An offsite assembly team would require communication be mainly carried out through emails, photographs/videos, and phone calls with sporadic site visits. This can result in information not being completely understood and may allow issues/conflicts to be overlooked. This additional staffing need, solely hired to inspect the lift span assembly, would add approximately $0.8 million to $1 million in additional inspection costs to the non-local yards seen in Figure 1.

These added risks and complexities make the initially similar cost estimate for assembly/delivery not as easily comparable to one another. While risk is not a "concrete" cost to the Program, it is very critical in the decision-making process. Since the costs are relatively similar, these added complexities result in the Department favoring an assembly yard near Norwalk. When comparing Manresa Island and the North Water Street parcels, the Manresa Island site is preferred as it eliminates the impacts to the river navigational channel. In addition, the Program completed a noise study at the prospective local properties and have concluded that having the assembly yard at Manresa Island will have less of a noise impact to the general public than if it located at the North Water Street parcels. Furthermore, based on the study, the noise impacts from assembly operations at Manresa Island will have minimal-to-negligible impacts to the surrounding neighborhoods (see the "Manresa Island Construction Noise Study" for additional information).

Based upon the evaluation of all the options, the Department has selected Manresa Island as the assembly yard for the Walk Bridge lift spans.

Appendix

Location	Property and Site Cost[1]	Lift Span Assembly & Transportation Cost	Additional Construction Inspection Cost	***Total Cost***	***Difference from Manresa Island***
Manresa Island - Norwalk, CT	$1,475,000	$25,298,801	-	**$26,698,976**	-
MNO / 90 Water St - Norwalk, CT	$13,090,000[2]	$25,833,412	-	**$37,145,412**	***$10,446,436***
Cianbro Marine Yard - Baltimore, MD	$1,209,650	$26,131,468	$1,000,000	**$28,341,118**	***$1,642,142***
Port of Coeymans - Albany, NY (near)	$1,628,240	$25,750,664	$800,000	**$28,178,904**	***$1,479,928***
Steel Fabricator Full Offsite Assembly - Iuka, MS	-	$24,897,694	$1,000,000	**$25,897,694**	***-$801,282***

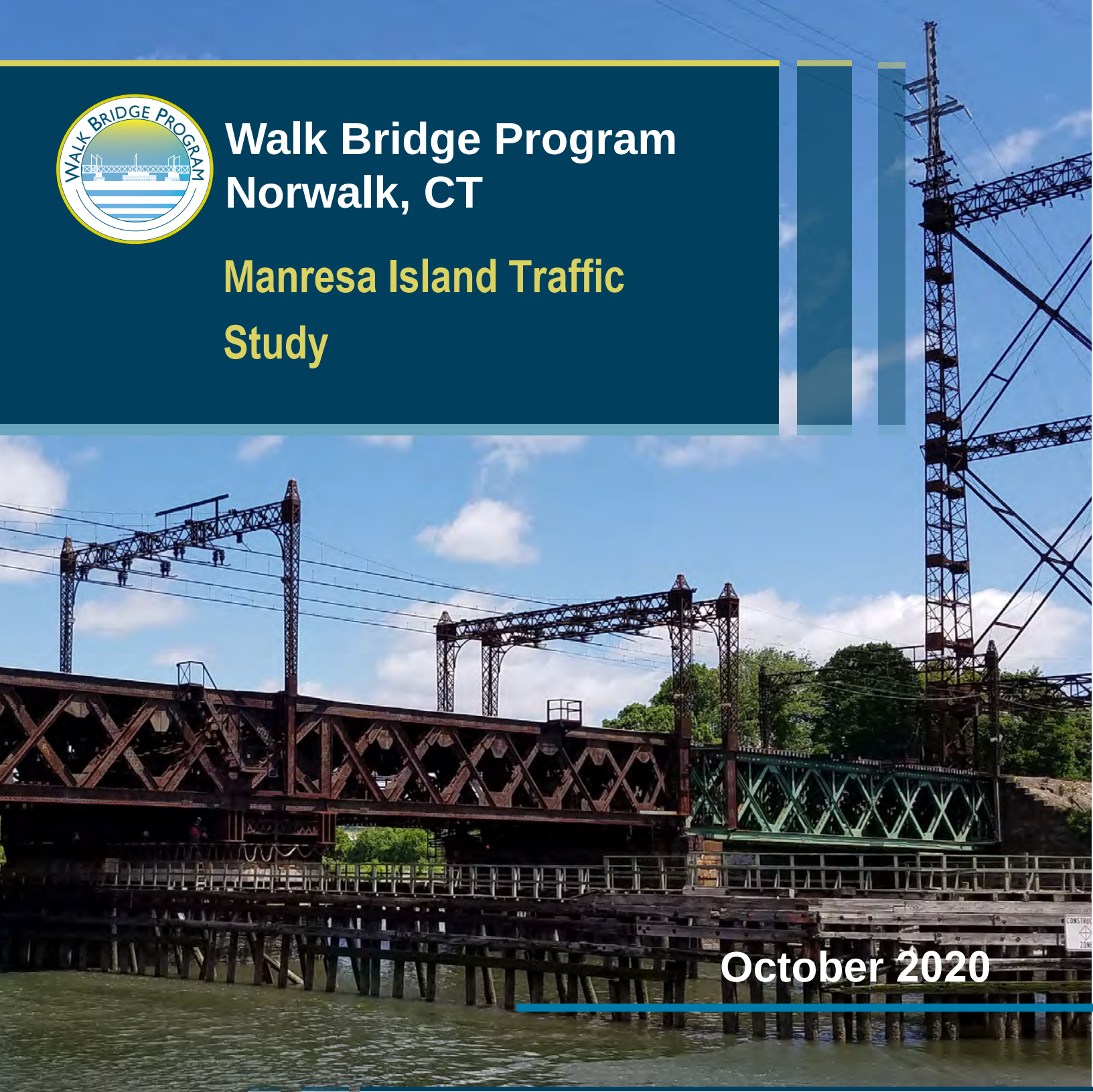
Notes: [1] Includes parcel acquisition/rental costs, site prep costs, and site restoration costs.
[2]While the parcel cost is a negative value due to the resale of the property once the Walk Bridge Program is complete, this option requires a bulkhead be constructed in order to use as an assembly yard (approx.. $12.5 million).

Figure 1: Lift Span Assembly Cost Comparison

Attachment C-2 - Manresa Island Traffic Study, October 2020

Walk Bridge Program
Norwalk, CT

Manresa Island Traffic Study



October 2020

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1 Introduction

1.1 Project Background

The Walk Bridge Program seeks to replace the existing deteriorated four-track railroad bridge that crosses the Norwalk River, connecting South and East Norwalk. It is part of Metro-North Railroad's (MNR) New Haven Line and a critical link in connecting Boston, New York, and Washington D.C. The Walk Bridge carries approximately 125,000 riders each year. The project also includes simple span bridge replacements at Ann Street, Fort Point Street, Osborne Avenue, and East Avenue.

The Connecticut Department of Transportation (CTDOT) is planning to relocate the construction of the vertical replacement bridge lift span from the vacant properties at 68, 70 and 90 Water Street to Manresa Island, Norwalk, Connecticut. Manresa Island is located at southern tip of Norwalk, near the Harbor View neighborhood. The island is the site of a former power plant which was severely damaged by Hurricane Sandy in 2012, leading to its permanent closure in 2013 and has been vacant ever since. Figure 2 shows the project location.

Relocating the construction to Manresa Island would be beneficial given that it already has the infrastructure in place, as opposed to the vacant lots in South Norwalk which would require the state to dredge parts of the harbor and build a bulkhead at the location. CTDOT would use the southern part of Manresa Island for construction, storage of construction materials, safety boat vessels, construction boats and barges. The vacant Water Street lots #7, #8, and #9 would still be used for some stages of the construction process.

The project will be using the Manresa Island site for 60 months with substantial work occurring during an approximate 4 year period for construction of the vertical lift spans, with a six-day per week schedule that would normally run from 8 a.m. to 4 p.m. The traffic going to Manresa Island would originate from I-95 and would consist of trucks making three (3) roundtrips on average per day as well as the number of contractor employees destined to Manresa Island. There are two proposed truck haul routes depending on the truck height. For trucks under 13'-9", the proposed truck haul route bringing the materials to Manresa Island would follow (from I-95) West Avenue, Martin Luther King Drive, Monroe Street, South Main Street, Woodward Avenue, and Longshore Avenue, as shown on Figure 2 and described as Truck Route A. For trucks over 13'-9", the proposed truck haul route would follow (from I-95) West Avenue, Martin Luther King Jr. Drive, Route 136 (Wilson Avenue), Route 136 (Meadows Street), Woodward Avenue, and Longshore Avenue, as shown on Figure 3 and described as Truck Route B.

This traffic study summarizes existing intersection operational conditions along the truck haul routes and the anticipated construction related traffic impacts associated with the relocation of the vertical lift bridge construction site to Manresa Island. Findings presented within this document are current as of the date of this report.

The traffic study was performed using various sources of traffic data. The latest available traffic data, obtained from the City of Norwalk and the CTDOT, from 2017 was used for each study area intersection for analysis purposes. Traffic modeling software (Synchro 10) was utilized to evaluate the operations at the impacted intersections.

WSP was tasked with:

- Traffic data collection and summarization
- Traffic analysis for the truck haul route for year 2024
- Traffic analysis for the truck haul route with additional trucks and contractor employees for year 2024
- Crash data analysis

The Traffic Engineering Technical Memorandum (TETM) is a separate, living document, prepared by WSP, and a supplement to the Transportation Management Plan. The TETM summarizes existing operational conditions and anticipated construction related traffic impacts associated with the construction of the Walk Bridge, including Metro-North Railroad (MNR) bridge replacements at Ann Street, Fort Point Street, Osborne Avenue and East Avenue. This traffic study is a supplement to the TETM.

This traffic study is a supplement to the Transportation Management Plan and is a dynamic, living document that will be monitored, adjusted and updated as warranted based on field observations, operational information (planned roadway closures), and lessons learned to achieve safe and effective transportation operations.

Figure 1: Project Location

Figure 2: Truck Route A – Truck Height Under 13'-9"

Figure 3: Truck Route B – Truck Height Over 13'-9"

2 Roadway Information

2.1 Project Study Area Limits

WSP has carefully reviewed and field verified the proposed truck haul routes going to and from Manresa Island, and discussed the proposed routes with CTDOT and the City for identifying impacts at key intersections within the study area as follows:

1. Martin Luther King Jr. Drive & Monroe Street
2. South Main Street & Monroe Street
3. South Main Street & Henry Street
4. South Main Street & Woodward Avenue/Concord Place
5. Woodward Avenue & Grove Street
6. Route 136-south leg (Woodward Avenue) & Route 136 (Burritt Avenue)
7. Route 136-north leg (Woodward Avenue) & Route 136 (Meadows Street)

These intersections are in primarily residential areas as shown on

Figure *4*.

Figure 4: Critical Intersections

2.2 Existing Roadway and Intersection Geometry

WSP conducted field inventory of the affected intersections in the study area. The intersection geometry, traffic controls, land use, parking regulations, and pedestrian accommodations were evaluated.

2.2.1 MARTIN LUTHER KING JR. DRIVE & MONROE STREET

Martin Luther King Jr. Drive & Monroe Street is a signalized T-intersection with video detection on all approaches.

Martin Luther King Jr. Drive is classified as a Minor Arterial (per City of Norwalk DPW) and has a speed limit of 35 mph. The northbound approach has one through lane and one shared through-right lane. The southbound approach has two through lanes, and one dedicated left turn lane with a storage of approximately 180 feet.

Monroe Street, the eastern leg of the intersection, consists of one left turn lane and one right turn lane. It provides a bike lane between the turning lanes for the westbound direction and a bike lane on the shoulder side for the eastbound direction. Monroe is classified as a Major Collector with a speed limit of 30 mph.

The intersection provides sidewalks on the east side of Martin Luther King Jr. Drive and on both sides of Monroe Street. A signalized pedestrian crosswalk is provided across Monroe Street.

The South Norwalk Train Station drop-off/pick-up driveway is located approximately 200 feet east of the intersection, while the parking garage exit driveway is located approximately 400 feet east of the intersection.

The Monroe Street railroad underpass, located approximately 525 feet east of the intersection, provides a 13'-9" vertical clearance which is adequate for trucks traveling on Truck Route A.

Figure 5 shows an aerial image of the intersection.

FIGURE 5: MARTIN LUTHER KING JR. DR & MONROE ST AERIAL IMAGE

2.2.2 SOUTH MAIN STREET & MONROE STREET/HANFORD PLACE

South Main Street & Monroe Street/Hanford Place is a four-way signalized intersection with video detection on all approaches.

South Main Street is classified as a Minor Arterial and has a speed limit of 30 mph north of the intersection and a speed limit of 25 mph south of the intersection. The northbound approach has one shared left-through-right lane.

The southbound approach has one shared left-through lane, and one dedicated right turn lane with a storage of approximately 95 feet. North of the intersection, parking is allowed on the eastside of South Main Street at approximately 75 feet from the intersection. South of the intersection, parking is allowed on both sides of South Main Street at approximately 30 feet from the intersection.

Monroe Street, the western leg of the intersection, consists of one dedicated left turn lane and one shared through-right turn lane. It provides a bike lane for both the eastbound and westbound direction. It is classified as a Major Collector with a speed limit of 30 mph.

Hanford Place, the eastern leg of the intersection, consists of one shared left-through-right lane. It is classified as a Minor Arterial with a speed limit of 30 mph.

The intersection provides sidewalks on every side of the intersection as well as crosswalks on all approaches. Pedestrian signals are provided across every approach to the intersection.

There are two (2) mid-block crosswalks along Monroe Street between Martin Luther King Jr. Drive and South Main Street. One is located approximately 260 feet west of the South Main Street & Monroe Street/Hanford Place intersection and the other one is approximately 650 feet west of the intersection. Both midblock crosswalks provide rapid rectangular flashing beacons to increase motorist awareness of pedestrians in the crosswalks. The additional crosswalks serve pedestrian traffic to and from the South Norwalk Train Station

Figure 6 shows an aerial image of the intersection.

Figure 6: South Main Street & Monroe St Aerial Image

2.2.3 SOUTH MAIN STREET & HENRY STREET

South Main Street & Henry Street is a signalized T-intersection with no detection.

South Main Street is classified as a Minor Arterial and has a speed limit of 25 mph. The northbound approach has one shared left-through lane. The southbound approach has one shared through-right lane. Parking is not allowed on

either side of South Main Street north of the intersection between Henry Street and Raymond Street. South of the intersection, parking is allowed on both sides of South Main Street.

Henry Street is a westbound one-way road and consists of a 24-foot wide lane with parking allowed on both sides, except during school hours. It is classified as a Minor Arterial and has a speed limit of 25 mph.

The intersection provides sidewalks on all sides of the intersection and provides signalized crosswalks across Henry Street and across the southbound approach of South Main Street.

Although not part of the intersection, Raymond Street is located approximately 100 feet north of the intersection. Raymond Street is an eastbound one-way road.

Figure 7 shows an aerial image of the intersection.

Figure 7: South Main Street & Henry Street Aerial Image

2.2.4 SOUTH MAIN STREET & WOODWARD AVENUE/CONCORD STREET

South Main Street & Woodward Avenue/Concord Place is a five-legged signalized intersection with video detection on all approaches.

South Main Street is classified as a Minor Arterial and has a speed limit of 25 mph. The northbound approach has one shared left-through lane. The southbound approach has one shared through-right lane. North of the intersection, parking is allowed on both sides of South Main Street, however, for the southbound direction is it only allowed at approximately 65 feet from the stop bar. South of the intersection, parking is allowed only on the west side of South Main Street.

Concord Place, the western leg of the intersection, consists of one shared through-right lane and one dedicated left turn lane with a storage of approximately 50 feet. The eastern leg of the intersection consists of one shared left-through-right lane. West of the intersection, parking is allowed only on the north side of Concord Place. East of the intersection, parking is not allowed. It is classified as a Minor Arterial with a speed limit of 25 mph.

Woodward Avenue consists of a shared left-through-right lane. It is classified as a Minor Arterial with a speed limit of 25 mph. Parking is only allowed on the east side of the road.

The intersection provides sidewalks on all sides of the intersection and provides signalized crosswalks across all approaches.

Figure 8 shows an aerial image of the intersection.

Figure 8: South Main St & Woodward Ave/Concord St Aerial Image

2.2.5 WOODWARD AVENUE & GROVE STREET

Woodward Avenue & Grove Street is a one-way, stop-controlled T-intersection.

Woodward Avenue is classified as a Minor Arterial with a has speed limit of 25 mph. The northbound approach has one shared left-through lane and the southbound has one shared through-right lane. Woodward Avenue is free flow. Parking is allowed on the east side of Woodward Avenue.

Grove Street is stop controlled and consists of one shared left-right lane. It is classified as a Minor Arterial with a speed limit of 25 mph. Parking is allowed on the south side of the road.

The intersection provides sidewalks on all directions and there is an unmarked crosswalk on Grove Street.

Route 136 (Burritt Avenue) is located approximately 50 feet south of the intersection.

Figure 9 shows an aerial image of the intersection.

Figure 9: Woodward Ave & Grove St Aerial Image

2.2.6 WOODWARD AVENUE & ROUTE 136 (BURRITT AVENUE)

Woodward Avenue & Burritt Avenue is a one-way, stop-controlled T-intersection.

Woodward Avenue is classified as a Minor Arterial and has speed limit of 25 mph. The northbound approach (Route 136) has one shared through-right lane and the southbound has one shared left-through lane. Woodward Avenue is free flow. Parking is allowed on the west side of Woodward Avenue.

Route 136 (Burritt Avenue) is stop controlled and consists of one shared left-right lane. It is classified as a Minor Arterial with a speed limit of 25 mph. Parking is not allowed on this road.

The intersection provides sidewalks on all directions and there is an unmarked crosswalk on Route 136 (Burritt Avenue).

Figure 10 shows an aerial image of the intersection.

Figure 10: Woodward Ave & Route 136 (Burritt Ave) Aerial Image

2.2.7 WOODWARD AVENUE & ROUTE 136 (MEADOWS STREET)

Woodward Avenue & Route 136 (Meadows Street) is an all-way stop-controlled T-intersection.

Woodward Avenue is classified as a Minor Arterial with a speed limit of 25 mph. The northbound approach has one shared left-through lane and the southbound has one shared through-right lane. Parking is allowed on the west side of Woodward Avenue.

Route 136 (Meadows Street) consists of one shared left-right lane. It is classified as a Minor Arterial with a speed limit of 30 mph. Parking is allowed only on the north side of the road. Trucks coming from Route 136 (Meadows Street) making the right turn onto southbound Woodward Avenue will have difficulty given the acute angle of the intersection and the small radius. This intersection is on Truck Route B for oversized trucks.

The intersection provides sidewalks for all directions and there is a crosswalk across Route 136 (Meadows Street).

Figure 11 shows an aerial image of the intersection.

Figure 11: Woodward Ave & Route 136 (Meadows St) Aerial Image

2.3 Land Use

Land use provides an important role in defining the character of a community and directly impacts how well a transportation corridor functions. Land use decisions directly impact the transportation system generating vehicle trips that would lead to traffic congestion and roadway capacity improvements. The current land use around the study area is shown on Figure 12. The Woodward Avenue area is mainly residential passing through Industrial and Restricted Industrial zones. There is an active industrial area on Route 136 (Meadow Street). These industrial zones currently bring truck volume to the area. The blue line shown on Figure 12 is the location of Woodward Avenue.

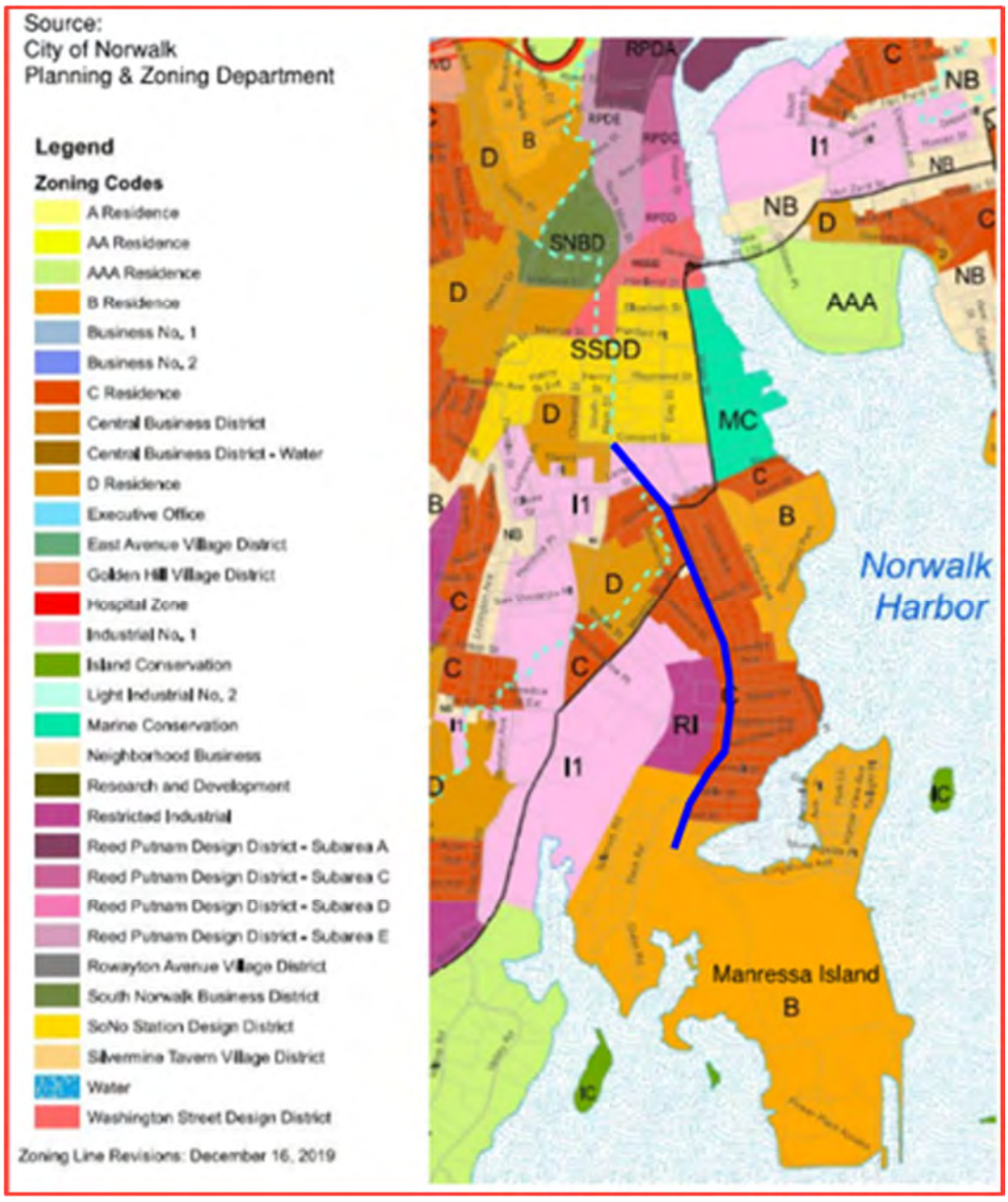


Figure 12: Land Use

2.4 Multimodal Use

Multimodal transportation combines the use of multiple modes of transportation including bus, bicycles, and pedestrians.

2.4.1 PEDESTRIAN

Currently, there are pedestrian accommodations and crosswalks at these key intersections in the study area:

- Martin Luther King Jr. Drive & Monroe Street
- South Main Street & Monroe Street/Hanford Place

- South Main Street & Henry Street
- South Main Street & Concord Street/Woodward Avenue
- Woodward Avenue & Grove Street
- Woodward Avenue & Route 136 (Burritt Avenue)
- Woodward Avenue & Route 136(Meadows Street)

ADA (Americans With Disability Act) wheelchair ramps with tactile warning strips are available at each intersection, except for Woodward Avenue & Grove Street intersection.

Pedestrian signalization and phasing are incorporated in the signal timing at these intersections:

- Martin Luther King Jr. Drive & Monroe Street
- South Main Street & Monroe Street/Hanford Place
- South Main Street & Henry Street
- South Main Street & Concord Street/Woodward Avenue

Sidewalks are provided at every intersection. Currently, Woodward Avenue has a mix of sidewalk facilities, concrete and bituminous concrete with varying quality. There are areas where sidewalk is only on one side of the road. It should be noted that recently the City's Public Works Committee approved an approximate $275,000 contract that will improve curbs and sidewalk primarily along Woodward Avenue. Construction has begun on this contract.

2.4.2 BIKE

In terms of bicycles, bike lanes are provided along Monroe Street, for both the eastbound and westbound direction. The City's Bike Plan proposes a future bike lane on Martin Luther King Jr. Drive. The City also proposes shared lane markings ("sharrows") on South Main Street and Woodward Avenue. Figure 13 shows the existing and proposed bicycle facilities in the study area.

Figure 13: Bicycle Facilities

2.4.3 COMMUTER RAIL

The South Norwalk Train Station and its parking garage are located within the study area. The parking garage exit intersects with Monroe Street approximately 400 feet east of Martin Luther King Jr. Drive & Monroe Street

intersection. The garage has a capacity of 709 vehicles and on a typical weekday in 2018 was at 80% capacity. The South Norwalk Train Station carries approximately 125,000 riders each year.

2.4.4 TRANSIT

The Norwalk Transit District has the following bus routes and shuttles services within the study area:

- WHEELS Route 9 (Monroe Street, Hanford Place, South Main Street, Woodward Avenue)
- WHEELS Route 10 (Monroe Street, South Main Street)
- WHEELS Route 11 (Monroe Street, South Main Street)
- Connecticut Avenue Shuttle (South Main Street)
- Connecticut Avenue Shuttle Sunday (South Main Street)
- Main Avenue Shuttle [Route 136 (Burritt Avenue), Woodward Avenue]
- Main Avenue Shuttle Sunday [Route 136 (Burritt Avenue), Woodward Avenue]

Buses running on these routes operate on weekdays from 5:55 a.m. to 8:15 p.m. and on Saturdays from 5:55 a.m. to 7:35 p.m. There is no Sunday service for the regular bus routes. Connecticut Avenue Shuttle and the Main Avenue Shuttle operate weekday evenings, Saturday evenings and all day on Sunday. The bus schedules are shown in Table 2.1.

Figure 14 shows the bus routes within the study area.

	Destinations	Days of Operation	Schedule	Frequency
WHEELS Route 9	• WHEELS Hub • Norwalk Hospital • Cedar Street • Monroe Street • Burritt Avenue & Woodward Avenue	Monday - Friday	5:55 a.m. – 7:15 p.m.	20 minutes
		Saturday	5:55 a.m. – 6:55 p.m.	40 minutes
WHEELS Route 10	• WHEELS Hub • South Norwalk Metro-North • Roodner Court • Washington Street & Main Street • YMCA	Monday - Friday	5:51 a.m. – 7:35 p.m.	20 minutes
		Saturday	6:31 a.m. – 6:55 p.m.	40 minutes
WHEELS Route 11	• WHEELS Hub • South Norwalk Metro-North • Scribner Avenue & Connecticut Avenue • Norwalk Community College	Monday - Friday	5:40 a.m. – 8:15 p.m.	40 minutes
		Saturday	6:17 a.m. – 7:35 p.m.	40 minutes
Connecticut Avenue Shuttle	• WHEELS Hub • Maple & Van Buren • Darinor Shopping Plaza • Norwalk Community College • Connecticut Avenue & Stuart • Mathew's Park • South Norwalk Metro–North • Roodner Court • Wilson Avenue	Weekdays Evening	7:20 p.m. to 10:32 p.m.	60 minutes
		Saturday Evening	6:37 p.m. to 9:32 p.m.	60 minutes
		Sunday	8:40 a.m. to 7:25 p.m.	80 minutes
Main Avenue Shuttle	• WHEELS Hub • Stop & Shop • Merritt 7 • Wal-Mart • Washington Street & Main Street • Burritt Avenue & Water Street • Dock	Weekdays Evening	7:20 p.m. to 10:32 p.m.	60 minutes
		Saturday Evening	6:32 p.m. to 9:32 p.m.	60 minutes
		Sunday	8:40 a.m. to 7:16 p.m.	80 minutes

Table 2.1: Norwalk Transit District Bus Schedules

Figure 14: Norwalk Transit District Bus Routes

3 Analysis Methodology

3.1 Traffic Operational Analysis Methodology

The traffic operations for each intersection were analyzed based on the methodologies outlined in the Highway Capacity Manual (HCM).

The level of service (LOS) is a calculation of control delay for an intersection. It is a qualitative measure of the effect of several factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. LOS is defined by an index from A through F, with A being the best and F being the worst. The HCM lists the following definitions for each grade:

- A = Free Flow
- B = Reasonably free flow
- C = Stable flow
- D = Approaching unstable flow
- E = Unstable flow
- F = Forced flow, volume is greater than capacity

Four (4) of the intersections are signalized, while three (3) of the intersections are stop-controlled (one being all-way). The LOS for a signalized intersection is defined in terms of a weighted average control delay for the entire intersection. The LOS for all-way stop-controlled (AWSC) intersections is expressed in terms of the average delay of all movements, much like that of a signalized intersection. The LOS for the two-way stop-controlled (TWSC) is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is because major street through vehicles are assumed to experience zero delay, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements (Source: HCM 2010).

Capacity is a measurement of the ability of an intersection design to accommodate all movements within the intersection. Delay is the measure of the user quality of service.

The LOS assignments for signalized intersections as compared to delay values are shown in Table 3.1.

Level of Service	Average Delay (seconds)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Table 3.1: Signalized Intersection Level of Service Criteria

The LOS assignments for both TWSC and AWSC intersections as compared to delay values are shown in Table 3.2.

Level of Service	Average Delay (seconds)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Table 3.2: TWSC & AWSC Intersection Level of Service Criteria

Trafficware's Synchro 10/SimTraffic software was used to perform the traffic analysis. Synchro/SimTraffic implements the methods outlined in the Highway Capacity Manual (HCM) and provides delay/vehicle and queue length results.

Below are some pertinent assumptions that were used for the capacity analyses. Other inputs not described below were kept at their default values:

- Lane widths and storage bay lengths are based on pavement markings per traffic signal plans and verified on field conditions
- Grades were assumed to be level
- Right turn on red (RTOR) was assumed based on traffic signal plans and verified based on field conditions
- Signal timings were taken from signal timing plans obtained from CTDOT and the City of Norwalk
- Peak hour factors and heavy vehicles percentages were derived from traffic count data
- Pedestrian and bicycle calls per hour were assumed based on pedestrian activity at each intersection and field observations of pedestrian push button usage

In addition to level of service analyses, queue lengths were reviewed to determine adequacy of the vehicle storage at each intersection. The 95th percentile queue length was used in determining the queuing of traffic at study area intersection approaches. The 95th percentile queue is not typical of what an average driver would experience but represents the queue length where there is only a 5 percent probability of the queue length being exceeded during a peak hour.

3.2 Safety Analysis Methodology

Crash analyses were performed for all study area intersections. Crash data was downloaded from the University of Connecticut's (UConn) Crash Data Repository. UConn publishes crash data from CTDOT, which complies with the newly adopted standard in Connecticut, the MMUCC or the "Model Minimum Uniform Crash Criteria" Standard. For the purposes of this traffic study, the MMUCC data was obtained and analyzed for the latest available three-year period.

4 Traffic Operational Analysis

4.1 Traffic Data Collection

WSP coordinated with CTDOT and the City of Norwalk to obtain the latest available traffic data (pre-COVID-19 conditions), which included traffic count data, and traffic signal plans.

The following sources of data were used to develop base year traffic volumes for both the Martin Luther King Jr. Drive & Monroe Street intersection and the South Main Street & Monroe Street intersection:

Traffic Engineering Technical Memo (TETM)

The following sources of data were used to obtain the turning movement counts for both the South Main Street & Henry Street intersection and the South Main Street & Woodward Avenue/Concord Street intersection.

Traffic Signal Timing Plans

The following sources of data were used to develop base year traffic volumes for the rest of the intersections:

CTDOT ArcGIS Traffic Monitoring Station Viewer (2017)

Table 4.1 summarizes the sources and year of the collected traffic data.

Intersection	Source	Year
Martin Luther King Jr Dr. & Monroe Street	TETM	2017
South Main Street & Monroe Street/Hanford Place	TETM	2017
South Main Street & Henry Street	Traffic Signal Timing Plans	2012
South Main Street & Woodward Ave/Concord St	Traffic Signal Timing Plans	2012
Woodward Avenue & Grove Street	CTDOT ArcGIS Traffic Monitoring Station Viewer	2017
Woodward Avenue & Route 136 (Burritt Avenue)	CTDOT ArcGIS Traffic Monitoring Station Viewer	2017
Woodward Avenue & Route 136 (Meadows Street)	CTDOT ArcGIS Traffic Monitoring Station Viewer	2017

Table 4.1: Traffic Data Sources

Raw traffic data is provided in Appendix J. Bicycle and pedestrian data was also collected in addition to vehicular traffic data at certain locations.

4.2 Traffic Volumes

4.2.1 TRAFFIC VOLUMES

The peak hour periods, typical of commuter, commercial and retail developments, in the Walk Bridge study area are:

AM Peak 7:00 – 9:00; Midday Peak 11:00 – 1:00; PM Peak 4:00 – 6:00; SAT Midday 11:00 – 1:00

However, the traffic generated by Manresa Island is expected to occur within the AM Peak and PM Peak period when contractors are expected to come in (AM) and come out (PM). Therefore, the AM peak and PM Peak periods were analyzed in this study. Truck deliveries will occur throughout the day. For this study, they were assumed to come and go during the AM and Pm Peak periods as described below in Section 4.2.2.

The turning movement counts (TMC) for these three intersections were not available:

- Woodward Avenue & Grove Street
- Woodward Avenue & Route 136 (Burritt Avenue)
- Route 136 (Woodward Avenue) & Route 136 (Meadows Street)

The most recent Average Daily Traffic (ADT) for Woodward Avenue, Burritt Avenue, and Route 136 (Meadows Street) were used to develop the TMC. From the ADT for each of these roads, the turning movement volumes were proportionally calculated based on the ADT from each of the approaches at a given intersection. Once the TMC were calculated for each of the intersections, the volumes were balanced between the South Main Street & Woodward Avenue/Concord Street intersection and the Woodward Avenue & Grove Street intersection. This way, the traffic entering and exiting the Woodward Avenue & Grove Street intersection matches the volume entering and exiting the South Main Street & Woodward Avenue/Concord Street intersection taken from the available TMC at this intersection.

Given that the construction is expected to last 60 months, a growth factor was applied for each of the TMC to grow the volume to 2024 conditions. The growth factor was calculated from the available historical ADT counts in the area. Table 4.2 shows the calculated growth factor.

Location	2011 ADT	2017 ADT	Growth Rate
Martin Luther King Jr. Drive	13,000	13,700	0.88%
Monroe Street	5,800	7,000	3.18%
South Main Street	8,900	9,300	0.74%
Woodward Avenue (north of Grove Street)	5,000	4,200	-2.86%
Route 136 (Woodward Avenue, south of Burritt Avenue)	8,000	9,800	3.44%
Route 136 (Burritt Avenue)	5,400	6,600	3.40%
Route 136 (Meadows Street)	6,100	6,100	0.00%
Average Growth Rate			1.25%

Table 4.2: Average Growth Factor

The 2024 traffic volumes for each intersection are shown in Appendix A.

4.2.2 MANRESA ISLAND TRIP GENERATION

The trips generated by Manresa Island will consist of:

1. Trucks trips carrying materials and equipment, and
2. Vehicle trips

The expected trips generated by Manresa Island are presented in the following subsections.

TRUCK TRIPS

There are two scenarios regarding truck trips, a short-term and long-term. The short-term scenario involves the installation of the stone storage pad and will last two weeks at the beginning of the construction and two weeks at the end of the construction. The long-term scenario involves the construction activities and is expected to last 48 months.

Short-Term

For the installation of the stone storage pad, a total of 125-140 dump truck trips are expected at the beginning of the job over a two-week period to lay the stone. Then over a two-week period, there will be 125-140 dump truck trips at the end of the job to remove the stone. This translates to a maximum of 14 truck roundtrips per day (14 trucks in and 14 trucks out). These dump trucks will be using the Truck Route A (under 13'-9"). During the 8-hour work period, this translated to approximately 2 truck trips per hour.

Long-Term

During construction activities, the expected truck trips to Manresa Island will be composed of 480 tractor trailer loads and 480 straight delivery trucks for a total of 960 truck trips over 48 months. Deliveries will be during the day. Night and weekend deliveries will be very rare. The approximate load counts are:

Lift span, 180

Lift tower, 190

Crane mats, pipe piling, sheet piling, 280

Mechanical/operating equipment, 60

Erection/yard materials, 120

Rebar, 60

Precast structural components, 70

The 960 truck trips over 48 months translate to about 5 truck roundtrips per week (5 trucks in and 5 trucks out). However, it is estimated that there will be a maximum of 3 truck roundtrips in any single day (3 trucks in and 3 trucks out). Out of these 3 truck roundtrips, it is assumed that 2 will be using Truck Route A (under 13'-9") and 1 will be using Truck Route B (over 13'-9"). For the purpose of the traffic analysis, it will be assumed that the trips will be done during the peak hours.

VEHICLE TRIPS

Vehicle trips will consist of employees destined to Manresa Island. During construction activities, it is estimated a total of 20 personal vehicles per day (20 vehicles in and 20 vehicles out). These are composed of:

Span erection crew, 12-14 personnel

Yard crew, 4-6 personnel

CTDOT crew, 2 personnel

TRIP GENERATION SUMMARY

Although the short-term activities will have more truck trips per week than the long-term activities, it is expected that the vehicle trips will not be as high. However, for analysis purposes, the long-term activities will be analyzed using the 3 trucks trips during the peak hours, which will be one truck higher than the short-term activities which

carries an average of 2 truck trips per hour. Therefore, the long-term activities are analyzed as the worst-case scenario.

For traffic analysis purposes, the trips going in are assumed to be in the AM Peak, while the trips going out are assumed to be in the PM Peak. Table 4.3 summarized the Manresa Island trip generation.

	AM Peak		PM Peak	
	In	Out	In	Out
Truck Trips	3	0	0	3
Vehicle Trips	20	0	0	20

Table 4.3: Manresa Island Daily Trip Generation

4.2.3 MANRESA ISLAND TRIP DISTRIBUTION

The trips generated by Manresa Island construction activities will be distributed based on the truck sizes, and the origin and destination of the Manresa Island personnel.

TRUCK TRIPS

The truck trips will be distributed according to their sizes and will use these two routes:

- Truck Route A – for trucks under 13'-9" height (Figure 2 and Appendix B)
- Truck Route B – for trucks over 13'-9" height (Figure 3 and Appendix C)

Out of the 3 truck trips, 2 trucks will use Truck Route A, and 1 truck will use Truck Route B.

Appendix D shows the additional truck volume at the each of the critical intersections.

VEHICLE TRIPS

There is a total of 20 vehicle trips per day generated by Manresa Island construction activities. It is assumed that 10 vehicle trips will be coming from northbound I-95, while the other 10 vehicle trips will be coming from southbound I-95.

For vehicles traveling northbound I-95, the shortest route would be I-95 Exit 14, Fairfield Avenue, Washington Street, South Main Street, Woodward Avenue, and Longshore Avenue as shown in Figure 15 and Appendix E.

For vehicles traveling southbound I-95, the I-95 Exit 16, East Avenue, Van Zant Street, Route 136 (Washington Street), Route 136 (Water Street), Route 136 (Burritt Avenue), Route 136 (Woodward Avenue), and Longshore Avenue as shown in Figure 16 and Appendix F.

Appendix G shows the additional vehicle volume at each of the critical intersections based on the trip distribution.

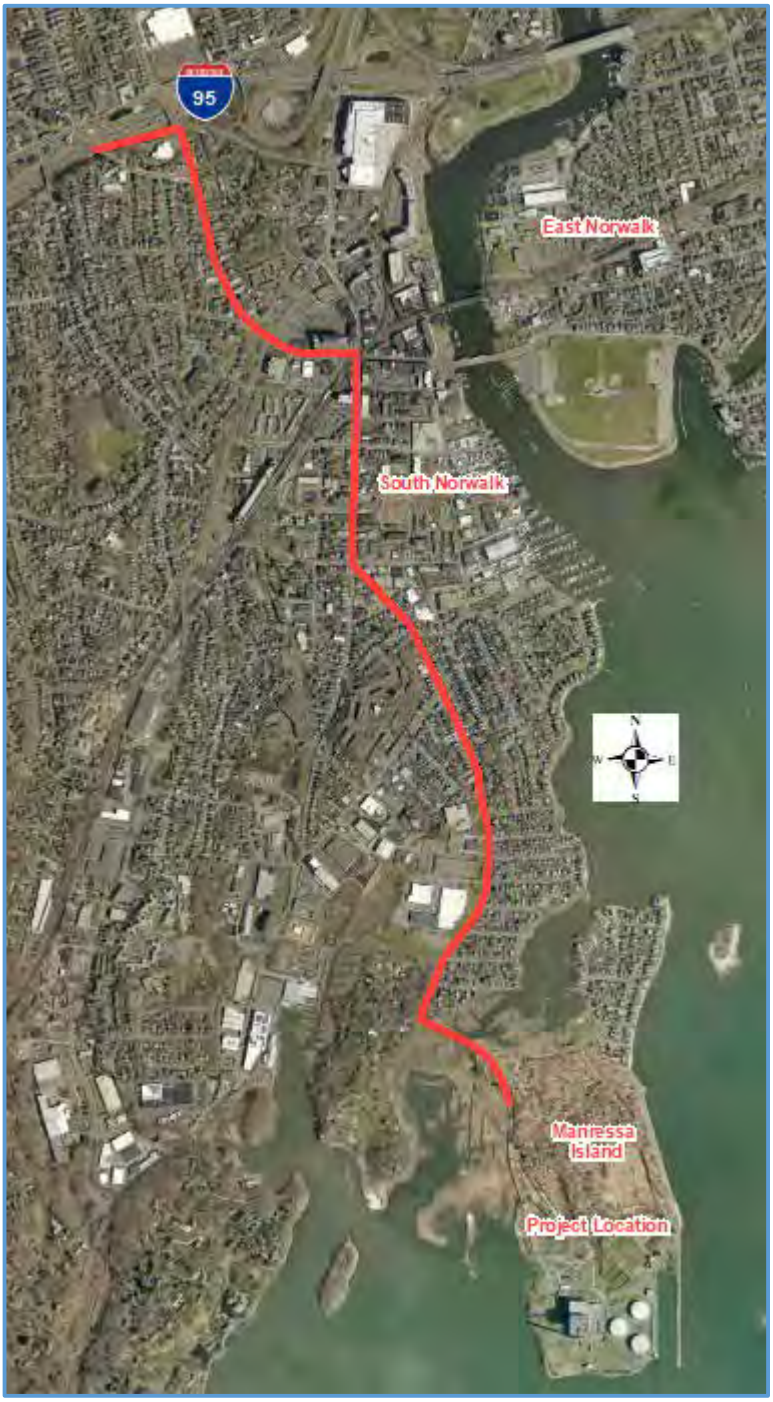


Figure 15: Vehicle Route – Northbound I-95 Vehicles

Figure 16: Vehicle Route – Southbound I-95 Vehicles

4.2.4 MANRESA ISLAND TRAFFIC VOLUMES

The additional Manresa Island traffic volumes for each of the critical intersections were added to the existing traffic volumes for both the AM peak and the PM peak. The resulted traffic volumes are shown in Appendix H.

4.3 Traffic Modeling & Analysis

Synchro 10 models were developed for the weekday AM peak hour, and PM peak hour. In addition to traffic volumes, other traffic data such as peak hour factors, heavy vehicle percentages and existing signal timings were compiled and inputted into the models. The Synchro network volumes were balanced as necessary to achieve a more realistic model. Site visits were performed to support the development of the traffic model. Google Earth satellite data was also utilized to gather additional site-specific information.

The results of the traffic operations for each of the critical intersections are shown in the following tables. The tables compare the existing conditions without the Manresa Island traffic and the existing conditions with the Manresa Island traffic. The operational results are also shown in Appendix I. The Synchro outputs are shown in Appendix K.

Table 4.4: Synchro Analysis Results – Martin Luther King Jr. Drive & Monroe St

Table 4.5: Synchro Analysis Results – South Main Street & Monroe St/Hanford Pl

Table 4.6: Synchro Analysis Results – South Main Street & Henry St

Table 4.7: Synchro Analysis Results – South Main Street & Woodward Ave/Concord St

Table 4.8: Synchro Analysis Results – Woodward Avenue & Grove St

Table 4.9: Synchro Analysis Results – Woodward Avenue & Route 136 (Burritt Ave

Table 4.10: Synchro Analysis Results – Woodward Avenue & Route 136 (Meadows Street)

Table 4.11 shows the overall intersection delays and LOS for each critical intersection.

Movement		2024 Conditions						2024 Conditions + Manresa Island Traffic					
Approach	Lane Group	Weekday AM Peak			Weekday PM Peak			Weekday AM Peak			Weekday PM Peak		
		Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]
Northbound MLK Jr. Dr	TR	15.2	B	195	14.6	B	220	15.2	B	195	14.6	B	221
Southbound MLK Jr. Dr.	L	7.9	A	95	6.3	A	91	7.9	A	96	6.3	A	91
	T	7.8	A	225	4.5	A	98	7.8	A	225	4.5	A	98
Westbound Monroe St	L	47.3	D	116	48.1	D	91	47.4	D	116	48.3	D	89
	R	25.7	C	112	25.9	C	128	25.7	C	113	26.6	C	128

1 Delay is reported in seconds per vehicle.

2 95th Queue Delay is reported in feet.

Table 4.4: Synchro Analysis Results – Martin Luther King Jr. Drive & Monroe Street

Movement		2024 Conditions						2024 Conditions + Manresa Island Traffic					
Approach	Lane Group	Weekday AM Peak			Weekday PM Peak			Weekday AM Peak			Weekday PM Peak		
		Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]
Northbound S. Main St	LTR	27.8	C	353	27.4	C	257	27.6	C	352	26.4	C	260
Southbound S. Main St	LT	19.2	B	145	19.9	B	184	19.3	B	168	19.0	B	184
	R	3.7	A	< 25	4.1	A	< 25	3.7	A	< 25	4.0	A	< 25
Eastbound Monroe St	L	17.9	B	63	18.8	B	68	18.0	B	64	19.6	B	68
	TR	15.2	B	81	18.4	B	142	15.4	B	82	19.3	B	142
Westbound Hanford Pl	LTR	24.3	C	167	22.8	C	96	24.4	C	167	23.6	C	96

1 Delay is reported in seconds per vehicle.

2 95th Queue Delay is reported in feet.

Table 4.5: Synchro Analysis Results – South Main Street & Monroe St/Hanford Place

Movement		2024 Conditions						2024 Conditions + Manresa Island Traffic					
Approach	Lane Group	Weekday AM Peak			Weekday PM Peak			Weekday AM Peak			Weekday PM Peak		
		Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]
Northbound S. Main St	LT	0.6	A	< 25	1.1	A	< 25	0.6	A	< 25	1.1	A	< 25
Southbound S. Main St	TR	0.3	A	< 25	0.3	A	< 25	0.3	A	< 25	0.3	A	< 25

1 Delay is reported in seconds per vehicle.

2 95th Queue Delay is reported in feet.

Table 4.6: Synchro Analysis Results – South Main Street & Henry Street

Movement		2024 Conditions						2024 Conditions + Manresa Island Traffic					
Approach	Lane Group	Weekday AM Peak			Weekday PM Peak			Weekday AM Peak			Weekday PM Peak		
		Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]
Northbound S. Main St	LTR	13.7	B	184	11.9	B	125	13.7	B	184	12.3	B	128
Southbound S. Main St	LTR	24.7	C	317	11.0	B	138	26.0	C	339	11.5	B	138
Eastbound Concord St	L	40.2	D	58	41.8	D	38	40.2	D	58	41.8	D	38
	TR	34.1	C	59	39.8	D	65	34.1	C	59	39.8	D	65
Westbound Concord St	LTR	2.1	A	<25	7.8	A	26	2.1	A	< 25	7.8	A	< 25
Northwest-bound Woodward Ave	LTR	27.2	C	144	27.9	C	152	27.2	C	144	28.7	C	161

1 Delay is reported in seconds per vehicle.

2 95th Queue Delay is reported in feet.

Table 4.7: Synchro Analysis Results – South Main Street & Woodward Ave/Concord Street

Movement		2024 Conditions						2024 Conditions + Manresa Island Traffic					
Approach	Lane Group	Weekday AM Peak			Weekday PM Peak			Weekday AM Peak			Weekday PM Peak		
		Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]
Northbound Woodward Ave	LTR	1.4	A	< 25	1.2	A	< 25	1.4	A	< 25	1.2	A	< 25
Southbound Woodward Ave	LTR	0.0	A	< 25	0.0	A	< 25	0.0	A	< 25	0.0	A	< 25
Eastbound Grove St	LTR	10.4	B	< 25	10.8	B	< 25	10.5	B	< 25	10.9	B	< 25

1 Delay is reported in seconds per vehicle.

2 95th Queue Delay is reported in feet.

Table 4.8: Synchro Analysis Results – Woodward Avenue & Grove Street (One-Way Stop Controlled)

Movement		2024 Conditions						2024 Conditions + Manresa Island Traffic					
Approach	Lane Group	Weekday AM Peak			Weekday PM Peak			Weekday AM Peak			Weekday PM Peak		
		Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]
Northbound Woodward Ave	LTR	0.0	A	< 25	0.0	A	< 25	0.0	A	< 25	0.0	A	< 25
Southbound Woodward Ave	LTR	5.3	A	< 25	4.6	A	< 25	5.1	A	< 25	4.7	A	< 25
Westbound Burritt Ave	LTR	124.0	F	444	100.5	F	370	142.4	F	486	111.1	F	389

1 Delay is reported in seconds per vehicle.

2 95th Queue Delay is reported in feet.

Table 4.9: Synchro Analysis Results – Woodward Avenue & Route 136 (Burritt Avenue)

(One-Way Stop Controlled)

Movement		2024 Conditions						2024 Conditions + Manresa Island Traffic					
Approach	Lane Group	Weekday AM Peak			Weekday PM Peak			Weekday AM Peak			Weekday PM Peak		
		Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]	Delay[1]	LOS	95th Queue[2]
Northbound Woodward Ave	LTR	15.1	C	70	14.2	B	60	15.3	C	70	15.2	C	70
Southbound Woodward Ave	LTR	22.5	C	145	18.3	C	125	20.1	C	140	18.8	C	128
Eastbound Route 136 (Meadows St)	LTR	18.2	C	120	20.7	C	130	23.2	C	150	21.3	C	135

1 Delay is reported in seconds per vehicle.

2 95th Queue Delay is reported in feet.

Table 4.10: Synchro Analysis Results – Woodward Avenue & Route 136 (Meadows Street)

(All-Way Stop Controlled)

Intersection	2024 Conditions				2024 Conditions + Manresa Island Traffic			
	Weekday AM Peak		Weekday PM Peak		Weekday AM Peak		Weekday PM Peak	
	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
MLK Jr. Dr & Monroe St	15.5	B	14.2	B	15.5	B	14.3	B
S. Main St & Monroe St	21.5	C	21.7	C	21.5	C	21.5	C
S. Main St & Henry St	0.4	A	0.8	A	0.4	A	0.8	A
S. Main St & Woodward Ave/Concord St	22.2	C	17.7	B	22.6	C	18.4	B
Woodward Ave & Grove St	1.8	A	1.7	A	1.7	A	1.6	A
Woodward Ave & Burritt Ave	47.4	E	36.7	E	54.6	F	39.7	E
Woodward Ave & Route 136 (Meadows St)	19.0	C	18.2	C	20.0	C	18.8	C

Table 4.11: Synchro Analysis Results – Overall Intersection Operations

Except for one location, the overall operational conditions for each intersection are acceptable for both the 2024 conditions and the 2024 conditions with the additional Manresa Island traffic. The intersection with the longest delays is Woodward Avenue & Route 136 (Burritt Avenue) with a LOS F during the AM Peak with the additional Manresa Island traffic. The Route 136 (Burritt Avenue) westbound approach at this intersection currently fails with a LOS F as shown in Table 4.9.

The Route 136 (Burritt Avenue) westbound approach is stop-controlled and carry between 350 to 400 vehicles per hour in the peak hours, while Woodward Avenue is free flow. It is expected that there will be an additional 10 vehicles in the AM peak for the employees heading to Manresa Island. These additional vehicles translate to an increase of 14% in delay and a 10% increase in the 95th queue length. Although there is an increase in delay and queue length, the increases are not significant. Therefore, it is expected that the additional Manresa Island traffic will not significantly affect the existing intersection operations.

5 Safety Analysis

5.1 Crash Summaries

A crash analysis was performed for six (6) intersection within the study area. Crash data was collected for the most recent three-year period (January 1, 2016-December 31, 2018) from the UConn's Crash Data Repository using the MMUCC dataset. Data from 2019 was initially evaluated but the crashes seemed to be significantly lower than the other years, therefore, 2019 was not considered in the analysis. For the purpose of the crash analysis, both the Woodward Avenue & Grove Street intersection and the Woodward Avenue & Route 136 (Burritt Avenue) intersection were considered as one intersection due to their proximity.

Table 5.1 summarizes the crash data for each study area intersections for the most recent three-year period. In addition to the amount of crashes, summaries by collision type, crash severity are shown in Table 5.2. Roadway pavement condition, and roadway lighting condition are also provided in Table 5.3.

Year	Martin Luther King Jr. Dr & Monroe St	South Main St & Monroe St	South Main St & Henry St	South Main St & Woodward Ave/ Concord St	Woodward Ave & Grove St /Route 136 (Burritt Ave)	Woodward Ave & Route 136 (Meadows St)
Crashes by Intersection						
2016	9	5	2	3	10	3
2017	6	7	7	9	5	3
2018	6	10	4	10	12	8
Total	21	22	13	22	27	14

Table 5.1: Crashes by Intersection - 3-Year Period

Type & Severity	Martin Luther King Jr. Dr & Monroe St	South Main St & Monroe St	South Main St & Henry St	South Main St & Woodward Ave/ Concord St	Woodward Ave & Grove St/Route 136 (Burritt Ave)	Woodward Ave & Route 136 (Meadows St)	Total
Collision Type							
Angle	5	4	2	2	4	1	18
Front to Front	0	0	0	1	2	0	3
Front to Rear	10	10	6	10	5	3	44
Not Applicable	1	1	2	3	2	1	10
Other	2	2	1	2	4	1	12
Unknown	1	1	2	1	1	2	8
Rear to Side	1	0	0	1	1	2	5
Rear to Rear	0	0	0	0	1	1	2
Sideswipe, Opposite Direction	0	1	0	1	0	0	2
Sideswipe, Same Direction	1	3	0	1	7	3	15
Crash Severity							
Property Damage Only (PDO)	16	20	11	14	24	11	96
Possible Injury	1	2	1	4	3	2	13
Suspected Minor Injury	4	0	1	4	0	1	10
Fatality	0	0	0	0	0	0	0

Table 5.2: Crashes by Collision Type & Severity

Type & Severity	Martin Luther King Jr. Dr & Monroe St	South Main St & Monroe St	South Main St & Henry St	South Main St & Woodward Ave/ Concord St	Woodward Ave & Grove St/Route 136 (Burritt Ave)	Woodward Ave & Route 136 (Meadows St)	Total
Road Surface Condition							
Dry	16	20	10	16	17	13	92
Wet	4	2	2	6	5	1	20
Snow	0	0	0	0	1	0	1
Slush	0	0	0	0	0	0	0
Ice / Frost	0	0	0	0	3	0	3
Mud, Dirt, Gravel	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Unknown	1	0	1	0	1	0	3
Light Condition							
Daylight	19	17	12	17	16	8	89
Dawn	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0
Dark-Lighted	2	5	1	4	9	6	27
Other	0	0	0	1	0	0	1
Unknown	0	0	0	0	2	0	2

Table 5.3: Crashes by Road Surface & Light Condition

5.2 Crash Trends & Patterns

A total of 119 crashes occurred within the study area over the three-year analysis period. Approximately eighty-one (81%) percent of crashes were minor and involved property damage only. Rear end crashes represent thirty-six (36%)

percent of all crashes in the area followed by angle crashes. Most crashes occurred under clear weather conditions, during daylight conditions, and on dry roadway surfaces.

Every intersection, except for Martin Luther King Jr Drive & Monroe Street, is experiencing an upward trend in crashes as shown Figure 17.

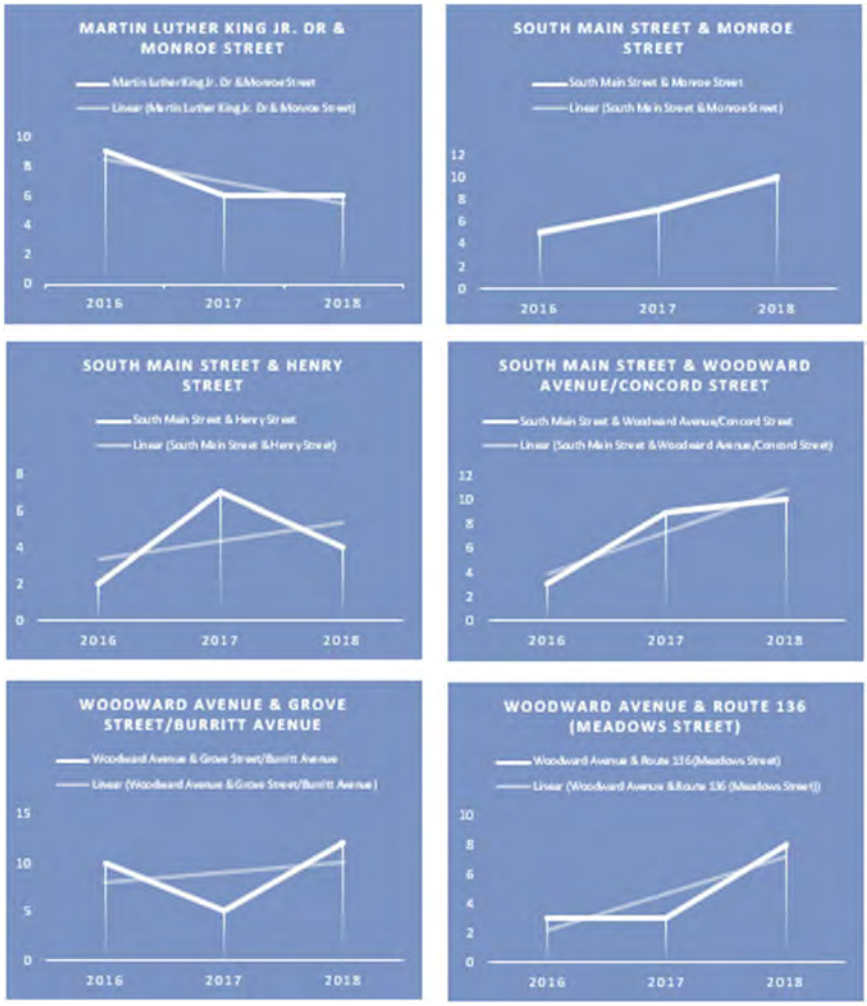


Figure 17: Crash Trends

The construction of the vertical lift span at Manresa Island is expected to last four (4) years, with a six-day week schedule that would normally run from 8 a.m. to 4 p.m. Although thirty-eight (38%) percent of the crashes occurred during the winter months (December-March), the crashes are evenly distributed throughout the year with a slight increase in those winter months. Many of the crashes occurred in the weekday between Monday and Wednesday, accounting for fifty-eight (58%) percent of the total crashes in the study area. A little over half of the crashes (51%) occurred within the 8 a.m. to 4 p.m. timeframe.

The most crash prone intersection is the Woodward & Grove Street/Route 136 (Burritt Avenue) location with an average of 9 crashes per year. Most of the crashes occurred during the daylight (76%) and involved property damage only (81%). The winter months also accounted for most of the crashes for this intersection with fifty-eight (58%) percent. For this intersection, most of the crashes also occurred in the weekday between Monday and Wednesday, accounting for fifty-eight (58%) percent of the crashes recorded at the intersection. However, for this intersection, the

crashes occurring within the 8 a.m. to 4 p.m. timeframe totaled 15 crashes or forty-five (45%) percent of the total crashes recorded at the intersection.

5.3 Crash Rates

Crash rates describe the number of crashes that occur at a given location during a specified time period divided by a measure of exposure for the same period. For intersections, the measure of exposure is the total number of vehicles entering the intersection for a year, which in this case, it would be the AADT. The intersection crash rates, expressed as Million Entering Vehicles (MEV) is as follow:

$$Crash\ Rate = \frac{1{,}000{,}000 \times C}{365 \times N \times V}$$

Where,

C = Total number of intersection crashes in the study period.

N = Number of years of data.

V = Traffic volumes entering the intersection daily.

The crash rates for each of the intersections are shown in Table 5.4.

Crash Rate	Martin Luther King Jr. Dr & Monroe St	South Main St & Monroe St	South Main St & Henry St	South Main St & Woodward Ave/ Concord St	Woodward Ave & Grove St/Route 136 (Burritt Ave)	Woodward Ave & Route 136 (Meadows St)
AADT	17,200	15,500	9,300	13,500	13,500	10,000
By Total Crashes	1.12	1.30	1.28	1.49	1.83	1.28
By Fatality	0.0	0.0	0.0	0.0	0.0	0.0
By Injury	0.27	0.12	0.20	0.54	0.20	0.27
By Property Damage Only(PDO)	0.85	1.18	1.08	0.95	1.62	1.00

Table 5.4: Crash Rates

6 Conclusions & Recommendations

WSP has completed the traffic operations and safety analysis for the proposed use of Manresa Island for the construction of the vertical lift and has reached the following conclusions and recommendations:

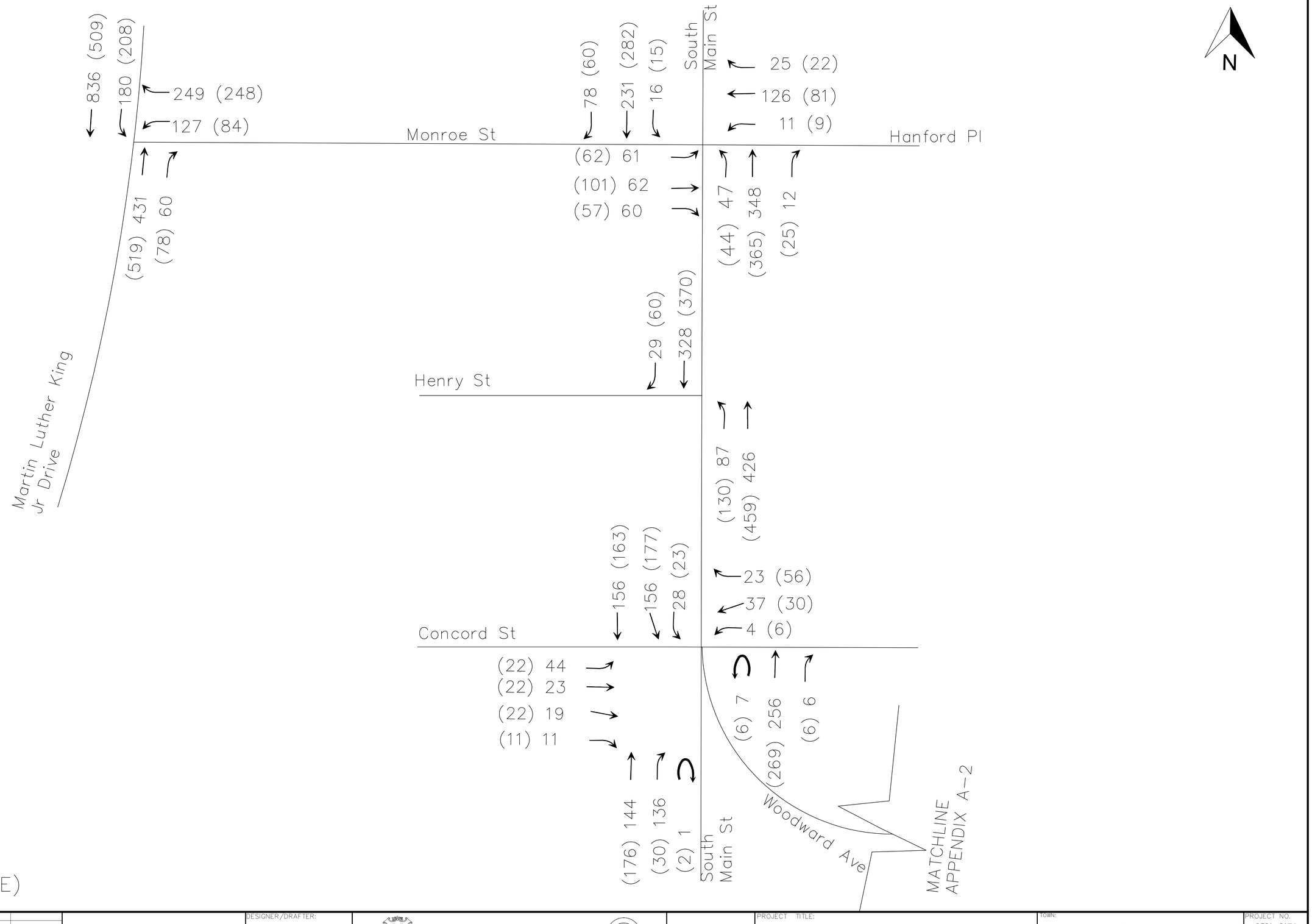
- The expected increase in trucks and vehicles destined for Manresa Island is shown to have only minor impacts in terms of traffic operations. As discussed in the study, Woodward Avenue & Grove Street/Route 136 (Burritt Avenue) is the most critical intersection. The Route 136 (Burritt Avenue) westbound approach

currently experiences high delays and the additional 20 vehicles (employees) would slightly increase these delays. This intersection also experiences a high volume of crashes with an average of 9 crashes per year. It is recommended to add pavement markings for the crosswalks on Grove Street and Burritt Avenue and trim vegetation that interferes with the sight line from Burritt Street.

- Trucks coming from Route 136 (Meadows Street) and making the right turn into southbound Woodward Avenue will have difficulties due to the acute angle of the intersection. This road is part of Truck Route B for oversized trucks. However, the oversized trucks are expected to be infrequent and it is recommended that flaggers be in place to assist with navigation through the intersection.
- There are no expected impacts to transit. Three (3) bus routes currently operate in the study area, during the expected work hours in Manresa Island, with a frequency of 20-40 minutes.
- The Monroe Street railroad underpass vertical clearance is adequate for tucks traveling on Truck Route A.
- There is currently a large industrial area on Route 136 (Meadows Street) and on Woodward Avenue (south of Route 136), that brings truck volume to the area.

APPENDIX

A 2024 TRAFFIC VOLUMES



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

CHECKED BY:

NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

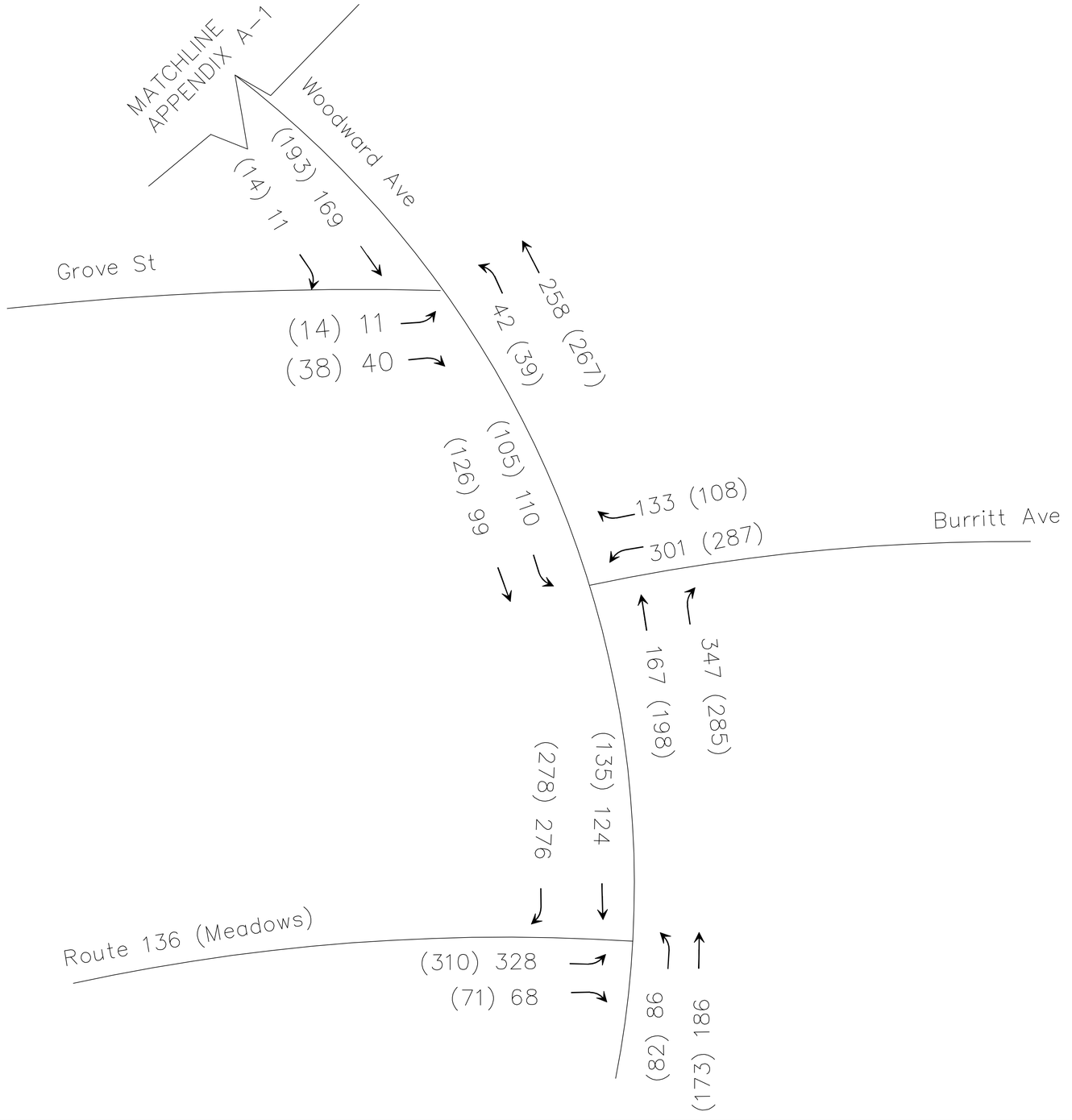
TOWN: NORWALK

DRAWING TITLE:
APPENDIX A-1
2024 TRAFFIC VOLUMES

PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

CHECKED BY:

NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX A-2
2024 TRAFFIC VOLUMES

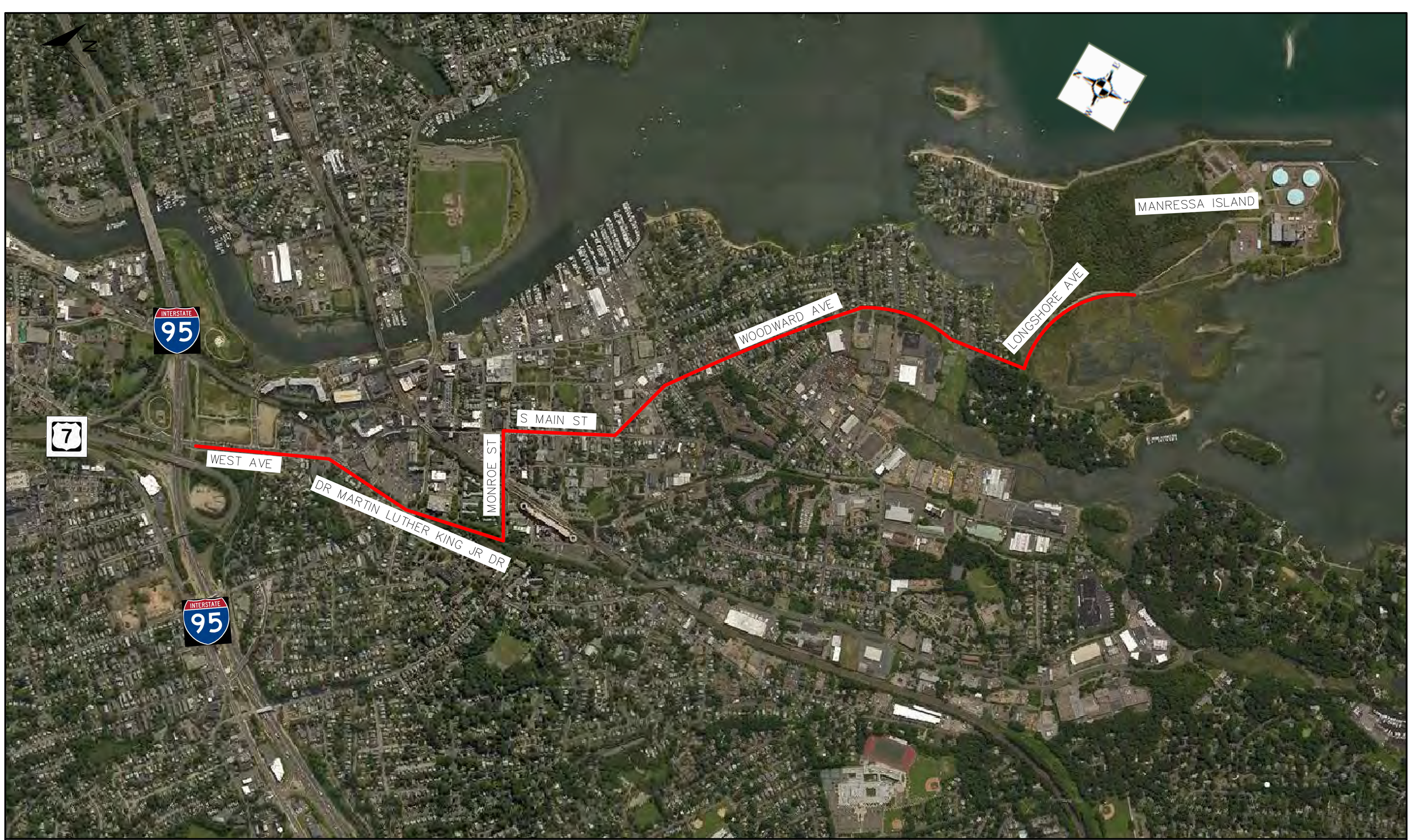
PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

B MANRESA ISLAND TRUCK ROUTE A- UNDER 13'-9"



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

CHECKED BY:

NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX B
MANRESA ISLAND ROUTE A – UNDER 13'9"

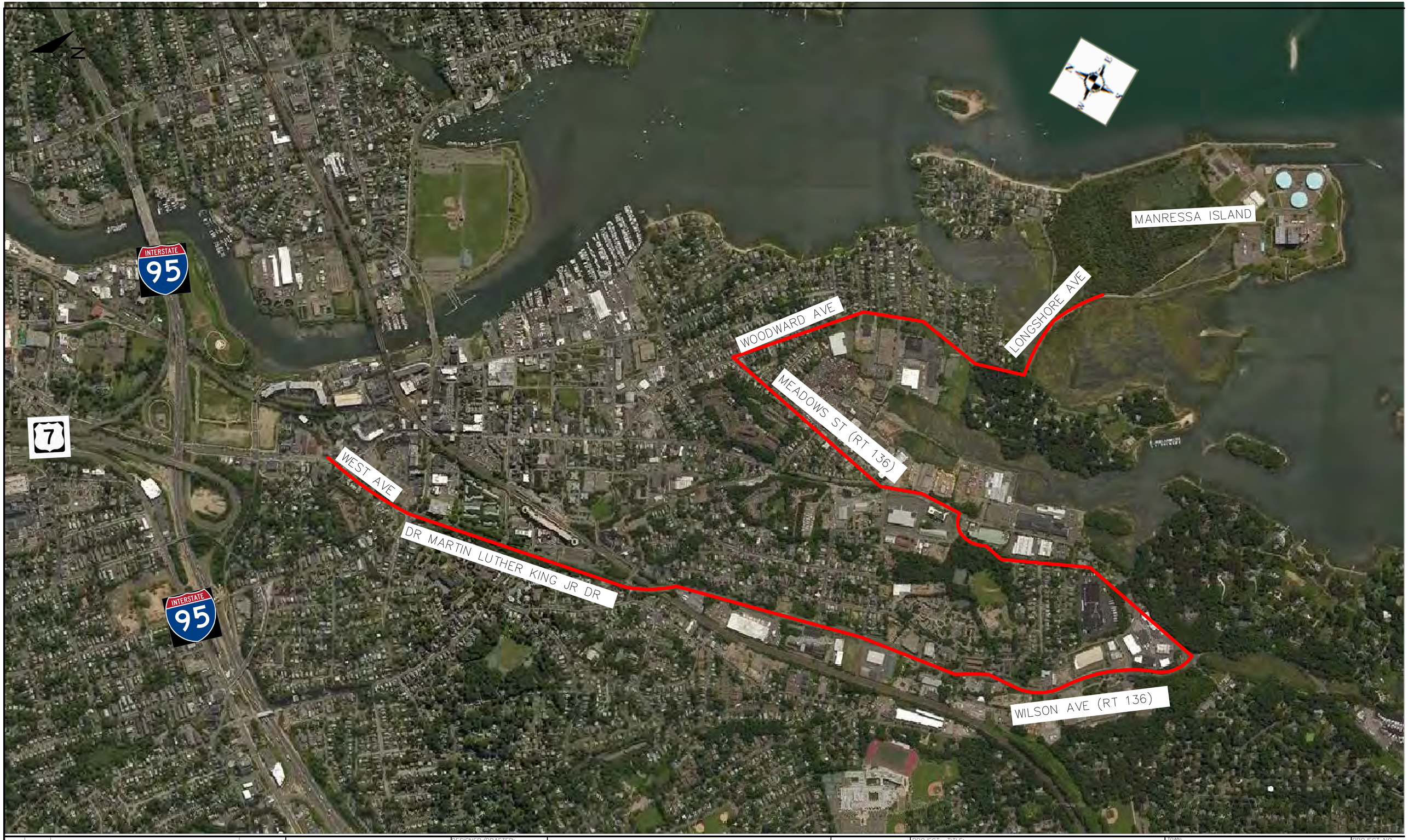
PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

C MANRESA ISLAND TRUCK ROUTE B- OVER 13'-9"



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

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SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX C
MANRESA ISLAND ROUTE B – OVER 13'9"

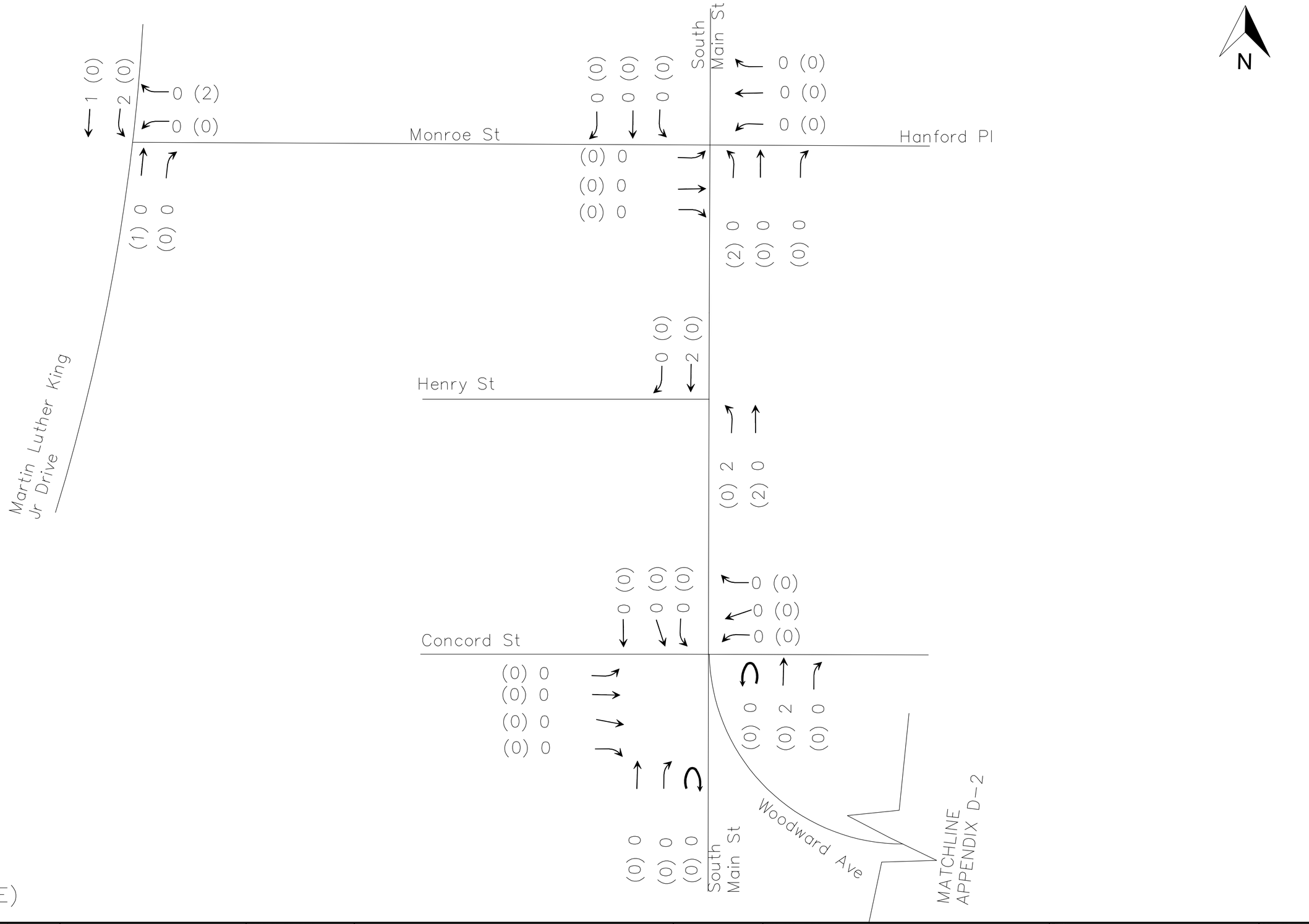
PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

D MANRESA ISLAND TRUCK VOLUME



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

CHECKED BY:

NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

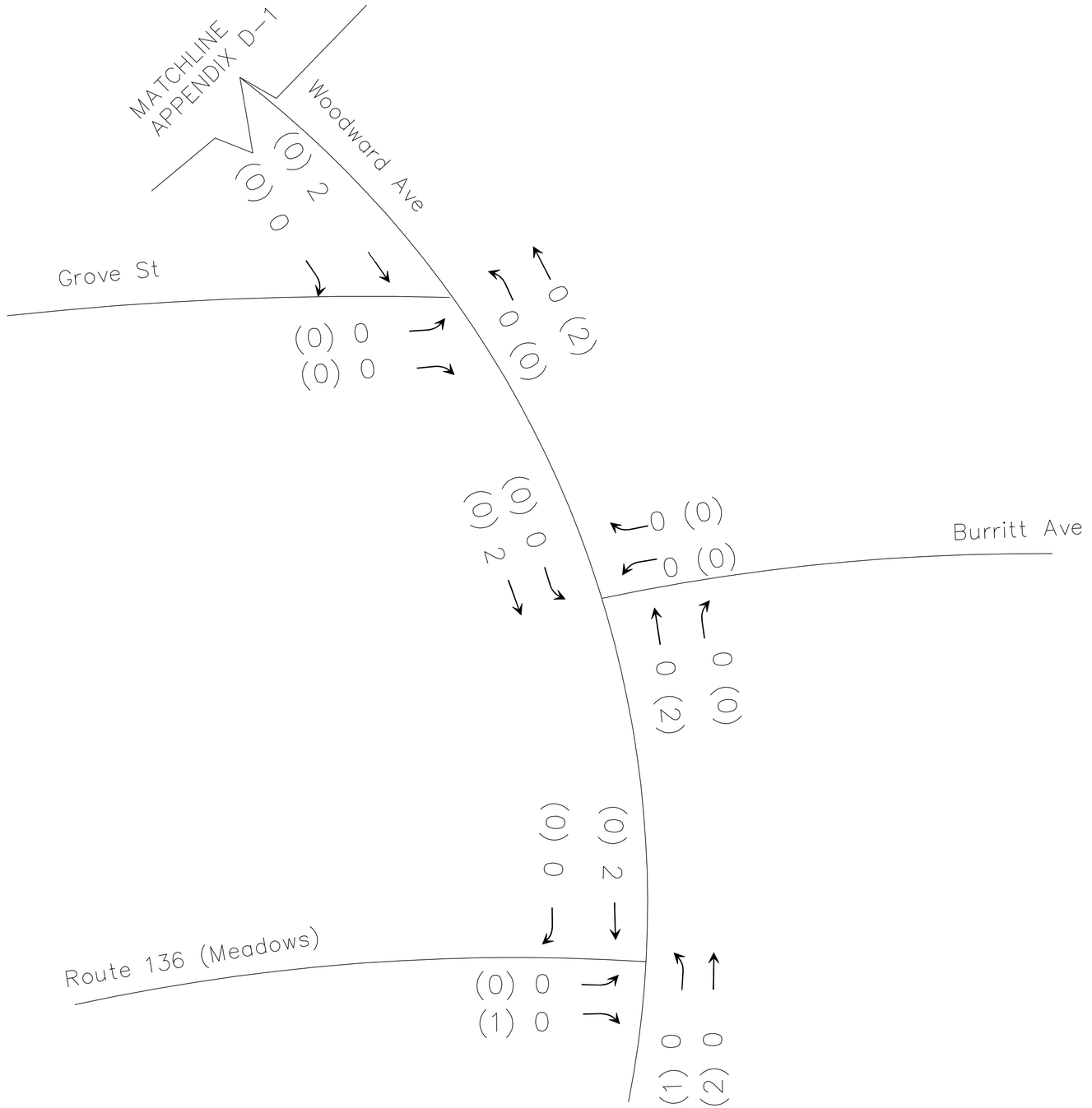
TOWN: NORWALK

DRAWING TITLE:
APPENDIX D-1
MANRESA ISLAND TRUCK VOLUMES

PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

CHECKED BY:

NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX D-2
MANRESA ISLAND TRUCK VOLUMES

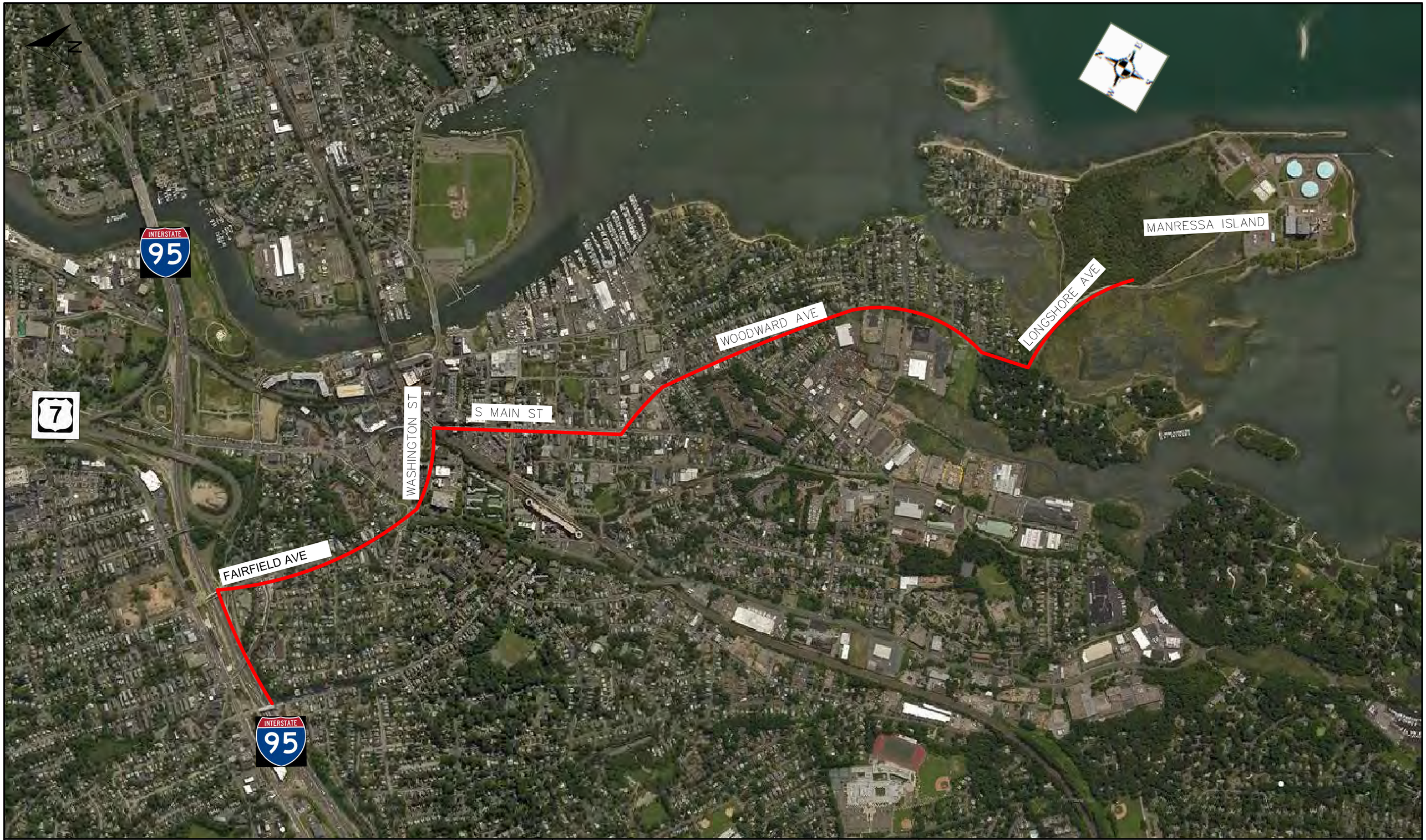
PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

E MANRESA ISLAND VEHICULAR ROUTE A- FROM NB I-95



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

CHECKED BY:

NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN:
NORWALK

DRAWING TITLE:
APPENDIX E
MANRESA ISLAND VEHICULAR ROUTE A - FROM NB I-95

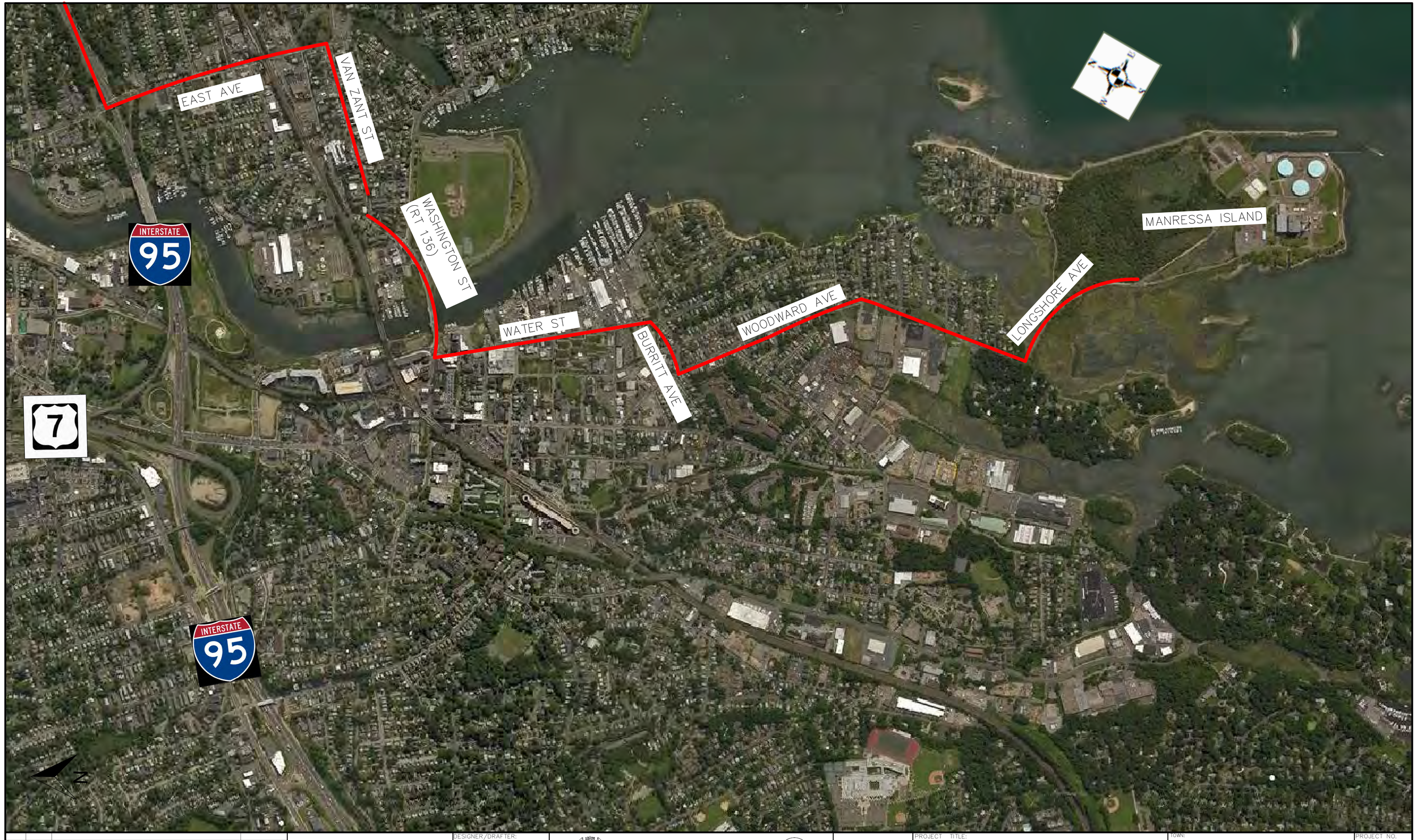
PROJECT NO.
0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

F MANRESA ISLAND VEHICULAR ROUTE B- FROM SB I-95



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

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NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX F
MANRESA ISLAND VEHICULAR ROUTE B – FROM SB I-95

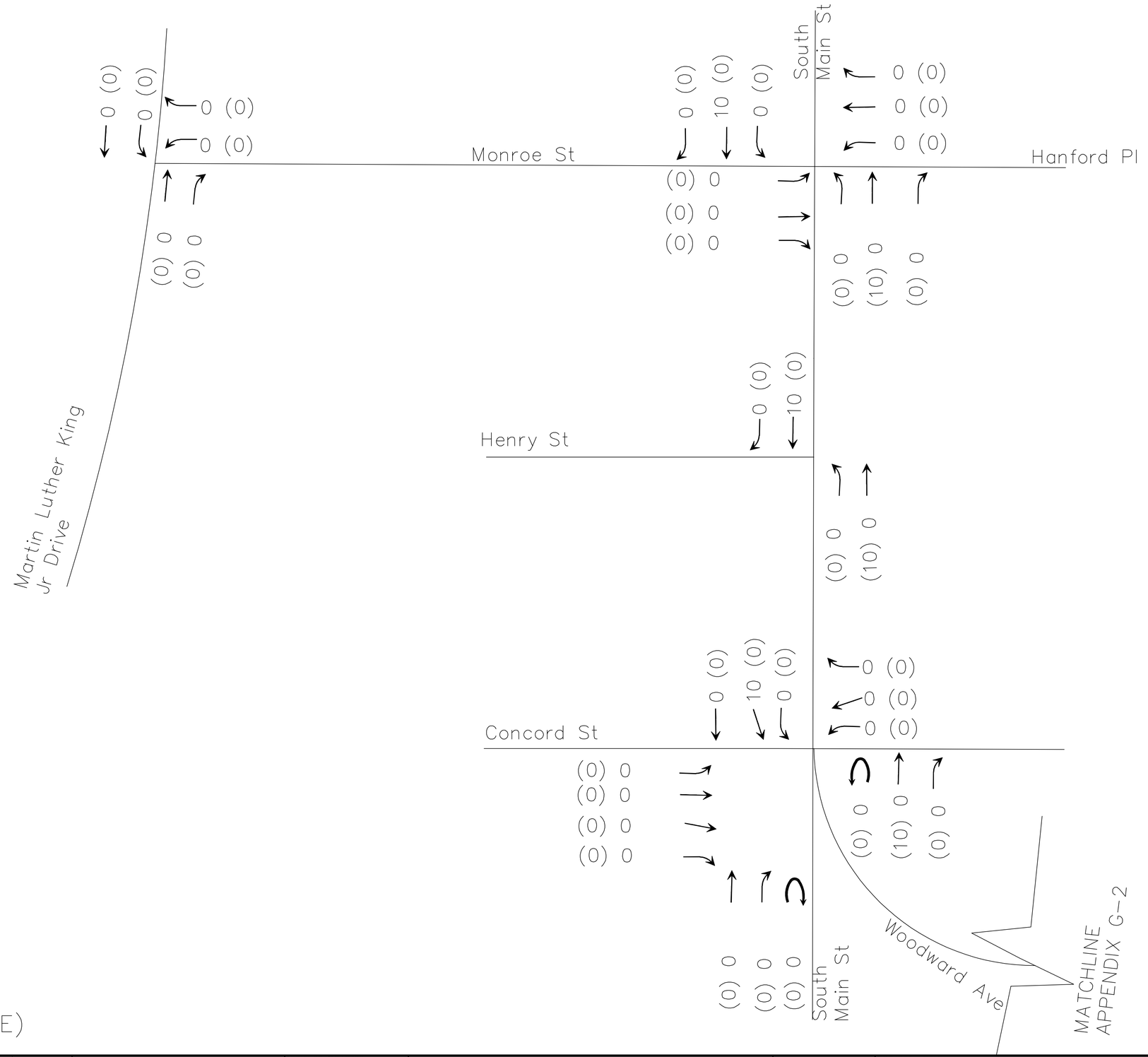
PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

G MANRESA ISLAND VEHICULAR VOLUME



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

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NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

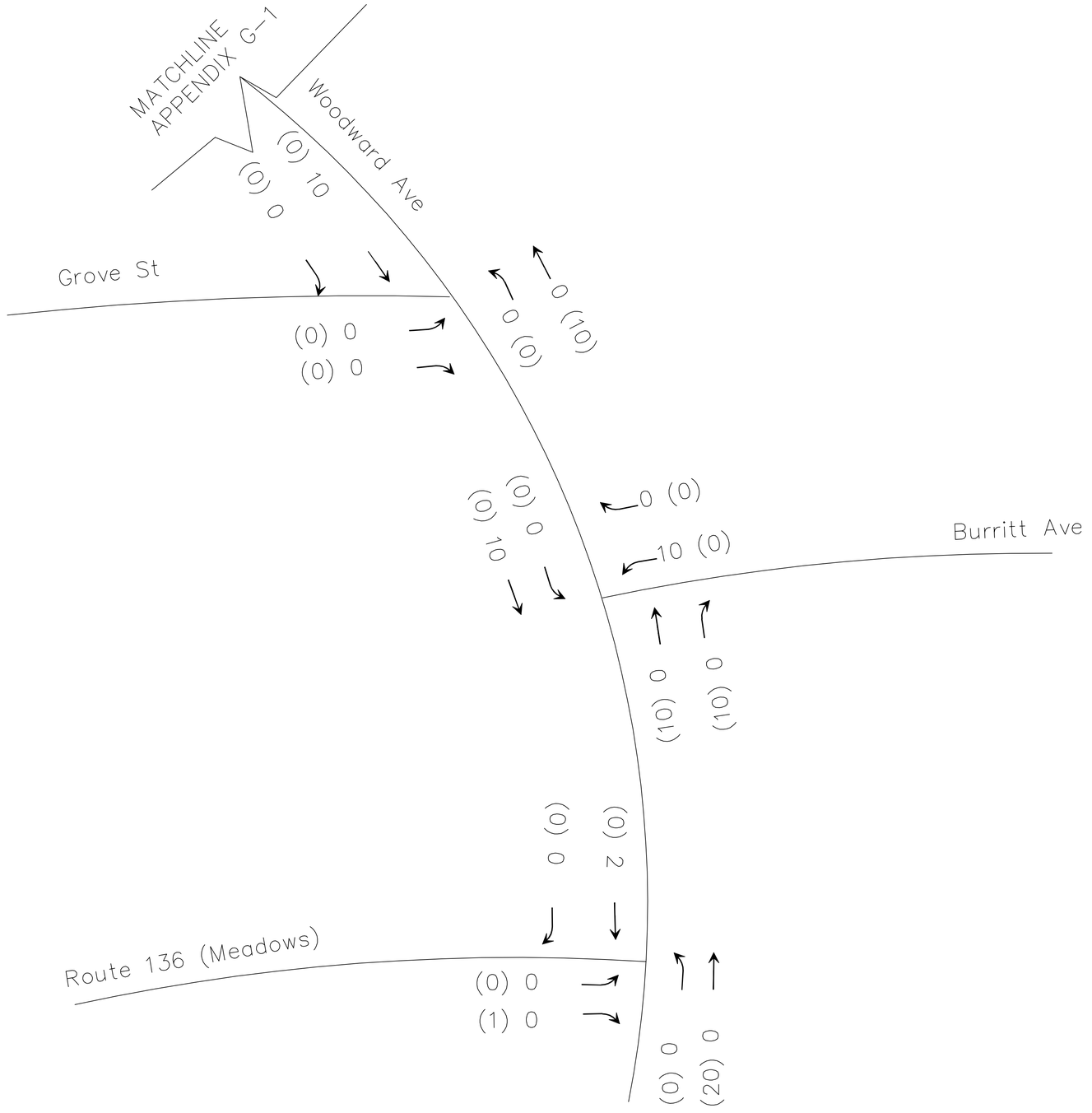
TOWN: NORWALK

DRAWING TITLE:
APPENDIX G-1
MANRESA ISLAND VEHICULAR VOLUMES

PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

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SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX G-2
MANRESA ISLAND VEHICULAR VOLUMES

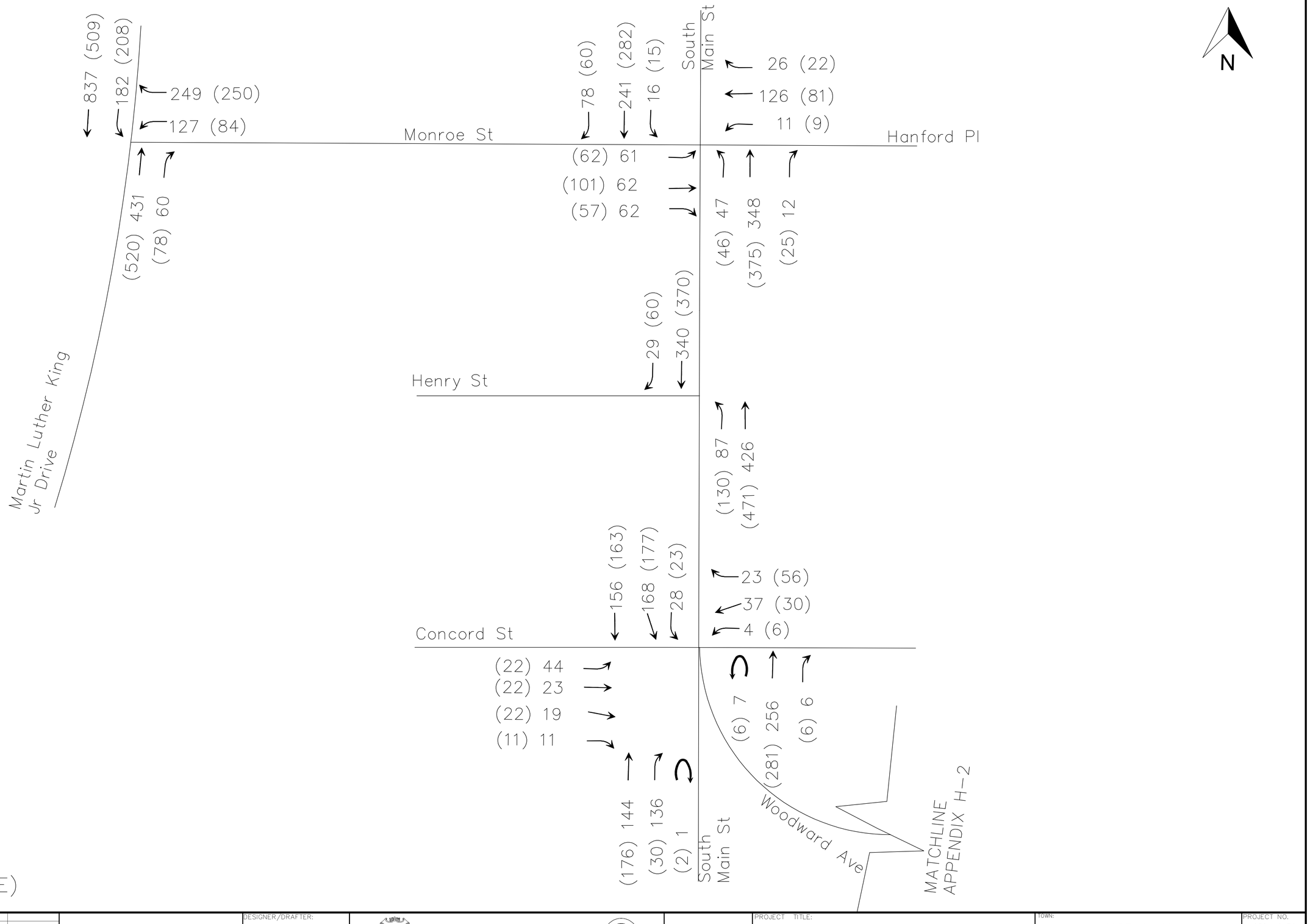
PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

H FUTURE 2024 + MANRESA ISLAND TRAFFIC VOLUMES



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:

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SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

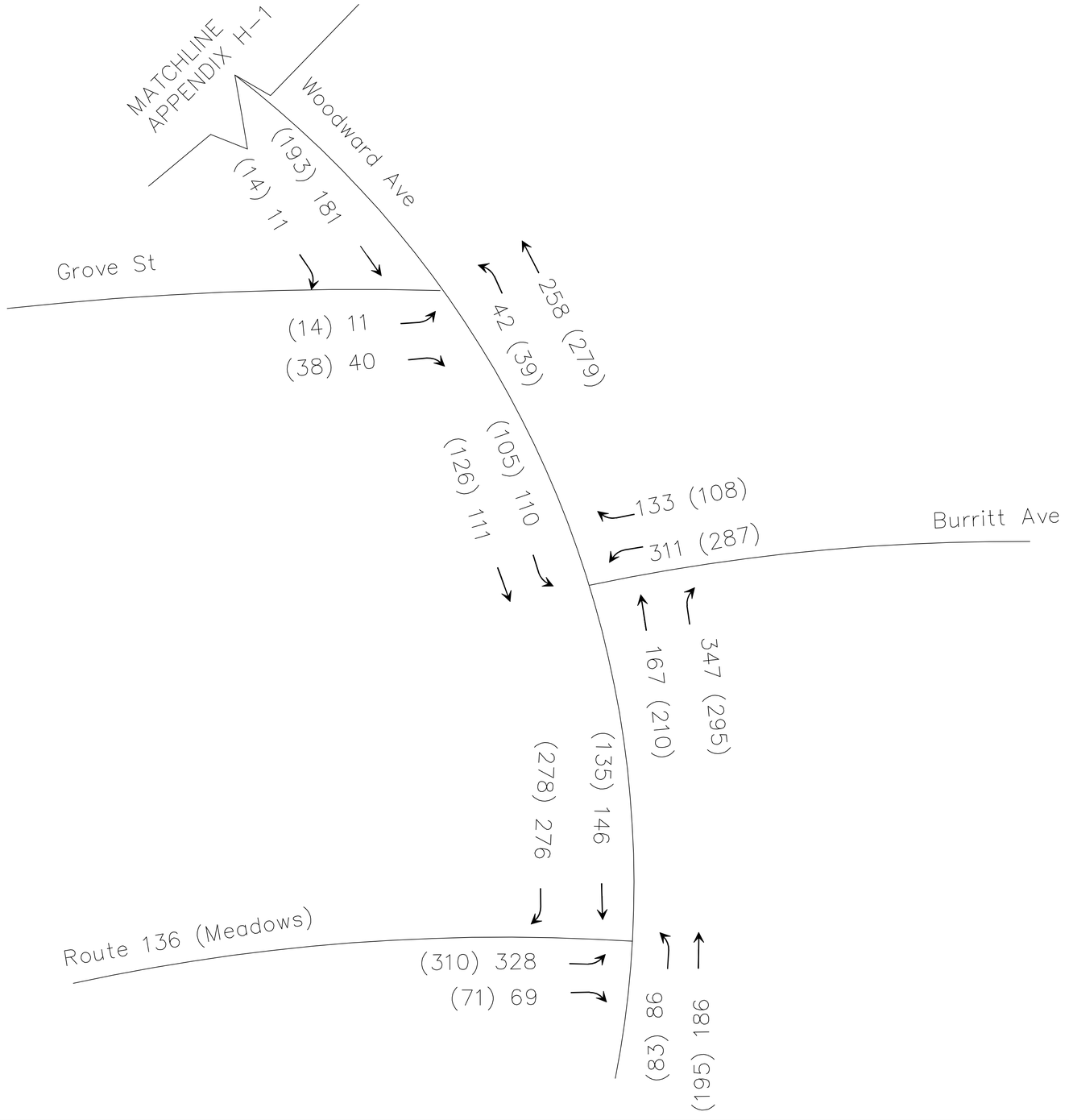
TOWN: NORWALK

DRAWING TITLE:
APPENDIX H-1
FUTURE 2024 + MANRESA ISLAND TRAFFIC VOLUMES

PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.



LEGEND

– AM VOLUME

(##) – (PM VOLUME)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX H-2
FUTURE 2024 + MANRESA ISLAND TRAFFIC VOLUMES

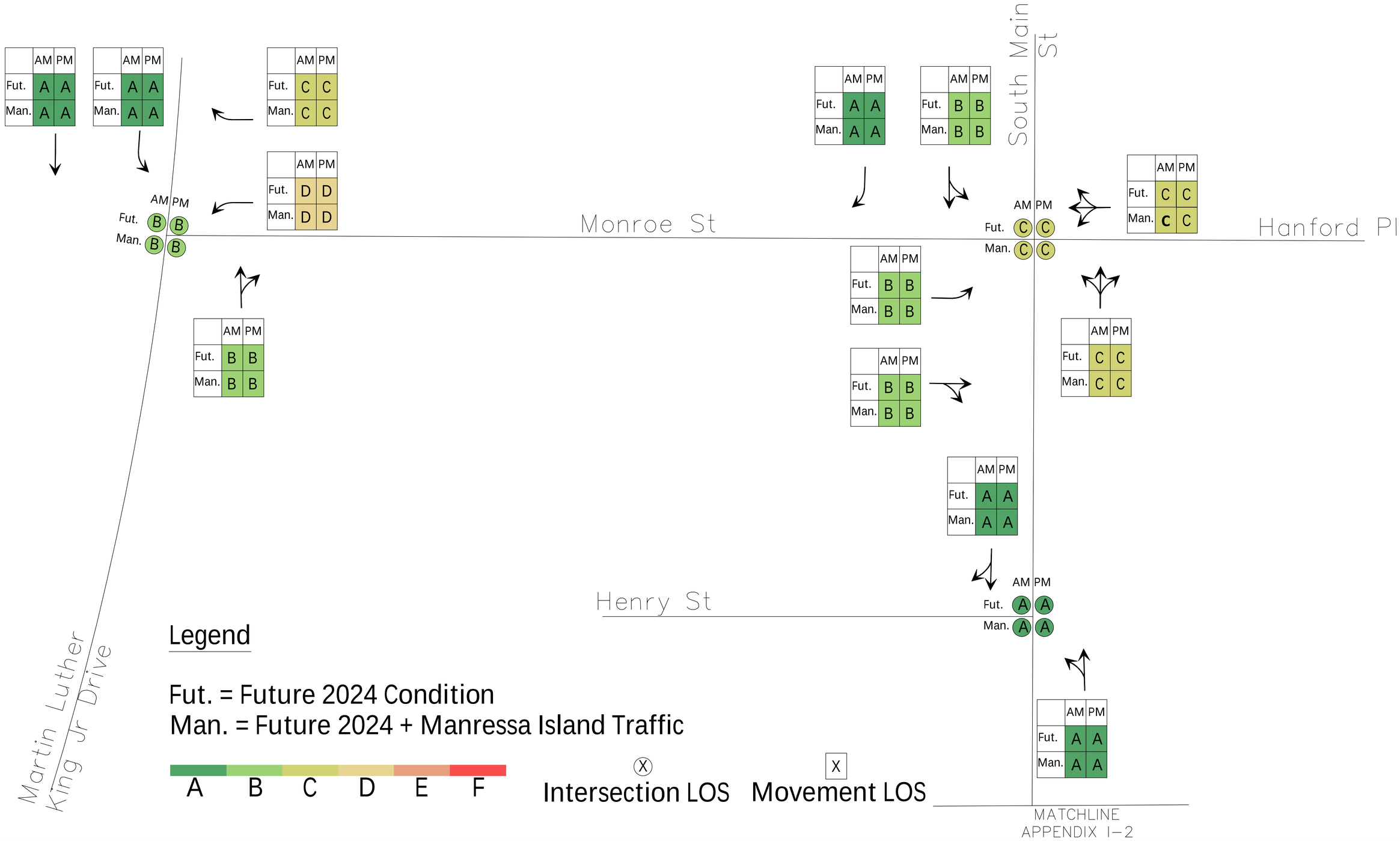
PROJECT NO. 0301-0176

DRAWING NO.

SHEET NO.

APPENDIX

I OPERATIONAL RESULTS



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DESIGNER/DRAFTER:
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME:
PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO–NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX I–1
OPERATIONAL RESULTS

PROJECT NO. 0301–0176
DRAWING NO.
SHEET NO.

MATCHLINE
APPENDIX I–1

Concord St

	AM	PM
Fut.	C	B
Man.	C	B

	AM	PM
Fut.	A	A
Man.	A	A

AM PM
Fut. C B
Man. C B

	AM	PM
Fut.	C	C
Man.	C	C

	AM	PM
Fut.	D	D
Man.	D	D

	AM	PM
Fut.	C	D
Man.	C	D

	AM	PM
Fut.	B	B
Man.	B	B

	AM	PM
Fut.	A	A
Man.	A	A

AM PM
Fut. A A
Man. A A

	AM	PM
Fut.	B	B
Man.	B	B

	AM	PM
Fut.	A	A
Man.	A	A

South Main St

Grove St

Woodward Ave

MATCHLINE
APPENDIX I–3

Legend

Fut. = Future 2024 Condition
Man. = Future 2024 + Manressa Island Traffic

A B C D E F

(X) Intersection LOS [X] Movement LOS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:
CHECKED BY:
NOT TO SCALE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO–NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK
DRAWING TITLE: APPENDIX I–2
OPERATIONAL RESULTS

PROJECT NO. 0301–0176
DRAWING NO.
SHEET NO.

MATCHLINE APPENDIX I-2

Burritt Ave

Route 136 (Meadows)

Woodward Ave

	AM	PM
Fut.	A	A
Man.	A	A

	AM	PM
Fut.	F	F
Man.	F	F

	AM	PM
Fut.	A	A
Man.	A	A

	AM	PM
Fut.	C	C
Man.	C	C

	AM	PM
Fut.	C	C
Man.	C	C

	AM	PM
Fut.	C	B
Man.	C	C

	AM	PM
Fut.	E	E
Man.	F	E

	AM	PM
Fut.	C	C
Man.	C	C

A B C D E F

(X) Intersection LOS

[X] Movement LOS

Legend

Fut. = Future 2024 Condition
Man. = Future 2024 + Manressa Island Traffic

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: PLOTTED DATE:

PROJECT TITLE:
BRIDGE NO. 03691R REPLACEMENT
METRO-NORTH RAILROAD MP42.14
OVER EAST AVENUE

TOWN: NORWALK

DRAWING TITLE:
APPENDIX I-3
OPERATIONAL RESULTS

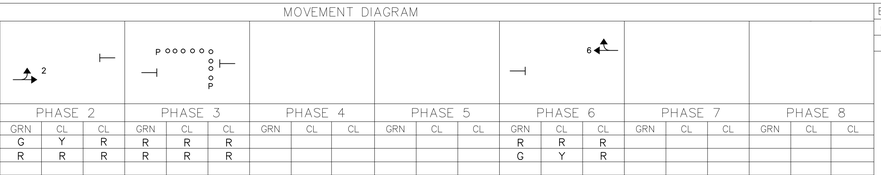
PROJECT NO. 0301-0176
DRAWING NO.
SHEET NO.

APPENDIX

J TRAFFIC COUNTS

MOVEMENT DIAGRAM

NONE



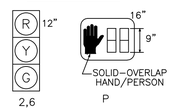
NTOR		PHASE 1			PHASE 2			PHASE 3			PHASE 4			PHASE 5			PHASE 6			PHASE 7			PHASE 8		
	FLASH	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL
2	Y				G	Y	R	R	R	R							R	R	R						
6	Y				R	R	R	R	R	R							G	Y	R						
P	OFF				◄ DW ►			WØ	◄ DW ►								◄ DW ►								
					◄YIELD													◄YIELD							
MIN					10	3.0	1.0	7	8	4	0						10	3.0	1.0						
MAX					90	5.0	3.0	10	10	4	0						90	5.0	3.0						
MIN GRN					15												15								
WALK								7																	
PED CLR								8		COUNTDOWN PEDESTRIAN SIGNAL															
VEH EXT																									
MAX 1					50												50								
MAX 2					60												60								
YELLOW						3.2				4								3.2							
RED							1.9				0								1.9						
ADD INIT																									
MAX INIT																									
TBR																									
TTR																									
MIN GAP																									
MODE		OFF			MAX RECALL			NON-LOCK			OFF			OFF			MAX RECALL			OFF			OFF		
INT START					THIS PHASE												THIS PHASE								

ENERGY BY- CITY | METER # - | INTERSECTION # 53

MAINT LEVEL | SERVICE POLE- SNEW# A-33

METERED SERVICE

SIGNAL FACES



ALL INDICATIONS TO HAVE L.E.D. LAMPS.

PEDESTRIAN SIGNAL FACE TO HAVE COUNTDOWN TIMER.

CITY SIGNAL

OFFICE RECORD

STC #	SM #
SIGNAL REVISED	
SIGNAL REVISED UNDER PROJECT 102-337. NEW TRAFFIC SIGNAL EQUIPMENT INSTALLED AND CONNECTED TO COMPUTERIZED CENTRAL SYSTEM.	

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUR. OF ENGINEERING & HWY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

TRAFFIC CONTROL SIGNAL

CITY OF NORWALK
SOUTH MAIN STREET AT
HENRY STREET

REV #	TRAFFIC DATE	ELECTRICAL DATE
ENGINEER		
DRAFTER		
CHECKED BY		
SUBMITTED BY		
APPROVED BY		
DATE		

VHB Vanasse Hangen Brustlin, Inc.
Transportation & Land Development & Environmental Services
54 Tuttle Place, Middletown, Connecticut 06457-1847
Tel: 860 632-1500 & Fax: 860 632-7879

DETECTORS

IDENT	SIZE (WXL)	TURNS	MODE

PROGRAM

FUNCTION	T I M E	DAYS
FLASH	FUTURE	
PATTERN 1	0600-0900	M-F
PATTERN 2	ALL OTHER TIMES	DAILY
PATTERN 3	0900-1500	M-F
PATTERN 4	1500-1900	M-F
PATTERN 5	1000-1600	SA-SU
MAX 1	ALL OTHER TIMES	
MAX 2	FUTURE	
FREE	FUTURE	

COORDINATION TYPE- CENTRAL SYSTEM

CYCLE	OFFSET SEC	OFFSET %	PHASE SPLITS SEC/% Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	PERMIS PERIOD Ø	SEC
90	53	59	78	12	87	13		78	12	87		
80	48	60	68	12	85	15		68	12	85		
80	48	60	68	12	85	15		68	12	85		
90	50	56	78	12	85	13		78	12	85		
80	43	54	68	12	78	15		68	12	78		

SYSTEM LOC. MASTER

CITY HALL
INT# 49
INT# 50
INT# 51
INT# 52
INT# 53
INT# 54

TECHNICAL NOTES

1. STANDARD OVERLAP SKIP FEATURES APPLY
2. MANUAL AND INTERVAL ADVANCE PHASE TO BE DISCONNECTED DURING PHASE 3 PEDESTRIAN CLEARANCE INTERVAL.
3. COUNTDOWN DISPLAYS SHALL NOT BE USED DURING THE WALK INTERVAL NOR DURING THE YELLOW CHANGE INTERVAL OF A CONCURRENT VEHICULAR PHASE.
4. FLOATING FORCE-OFFS SHALL BE IN EFFECT.
5. TIMING SHOWN REFLECT FREE OPERATION. ACTUAL PHASE SPLITS TO BE DETERMINED BY THE COORDINATION PROGRAM.
6. PHASE SPLITS SHOWN REPRESENT PRELIMINARY COORDINATION DATA.

LEGEND:
R RED, Y YELLOW, G GREEN
◄R RED ARROW, ◄Y YELLOW ARROW, ◄ GREEN ARROW
WØ WALK/ PED. CLR, D.W. DON'T WALK, FL. FLASHING

CONSTRUCTION NOTES

ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE NEW, EXCEPT AS NOTED.

CONTRACTOR SHALL STAKE ALL R.O.W. PRIOR TO EXCAVATION. ALL WORK, INCLUDING ALL FOUNDATIONS SHALL BE WITHIN THE R.O.W EXCEPT AS NOTED.

INSTALL RACK BASED NEMA TS2 TYPE 1-4 PHASE CONTROLLER IN A CABINET ATTACHED TO THE MAST ARM (P) AS SPECIFIED IN THE BID DOCUMENTS.

CONTRACTOR SHALL INSTALL AN AUXILLARY EQUIPMENT CABINET (AEC) ATTACHED TO THE MAST ARM P AS SPECIFIED IN THE BID DOCUMENTS.

CONTROLLER BACK TO ALWAYS FACE THE INTERSECTION, SERVICE METERS TO BE INSTALLED ON THE SIDE OF THE CABINET.

CONTRACTOR SHALL REMOVE ALL ABANDONED TRAFFIC SIGNAL EQUIPMENT INCLUDING BUT NOT LIMITED TO FOUNDATIONS, HANDHOLES, CONDUIT RISERS & CABLE, AND STEEL POLES.

ALL HANDHOLES ARE TYPE II UNLESS OTHERWISE SPECIFIED. CONTRACTOR SHALL INSTALL HANDHOLES APPROXIMATELY 1 FOOT BEHIND CURB OR EDGE OF ROADWAY UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SHALL TELEPHONE "CALL BEFORE YOU DIG" AT 1-800-922-4455 48 HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL CONTACT UTILITY REPRESENTATIVES AND CITY AGENCIES FOUR WEEKS PRIOR TO EXCAVATION.

REPRESENTATIVE	UTILITY	TELEPHONE
FRANCO CHIEFFALO	FIRST DISTRICT WATER DEPT.	(203) 847-7387
GEORGE LEARY	THIRD TAXING DISTRICT DEPT.	(203) 838-7445
DAN HERMAN	AT&T/SBC	(866) 365-3256
BILL HUGHES	AT&T (LOCAL)	(203) 846-9063
GEORGE REBENTISCH	CABLEVISION	(203) 750-5600
JIM CALABRESE	CL&P	(203) 854-3664
RON TARINI	AT&T (LONG LINES)	(203) 269-2567
WALTER MASHECK	SOUTH NORWALK ELECTRICITY AND WATER (ELECTRICITY DEPARTMENT)	(203) 866-3366
SCOTT WHITTIER	SOUTH NORWALK ELECTRICITY AND WATER (WATER DEPARTMENT)	(203) 866-4446
DAN FITZSIMMONS	YANKEE GAS	(203) 854-6459
CONNIE BLAIR	NORWALK DEPT. OF PUBLIC WORKS CALL CENTER	(203) 854-3200

THE CONTRACTOR SHALL CONTACT MR. FRED ESHRAGHI, CITY OF NORWALK TRAFFIC ENGINEER, AT (203) 854-7791 PRIOR TO ANY EXCAVATION AND DELIVERY OF ALL SALVAGE MATERIAL.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY STATE AND CITY PERMITS, INCLUDING BUT NOT LIMITED TO: SIDEWALK, CURB, AND ROAD OPENING.

CONTRACTOR SHALL REPLACE ALL PAVEMENT MARKINGS 200 FEET ALONG ALL APPROACHES AS SHOWN ON THE PLANS. NEW STOP BARS, CROSSWALKS AND LEGENDS SHALL BE INSTALLED AS SHOWN ON THE PLANS. THE NEW PAVEMENT MARKINGS TO MATCH THE EXISTING PAVEMENT MARKINGS. ALL CONFLICTING PAVEMENT MARKINGS TO BE REMOVED.

INSTALL PAVEMENT MARKINGS IN ACCORDANCE WITH MISCELLANEOUS DETAIL SHEET # 62 "SPECIAL DETAILS AND TYPICAL PAVEMENT MARKINGS FOR TWO-WAY HIGHWAYS."

TRAFFIC SIGNAL APPURTENANCES (CONTROLLERS, MAST ARM, SPAN POLES, PEDESTALS AND HAND HOLES) WHEN IN OR ADJACENT TO SIDEWALKS SHALL BE FIELD LOCATED BY THE CONTRACTOR TO PROVIDE A FREE PATH OF NOT LESS THAN 3 FEET. ANY PROPOSED REVISIONS TO THE LOCATIONS OF THE APPURTENANCES SHOWN ON THE PLAN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY OF NORWALK TRAFFIC ENGINEER PRIOR TO INSTALLATION.

TRAFFIC SIGNAL APPURTENANCES (CONTROLLERS, MAST ARM, AND PEDESTALS) WHEN IN OR ADJACENT TO SIDEWALKS SHALL BE FIELD LOCATED BY THE CONTRACTOR TO PROVIDE A FREE PATH OF NOT LESS THAN 3 FEET.

ALL SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT HIS EXPENSE.

CONTRACTOR WILL BE REQUIRED TO TRIM TREE BRANCHES AT EACH APPROACH TO OBTAIN CLEAR SIGHTLINE TO THE SIGNAL HEADS. TREE BRANCHES SHALL BE TRIMMED BACK TO THE CURB LINE FOR A MINIMUM OF 300' FEET BACK FROM THE STOP BAR. THIS WORK SHALL BE PAID FOR UNDER ITEM NO. 0952001A "SELECTIVE CLEARING AND THINNING".

CONTRACTOR SHALL REMOVE ALL EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED SIGNS. AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PAID FOR UNDER ITEM NO. 1206023A "REMOVAL AND RELOCATION OF EXISTING SIGNS".

INSTALL SIGNS AND METAL SIGN POSTS IN ACCORDANCE WITH MISCELLANEOUS DETAIL SHEET # 55 "TYPICAL SIGNS, SUPPORTS AND SIGN PLACEMENT DETAILS" AND SHEET # 56 "TYPICAL METAL SIGN POSTS AND SIGN MOUNTING DETAILS."

CONTRACTOR SHALL TRIM ALL NECESSARY BUSHES, SHRUBS, TREES, ETC. OBSTRUCTING ANY TRAFFIC SIGNAL EQUIPMENT OR VISIBILITY OF SIGNAL HEADS.

CONTRACTOR SHALL REMOVE ALL EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED SIGNS.

CONTRACTOR SHALL REPLACE IN KIND ALL DISTURBED AREAS (CURBING, SIDEWALK, LANDSCAPE ETC.) ASSOCIATED WITH THE CONSTRUCTION OF SIGNAL EQUIPMENT. THE LIMIT OF WORK ASSOCIATED WITH THE CONSTRUCTION OF SIGNAL EQUIPMENT SHALL BE A MINIMUM OF TEN (10) FEET UNLESS OTHERWISE SPECIFIED.

ALL DISTURBED LANDSCAPE AREAS SHALL BE TREATED WITH TOP SOIL AND SEEDING PAID FOR UNDER ITEM NO. 944001 "FURNISHING AND PLACING TOPSOIL" AND ITEM NO. 950005 "TURF ESTABLISHMENT".

A VERTICAL CLEARANCE OF 16 TO 18 FEET OVER ROADWAY PAVEMENT IS REQUIRED FOR TRAFFIC SIGNALS.

CONTRACTOR TO PROVIDE FOUR SETS OF CABINET WIRING DIAGRAMS IN THE CABINET.

CONTRACTOR SHALL INSTALL 1.5" RISER ON SERVICE POLE INDICATED ON PLAN FOR ELECTRICAL SERVICE.

CONTRACTOR SHALL REPLACE THE ENTIRE SECTION OF SIDEWALK DAMAGED DUE TO INSTALLATION OF CONDUIT, HANDHOLE, OR FOUNDATION. THE SIDEWALK SHALL BE RESTORED WITHIN 48 HOURS OF DISTURBANCE.

(X) CONTRACTOR SHALL INSTALL FIBER OPTIC SPLICE ENCLOSURE IN THE HANDHOLE FOR THE INSTALLATION OF FIBER OPTIC DROP CABLE.

REV. | INTERSECTION # 53

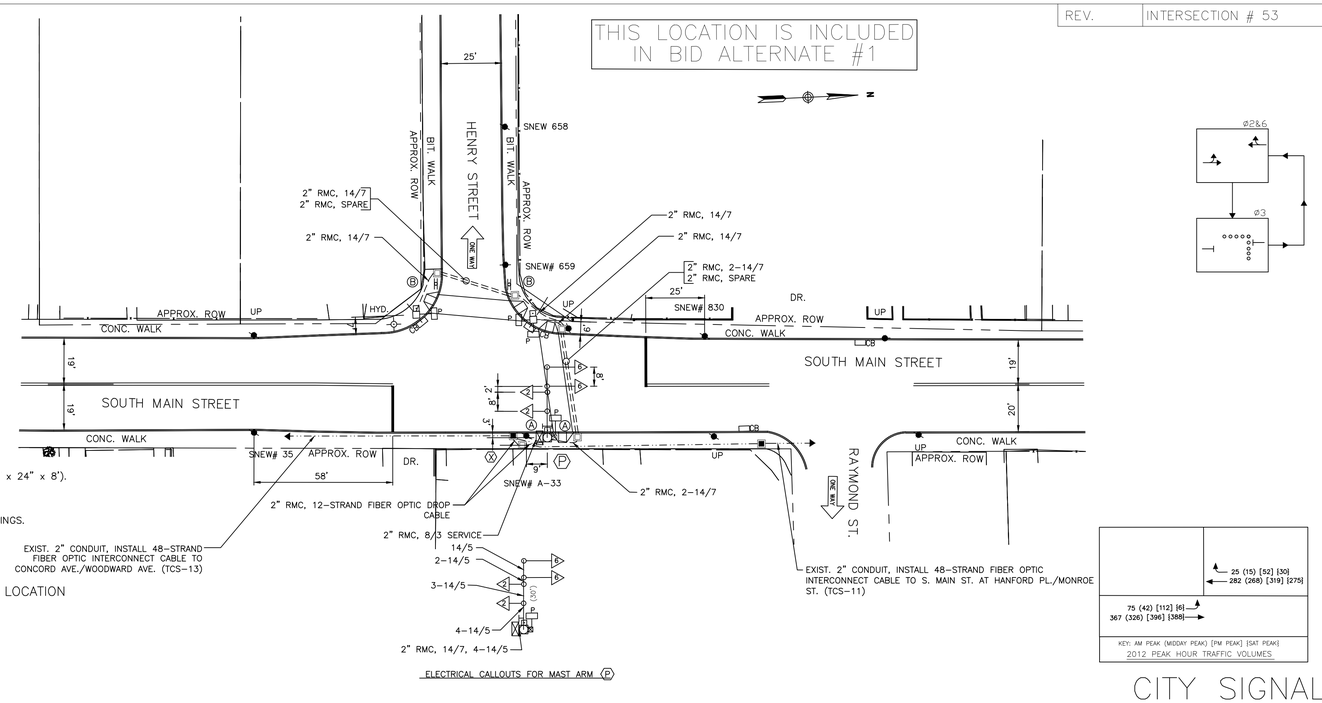
SIGN LEGEND

(A) INSTALL HENRY ST - OVERHEAD MOUNT

(B) INSTALL 31-1177Z (ONE WAY →)
31-1188Z (ONE WAY ←)

NOTE:
ALL SIGNS TO BE MAINTAINED BY THE CITY OF NORWALK

THIS LOCATION IS INCLUDED IN BID ALTERNATE #1



PAVEMENT MARKING NOTES:

WHITE CROSSWALKS TO BE BAR TYPE CROSSWALKS (24" x 24" x 8').

WHITE STOP BAR SHALL BE 24" WIDE.

ALL PAVEMENT MARKINGS SHALL BE EPOXY RESIN MARKINGS.

ALL PAVEMENT MARKINGS TO BE MAINTAINED BY THE CITY OF NORWALK.

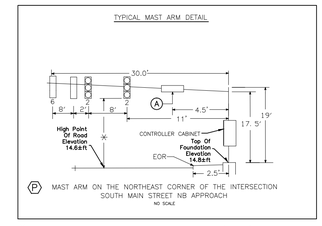
MAST ARM DESIGN CRITERIA PER SPECIFIC LOCATION

ID	SHAFT HEIGHT	ARM LENGTH	LOAD CASE
(P)	19'	30'	30-1W

ELECTRICAL CALLOUTS FOR MAST ARM (P)

25 (15) [52] {30}
282 (268) [319] {275}
75 (42) [112] {6}
367 (326) [396] {388}
KEY: AM PEAK (MIDDAY PEAK) [PM PEAK] {SAT PEAK}
2012 PEAK HOUR TRAFFIC VOLUMES

TYPICAL MAST ARM DETAIL



* DISTANCE BETWEEN ROAD AND SIGNAL HEAD SHALL BE 16' TO 18'.

CROSS SECTION IS IN LINE WITH MAST ARM.
CONTRACTOR TO VERIFY MAST ARM INFORMATION PRIOR TO ORDERING MAST ARMS, PER SPECIAL PROVISIONS.
ALL MAST ARM MOUNTED TRAFFIC SIGNALS ARE FIXED MOUNTED TO THE ARM BY THE USE OF ADJUSTABLE BRACKETS.
OPTICAL PRE-EMPTION EQUIPMENT AND STREET SIGNS TO BE FIELD LOCATED.
EOR = EDGE OF ROADWAY

CITY SIGNAL

CITY OF NORWALK
SOUTH MAIN STREET AT
HENRY STREET

LEGEND:
- PROPOSED WOOD SPAN POLE
- EXISTING WOOD SPAN POLE
- PROPOSED STEEL MAST ARM
- EXISTING STEEL SPAN POLE
- BOLLARD
- EXISTING PTZ CAMERA
- PROPOSED UTILITY POLE
- EXISTING UTILITY POLE
- PEDESTAL MOUNTING
- PEDESTRIAN PUSH BUTTON & SIGN
- ELECTRIC VAULT
- TRAFFIC SIGNAL FACE
- PEDESTRIAN SIGNAL HEAD
- AUDIBLE PEDESTRIAN SIGNAL
- LOOP DETECTOR
- PTZ CAMERA CONTROLLER
- DETECTED MOVEMENT
- SD SYSTEM DETECTOR
- OPTICAL DETECTOR
- PROPOSED CONTROLLER
- EXISTING CONTROLLER
- PROPOSED HANDHOLE
- EXISTING HANDHOLE
- PROPOSED R.M.C. (RIGID METAL CONDUIT)
- EXIST. INTERCONNECT CONDUIT
- FIBER OPTIC SPLICE ENCLOSURE
- EXISTING R.M.C. (RIGID METAL CONDUIT)
- CABLE CLOSURE
- DET. LEADS IN SAW CUT
- OVERHEAD SIGN
- VIDEO DETECTOR
- STRAIN INSULATOR
- AUXILIARY TERMINATION CABINET
- AUXILIARY EQUIPMENT CABINET
- APPROXIMATE DETECTOR AIMING ZONE

TRAFFIC CONTROL SIGNAL LAYOUT

CADD FILE NAME: TCS-12_S Main St @ Henry St.dwg
DATE PLOTTED: Apr 01, 2011
SCALE - 1"=30'

NO.	DATE	INIT.	DESCRIPTION
			REVISIONS

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: PHASE I - NORWALK TRAFFIC SIGNAL CONTROLLER/SYSTEM UPGRADE

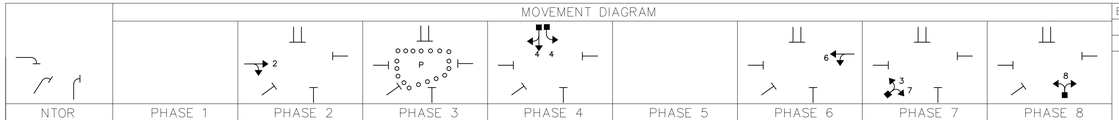
TOWN: NORWALK
DRAWING TITLE: SOUTH MAIN STREET AT HENRY STREET
PROJECT NO.: 0301-0176
DRAWING NO.: TCS-12
SHEET NO.: 34

REV. | INTERSECTION # 53

THIS LOCATION IS INCLUDED IN BID ALTERNATE #1

G:\TRAFFIC\Traffic Projects\Traffic Signal Upgrade, Phase I & II\Phase I\Traffic Signal Plan, Auto Cad\TCS-12_S Main St @ Henry St.dwg, 4/1/2011 10:23:17 AM

MOVEMENT DIAGRAM

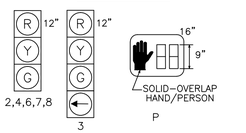


FACE #		NTOR	PHASE 1			PHASE 2			PHASE 3			PHASE 4			PHASE 5			PHASE 6			PHASE 7			PHASE 8		
		FLASH	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL
	2	Y				G	Y	R	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R
	3	R				R	R	R	R	R	R	R	R	R				R	R	R	◄G	Y	R	R	R	R
	4	R				R	R	R	R	R	R	G	Y	R				R	R	R	R	R	R	R	R	R
	6	Y				R	R	R	R	R	R	R	R	R				G	Y	R	R	R	R	R	R	R
	7	R				R	R	R	R	R	R	R	R	R				R	R	R	G	Y	R	R	R	R
	8	R				R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	G	Y	R
	P	OFF				DW			Wø	DW		DW						DW			DW			DW		
						YIELD												YIELD								
	MIN					10	3	1	7	9	4	0	6	3	1				10	3	1	6	3	1.5	10	3	1
	MAX					50	5	3	10	11	4	0	25	5	3				50	5	3	45	4	3.0	50	5	3
INTERVALS	MIN GRN					15							7						15			10			10		
	WALK								7																	
	PED CLR								9		COUNTDOWN PEDESTRIAN SIGNAL															
	VEH EXT												3									3			3		
	MAX 1					30							20						30			30			20		
	MAX 2					40							25						40			40			25		
	YELLOW						3.2				4			3.3						3.2			3.1			3.3	
	RED							2.5				0			3.4						2.5			1.6			3.4
	ADD INIT																									
	MAX INIT																									
	TBR																									
	TTR																									
	MIN GAP																									
MODE			OFF			MAX RECALL			NON-LOCK			NON-LOCK			OFF			MAX RECALL			NON LOCK			NON-LOCK		
INT START						THIS PHASE													THIS PHASE								

ENERGY BY– CITY	METER # –
MAINT LEVEL	SERVICE POLE– SNEW A–44

METERED SERVICE

SIGNAL FACES



ALL INDICATIONS TO HAVE L.E.D. LAMPS.

SIGNAL HEADS 3,4,7,8 TO HAVE 5" LOUVERED BACK PLATES.

SIGNAL HEAD 8 TO HAVE RIGHT CUT–OFF LOUVERS.

SIGNAL HEAD 2 TO HAVE LEFT CUT–OFF LOUVERS.

PEDESTRIAN SIGNAL FACE TO HAVE COUNTDOWN TIMER.

CITY SIGNAL

INTERSECTION # 54

OFFICE RECORD

STC #	SM #
SIGNAL REVISED	
SIGNAL REVISED UNDER PROJECT 102–337. NEW TRAFFIC SIGNAL EQUIPMENT INSTALLED AND CONNECTED TO COMPUTERIZED CENTRAL	

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUR. OF ENGINEERING & HWY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

TRAFFIC CONTROL SIGNAL

CITY OF NORWALK
SOUTH MAIN STREET AT
WOODWARD AVENUE/CONCORD AVENUE

REV #	TRAFFIC DATE	ELECTRICAL DATE
ENGINEER		
DRAFTER		
CHECKED BY		
SUBMITTED BY		
APPROVED BY		
DATE		

Vanasse Hangen Brustlin, Inc.
Transportation & Land Development & Environmental Services
54 Tuttle Place, Middletown, Connecticut 06457–1847
Tel: 860 632–1500 ◊ Fax: 860 632–7879

DETECTORS

IDENT	SIZE (WXL)	DELAY/EXT	MODE
D4	6' x 50'	0	VIDEO DETECTION
D4A	6' x 50'	0	VIDEO DETECTION
D7	12' x 50'	0	VIDEO DETECTION
D8	6' x 50'	0	VIDEO DETECTION
SD1	12' x 6'	0	VIDEO DETECTION
SD2	12' x 6'	0	VIDEO DETECTION
SD3	6' x 6'	0	VIDEO DETECTION
SD4	6' x 6'	0	VIDEO DETECTION
SD5	6' x 6'	0	VIDEO DETECTION
SD6	6' x 6'	0	VIDEO DETECTION
SD7	12' x 6'	0	VIDEO DETECTION
SD8	6' x 6'	0	VIDEO DETECTION

PROGRAM

FUNCTION	TIME	DAYS
FLASH	FUTURE	
PATTERN 1	0600–0900	M–F
PATTERN 2	ALL OTHER TIMES	DAILY
PATTERN 3	0900–1500	M–F
PATTERN 4	1500–1900	M–F
PATTERN 5	1000–1600	SA–SU
MAX 1	ALL OTHER TIMES	
MAX 2	FUTURE	
FREE	FUTURE	

COORDINATION TYPE– CENTRAL SYSTEM

CYCLE	OFFSET SEC	OFFSET %	PHASE SPLITS SEC/% Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	PERMIS PERIOD Ø	SEC
90	45	50	29	12	22	27	29	27	22	32	30	24
80	0	0	23	12	22	27	23	23	22	29	29	27
80	0	0	23	29	15	27	23	29	29	27		
90	89	99	31	12	20	27	31	27	20	35	30	22
80	79	99	25	12	20	25	25	23	20	31	29	25

SYSTEM LOC. MASTER	
CITY HALL	
INT# 49	
INT# 50	
INT# 51	
INT# 52	
INT# 53	
INT# 54	

TECHNICAL NOTES

1. STANDARD OVERLAP SKIP FEATURES APPLY.
2. MANUAL AND INTERVAL ADVANCE PHASE TO BE DISCONNECTED DURING PHASE 3 PEDESTRIAN CLEARANCE INTERVAL.
3. COUNTDOWN DISPLAYS SHALL NOT BE USED DURING THE WALK INTERVAL NOR DURING THE YELLOW CHANGE INTERVAL OF A CONCURRENT VEHICULAR PHASE.
4. FLOATING FORCE–OFFS SHALL BE IN EFFECT.
5. TIMING SHOWN REFLECT FREE OPERATION. ACTUAL PHASE SPLITS TO BE DETERMINED BY THE COORDINATION PROGRAM.
6. PHASE SPLITS SHOWN REPRESENT PRELIMINARY COORDINATION DATA.

LEGEND:
R RED ◄R RED ARROW
Y YELLOW ◄Y YELLOW ARROW
G GREEN ◄ GREEN ARROW
Wø WALK/ PED. CLR
D.W. DON'T WALK
FL. FLASHING

CONSTRUCTION NOTES

ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE NEW, EXCEPT AS NOTED.

CONTRACTOR SHALL STAKE ALL R.O.W. PRIOR TO EXCAVATION. ALL WORK, INCLUDING ALL FOUNDATIONS SHALL BE WITHIN THE R.O.W EXCEPT AS NOTED.

INSTALL RACK MOUNT NEMA TS2 TYPE 1 CONTROLLER IN A CABINET AS SPECIFIED IN THE BID DOCUMENTS.

Ⓥ CONTRACTOR SHALL INSTALL NEW CONTROLLER CABINET ON EXISTING FOUNDATION AS SHOWN ON THE PLAN.

CONTROLLER BACK TO ALWAYS FACE THE INTERSECTION, SERVICE METERS TO BE INSTALLED ON THE SIDE OF THE CABINET.

CONTRACTOR SHALL REMOVE ALL ABANDONED TRAFFIC SIGNAL EQUIPMENT INCLUDING BUT NOT LIMITED TO FOUNDATIONS, HANDHOLES, CONDUIT RISERS & CABLE, AND STEEL POLES.

ALL HANDHOLES ARE 30" x 30" UNLESS OTHERWISE SPECIFIED. CONTRACTOR SHALL INSTALL HANDHOLES APPROXIMATELY 1 FOOT BEHIND CURB OR EDGE OF ROADWAY UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SHALL TELEPHONE "CALL BEFORE YOU DIG" AT 1–800–922–4455 48 HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL CONTACT UTILITY REPRESENTATIVES AND CITY AGENCIES FOUR WEEKS PRIOR TO EXCAVATION.

REPRESENTATIVE	UTILITY	TELEPHONE
FRANCO CHIEFFALO	FIRST DISTRICT WATER DEPT.	(203) 847–7387
GEORGE LEARY	THIRD TAXING DISTRICT DEPT.	(203) 838–7445
JOHN ROBINSON	AT&T/SBC	(203) 238–7407
BILL HUGHES	AT&T (LOCAL)	(203) 846–9063
GEORGE REBENTISCH	CABLEVISION	(203) 750–5600
STEVE KLUBNIK	CL&P	(860) 665–2473
MARK BURKHART	AT&T (LONG LINES)	(203) 266–4372
WALTER MASHECK	SOUTH NORWALK ELECTRICITY AND WATER (ELECTRICITY DEPARTMENT)	(203) 866–3366
SCOTT WHITTIER	SOUTH NORWALK ELECTRICITY AND WATER (WATER DEPARTMENT)	(203) 866–4446
DAN FITZSIMMONS	YANKEE GAS	(203) 854–6450
CONNIE BLAIR	NORWALK DEPT. OF PUBLIC WORKS CALL CENTER	(203) 854–3200

THE CONTRACTOR SHALL CONTACT MR. FRED ESHRAGHI, CITY OF NORWALK TRAFFIC ENGINEER AT (203) 854–7791 PRIOR TO ANY EXCAVATION AND DELIVERY OF ALL SALVAGE MATERIAL.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY STATE AND CITY PERMITS, INCLUDING BUT NOT LIMITED TO: SIDEWALK, CURB, AND ROAD OPENING.

CONTRACTOR SHALL REPLACE ALL PAVEMENT MARKINGS 200 FEET ALONG ALL APPROACHES AS SHOWN ON THE PLANS. NEW STOP BARS, CROSSWALKS AND LEGENDS SHALL BE INSTALLED AS SHOWN ON THE PLANS. THE NEW PAVEMENT MARKINGS TO MATCH THE EXISTING PAVEMENT MARKINGS. ALL CONFLICTING PAVEMENT MARKINGS TO BE REMOVED.

INSTALL PAVEMENT MARKINGS IN ACCORDANCE WITH MISCELLANEOUS DETAIL SHEET # 62 "SPECIAL DETAILS AND TYPICAL PAVEMENT MARKINGS FOR TWO–WAY HIGHWAYS."

TRAFFIC SIGNAL APPURTENANCES (CONTROLLERS, MAST ARM, SPAN POLES, PEDESTALS AND HAND HOLES) WHEN IN OR ADJACENT TO SIDEWALKS SHALL BE FIELD LOCATED BY THE CONTRACTOR TO PROVIDE A FREE PATH OF NOT LESS THAN 3 FEET. ANY PROPOSED REVISIONS TO THE LOCATIONS OF THE APPURTENANCES SHOWN ON THE PLAN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY OF NORWALK TRAFFIC ENGINEER PRIOR TO INSTALLATION.

ALL SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT HIS EXPENSE.

CONTRACTOR WILL BE REQUIRED TO TRIM TREE BRANCHES AT EACH APPROACH TO OBTAIN CLEAR SIGHTLINE TO THE SIGNAL HEADS. TREE BRANCHES SHALL BE TRIMMED BACK TO THE CURB LINE FOR A MINIMUM OF 300' FEET BACK FROM THE STOP BAR. THIS WORK SHALL BE PAID FOR UNDER ITEM NO. 0952001A "SELECTIVE CLEARING AND THINNING".

CONTRACTOR SHALL REMOVE ALL EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED SIGNS. AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PAID FOR UNDER ITEM NO. 1206023A "REMOVAL AND RELOCATION OF EXISTING SIGNS".

INSTALL SIGNS AND METAL SIGN POSTS IN ACCORDANCE WITH MISCELLANEOUS DETAIL SHEET # 55 "TYPICAL SIGNS, SUPPORTS AND SIGN PLACEMENT DETAILS" AND SHEET # 56 "TYPICAL METAL SIGN POSTS AND SIGN MOUNTING DETAILS."

VIDEO DETECTION CAMERAS AND DETECTOR ZONE LOCATIONS ARE FOR ILLUSTRATION ONLY. EXACT LOCATIONS AND DETECTOR ZONE SIZES SHALL BE DETERMINED BY THE MANUFACTURER. ALL CABLES ARE TO BE INSTALLED BY THE CONTRACTOR CONTINUOUS BETWEEN EACH VIDEO DETECTION CAMERA TO THE CONTROLLER CABINET.

CONTRACTOR SHALL REPLACE IN KIND ALL DISTURBED AREAS (CURBING, SIDEWALK, LANDSCAPE ETC.) ASSOCIATED WITH THE CONSTRUCTION OF SIGNAL EQUIPMENT. THE LIMIT OF WORK ASSOCIATED WITH THE CONSTRUCTION OF SIGNAL EQUIPMENT SHALL BE A MINIMUM OF TEN (10) FEET UNLESS OTHERWISE SPECIFIED.

ALL DISTURBED LANDSCAPE AREAS SHALL BE TREATED WITH TOP SOIL AND SEEDING PAID FOR UNDER ITEM NO. 944001 "FURNISHING AND PLACING TOPSOIL" AND ITEM NO. 950005 "TURF ESTABLISHMENT".

A VERTICAL CLEARANCE OF 16 TO 18 FEET OVER ROADWAY PAVEMENT IS REQUIRED FOR TRAFFIC SIGNALS.

CONTRACTOR TO PROVIDE FOUR SETS OF CABINET WIRING DIAGRAMS IN THE CABINET.

CONTRACTOR SHALL REPLACE THE ENTIRE SECTION OF SIDEWALK DAMAGED DUE TO INSTALLATION OF CONDUIT, HANDHOLE, OR FOUNDATION. THE SIDEWALK SHALL BE RESTORED WITHIN 48 HOURS OF DISTURBANCE.

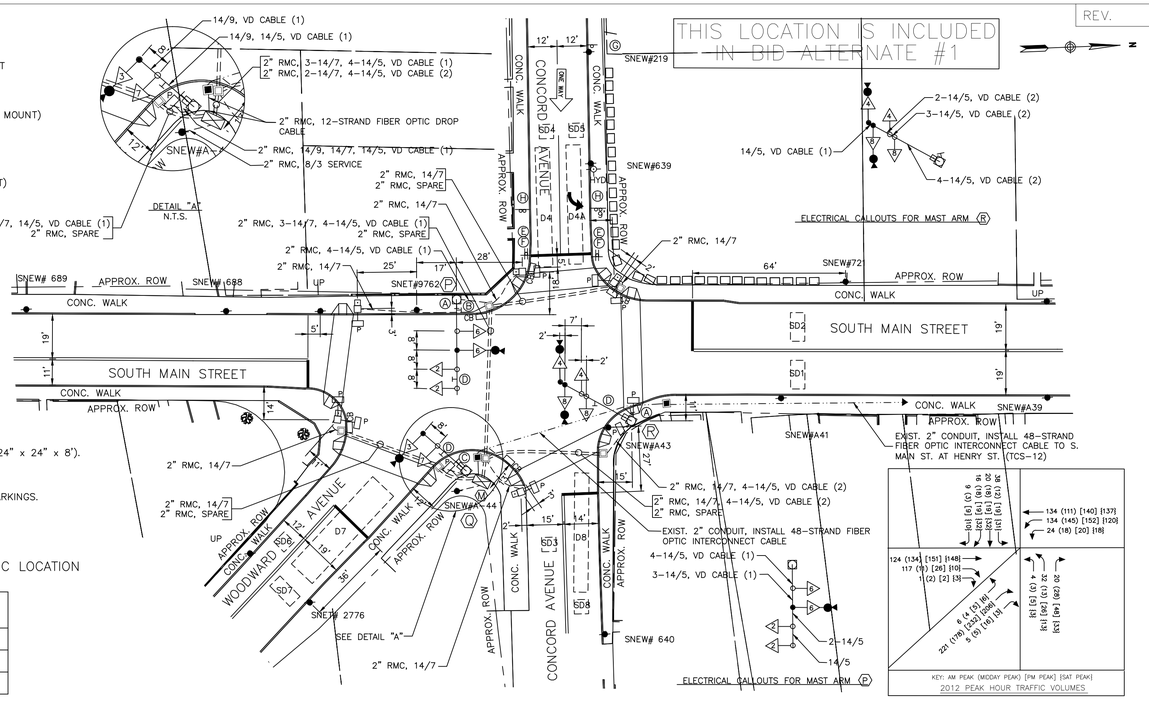
CONTRACTOR SHALL INSTALL 96" RISER ON MAST ARMS BEHIND THE SIGNAL HEADS FOR INSTALLING VIDEO CAMERA AS SHOWN ON THE PLAN. CONTRACTOR SHALL REFER TO SPECIAL PROVISIONS FOR THE TYPICAL INSTALLATION DETAIL FOR CAMERAS MOUNTED ON EXTENSION BRACKETS AND RISERS.

CONTRACTOR SHALL PROVIDE TEMPORARY SIGNALIZATION AT THIS LOCATION UNDER ITEM# 1118057A (SITE NO.7)

Ⓧ CONTRACTOR SHALL INSTALL FIBER OPTIC SPLICE ENCLOSURE IN THE HANDHOLE FOR THE INSTALLATION OF FIBER OPTIC DROP CABLE.

REV.	INTERSECTION # 54

SIGN LEGEND
- Ⓐ INSTALL SOUTH MAIN ST – SHAFT MOUNT
- Ⓑ INSTALL ↖ WOODWARD AVE / CONCORD AVE ↗ – OVERHEAD MOUNT
- Ⓒ INSTALL WOODWARD AVE – SHAFT MOUNT
- Ⓓ INSTALL 31–0823Z (NO TURN ON RED–OVERHEAD MOUNT)
- Ⓔ EXISTING 31–1177Z (ONE WAY →) 31–1188Z (ONE WAY ←)
- Ⓕ EXISTING 31–1111Z (DO NOT ENTER)
- Ⓒ RELOCATE 31–0117Z (LEFT LANE MUST TURN LEFT)
- Ⓗ INSTALL 31–0282Z (↑ ONLY ↑)



NOTE:
ALL SIGNS TO BE MAINTAINED BY THE CITY OF NORWALK

PAVEMENT MARKING NOTES:
WHITE CROSSWALKS TO BE BAR TYPE CROSSWALKS (24" x 24" x 8').

WHITE STOP BAR SHALL BE 24" WIDE.

ALL PAVEMENT MARKINGS SHALL BE EPOXY RESIN MARKINGS.

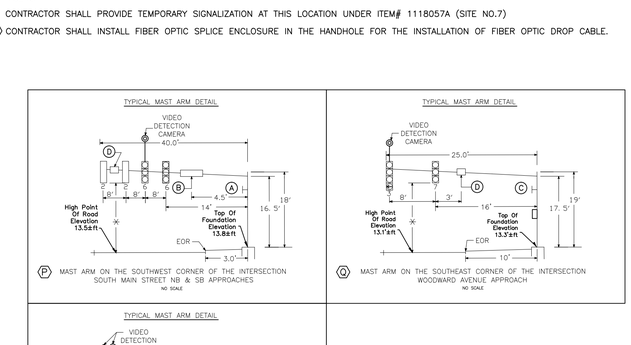
ALL PAVEMENT MARKINGS TO BE MAINTAINED BY THE CITY OF NORWALK.

MAST ARM DESIGN CRITERIA PER SPECIFIC LOCATION

ID	SHAFT HEIGHT	ARM LENGTH	LOAD CASE
(P)	18'	40'	40–1W
(Q)	19'	25'	25–1W
(R)	18'	35'	35–1W

DETECTOR CHART		
DETECTOR	LOCAL	SYSTEM
D4	Ø4 C&E	–
D4A	Ø4 C&E	–
D7	Ø7 C&E	–
D8	Ø8 C&E	–
SD1	–	SD1
SD2	–	SD2
SD3	–	SD3
SD4	–	SD4
SD5	–	SD5
SD6	–	SD6
SD7	–	SD7
SD8	–	SD8

C&E = CALL AND EXTEND



✳ DISTANCE BETWEEN ROAD AND SIGNAL HEAD SHALL BE 16' TO 18'.

CROSS SECTION IS IN LINE WITH MAST ARM.
CONTRACTOR TO VERIFY MAST ARM INFORMATION PRIOR TO ORDERING MAST ARMS, PER SPECIAL PROVISIONS.
ALL MAST ARM MOUNTED TRAFFIC SIGNALS ARE FIXED MOUNTED TO THE ARM BY THE USE OF ADJUSTABLE BRACKETS.
OPTICAL PRE–EMPTION EQUIPMENT AND STREET SIGNS TO BE FIELD LOCATED.
EOR = EDGE OF ROADWAY

LEGEND:
- PROPOSED WOOD SPAN POLE
- EXISTING WOOD SPAN POLE
- PROPOSED STEEL MAST ARM
- EXISTING STEEL SPAN POLE
- BOLLARD
- EXISTING PTZ CAMERA
- PROPOSED UTILITY POLE
- EXISTING UTILITY POLE
- PEDESTAL MOUNTING
- PEDESTRIAN PUSH BUTTON & SIGN
- ELECTRIC VAULT
- TRAFFIC SIGNAL FACE
- PEDESTRIAN SIGNAL HEAD
- AUDIBLE PEDESTRIAN SIGNAL
- LOOP DETECTOR
- PTZ CAMERA CONTROLLER
- DETECTED MOVEMENT
- SD SYSTEM DETECTOR
- OPTICAL DETECTOR
- PROPOSED CONTROLLER
- EXISTING CONTROLLER
- PROPOSED HANDHOLE
- EXISTING HANDHOLE
- PROPOSED R.M.C. (RIGID METAL CONDUIT)
- EXIST. INTERCONNECT CONDUIT
- FIBER OPTIC SPLICE ENCLOSURE
- EXISTING R.M.C. (RIGID METAL CONDUIT)
- CABLE CLOSURE
- DET. LEADS IN SAW CUT
- OVERHEAD SIGN
- VIDEO DETECTOR
- STRAIN INSULATOR
- AUXILIARY TERMINATION CABINET
- AUXILIARY EQUIPMENT CABINET
- [D] APPROXIMATE VIDEO DETECTOR AIMING ZONE

TRAFFIC CONTROL SIGNAL LAYOUT

CADD FILE NAME: TCS–13_S Main St @ Woodward Ave & Concord Ave.dwg
DATE PLOTTED: Apr 01, 2011
SCALE: 1"=30'

CITY OF NORWALK
SOUTH MAIN STREET AT
WOODWARD AVENUE/CONCORD AVENUE

NO.	DATE	INIT.	DESCRIPTION
			REVISIONS

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: PHASE I – NORWALK TRAFFIC SIGNAL CONTROLLER/SYSTEM UPGRADE

OFFICE OF ENGINEERING

TOWN: NORWALK	PROJECT NO.: 0301–0176
DRAWING TITLE: S. MAIN ST. AT WOODWARD AVE/ CONCORD AVE	DRAWING NO.: TCS–13
	SHEET NO.: 35

REV. | INTERSECTION # 54

THIS LOCATION IS INCLUDED IN BID ALTERNATE #1

G:\TRAFFIC\Traffic Projects\Traffic Signal Upgrade, Phase I & II\Phase I\Traffic Signal Plan, Auto Cad\TCS–13_S Main St @ Woodward Ave & Concord Ave.dwg, 4/4/2011 10:23:53 AM

APPENDIX

K SYNCHRO RESULTS

Intersection	
Intersection Delay, s/veh	19
Intersection LOS	C

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	86	186	124	276	328	68
Future Vol, veh/h	86	186	124	276	328	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	202	135	300	357	74
Number of Lanes	0	1	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE		SB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		NE	NB
Conflicting Lanes Right	0	1	1
HCM Control Delay	15.1	18.2	22.5
HCM LOS	C	C	C

Lane	NELn1	NBLn1	SBLn1
Vol Left, %	83%	32%	0%
Vol Thru, %	0%	68%	31%
Vol Right, %	17%	0%	69%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	396	272	400
LT Vol	328	86	0
Through Vol	0	186	124
RT Vol	68	0	276
Lane Flow Rate	430	296	435
Geometry Grp	1	1	1
Degree of Util (X)	0.712	0.497	0.652
Departure Headway (Hd)	5.953	6.057	5.401
Convergence, Y/N	Yes	Yes	Yes
Cap	603	591	665
Service Time	4.021	4.145	3.482
HCM Lane V/C Ratio	0.713	0.501	0.654
HCM Control Delay	22.5	15.1	18.2
HCM Lane LOS	C	C	C
HCM 95th-tile Q	5.8	2.8	4.8

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	82	173	135	278	310	71
Future Vol, veh/h	82	173	135	278	310	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	188	147	302	337	77
Number of Lanes	0	1	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE		SB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		NE	NB
Conflicting Lanes Right	0	1	1
HCM Control Delay	14.2	18.3	20.7
HCM LOS	B	C	C

Lane	NELn1	NBLn1	SBLn1
Vol Left, %	81%	32%	0%
Vol Thru, %	0%	68%	33%
Vol Right, %	19%	0%	67%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	381	255	413
LT Vol	310	82	0
Through Vol	0	173	135
RT Vol	71	0	278
Lane Flow Rate	414	277	449
Geometry Grp	1	1	1
Degree of Util (X)	0.68	0.462	0.662
Departure Headway (Hd)	5.909	6.005	5.312
Convergence, Y/N	Yes	Yes	Yes
Cap	609	596	673
Service Time	3.973	4.085	3.383
HCM Lane V/C Ratio	0.68	0.465	0.667
HCM Control Delay	20.7	14.2	18.3
HCM Lane LOS	C	B	C
HCM 95th-tile Q	5.2	2.4	5

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	86	186	146	276	328	68
Future Vol, veh/h	86	186	146	276	328	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	202	159	300	357	74
Number of Lanes	0	1	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE		SB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		NE	NB
Conflicting Lanes Right	0	1	1
HCM Control Delay	15.3	20.1	23.2
HCM LOS	C	C	C

Lane	NELn1	NBLn1	SBLn1
Vol Left, %	83%	32%	0%
Vol Thru, %	0%	68%	35%
Vol Right, %	17%	0%	65%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	396	272	422
LT Vol	328	86	0
Through Vol	0	186	146
RT Vol	68	0	276
Lane Flow Rate	430	296	459
Geometry Grp	1	1	1
Degree of Util (X)	0.72	0.502	0.694
Departure Headway (Hd)	6.023	6.116	5.443
Convergence, Y/N	Yes	Yes	Yes
Cap	598	585	661
Service Time	4.096	4.211	3.527
HCM Lane V/C Ratio	0.719	0.506	0.694
HCM Control Delay	23.2	15.3	20.1
HCM Lane LOS	C	C	C
HCM 95th-tile Q	6	2.8	5.6

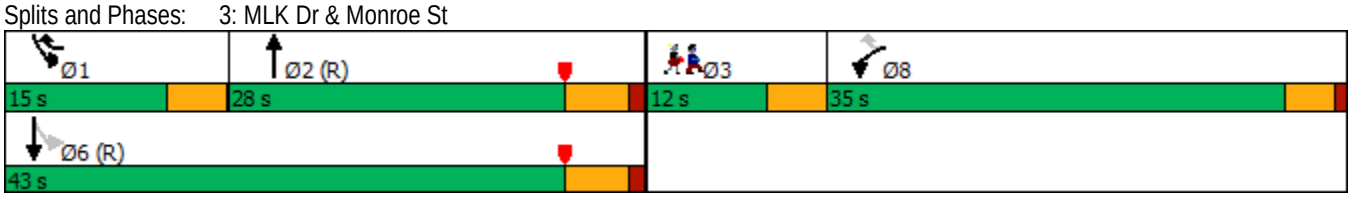
Lanes, Volumes, Timings
3: MLK Dr & Monroe St

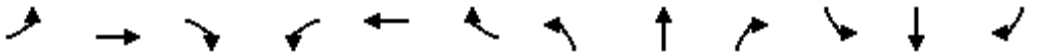
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	127	249	431	60	180	836	
Future Volume (vph)	127	249	431	60	180	836	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	155		0	180		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Frt		0.850	0.977				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1719	1482	3039	0	1626	3438	
Flt Permitted	0.950				0.380		
Satd. Flow (perm)	1719	1482	3039	0	650	3438	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	30		35			35	
Link Distance (ft)	1185		556			566	
Travel Time (s)	26.9		10.8			11.0	
Peak Hour Factor	0.66	0.95	0.92	0.70	0.91	0.90	
Heavy Vehicles (%)	5%	9%	17%	11%	11%	5%	
Adj. Flow (vph)	192	262	468	86	198	929	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	192	262	554	0	198	929	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	24		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			6			6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	1	2		1	6	3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Permitted Phases		8			6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	7.0	5.0	15.0		5.0	15.0	1.0
Minimum Split (s)	20.0	9.5	20.5		9.5	20.5	7.0
Total Split (s)	35.0	15.0	28.0		15.0	43.0	12.0
Total Split (%)	38.9%	16.7%	31.1%		16.7%	47.8%	13%
Maximum Green (s)	30.7	10.9	22.5		10.9	37.5	8.0
Yellow Time (s)	3.3	4.0	4.3		4.0	4.3	4.0
All-Red Time (s)	1.0	0.1	1.2		0.1	1.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.1	5.5		4.1	5.5	
Lead/Lag	Lag	Lead	Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	15.4	29.4	48.6		63.8	62.4	
Actuated g/C Ratio	0.17	0.33	0.54		0.71	0.69	
v/c Ratio	0.65	0.54	0.34		0.35	0.39	
Control Delay	47.3	25.7	15.2		7.9	7.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	47.3	25.7	15.2		7.9	7.8	
LOS	D	C	B		A	A	
Approach Delay	34.8		15.2			7.8	
Approach LOS	C		B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 15.5		Intersection LOS: B	
Intersection Capacity Utilization 42.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: MLK Dr & Monroe St





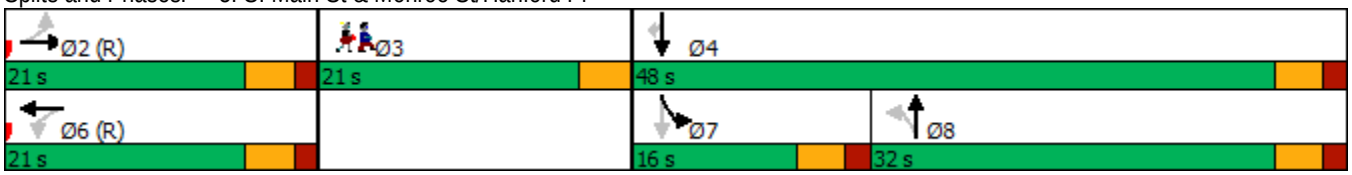
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	62	60	11	126	26	47	348	12	16	231	78
Future Volume (vph)	61	62	60	11	126	26	47	348	12	16	231	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	0		0	0		0	0		95
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.937			0.973			0.993				0.850
Flt Protected	0.950				0.995			0.994			0.997	
Satd. Flow (prot)	1719	1682	0	0	1782	0	0	1621	0	0	1810	1495
Flt Permitted	0.574				0.964			0.926			0.000	
Satd. Flow (perm)	1039	1682	0	0	1727	0	0	1510	0	0	0	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			12			3				95
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1185			837			620			729	
Travel Time (s)		26.9			19.0			16.9			16.6	
Peak Hour Factor	0.79	0.69	0.93	0.50	0.84	0.60	0.79	0.90	0.46	0.94	0.93	0.82
Heavy Vehicles (%)	5%	5%	7%	10%	2%	4%	30%	14%	9%	0%	5%	8%
Adj. Flow (vph)	77	90	65	22	150	43	59	387	26	17	248	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	155	0	0	215	0	0	472	0	0	265	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			40			30			20	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	Perm
Protected Phases		2			6			8		7	4	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8				7	4
Detector Phase	2	2		6	6		8	8		7	4	4
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	20.9	20.9		20.9	20.9		20.9	20.9		20.9	20.9	20.9
Total Split (s)	21.0	21.0		21.0	21.0		32.0	32.0		16.0	48.0	48.0
Total Split (%)	23.3%	23.3%		23.3%	23.3%		35.6%	35.6%		17.8%	53.3%	53.3%
Maximum Green (s)	16.1	16.1		16.1	16.1		27.1	27.1		11.1	43.1	43.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.6	1.6		1.6	1.6		1.7	1.7		1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	34.6	34.6			34.6			37.4			37.4	37.4
Actuated g/C Ratio	0.38	0.38			0.38			0.42			0.42	0.42
v/c Ratio	0.19	0.23			0.32			0.75			0.35	0.14
Control Delay	17.9	15.2			24.3			27.8			19.2	3.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	17.9	15.2			24.3			27.8			19.2	3.7
LOS	B	B			C			C			B	A
Approach Delay		16.1			24.3			27.8			15.1	
Approach LOS		B			C			C			B	

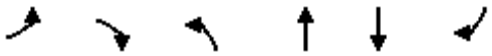
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S. Main St & Monroe St/Hanford Pl

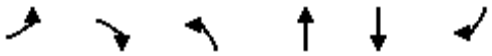


Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	23%
Maximum Green (s)	17.5
Yellow Time (s)	3.5
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	0	0	87	426	328	29	
Future Volume (vph)	0	0	87	426	328	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt					0.989		
Flt Protected				0.992			
Satd. Flow (prot)	0	0	0	1848	1842	0	
Flt Permitted				0.873			
Satd. Flow (perm)	0	0	0	1626	1842	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					10		
Link Speed (mph)	25			25	25		
Link Distance (ft)	360			541	620		
Travel Time (s)	9.8			14.8	16.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	95	463	357	32	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	558	389	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			50	50		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9	15			9	
Number of Detectors			1	2	2		
Detector Template			Left	Thru	Thru		
Leading Detector (ft)			20	100	100		
Trailing Detector (ft)			0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			20	6	6		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type			Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases			2				
Detector Phase			2	2	6		
Switch Phase							
Minimum Initial (s)			15.0	15.0	15.0		4.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Minimum Split (s)			23.1	23.1	23.4		26.0
Total Split (s)			64.0	64.0	64.0		26.0
Total Split (%)			71.1%	71.1%	71.1%		29%
Maximum Green (s)			58.9	58.9	58.9		22.0
Yellow Time (s)			3.2	3.2	3.2		4.0
All-Red Time (s)			1.9	1.9	1.9		0.0
Lost Time Adjust (s)				0.0	0.0		
Total Lost Time (s)				5.1	5.1		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			3.0	3.0	3.0		3.0
Recall Mode			C-Max	C-Max	C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				90.0	90.0		
Actuated g/C Ratio				1.00	1.00		
v/c Ratio				0.34	0.21		
Control Delay				0.6	0.3		
Queue Delay				0.0	0.0		
Total Delay				0.6	0.3		
LOS				A	A		
Approach Delay				0.6	0.3		
Approach LOS				A	A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 0.4		Intersection LOS: A	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: S. Main St & Henry St

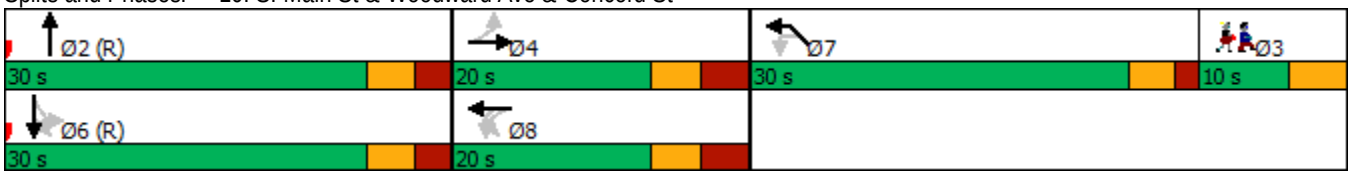
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	44	23	19	11	4	37	0	23	144	136	1	28
Future Volume (vph)	44	23	19	11	4	37	0	23	144	136	1	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0			0		0		0		
Storage Lanes	1		0			0		0		0		
Taper Length (ft)	25					25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915					0.951		0.934			
Flt Protected	0.950						0.969					
Satd. Flow (prot)	1770	1704	0	0	0	0	1717	0	1740	0	0	0
Flt Permitted	0.858						0.772					
Satd. Flow (perm)	1598	1704	0	0	0	0	1368	0	1740	0	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)		12					138					
Link Speed (mph)		25					25		25			
Link Distance (ft)		344					721		778			
Travel Time (s)		9.4					19.7		21.2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	25	21	12	4	40	0	25	157	148	1	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	58	0	0	0	0	69	0	306	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Right	Right	Left
Median Width(ft)		12					12		0			
Link Offset(ft)		0					0		0			
Crosswalk Width(ft)		30					35		60			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15	15		9		9	9	15
Number of Detectors	1	2			1	1	2		2			1
Detector Template	Left	Thru			Left	Left	Thru		Thru			Left
Leading Detector (ft)	20	100			20	20	100		100			20
Trailing Detector (ft)	0	0			0	0	0		0			0
Detector 1 Position(ft)	0	0			0	0	0		0			0
Detector 1 Size(ft)	20	6			20	20	6		6			20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Detector 2 Position(ft)		94					94		94			
Detector 2 Size(ft)		6					6		6			
Detector 2 Type		Cl+Ex					Cl+Ex		Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0		0.0			
Turn Type	Perm	NA			Perm	Perm	NA		NA			Perm
Protected Phases		4					8		2			
Permitted Phases	4				8	8						6

Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Lane Configurations							
Traffic Volume (vph)	156	156	7	0	256	6	
Future Volume (vph)	156	156	7	0	256	6	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0			0	0		
Storage Lanes	0			1	0		
Taper Length (ft)	25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt				0.869			
Flt Protected		0.974		0.999			
Satd. Flow (prot)	0	1814	0	1617	0	0	
Flt Permitted		0.641		0.999			
Satd. Flow (perm)	0	1194	0	1617	0	0	
Right Turn on Red						Yes	
Satd. Flow (RTOR)				162			
Link Speed (mph)		25		25			
Link Distance (ft)		541		844			
Travel Time (s)		14.8		23.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	170	170	8	0	278	7	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	370	0	293	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0		12			
Link Offset(ft)		0		0			
Crosswalk Width(ft)		50		60			
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		15	15	9	9	
Number of Detectors	1	2	1	1			
Detector Template	Left	Thru	Left	Left			
Leading Detector (ft)	20	100	20	20			
Trailing Detector (ft)	0	0	0	0			
Detector 1 Position(ft)	0	0	0	0			
Detector 1 Size(ft)	20	6	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94					
Detector 2 Size(ft)		6					
Detector 2 Type		Cl+Ex					
Detector 2 Channel							
Detector 2 Extend (s)		0.0					
Turn Type	Perm	NA	Perm	Prot			
Protected Phases		6		7			3
Permitted Phases	6		7	7			

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Detector Phase	4	4			8	8	8		2			6
Switch Phase												
Minimum Initial (s)	7.0	7.0			10.0	10.0	10.0		15.0			15.0
Minimum Split (s)	24.7	24.7			24.7	24.7	24.7		23.7			23.7
Total Split (s)	20.0	20.0			20.0	20.0	20.0		30.0			30.0
Total Split (%)	22.2%	22.2%			22.2%	22.2%	22.2%		33.3%			33.3%
Maximum Green (s)	13.3	13.3			13.3	13.3	13.3		24.3			24.3
Yellow Time (s)	3.3	3.3			3.3	3.3	3.3		3.2			3.2
All-Red Time (s)	3.4	3.4			3.4	3.4	3.4		2.5			2.5
Lost Time Adjust (s)	0.0	0.0					0.0		0.0			
Total Lost Time (s)	6.7	6.7					6.7		5.7			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			3.0
Recall Mode	None	None			None	None	None		C-Min			C-Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	9.9	9.9					10.5		51.3			
Actuated g/C Ratio	0.11	0.11					0.12		0.57			
v/c Ratio	0.27	0.29					0.25		0.31			
Control Delay	40.2	34.1					2.1		13.7			
Queue Delay	0.0	0.0					0.0		0.0			
Total Delay	40.2	34.1					2.1		13.7			
LOS	D	C					A		B			
Approach Delay		36.9					2.1		13.7			
Approach LOS		D					A		B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 45 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 22.2		Intersection LOS: C	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: S. Main St & Woodward Ave & Concord St

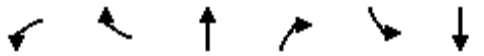


Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Detector Phase	6	6	7	7			
Switch Phase							
Minimum Initial (s)	15.0	15.0	10.0	10.0			4.0
Minimum Split (s)	23.7	23.7	22.7	22.7			21.0
Total Split (s)	30.0	30.0	30.0	30.0			10.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%			11%
Maximum Green (s)	24.3	24.3	25.3	25.3			6.0
Yellow Time (s)	3.2	3.2	3.1	3.1			4.0
All-Red Time (s)	2.5	2.5	1.6	1.6			0.0
Lost Time Adjust (s)		0.0		0.0			
Total Lost Time (s)		5.7		4.7			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0
Recall Mode	C-Min	C-Min	None	None			None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		51.3		14.4			
Actuated g/C Ratio		0.57		0.16			
v/c Ratio		0.54		0.74			
Control Delay		24.7		27.2			
Queue Delay		0.0		0.0			
Total Delay		24.7		27.2			
LOS		C		C			
Approach Delay		24.7		27.2			
Approach LOS		C		C			

Intersection Summary

Lane Group	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (vph)	42	258	169	11	11	40
Future Volume (vph)	42	258	169	11	11	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865		0.894	
Flt Protected		0.950			0.989	
Satd. Flow (prot)	0	1770	1611	0	1647	0
Flt Permitted		0.950			0.989	
Satd. Flow (perm)	0	1770	1611	0	1647	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		91	844		641	
Travel Time (s)		2.5	23.0		17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	280	184	12	12	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	326	196	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Right
Median Width(ft)		12	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.6%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	301	133	167	347	110	99
Future Volume (vph)	301	133	167	347	110	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959		0.909			
Flt Protected	0.967					0.974
Satd. Flow (prot)	1727	0	1693	0	0	1814
Flt Permitted	0.967					0.974
Satd. Flow (perm)	1727	0	1693	0	0	1814
Link Speed (mph)	25		25			25
Link Distance (ft)	380		640			91
Travel Time (s)	10.4		17.5			2.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	145	182	377	120	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	0	559	0	0	228
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	86	186	124	276	328	68
Future Volume (vph)	86	186	124	276	328	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.907		0.977	
Flt Protected		0.984			0.960	
Satd. Flow (prot)	0	1833	1690	0	1747	0
Flt Permitted		0.984			0.960	
Satd. Flow (perm)	0	1833	1690	0	1747	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		616	640		489	
Travel Time (s)		16.8	17.5		11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	202	135	300	357	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	295	435	0	431	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.3%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	39	267	193	14	14	38
Future Volume (Veh/h)	39	267	193	14	14	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	290	210	15	15	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			844			
pX, platoon unblocked						
vC, conflicting volume	225				592	218
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225				592	218
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	95
cM capacity (veh/h)	1344				455	822

Direction, Lane #	NB 1	SE 1	NE 1
Volume Total	332	225	56
Volume Left	42	0	15
Volume Right	0	15	41
cSH	1344	1700	676
Volume to Capacity	0.03	0.13	0.08
Queue Length 95th (ft)	2	0	7
Control Delay (s)	1.2	0.0	10.8
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	10.8
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	287	108	198	285	105	126
Future Volume (Veh/h)	287	108	198	285	105	126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	312	117	215	310	114	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	735	370			525	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	735	370			525	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	9	83			89	
cM capacity (veh/h)	344	676			1042	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	429	525	251
Volume Left	312	0	114
Volume Right	117	310	0
cSH	398	1700	1042
Volume to Capacity	1.08	0.31	0.11
Queue Length 95th (ft)	370	0	9
Control Delay (s)	100.5	0.0	4.6
Lane LOS	F		A
Approach Delay (s)	100.5	0.0	4.6
Approach LOS	F		

Intersection Summary			
Average Delay	36.7		
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	82	173	135	278	310	71
Future Volume (vph)	82	173	135	278	310	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	89	188	147	302	337	77

Direction, Lane #	NB 1	SB 1	NE 1
Volume Total (vph)	277	449	414
Volume Left (vph)	89	0	337
Volume Right (vph)	0	302	77
Hadj (s)	0.10	-0.37	0.09
Departure Headway (s)	6.1	5.4	6.0
Degree Utilization, x	0.47	0.67	0.68
Capacity (veh/h)	550	642	570
Control Delay (s)	14.3	18.6	20.9
Approach Delay (s)	14.3	18.6	20.9
Approach LOS	B	C	C

Intersection Summary			
Delay	18.4		
Level of Service	C		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

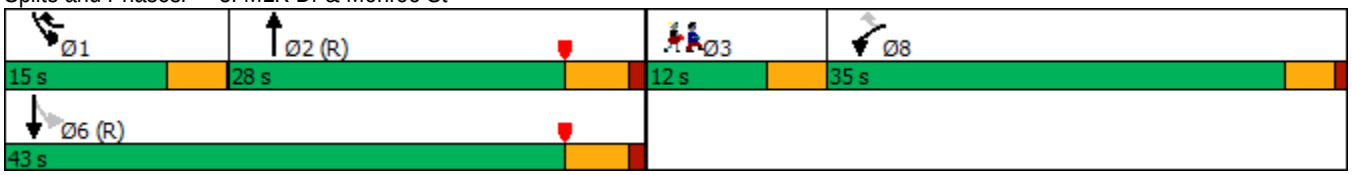
Lanes, Volumes, Timings
3: MLK Dr & Monroe St

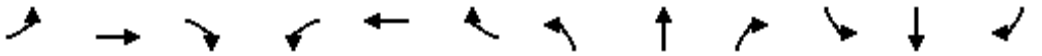
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	127	249	431	60	182	837	
Future Volume (vph)	127	249	431	60	182	837	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	155		0	180		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Frt		0.850	0.977				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1719	1482	3039	0	1626	3438	
Flt Permitted	0.950				0.380		
Satd. Flow (perm)	1719	1482	3039	0	650	3438	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	30		35			35	
Link Distance (ft)	1185		556			566	
Travel Time (s)	26.9		10.8			11.0	
Peak Hour Factor	0.66	0.95	0.92	0.70	0.91	0.90	
Heavy Vehicles (%)	5%	9%	17%	11%	11%	5%	
Adj. Flow (vph)	192	262	468	86	200	930	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	192	262	554	0	200	930	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	24		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			6			6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	1	2		1	6	3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Permitted Phases		8			6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	7.0	5.0	15.0		5.0	15.0	1.0
Minimum Split (s)	20.0	9.5	20.5		9.5	20.5	7.0
Total Split (s)	35.0	15.0	28.0		15.0	43.0	12.0
Total Split (%)	38.9%	16.7%	31.1%		16.7%	47.8%	13%
Maximum Green (s)	30.7	10.9	22.5		10.9	37.5	8.0
Yellow Time (s)	3.3	4.0	4.3		4.0	4.3	4.0
All-Red Time (s)	1.0	0.1	1.2		0.1	1.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.1	5.5		4.1	5.5	
Lead/Lag	Lag	Lead	Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	15.4	29.4	48.6		63.8	62.4	
Actuated g/C Ratio	0.17	0.33	0.54		0.71	0.69	
v/c Ratio	0.65	0.54	0.34		0.35	0.39	
Control Delay	47.4	25.7	15.2		7.9	7.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	47.4	25.7	15.2		7.9	7.8	
LOS	D	C	B		A	A	
Approach Delay	34.8		15.2			7.8	
Approach LOS	C		B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 15.5		Intersection LOS: B	
Intersection Capacity Utilization 42.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: MLK Dr & Monroe St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	62	62	11	126	26	47	348	12	16	241	78
Future Volume (vph)	61	62	62	11	126	26	47	348	12	16	241	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	0		0	0		0	0		95
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.936			0.973			0.993				0.850
Flt Protected	0.950				0.995			0.994			0.997	
Satd. Flow (prot)	1719	1680	0	0	1782	0	0	1621	0	0	1809	1495
Flt Permitted	0.573				0.964			0.925			0.000	
Satd. Flow (perm)	1037	1680	0	0	1727	0	0	1508	0	0	0	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			12			3				95
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1185			837			620			729	
Travel Time (s)		26.9			19.0			16.9			16.6	
Peak Hour Factor	0.79	0.69	0.93	0.50	0.84	0.60	0.79	0.90	0.46	0.94	0.93	0.82
Heavy Vehicles (%)	5%	5%	7%	10%	2%	4%	30%	14%	9%	0%	5%	8%
Adj. Flow (vph)	77	90	67	22	150	43	59	387	26	17	259	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	157	0	0	215	0	0	472	0	0	276	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			40			30			20	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	Perm
Protected Phases		2			6			8		7	4	

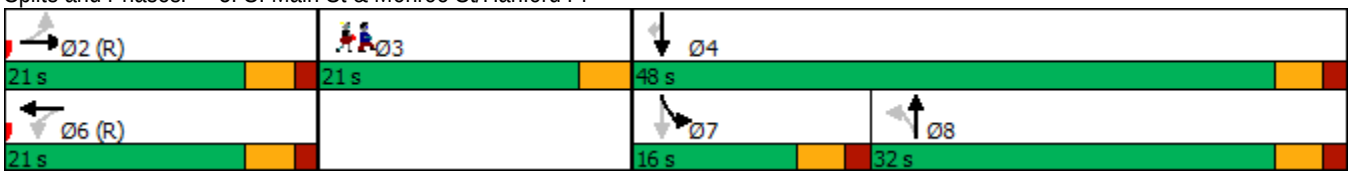
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

Lanes, Volumes, Timings
5: S. Main St & Monroe St/Hanford Pl

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8				7	4
Detector Phase	2	2		6	6		8	8		7	4	4
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	20.9	20.9		20.9	20.9		20.9	20.9		20.9	20.9	20.9
Total Split (s)	21.0	21.0		21.0	21.0		32.0	32.0		16.0	48.0	48.0
Total Split (%)	23.3%	23.3%		23.3%	23.3%		35.6%	35.6%		17.8%	53.3%	53.3%
Maximum Green (s)	16.1	16.1		16.1	16.1		27.1	27.1		11.1	43.1	43.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.6	1.6		1.6	1.6		1.7	1.7		1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	34.4	34.4			34.4			37.6			37.6	37.6
Actuated g/C Ratio	0.38	0.38			0.38			0.42			0.42	0.42
v/c Ratio	0.19	0.24			0.32			0.75			0.37	0.14
Control Delay	18.0	15.4			24.4			27.6			19.3	3.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	18.0	15.4			24.4			27.6			19.3	3.7
LOS	B	B			C			C			B	A
Approach Delay		16.2			24.4			27.6			15.3	
Approach LOS		B			C			C			B	

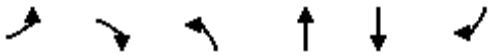
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S. Main St & Monroe St/Hanford Pl

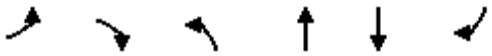


Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	23%
Maximum Green (s)	17.5
Yellow Time (s)	3.5
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	0	0	87	426	340	29	
Future Volume (vph)	0	0	87	426	340	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt					0.989		
Flt Protected				0.992			
Satd. Flow (prot)	0	0	0	1848	1842	0	
Flt Permitted				0.871			
Satd. Flow (perm)	0	0	0	1622	1842	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					10		
Link Speed (mph)	25			25	25		
Link Distance (ft)	360			541	620		
Travel Time (s)	9.8			14.8	16.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	95	463	370	32	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	558	402	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			50	50		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9	15			9	
Number of Detectors			1	2	2		
Detector Template			Left	Thru	Thru		
Leading Detector (ft)			20	100	100		
Trailing Detector (ft)			0	0	0		
Detector 1 Position(ft)			0	0	0		
Detector 1 Size(ft)			20	6	6		
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type			Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases			2				
Detector Phase			2	2	6		
Switch Phase							
Minimum Initial (s)			15.0	15.0	15.0		4.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Minimum Split (s)			23.1	23.1	23.4		26.0
Total Split (s)			64.0	64.0	64.0		26.0
Total Split (%)			71.1%	71.1%	71.1%		29%
Maximum Green (s)			58.9	58.9	58.9		22.0
Yellow Time (s)			3.2	3.2	3.2		4.0
All-Red Time (s)			1.9	1.9	1.9		0.0
Lost Time Adjust (s)				0.0	0.0		
Total Lost Time (s)				5.1	5.1		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			3.0	3.0	3.0		3.0
Recall Mode			C-Max	C-Max	C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				90.0	90.0		
Actuated g/C Ratio				1.00	1.00		
v/c Ratio				0.34	0.22		
Control Delay				0.6	0.3		
Queue Delay				0.0	0.0		
Total Delay				0.6	0.3		
LOS				A	A		
Approach Delay				0.6	0.3		
Approach LOS				A	A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 0.4		Intersection LOS: A	
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: S. Main St & Henry St

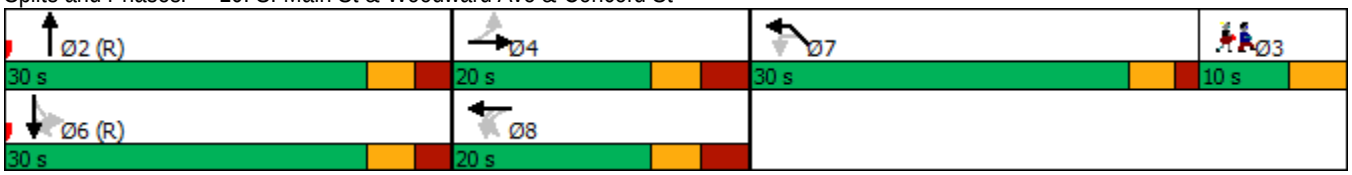
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	44	23	19	11	4	37	0	23	144	136	1	28
Future Volume (vph)	44	23	19	11	4	37	0	23	144	136	1	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0			0		0		0		
Storage Lanes	1		0			0		0		0		
Taper Length (ft)	25					25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915					0.951		0.934			
Flt Protected	0.950						0.969					
Satd. Flow (prot)	1770	1704	0	0	0	0	1717	0	1740	0	0	0
Flt Permitted	0.858						0.772					
Satd. Flow (perm)	1598	1704	0	0	0	0	1368	0	1740	0	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)		12					138					
Link Speed (mph)		25					25		25			
Link Distance (ft)		344					721		778			
Travel Time (s)		9.4					19.7		21.2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	25	21	12	4	40	0	25	157	148	1	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	58	0	0	0	0	69	0	306	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Right	Right	Left
Median Width(ft)		12					12		0			
Link Offset(ft)		0					0		0			
Crosswalk Width(ft)		30					35		60			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15	15		9		9	9	15
Number of Detectors	1	2			1	1	2		2			1
Detector Template	Left	Thru			Left	Left	Thru		Thru			Left
Leading Detector (ft)	20	100			20	20	100		100			20
Trailing Detector (ft)	0	0			0	0	0		0			0
Detector 1 Position(ft)	0	0			0	0	0		0			0
Detector 1 Size(ft)	20	6			20	20	6		6			20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Detector 2 Position(ft)		94					94		94			
Detector 2 Size(ft)		6					6		6			
Detector 2 Type		Cl+Ex					Cl+Ex		Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0		0.0			
Turn Type	Perm	NA			Perm	Perm	NA		NA			Perm
Protected Phases		4					8		2			
Permitted Phases	4				8	8						6

Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Lane Configurations							
Traffic Volume (vph)	168	156	7	0	256	6	
Future Volume (vph)	168	156	7	0	256	6	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0			0	0		
Storage Lanes	0			1	0		
Taper Length (ft)	25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt				0.869			
Flt Protected		0.973		0.999			
Satd. Flow (prot)	0	1812	0	1617	0	0	
Flt Permitted		0.635		0.999			
Satd. Flow (perm)	0	1183	0	1617	0	0	
Right Turn on Red						Yes	
Satd. Flow (RTOR)				162			
Link Speed (mph)		25		25			
Link Distance (ft)		541		844			
Travel Time (s)		14.8		23.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	183	170	8	0	278	7	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	383	0	293	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0		12			
Link Offset(ft)		0		0			
Crosswalk Width(ft)		50		60			
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		15	15	9	9	
Number of Detectors	1	2	1	1			
Detector Template	Left	Thru	Left	Left			
Leading Detector (ft)	20	100	20	20			
Trailing Detector (ft)	0	0	0	0			
Detector 1 Position(ft)	0	0	0	0			
Detector 1 Size(ft)	20	6	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94					
Detector 2 Size(ft)		6					
Detector 2 Type		Cl+Ex					
Detector 2 Channel							
Detector 2 Extend (s)		0.0					
Turn Type	Perm	NA	Perm	Prot			
Protected Phases		6		7			3
Permitted Phases	6		7	7			

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Detector Phase	4	4			8	8	8		2			6
Switch Phase												
Minimum Initial (s)	7.0	7.0			10.0	10.0	10.0		15.0			15.0
Minimum Split (s)	24.7	24.7			24.7	24.7	24.7		23.7			23.7
Total Split (s)	20.0	20.0			20.0	20.0	20.0		30.0			30.0
Total Split (%)	22.2%	22.2%			22.2%	22.2%	22.2%		33.3%			33.3%
Maximum Green (s)	13.3	13.3			13.3	13.3	13.3		24.3			24.3
Yellow Time (s)	3.3	3.3			3.3	3.3	3.3		3.2			3.2
All-Red Time (s)	3.4	3.4			3.4	3.4	3.4		2.5			2.5
Lost Time Adjust (s)	0.0	0.0					0.0		0.0			
Total Lost Time (s)	6.7	6.7					6.7		5.7			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			3.0
Recall Mode	None	None			None	None	None		C-Min			C-Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	9.9	9.9					10.5		51.3			
Actuated g/C Ratio	0.11	0.11					0.12		0.57			
v/c Ratio	0.27	0.29					0.25		0.31			
Control Delay	40.2	34.1					2.1		13.7			
Queue Delay	0.0	0.0					0.0		0.0			
Total Delay	40.2	34.1					2.1		13.7			
LOS	D	C					A		B			
Approach Delay		36.9					2.1		13.7			
Approach LOS		D					A		B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 45 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 81.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: S. Main St & Woodward Ave & Concord St



Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Detector Phase	6	6	7	7			
Switch Phase							
Minimum Initial (s)	15.0	15.0	10.0	10.0			4.0
Minimum Split (s)	23.7	23.7	22.7	22.7			21.0
Total Split (s)	30.0	30.0	30.0	30.0			10.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%			11%
Maximum Green (s)	24.3	24.3	25.3	25.3			6.0
Yellow Time (s)	3.2	3.2	3.1	3.1			4.0
All-Red Time (s)	2.5	2.5	1.6	1.6			0.0
Lost Time Adjust (s)		0.0		0.0			
Total Lost Time (s)		5.7		4.7			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0
Recall Mode	C-Min	C-Min	None	None			None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		51.3		14.4			
Actuated g/C Ratio		0.57		0.16			
v/c Ratio		0.57		0.74			
Control Delay		26.0		27.2			
Queue Delay		0.0		0.0			
Total Delay		26.0		27.2			
LOS		C		C			
Approach Delay		26.0		27.2			
Approach LOS		C		C			

Intersection Summary

Lane Group	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (vph)	42	258	181	11	11	40
Future Volume (vph)	42	258	181	11	11	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865		0.894	
Flt Protected		0.950			0.989	
Satd. Flow (prot)	0	1770	1611	0	1647	0
Flt Permitted		0.950			0.989	
Satd. Flow (perm)	0	1770	1611	0	1647	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		91	844		641	
Travel Time (s)		2.5	23.0		17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	280	197	12	12	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	326	209	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Right
Median Width(ft)		12	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	311	133	167	347	110	111
Future Volume (vph)	311	133	167	347	110	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959		0.909			
Flt Protected	0.966					0.976
Satd. Flow (prot)	1726	0	1693	0	0	1818
Flt Permitted	0.966					0.976
Satd. Flow (perm)	1726	0	1693	0	0	1818
Link Speed (mph)	25		25			25
Link Distance (ft)	380		640			91
Travel Time (s)	10.4		17.5			2.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	145	182	377	120	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	483	0	559	0	0	241
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	86	186	146	276	328	68
Future Volume (vph)	86	186	146	276	328	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.912		0.977	
Flt Protected		0.984			0.960	
Satd. Flow (prot)	0	1833	1699	0	1747	0
Flt Permitted		0.984			0.960	
Satd. Flow (perm)	0	1833	1699	0	1747	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		616	640		489	
Travel Time (s)		16.8	17.5		11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	202	159	300	357	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	295	459	0	431	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Stop	Stop		Stop	

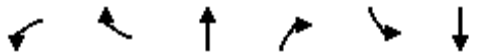
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	42	258	181	11	11	40
Future Volume (Veh/h)	42	258	181	11	11	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	280	197	12	12	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			844			
pX, platoon unblocked						
vC, conflicting volume	209				575	203
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209				575	203
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	95
cM capacity (veh/h)	1362				464	838

Direction, Lane #	NB 1	SE 1	NE 1
Volume Total	326	209	55
Volume Left	46	0	12
Volume Right	0	12	43
cSH	1362	1700	712
Volume to Capacity	0.03	0.12	0.08
Queue Length 95th (ft)	3	0	6
Control Delay (s)	1.4	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	1.4	0.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
16: Woodward Ave & Burritt Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	311	133	167	347	110	111
Future Volume (Veh/h)	311	133	167	347	110	111
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	338	145	182	377	120	121
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	732	370			559	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	732	370			559	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	1	79			88	
cM capacity (veh/h)	343	675			1012	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	483	559	241
Volume Left	338	0	120
Volume Right	145	377	0
cSH	402	1700	1012
Volume to Capacity	1.20	0.33	0.12
Queue Length 95th (ft)	486	0	10
Control Delay (s)	142.4	0.0	5.1
Lane LOS	F		A
Approach Delay (s)	142.4	0.0	5.1
Approach LOS	F		

Intersection Summary			
Average Delay	54.6		
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	86	186	146	276	328	68
Future Volume (vph)	86	186	146	276	328	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	93	202	159	300	357	74

Direction, Lane #	NB 1	SB 1	NE 1
Volume Total (vph)	295	459	431
Volume Left (vph)	93	0	357
Volume Right (vph)	0	300	74
Hadj (s)	0.10	-0.36	0.10
Departure Headway (s)	6.2	5.5	6.1
Degree Utilization, x	0.51	0.70	0.73
Capacity (veh/h)	541	627	562
Control Delay (s)	15.5	20.6	23.6
Approach Delay (s)	15.5	20.6	23.6
Approach LOS	C	C	C

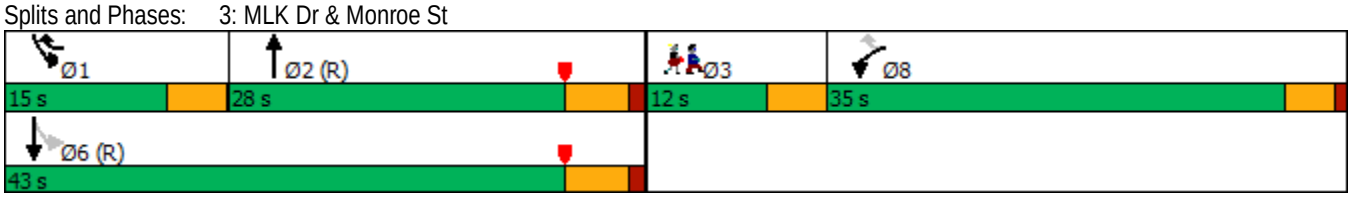
Intersection Summary			
Delay	20.4		
Level of Service	C		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

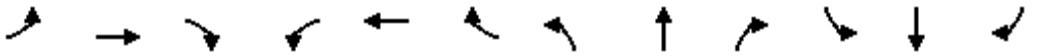
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	84	248	519	78	208	509	
Future Volume (vph)	84	248	519	78	208	509	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%		0%			0%	
Storage Length (ft)	0	155		0	180		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.980				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1703	1568	3478	0	1626	3406	
Flt Permitted	0.950				0.318		
Satd. Flow (perm)	1703	1568	3478	0	544	3406	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	30		35			35	
Link Distance (ft)	1185		556			566	
Travel Time (s)	26.9		10.8			11.0	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.80	0.90	0.88	0.86	0.85	0.96	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	6%	3%	2%	0%	11%	6%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	105	276	590	91	245	530	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	276	681	0	245	530	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	24		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	1	2		1	6	3
Permitted Phases		8			6		
Detector Phase	8	1	2		1	6	
Switch Phase							

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Minimum Initial (s)	7.0	5.0	15.0		5.0	15.0	1.0
Minimum Split (s)	20.0	9.5	20.5		9.5	20.5	7.0
Total Split (s)	35.0	15.0	28.0		15.0	43.0	12.0
Total Split (%)	38.9%	16.7%	31.1%		16.7%	47.8%	13%
Maximum Green (s)	30.7	10.9	22.5		10.9	37.5	8.0
Yellow Time (s)	3.3	4.0	4.3		4.0	4.3	4.0
All-Red Time (s)	1.0	0.1	1.2		0.1	1.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.1	5.5		4.1	5.5	
Lead/Lag	Lag	Lead	Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	11.0	28.0	50.0		70.5	70.2	
Actuated g/C Ratio	0.12	0.31	0.56		0.78	0.78	
v/c Ratio	0.50	0.57	0.35		0.40	0.20	
Control Delay	48.1	25.9	14.6		6.3	4.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.1	25.9	14.6		6.3	4.5	
LOS	D	C	B		A	A	
Approach Delay	32.0		14.6			5.1	
Approach LOS	C		B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 45.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: MLK Dr & Monroe St





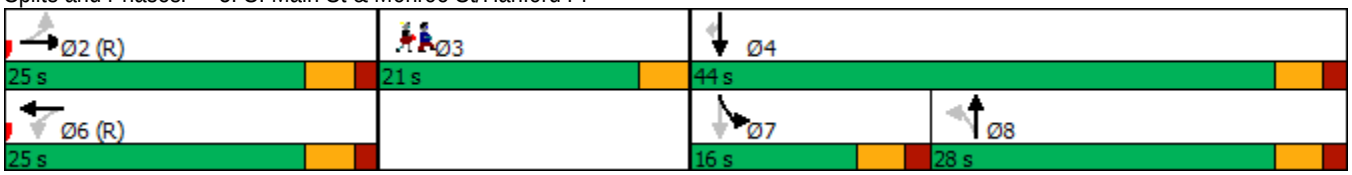
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	101	57	9	81	22	44	365	25	15	282	60
Future Volume (vph)	62	101	57	9	81	22	44	365	25	15	282	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	80		0	0		0	0		0	0		95
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.943			0.976			0.991				0.850
Flt Protected	0.950				0.995			0.994			0.997	
Satd. Flow (prot)	1752	1733	0	0	1780	0	0	1813	0	0	1793	1583
Flt Permitted	0.635				0.966			0.923			0.000	
Satd. Flow (perm)	1171	1733	0	0	1728	0	0	1683	0	0	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			11			4				86
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1185			837			620			729	
Travel Time (s)		26.9			19.0			16.9			16.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.76	0.70	0.60	0.70	0.80	0.73	0.89	0.72	0.88	0.95	0.70
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	9%	0%	5%	0%	0%	4%	0%	0%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	77	133	81	15	116	28	60	410	35	17	297	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	214	0	0	159	0	0	505	0	0	314	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			40			30			20	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8				7	4
Detector Phase	2	2		6	6		8	8		7	4	4
Switch Phase												

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	20.9	20.9		20.9	20.9		20.9	20.9		20.9	20.9	20.9
Total Split (s)	25.0	25.0		25.0	25.0		28.0	28.0		16.0	44.0	44.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%		31.1%	31.1%		17.8%	48.9%	48.9%
Maximum Green (s)	20.1	20.1		20.1	20.1		23.1	23.1		11.1	39.1	39.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.6	1.6		1.6	1.6		1.7	1.7		1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	32.8	32.8			32.8			39.2			39.2	39.2
Actuated g/C Ratio	0.36	0.36			0.36			0.44			0.44	0.44
v/c Ratio	0.18	0.33			0.25			0.69			0.40	0.12
Control Delay	18.8	18.4			22.8			27.4			19.9	4.1
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	18.8	18.4			22.8			27.4			19.9	4.1
LOS	B	B			C			C			B	A
Approach Delay		18.5			22.8			27.4			16.5	
Approach LOS		B			C			C			B	

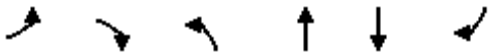
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 21.7		Intersection LOS: C	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S. Main St & Monroe St/Hanford Pl

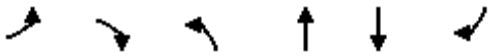


Lane Group	Ø3
Minimum Initial (s)	4.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	23%
Maximum Green (s)	17.5
Yellow Time (s)	3.5
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary



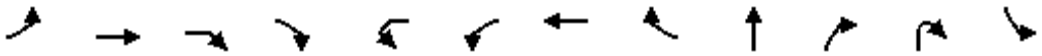
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	0	0	130	459	370	60	
Future Volume (vph)	0	0	130	459	370	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)	0	0	0			0	
Storage Lanes	0	0	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt					0.981		
Flt Protected				0.989			
Satd. Flow (prot)	0	0	0	1842	1827	0	
Flt Permitted				0.807			
Satd. Flow (perm)	0	0	0	1503	1827	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					19		
Link Speed (mph)	25			25	25		
Link Distance (ft)	360			541	620		
Travel Time (s)	9.8			14.8	16.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Adj. Flow (vph)	0	0	141	499	402	65	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	640	467	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			50	50		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9	15			9	
Number of Detectors			1	2	2		
Detector Template			Left	Thru	Thru		
Leading Detector (ft)			20	100	100		
Trailing Detector (ft)			0	0	0		
Turn Type			Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases			2				
Detector Phase			2	2	6		
Switch Phase							



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Minimum Initial (s)			15.0	15.0	15.0		4.0
Minimum Split (s)			23.1	23.1	23.4		26.0
Total Split (s)			64.0	64.0	64.0		26.0
Total Split (%)			71.1%	71.1%	71.1%		29%
Maximum Green (s)			58.9	58.9	58.9		22.0
Yellow Time (s)			3.2	3.2	3.2		4.0
All-Red Time (s)			1.9	1.9	1.9		0.0
Lost Time Adjust (s)				0.0	0.0		
Total Lost Time (s)				5.1	5.1		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			3.0	3.0	3.0		3.0
Minimum Gap (s)			3.0	3.0	3.0		3.0
Time Before Reduce (s)			0.0	0.0	0.0		0.0
Time To Reduce (s)			0.0	0.0	0.0		0.0
Recall Mode			C-Max	C-Max	C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				90.0	90.0		
Actuated g/C Ratio				1.00	1.00		
v/c Ratio				0.43	0.26		
Control Delay				1.1	0.3		
Queue Delay				0.0	0.0		
Total Delay				1.1	0.3		
LOS				A	A		
Approach Delay				1.1	0.3		
Approach LOS				A	A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 50 (56%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 0.8		Intersection LOS: A	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: S. Main St & Henry St



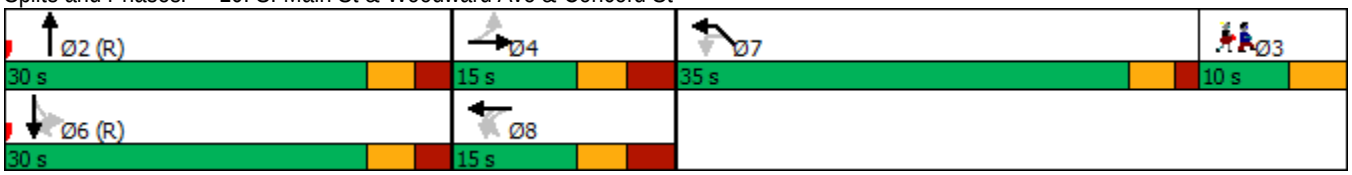
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	22	22	22	11	6	30	0	56	176	30	2	23
Future Volume (vph)	22	22	22	11	6	30	0	56	176	30	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%					0%		0%			
Storage Length (ft)	50		0			0		0		0		
Storage Lanes	1		0			0		0		0		
Taper Length (ft)	25					25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.910					0.918		0.979			
Flt Protected	0.950						0.981					
Satd. Flow (prot)	1770	1695	0	0	0	0	1678	0	1824	0	0	0
Flt Permitted	0.748						0.844					
Satd. Flow (perm)	1393	1695	0	0	0	0	1443	0	1824	0	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)		11					138					
Link Speed (mph)		25					25		25			
Link Distance (ft)		344					721		778			
Travel Time (s)		9.4					19.7		21.2			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%					0%		0%			
Adj. Flow (vph)	24	24	24	12	7	33	0	61	191	33	2	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	60	0	0	0	0	101	0	226	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Right	Right	Left
Median Width(ft)		12					12		0			
Link Offset(ft)		0					0		0			
Crosswalk Width(ft)		30					35		60			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15	15		9		9	9	15
Number of Detectors	1	2			1	1	2		2			1
Detector Template	Left	Thru			Left	Left	Thru		Thru			Left
Leading Detector (ft)	20	100			20	20	100		100			20
Trailing Detector (ft)	0	0			0	0	0		0			0
Turn Type	Perm	NA			Perm	Perm	NA		NA			Perm
Protected Phases		4					8		2			
Permitted Phases	4				8	8						6
Detector Phase	4	4			8	8	8		2			6
Switch Phase												

Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Lane Configurations							
Traffic Volume (vph)	177	163	6	0	269	6	
Future Volume (vph)	177	163	6	0	269	6	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)		0%		0%			
Storage Length (ft)	0			0	0		
Storage Lanes	0			1	0		
Taper Length (ft)	25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt				0.868			
Flt Protected		0.973		0.999			
Satd. Flow (prot)	0	1812	0	1615	0	0	
Flt Permitted		0.709		0.999			
Satd. Flow (perm)	0	1321	0	1615	0	0	
Right Turn on Red						Yes	
Satd. Flow (RTOR)				162			
Link Speed (mph)		25		25			
Link Distance (ft)		541		844			
Travel Time (s)		14.8		23.0			
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%			
Adj. Flow (vph)	192	177	7	0	292	7	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	394	0	306	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0		12			
Link Offset(ft)		0		0			
Crosswalk Width(ft)		50		60			
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		15	15	9	9	
Number of Detectors	1	2	1	1			
Detector Template	Left	Thru	Left	Left			
Leading Detector (ft)	20	100	20	20			
Trailing Detector (ft)	0	0	0	0			
Turn Type	Perm	NA	Perm	Prot			
Protected Phases		6		7			3
Permitted Phases	6		7	7			
Detector Phase	6	6	7	7			
Switch Phase							

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Minimum Initial (s)	7.0	7.0			10.0	10.0	10.0		15.0			15.0
Minimum Split (s)	24.7	24.7			24.7	24.7	24.7		23.7			23.7
Total Split (s)	15.0	15.0			15.0	15.0	15.0		30.0			30.0
Total Split (%)	16.7%	16.7%			16.7%	16.7%	16.7%		33.3%			33.3%
Maximum Green (s)	8.3	8.3			8.3	8.3	8.3		24.3			24.3
Yellow Time (s)	3.3	3.3			3.3	3.3	3.3		3.2			3.2
All-Red Time (s)	3.4	3.4			3.4	3.4	3.4		2.5			2.5
Lost Time Adjust (s)	0.0	0.0					0.0		0.0			
Total Lost Time (s)	6.7	6.7					6.7		5.7			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			3.0
Minimum Gap (s)	3.0	3.0			3.0	3.0	3.0		3.0			3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Recall Mode	None	None			None	None	None		C-Min			C-Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	8.0	8.0					8.3		52.4			
Actuated g/C Ratio	0.09	0.09					0.09		0.58			
v/c Ratio	0.19	0.37					0.39		0.21			
Control Delay	41.8	39.8					7.8		11.9			
Queue Delay	0.0	0.0					0.0		0.0			
Total Delay	41.8	39.8					7.8		11.9			
LOS	D	D					A		B			
Approach Delay		40.4					7.8		11.9			
Approach LOS		D					A		B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 89 (99%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 17.7		Intersection LOS: B	
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: S. Main St & Woodward Ave & Concord St



Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Minimum Initial (s)	15.0	15.0	10.0	10.0			4.0
Minimum Split (s)	23.7	23.7	22.7	22.7			21.0
Total Split (s)	30.0	30.0	35.0	35.0			10.0
Total Split (%)	33.3%	33.3%	38.9%	38.9%			11%
Maximum Green (s)	24.3	24.3	30.3	30.3			6.0
Yellow Time (s)	3.2	3.2	3.1	3.1			4.0
All-Red Time (s)	2.5	2.5	1.6	1.6			0.0
Lost Time Adjust (s)		0.0		0.0			
Total Lost Time (s)		5.7		4.7			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0			3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0			0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0			0.0
Recall Mode	C-Min	C-Min	None	None			None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		52.4		15.2			
Actuated g/C Ratio		0.58		0.17			
v/c Ratio		0.51		0.75			
Control Delay		11.0		27.9			
Queue Delay		0.0		0.0			
Total Delay		11.0		27.9			
LOS		B		C			
Approach Delay		11.0		27.9			
Approach LOS		B		C			

Intersection Summary

Lane Group	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (vph)	39	267	193	14	14	38
Future Volume (vph)	39	267	193	14	14	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)		25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865		0.901	
Flt Protected		0.950			0.987	
Satd. Flow (prot)	0	1770	1611	0	1657	0
Flt Permitted		0.950			0.987	
Satd. Flow (perm)	0	1770	1611	0	1657	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		91	844		641	
Travel Time (s)		2.5	23.0		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	42	290	210	15	15	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	332	225	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Right
Median Width(ft)		12	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	287	108	198	285	105	126
Future Volume (vph)	287	108	198	285	105	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.963		0.920			
Flt Protected	0.965					0.978
Satd. Flow (prot)	1731	0	1714	0	0	1822
Flt Permitted	0.965					0.978
Satd. Flow (perm)	1731	0	1714	0	0	1822
Link Speed (mph)	25		25			25
Link Distance (ft)	380		640			91
Travel Time (s)	10.4		17.5			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	312	117	215	310	114	137
Shared Lane Traffic (%)						
Lane Group Flow (vph)	429	0	525	0	0	251
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.8%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	82	173	135	278	310	71
Future Volume (vph)	82	173	135	278	310	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.909		0.975	
Flt Protected		0.984			0.961	
Satd. Flow (prot)	0	1833	1693	0	1745	0
Flt Permitted		0.984			0.961	
Satd. Flow (perm)	0	1833	1693	0	1745	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		616	640		489	
Travel Time (s)		16.8	17.5		11.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	89	188	147	302	337	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	277	449	0	414	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.3%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	42	258	169	11	11	40
Future Volume (Veh/h)	42	258	169	11	11	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	280	184	12	12	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			844			
pX, platoon unblocked						
vC, conflicting volume	196				562	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196				562	190
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	95
cM capacity (veh/h)	1377				472	852

Direction, Lane #	NB 1	SE 1	NE 1
Volume Total	326	196	55
Volume Left	46	0	12
Volume Right	0	12	43
cSH	1377	1700	724
Volume to Capacity	0.03	0.12	0.08
Queue Length 95th (ft)	3	0	6
Control Delay (s)	1.4	0.0	10.4
Lane LOS	A		B
Approach Delay (s)	1.4	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	301	133	167	347	110	99
Future Volume (Veh/h)	301	133	167	347	110	99
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	327	145	182	377	120	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	718	370			559	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	718	370			559	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	6	79			88	
cM capacity (veh/h)	349	675			1012	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	472	559	228
Volume Left	327	0	120
Volume Right	145	377	0
cSH	409	1700	1012
Volume to Capacity	1.15	0.33	0.12
Queue Length 95th (ft)	444	0	10
Control Delay (s)	124.0	0.0	5.3
Lane LOS	F		A
Approach Delay (s)	124.0	0.0	5.3
Approach LOS	F		

Intersection Summary			
Average Delay	47.4		
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	86	186	124	276	328	68
Future Volume (vph)	86	186	124	276	328	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	93	202	135	300	357	74

Direction, Lane #	NB 1	SB 1	NE 1
Volume Total (vph)	295	435	431
Volume Left (vph)	93	0	357
Volume Right (vph)	0	300	74
Hadj (s)	0.10	-0.38	0.10
Departure Headway (s)	6.1	5.5	6.0
Degree Utilization, x	0.50	0.66	0.72
Capacity (veh/h)	547	629	568
Control Delay (s)	15.2	18.5	22.8
Approach Delay (s)	15.2	18.5	22.8
Approach LOS	C	C	C

Intersection Summary			
Delay		19.3	
Level of Service		C	
Intersection Capacity Utilization		70.3%	ICU Level of Service C
Analysis Period (min)		15	

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	83	195	135	278	310	71
Future Vol, veh/h	83	195	135	278	310	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	212	147	302	337	77
Number of Lanes	0	1	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE		SB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		NE	NB
Conflicting Lanes Right	0	1	1
HCM Control Delay	15.2	18.8	21.3
HCM LOS	C	C	C

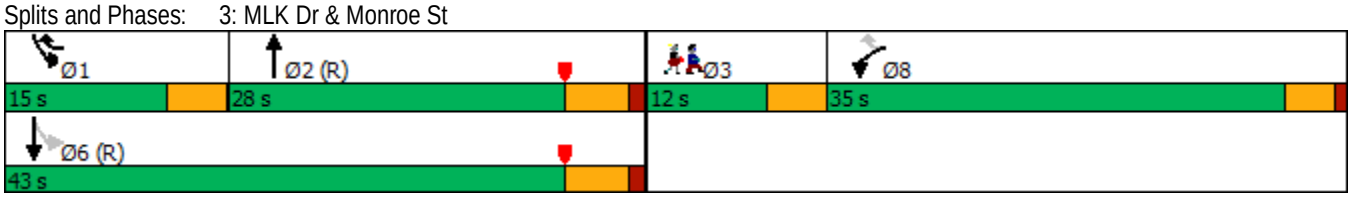
Lane	NELn1	NBLn1	SBLn1
Vol Left, %	81%	30%	0%
Vol Thru, %	0%	70%	33%
Vol Right, %	19%	0%	67%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	381	278	413
LT Vol	310	83	0
Through Vol	0	195	135
RT Vol	71	0	278
Lane Flow Rate	414	302	449
Geometry Grp	1	1	1
Degree of Util (X)	0.688	0.505	0.67
Departure Headway (Hd)	5.981	6.021	5.371
Convergence, Y/N	Yes	Yes	Yes
Cap	600	595	669
Service Time	4.05	4.107	3.449
HCM Lane V/C Ratio	0.69	0.508	0.671
HCM Control Delay	21.3	15.2	18.8
HCM Lane LOS	C	C	C
HCM 95th-tile Q	5.4	2.8	5.1

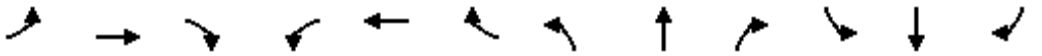
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	84	250	520	78	208	509	
Future Volume (vph)	84	250	520	78	208	509	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%		0%			0%	
Storage Length (ft)	0	155		0	180		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.980				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1703	1568	3478	0	1626	3406	
Flt Permitted	0.950				0.317		
Satd. Flow (perm)	1703	1568	3478	0	543	3406	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	30		35			35	
Link Distance (ft)	1185		556			566	
Travel Time (s)	26.9		10.8			11.0	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.80	0.90	0.88	0.86	0.85	0.96	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	6%	3%	2%	0%	11%	6%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	105	278	591	91	245	530	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	278	682	0	245	530	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	24		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	1	2		1	6	3
Permitted Phases		8			6		
Detector Phase	8	1	2		1	6	
Switch Phase							

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Minimum Initial (s)	7.0	5.0	15.0		5.0	15.0	1.0
Minimum Split (s)	20.0	9.5	20.5		9.5	20.5	7.0
Total Split (s)	35.0	15.0	28.0		15.0	43.0	12.0
Total Split (%)	38.9%	16.7%	31.1%		16.7%	47.8%	13%
Maximum Green (s)	30.7	10.9	22.5		10.9	37.5	8.0
Yellow Time (s)	3.3	4.0	4.3		4.0	4.3	4.0
All-Red Time (s)	1.0	0.1	1.2		0.1	1.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.1	5.5		4.1	5.5	
Lead/Lag	Lag	Lead	Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	11.0	28.1	49.9		70.5	70.2	
Actuated g/C Ratio	0.12	0.31	0.55		0.78	0.78	
v/c Ratio	0.50	0.57	0.35		0.40	0.20	
Control Delay	48.3	26.6	14.6		6.3	4.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.3	26.6	14.6		6.3	4.5	
LOS	D	C	B		A	A	
Approach Delay	32.6		14.6			5.1	
Approach LOS	C		B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 45.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: MLK Dr & Monroe St





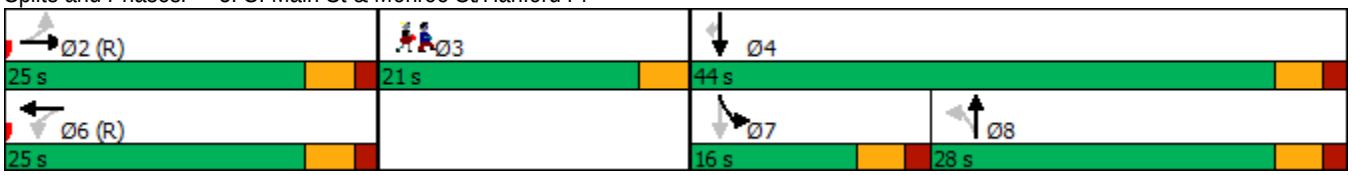
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	101	57	9	81	22	46	375	25	15	282	60
Future Volume (vph)	62	101	57	9	81	22	46	375	25	15	282	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	80		0	0		0	0		0	0		95
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.943			0.976			0.991				0.850
Flt Protected	0.950				0.995			0.994			0.997	
Satd. Flow (prot)	1752	1733	0	0	1780	0	0	1813	0	0	1793	1583
Flt Permitted	0.629				0.966			0.920			0.000	
Satd. Flow (perm)	1160	1733	0	0	1728	0	0	1678	0	0	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			11			4				86
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1185			837			620			729	
Travel Time (s)		26.9			19.0			16.9			16.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.76	0.70	0.60	0.70	0.80	0.73	0.89	0.72	0.88	0.95	0.70
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	9%	0%	5%	0%	0%	4%	0%	0%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	77	133	81	15	116	28	63	421	35	17	297	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	214	0	0	159	0	0	519	0	0	314	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			40			30			20	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8				7	4
Detector Phase	2	2		6	6		8	8		7	4	4
Switch Phase												

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	20.9	20.9		20.9	20.9		20.9	20.9		20.9	20.9	20.9
Total Split (s)	25.0	25.0		25.0	25.0		28.0	28.0		16.0	44.0	44.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%		31.1%	31.1%		17.8%	48.9%	48.9%
Maximum Green (s)	20.1	20.1		20.1	20.1		23.1	23.1		11.1	39.1	39.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.6	1.6		1.6	1.6		1.7	1.7		1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	31.2	31.2			31.2			40.8			40.8	40.8
Actuated g/C Ratio	0.35	0.35			0.35			0.45			0.45	0.45
v/c Ratio	0.19	0.34			0.26			0.68			0.39	0.11
Control Delay	19.6	19.3			23.6			26.4			19.0	4.0
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	19.6	19.3			23.6			26.4			19.0	4.0
LOS	B	B			C			C			B	A
Approach Delay		19.4			23.6			26.4			15.7	
Approach LOS		B			C			C			B	

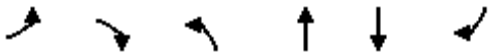
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 65.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S. Main St & Monroe St/Hanford Pl

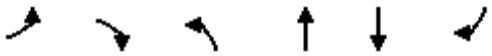


Lane Group	Ø3
Minimum Initial (s)	4.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	23%
Maximum Green (s)	17.5
Yellow Time (s)	3.5
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary



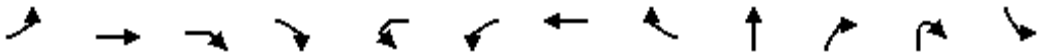
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	0	0	130	471	370	60	
Future Volume (vph)	0	0	130	471	370	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)	0	0	0			0	
Storage Lanes	0	0	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt					0.981		
Flt Protected				0.989			
Satd. Flow (prot)	0	0	0	1842	1827	0	
Flt Permitted				0.810			
Satd. Flow (perm)	0	0	0	1509	1827	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)					19		
Link Speed (mph)	25			25	25		
Link Distance (ft)	360			541	620		
Travel Time (s)	9.8			14.8	16.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Adj. Flow (vph)	0	0	141	512	402	65	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	0	653	467	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	0			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			50	50		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9	15			9	
Number of Detectors			1	2	2		
Detector Template			Left	Thru	Thru		
Leading Detector (ft)			20	100	100		
Trailing Detector (ft)			0	0	0		
Turn Type			Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases			2				
Detector Phase			2	2	6		
Switch Phase							



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Minimum Initial (s)			15.0	15.0	15.0		4.0
Minimum Split (s)			23.1	23.1	23.4		26.0
Total Split (s)			64.0	64.0	64.0		26.0
Total Split (%)			71.1%	71.1%	71.1%		29%
Maximum Green (s)			58.9	58.9	58.9		22.0
Yellow Time (s)			3.2	3.2	3.2		4.0
All-Red Time (s)			1.9	1.9	1.9		0.0
Lost Time Adjust (s)				0.0	0.0		
Total Lost Time (s)				5.1	5.1		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)			3.0	3.0	3.0		3.0
Minimum Gap (s)			3.0	3.0	3.0		3.0
Time Before Reduce (s)			0.0	0.0	0.0		0.0
Time To Reduce (s)			0.0	0.0	0.0		0.0
Recall Mode			C-Max	C-Max	C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)				90.0	90.0		
Actuated g/C Ratio				1.00	1.00		
v/c Ratio				0.43	0.26		
Control Delay				1.1	0.3		
Queue Delay				0.0	0.0		
Total Delay				1.1	0.3		
LOS				A	A		
Approach Delay				1.1	0.3		
Approach LOS				A	A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 50 (56%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 0.8		Intersection LOS: A	
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: S. Main St & Henry St



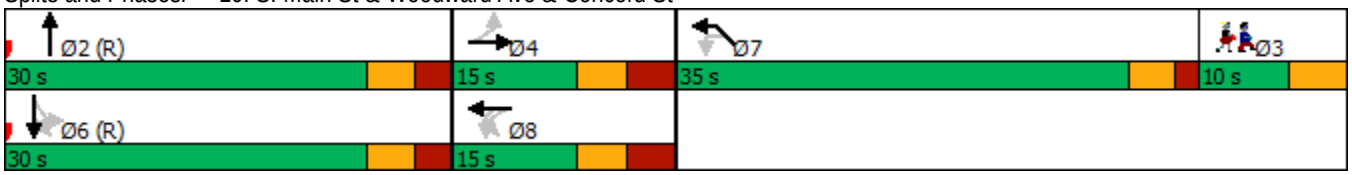
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	22	22	22	11	6	30	0	56	176	30	2	23
Future Volume (vph)	22	22	22	11	6	30	0	56	176	30	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%					0%		0%			
Storage Length (ft)	50		0			0		0		0		
Storage Lanes	1		0			0		0		0		
Taper Length (ft)	25					25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.910					0.918		0.979			
Flt Protected	0.950						0.981					
Satd. Flow (prot)	1770	1695	0	0	0	0	1678	0	1824	0	0	0
Flt Permitted	0.748						0.844					
Satd. Flow (perm)	1393	1695	0	0	0	0	1443	0	1824	0	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)		11					138					
Link Speed (mph)		25					25		25			
Link Distance (ft)		344					721		778			
Travel Time (s)		9.4					19.7		21.2			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%					0%		0%			
Adj. Flow (vph)	24	24	24	12	7	33	0	61	191	33	2	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	60	0	0	0	0	101	0	226	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Right	Right	Left
Median Width(ft)		12					12		0			
Link Offset(ft)		0					0		0			
Crosswalk Width(ft)		30					35		60			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15	15		9		9	9	15
Number of Detectors	1	2			1	1	2		2			1
Detector Template	Left	Thru			Left	Left	Thru		Thru			Left
Leading Detector (ft)	20	100			20	20	100		100			20
Trailing Detector (ft)	0	0			0	0	0		0			0
Turn Type	Perm	NA			Perm	Perm	NA		NA			Perm
Protected Phases		4					8		2			
Permitted Phases	4				8	8						6
Detector Phase	4	4			8	8	8		2			6
Switch Phase												

Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Lane Configurations							
Traffic Volume (vph)	177	163	6	0	281	6	
Future Volume (vph)	177	163	6	0	281	6	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)		0%		0%			
Storage Length (ft)	0			0	0		
Storage Lanes	0			1	0		
Taper Length (ft)	25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt				0.868			
Flt Protected		0.973		0.999			
Satd. Flow (prot)	0	1812	0	1615	0	0	
Flt Permitted		0.709		0.999			
Satd. Flow (perm)	0	1321	0	1615	0	0	
Right Turn on Red						Yes	
Satd. Flow (RTOR)				162			
Link Speed (mph)		25		25			
Link Distance (ft)		541		844			
Travel Time (s)		14.8		23.0			
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%			
Adj. Flow (vph)	192	177	7	0	305	7	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	394	0	319	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0		12			
Link Offset(ft)		0		0			
Crosswalk Width(ft)		50		60			
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		15	15	9	9	
Number of Detectors	1	2	1	1			
Detector Template	Left	Thru	Left	Left			
Leading Detector (ft)	20	100	20	20			
Trailing Detector (ft)	0	0	0	0			
Turn Type	Perm	NA	Perm	Prot			
Protected Phases		6		7			3
Permitted Phases	6		7	7			
Detector Phase	6	6	7	7			
Switch Phase							

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBT	NBR	NBR2	SBL2
Minimum Initial (s)	7.0	7.0			10.0	10.0	10.0		15.0			15.0
Minimum Split (s)	24.7	24.7			24.7	24.7	24.7		23.7			23.7
Total Split (s)	15.0	15.0			15.0	15.0	15.0		30.0			30.0
Total Split (%)	16.7%	16.7%			16.7%	16.7%	16.7%		33.3%			33.3%
Maximum Green (s)	8.3	8.3			8.3	8.3	8.3		24.3			24.3
Yellow Time (s)	3.3	3.3			3.3	3.3	3.3		3.2			3.2
All-Red Time (s)	3.4	3.4			3.4	3.4	3.4		2.5			2.5
Lost Time Adjust (s)	0.0	0.0					0.0		0.0			
Total Lost Time (s)	6.7	6.7					6.7		5.7			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			3.0
Minimum Gap (s)	3.0	3.0			3.0	3.0	3.0		3.0			3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0	0.0		0.0			0.0
Recall Mode	None	None			None	None	None		C-Min			C-Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	8.0	8.0					8.3		51.7			
Actuated g/C Ratio	0.09	0.09					0.09		0.57			
v/c Ratio	0.19	0.37					0.39		0.22			
Control Delay	41.8	39.8					7.8		12.3			
Queue Delay	0.0	0.0					0.0		0.0			
Total Delay	41.8	39.8					7.8		12.3			
LOS	D	D					A		B			
Approach Delay		40.4					7.8		12.3			
Approach LOS		D					A		B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 89 (99%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: S. Main St & Woodward Ave & Concord St



Lane Group	SBL	SBT	NWL2	NWL	NWR	NWR2	Ø3
Minimum Initial (s)	15.0	15.0	10.0	10.0			4.0
Minimum Split (s)	23.7	23.7	22.7	22.7			21.0
Total Split (s)	30.0	30.0	35.0	35.0			10.0
Total Split (%)	33.3%	33.3%	38.9%	38.9%			11%
Maximum Green (s)	24.3	24.3	30.3	30.3			6.0
Yellow Time (s)	3.2	3.2	3.1	3.1			4.0
All-Red Time (s)	2.5	2.5	1.6	1.6			0.0
Lost Time Adjust (s)		0.0		0.0			
Total Lost Time (s)		5.7		4.7			
Lead/Lag			Lead	Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0			3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0			0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0			0.0
Recall Mode	C-Min	C-Min	None	None			None
Walk Time (s)							7.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		51.7		15.9			
Actuated g/C Ratio		0.57		0.18			
v/c Ratio		0.52		0.76			
Control Delay		11.5		28.7			
Queue Delay		0.0		0.0			
Total Delay		11.5		28.7			
LOS		B		C			
Approach Delay		11.5		28.7			
Approach LOS		B		C			

Intersection Summary

Lane Group	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (vph)	39	279	193	14	14	38
Future Volume (vph)	39	279	193	14	14	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)		25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865		0.901	
Flt Protected		0.950			0.987	
Satd. Flow (prot)	0	1770	1611	0	1657	0
Flt Permitted		0.950			0.987	
Satd. Flow (perm)	0	1770	1611	0	1657	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		91	844		641	
Travel Time (s)		2.5	23.0		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	42	303	210	15	15	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	345	225	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Right
Median Width(ft)		12	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	287	108	210	295	105	126
Future Volume (vph)	287	108	210	295	105	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.963		0.921			
Flt Protected	0.965					0.978
Satd. Flow (prot)	1731	0	1716	0	0	1822
Flt Permitted	0.965					0.978
Satd. Flow (perm)	1731	0	1716	0	0	1822
Link Speed (mph)	25		25			25
Link Distance (ft)	380		640			91
Travel Time (s)	10.4		17.5			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	312	117	228	321	114	137
Shared Lane Traffic (%)						
Lane Group Flow (vph)	429	0	549	0	0	251
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	83	195	135	278	310	71
Future Volume (vph)	83	195	135	278	310	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.909		0.975	
Flt Protected		0.985			0.961	
Satd. Flow (prot)	0	1835	1693	0	1745	0
Flt Permitted		0.985			0.961	
Satd. Flow (perm)	0	1835	1693	0	1745	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		616	640		489	
Travel Time (s)		16.8	17.5		11.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	90	212	147	302	337	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	302	449	0	414	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	NBL2	NBL	SER	SER2	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	39	279	193	14	14	38
Future Volume (Veh/h)	39	279	193	14	14	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	303	210	15	15	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			844			
pX, platoon unblocked						
vC, conflicting volume	225				604	218
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225				604	218
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	95
cM capacity (veh/h)	1344				447	822

Direction, Lane #	NB 1	SE 1	NE 1
Volume Total	345	225	56
Volume Left	42	0	15
Volume Right	0	15	41
cSH	1344	1700	671
Volume to Capacity	0.03	0.13	0.08
Queue Length 95th (ft)	2	0	7
Control Delay (s)	1.2	0.0	10.9
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	10.9
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	287	108	210	295	105	126
Future Volume (Veh/h)	287	108	210	295	105	126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	312	117	228	321	114	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	754	388			549	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	754	388			549	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	7	82			89	
cM capacity (veh/h)	335	660			1021	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	429	549	251
Volume Left	312	0	114
Volume Right	117	321	0
cSH	387	1700	1021
Volume to Capacity	1.11	0.32	0.11
Queue Length 95th (ft)	389	0	9
Control Delay (s)	111.1	0.0	4.7
Lane LOS	F		A
Approach Delay (s)	111.1	0.0	4.7
Approach LOS	F		

Intersection Summary			
Average Delay	39.7		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	83	195	135	278	310	71
Future Volume (vph)	83	195	135	278	310	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	212	147	302	337	77

Direction, Lane #	NB 1	SB 1	NE 1
Volume Total (vph)	302	449	414
Volume Left (vph)	90	0	337
Volume Right (vph)	0	302	77
Hadj (s)	0.09	-0.37	0.09
Departure Headway (s)	6.1	5.4	6.0
Degree Utilization, x	0.51	0.68	0.69
Capacity (veh/h)	551	635	563
Control Delay (s)	15.3	19.2	21.5
Approach Delay (s)	15.3	19.2	21.5
Approach LOS	C	C	C

Intersection Summary			
Delay	19.0		
Level of Service	C		
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	30.7
Intersection LOS	D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	311	133	167	347	110	111
Future Vol, veh/h	311	133	167	347	110	111
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	338	145	182	377	120	121
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	32.7	35.8	15
HCM LOS	D	E	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	70%	50%
Vol Thru, %	32%	0%	50%
Vol Right, %	68%	30%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	514	444	221
LT Vol	0	311	110
Through Vol	167	0	111
RT Vol	347	133	0
Lane Flow Rate	559	483	240
Geometry Grp	1	1	1
Degree of Util (X)	0.876	0.832	0.444
Departure Headway (Hd)	5.643	6.206	6.66
Convergence, Y/N	Yes	Yes	Yes
Cap	642	589	540
Service Time	3.689	4.206	4.719
HCM Lane V/C Ratio	0.871	0.82	0.444
HCM Control Delay	35.8	32.7	15
HCM Lane LOS	E	D	B
HCM 95th-tile Q	10.3	8.7	2.3

Intersection	
Intersection Delay, s/veh	24.2
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	287	108	210	295	105	126
Future Vol, veh/h	287	108	210	295	105	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	312	117	228	321	114	137
Number of Lanes	1	0	1	0	0	1

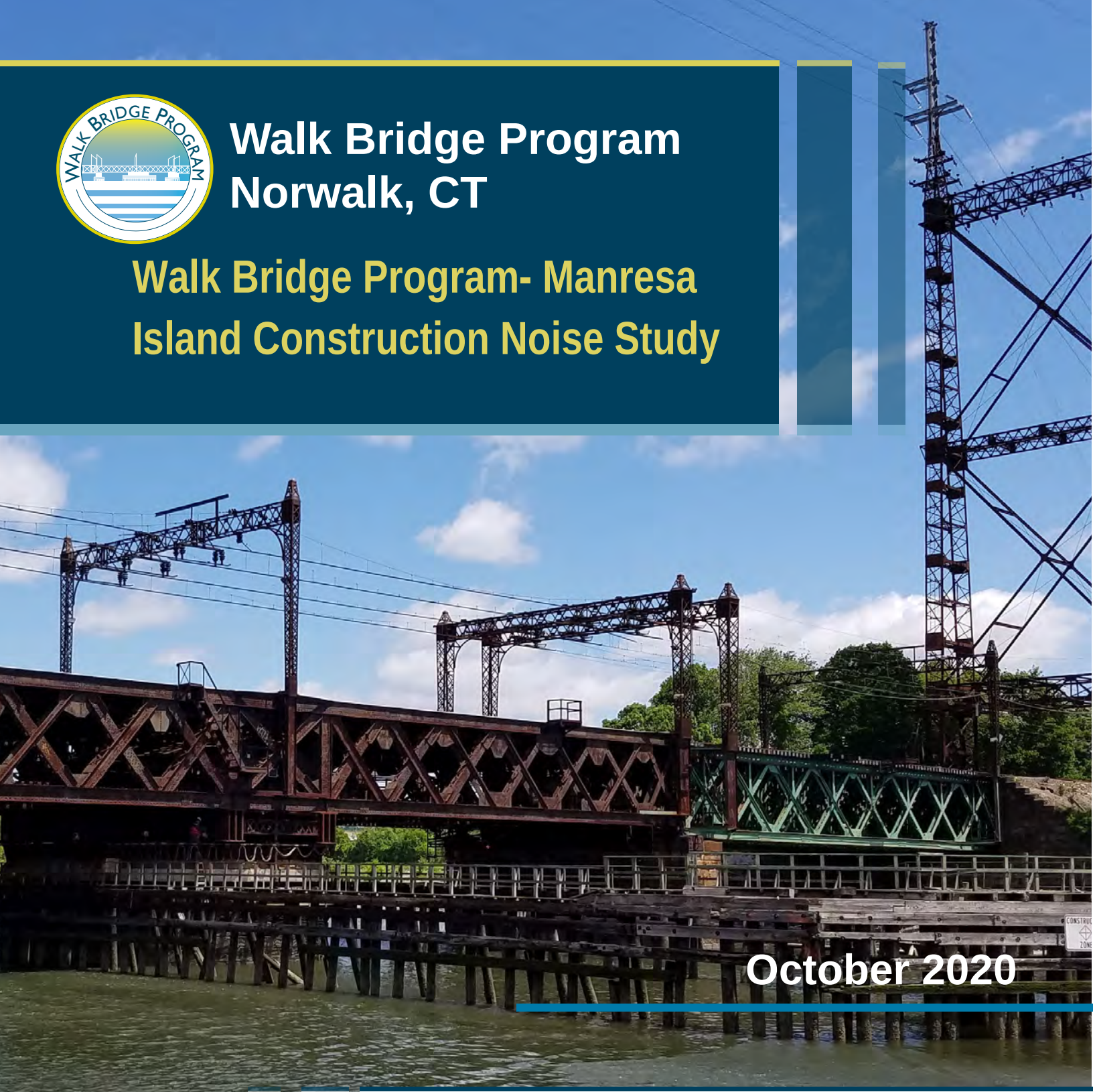
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	23.5	29.2	14.4
HCM LOS	C	D	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	73%	45%
Vol Thru, %	42%	0%	55%
Vol Right, %	58%	27%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	505	395	231
LT Vol	0	287	105
Through Vol	210	0	126
RT Vol	295	108	0
Lane Flow Rate	549	429	251
Geometry Grp	1	1	1
Degree of Util (X)	0.826	0.723	0.446
Departure Headway (Hd)	5.42	6.06	6.396
Convergence, Y/N	Yes	Yes	Yes
Cap	659	593	567
Service Time	3.512	4.148	4.396
HCM Lane V/C Ratio	0.833	0.723	0.443
HCM Control Delay	29.2	23.5	14.4
HCM Lane LOS	D	C	B
HCM 95th-tile Q	8.8	6	2.3

Attachment C-3 - Manresa Island Construction Noise Study, October 2020

Walk Bridge Program
Norwalk, CT

Walk Bridge Program- Manresa Island Construction Noise Study



October 2020

Prepared for:

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Introduction

WSP was requested by the Connecticut Department of Transportation (CTDOT) to implement a noise study to model conditions anticipated to result from work at the proposed bridge assembly site on Manresa Island south of Norwalk Harbor. This work is part of the Walk Bridge Replacement Project (SPN 0301-0176) in Norwalk, CT. As part of the study, data collected in early September 2020 documented background ambient noise levels at five (5) locations adjacent to Manresa Island. This information was then compared to a model of future construction noise levels based on Manresa Island work activities. Additionally, a site in downtown Norwalk near 70 Water Street had previously been considered for bridge assembly work and additional comparisons were made between the Manresa Island locations and sites in downtown Norwalk.

WSP retained the services of Cross Spectrum Acoustics (CSA) of Longmeadow, MA to prepare the Manresa Noise Study; including background noise monitoring, analysis of monitoring results and modeling of construction phase noise levels for both Manresa Island and downtown Norwalk. CSA deployed noise monitoring systems at representative locations in neighborhoods adjacent to Manresa Island. Monitoring devices were placed on private property as coordinated with and agreed to by the property owners and/or representatives. Downtown Norwalk background noise levels were obtained from a previous study for the Walk Bridge Test Pile Program, conducted between summer of 2018 and winter of 2019.

The study (Attachment A) is supplemented by appendices that provide noise measurement site photographs (Appendix A), noise measurement results graphs (Appendix B) and additional graphics representing the expected noise levels for both the Manresa Island areas and downtown Norwalk (Appendix C).

Attachment A - Manresa Island Construction Noise Study

Cross-Spectrum Acoustics

Cross-Spectrum Acoustics Inc.

Massachusetts
Utah
California

TECHNICAL MEMORANDUM

From:	David Towers & Herbert Singleton, Cross-Spectrum Acoustics Inc.
Date:	October 9, 2020
Project Reference:	J2018-1050 – Walk Bridge Project - Manresa Island Construction Noise Study (SPN 301-176)

1. INTRODUCTION

This technical memorandum provides a summary of a noise study for proposed Walk Bridge Project construction activities at Manresa Island in Norwalk, CT. The study included pre-construction background ambient noise measurements at nearby noise-sensitive locations as well as predictions of future construction noise levels at these locations. The projected noise levels in nearby neighborhoods from the proposed construction activities at Manresa Island are compared to noise levels in downtown Norwalk from the same activities if conducted at the Marine Staging Yard on Water Street, south of the Stroffolino Bridge.

2. BACKGROUND AMBIENT NOISE MEASUREMENTS

Sound is defined as small changes in air pressure above and below the standard atmospheric pressure. Noise is usually considered to be unwanted sound. The level of sound is the magnitude of air pressure change above and below atmospheric pressure and is expressed in A-weighted decibels (dBA) to correspond with the characteristics of human hearing. Typical sounds fall within a range between 0 dBA (the approximate lower limit of human hearing) and 120 dBA (the highest sound level generally experienced in the environment). A 3-dB change in sound level is perceived as a barely noticeable change outdoors and a 10-dB change in sound level is perceived as a doubling (or halving) of loudness. Because environmental noise is constantly changing, it is common to use various metrics to describe the overall noise exposure. Some of these metrics are described below:

> **L_{eq}** is the "equivalent" sound level over a time period, typically 1 hour or 24-hours. It is the level of steady sound that has the same energy as a fluctuating sound measured over the same time period. L_{eq} is indicative of the average sound level during the measurement period.
>
> **L_{xx}:** represents "percentile" levels, i.e. the sound level that is exceeded over "xx" percent of the time during the measurement period. For example, the L_{90} is the sound level that is exceeded 90% of the time during the measurement period and is the metric commonly associated with the background noise. L_{10} and L_{50} are sound levels that are exceeded 10% of the time and 50% of the time, respectively. L_{10} and L_{50} are used by the Connecticut Department of Energy and Environmental Protection to assess noise levels.
>
> **L_{max}** is the maximum sound level and is used to describe the highest level over a measurement period .
>
> **L_{dn}** is the day-night sound level which is used by federal agencies to describe daily community noise exposure. L_{dn} is a cumulative equivalent noise level over a 24-hour period that is similar to L_{eq}. However, L_{dn} adds a night-time penalty of 10 decibels to events measured between 10:00 PM and 7:00 AM to account for increased nighttime sensitivity to noise.

2.1. AMBIENT NOISE MEASUREMENT LOCATIONS

Long-term noise measurements were conducted over a 48-hour weekday period between September 1 and September 3, 2020 at the five locations around Manresa Island shown in Figure 1, denoted as Sites MAN-1 through MAN-5. The measurements were performed using NTi Audio model XL2 sound level meters that conform to American National Standard Institute (ANSI) standards for Class 1 (Precision) sound measurement equipment. Calibrations, traceable to the National Institute of Standards and Technology (NIST), were conducted before and after each measurement. The monitors were set to continuously monitor noise levels and report the hourly equivalent noise level (L_{eq}), maximum noise level (L_{max}), and 10^{th}, 50^{th} and 90^{th} percentile sound level (L_{10}, L_{50} and L_{90}) metrics over the measurement periods.

The weather during the measurement period was mostly dry, except for some periods of rain on September 2, and temperatures in the area ranged from 60 to 80 degrees Fahrenheit. Wind speeds were generally below 10 mph. Windscreens were used to minimize wind noise in the measurements. CSA staff performed short-term on-site observations during the measurement periods to note sound sources and typical activities.

In addition to the September 2020 measurements, the existing noise data from measurement sites N-6 (at 50 Water Street) and N-7 (100 Water Street) collected in July 2018[1] are also presented in Figure 2. These results are intended to represent the existing noise conditions near newly constructed apartment buildings located west of Water Street between Hanford Place and Raymond Street. Because construction is still occurring at one building, it was not feasible to conduct additional long-term measurements in this area.

A summary of each location is provided below, and photographs of the measurement sites are included in Appendix A.

MAN-1: 10 Woodland Road. This measurement location was intended to represent the existing noise environment for homes in the southeast portion of the Wilson Point Community located west of the Manresa Island site. The noise monitor was located in the backyard of the home at 10 Woodland Road, facing toward the location of the proposed construction site. The major existing noise sources at this location were neighborhood activity, activity on the water, wind in the trees and birdsong.

MAN-2: 8 Valley Road. This measurement location was intended to represent the existing noise environment for homes in the northeast portion of the Wilson Point Community located west of the Manresa Island site. The noise monitor was located on the rear patio of the home at 8 Valley Road. Noise sources affecting this location included neighborhood activity, activity on the water, wind in the trees and birdsong.

MAN-3: 14 Outer Road. This measurement location was intended to represent the existing noise environment at the residences in the Village Creek community located to the northwest of Manresa Island. The noise monitor was located in the back yard of the 14 Outer Road residence, along the floodwall near the shore. Major noise sources at this location included wave motion, activity on the water, wind in the trees, birdsong, and neighborhood activity.

MAN-4: 4 Yost Street. This measurement location was intended to represent the existing noise environment along the proposed Woodward Avenue truck route, north of Manresa Island. The noise monitor was located at the edge of the side yard to the west of the 4 Yost Street residence, along Woodward Ave. The major noise sources affecting this location were traffic on Woodward Avenue and neighborhood activity.

MAN-5: 5 ½ Longshore Ave. This measurement location was intended to represent the existing noise environment at the Harborshore community, located to the north of Manresa Island. The noise monitor was located south of the property, along the fence separating the residence and the NRG property, near the water. The major noise sources affecting this location were wave action, activities on the water, local activity, wind in the trees and birdsong.

[1] "Walk Bridge Background Noise and Vibration Background Measurement Program – (SPN 301-176)," Technical Memorandum from David Towers and Herbert Singleton, Cross-Spectrum Acoustics Inc., September 5, 2018

N-6: 50 Water Street (2018). This measurement location was intended to represent the existing noise environment at the buildings in the vicinity of 50-68 Water Street, located south of Washington Street between Water Street and the Norwalk River. The noise monitor was located near the bottom of the stairway on the south side of the building. Noise at this location was continuously monitored for a 48-hour weekday period from July 9 to July 11, 2018, and for a 24-hour weekend period from July 14 to July 15, 2018. The major noise sources affecting this location were traffic on the Washington Street bridge and trains on the Walk Bridge, as well as local parking lot and boat dock activity.

N-7: 100 Water Street (2018). This measurement location was intended to represent the existing noise environment in the dock area in the vicinity of 100 Water Street, located south of Washington Street between Water Street and the Norwalk River. The noise monitor was located in the parking lot adjacent to the Sono Seaport Seafood building. Noise at this location was continuously monitored for a 48-hour weekday period from July 11 to July 13, 2018, and for a 24-hour weekend period from July 14 to July 15, 2018. The major noise sources affecting this location were traffic on the Washington Street bridge and Water Street, local parking lot and boat dock activity and a nearby air conditioning unit.

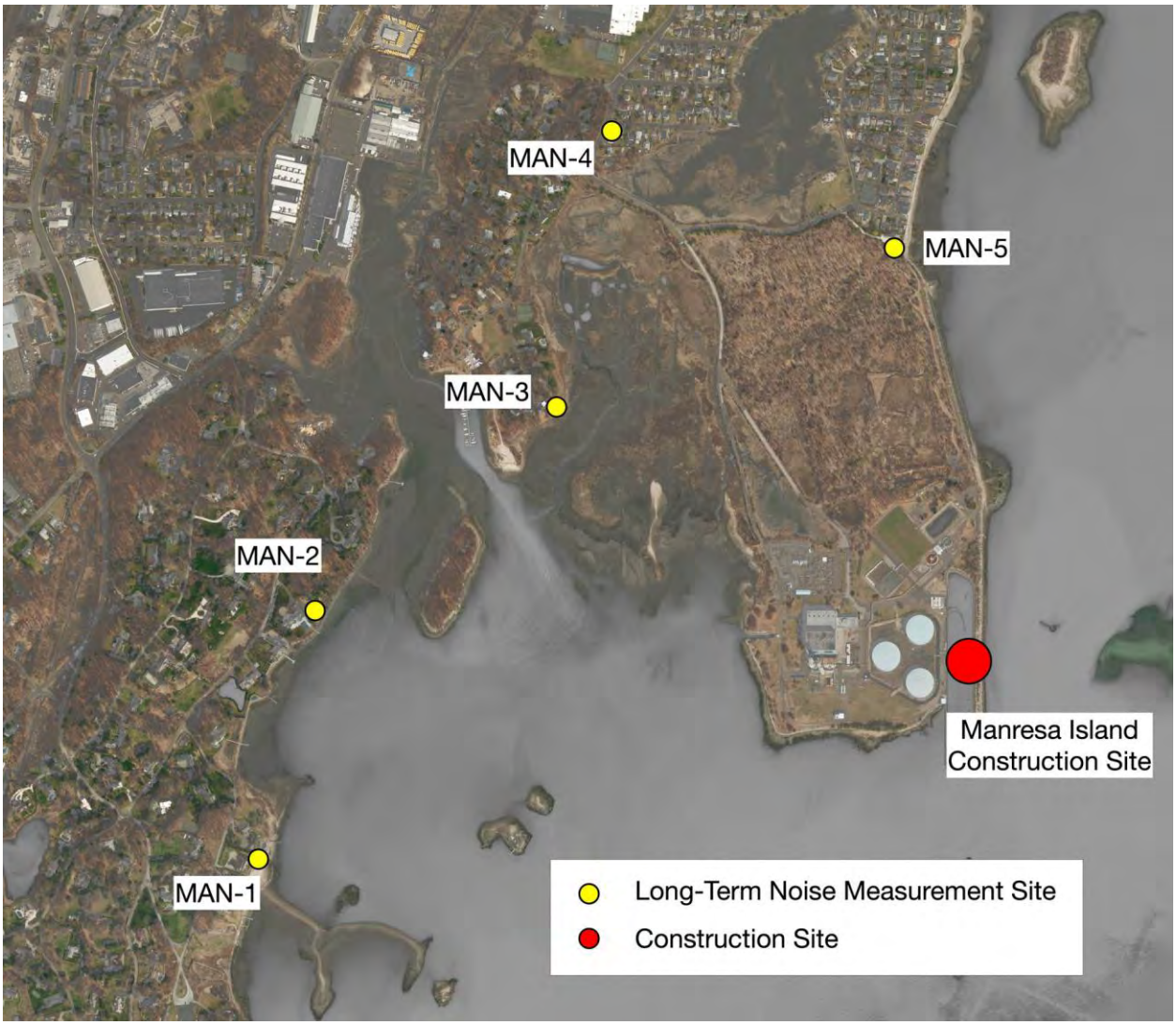


Figure 1. Noise Monitoring Locations Near Manresa Island

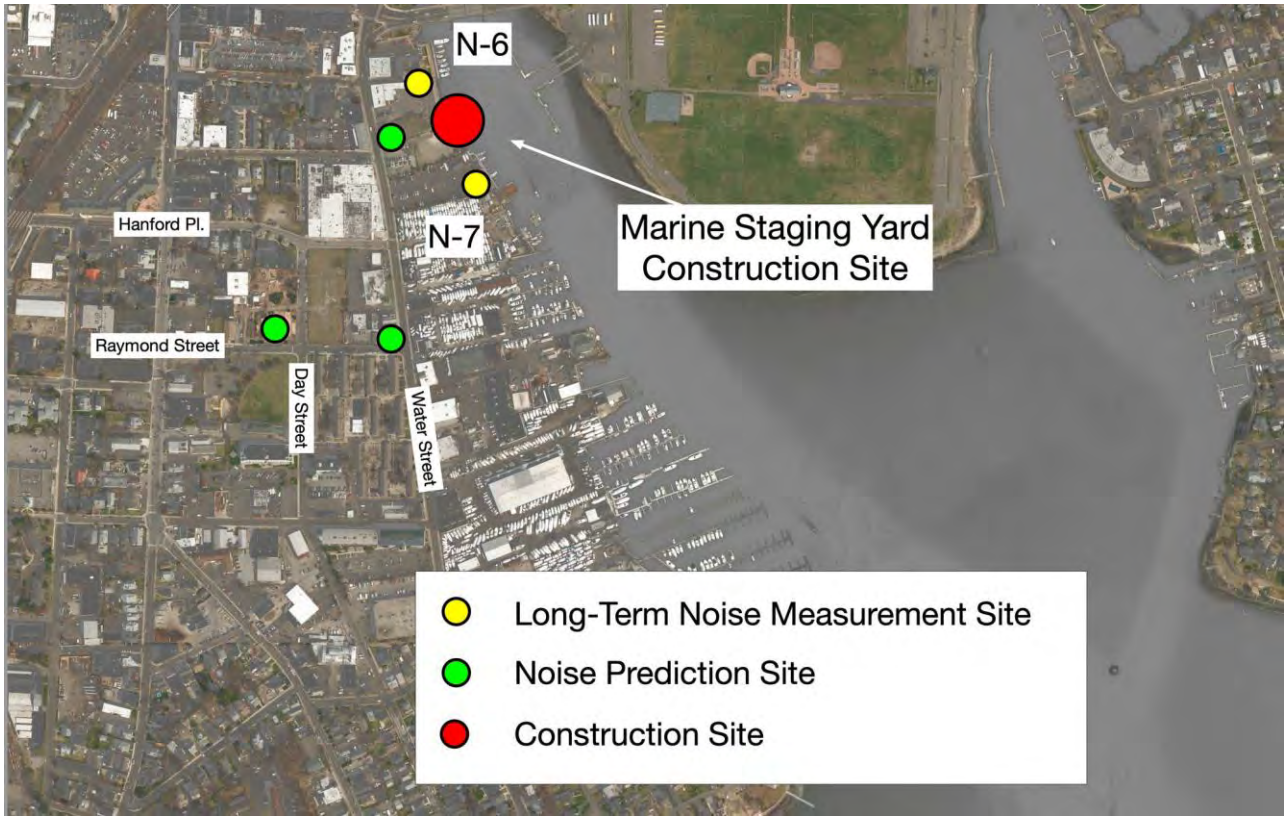


Figure 2. Noise Prediction Locations Near the Marine Staging Yard

2.2. AMBIENT NOISE MEASUREMENT RESULTS

The ambient long-term noise measurement results are presented in Table 1 for the 48-hour weekday measurements. The results are summarized in terms of the various noise metrics that were collected over the monitoring periods. The noise metrics presented here are consistent with those collected for previous Walk Bridge construction noise studies. Most of the noise near the project site was due to local neighborhood activities, beach sounds, motor-vehicle traffic on nearby streets, and biogenic sources such as bird song and insect noises. The hourly noise metrics for each position over the monitoring periods are presented in Appendix B.

Table 1. Long-Term (48-hour) Weekday Noise Measurement Results

Measurement Location		Start of Measurement		Measured Sound Level (dBA)													
				L_{dn}	$L_{eq(24)}$	Day (7 AM – 6 PM)				Evening (6 PM – 10 PM)				Night (10 PM - 7 AM)			
Site No.	Address	Date	Time			L_{eq}	L_{10}	L_{90}	L_{max}	L_{eq}	L_{10}	L_{90}	L_{max}	L_{eq}	L_{10}	L_{90}	L_{max}
MAN-1	10 Woodland Rd	9/1/20	10:00 am	56.7	49.9	49.2	50.4	44.1	69.2	48.9	52.6	47.8	66.3	50.4	54.5	45.2	59.8
MAN-2	8 Valley Rd	9/1/20	11:00 am	62.1	58.7	61.7	56.3	44.1	97.0	53.4	56.6	50.2	66.0	54.1	58.0	43.3	64.9
MAN-3	14 Outer Rd	9/1/20	11:00 am	63.9	61.0	63.8	53.1	42.0	104.4	51.9	55.1	50.5	67.6	55.0	58.6	48.5	64.3
MAN-4	4 Yost St	9/1/20	12:00 pm	60.0	53.5	53.4	55.7	45.3	81.8	53.4	56.5	47.9	68.6	53.5	55.6	46.3	65.3
MAN-5	5 ½ Longshore Ave	9/1/20	1:00 pm	63.1	54.8	49.9	56.4	43.9	68.2	55.8	58.7	54.6	65.4	57.2	58.8	49.7	66.9
N-6*	50 Water St	7/9/18	9:30 am	63.6	61.6	61.2	63.9	50.9	82.7	51.1	54.8	46.1	90.2	51.1	54.5	41.3	81.6
N-7*	100 Water St	7/11/18	10:50 am	62.1	59.5	57.2	58.3	50.2	86.5	59.6	62.5	52.1	87.9	50.5	50.9	43.2	83.9
* 2018 measurement																	

3. NOISE PREDICTIONS

3.1. CONSTRUCTION ACTIVITIES

The construction noise predictions were carried out using the methodology contained in the U.S. Federal Transit Administration (FTA) "Transit Noise and Vibration Impact Assessment Manual" (FTA Report No. 0123, September 2018). Specifically, the predictions were based on the FTA methodology for a General Assessment, which assumes simultaneous full-power operation of the two noisiest pieces of equipment for each construction activity. The reference noise levels used for the computations are based on the FTA methodology and the Federal Highway Administration (FHWA) Roadway Construction Noise model (RCNM) data.

In accordance with FTA methodology, sound propagation from construction equipment assumes a point source model based on spherical spreading, with a reduction of 6 decibels per doubling of distance from the source. To be conservative, no excess sound attenuation due to ground or atmospheric effects is assumed. However, an even more conservative approach has been adopted in cases where the sound from the construction site propagates over large bodies of water. Based on guidance provided by a working group of the Institute of Acoustics,[2] cylindrical sound spreading (with a reduction of only 3 decibels per doubling of distance from the source) is assumed for noise propagation over large bodies of water at least 700 meters (2,300 feet) in extent.

Predictions of construction noise levels generated by Lift Span Assembly activities at Manresa Island are shown in Table 2. The results indicate projected worst-case construction noise levels in the range of 50-64 dBA at the representative ambient noise measurement locations, depending on construction activity and location. These noise levels are well below the CT DOT noise limit of 90 dBA and the construction will be limited to daytime hours. However, given that the daytime background noise levels (L_{90}) were in the range of 42-45 dBA at the ambient measurement sites, the construction activities at Manresa Island are likely to be audible at some outdoor locations during quiet periods of time.

For purposes of comparison, predictions of construction noise levels generated by Lift Span Assembly activities at the Marine Staging Yard in downtown Norwalk were made at the five locations shown in Figure 2, and the results are presented in Table 3. The results indicate projected worst-case construction noise levels in the range of 67-87 dBA at the representative noise-sensitive locations, depending on construction activity and location. Although these noise levels do not exceed the CT DOT noise limit of 90 dBA, they are significantly (on the order of 20 decibels) greater than those projected in the nearest neighborhoods for the same construction activities at Manresa Island.

3.2. CONSTRUCTION TRAFFIC

Construction-related traffic along the proposed Woodward Avenue route will include both delivery trucks and personal employee vehicles, and will be limited to the daytime hours. It expected that there will be about five truck trips (in and out) per week and about 20 automobile trips (in and out) per day. The posted speed limit on Woodward Avenue is 25 mph.

Noise from construction traffic was predicted in terms of one-hour L_{eq} using FHWA procedures and was assessed by comparing the predictions with the ambient noise measurement results at Site MAN-4 (4 Yost Street). The measurement microphone at this site was directly behind a solid wood stockade fence, approximately 25 feet from the center of Woodward Avenue. Given the limited number of delivery truck trips, it was assumed that there would be one heavy truck traveling along the route during 10 different one-hour periods each week. For employee traffic, it was assumed that there would be 20 automobiles traveling along the route during two different one-hour periods each day. To be conservative, a speed of 30 mph was assumed for all vehicles traveling along Woodward Avenue (5 mph above the posted speed limit).

[2] A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, Supplementary Guidance Note 6: Noise Propagation Over Water for On-Shore Wind Turbines (December 2013)

The results of the noise predictions at Site MAN-4 indicate one-hour L_{eq} values of 45 dBA for construction truck traffic and 44 dBA for employee vehicle traffic, assuming a -5 dB adjustment to account for shielding of road traffic noise by the fence adjacent to the measurement location. These predicted future construction-related traffic noise levels are lower than the measured existing daytime hourly Leq, which were in the range of 49-60 dBA and averaged 53 dBA. Combining the highest future traffic noise level (45 dBA) with the lowest existing noise level (49 dBA) results in a total future noise level of 50 dBA based on decibel addition (which is logarithmic rather than arithmetic). Therefore, it is concluded that construction-related traffic will result in an increase of no more than one decibel at locations along the proposed route, which is an insignificant change. Furthermore, the exposure to construction-related traffic will occur during a limited number of hours during the day.

4. SUMMARY OF RESULTS AND CONCLUSIONS

The results of the study indicate that, although noise from the proposed Lift Span Assembly construction activities at Manresa Island will be audible at times, the construction noise levels will be below the Connecticut Department of Transportation (CT DOT) noise limits for the Walk Bridge Project at all modeled community locations, and well below noise limits at the Manresa Island locations. In addition, noise increases from construction-related traffic along the proposed Woodward Avenue truck route are not expected to be significant.

The results of the study also indicate that although construction noise levels at nearby noise-sensitive locations are not projected to exceed the CT DOT noise limits, they would be significantly (on the order of 20 decibels) higher if the Lift Span Assembly activities were to occur at the Marine Staging Yard location. Therefore, it is concluded that relocating these construction activities to Manresa Island will result in significantly less community noise impact.

Finally, it should be noted that, although construction noise levels at noise-sensitive locations are not projected to exceed the CT DOT noise limits, the Department may consider mitigations to the extent that they are warranted and feasible as the program advances.

Additional graphics showing Manresa Island and the Marine Staging Yard noise predictions at specified distances from the work areas are presented in Appendix C.

Table 2. Construction Noise Projections for Lift Span Assembly at Manresa Island

Construction Activity	Major Equipment Items	Maximum Projected Noise Level (dBA) at Given Site/Distance						
		Reference Level at 50 feet	Calculated Level at 100 feet	MAN-1 (4,600 ft)†	MAN-2 (4,300 ft)‡	MAN-3 (3,000 ft)	MAN-4 (4,000 ft)	MAN-5 (2,600 ft)
Grading, fabric, and stone installation for yard	Tri-Axle Dump Truck Cat 950 Loader	90	84	58	58	54	52	56
Structural steel erection and boltup installation	Grove 60T Rough Terrain Yard Crane Impact Wrench	90	84	58	58	54	52	56
Sand blasting and touchup paint	Sand Blaster Air Compressor	96	90	64	64	60	58	62
Construction fencing installation	Cat 950 Loader Skid Steer with Auger attachment	88	82	56	56	52	50	54
Lift Span Construction	Tri Axel Dump Truck Grove 60T Rough Terrain Yard Crane	91	85	59	59	55	53	57
Temporary power, site lighting and water installation	Cat 950 Loader Tri Axel Dump Truck	90	84	58	58	54	52	56
Lift span barge demobilization	Manitowoc 4100 Ringer on Barge Tri-Axle Dump Truck	91	85	59	59	55	53	57

† Assumes propagation over land for 1,200 feet and propagation over water for 3,400 feet.

‡ Assumes propagation over land for 1,300 feet and propagation over water for 3,000 feet.

Table 3. Construction Noise Projections for Lift Span Assembly at the Marine Staging Yard

Construction Activity	Major Equipment Items	Maximum Projected Noise Level (dBA) at Given Site/Distance						
		Reference Level at 50 feet	Calculated Level at 100 feet	N-6 50 Water Street (200 ft)	70 Water Street (140 ft)	N-7 100 Water Street (250 ft)	123 Water Street (550 ft)	19 Day Street (550 ft)
Grading, fabric, and stone installation for yard	Tri-Axle Dump Truck Cat 950 Loader	90	84	78	81	76	69	69
Structural steel erection and boltup installation	Grove 60T Rough Terrain Yard Crane Impact Wrench	90	84	78	81	76	69	69
Sand blasting and touchup paint	Sand Blaster Air Compressor	96	90	84	87	82	75	75
Construction fencing installation	Cat 950 Loader Skid Steer with Auger attachment	88	82	76	79	74	67	67
Lift Span Construction	Tri Axel Dump Truck Grove 60T Rough Terrain Yard Crane	91	85	79	82	77	70	70
Temporary power, site lighting and water installation	Cat 950 Loader Tri Axel Dump Truck	90	84	78	81	76	69	69
Lift span barge demobilization	Manitowoc 4100 Ringer on Barge Tri-Axle Dump Truck	91	85	79	82	77	70	70

APPENDIX A: NOISE MEASUREMENT SITE PHOTOGRAPHS

MAN-1

MAN-2

MAN-3

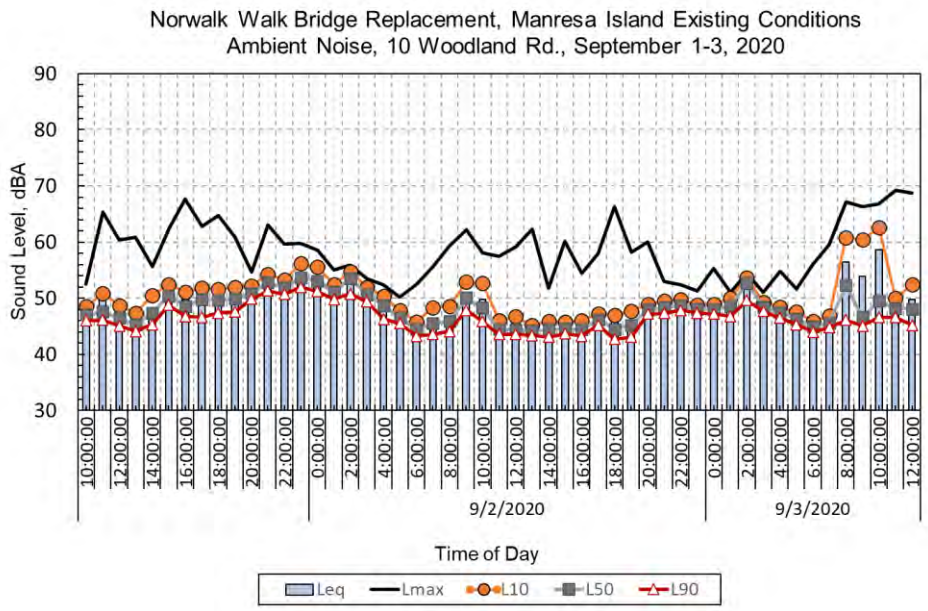
MAN-4

MAN-5

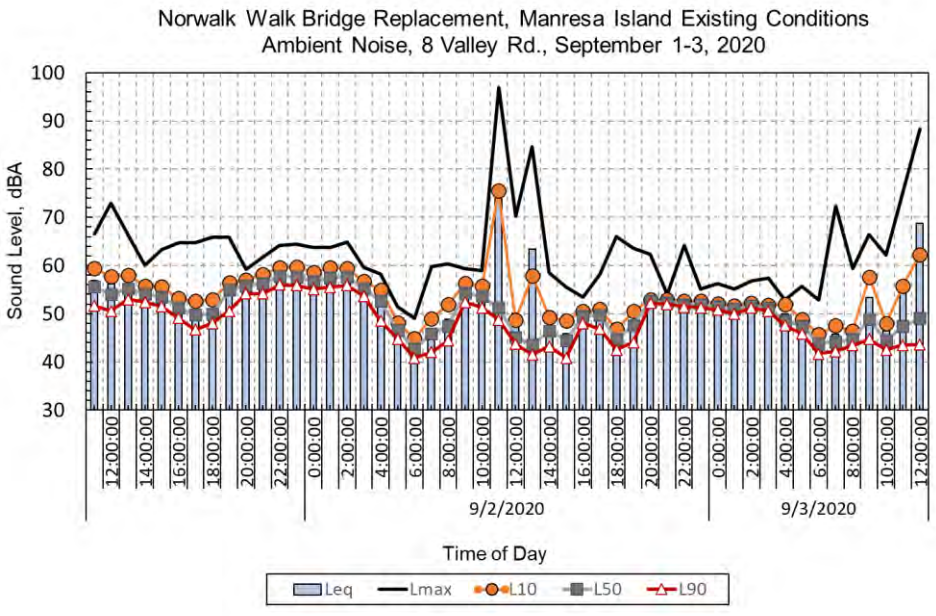
N-6 (2018)

N-7 (2018)

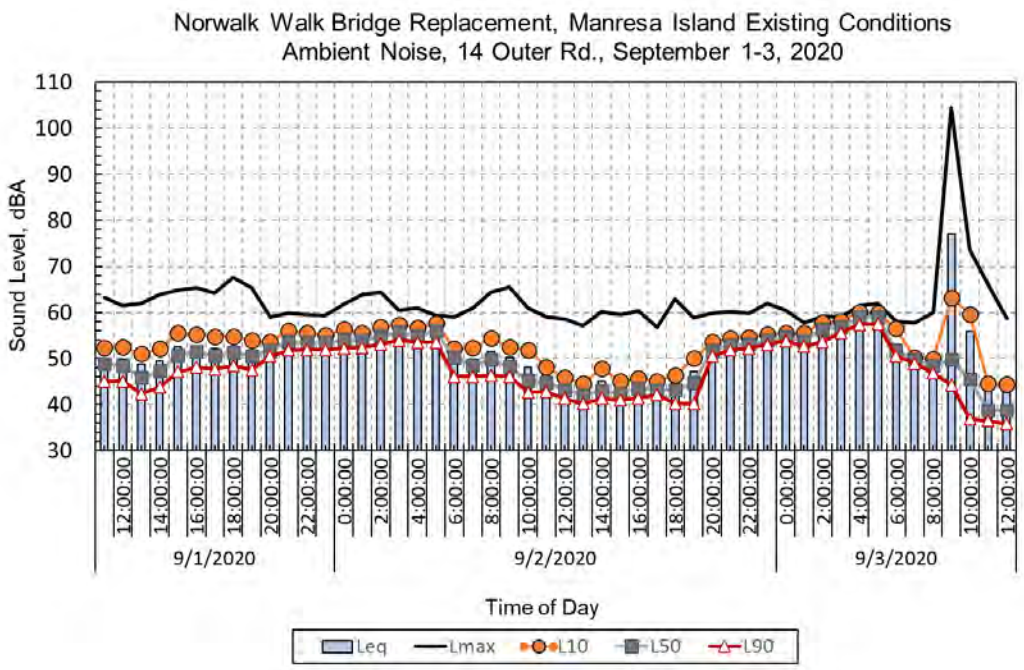
APPENDIX B. NOISE MEASUREMENT RESULTS



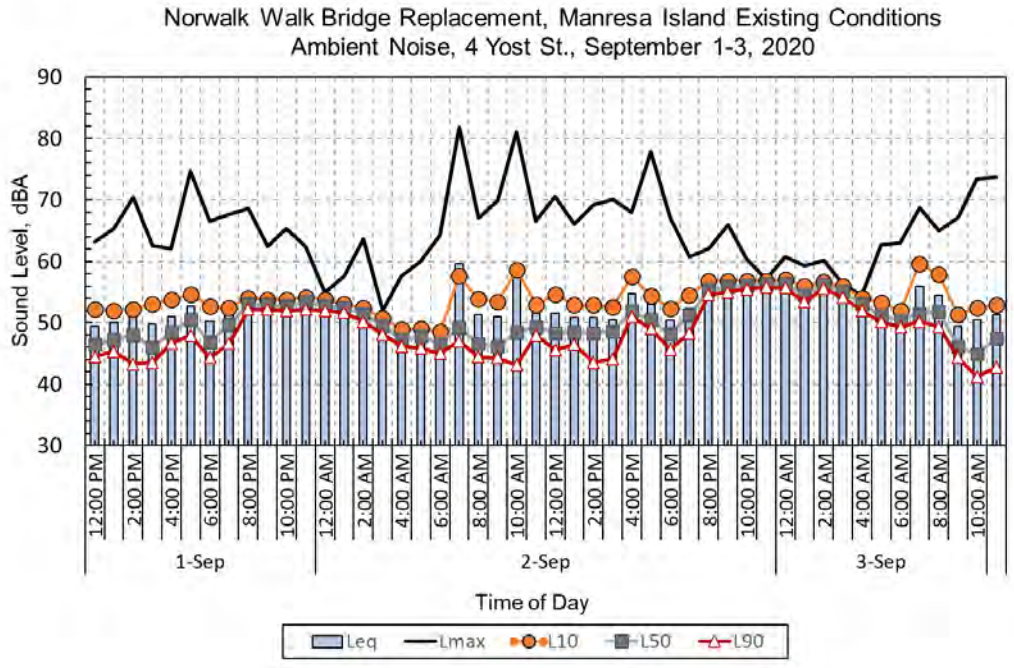
MAN-1 10 Woodland Rd.



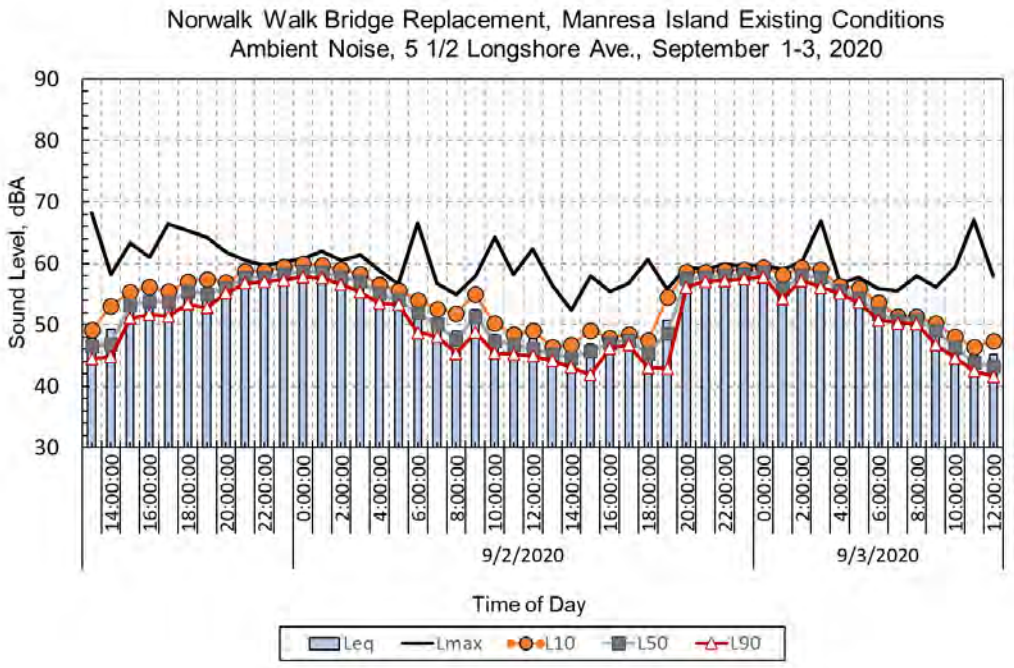
MAN-2 8 Valley Rd



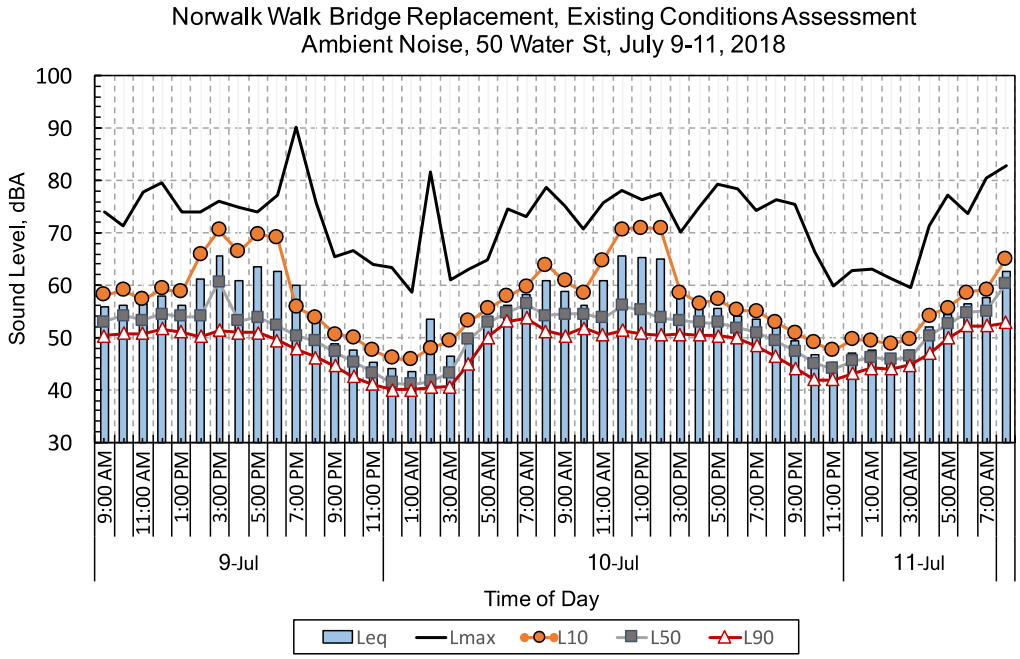
MAN-3 14 Outer Rd.



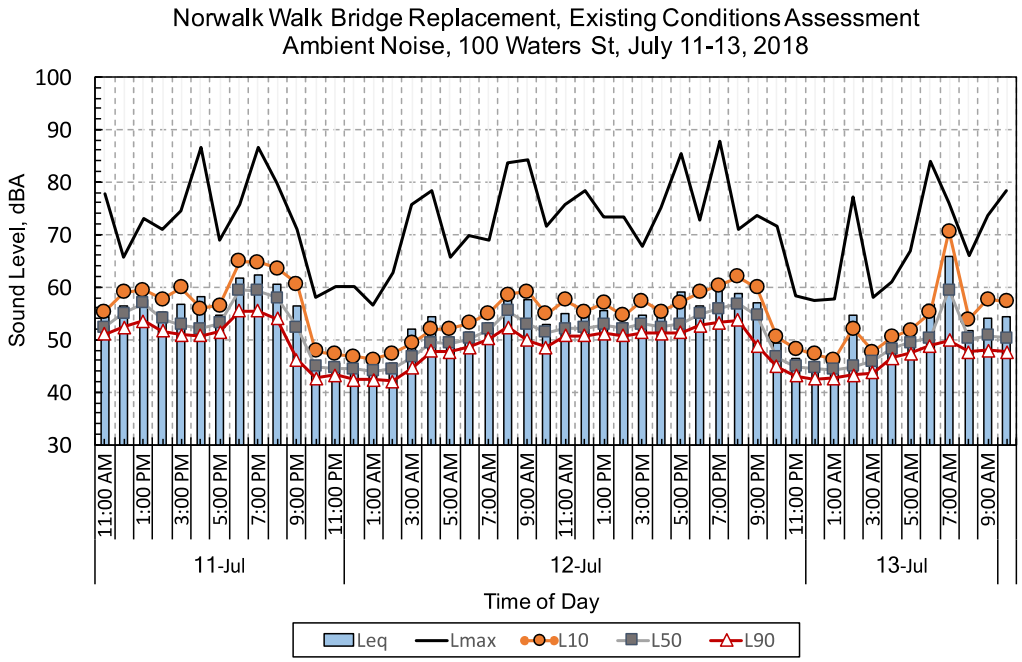
MAN-4 4 Yost Street



MAN-5 5 ½ Longshore Ave



N-6 50 Water Street (Weekday)

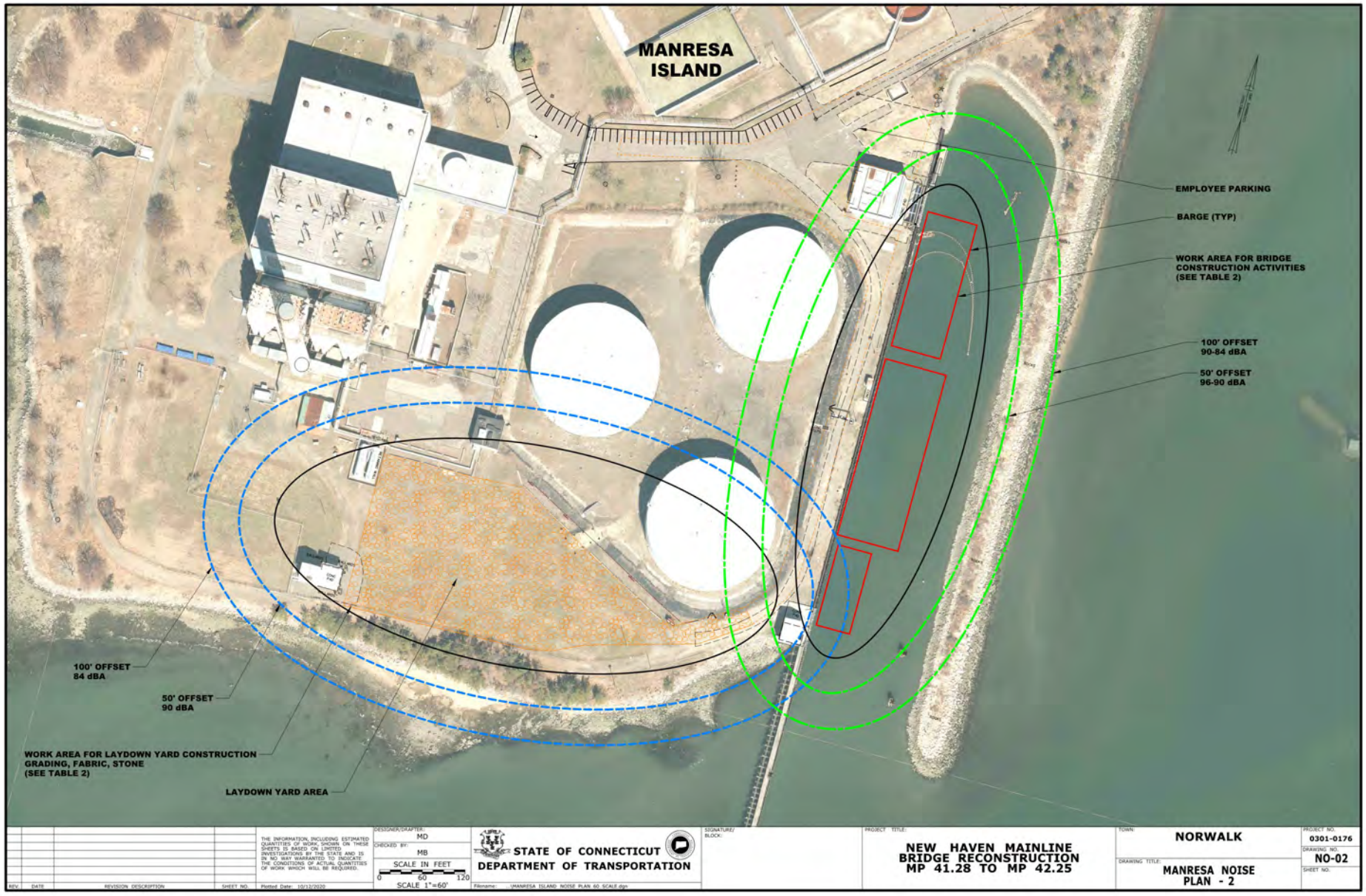


N-7 100 Water Street (Weekday)

APPENDIX C: ADDITIONAL GRAPHICS

- **MANRESA NOISE PLAN 1 – MANRESA ISLAND 400 SCALE**
- **MANRESA NOISE PLAN 2 – MANRESA ISLAND 60 SCALE**
- **MARINA NOISE PLAN 1 – MARINE STAGING YARD 60 SCALE**

MANRESA NOISE PLAN 1 – MANRESA ISLAND 400 SCALE



MANRESA NOISE PLAN 2 – MANRESA ISLAND 60 SCALE

MARINA NOISE PLAN 1 – MARINE STAGING YARD 60 SCALE

Attachment C-4 – Environmental Frequently Asked Questions, October 2020

Environmental Frequently Asked Questions

How will air and water quality be ensured?

Air and water quality will be ensured with the inclusion of the Department's standard specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with the Department's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs are standard practice for the Department and are designed to protect air and water quality. Additionally, the Department has Construction Inspectors and Environmental Coordinators who verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.

For each of the Required Best Management Practices there are inspection requirements on the part of the Contractor and provisions to correct any identified protection failures within a timely manner (usually 24 hours). Provisions within the standard specifications allow the Department to correct any identified issues that the Contractor has not performed in a timely manner and the costs for said corrections would be withheld from payment to the Contractor.

Additionally, the site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

Will there be baseline testing of the surrounding waters/soil to make sure there's no increase in contamination?

The proposed Department activities at the site have been designed to limit the disturbance of existing soils. The Department is aware of the numerous investigations that have been conducted on the property as well as the proposed Remedial Action Plan (RAP) for the site (found within the document located here: http://www.manresaassociation.org/wp-content/uploads/2019/03/ManresaFinalReport-020119-Compressed2_20190201141607172 7.pdf). The RAP outlines the potential remedial options for the site which includes capping, soil excavation and disposal, and long-term monitoring. The Department has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface.

Due to the limited disturbance and installation of the protective measures outlined above the Department will not be performing baseline testing of the surrounding areas.

Will that testing extend to Village Creek and Hayes Creek?

The proposed site activities will be outside of the drainage area of both Village and Hayes Creek.

How do you guarantee the coal ash and other contaminants already on the site will remain 100% undisturbed?

The Department has designed activities to prevent disturbance of existing on-site materials. The only anticipated material disturbance is for the installation of proposed fence posts to secure the site activities. All excess materials for the installation will be transferred to the project's Waste Stockpile Area for waste characterization and disposal at an off-site permitted disposal facility.

Attachment C-5 - Manresa Island Public Meeting Responses to Questions, August 2020

Question

I am concerned about noise, effect on wildlife, including driving deer towards my area along with their ticks. What are you going to prevent and remediate damage? Are you going to lower our taxes? Property values will certainly be affected. Why are you rushing this decision? Those of us affected need real answers, not given on June 16.

Response

The Program is aware of the environmental factors and wildlife on Manresa Island. CTDOT coordinated with the CTDEEP NDDB Program and the CTDEEP Division of Wildlife regarding protected species. Time of year restrictions and protection protocols for State-listed species are included in permits and contract specifications. The area of Manresa Island that is proposed for use is already disturbed and not an attractive location for wildlife as is.

CTDOT is developing site-specific Construction Plans to minimize adverse impacts to the surrounding area. These plans will be available prior to work start and will be posted on the project website. These plans include a Stormwater Pollution Control Plan, identifying controls for managing stormwater at the site; Water Quality Control Plan, identifying protections for the Norwalk River; Air Quality/Dust Control Plan, identifying ways to minimize dust and air quality impacts; and a Materials Management Plan, specifying protections for material storage. The Plans will be posted on the Project website prior to construction start. Additionally, prior to work start, the contractor will be required to develop a Construction Safety and Security Plan that will address employee safety, fire life safety and emergency response procedures, maintenance of traffic in and around the construction site, security procedures, and safe work practices related to facilities, equipment, construction vehicles and CTDOT properties.

A minimal increase in traffic, less than 1% based on traffic data from 2017, is anticipated in the Manresa Island area due to Walk Bridge construction. During construction of the lift spans, the Program estimates one truck making one round-trip per day. At the peak of construction, we estimate three trucks each making one round-trip per day. Employee traffic is expected to be approximately 22 roundtrips per day, six days per week.

The Program plans to use the southern tip of Manresa Island as a worksite, which is 0.4 miles away from the nearest resident. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. Fuels and hazardous materials needed for construction will be securely stored in double-walled flood-proof containers and will be removed from the site for proper disposal. The work site will be fenced with a secure entrance gate for safety purposes. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface. The Program will leave the Manresa site as it was prior to Walk Bridge work.

For questions about local property taxes, please contact the City of Norwalk's Customer Service Department customerservice@norwalkct.org.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

Will there be baseline testing of the surrounding waters/soil to make sure there's no increase in contamination?

Response

The Walk Bridge Program will not be completing studies as no impacts on property values is expected as an outcome of Program work being completed on Manresa Island. For questions about local property taxes, please contact the City of Norwalk's Customer Service Department customerservice@norwalkct.org.

The proposed activities at the site have been designed to limit the disturbance of existing soils. CTDOT is aware of the numerous investigations that have been conducted on the property as well as the proposed Remedial Action Plan (RAP) for the site. The RAP outlines the potential remedial options for the site, which includes capping, soil excavation and disposal, and long-term monitoring. The Department has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. Fuels and hazardous materials needed for construction will be securely stored in double-walled flood-proof containers and will be removed from the site for proper disposal. The work site will be fenced with a secure entrance gate for safety purposes.

At the end of the project, the stone and geotextile will be removed from the area and the site will be

reseeded for the reestablishment of a vegetated surface.

The site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

Due to the limited disturbance and installation of the protective measures outlined above and the Department will not be performing baseline testing of the surrounding areas.

Question

How will the trucks access Woodward - along MLK Blvd to Wilson Ave to Meadow to Woodward or thru South Norwalk, or along Water St to Burritt? How big are the trucks? Please address again why you discounted the Water Street location in favor of a more residential location?

Response

The trucks will be standard-size commercial construction vehicles and travel through South Norwalk.

The Manresa Island Staging and Storage Yard would be used in conjunction with the Water Street properties. The Water Street properties will be used for land-based storage of construction equipment. The parcels will not be used to accommodate construction and material barges. The potential use of Manresa Island accommodates certain water-based project construction, such as assembly of the new lift spans on barges. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to construct a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location.

Further, use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

Question

How do you plan on dealing with the truck traffic up and down an already congested Woodward ave? Will there be set hours for trucks to run up and down Woodward? Will this site be used for all 5 years

of the construction timeline? There's a speeding problem on Woodward already once it opens up near Baxter. That 25% increase could significantly increase risk to the young residents who use the playground right off Woodward near Burwell. How are you planning on enforcing speed limits? Noise travels fairly well in this part of town. If we request it, can we have a noise study conducted What do you forecast the property value of surrounding houses to fall to with this increase in commercial activity, trucks, cranes, noise, etc.? Who would be granting permission for night time hours? Were any of the barrier islands evaluated to perform the same staging?

Response

The Project Team considered several properties for construction staging and storage. Due to a variety of factors and environmental concerns, the Water Street and Manresa Island locations are the locations being considered at this time.

The Program does not anticipate the contractor working overnight at Manresa Island. The overall intent is to perform work in the Manresa Island area during daytime hours, 7AM to 5PM. If the contractor needs lighting due to unforeseen circumstances, the Program will update the community through our weekly Construction News bulletin, website and social media accounts.

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck round trip per day. At the peak of construction, we estimate three trucks, for one round trip each per day. Employee traffic is expected to be approximately 22 roundtrips per day (6 days per week). Local police monitor speeding. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

For questions about local property taxes, please contact the City of Norwalk's Customer Service Department customerservice@norwalkct.org.

Question

I don't understand why the public only had 3 weeks to comment on something that can have huge impact on neighboring residential communities. Why the rush?

Why Manresa and not the Water Street site, which is 2 miles closer to the bridge? And does not have as many residential neighbors?

What kind of environmental studies have you performed to ensure the safety and impact of the nearby residential communities? Have you explore what types of noise, pollution, car

Response

Since this was an informational public meeting and not a formal public hearing, there was no requirement in terms of a comment period. The Program had offered a three week period to provide comments and ask questions regarding the use Manresa Island, however, questions and comments will still be responded to via the comment submission form on the Program Website, emailing or calling the Public Information Office or visiting us at the Welcome Center (temporarily closed for the safety of the public and our staff).

The Project Team is considering several properties for construction staging and storage. The potential use of Manresa Island allows for the relocation of water-based construction of the lift spans to Manresa Island and the Water Street properties will still be used for land-based storage of construction equipment.

Manresa Island's use provides for specific water-based project construction, such as assembly of the new lift spans on barges. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and a current staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to build a robust steel bulkhead to accommodate construction barges, needed at the Water Street location.

Additionally, the use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will generally be 300 feet outside of the (200-foot) navigation channel. In comparison, berthing these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (250-feet wide at this location).

For the proposed use of Manresa Island as a staging and storage yard, The Connecticut Department of Transportation (CTDOT) will be submitting a comprehensive Environmental Impact Evaluation to the Federal Transit Administration (FTA). Environmental investigations included wildlife habitats, wetlands, and historical and archaeological resources. CTDOT coordinated reviews of the project, including the proposed staging and storage yard, with CTDEEP Divisions of Wildlife, Fisheries-Marine Fisheries, Natural Diversity Data Base Program; U.S. Fish and Wildlife Service; and National Marine Fisheries Program/Greater Atlantic Regional Fisheries Office. Best management practices and protection protocols will be incorporated into project permits and contract specifications required by federal and state agencies.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

CTDOT will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

What about the dust from dissembling the old bridge, particularly dust with lead from the old bridge. Can you please give an estimated decibel level at Outer Road?

Response

The steel members of the existing bridge brought to the staging and storage yard via a barge will be cut (sheared) to smaller pieces, which will allow them to be transported over the road for off-site disposal. The lead-containing fragments from the shearing process will be stored in drums removed from the site at the end of every workday. The contractor will be responsible for implementing the project's Air Quality/Dust Control Plan. Mitigation measures identified in the Plan include but are not limited to: covering transported materials to prevent the loss of material during transport before leaving the site and are to remain covered until the arrival at the selected treatment/recycling/disposal facility; using water-tight transport containers and using water and calcium chloride to minimize dust conditions.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area. A noise study will be completed as part of this work and a monitor will be placed in the vicinity of Outer Road.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

Is Cedar Hammocks Island included in your consideration of the impact of the Manresa Property on sensitive areas? What do you believe will be the impact of activities at Manresa on Cedar Hammocks Island?

Response

The Program does not anticipate traffic or noise impacts on Cedar Hammocks Island due to its distance from the Manresa Island site.

Question

What program will be in place to compensate property owners for any adverse impact on their property values? Can you provide details on the estimate that only 22 employees would be committing to the site. (22 workers sounds like a light workforce for the scope of this project). Thx. How many truckloads will be required for the initial crushed stone and other material to level the staging area? You said the ' average' # of trips would be 3 at the peak. What is the median and absolute peak # of daily trips expected.

Response

For questions about local property taxes, please contact the City of Norwalk's Customer Service Department customerservice@norwalkct.org.

The Program anticipates a minimal increase in traffic, less than 1% based on traffic data from 2017, in the Manresa Island area due to Walk Bridge construction. At peak, for a few weeks early in construction to move in materials, three trucks will make one round-trip each, per day each. This will be the most disruptive operation the contractor will have in terms of the total number of trucks in a short period, but once the material is at the site, the Program estimates one truck making a round-trip per day.

Employee traffic is to be approximately 22 round-trips per day, six days per week. The number of anticipated employees entering and exiting the site was coordinated with and verified by the contractor.

Question

You mentioned marine life but what has been done to study the impact to birds that seek sanctuary on Manresa? What will the city of Norwalk be doing to monitor the speed of the employees cars and the trucks on Woodward? what research was done to find a location closer to the walk bridge rather than driving through our residential streets?

Response

The Project Team considered several properties for construction staging and storage. Due to a variety of factors and environmental concerns, the Water Street and Manresa Island locations are the locations being considered at this time.

The potential use of Manresa Island allows for the relocation of water-based construction of the lift span to Manresa Island and the Water Street properties will still be used as a staging yard. Manresa Island has the existing infrastructure needed for the project already in place where additional construction would be needed at Water Street. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to construct a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location.

Further, use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

CTDOT coordinated with the CTDEEP NDDB Program and the CTDEEP Division of Wildlife regarding protected species. To protect listed species during Staging and Storage Yard operations, CTDOT will use protection protocols and time-of-year (TOY) restrictions. These protection protocols and TOY restrictions will be incorporated into permit applications and the contract specifications. Work, on behalf of the Program, will be completed in paved areas and will not require tree clearing.

Local police monitor speeding. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

Question

What other sites are being considered? Why not Water Street? Why is Manressa coming up as a site after all this time? This project has been under consideration for years. Why Manressa ? Why now?

Response

The Project Team is considering several properties for the construction of the replacement bridge lift spans. The use of Manresa Island provides for certain water-based project construction, such as assembly of the new lift spans on barges. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard.

Using Manresa Island to construct the lift spans will not require extensive dredging to construct a steel bulkhead that accommodates construction barges, which would be required at the Water Street location. Further, the use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift spans at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location) and additional construction would be needed.

As the Walk Bridge Replacement Project progresses, we remain committed to providing timely and transparent updates to the public. The potential use of Manresa Island is a development that we wanted to inform the community about well in advance of any work on the site and provide an opportunity for people to provide comments and ask questions.

Question

What is the regulatory significance of the 7/3 date? [Comments accepted by DOT until July 3.] Under what authority is it established?

Response

There is no specific significance to the July 3 date other than to share information with the public about the planning for the project. The Program wants to give a reasonable timeframe for people to provide comments.

There is no authority that dictates the public response period. The Program chose to hold the public involvement meeting and solicit feedback in keeping with CTDOT's desire to share information with the public. There will be other avenues by which to have discussions if there are concerns. The Program is continuing to coordinate has stayed in contact with the Harbor Management and the Shellfish Commissions and will be submitting permit applications this summer; and there will still be time for coordination as needed.

Question

Following public comment, what are the next steps to get approval for this use of Manresa?

Response

For the proposed use of Manresa Island as a construction staging and storage yard, CTDOT will be submitting a comprehensive environmental impact evaluation to the Federal Transit Administration (FTA). The FTA will review the evaluation and issue a final determination. Both, noise and traffic studies will be completed to evaluate the impacts of using Manresa Island as a construction staging site. The Program will be submitting permit applications to federal and state agencies, which will include a portion of Manresa Island as a construction staging and storage yard. Those permit applications will be open for public review and comment. The Walk Bridge Replacement Project is advancing through the design phase and anticipates design completion at the end of this year before construction starts in Fall 2021, following the receipt of federal and state permits.

Question

Are there any alternatives being considered or is this the only plan? What about the area off Selleck street for instance?

You mentioned 12 hour days and in the winter it is dark at 430. How will you work without additional lightings?

And what is the noise level antipathetic to be during the construction? How much time will it take to remove materials in case of a storm? How much advance notice and what will warrant the removal?

Response

Veteran's Memorial Park is a protected park under Section 4(f) of the U.S. Department of Transportation Act of 1966. According to Section 4(f), U.S. DOT agencies cannot approve the use of publicly owned parks and recreational areas of national, state, or local significance unless there is no feasible and prudent avoidance alternative to the use of the land. If a feasible and prudent alternative exists that avoids all Section 4(f) resources, it must be selected. CTDOT determined that the use of Manresa Island for construction of the lift spans is a prudent and feasible alternative to the use of Veteran's Memorial Park. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable. The work anticipated to be completed at the final site has the potential to last up to six years. This would significantly impact public use of the park.

Question

What kind of policing will you guarantee re trucks, speeding, oversized vehicles?

Specifically, what will be stored there?

What about flooding during bad storms? What kind of mitigation will you have for Runoff into the creek where our beach is? Or just the Sound in general? What about contaminated materials? There is no way that that area does not flood, during a bad storm or hurricane, which are inevitable.

Deep report?

What guarantee do we have that when the bridge project is done, everything that was "temporarily stored on Manresa", will be removed? Daily penalties.

What will the operating hours be?

Are you in any way exempt from Norwalks noise ordinance? city commitment to enforcing the noise ordinance?

Will this just be storage or will there be other activities going on?

Response

Manresa Island is identified as a potential location to construct the lift spans and offers overall project improvement by moving construction activities away from a more congested urban area. On-site work

includes pre-assembly of structural components, temporary berthing of construction vessels and barges, material storage.

The contractor will submit a written Flood Contingency Plan to CTDOT prior to construction start. The plan will include the following:
• A description of the means by which the Contractor will protect and/or remove from within the 100-year floodplain (500-year floodplain for critical activities), all material, equipment, and personnel prior to a predicted major storm event. A major storm event is defined as a storm predicted by the National Oceanic and Atmospheric Administration (NOAA) weather service with a warning of flooding, severe thunderstorms, or similarly severe weather conditions or effects.
• Provisions for notifying workers engaged in work below the 500-year flood elevation of an impending storm.
• Provisions for securing work in progress prior to a major storm.

Water quality will be ensured with the inclusion of CTDOT's standard specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with CTDOT's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs are standard practice for CTDOT and are designed to protect air and water quality. CTDOT has Construction Inspectors and Environmental Coordinators who verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.

For each of the Required Best Management Practices there are inspection requirements on the part of the Contractor and provisions to correct any identified protection failures within a timely manner (usually 24 hours). Provisions within the standard specifications allow the Department to correct any identified issues that the Contractor has not performed in a timely manner and the costs for said corrections would be withheld from payment to the Contractor.

The site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

The Program anticipates a minimal increase in traffic. At the peak of construction, a truck will make approximately 3 roundtrips per day (5-days per week during daylight hours). Employee traffic is anticipated to be 22 roundtrips per day (6 days per week). Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

The Program will comply with the Construction Noise Pollution standards set in the CTDOT's Form 818:

The Contractor shall take measures to minimize the noise caused by its construction operations, including but not limited to noise generated by equipment used for drilling, pile-driving, blasting, excavation or hauling. All methods and devices employed to minimize noise shall be subject to the continuing approval of the Engineer. The maximum allowable level of noise at the residence or occupied building nearest to the Site shall be 90 decibels on the "A"-weighted scale (dBA). The Contractor shall halt any Project operation that violates this standard at any time until the Contractor develops and implements a methodology that enables it to keep the noise from its Project operations below the 90-dBA limit.

The intent is to perform work in the Manresa Island area during daytime hours, 7AM to 5PM. If the contractor needs to work overnight due to unforeseen circumstances, the Program will update the community through our weekly Construction News.

Question

What is the financial arrangement with the property owner? Is rent being charged? How much?

What is the downside timeline? How long could the project go over the proposed timeline?

How loud and when is noise expected. Are compressors and/or other Pneumatic tools expected? How many shifts are planned and what will happen (in terms of extra shift...second shift? Weekends) if they get behind? Is there a decibel level that the project will be required to adhere to?

Is there a plan to add lighting to the area?

Will the bridge be painted at Manresa? How will air and water quality be ensured? Will there be baseline testing of the surrounding waters/soil to make sure there's no increase in contamination? Will that extend to VC and Hayes Creek? How will southern winds be accounted for, as these will carry to Village Creek and beyond? Why not use other sites? What are the specific benefits of Manresa vs. other sites?

Response

In due course, the Connecticut Department of Transportation will enter into conversations with NRG, the owners of Manresa Island, for the property rights needed for the Walk Bridge Replacement Project.

The Walk Bridge Replacement Project is slated to begin in Fall 2021 and construction is anticipated to take approximately 5-6 years.

The Program anticipates that work will happen during daytime hours on Manresa Island, therefore construction lighting will not be necessary. Should an activity require nighttime hours, the Community will be notified in advance of the work.

The Walk Bridge Program evaluated the potential use of Manresa Island early in the pre-construction phase of the Walk Bridge Replacement Project. As the design progressed and more details developed

about construction of the Walk Bridge, the Program has identified Manresa Island as a location for staging materials and constructing the lift spans due to the docking capabilities and proximity to the construction site. Manresa Island is being considered as a staging site because it has the existing infrastructure necessary for the construction of the lift spans and allows the Project Team to move construction away from the more congested urban area. The Program will be using the southern tip of Manresa Island as a worksite, which is 0.4 miles away from the nearest resident.

Air and water quality will be ensured with the inclusion of the Department's standard specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with CTDOT's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs are standard practice for CTDOT and are designed to protect air and water quality. CTDOT has Construction Inspectors and Environmental Coordinators who verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.

For each of the Required Best Management Practices there are inspection requirements on the part of the Contractor and provisions to correct any identified protection failures within a timely manner (usually 24 hours). Provisions within the standard specifications allow the Department to correct any identified issues that the Contractor has not performed in a timely manner and the costs for said corrections would be withheld from payment to the Contractor.

Additionally, the site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

The proposed activities at the site have been designed to limit the disturbance of existing soils. The Program is aware of the numerous investigations that have been conducted on the property as well as the proposed Remedial Action Plan (RAP) for the site. The RAP outlines the potential remedial options for the site which includes capping, soil excavation and disposal, and long-term monitoring. CTDOT has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface. Due to the limited disturbance and installation of the protective measures outlined above and the Department will not be performing baseline testing of the surrounding areas.

The proposed site activities will be outside of the drainage area of both Village and Hayes Creek.

The Program will comply with the Construction Noise Pollution standards set in the CTDOT's Form 818:

The Contractor shall take measures to minimize the noise caused by its construction operations, including but not limited to noise generated by equipment used for drilling, pile-driving, blasting, excavation or hauling. All methods and devices employed to minimize noise shall be subject to the continuing approval of the Engineer. The maximum allowable level of noise at the residence or occupied building nearest to the Site shall be 90 decibels on the "A"-weighted scale (dBA). The Contractor shall halt any Project operation that violates this standard at any time until the Contractor develops and implements a methodology that enables it to keep the noise from its Project operations below the 90-dBA limit.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

CTDOT will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

The bridge components will be delivered to the site, pre-painted. Minor touch up painting will be required after the components are assembled. This work will be completed on the proposed Manresa site.

Question

There is a DEEP study of the lone star tick presently being conducted at Manresa. Are you aware of this? And how would the traffic effect the deer and the outcomes of that study?

Response

The Walk Bridge Program Team is aware of the CTDEEP Wildlife Division study regarding deer on Manresa Island. Coordination will continue with CTDEEP as part of permit application review.

The Program anticipates a minimal increase in traffic, less than 1% based on traffic data from 2017, in the Manresa Island area due to Walk Bridge construction. At peak, for a few weeks early in construction to move in materials, three trucks will make one round-trip each, per day each. This will be the most disruptive operation the contractor will have in terms of the total number of trucks in a short period, but once the material is at the site, the Program estimates one truck making a round-trip per day. Employee vehicles are expected to make 22 round trips per day, six days a week. This small increase in traffic is not anticipated to cause a significant impact on deer in the area.

Question

What is the alternate site? Ditto on the speeding. Will there be increased police presence? What type of noise can we expect while they do the work? Can any lead particles become airborne? So, "daytime hours" does not mean 9-5 or 8-6, or is potentially 12 hours? Will you be contributing to any of the existing environmental clean-up that need to happen on that site?

Response

The Project Team is considering several properties for the construction of the replacement bridge lift spans. The use of Manresa Island allows for the relocation of certain water-based project construction. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to build a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location. Further, the use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

Local police monitor speeding. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

The Program does not anticipate the contractor working overnight at Manresa Island. Work is anticipated to happen during the daytime hours of 7:00 AM – 5:00 PM. These hours may vary based on the construction activity and the community will be updated through weekly Construction News bulletins.

Air and water quality will be ensured with the inclusion of the Department's standard specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with the Department's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs are standard practice for the Department and are designed to protect air and water quality. CTDOT has Construction Inspectors and Environmental Coordinators who verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.

For each of the Required Best Management Practices there are inspection requirements on the part of the Contractor and provisions to correct any identified protection failures within a timely manner (usually 24 hours). Provisions within the standard specifications allow the Department to correct any identified issues that the Contractor has not performed in a timely manner and the costs for said corrections would be withheld from payment to the Contractor.

Additionally, the site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan

which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

The proposed activities at the site have been designed to limit the disturbance of existing soils. The Program is aware of the numerous investigations that have been conducted on the property as well as the proposed Remedial Action Plan (RAP) for the site. The RAP outlines the potential remedial options for the site which includes capping, soil excavation and disposal, and long-term monitoring. CTDOT has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Program will comply with the Construction Noise Pollution standards set in the CTDOT's Form 818:

The Contractor shall take measures to minimize the noise caused by its construction operations, including but not limited to noise generated by equipment used for drilling, pile-driving, blasting, excavation or hauling. All methods and devices employed to minimize noise shall be subject to the continuing approval of the Engineer. The maximum allowable level of noise at the residence or occupied building nearest to the Site shall be 90 decibels on the "A"-weighted scale (dBA). The Contractor shall halt any Project operation that violates this standard at any time until the Contractor develops and implements a methodology that enables it to keep the noise from its Project operations below the 90-dBA limit.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

Sound travels across water differently than through woods. I would expect that a great deal of noise will affect the Village Creek and Wilson Point neighborhoods. Has this been considered? Will the Manresa site be lit at night? This could be extremely disturbing to nearby waterfront communities.

Response

The Program does not anticipate the contractor working overnight at Manresa Island. The intent is to perform work in the Manresa Island area during daytime hours. If the contractor needs to work overnight due to unforeseen circumstances, there may be some additional lighting and the Program will update the community through our weekly Construction News bulletin, website and social media accounts. To receive our bulletin, please sign up on our website, www.walkbridgect.com.

A noise study is being prepared to evaluate impacts on the surrounding area, including how sounds propagates over water. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

On your presentation, you state there will be no perceptible increase in noise to the nearest receptor along with no additional impact to the aquatic protected species and habitat. How can you guarantee that? Trucks backing up would increase noise and disturb the habitat. Along with the constant noise from large trucks and employee traffic would increase noise. There will be construction noise for extended period 6 days a week for up to 60 months. How can you guarantee there will be no adverse effect to those who leave in the surrounding area and to the wildlife that live on Manresa Island? Who is going to be the watchdog overseeing your activities on Manresa Island? On truck traffic, what is considered daylight hours - 9 to 5? Also, what hours will there be employee traffic? Is it going to be 24 hours a day? Will the construction be 24 hours a day?

Response

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks making one round-trip per day. Employee traffic is expected to be approximately 22 roundtrips per day, 6 days per week. Work is anticipated to happen during the daytime hours of 7:00 AM – 5:00 PM. The Program does not anticipate the contractor working overnight at Manresa Island. If the contractor needs to work overnight due to unforeseen circumstances, there may be some additional lighting and the Program will update the community through our weekly

Construction News bulletin, website and social media accounts. To receive our bulletin, please sign up on our website, www.walkbridgect.com.

Air and water quality will be ensured with the inclusion of the Department's standard specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with the Department's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs are standard practice for the Department and are designed to protect air and water quality. Additionally, the Department has Construction Inspectors and Environmental Coordinators who verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.

For each of the Required Best Management Practices there are inspection requirements on the part of the Contractor and provisions to correct any identified protection failures within a timely manner (usually 24 hours). Provisions within the standard specifications allow the Department to correct any identified issues that the Contractor has not performed in a timely manner and the costs for said corrections would be withheld from payment to the Contractor.

Additionally, the site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

CTDOT is developing site-specific Construction Plans to minimize adverse impacts to the surrounding area. These plans will be available prior to work start and will be posted on the project website. These plans include a Stormwater Pollution Control Plan, identifying controls for managing stormwater at the site; Water Quality Control Plan, identifying protections for the Norwalk River; Air Quality/Dust Control Plan, identifying ways to minimize dust and air quality impacts; and a Materials Management Plan, specifying protections for material storage. The Plans will be posted on the Project website prior to construction start. Additionally, prior to work start, the contractor will be required to develop a Construction Safety and Security Plan that will address employee safety, fire life safety and emergency response procedures, maintenance of traffic in and around the construction site, security procedures, and safe work practices related to facilities, equipment, construction vehicles and CTDOT properties. All work will be completed at the southern top of Manresa Island, approximately 0.4 miles from the nearest resident.

A noise study is being prepared to evaluate impacts on the surrounding area, including how sounds propagates over water. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received

through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

I would like to know the plans for Manresa Island to be used.

I am shocked there is nothing about the effect of all this traffic on the kids riding bikes and going to the park.

Nothing about all the nesting osprey on the pillings right where the barges will be.

Response

Manresa Island is identified as a potential location to construct the lift spans and offers overall project improvement by moving construction activities away from a more congested urban area. On-site work includes pre-assembly of structural components, temporary berthing of construction vessels and barges, material storage.

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks are making one round-trip each per day. Employee traffic is expected to be approximately 22 round-trips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

The Program is aware of the environmental factors and wildlife on Manresa Island. Time of year restrictions and protection protocols for State-listed species are included in permits and contract specifications. Work will start before April 15 or after August 1 to allow time for nesting ospreys to acclimate to noise levels.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

Question

What are plans to relocate - or accommodate the nesting needs - if the dozen or more Osprey which spend the summer on Manresa Island - all close to the marine base? At a minimum, you should plan on erecting another dozen nesting poles along the perimeter of the NRG property.

Response

The Program is aware of the environmental factors and wildlife on Manresa Island. CTDOT has coordinated with the CTDEEP Division of Wildlife regarding the protection of osprey. Time of year restrictions will be included in permits and contract specifications. Work at the site will start before April 15 or after August 1 to allow the nesting ospreys to acclimate to the disruption. The Program will continue to coordinate with State and Federal Environmental Agencies to avoid, minimize and mitigate impacts to the extent feasible and practicable.

Question

Are there any other options that are being considered? Would this be used in conjunction with the original Water street address? If they reach the point where they need to ask for additional hours, what power do the neighboring community to prevent it? What is the process of removing the geotextile and stone underlayer? How will that impact the already existing polluted soil that requires cleanup?

Response

The Project Team considered several properties for construction staging and storage. Due to a variety of factors and environmental concerns, the Water Street and Manresa Island locations are the locations being considered at this time. The potential use of Manresa Island allows for the relocation of water-based construction of the lift spans to Manresa Island and the Water Street properties will still be used as a staging yard. If the Program uses Manresa Island, it can avoid the additional dredging and construction of a bulkhead at the Water Street location. Manresa Island has the existing infrastructure needed for the project already in place, where further construction would be needed at Water Street to complete the project.

Work is anticipated to happen during the daytime hours of 7:00 AM – 5:00 PM. The Program does not anticipate the contractor working overnight at Manresa Island. If the contractor needs to work overnight due to unforeseen circumstances, the Program will update the community through our weekly Construction News bulletin, website and social media accounts. To receive our bulletin, please sign up on our website, www.walkbridgect.com.

The Department has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The only anticipated material disturbance is for the installation of proposed fence posts to secure the site activities. All excess materials for the installation will be transferred to the project's Waste Stockpile Area for waste characterization and disposal at an off-site permitted disposal facility. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed

directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface.

Question

There are at least 12 osprey nests (2 adults chicks) from March thru October at the south end of Manresa. They are situated on the man-made posts, on the maritime dolphins in the barge slip, on the roof of the shed, in the trees. The same ospreys usually come back to their nests year after year. What steps can be taken so they are not disrupted?

There has been a concern for years that the culvert running under the west end of Longshore Ave that connects the marshes is too small for the flow of the saltwater tides, especially in a storm. The buildup of tidal water in a noreaster in the north marsh bordering Harbor View is prone to flooding Longshore. With commercial construction traffic over the culvert, it might be an opportune time to widen and strengthen the culvert.

Response

The Connecticut Department of Transportation (CTDOT) has coordinated with the CTDEEP Division of Wildlife regarding the protection of osprey. Time of year restrictions and protection protocols for State-listed species are will be included in permits and contract specifications. Work at the site will start before April 15 or after August 1 to allow time for nesting ospreys to acclimate to noise levels.

Replacement of the culvert at Longshore Ave is outside the scope of work for this project.

Question

Longshore Ave is already a dangerous road clogged on fair weather days with bicycles, walkers, runners, bird watchers and photographers. Just today, 7\/2, a car stopped right in the middle of one of the blind curves, left all the doors open and got her children out to save a turtle crossing the road.

There is a fat, uneven shoulder on one side, but pedestrians often insist on traveling on the opposite side where there is no shoulder at all whatsoever.

I don't want the Manresa staging plan to move forward, but if it does, at the very least, the state should install a sidewalk and bike lane.

Response

Work to improve Longshore Ave. is outside the scope of work for this project.

For more information, please visit the Manresa Island Online Public Meeting Webpage. Should you have additional questions or comments, please don't hesitate to contact the Program's Public Information staff at info@walkbridgect.com.

Question

Will taxpayers be responsible for cleanup and decontamination of the site? What is the anticipated commencement date of work to start on the Walk Bridge? How much more congestion will this add to the Norwalk Harbor Channel?

Response

The Program is not responsible for the decontamination or cleanup of the existing NRG site at Manresa Island. In the area planned to be used, a layer of geotextile fabric and 6-inches of crushed stone will be placed as a barrier from existing areas of concern, so they are not disturbed. Fuels and hazardous materials needed for construction will be securely stored in double-walled flood-proof containers and will be removed from the site for proper disposal. The work site will be fenced with a secure entrance gate for safety purposes. The Program will remove the crushed stone and geotextile fabric and leave the Manresa site as it was prior to Walk Bridge work.

The Project is slated to begin in Fall 2021. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to construct a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location. Further, use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

The Program anticipates barges and construction equipment to be staged in the Norwalk River. The channels will remain open except for planned closures that will be coordinated with the United States Coast Guard, the Norwalk Harbor Management Commission, the Norwalk Shellfish Commission, Norwalk Harbormaster and marine users. Advance notice of closures will be sent to marine users and posted on the Walk Bridge Program's weekly Construction News bulletin, website and social media accounts.

Question

During the recent online meeting, I was shocked by the response regarding noise and how it carries by water. I think this rush response is very concerning...Has anyone looked at more appropriate sites not near residential communities available, given that the intent is to construct the spans on a barge and

float them? What is the marginal cost of additional miles? There are many impacts regarding this project and I think it is being rushed through before totally thought out.

Response

The Project Team is considering several properties for the construction of the replacement bridge lift spans, staging and storage. The potential use of Manresa Island accommodates specific water-based project construction. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard.

During construction of the lift spans, the Program estimates one truck making a roundtrip per day. At the peak of construction, we estimate three trucks are making one roundtrip each, per day. Employee traffic is expected to be approximately 22 roundtrips per day, six days per week.

The Program anticipates that work will happen primarily during daytime hours on Manresa Island, minimizing the need for construction lighting. Should an activity require nighttime hours, any construction lighting will be directed to reduce impacts on the local neighborhoods while a safe and secure working environment is maintained.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

As you may not have been made aware by the Office of the Mayor of Norwalk, and Jessica Casey, Chief of Economic and Community Development, the 47 acres on the southern portion of Manresa Island is proposed as a solar energy facility for the citizens of Norwalk and Fairfield County (Fitzgerald and Halliday online report, Future of Manresa Island). Therefore, North Water Street should be the site for your construction needs as it would not interfere with the future use of Manresa Island. As to the marine terminal, your staging there should not disturb the initial building related to the solar facility.

We all understand that the building and stack related to the former fossil fuel installations will have to be dismantled, and that the toxic waste will have to be remediated.

Please advise us of your decision making in this regard.

Response

The Connecticut Department of Transportation (CTDOT) is in regular coordination with the City of Norwalk about all Walk Bridge Program-related plans. The Program is not responsible for the decontamination or cleanup of the existing NRG site at Manresa Island. In the area planned to be used, a layer of geotextile fabric and 6-inches of crushed stone will be placed as a barrier from existing areas of concern, so they are not disturbed. Fuels and hazardous materials needed for construction will be securely stored in double-walled flood-proof containers and will be removed from the site for proper disposal. The Program will remove the crushed stone and geotextile fabric and leave the Manresa site as it was prior to Walk Bridge work.

Question

Will any digging or road expansion be done north of the power plant. The marsh is a breeding area for terrapins and mantis shrimp (Squilla empusa)

Response

The Program plans to use the southern tip of Manresa Island as a worksite, which is 0.4 miles away from the nearest resident. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. No digging or expansion of the roadway north of the plant is included in the project scope.

CTDOT has coordinated with the CTDEEP Natural Diversity Data Base Program and the CTDEEP Division of Wildlife regarding the protection of listed species. Time-of-year restrictions and protection protocols for State-listed species will be included in permits and contract specifications.

Question

I am not pleased with the idea of the proposed construction for the bridge project on Manresa Island. I live at 1 Longshore Avenue and am concerned about the increased traffic and construction noise. I feel there are other sites that could be considered and not located near a residential area.

Response

The Project Team considered several properties for the construction of the replacement bridge lift spans. The potential use of Manresa Island accommodates certain water-based project construction, such as assembly of the new lift spans on barges.

Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to

construct a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location. Further, use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift spans, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks making one round-trip per day. Employee traffic is expected to be approximately 22 roundtrips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

A noise study is being prepared to evaluate impacts on the surrounding area, including how sounds propagates over water. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

I oppose Manresa being used as a site for Walk Bridge, the noise and traffic on Woodward and the area will be too much. 20 extra cars each way? People already speed on Woodward daily.

Response

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift spans, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks making one round-trip per day. Employee traffic is expected to be approximately 22 roundtrips per day, six days per week.

Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

Question

There is a very active and robust terrapin population on Manresa Island. Will you make plans to address their vulnerability during construction?

Response

CTDOT has coordinated with the CTDEEP Natural Diversity Data Base (NDDB) Program for the protection of the Northern diamondback terrapin. CTDOT will incorporate special protocols for the terrapin's dormant period (Nov 1st to May 31st) and during its active period (April 1st through October 31st) into the project permits and contract specifications to ensure protection of this species.

The Program will provide environmental enhancements including tidal wetland restoration and sand berms for nesting terrapins as part of our Wetland Mitigation Plan.

Question

How much will the CT DOT be paying NRG for use of Manresa?

Response

In due course, the Connecticut Department of Transportation (CTDOT) will enter into conversations with NRG, the owners of Manresa Island, for the property rights needed for the Walk Bridge Replacement Project.

Question

When will it be done?

Response

The Project is slated to begin in Fall 2021. Construction is anticipated to take approximately 5-6 years.

Question

Is there any summary about what was discussed?

Response

A video of the Online Public Meeting and the presentation are available on the Manresa Island Online Public Meeting webpage at: www.WalkBridgeCT.com.

Question

Manresa Island is the most logical piece of property in the entire city for the contractor to use. There will be many benefits to the city.

Response

We appreciate your comment regarding the potential use of Manresa Island as a staging area for the Walk Bridge Replacement Project.

Question

Re: the 3 round trips, is that for a single truck or multiple vehicles? Thank you

Response

At the peak of construction, we estimate three trucks making one round-trip per day. Employee traffic is expected to be approximately 22 roundtrips per day, six days per week.

Question

Has the city considered the impact on near by neighborhoods like Harborview and Village Creek? Seems like this would cause significant congestion on already busy and crowded roads. Further - there is only one way out of these neighborhoods - so construction traffic could cause significant delays.

Response

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making one round trip per day. At the peak of construction, we estimate three trucks making one round trip per day each. Employee traffic is expected to be approximately 22 roundtrips per day (six days per week).

Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

Requested a copy of the Meeting Minutes for the Manresa Island Online Public Meeting.

Response

Attached is a copy of the meeting minutes. A video recording of the meeting and the presentation are available on the Walk Bridge Program's website, www.walkbridgect.com.

Question

Why is Manresa being considered after all this time? How will traffic be impacted? How much is power plant being paid? My understanding was Manresa was not chosen as a location during all the town meetings over the last 2 years - what has changed?

Will this disrupt traffic on Longshore/Woodword?

How much money is the state (or federal) paying the powerplant at Manresa for staging?

What environmental impacts have been taken into consideration?

Response

The Project Team considered several properties for the construction of the replacement bridge lift spans. The potential use of Manresa Island accommodates certain water-based project construction, such as assembly of the new lift spans on barges.

Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to construct a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location. Further, use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making one round-trip, per day. At the peak of construction, we anticipate three trucks making one round-trip, each, per day. Employee vehicles will be making 22 round-trips per day, six days a week.

In due course, the Connecticut Department of Transportation (CTDOT) will enter into conversations with NRG, the owners of Manresa Island, for the property rights needed for the Walk Bridge Replacement Project.

Environmental investigations included wildlife habitat, wetlands, and historical and archaeological resources. CTDOT coordinated reviews of the project, including the proposed staging and storage yard, with CTDEEP Divisions of Wildlife, Fisheries-Marine Fisheries, Natural Diversity Data Base Program; U.S. Fish and Wildlife Service; and National Marine Fisheries Program/Greater Atlantic Regional Fisheries Office. Best management practices, time of year restrictions, and protection protocols for State-listed species are included in permits and contract specifications. The Program Team will continue to coordinate with relevant agencies throughout the duration of the project.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

Will taxpayers be responsible for clean-up and decontamination of the site. What is the anticipated commencement date of work to start on the Walk Bridge? how much more congestion will this add to the Norwalk Harbor Channel?

Response

The Program is not responsible for the decontamination or cleanup of the existing NRG site at Manresa Island. In the area planned to be used, a layer of geotextile fabric and 6-inches of crushed stone will be placed as a barrier from existing areas of concern, so they are not disturbed. Fuels and hazardous materials needed for construction will be securely stored in double-walled flood-proof containers and will be removed from the site for proper disposal. The work site will be fenced with a secure entrance gate for safety purposes. The Program will remove the crushed stone and geotextile fabric and leave the Manresa site as it was prior to Walk Bridge work.

The Project is slated to begin in Fall 2021. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and

material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to construct a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location. Further, use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

The Program anticipates barges and construction equipment to be staged in the Norwalk River. The channels will remain open except for planned closures that will be coordinated with the United States Coast Guard, the Norwalk Harbor Management Commission, the Norwalk Shellfish Commission, Norwalk Harbormaster and marine users. Advance notice of closures will be sent to marine users and posted on the Walk Bridge Program's weekly Construction News bulletin, website and social media accounts.

Question

I am concerned about significant increased traffic directly past my house [REDACTED], as well as increased truck and construction noise. How will these be controlled? What recourse do residents have for enforcement of controls? Lots of construction has been occurring there over the last 2 years that has NOT been consistent with being a good neighbor. Work crews starting at 7am most days including weekends, etc. Very noisy.

Manresa is covered in coal ash which is highly toxic. What ongoing mitigation and testing throughout the FIVE YEARS of the project will be assured and publicly available?

The city has already informed residents with a view of the power plant that if/when it comes down, our taxes will skyrocket, presumably because the "view will improve". What tax reductions will be in place during the FIVE YEARS that this noise, traffic, and toxicity risk nuisance cluster will be in place? If the city can place a value on the power plant being gone, it can SURE place a value on even worse conditions being intentionally created there and the impact it will have on quality of life, potential increased health risks, property values, and peace and quiet.

I would like the thoughtful satisfactory answers to these questions please. Publicly posted responses to these topics of inquiry would also be appreciated. Thank you.

Response

A minimal increase in traffic, less than 1% based on traffic data from 2017, is anticipated in the Manresa Island area due to Walk Bridge construction. During construction of the lift spans, the Program estimates one truck making one round-trip per day. At the peak of construction, we estimate three trucks making one round-trip each per day. Employee traffic is expected to be approximately 22 roundtrips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

The proposed activities at the site have been designed to limit the disturbance of existing soils. The Program is aware of the numerous investigations that have been conducted on the property as well as the proposed Remedial Action Plan (RAP) for the site. The RAP outlines the potential remedial options for the site which includes capping, soil excavation and disposal, and long-term monitoring. The Department has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface.

Due to the limited disturbance and installation of the protective measures outlined above, the Department will not be performing baseline testing of the surrounding areas.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to the extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

For questions about local property taxes, please contact the City of Norwalk's Customer Service Department customerservice@norwalkct.org.

Question

Recording posted for public viewing?

Response

A video recording of the Public Meeting and the presentation are available on the Manresa Island Online Public Meeting webpage on the Walk Bridge Program's website, www.walkbridgect.com.

Question

What is the current status of the Eversource proposal to relocate the electric transmission line at the South Water Street site? How might the schedule for this project affect the anticipated staging or

work area on the South Water Street sites?
How will the proposed use of Manresa Island affect the previously planned staging sites on South Water Street? How will the proposed use of Manresa Island affect the previously planned staging sites on South Water Street?

Response

Eversource is finalizing its plans for the relocation of the overhead transmission lines; Eversource is responsible for the design, regulatory approvals, and permitting of this relocation. When Eversource completes its work and de-mobilized from the South Water Street Site, our contractor will then use the site for construction staging.

The potential use of Manresa Island accommodates certain water-based project construction. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to build a robust steel bulkhead to accommodate construction barges, required at the Water Street location. Additionally, the use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will generally be 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

Question

Will you be responsible for any damage done to the roads by the trucks?

Response

The Walk Bridge Program is not responsible for damage done to roads from the normal wear-and-tear of travel. Should any direct damage occur, the Program will address the situation accordingly.

Question

What about the unremediated contaminants which might be released into the environment?
I strongly oppose the use of Manresa Island as part of the Walk Bridge Replacement Project.

Response

Air and water quality will be ensured with the inclusion of the Department's standard specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with the Department's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs are standard practice for the Department and are designed

to protect air and water quality. Additionally, the Department has Construction Inspectors and Environmental Coordinators who verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.

For each of the Required Best Management Practices there are inspection requirements on the part of the Contractor and provisions to correct any identified protection failures within a timely manner (usually 24 hours). Provisions within the standard specifications allow the Department to correct any identified issues that the Contractor has not performed in a timely manner and the costs for said corrections would be withheld from payment to the Contractor.

Additionally, the site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

The proposed activities at the site have been designed to limit the disturbance of existing soils. The Program is aware of the numerous investigations that have been conducted on the property as well as the proposed Remedial Action Plan (RAP) for the site. The RAP outlines the potential remedial options for the site which includes capping, soil excavation and disposal, and long-term monitoring. CTDOT has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface.

Question

Please, consider using the Water Street site for this. We should be able to keep natural, serene, quiet places of Norwalk as is. Creating noise, traffic, and pollution here would be such a shame. We strongly urge you to direct this to another location. It would be a huge disappointment to the neighborhood and surrounding neighborhoods.

Response

The Project Team considered several properties for construction staging and storage. Due to a variety of factors and environmental concerns, the Water Street and Manresa Island locations are the locations being considered at this time.

The potential use of Manresa Island allows for the relocation of water-based construction of the lift span to Manresa Island and the Water Street properties will still be used as a staging yard. Manresa Island has the existing infrastructure needed for the project in place where additional construction would be

needed at Water Street to complete the project. The Manresa Island Staging and Storage Yard would be used in conjunction with the Water Street properties. The Water Street properties will be used for land-based storage of construction equipment. The parcels will not be used to accommodate construction and material barges. The use of Manresa Island allows for certain water-based project construction. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and an existing staging and storage yard. Using Manresa Island to construct the lift spans will not require extensive dredging to construct a robust steel bulkhead to accommodate construction barges, which would be required at the Water Street location.

Further, use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the (200-foot) navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (which is 250-feet wide at this location).

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks are making one round-trip each per day to bring materials to and from the site. Employee traffic is expected to be approximately 22 round-trips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to the extent feasible and practicable.

CTDOT will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the City of Norwalk, stakeholders and the public in September 2020.

Question

Who is responsible for monitoring that the safety protocols at Manresa Island outlined in the Walk Bridge meeting are being followed?

Response

The Program Team, comprised of CTDOT staff and design, construction and inspection consultants are responsible for establishing, monitoring and enforcing safety protocols in compliance within the Federal and State regulations.

Question

Manresa Island has always been an issue. As a power plant an eyesore to the point that the city has said they would raise local taxes 20%if it came down. This use of Manresa with heavy boat and road traffic is nothing less than blight. Manresa is in a quiet residential neighborhood, people walk, cycle constantly. We strongly oppose this project on environmental grounds both marine and land. Is the city proposing a 20% decrease in property taxes by all those affected of using Manresa for the walk bridge?

Response

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks are making one round-trip each per day to bring materials to and from the site. Employee traffic is expected to be approximately 22 round-trips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to the extent feasible and practicable.

CTDOT will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the City of Norwalk, stakeholders and the public in September 2020.

For questions about local property taxes, please contact the City of Norwalk's Customer Service Department customerservice@norwalkct.org.

Question

Has NRG agreed to utilization of the site? Is NRG being paid for use of the site? If yes, how much? Will ConnDOT's use of the site prevent NRG from tearing down the power plant during the entire period that ConnDOT is utilizing it?

Response

In due course, the Connecticut Department of Transportation will enter into conversations with NRG, the owners of Manresa Island, for the property rights needed for the Walk Bridge Replacement Project.

Question

Three items of concern: 1) I understand and am unconcerned about the 20 employees driving to and from the site every day, as long as they obey the Speed Limit. I am concerned about the representation of an AVERAGE of 1 round trip Truck trip Per day during most periods, and 3 during peak periods. Over the course of 4-5 years those averages could result in 20+ trips per day during peak times, and many fewer or none at many others. Can you commit to a Maximum # of daily trips during peak times?

Response

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks are making one round-trip each per day to bring materials to and from the site. Employee traffic is expected to be approximately 22 round-trips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

Question

Is there a monetary reward for the contractor to conclude construction on or before a promised date?

Response

Currently, there is no monetary incentive for early completion of the Walk Bridge Replacement Project.

Question

Instead of the south portion could you use North Water Street, dividing
up the sites?

What are you paying NRG for using their facilities?

Response

The Manresa Island staging and storage yard will be used in conjunction with the Water Street properties. The Water Street properties will be used for land-based storage of construction equipment, but both parcels will not be used to accommodate construction and material barges. The use of Manresa Island allows for the relocation of specific water-based project construction. Manresa Island has the existing infrastructure needed for the project in place: a large docking area with sufficient berthing depths to accommodate construction and material barges and a current staging and storage

yard. Using Manresa Island to construct the lift spans will not require extensive dredging to build a robust steel bulkhead to accommodate construction barges, needed at the Water Street location.

Further, the use of Manresa Island will avoid encroachment into the Norwalk River navigation channel. Berthing of the largest barges for assembling the lift span at the Manresa Island dock will generally be 300 feet outside of the (200-foot) navigation channel. In comparison, berthing these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel (250-feet wide at this location).

In due course, the Connecticut Department of Transportation will enter conversations with NRG, the owners of Manresa Island, for the property rights needed for the Walk Bridge Replacement Project.

Question

Every time a barge goes through--even when the testing begins on June 17, will the Stroffolino bridge be open and will traffic back up on Washington Street, Water Street etc.?
How many barges will go through during testing? How many barges will go through during the construction project? Will this be at random times of the day? or a bit more scheduled?

Response

Barges will travel through the Stroffolino only at the allowed times. No bridge openings are planned from Monday to Friday, from 07:00 AM to 08:45 AM, 11:45 AM to 13:15 and 16:00 to 18:00 PM. On average, only one barge will travel back and forth through the Stroffolino Bridge per day; in very few instances, a second barge will be required to pass.

Question

Can workers carpool to minimize traffic?

What impact will this have on nesting ospreys who have increased their population over the last years?

As a resident in Harborview, an impacted neighborhood, will there be a point person we can reach out to if concerns do arise?

Response

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks are making one round-trip each per day to bring materials to and from the site. Employee traffic is expected to be approximately 22 round-trips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

The Connecticut Department of Transportation (CTDOT) has coordinated with the CTDEEP Division of Wildlife regarding the protection of osprey. Time of year restrictions and protection protocols for State-listed species are included in permits and contract specifications. Work at the site will start before April 15 or after August 1 to allow the nesting ospreys to acclimate to noise levels.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to the extent feasible and practicable.

CTDOT will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the City of Norwalk, stakeholders and the public in September 2020.

Question

What noise studies have been undertaken to protect nearby residents? When you say "one truck" will be the norm, does that mean that truck will be coming and going all day? Is the truck's main purpose to be removing or delivering construction materials or debris? Can you list the other properties that are under consideration for construction?

Response

The Project Team considered several properties for construction staging and storage. Due to a variety of factors and environmental concerns, the Water Street and Manresa Island locations are the locations being considered at this time. The potential use of Manresa Island allows for the relocation of water-based construction of the lift spans to Manresa Island and the Water Street properties will still be used as a staging yard. If the Program uses Manresa Island, it can avoid the additional dredging and construction of a bulkhead at the Water Street location. Manresa Island has the existing infrastructure needed for the project already in place, where further construction would be needed at Water Street to complete the project.

The Program anticipates a minimal increase in traffic in the Manresa Island area. During construction of the lift span, the Program estimates one truck making a round-trip per day. At the peak of construction, we estimate three trucks are making one round-trip each per day to bring materials to and from the site. Employee traffic is expected to be approximately 22 round-trips per day, six days per week. Speeding and other traffic regulations will be enforced by the local police. The Program plans to work closely with the City of Norwalk and police to facilitate safe travel for vehicles and pedestrians on local roads.

A noise study is being prepared to evaluate impacts on the surrounding area. The Program will avoid, minimize and mitigate impacts to the extent feasible and practicable.

The Connecticut Department of Transportation will further review potential traffic, noise and environmental concerns, as well as compile additional information for site staging alternatives for the Walk Railroad Bridge replacement project in response to public comment and feedback received through the online public informational meeting regarding the use of Manresa Island as a construction staging area.

The purpose of this effort is to add to the existing body of knowledge from previously conducted studies concerning these topics and inform and share this information with the city of Norwalk, stakeholders and the public in September 2020.

Question

I am very concerned about the coal ash being disturbed. What is being done to prevent this?

Response

The proposed activities at the site have been designed to limit the disturbance of existing soils. CTDOT is aware of the numerous investigations that have been conducted on the property as well as the proposed Remedial Action Plan (RAP) for the site. The RAP outlines the potential remedial options for the site which includes capping, soil excavation and disposal, and long-term monitoring. CTDOT has designed its proposed site activities to minimize the disturbance of existing on-site soils and sediment. The site activities will be limited to paved areas and in proposed areas where no pavement exists, existing soils will be protected with the installation of a separation geotextile that will be placed directly on top of existing soils and then six (6) inches of crushed stone will be placed to serve as the working surface for the construction activities. At the end of the project, the stone and geotextile will be removed from the area and the site will be reseeded for the reestablishment of a vegetated surface.

Question

I saw a mention of wastewater and stormwater from construction, but it didn't say how that would be captured and kept out of the Sound. Can you explain that process?

Response

Air and water quality will be ensured with the inclusion of CTDOT's standard specification 1.10 Environmental Compliance under Form 818. The specification provides accountability to the Contractor to perform the construction in accordance with CTDOT's Required Best Management Practices (BMPs) which include dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials. All of these BMPs are standard practice for the Department and are designed to protect air and water quality. CTDOT has Construction Inspectors and Environmental Coordinators who verify site conditions to ensure that the Contractor upholds the environmental requirements on the project.

For each of the Required Best Management Practices there are inspection requirements on the part of the Contractor and provisions to correct any identified protection failures within a timely manner (usually 24 hours). Provisions within the standard specifications allow the Department to correct any identified issues that the Contractor has not performed in a timely manner and the costs for said corrections would be withheld from payment to the Contractor.

Additionally, the site activities will be subject to the Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater Associated with Construction and Dewatering Activities (General Permit). The General Permit requires the development of a Stormwater Pollution Control Plan which outlines Erosion & Sediment Control requirements that will be required to be implemented including inspections after rainfall events to ensure that the best management practices that prevent erosion are implemented and maintained and corrective actions are promptly implemented.

Question

There is an active bird population (ospreys, eagles, etc.) nesting on the site, especially in the slip area. What would be done to protect these animals? Thank you.

Response

CTDOT has coordinated with the CTDEEP Natural Diversity Data Base Program and the CTDEEP Division of Wildlife regarding the protection of listed species. Time-of-year restrictions and protection protocols for State-listed species will be included in permits and contract specifications.

Work at the site will start before April 15 or after August 1 to allow time for nesting ospreys to acclimate to noise levels.

Question

Why don't you stop having any and all meetings about our city's future plans until we can meet in a normal assembly? Let's put all future impact plans on hold instead of using the current conditions to push them ahead.

Response

As holding an in-person meeting would have gone against Governor Lamont's Executive Order limiting gatherings, the Program Team chose to move forward with an online meeting. To date, the online public meeting holds the highest attendance numbers for any meeting held by the Walk Bridge Program.

As the Walk Bridge Replacement Project progresses, we remain committed to providing timely and transparent updates to the public. The potential use of Manresa Island is a development that we wanted to inform the community about well in advance of any work on the site and provide an opportunity for people to provide comments and ask questions.

Attachment D Section 106 Assessments

Attachment D-1 - Supplemental Cultural Resources Evaluation Memorandum, 5/1/2020

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Supplemental Cultural Resources Evaluation Memorandum

Author:	Lucas A. Karmazinas	**Date:** May 1, 2020
Project:	State No.:	301-176
	Project Title:	Walk Bridge Replacement Project
	Town:	Norwalk

Project Description

The Connecticut Department of Transportation (CTDOT) has proposed a series of improvements to the Metro-North Commuter Railroad's New Haven Line (NHL), among these being the replacement of Bridge #04288R (the Walk Bridge), which carries the rail line over the Norwalk River in Norwalk, Connecticut. A Value Engineering (VE) Study for the Walk Bridge Replacement Project (the Project) completed by HNTB Corporation and Strategic Value Solutions, Inc., in September 2019, included an alternative construction concept for the fabrication of the replacement bridge lift spans, this consisting of the recommendation that the replacement spans be constructed off-site at a Staging and Storage Yard (SSY) and then delivered by barge to the bridge site for installation. CTDOT is proposing, in coordination with the Project Management Team, to utilize a portion of the property occupied by the decommissioned NRG Energy power plant on Manresa Island in Norwalk as the SSY. This refinement in the proposed construction approach necessitates a re-evaluation of potential environmental impacts and this memorandum, completed by qualified cultural resources staff at the CTDOT's Office of Environmental Planning (OEP), considers the potential for effects to cultural resources resultant of the proposed use of a portion of the island occupied by the power plant (this identified in local Assessor's records as Parcel 5/86/1).

Technical Review of Project Area Uses

In accordance with the recommendation presented by the VE Study, CTDOT proposes to secure a construction easement within the southern parcel of Manresa Island (Parcel 5/86/1) for use of the parcel as an SSY. The area occupied by the SSY will measure approximately 4.7+ acres and will consist of an approximately 120,000 square-foot (sf) Work Area and an approximately 87,500 sf construction equipment and material Storage Area (Figures 1 and 2). The bridge lift spans will be assembled at the existing wharf area at the southeast corner of Manresa Island and then floated by barge approximately 2.1 nautical miles north to the bridge site to be installed. Additional uses within the SSY on Manresa Island may include the pre-assembly of structural components (i.e. lift tower) and both lift span trusses, storage of construction materials for trestles and sheet piles for marine enclosures, transfer of materials to and from barges as needed, unloading and storage of

components from demolition of the existing bridge, berthing of safety boat vessel(s) and emergency rescue operations that are associated with construction of the lift spans, and temporary berthing of construction vessels and barges.

Vehicle access to the SSY will be provided from Longshore Avenue via an existing paved access road (Figures 1 and 2). The Work Area will include potential use of an existing industrial office building as a project construction office, and use of an existing parking area for employee parking (Figure 2). No new buildings will be constructed, however, storage containers, these measuring approximately 8' x 40', will be required to house construction tools and weather-sensitive materials. Surface stabilization of the Work and Storage Areas will necessitate installation of a geotextile fabric topped with six inches of crushed stone (Figure 2). A lift span assembly barge, a work barge, and miscellaneous material barges will be stationed at the existing wharf area.

Cultural Resources Within the Area of Potential Effect (APE)

Investigations were conducted to determine if the use of Parcel 5/86/1 as an SSY could potentially impact above- or below-ground historic resources. Cultural Resources staff with CTDOT's OEP conducted desktop and field assessments of the area to be occupied by the SSY in order to determine the potential for impacts related to proposed alterations to existing buildings, installation of fencing, compaction of subsurface conditions due to general use of the property, and application of a 6" deep gravel overlay throughout the SSY. The Area of Potential Effects (APE) for above- and below-ground resources for the project consists of those portions of Parcel 5/86/1 slated for potential use in Figure 2.

Manresa Island (formerly also referred to as Bouton's Island or Keyser Island) was established as a Jesuit retreat center known as the Manresa Institute in 1889. At the time of its founding, the Manresa Institute was "the only establishment in the United States exclusively devoted to the work of private retreats to priests and laymen," and it offered year round accommodations in the "Manresa House," and warm-weather lodging in two large cottages called the "Gonzaga" and the "Xavier" (Figures 3-6).[1] A chapel and various other support buildings, including a dining room, kitchen, bowling alley, and recreation hall, rounded out the resort (Figure 7).

The Manresa Institute relocated to Staten Island in 1911, and the property fell vacant until it was acquired by the Connecticut Light & Power Company (CL&P) in 1952. Maps and aerial imagery from the early 1920s through the early 1950s indicate that the Manresa Institute compound then consisted of 17 buildings, these located in an area to the south of the extant main power plant building (Figures 7-9). When CL&P redeveloped the property for use as a coal-fired power plant during the late 1950s, however, the entirety of the parcel was cleared of all structures and portions of the tidal flats to the north of the former retreat center were filled in in order to accommodate for construction (Figure 10). As such, the area proposed to be used as the Work Area will be located on areas of artificial fill, while the entirety of the space proposed to be used as the Storage Area was occupied by a large, open coal dump (Figures 10-12).

Six of the power plant's existing industrial buildings and structures were built during the late 1950s and completed by ca. 1960. The facility converted to oil fuel in 1972, after which the coal dump

[1] "Manresa Institute, Keyser Island," *Sacred Heart Review*, Vol. 15, No. 24; June 13, 1896.

was cleared, graded, and backfilled with gravel and top soil, and three large fuel oil tanks were constructed, thus creating the campus and conditions visible today (Figures 10-12, and 14, Photographs 1-16). NRG Energy acquired the property from CL&P in 1999, and the facility remained in operation until 2013.

Extant Buildings Within the APE		
Building/Structure (Building # Keyed to Figure X)	**Date of Construction**	**Description**
Main Power Plant Building (#1)	Ca. 1960	Three-story, steel-frame, flat-roofed building with metal and glass panel sheathing. Comprised of five primary blocks and adjoined to the south by a concrete smokestack. Fuel input and water discharge piping snakes across the property on the east side of the building.
Coal Conveyance Building (#2)	Ca. 1960	Three-story, steel-frame, gable-roofed building with concrete and corrugated metal sheathing.
Coal Conveyance Wharf Building (#3)	Ca. 1960	Two-story, steel-frame, gable-roofed building with corrugated metal sheathing.
Utility/Mechanical Building (#4)	Ca. 1960	Two-story, steel-frame and brick, flat-roofed building.
Water Treatment Plant (#5)	Ca. 1960	Two-story, steel-frame and concrete block, flat-roofed building. Adjoined to the east and west by open holding tanks, and to the northwest, north, and northeast by current and former leaching fields.
Electrical Transmission Station (#6)	Ca. 1960	One-story, steel-frame, gable-roofed building with metal sheathing. Adjoined by chain-link, fenced-in, electrical transmission station.
Oil Conveyance Building (#7)	Ca. 1972	Elevated one-story, steel-frame, flat-roofed building with metal and concrete panel sheathing.
Oil Tank (#8)	Ca. 1972	Approximately three-story tall, metal-frame, flat-topped oil storage tank. Stands within a tank farm with two other identical tanks, all surrounded by a roughly 5’ tall gravel berm.
Oil Tank (#9)	Ca. 1972	Approximately three-story tall, metal-frame, flat-topped oil storage tank. Stands within a tank farm with two other identical tanks, all surrounded by a roughly 5’ tall gravel berm.
Oil Tank (#10)	Ca. 1972	Approximately three-story tall, metal-frame, flat-topped oil storage tank. Stands within a tank farm with two other tanks, all surrounded by a roughly 5’ tall gravel berm.

While six of the buildings and structures presently located within the APE are over 50 years of age – the minimum standard vintage required for listing on the National Register of Historic Places

(NRHP) – none exhibit design characteristics or associations with events, people, or technological or engineering developments that would make them eligible for listing on the NRHP.

Archaeological Conditions Within the APE

Soil classification maps maintained by the U.S. Natural Resources Conservation Service were examined in conjunction with predictive models developed within the State of Connecticut in order to assess the sensitivity of the project area for previously unknown archaeological resources. The entirety of the proposed SSY is located on soils classified as Udorthents-Urban Land Complex (0-35% slopes), these predicted to possess a "poor" likelihood of bearing archaeological resources, while the access road runs along the edge of an area classified as Udorthents-Urban Land Complex, this predicted to possess a "low" likelihood of archaeological sensitivity (Figure 13). The Office of State Archaeology database of archaeological sites identifies the Ted Jostrant #5 site (Site #103-34 or #6-FA-83), a grouping of multi-component campsite areas, as being located near the southern end of Manresa Island, however, the exact location of the site is not identified in state inventory forms.

Evaluation of historic aerial imagery, this combined with a field review conducted by OEP cultural resources staff on March 12, 2020, confirmed that the soils upon which the power plant are located were either heavily disturbed as part of construction or subsequent activities, or consist of artificial fill introduced to expand the footprint of the island (Figures 9-11, Photographs 1-16). As noted, the area formerly occupied by the Manresa Institute was entirely cleared to make way for the CL&P power plant during the late 1950s and has been further disturbed as part of subsequent construction projects, such as the plant's conversion to oil fuel during the early 1970s.

In specific regard to the proposed use of the property as an SSY, the entirety of the proposed Work Area is located on introduced fill, while the soils within the Storage and Staging Area were cleared for use by the power plant's coal dump, and then were graded and backfilled when the use of coal was discontinued. The power plant's access road is a paved surface that will not be altered and will continue to be used for its present purpose. As such, given the aforementioned conditions, OEP's Cultural Resources staff has determined that there is minimal foreseeable potential to impact intact archaeological resources within the project area and no further study is recommended.

Recommendation

It is the opinion of CTDOT's OEP Cultural Resources staff that the proposed use of Parcel 5/86/1 as a Staging and Storage area would result in No Historic Properties Affected. All of the structures formerly associated with the Manresa Institute were cleared when the power plant was constructed during the late 1950s, and while many of the power plant buildings themselves are over 50 years of age, they do not possess historical, architectural, or technological significance worthy of listing on the National Register of Historic Places (NRHP). Furthermore, despite the presence of a documented archaeological site on Manresa Island, the entirety of the APE has experienced extensive soil disturbances, these associated with the construction and subsequent demolition of the Manresa Institute, construction of the powerplant and infilling of adjacent wetlands by CL&P, regrading of the former coal storage area, and construction of the oil-storage tanks after conversion to that fuel type.

Given the aforementioned conditions, CTDOT cultural resources staff have determined that there is minimal foreseeable potential to impact intact archaeological resources within the Project Area and no further study is recommended.

Lucas A. Karmazinas
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation

Attached Documents:

- [x] Maps
- [x] Photos
- [ ] Supporting Documents

cc: file
Kimberly Lesay
Mark McMillan

Figure 1: Manresa Island – Proposed Access Route and Staging and Storage Yard (SSY).

Figure 2: Manresa Island – Detail of uses within proposed SSY, including the Work Area and Storage Area.

Figure 3: Manresa Island – Historic photograph of the Manresa Institute's "Manresa House," ca. 1895.

Figure 4: Manresa Island – Historic photograph of the Manresa Institute's "Xavier" cottage, ca. 1900.

Figure 5: Manresa Island – Historic photograph of the Manresa Institute's "Gonzaga" cottage, ca. 1900.

Figure 6: Manresa Island – Historic photograph of the Manresa Institute's Chapel, ca. 1900.

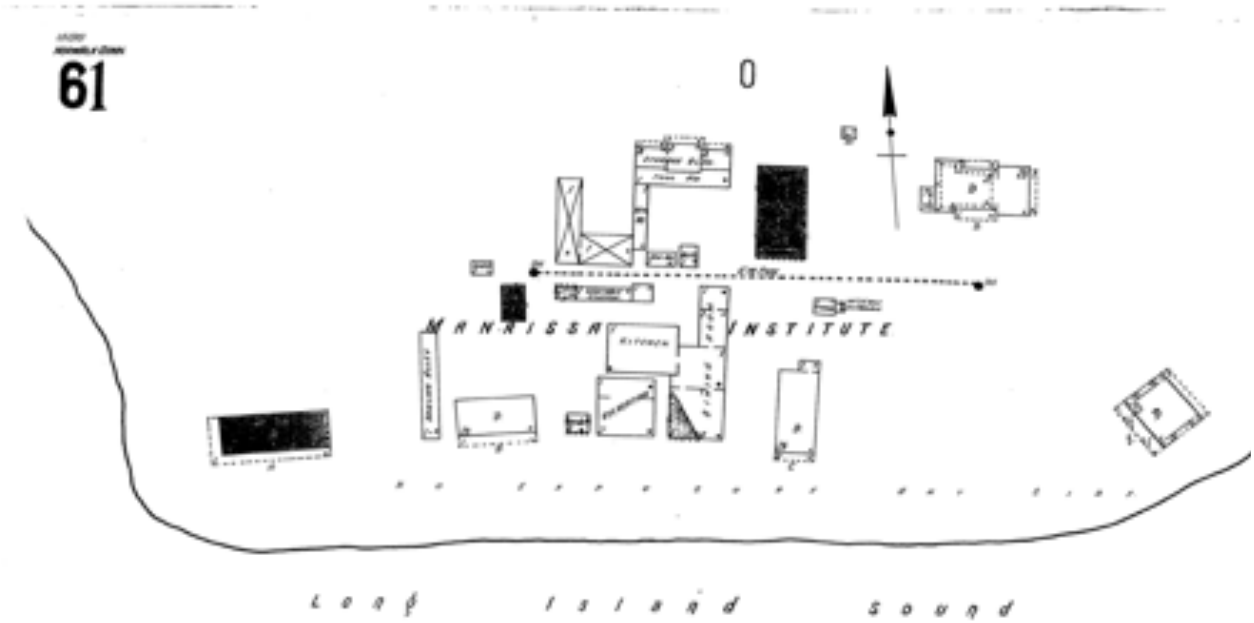


Figure 7: Manresa Island - 1922 Sanborn Map identifying buildings associated with the Manresa Institute.

Figure 8: Manresa Island – 1934 Aerial Image. Approximate Manresa Institute footprint boundary (in red) for reference. Note sand bar and salt marshes to the northeast.

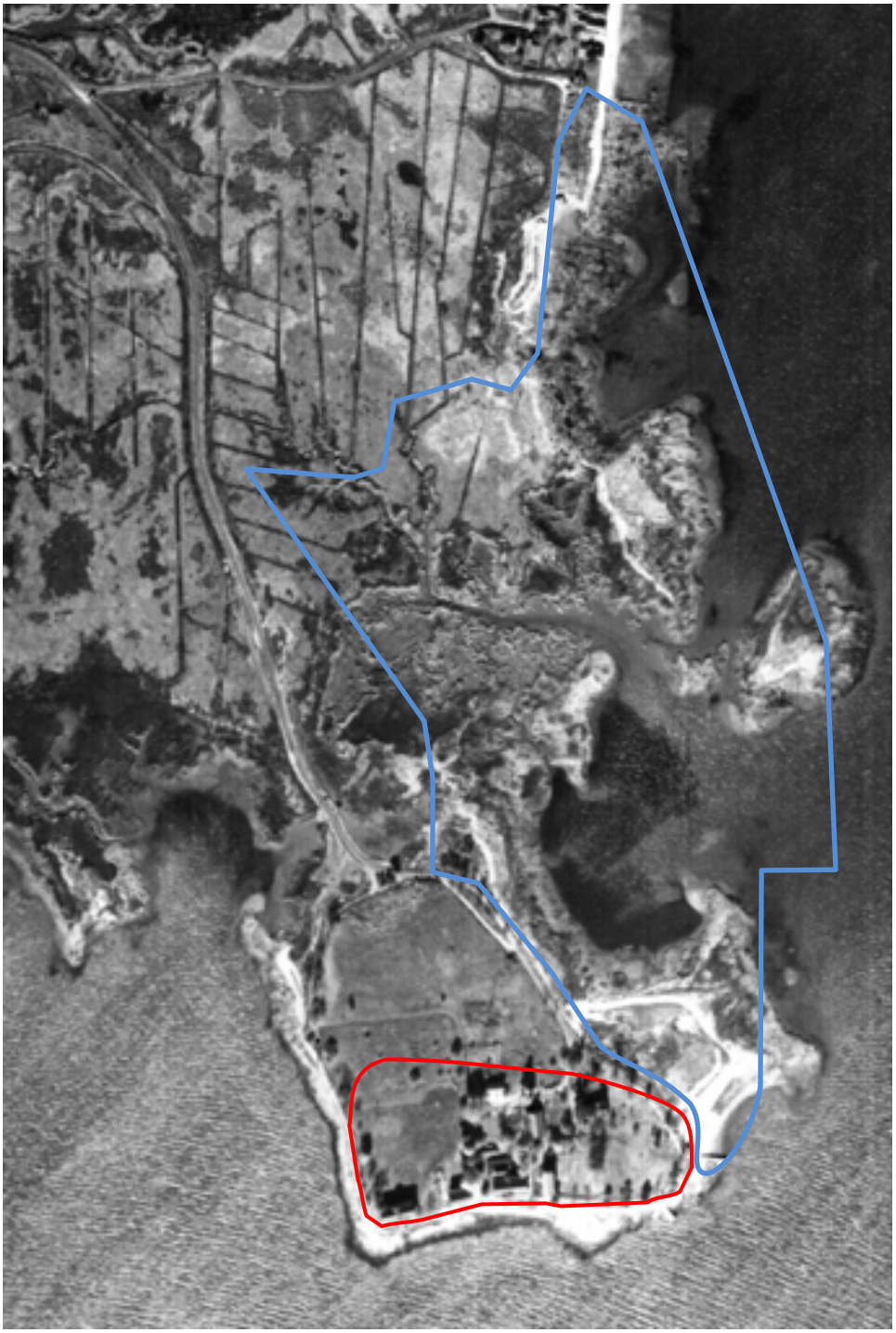


Figure 9: Manresa Island – 1951 Aerial Image. Approximate Manresa Institute footprint boundary (in red) and initial areas of fill for the CL&P power plant (in blue) for reference. Note sand bar to the northeast.

Figure 10: Manresa Island – 1965 Aerial Image. Approximate footprint of the former Manresa Institute identified in red. Note the construction of sea walls and extensive fill (identified in blue) associated with the construction of the CL&P power plant to the northeast, as well as the new power plant and adjoining coal dump themselves.

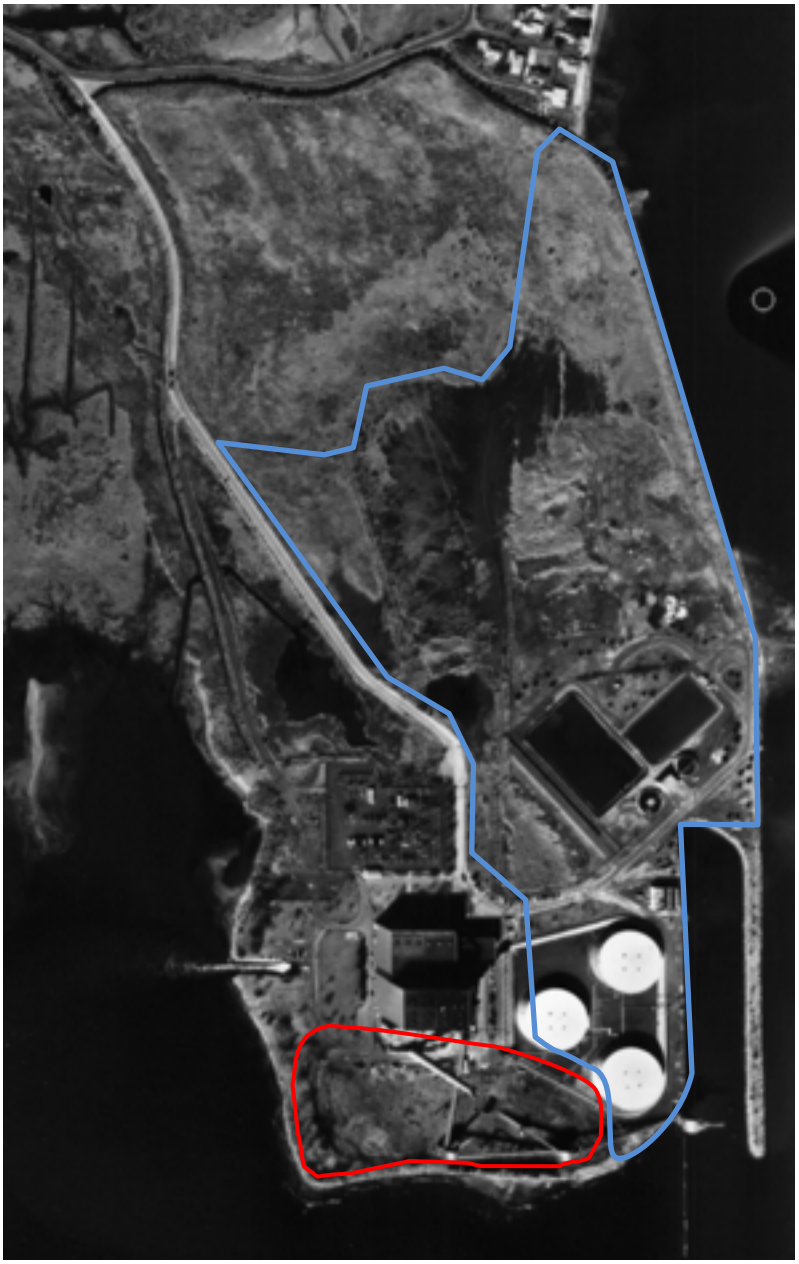


Figure 11: Manresa Island – 1985 Aerial Image. Approximate footprint of the former Manresa Institute identified in red. Note the areas of fill (identified in blue), as well as the new construction, including new oil storage tanks, associated with the CL&P power plant to the northeast.

Figure 12: Manresa Island – 2016 aerial image of Staging and Storage Area. Approximate footprint of the former Manresa Institute identified in red, areas of fill for the CL&P power plant (in blue).

Figure 13: Manresa Island – Soil classification/archaeological predictive map with soil types and sensitivity identified. Note: The project area falls entirely within areas predicted to have poor or low archaeological sensitivity.

Photograph 1: View from Parcel 5/86/1, looking west within the Staging and Storage Area towards the power plant from the north side of the tank farm. Facing west. 3/12/2020.

Photograph 2: View from Parcel 5/86/1, looking south within the Staging and Storage Area along the east side of the tank farm and west side of the wharf area. Facing south. 3/12/2020.

Photograph 3: View from Parcel 5/86/1, looking southeast within the Staging and Storage Area towards the wharf area. Facing southeast. 3/12/2020.

Photograph 4: View from Parcel 5/86/1, looking southwest within the Staging and Storage Area at the tank farm located east of the power plant. Facing southwest. 3/12/2020.

Photograph 5: View from Parcel 5/86/1, looking west within the Staging and Storage Area past the tank farm towards the power plant. Facing west. 3/12/2020.

Photograph 6: View from Parcel 5/86/1, looking south within the Staging and Storage Area along the east side of the existing tank farm and west side of the wharf area. Facing south. 3/12/2020.

Photograph 7: View from Parcel 5/86/1, looking north within the Staging and Storage Area along the east side of the existing tank farm and west side of the wharf area. Facing north. 3/12/2020.

Photograph 8: View from Parcel 5/86/1, looking west within the Staging and Storage Area along the south side of the existing tank farm. Note the gravel surface conditions throughout the area. Facing west. 3/12/2020.

Photograph 9: View from Parcel 5/86/1, looking west within the Staging and Storage Area south of the power plant. Note the thin topsoil/turf over gravel fill throughout. Facing west. 3/12/2020.

Photograph 10: Detail of the thin topsoil/turf over gravel fill throughout. 3/12/2020.

Photograph 11: View from Parcel 5/86/1, looking east within the Staging and Storage Area south of the power plant. Facing east. 3/12/2020.

Photograph 12: View from Parcel 5/86/1, looking northwest within the Staging and Storage Area at the power plant. Facing northwest. 3/12/2020.

Photograph 13: View from Parcel 5/86/1, looking southeast within the Staging and Storage Area south of the power plant. Facing east. 3/12/2020.

Photograph 14: View from Parcel 5/86/1, looking southeast from just outside (northwest of) the Staging and Storage Area west of the power plant. Facing southeast. 3/12/2020.

Photograph 15: View from Parcel 5/86/1, looking northeast just outside (northwest) of the Staging and Storage Area along the west side of the power plant. Note the thin topsoil/turf over gravel fill throughout. Facing northeast. 3/12/2020.

Photograph 16: View from Parcel 5/86/1, looking southwest just outside (north of) the Staging and Storage Area looking southwest towards the power plant. Facing south. 3/12/2020.

Figure 14: Manresa Island Staging and Storage Area - Photo Directions Map.

Attachment D-2 – CTSHPO's Concurrence, Temporary Use of Manresa Island, 6/15/2020

RE: WALK Bridge Re-Eval - Temporary Use of Manresa Island

Labadia, Catherine

Mon 6/15/2020 3:50 PM

To: Karmazinas, Lucas <Lucas.Karmazinas@ct.gov>;

Cc: McMillan, Mark J. <Mark.McMillan@ct.gov>;

Hello Lucas,
SHPO has reviewed the information submitted to our office regarding the use of Manressa Island to facilitate construction of the referenced project. Although an archaeologically sensitive and historically interesting location, it is unlikely that significant archaeological deposits would be impacted by the proposed activities. SHPO concurs with your conclusion that the proposed use of this location as
a Staging and Storage area would result in No Historic Properties Affected.
Thank you for the opportunity to comment,
Cathy

From: Karmazinas, Lucas <Lucas.Karmazinas@ct.gov>
Sent: Friday, June 5, 2020 10:04 AM
To: Labadia, Catherine <Catherine.Labadia@ct.gov>
Cc: McMillan, Mark J. <Mark.McMillan@ct.gov>
Subject: WALK Bridge Re-Eval - Temporary Use of Manresa Island

Hello Cathy,

I am not sure how much background you have on this issue other than what you might have gathered in passing, however, long story short, DOT is proposing to use a portion of the southern tip of Manresa Island in Norwalk for temporary staging, storage, and fabrication work associated with the WALK Bridge project. OEP was recently asked to prepare Re-Eval documentation for the use, this including a Cultural Resources Memo that evaluated the potential impacts on historic properties. I hate to do this to you again, however, there were some mixed signals in regards to whether FTA would be conducting consultation with your office directly or whether it should come from us with the end result being that it was not sent to you a month ago. I have attached the memo (here) and would very much appreciate if you could take a look at your earliest convenience and let me know if you have any questions or concerns. Also, rest assured that our office is reviewing our coordination protocols with FTA/FRA to prevent these communication lapses moving forward.

Thanks as always,

Lucas

Lucas A. Karmazinas
National Register Specialist
Office of Environmental Planning
Cultural Resources & Environmental Documents Unit
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131

Phone: (860) 594-2136
Fax: (860) 594-3028
Email: Lucas.Karmazinas@ct.gov

Attachment D-3 - Supplemental Information, Fort Point Street Wall 310, 11/23/2020

WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
STATE PROJECT 301-176

SUPPLEMENTAL INFORMATION
FORT POINT STREET
WALL 310

Prepared for HNTB Corporation
Boston, Massachusetts

by

Archaeological and Historical Services, Inc.
Storrs, Connecticut

November 23, 2020

Author:
Marguerite Carnell

Introduction

In the previous design, a section of the existing stone masonry wall, which is located on the south side of Fort Point Street and east of the Fort Point Street railroad bridge, would have been demolished and a new wall would have been constructed to tie into the remaining stone wall (Figure 1). In the final design, the entire existing wall will require replacement, primarily due to track grade raise and future track grade adjustments. The final design requires that the entirety of the stone masonry retaining wall between Fort Point Street and the rail corridor be abandoned in place, with a new soil nail wall (Wall 310, shown in Figure 2), to be installed immediately in front of the masonry wall, with soil nails extending through the existing wall (see attached drawings dated 11/09/2020).

This supplemental information augments a report prepared by Archaeological and Historical Services, Inc. (AHS), entitled *Supplementary Historic Resources Evaluation Report: Relocation of the Fort Point Street Railroad Bridge (State Bridge No. 0413R),* Bruce Clouette, Ph.D., February 2019, as well as the *Historic Resources Evaluation Report, Improvements to East Norwalk Station and Wall 27*, Norwalk, Connecticut, Marguerite Carnell, M.Phil. and Bruce Clouette, Ph.D., August 2017).

Historic Resources

The railroad right-of-way within the Walk Bridge project area has been identified as an National Register of Historic Places (NRHP)-eligible linear historic district significant for its role in the transportation history of Connecticut (NRHP Criterion A) and for its numerous historic engineering features (Criterion C). Among the district's contributing components that are within or adjacent to the wall replacement area are the Fort Point Street Railroad Bridge and the section of stone masonry retaining wall along the south side of Fort Point Street, east of this bridge.

This retaining wall was included in "Written and Photographic Documentation: New York, New Haven & Hartford Railroad: South Norwalk and East Norwalk, Norwalk, Connecticut, Walk Bridge Replacement Project, Norwalk, Connecticut, State Project No. 0301-0176," which was prepared for the Connecticut Department of Transportation by Archaeological and Historical Services, Inc. in August 2018. In the state-level documentation, the wall was described as follows:

> On the east side of the Fort Point Street Railroad Bridge is a stone retaining wall on the north side of the railway, along the short section of Fort Point Street that runs east-west (Photographs 22 to 24). It is very similar in character to the walls west of North Water Street, although the brownstone capping stones lack the smooth borders. At the east end the wall is several feet high, gradually increasing to about 15' where it joins the brownstone bridge abutment at the west end (Photograph 24). There are no historic masonry retaining walls on the south side of the railway, either east or west of the bridge.

Photographs 22, 23 and 14 from the state-level documentation are included with this memo for reference (Figures 3 to 5).

Scope of Work

The final design requires that the entirety of the existing northeast stone masonry retaining wall between Fort Point Street and the rail corridor be abandoned in place and replaced with a new soil nail wall (Wall 310), to be installed immediately in front of the existing masonry wall, with soil nails extending through the existing wall. The new retaining wall is required to accommodate added loading due to a raise in track profile necessary to tie in to the proposed new Fort Point Street Bridge and Walk Bridge, as well as for the future increase in vertical alignment (six-inch track raise) requested by Metro-North Railroad for future maintenance purposes. Analysis of the existing wall based on available core data indicates that the wall is unlikely to satisfy American Railway Engineering and Maintenance-of-Way Association (AREMA) stability factor of safety requirements under the revised loading conditions. Alternatives were analyzed to maintain and reinforce the existing retaining wall, including installation of post-tensioned ground anchors

and repointing of masonry joints. These reinforcement options, however, resulted in excessive quantities of anchors and would require construction of multiple rows of steel or concrete wales across the front face of the existing wall, diminishing the wall's historical integrity. Any option that maintained the existing wall would also require reliance on existing mortar in rubble masonry backfill to ensure stability of the masonry for the remaining service life of the structure. It was determined that while the existing Fort Point Street stone retaining wall need not be removed, it must be strengthened and re-faced through the installation of a new wall immediately in front of it.

The face of the new soil nail wall will be concrete that is stamped and stained to resemble stone masonry. The existing retaining wall is faced with rubble stone, which is difficult to convincingly replicate in concrete. Instead, the proposed wall will replicate the ashlar wall at the adjoining Fort Point Street bridge abutment (Figures 5 and 6).

Anticipated Project Effects

The Memorandum of Agreement (MOA) for the project contains the following stipulation:

> CTDOT shall prepare written and photographic documentation of other historic structures on the New Haven Line, within the limits of the Undertaking, to the professional standards of CTSHPO. The documentation will address the high towers, stone retaining walls, interlocking tower (South Norwalk Switch Tower Museum), Fort Point Street Railroad Bridge, and any historic trackside features such as mileposts.

The entirety of the stone masonry retaining wall between Fort Point Street and the rail corridor will be abandoned in place, with a new soil nail wall (Wall 310) to be installed immediately in front of the masonry wall, with soil nails extending through the existing wall. It is recommended that these changes be considered as an adverse effect on the NRHP-eligible linear historic district.

This retaining wall was included in "Written and Photographic Documentation: New York, New Haven & Hartford Railroad: South Norwalk and East Norwalk, Norwalk, Connecticut, Walk Bridge Replacement Project, Norwalk, Connecticut, State Project No. 0301-0176," which was prepared for the Connecticut Department of Transportation by Archaeological and Historical Services, Inc. in August 2018. Since this wall was included in the 2018 state-level documentation, no further mitigation is recommended.

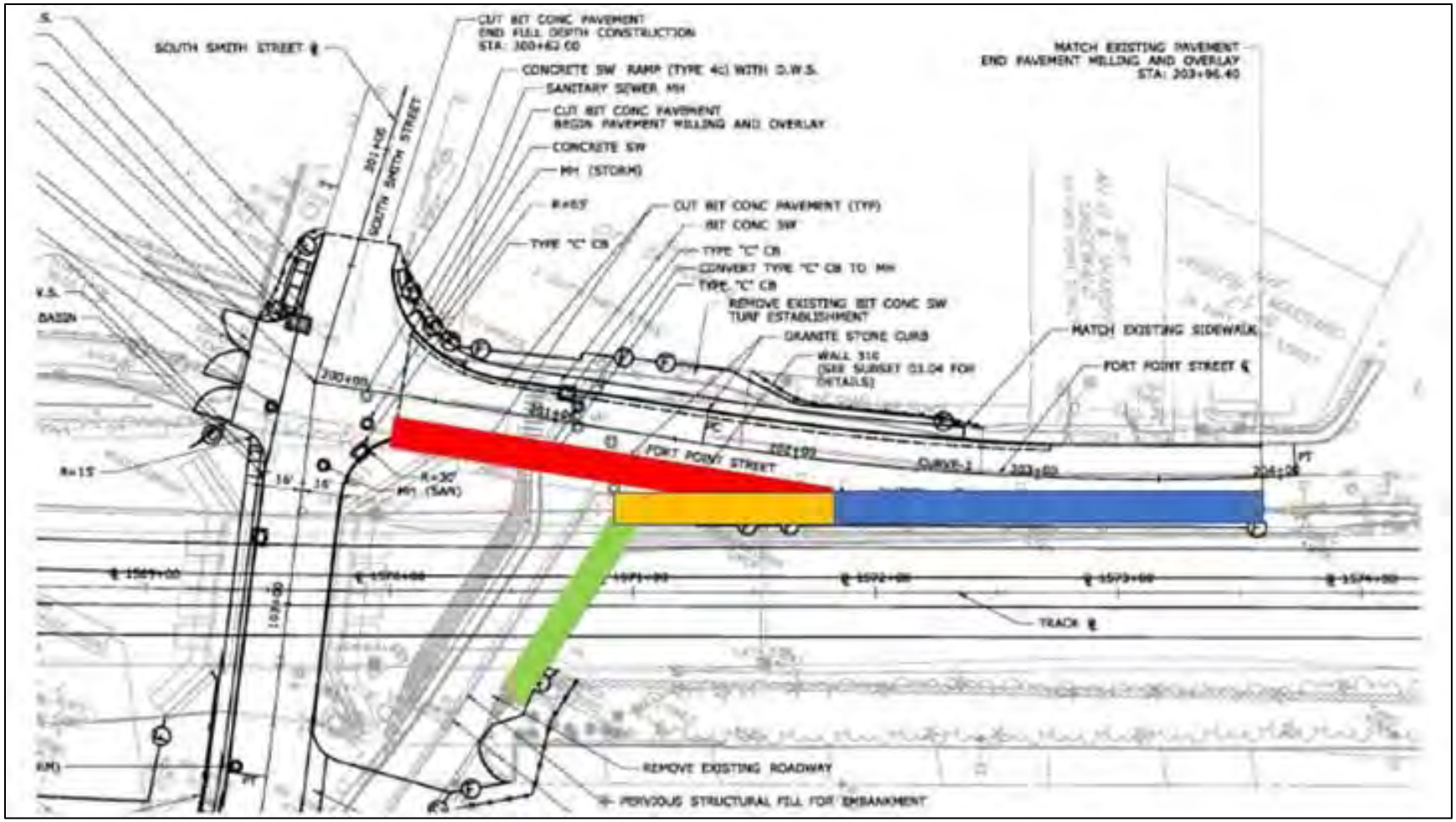


Figure 1. Retaining Walls at Fort Point Street. The green and orange portions were the original limits of removal. The blue portion of the wall was originally going to remain intact, and the plan was to tie in the new wall (red) into the blue. Based on the updated design and change in track profile, the decision was made to fully replace the wall - - the entire length of the wall from the existing Fort Point Street Bridge (west) to the eastern limit of the existing wall - - the orange and blue segments.

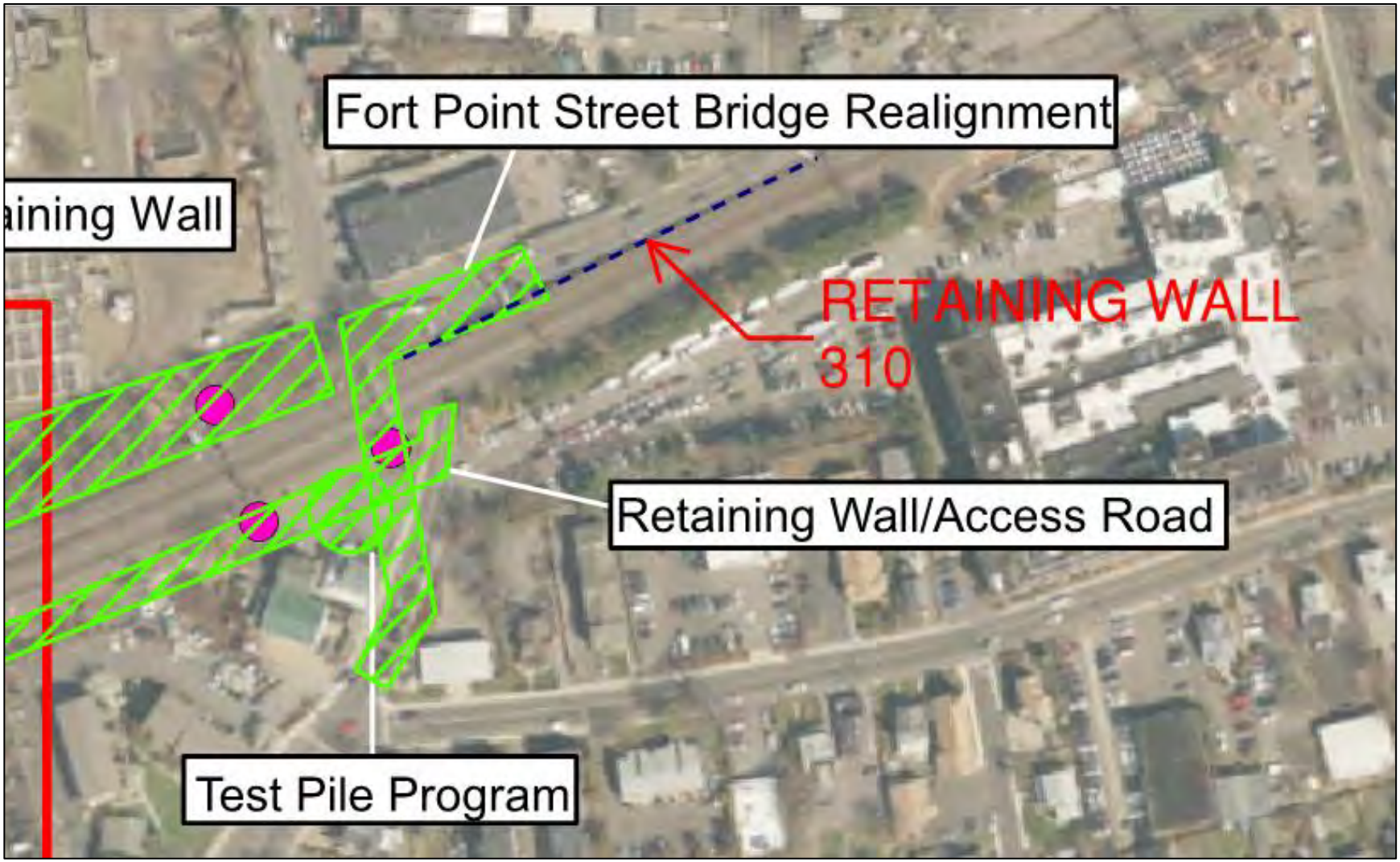


Figure 2. Retaining Wall 310 at Fort Point Street, east of the Fort Point Street railroad bridge.

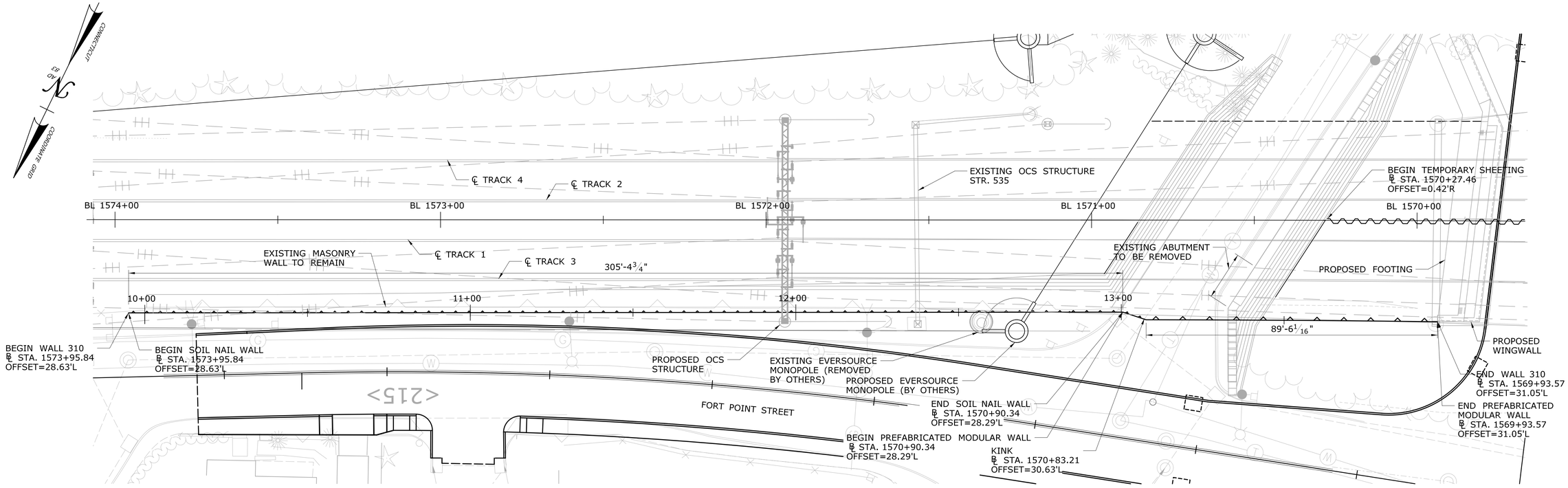
Figure 3. State-Level Documentation Photograph 22. Retaining wall east of Fort Point Street Railroad Bridge, camera facing southwest (AHS photograph, 9/2017).

Figure 4. State-Level Documentation Photograph 23. Detail of masonry, retaining wall east of Fort Point Street Railroad Bridge, camera facing east (AHS photograph, 9/2017).

Figure 5. State-Level Documentation Photograph 24. Retaining wall east of Fort Point Street Railroad Bridge, detail of junction between the wall's rubble masonry and the bridge abutment's ashlar masonry, camera facing southeast (AHS photograph, 9/2017).

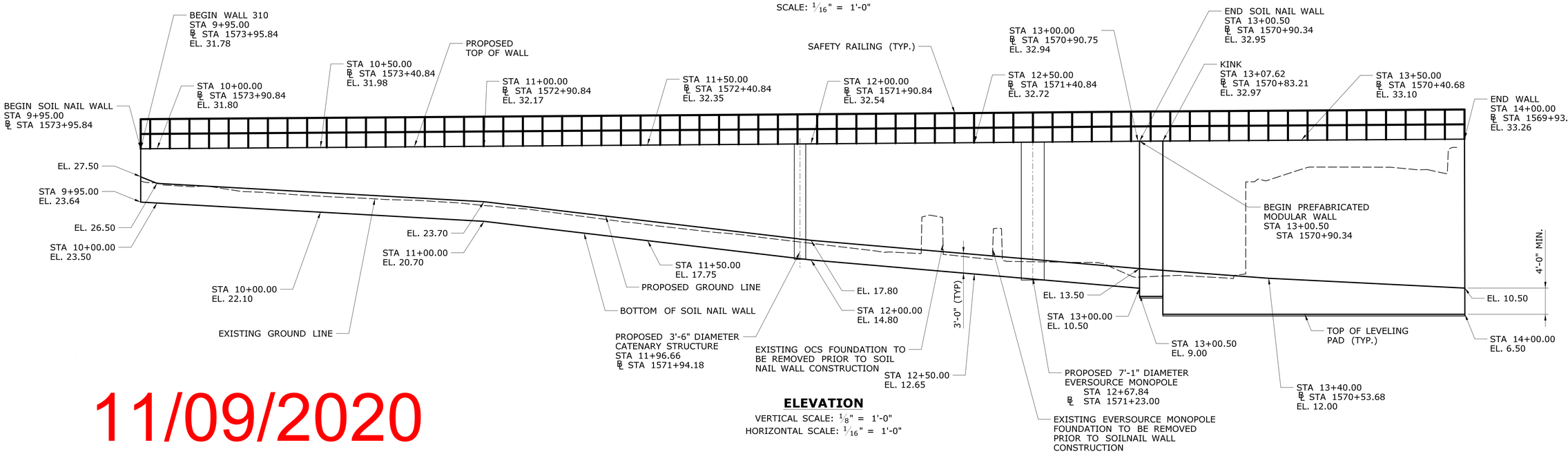
Figure 6. Fort Point Street Railroad Bridge, east abutment with ashlar stone masonry, camera facing southeast (AHS photograph, 9/2017).


2 S Smith St
Norwalk, Connecticut
Google
Street View
END OF WALL 310
START OF WALL 310
NOTES:
- EXISTING WALL TO REMAIN IN PLACE, COVERED WITH CONCRETE TO CREATE A NEW WALL
- PROPOSED CONCRETE FORM LINER TO REPLICATE EXISTING ABUTMENT STONE DIMENSIONS AND COLOR
Fort Point St
STOP
WALL 310



PLAN

SCALE: 1/16" = 1'-0"



ELEVATION

VERTICAL SCALE: 1/8" = 1'-0"
HORIZONTAL SCALE: 1/16" = 1'-0"

11/09/2020

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 10/23/2020

DESIGNER/DRAFTER: J. SONG
CHECKED BY: B. SUH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-038_SB_Sheet_0301-0189_WALL310.dgn

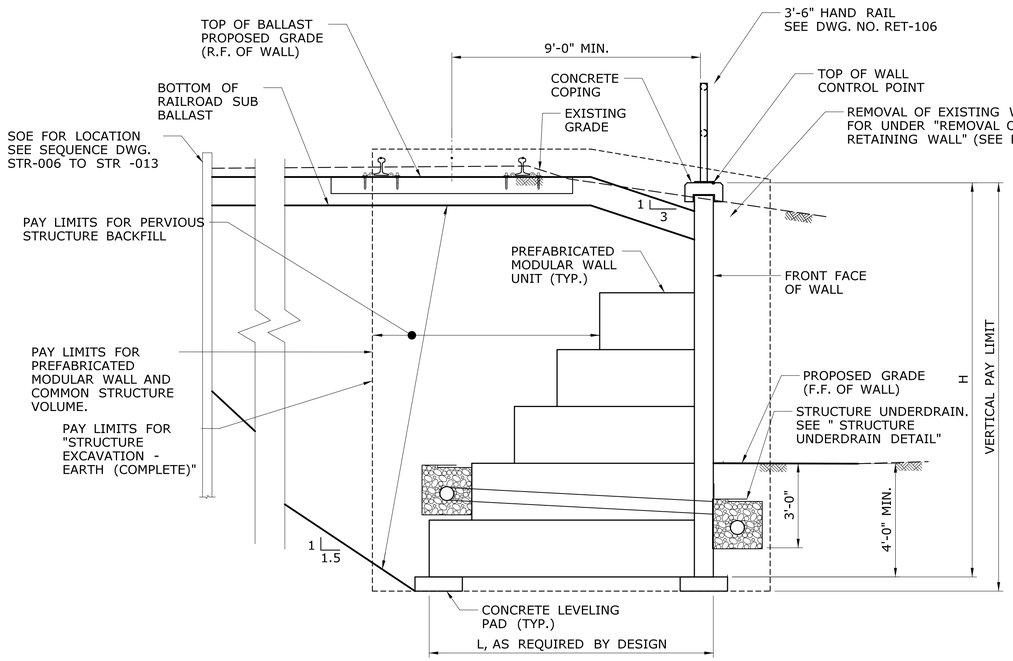
SIGNATURE/ BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

TOWN: **NORWALK**

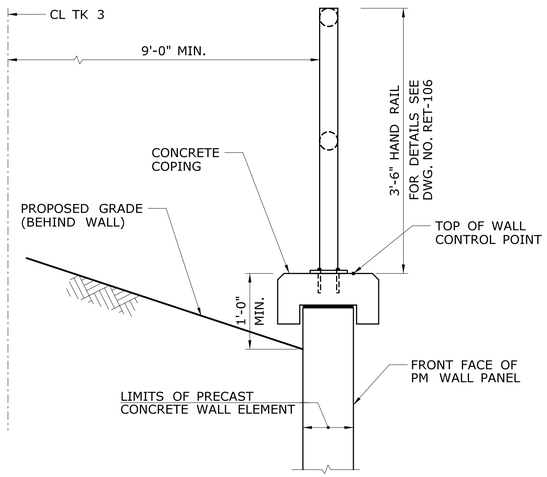
DRAWING TITLE:
WALL 310 PLAN AND ELEVATION

PROJECT NO. **0301-0189**
DRAWING NO. **STR-038**
SHEET NO.



TYPICAL SECTION
PREFABRICATED MODULAR (PM) WALL

NOT TO SCALE



COPING DETAIL

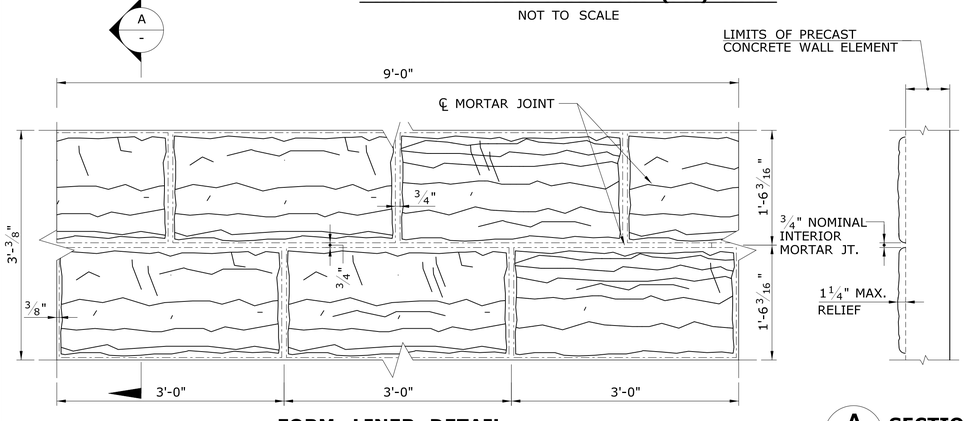
NOT TO SCALE

PREFABRICATED MODULAR (PM) WALL NOTES:

1. DESIGN AND CONSTRUCT THE RETAINING WALL AS A PREFABRICATED MODULAR (PM) WALL IN ACCORDANCE WITH THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION (AREMA) MANUAL FOR RAILWAY ENGINEERING (2016), AS SUPPLEMENTED BY THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (2002) AND BY THE CONNECTICUT DEPARMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003.)
2. SUBMIT TO THE ENGINEER FOR APPROVAL DESIGN CALCULATIONS AND WORKING DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF CONNECTICUT.
3. RELATION OF FRONT FACE OF WALL TO THE FRONT FACE OF COPING SHALL BE AS PER THE PM WALL MANUFACTURERS RECOMMENDED DETAILS. DETAILS SHOWN ARE FOR REPRESENTATIVE PURPOSES ONLY AND MAY BE MODIFIED BASED ON THE SPECIFIC WALL SYSTEM CHOSEN.
4. DETAILS SHOWN FOR THE CONCRETE COPING AND THE ALIGMENT AND CONNECTION TO THE PM WALL IS SHOWN FOR REPRESENTATIVE PURPOSES ONLY. DESIGN AND DETAILS FOR THE CONCRETE COPING, REINFORCEMENT, CONNECTION TO AND ALIGMENT WITH THE WALL SYSTEM IS THE RESPONSIBILITY OF THE CONTRACTOR AND IS DEPENDENT ON THE PM WALL MANUFACTURER CHOSEN.
5. THE MINIMUM WIDTHS OF WALL SHOWN IN THE TABLE ARE MINIMUM TRANSVERSE WIDTHS OF PREFABRICTED MODULAR RETAINING WALL REQUIRED FOR EXTERNAL AND GLOBAL STABILITY. THE PROPRIETARY WALL MANUFACTURER IS RESPONSIBLE FOR INTERNAL STABILITY OF THE RETAINING WALL. THE TRANSVERSE WIDTH USED IN THE CONSTRUCTION OF THE RETAINING WALL SHALL BE THE LONGER OF THAT REQUIRED FOR INTERNAL, EXTERNAL, OR GLOBAL STABILITY.
6. PERVIOUS STRUCTURE BACKFILL UNIT WEIGHT AND ANGLE OF INTERNAL FRICTION ARE 120 PCF AND 34° , RESPECTIVELY.
7. COORDINATE THE DESIGN, DETAILS AND ARRANGEMENT OF ALL WALL DRAINAGE COMPONENTS WITH THE PM WALL MANUFACTURER.
8. COORDINATE THE LOCATION OF ALL PROPOSED CATENARY STRUCTURE FOUNDATIONS WITH THE PM WALL MANUFACTURER. ENSURE THAT THERE IS NO CONFLICT BETWEEN THE PROPOSED FOUNDATIONS AND ANY COMPONENT OF THE PM WALL.

PAY LIMIT NOTES:

1. DEPTH OF EXISTING WALL UNKNOWN. REMOVAL LIMITED TO 1'-0" BELOW TOP OF LEVELING PAD.
2. QUANTITY MEASURED FOR "REMOVAL OF EXISTING RETAINING WALL" SHALL NOT INCLUDE COMPACTED SOIL BETWEEN THE EXISTING WALL.
3. TEMPORARY EARTH RETAINING SYSTEM BELOW PAY LIMITS AND ANY TIEBACKS AND BRACING ASSOCIATED WITH THE SAME SHALL BE INCLUDED IN THE LUMP SUM COST OF THE WALL.
4. ANY ADDITIONAL PERVIOUS STRUCURE BACKFILL REQUIRED OUTSIDE OF THE WALL PAY LIMITS SHALL ALSO BE INCLUDED IN THE LUMP SUM COST OF THE WALL.
5. ALL WORK WITHIN THE WALL PAY LIMITS WILL NOT BE MEASURED FOR PAYMENT. INCLUDE ALL COSTS UNDER THE PAY ITEM "RETAINING WALL (SITE NO. X)".
6. ALL WORK REQUIRED TO CONSTRUCT THE WALL, INCLUDING PORTIONS THAT MAY EXTEND BEYOND THE WALL PAY LIMITS, WILL NOT BE MEASURED FOR PAYMENT. INCLUDE ALL COSTS UNDER THE PAY ITEM "RETAINING WALL (SITE NO. X)".
7. REINFORCEMENT STEEL IN LEVELING PADS, CONCRETE COPING, WALL UNITS, AND WALL PANELS WILL NOT BE MEASURED FOR PAYMENT. INCLUDE ALL COSTS UNDER THE PAY ITEM "RETAINING WALL (SITE NO. X)".



FORM LINER DETAIL

NOT TO SCALE

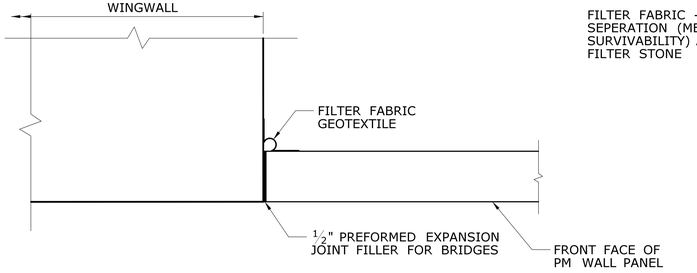
SECTION

NOT TO SCALE

RETAINING WALL DATA TABLE			
MAX WALL HEIGHT "H" (FT)	MIN. WIDTH OF WALL "L" (FT)	ALLOWABLE BEARING RESISTANCE (KSF)	ESTIMATED SETTLEMENT (IN)
27.0	16.0	11.5	<1

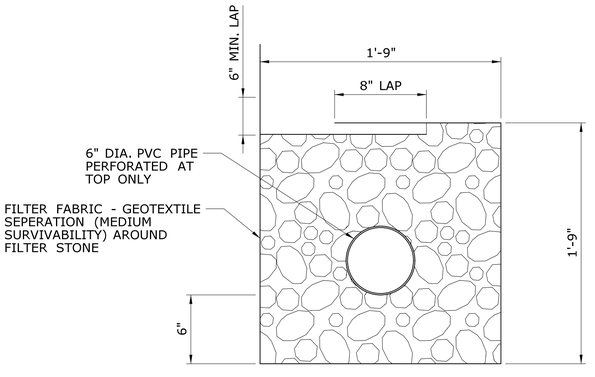
ARCHITECTURAL NOTES:

1. THE CONTRACTOR SHALL UTILIZE CONCRETE FORMLINERS ON THE FRONT FACE OF PREFABRICATED WALL PANELS TO SIMULATE STONE MASONRY CONSTRUCTION. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE FOR "RETAINING WALL (SITE NO. X)".
2. CONCRETE FORM LINERS SHALL CONFORM TO THE REQUIREMENTS OF "SIMULATED STONE MASONRY."
3. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL LAYOUT DRAWINGS OF ALL FORM LINERS SHOWING STONE SIZES, STONE CONFIGURATIONS, JOINT SPACING, AND ALL DIMENSIONS REQUIRED.
4. IN ADDITION TO THE DETAILS SHOWN ON THESE SHEETS, ALL EXPOSED EDGES SHALL RECEIVE A 1" X 1" BEVEL UNLESS DIMENSIONED OTHERWISE.
5. THE ARCHITECTURAL LINERS SHOWN ARE BASED ON FORM LINERS MANUFACTURED BY CUSTOM ROCK FORMLINER. THE STONE PATTERN IS BASED ON CUSTOM ROCK FORMLINER PATTERN NO. 2408, " 18" COURSING ASHLAR STONE (RUNNING BOND STONE, 1.25" RELIEF)."



END WALL DETAIL

NOT TO SCALE



STRUCTURE UNDERDRAIN DETAIL

NOT TO SCALE

11/09/2020

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Plotted Date: 10/23/2020

DESIGNER/DRAFTER: B. SUH

CHECKED BY: B. SUH

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-039_SB_Sheet_0301-0189.dgn

SIGNATURE/
BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

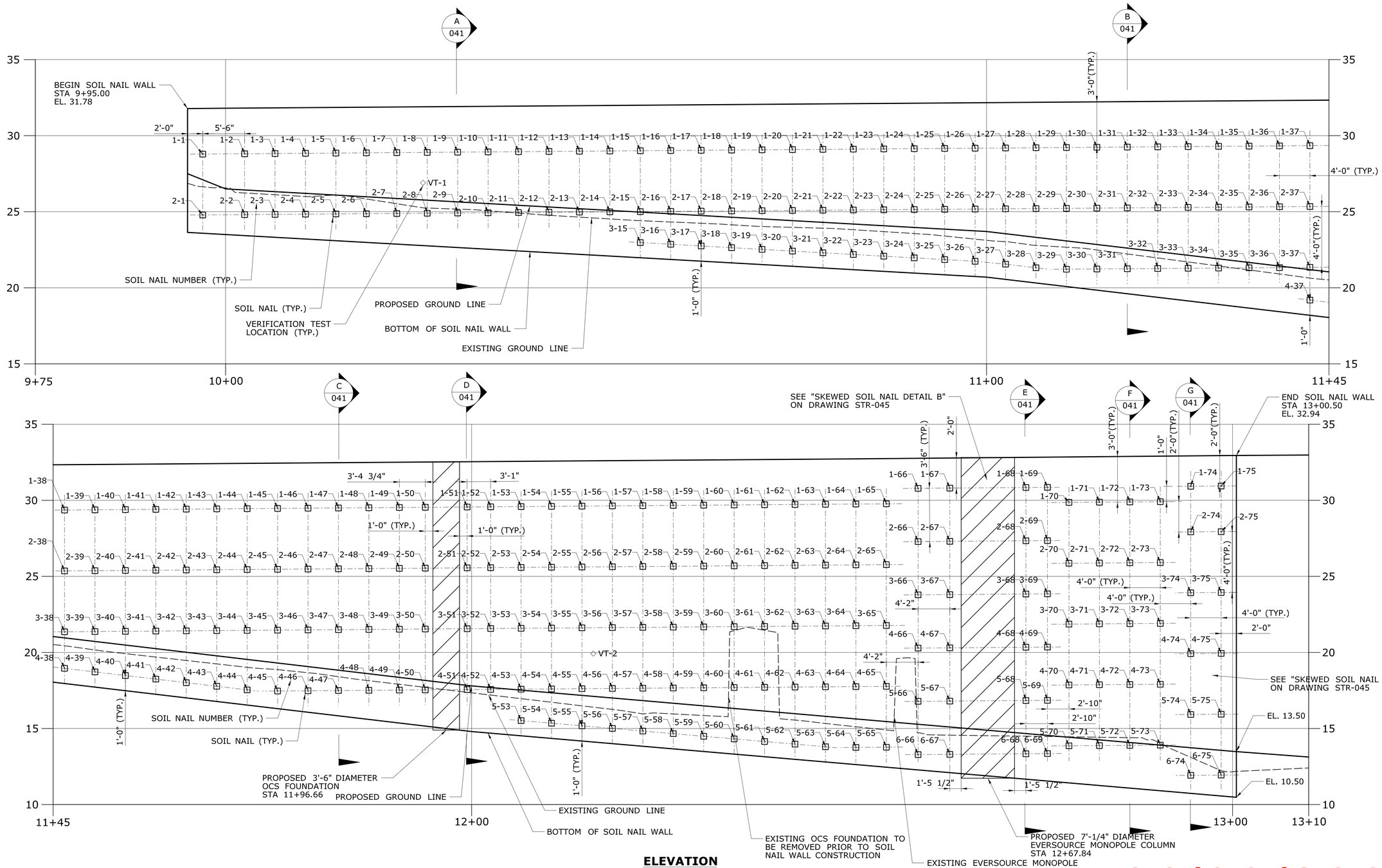
TOWN: **NORWALK**

DRAWING TITLE:
PREFABRICATED MODULAR WALL DETAILS 1

PROJECT NO. 0301-0189

DRAWING NO. **STR-039**

SHEET NO.



NOTE: EXISTING OCS STRUCTURE AND EVERSOURCE MONOPOLE SHALL BE REMOVED AND PROPOSED STRUCTURES SHALL BE CONSTRUCTED BY OTHERS PRIOR TO CONSTRUCITON OF SOIL NAIL WALL.

ELEVATION

VERTICAL SCALE: $\frac{5}{16}$" = 1'-0"
HORIZONTAL SCALE: $\frac{5}{32}$" = 1'-0"

11/09/2020

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DESIGNER/DRAFTER: J. SONG
CHECKED BY: B. SUH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-040_SB_Sheet_0301-189.dgn

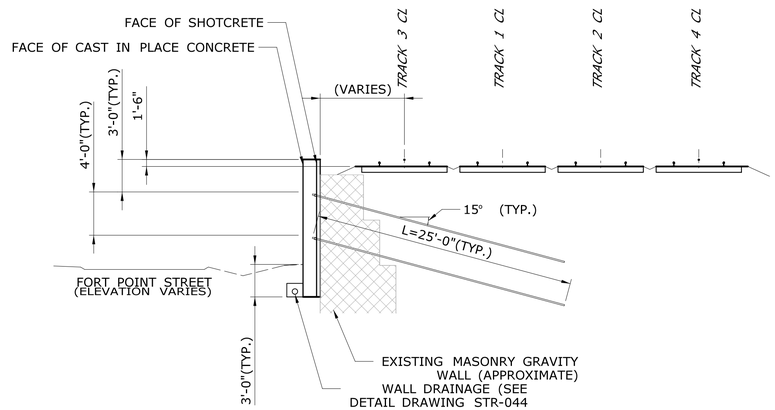
SIGNATURE/ BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

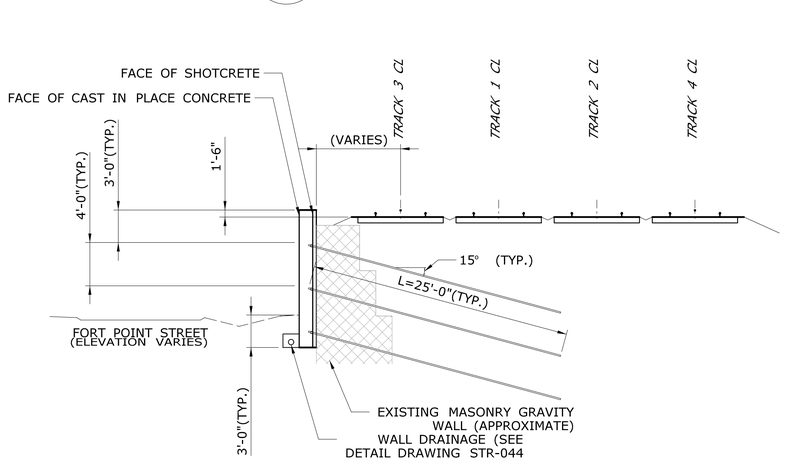
TOWN: **NORWALK**

DRAWING TITLE:
WALL 310 ELEVATION SOIL NAIL LAYOUT

PROJECT NO. 0301-0189
DRAWING NO. STR-040
SHEET NO.



A 041 **SECTION**
NOT TO SCALE



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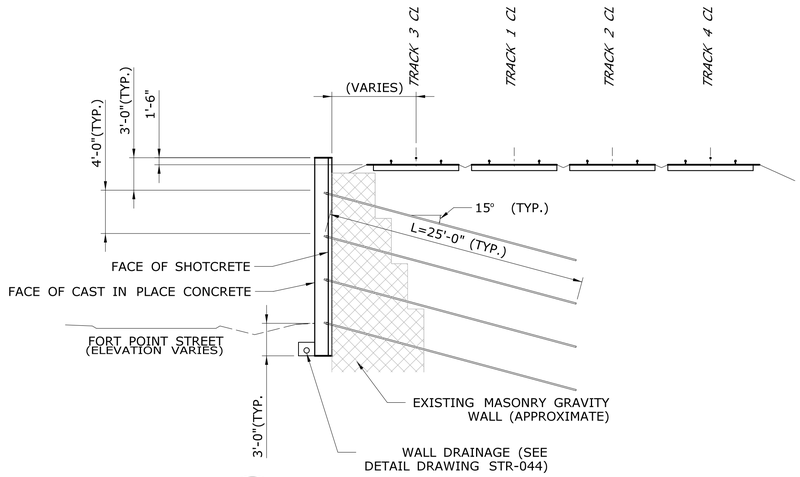

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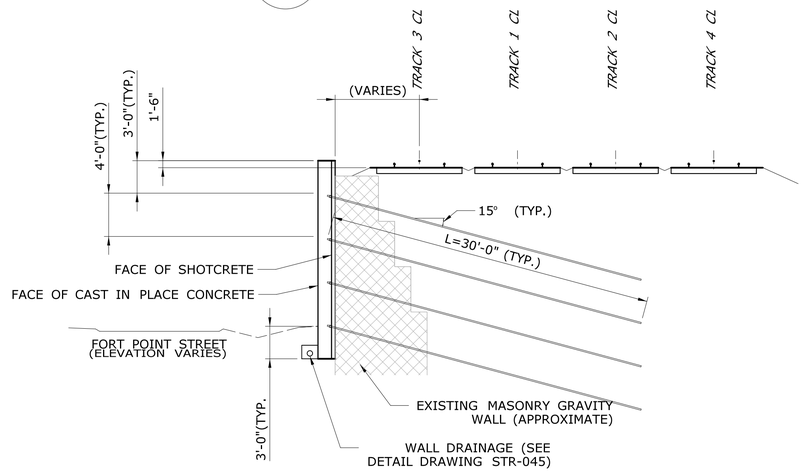

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NOT TO SCALE
(COLUMN 50 AND 51 ONLY)

11/09/2020

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-042_SB_Sheet_0301-0189

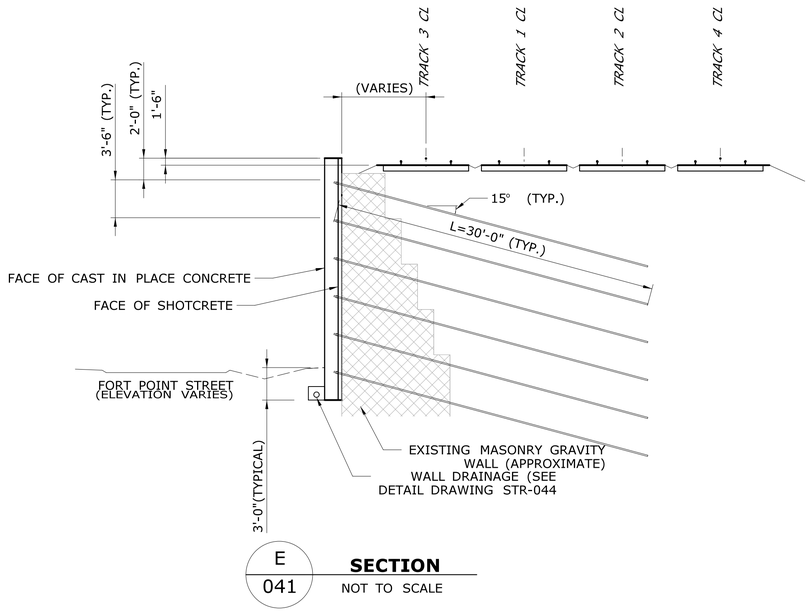
SIGNATURE/ BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT
METRO-NORTH RAILROAD MP 41.79
OVER FORT POINT STREET

TOWN: **NORWALK**

DRAWING TITLE: **WALL 310 DETAILS**

PROJECT NO. **0301-0189**
DRAWING NO. **STR-041**
SHEET NO.



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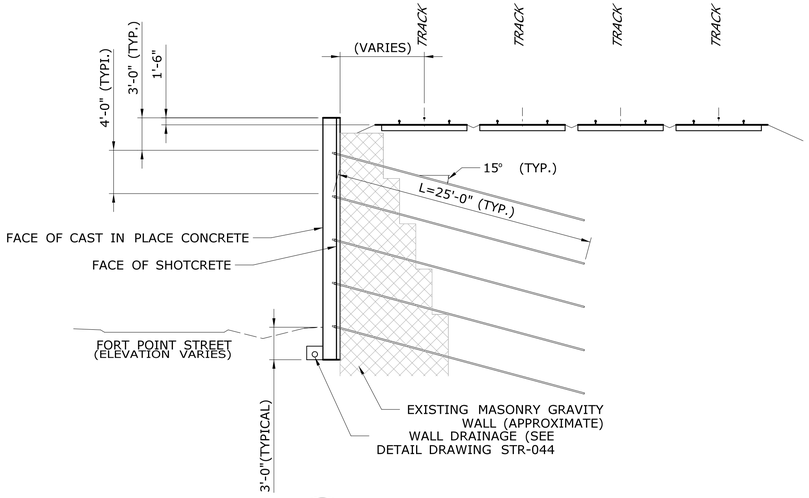

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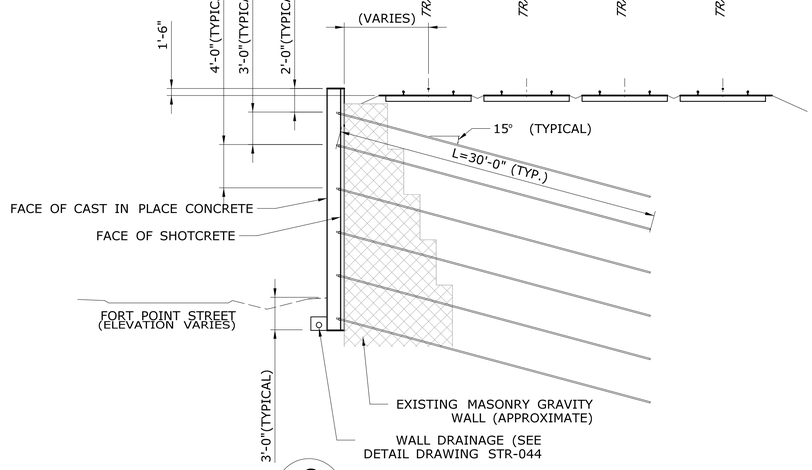

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11/09/2020

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CHECKED BY: B. SUH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-043_SB_Sheet_0301-0189

SIGNATURE/
BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

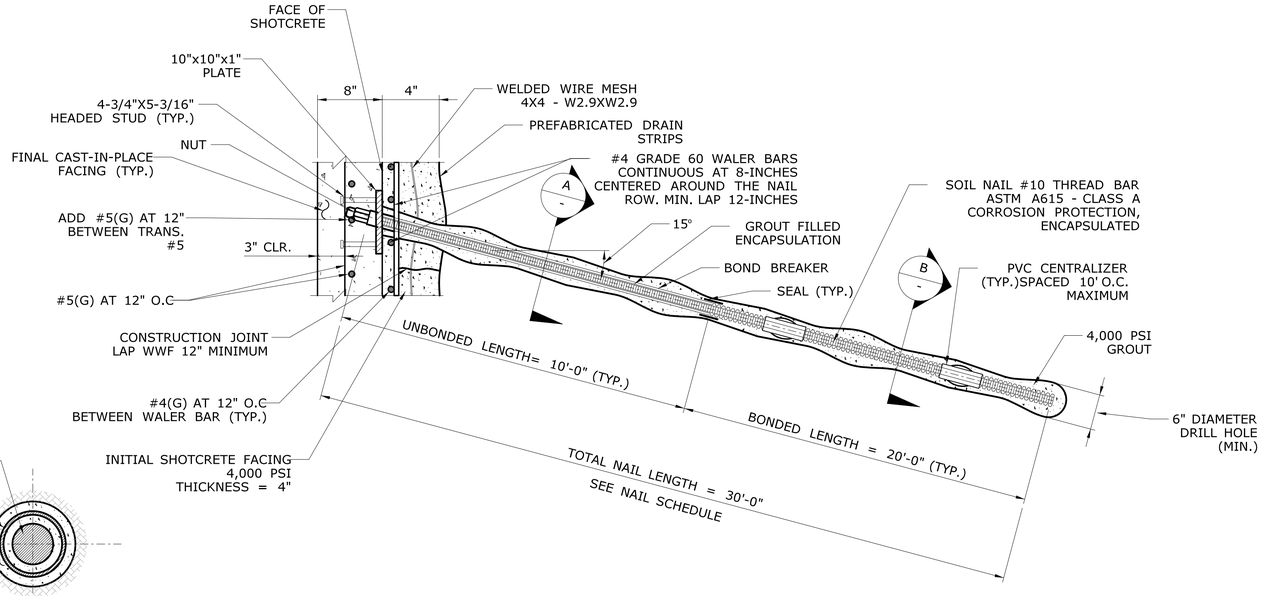
TOWN: **NORWALK**

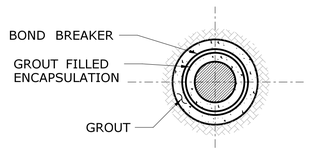
DRAWING TITLE: **WALL 310 DETAILS**

PROJECT NO. **0301-0189**
DRAWING NO. **STR-042**
SHEET NO.

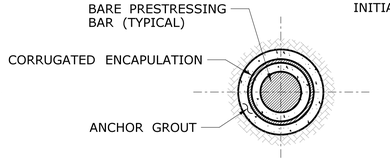
SOIL NAIL WALL NOTES:

1. SOIL NAIL WALL TO BE INSTALLED IN ACCORDANCE WITH THE SOIL NAIL WALL SPECIAL PROVISION.
2. THE HOLE THROUGH THE EXISTING MASONRY WALL FOR THE NAIL AND WEEP HOLES SHALL BE ADVANCED BY CORING.
3. VERIFICATION LOAD TEST AND PROOF LOAD TEST TO BE PERFORMED IN ACCORDANCE WITH THE SOIL NAIL WALL SPECIAL PROVISION. MINIMUM REQUIRED BOND STRESS 3.2 KSF.
4. AFTER INSTALLATION OF ALL SOIL NAILS AND COMPLETION AND ACCEPTANCE OF PROOF LOAD TESTS, LOCK OFF ALL PRODUCTION NAILS AT THE LOCK OFF LOAD INDICATED IN THE NAIL SCHEDULE.
5. SOIL NAIL THREADED BAR SHALL BE ASTM A615 GRADE 75 BAR - CLASS A CORROSION PROTECTION, ENCAPSULATED. SEE SOIL NAIL SCHEDULE FOR SIZE.
6. BEARING PLATE SHALL CONFORM TO ASTM A36 OR ASTM 420 GRADE 36.
7. HEADED STUDS SHALL CONFORM TO ASTM A1044 GRADE 60.





SECTION A



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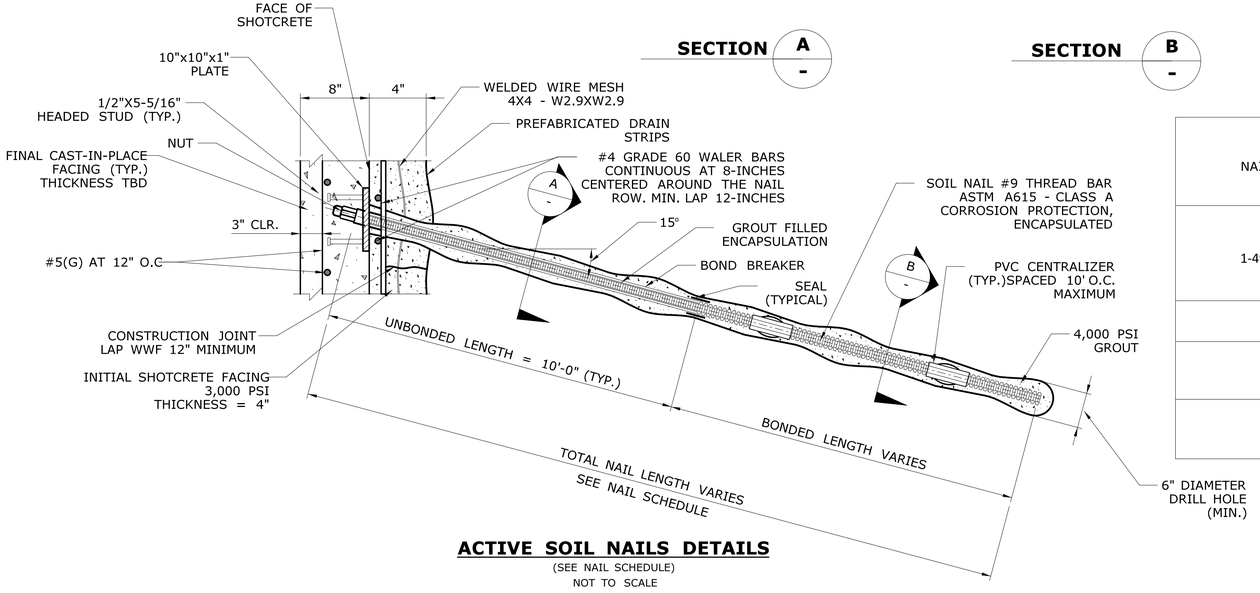

ACTIVE SOIL NAILS DETAILS

(SEE NAIL SCHEDULE)
NOT TO SCALE

ACTIVE SOIL NAILS DETAIL AT EVERSOURCE STRUCTURE

(SEE NAIL SCHEDULE)
NOT TO SCALE

NAIL COLUMN	BAR SIZE	INCLINATION FROM HORIZONTAL (DEGREES)	HORIZONTAL SKEW ANGLE FROM PERPENDICULAR TO WALL (DEGREES)	UNBONDED LENGTH (FT)	BONDED LENGTH (FT)	SOIL NAIL LENGTH (FT)	DESIGN LOAD (KIPS)	ULTIMATE LOAD (KIPS)	LOCK OFF LOAD (KIPS)
1-49, 52-65, 70-73	#9	15	0	10	15	25	37	74	16
50-51	#9	15	0	10	20	30	37	74	16
66-69	#10	15	5	10	20	30	43	86	24
74-75	#9	15	62.5	10	20	30	37	74	16

NAIL SCHEDULE

(SEE SKEWED NAILED DETAILS ON STR-045 FOR SKEW ORIENTATOIN)

11/09/2020

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 10/23/2020

DESIGNER/DRAFTER: B. SUH
CHECKED BY: B. SUH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-044..SB..Sheet..0301-0189

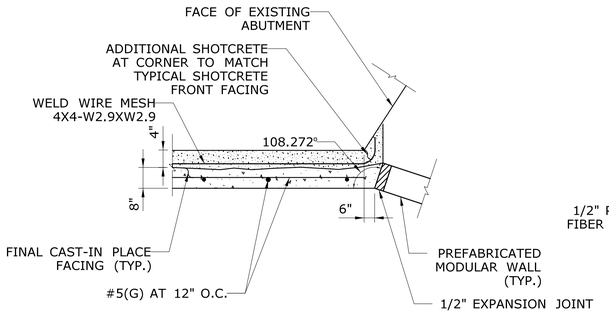
SIGNATURE/ BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

TOWN: **NORWALK**

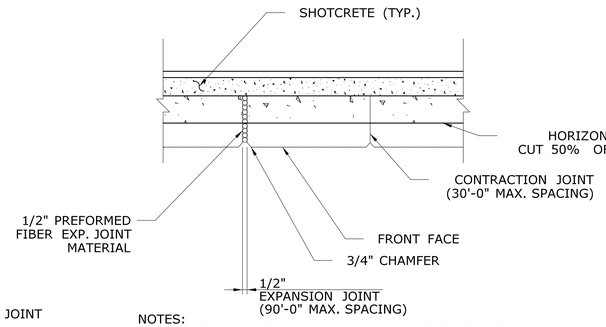
DRAWING TITLE: **WALL 310 DETAILS**

PROJECT NO. **0301-0189**
DRAWING NO. **STR-043**
SHEET NO.



CORNER DETAIL

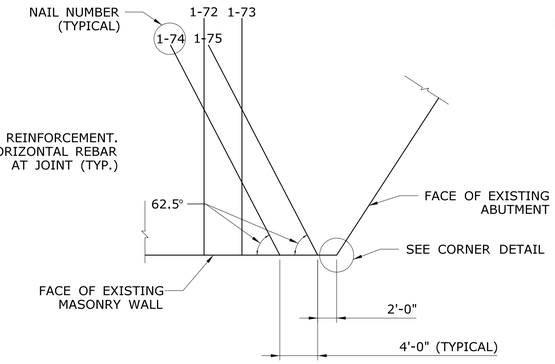
NOT TO SCALE



NOTES:
1. PLACE THE CONTROL JOINTS EVERY 30FT DISTANCE
2. LOCATE ALL JOINTS AT LEAST 18" AWAY FROM THE NAILS
3. ALL #4 BARS SHALL HAVE A MINIMUM LAP SPLICE OF 18"
4. MAINTAIN 1" CLEARANCE FROM THE ENDS OF THE LONGITUDINAL REINFORCEMENT TO EDGE OF EXPANSION JOINT.

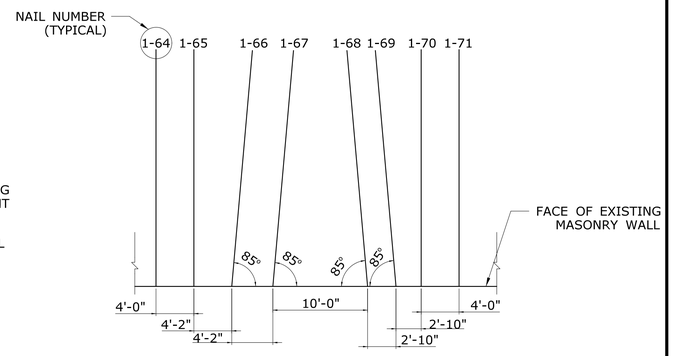
PART PLAN SECTION THRU CONCRETE FACING (CIP WALL FACING)

NOT TO SCALE



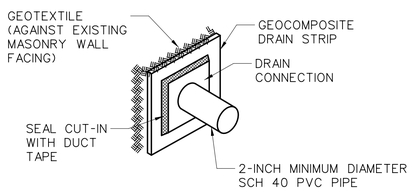
SKEWED SOIL NAILS DETAIL A

NOT TO SCALE
(TYPICAL FOR ROWS BELOW)



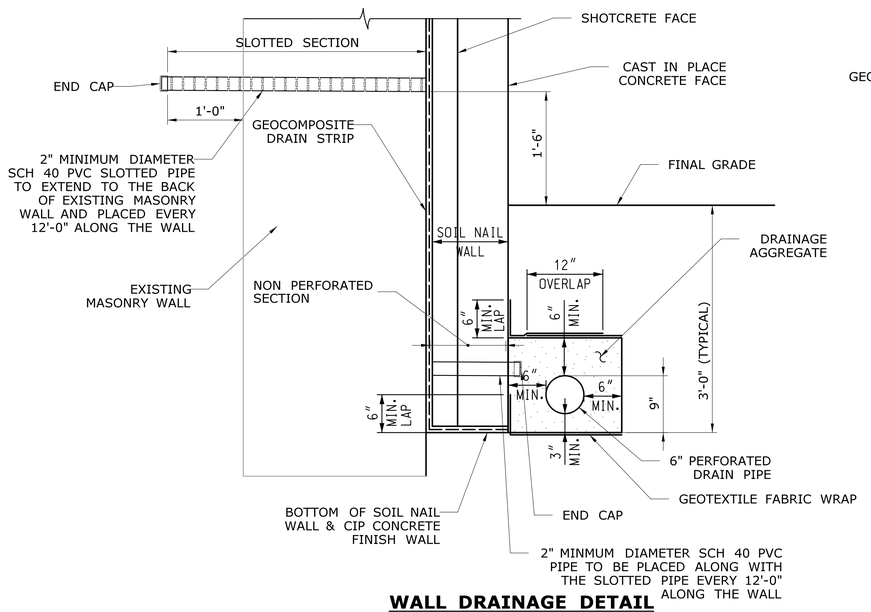
SKEWED SOIL NAILS DETAIL B

NOT TO SCALE
(TYPICAL FOR ROWS BELOW)



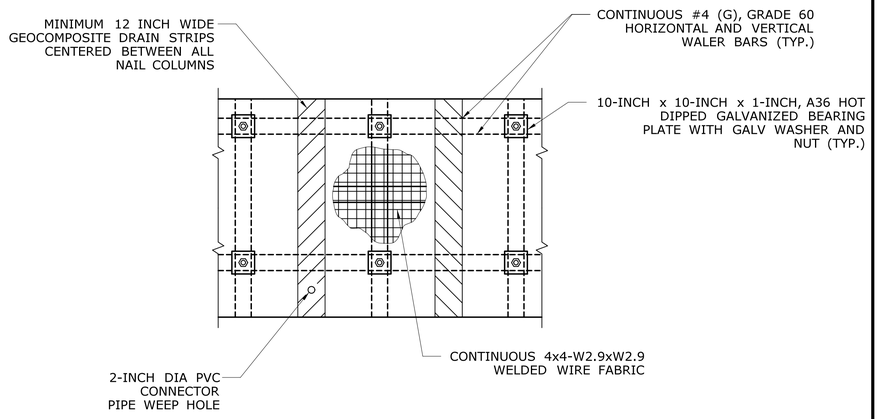
OUTLET DETAIL

NOT TO SCALE



WALL DRAINAGE DETAIL

NOT TO SCALE



TEMPORARY FACING REINFORCEMENT AND DRAINAGE (TYP.)

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/23/2020

DESIGNER/DRAFTER: B. SUH
CHECKED BY: B. SUH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-045_SB_Sheet_0301-0189

SIGNATURE/ BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT METRO-NORTH RAILROAD MP 41.79 OVER FORT POINT STREET

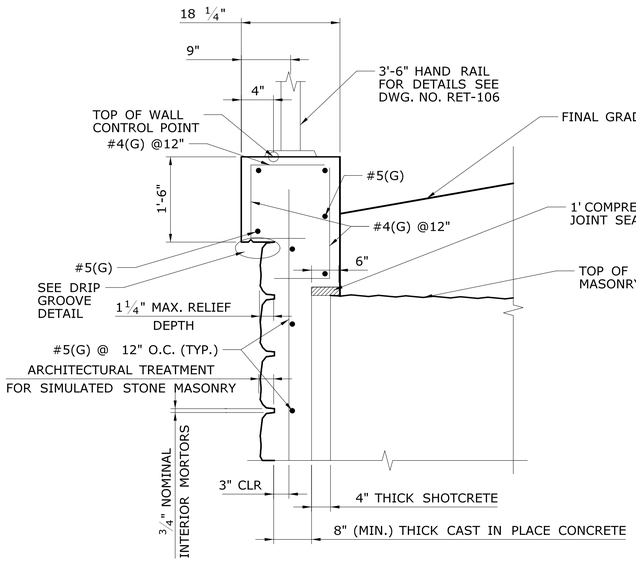
TOWN: **NORWALK**

DRAWING TITLE: **WALL 310 DETAILS**

PROJECT NO. **0301-0189**

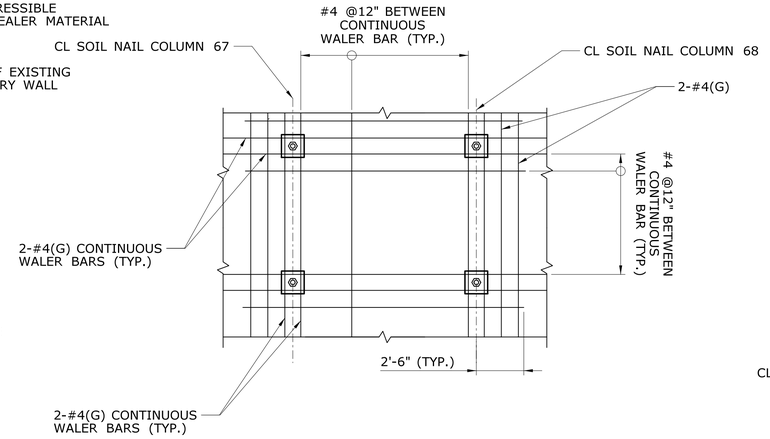
DRAWING NO. **STR-044**

SHEET NO.



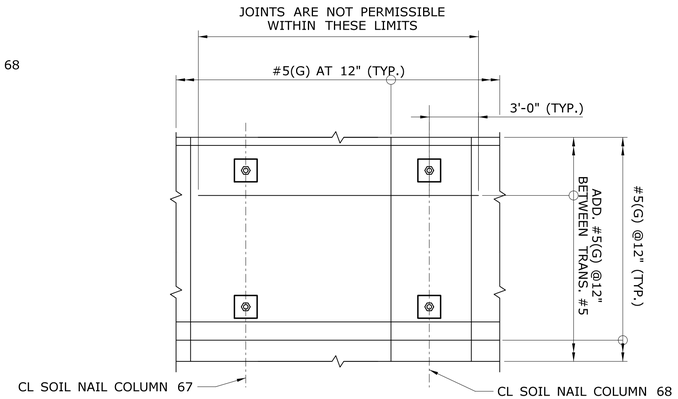
ARCHITECTURAL TREATMENT DETAIL

NOT TO SCALE
(ABUTMENT FACE SHOWN,
WINGWALLS SIMILAR)



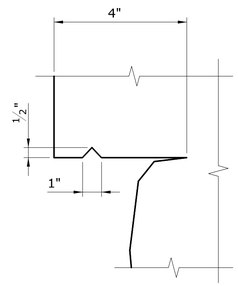
TEMPORARY FACING REINFORCEMENT AT EVERSOURCE STRUCTURE STA 1571+19.49 TO 1571+26.51

NOT TO SCALE



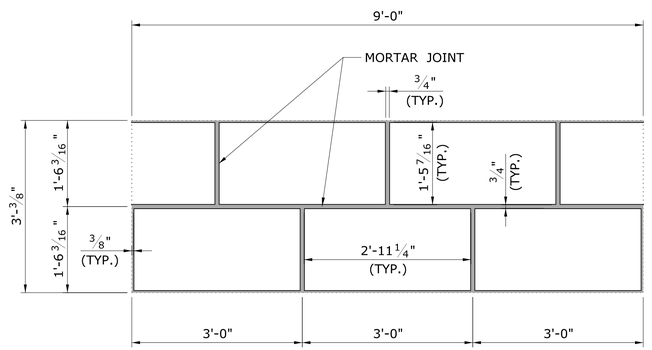
C.I.P. FACING DETAILS AT EVERSOURCE STRUCTURE STA 1571+19.49 TO 1571+26.51

NOT TO SCALE



DRIP GROOVE DETAIL

NOT TO SCALE



FORMLINER DETAIL

SCALE: 3/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/23/2020

DESIGNER/DRAFTER: J. SONG
CHECKED BY: B. SUH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\STR-046_SB_Sheet_0301-0189_WALL310

SIGNATURE/
BLOCK:

PROJECT TITLE:
BRIDGE NO. 04131R REPLACEMENT
METRO-NORTH RAILROAD MP 41.79
OVER FORT POINT STREET

TOWN: NORWALK

DRAWING TITLE:
WALL 310 DETAILS

PROJECT NO. 0301-0189
DRAWING NO. STR-045
SHEET NO.

Attachment D-4 - Supplemental Information, Marshall Street Pedestrian Improvements, 11/23/2020

WALK BRIDGE REPLACEMENT PROJECT
NORWALK, CONNECTICUT
STATE PROJECT 301-176

SUPPLEMENTAL INFORMATION
MARSHALL STREET PEDESTRIAN DETOUR IMPROVEMENTS

Prepared for HNTB Corporation
Boston, Massachusetts

by

Archaeological and Historical Services, Inc.
Storrs, Connecticut

November 23, 2020

Author:
Marguerite Carnell

Introduction

In order to provide safe pedestrian access during the Walk Bridge project construction, the sidewalk on the south side of Marshall Street will be upgraded to meet current Americans with Disabilities Act (ADA) standards. These improvements comprise new work that was not included in the previous design, but which will be part of the 100% project design. The proposed ADA improvements will be installed on Marshall Street between North Main and North Water streets, as labeled (1) through (7) on the attached annotated photographs.

This supplemental information augments a report prepared by Archaeological and Historical Consultants, Inc. (AHS), entitled *Historic Resources Evaluation Report, Walk Bridge Replacement Project,* Bruce Clouette, Marguerite Carnell Rodney, Stacey Vairo, August 2016.

Historic Resources

Properties along the west end of Marshall Street are included in the South Main and Washington Streets Historic District, which is listed in the National Register of Historic Places (NRHP). The Norwalk Lock Company Factory, on the south side of Marshall Street, was determined NRHP-eligible in 2000.

Scope of Work

During the Walk Bridge project construction, North Water Street will be closed to pedestrians for periods of time to ensure safety. CTDOT proposes improvements along the south side of Marshall Street to develop a pedestrian detour that is compliant with ADA requirements.

The proposed work includes the following elements:

- The sidewalk on the south side of Marshall Street will be made ADA accessible (1, 2, 3, and 4). A minimum 4-foot-wide sidewalk will be maintained for pedestrian use, if possible.
- If a 4-foot sidewalk cannot be maintained, the design will reduce roadway lanes to 11 feet, provide a temporary asphalt curb, provide a PVC pipe to maintain existing curb line drainage behind asphalt curb and existing granite stone curb, and provide signage for the pedestrian detour.
- Pole-mounted streetlights on the south side of Marshall Street (4 and 5) will be removed during construction and replaced in kind at the end of the project.
- Driveways on the south side of Marshall Street (2 and 3) will be reconstructed, including on the west side of the former Lock Company Factory (6), to meet ADA standards. Sidewalks crossing driveways will be concrete, including aprons between the roadway and sidewalk.
- Brick pavers at the Marshall Street/North Water Street intersection (7) will be removed and replaced with asphalt pavement during construction to prevent damage. When the project is complete, asphalt paving in crosswalks will be replaced with pavers. The rest of the intersection will remain asphalt.

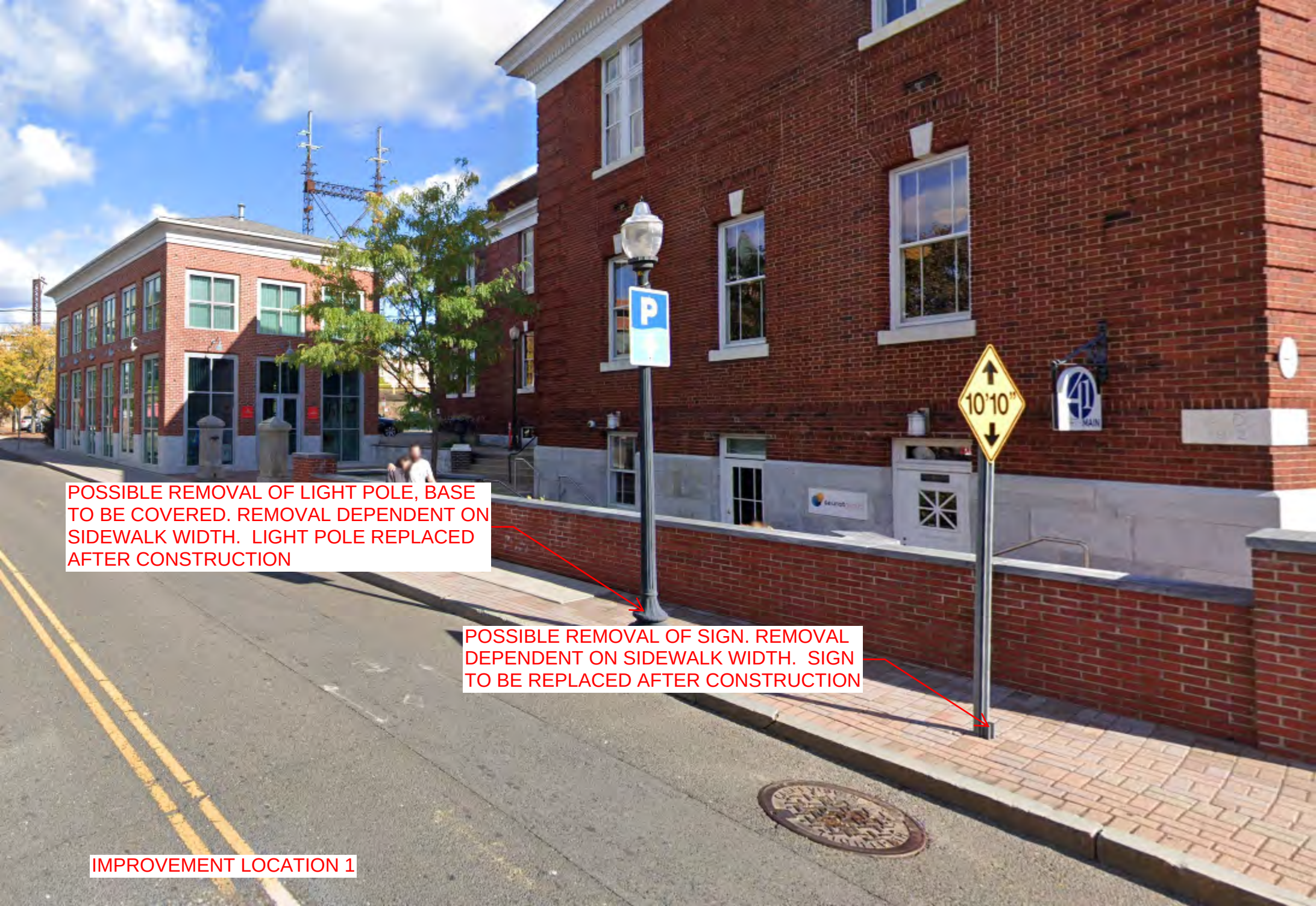
Anticipated Project Effects

The Memorandum of Agreement (MOA) for the project contains the following stipulation:

> After the execution of this MOA, if previously unidentified properties other than those discussed in this MOA are discovered that are eligible for the NRHP or that unanticipated effects on historic properties are found during the implementation of this MOA, CTDOT shall notify FTA, CTSHPO and appropriate concurring parties, and FTA shall follow the procedure specified in 36 C.F.R. 800.13.

The information herein, including the attached annotated photographs, is being provided to the MOA parties in fulfillment of this stipulation. The Marshall Street improvements are limited to upgrading existing modern paving and curb cuts to current ADA standards. It is recommended that these changes not be considered as an adverse effect on the NRHP-listed or NRHP-eligible properties or their settings.


Marshall Street Pedestrian Detour
- Detour for periodic closures of North Water Street
- Detour only on South Side of Marshall Street
Ann St
Sun Wok
Takeout
Caffe Social
Takeout • Delivery
Muse Paintbar - South Norwalk
Aventri
N Main St
Marshall St
Maclaren
Michael Smith Architects
Seurat Group
Maritime Garage
Triax Tec
Tenet Partners
The Lock Building
ONEnergy Inc
Shope Reno Wharton Architecture
1-25 N Water St Parking
N Water St
ATM On
County
1
2
3
4
5
6
7


POSSIBLE REMOVAL OF LIGHT POLE, BASE TO BE COVERED. REMOVAL DEPENDENT ON SIDEWALK WIDTH. LIGHT POLE REPLACED AFTER CONSTRUCTION
POSSIBLE REMOVAL OF SIGN. REMOVAL DEPENDENT ON SIDEWALK WIDTH. SIGN TO BE REPLACED AFTER CONSTRUCTION
IMPROVEMENT LOCATION 1
P
10'10"


IMPROVEMENT LOCATION 4
REMOVAL OF LIGHT POLE, BASE TO BE COVERED. LIGHT POLE REPLACED AFTER CONSTRUCTION
IMPROVEMENT LOCATION 3 - RECONSTRUCT DRIVEWAY TO MEET ADA STANDARDS
IMPROVEMENT LOCATION 2 - RECONSTRUCT DRIVEWAY TO MEET ADA STANDARDS
IMPROVEMENT LOCATION 2
IMPROVEMENT LOCATION 3
IMPROVEMENT LOCATION 4
41 NORTH MAIN
PARKING ONLY
PRIVATE PROPERTY
NO
PUBLIC PARKING

IMPROVEMENT LOCATION 5


LOCK BUILDING
ONE WAY
NO
IMPROVEMENT LOCATION 6 - RECONSTRUCT DRIVEWAY TO MEET ADA STANDARDS
IMPROVEMENT LOCATION 6


Norwalk, Connecticut
Google
Street View
Marshall St
IMPROVEMENT LOCATION 7 - REMOVE EXISTNG PAVERS AND REPLACE WITH BITUMINOUS ASPHALT PAVEMENT. PRIOR TO COMPLETION OF CONSTRUCTION, REMOVE ASPHALT IN CROSS WALKS AND REPLACE WITH CONCRETE PAVERS.
IMPROVEMENT LOCATION 7
The Maritime Aquarium at Norwalk
s Regent

Attachment D-5 - CTSHPO Concurrence, Walk Bridge Supplemental Information, 12/24/2020

From:	Kinney, Jonathan
To:	McMillan, Mark J.; Labadia, Catherine
Cc:	Hanifin, John D.; Sarah Walker; Lesay, Kimberly C; Fallon, James A
Subject:	RE: WALK Bridge supplemental information re: historic properties
Date:	Thursday, December 24, 2020 2:42:36 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png

Hello Mark,

Thank you for providing SHPO with additional information regarding the referenced project. We have reviewed the memos you sent and concur that the previously submitted written and photographic documentation for the Fort Point Street retaining wall (Wall 310) is consistent with the documentation expectations stipulated in the Memorandum of Agreement. SHPO also concurs that the ADA improvements along Marshall Street will not diminish the character defining features of the National Register listed South Main and Washington Streets Historic District. Thank you for the opportunity to review this additional information and if you have any questions, please do not hesitate to reach out.

Jonathan Kinney
Director of Operations
Deputy State Historic Preservation Officer

Connecticut State Historic Preservation Office
Department of Economic & Community Development
State of Connecticut
450 Columbus Boulevard, Suite 5
Hartford, CT 06103
O: 860.500.2380
Jonathan.kinney@ct.gov

From: McMillan, Mark J. <Mark.McMillan@ct.gov>

Sent: Wednesday, December 23, 2020 9:30 AM
To: Kinney, Jonathan <Jonathan.Kinney@ct.gov>; Labadia, Catherine <Catherine.Labadia@ct.gov>
Cc: Hanifin, John D. <John.Hanifin@ct.gov>; Sarah Walker <snwalker@hntb.com>; Lesay, Kimberly C <Kimberly.Lesay@ct.gov>; Fallon, James A <James.Fallon@ct.gov>
Subject: WALK Bridge supplemental information re: historic properties

Jonathan, Cathy,

Attached are two memos prepared by AHS. They document additional changes in the WALK Bridge Replacement Project that had not been previously considered when the undertaking was reviewed under §106 and a FONSI was prepared under NEPA. The additions are the result of design development rather than a substantial alteration of the project scope.

A brief summary of each memo follows:

Fort Point Street Retaining Wall

- A segment of masonry wall that supports the rail line will be altered by the addition of a new wall in front of this feature. The original masonry wall was identified as a contributing element to the NRHP-eligible rail line and has been documented in "Written and Photographic Documentation, NYNH&H Railroad…State Project #301-176" which was prepared in August, 2018.
- The consultant recommends that this will have an adverse effect to the masonry wall under §106, but that the previous documentation is adequate to mitigate for this effect. After reviewing the supplement report and documentation, CTDOT concurs with this recommendation.

Marshall Street ADA Improvements

- The need to provide safe pedestrian access during construction necessitates temporary improvements to sidewalks along Marshall Street. The area in question is within the NRHP-listed South Main and Washington Streets Historic District. The improvements will require the removal of 2 lightposts and portions of brick pavers in the sidewalk in order to be ADA-compliant. Following construction, these elements will be replaced in kind.
- CTDOT is developing designs to make the ADA-compliant improvements permanent in (rather than returning the sidewalks to their existing non-compliant condition). The details of this are still under design development, but they are not anticipated to impact any other features not already discussed in the memo.
- The consultant recommends that the lampposts and pavers are not historic / character-defining features of the historic district and that the proposed temporary changes to them with the restoration/replacement in-kind of these features will not constitute an adverse effect. CTDOT concurs with this recommendation.

We ask that your office review the supplement memos and invite you to provide comments and your opinion of effect in accordance with §106 of the National Historic Preservation Act.

If you have any questions about these memos or the project in general, please don't hesitate to

contact me.

Thank you,

Mark

I am currently teleworking out of the office but am available via email.
If this is an urgent matter, please email me your telephone number and I will contact you.
Stay well!

Mark McMillan
Supervising Transportation Planner
Office of Environmental Planning
Environmental / Historical Documents Unit
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131
☎ (860) 594-2135
☎ *(860) 594-3028 - Fax*
✉ mark.mcmillan@ct.gov

Attachment E Federal and State Reviews, Approvals, and Permit Requirements

Attachment E-1 - Coordination with NOAA/NMFS, June 2020 – January 2021

From: Samorajczyk, Christopher W
To: Hanifin, John D.
Cc: Davis, Andrew H; Lesay, Kimberly C; Joe Grilli; Bertoli, Richard; Sarah Walker; Lauren DiGovanni
Subject: Fw: CTDOT 301-176_WALK Bridge _Extra Project Area Added_Manresa Island
Date: Friday, January 8, 2021 1:13:41 PM

This should close the EFH loop for the use of Manresa Island. Let me know if there are any questions.
Chris

From: Alison Verkade - NOAA Federal <alison.verkade@noaa.gov>
Sent: Friday, January 8, 2021 10:40 AM
To: Samorajczyk, Christopher W <Christopher.Samorajczyk@ct.gov>
Cc: Lauren Sager - NOAA Affiliate <lauren.m.sager@noaa.gov>; Christopher Boelke - NOAA Federal <christopher.boelke@noaa.gov>
Subject: Re: CTDOT 301-176_WALK Bridge _Extra Project Area Added_Manresa Island

Hi Chris,

If there is no in-water work, re-initiation would not be necessary. Please let me know if you have any questions or concerns. Thank you, Alison

Alison T. Verkade
National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
Habitat and Ecosystem Services Division
55 Great Republic Drive
Gloucester, MA 01930
Office: 978-281-9266
Email: alison.verkade@noaa.gov

On Tue, Jan 5, 2021 at 7:42 AM Samorajczyk, Christopher W <Christopher.Samorajczyk@ct.gov> wrote:

> Hi Alison-
> Happy New Year-
> Hope you had a great Holiday season--just checking in again to see if you could send me a concurrence for the additional WALK Bridge staging area at Manresa Island. The Department is ready to submit the NEPA RE-evaluation now and this is the last bit that FTA

wants tied up. Let me know if you want to discuss quick--Talk soon
Thanks, Chris

Christopher W. Samorajczyk, CWB
Natural Resource Planning
Connecticut Department of Transportation
Office of Environmental Planning
Bureau of Policy & Planning
P: 860-594-2938

From: Samorajczyk, Christopher W <Christopher.Samorajczyk@ct.gov>
Sent: Wednesday, December 16, 2020 8:39 AM
To: Alison Verkade <alison.verkade@noaa.gov>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Lesay, Kimberly C <Kimberly.Lesay@ct.gov>; McMillan, Mark J. <Mark.McMillan@ct.gov>
Subject: Fw: CTDOT 301-176_WALK Bridge _Extra Project Area Added_Manresa Island

Hi Alison-
Hope all is well--Back in June we spoke at length about the WALK Bridge project in Norwalk, CT and the inclusion of the extra work area located out at the mouth of the harbor known as Manresa Island. Based on our discussion and scope of work you concluded that this area and the work being added would not have any new impacts on EFH species under your review (see below email). As part of the NEPA re-evaluation process FTA is looking for your written concurrence that CTDOT does not need to reinitiation consultation for EFH for this work. If you could respond to this email that should be all I need. If you have any questions or want to discuss quick give me a call--Talk soon
Thanks, Chris

Christopher W. Samorajczyk, CWB
Natural Resource Planning
Connecticut Department of Transportation
Office of Environmental Planning
Bureau of Policy & Planning
P: 860-594-2938

From: Samorajczyk, Christopher W
Sent: Monday, June 22, 2020 12:47 PM

To: 'alison.verkade@noaa.gov' <alison.verkade@noaa.gov>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Lesay, Kimberly C <Kimberly.Lesay@ct.gov>
Subject: CTDOT 301-176_WALK Bridge _Extra Project Area Added_Manresa Island

Hi Alison-
As discussed earlier this morning there are some changes with CTDOT 301-176 the replacement of the Metro North RR Bridge over the Norwalk River- Norwalk, CT. Originally we were going to build the bridge in a staging yard close to the existing bridge but a new change has now identified the area of the old decommissioned coal plant--Manresa Island- west side of Norwalk Harbor mouth -73.41/ 41.072- to be used as the staging yard. The Departments Contractor is going to be using this area—map attached, additional work area in yellow—to do most of the staging and bridge work. This is a much better area to use –one that the Town's Shellfish and Harbor Commissions have been really pushing for. The use of this area will be extremely less detrimental to the Rivers ecosystem and really a greater fit for the oyster industry and recreational boating on a whole –due to the large mooring areas for the construction barges. The possible use of this area will require a reevaluation to the NEPA document and that's why I'm reaching out----right now this area is within the EFH mapped area. The use of the area was almost entirely accounted for in the initial consultation. The only additional area would be the actual dredged man made barge slip along the bulkhead. I believe this additional area would be covered by the consultation and design comments already in place but just wanted to double check. The initial consultation addressed barges through this area already--just not into this particular slip. There will be some barges in the barge slip tied up to the existing bulkhead and some that will be spudded down. The fabrication yard is on land and is on old fill and is not located in the intertidal at all. All work on the upland will be done with no excavation and no demo of the existing structure. Please concur that the use of Manresa Island will not have any additional effects to Essential Fish Habitat under your review. Let me know if you have any questions--
Talk soon
Thanks, Chris

Christopher W. Samorajczyk, CWB
Natural Resource Planning
Connecticut Department of Transportation
Office of Environmental Planning
Bureau of Policy & Planning
P: 860-594-2938

From:	Lesay, Kimberly C
To:	Sarah Walker
Cc:	Hanifin, John D.; Fallon, James A; Samorajczyk, Christopher W; Davis, Andrew H; "Bertoli, Richard"
Subject:	FW: CTDOT 301-176 WALK Bridge_Project Changes
Date:	Thursday, June 18, 2020 8:46:31 PM

Sarah – please see correspondence below for inclusion into our re-evaluation for Manresa Island from NMFS. We still need concurrence from the EFH side of the shop, but this closes our loop on concurrence from the ESA side that re-initiation is not necessary due to the inclusion of utilizing Manresa for staging and storage.

Kimberly Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
2800 Berlin Turnpike
Newington, CT
Office: (860) 594-2931
Cell: (860) 992-9759
Kimberly.Lesay@ct.gov

From: Zachary Jylkka - NOAA Federal <zachary.jylkka@noaa.gov>
Sent: Thursday, June 18, 2020 5:08 PM
To: Samorajczyk, Christopher W <Christopher.Samorajczyk@ct.gov>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Lesay, Kimberly C <Kimberly.Lesay@ct.gov>; Alison Verkade - NOAA Federal <alison.verkade@noaa.gov>
Subject: Re: CTDOT 301-176 WALK Bridge_Project Changes

Hi Chris,

Thank you for the email. We agree with your review of the reinitiation triggers and concur that the project modifications you described do not require reinitiation of consultation at this time.

Regards,
Zach

On Thu, Jun 18, 2020 at 12:55 PM Samorajczyk, Christopher W <Christopher.Samorajczyk@ct.gov> wrote:

Hi Zach-

The Connecticut Department of Transportation has recently added a new staging and storage yard to CTDOT 301-176 Replacement of the Metro North RR Bridge over the Norwalk River in Norwalk, CT. The addition of this area located at -73.41/ 41.072-west side of Norwalk Harbor mouth is referred to as Manresa Island. This area has a deep water barge slip along side a decommissioned coal plant. The deep water slip connects directly to the dredged navigation channel. This is a much better area to use –one that the Town's Shellfish and Harbor Commissions have been really pushing for. The use of this area will be extremely less detrimental to the Rivers ecosystem and really a greater fit for the oyster industry and recreational boating on a whole –due to the large mooring areas for the construction barges. As well as the addition of the new staging area the Department also is implementing a longer dredge window for dredging outside of a marine enclosure. The new dredge window will be from December 1st through March 31st and will be within a TYPE III permeable turbidity curtain.

The addition of this new staging area and longer dredge window will not require re-initiation of project CTDOT 301-176 due to the following:

-The new information does not reveal effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.

-The identified actions are subsequently modified in a manner that does not cause an effect to the listed species or critical habitat that was considered in the biological opinion or written concurrence.

-No new species have been listed or critical habitat designated that may be affected by the identified action.

The Department requests concurrence that the addition of Manresa Island and the turbidity curtain only dredge window Time of Year extension form 12/1-3/31 does not require reinitiation under Section 7 ESA. If there are any questions or concerns please do not hesitate to contact me -Talk soon

Thanks, Chris

Christopher W. Samorajczyk, CWB

Natural Resources Planning

Connecticut Department of Transportation

Office of Environmental Planning

Bureau of Policy & Planning

P: 860-594-2938

--
Zach Jylkka
Fisheries Biologist
Protected Resources Division
Greater Atlantic Regional Fisheries Office
NOAA Fisheries
Gloucester, MA 01930
zachary.jylkka@noaa.gov
office: (978) 282-8467
Pronouns: (he/him/his)

For additional ESA Section 7 information and Critical Habitat guidance, please see: https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-consultation-technical-guidance

From:	Samorajczyk, Christopher W
To:	Joe Grilli; Sarah Walker
Subject:	Fw: CTDOT 301-176_WALK Bridge _Extra Project Area Added_Manresa Island
Date:	Wednesday, July 1, 2020 10:54:10 AM
Attachments:	ATT D_E_F_Proposed Staging and Storage Yard at Manresa Island.docx

---

From: Samorajczyk, Christopher W
Sent: Monday, June 22, 2020 12:47 PM
To: 'alison.verkade@noaa.gov'
Cc: Davis, Andrew H; Lesay, Kimberly C
Subject: CTDOT 301-176_WALK Bridge _Extra Project Area Added_Manresa Island

Hi Alison-
As discussed earlier this morning there are some changes with CTDOT 301-176 the replacement of the Metro North RR Bridge over the Norwalk River- Norwalk, CT. Originally we were going to build the bridge in a staging yard close to the existing bridge but a new change has now identified the area of the old decommissioned coal plant--Manresa Island-west side of Norwalk Harbor mouth -73.41/ 41.072- to be used as the staging yard. The Departments Contractor is going to be using this area—map attached, additional work area in yellow—to do most of the staging and bridge work. This is a much better area to use –one that the Town's Shellfish and Harbor Commissions have been really pushing for. The use of this area will be extremely less detrimental to the Rivers ecosystem and really a greater fit for the oyster industry and recreational boating on a whole –due to the large mooring areas for the construction barges. The possible use of this area will require a reevaluation to the NEPA document and that's why I'm reaching out----right now this area is within the EFH mapped area. The use of the area was almost entirely accounted for in the initial consultation. The only additional area would be the actual dredged man made barge slip along the bulkhead. I believe this additional area would be covered by the consultation and design comments already in place but just wanted to double check. The initial consultation addressed barges through this area already--just not into this particular slip. There will be some barges in the barge slip tied up to the existing bulkhead and some that will be spudded down. The fabrication yard is on land and is on old fill and is not located in the intertidal at all. All work on the upland will be done with no excavation and no demo of the existing structure. As discussed earlier today, please concur that the use of Manresa Island will not have any additional effects to Essential Fish Habitat under your review. Let me know if you have any questions--Talk soon
Thanks, Chris

Christopher W. Samorajczyk, CWB
Natural Resource Planning

Connecticut Department of Transportation
Office of Environmental Planning
Bureau of Policy & Planning
P: 860-594-2938

Proposed Staging and Storage Yard at Manresa Island

Attachment E-2- USFWS No Effect Determination, 6/24/2020

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

IPaC Record Locator: 743-22288392 June 24, 2020

Subject: Consistency letter for the 'CTDOT 0301-0176_Manresa Island' project (TAILS 05E1NE00-2020-R-3038) under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request to verify that the **CTDOT 0301-0176_Manresa Island** (Proposed Action) may rely on the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have no effect on the endangered Indiana bat (*Myotis sodalis*) or the threatened Northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species.**

For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- Red Knot, *Calidris canutus rufa* (Threatened)
- Roseate Tern, *Sterna dougallii dougallii* (Endangered)

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

CTDOT 0301-0176_Manresa Island

Description

The Department is adding a new staging and storage. Originally we were going to build the bridge in a staging yard close to the existing bridge but a new change has now identified the area of the old decommissioned coal plant--Manresa Island-west side of Norwalk Harbor mouth -73.41/ 41.072- to be used as the staging yard. The Departments Contractor is going to be use the area referred to as Manresa Island to do most of the staging and bridge work. This is a much better area to use –one that the Town’s Shellfish and Harbor Commissions have been really pushing for. The use of this area will be extremely less detrimental to the Rivers ecosystem and really a greater fit for the oyster industry and recreational boating on a whole –due to the large mooring areas for the construction barges. There will be no wetland impacts and no tree clearing associated with this area.

Determination Key Result

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

Qualification Interview

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   No

2. Is the project within the range of the Northern long-eared bat[1]?

   [1] See Northern long-eared bat species profile

   Automatically answered
   Yes

3. Which Federal Agency is the lead for the action?

   C) Federal Transit Administration (FTA)

4. Are *all* project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   Yes

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on December 02, 2019. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

Attachment E-3
Table of Required Federal and State Permits

The following table identifies federal and state permits required for the Walk Bridge Replacement Project. Federal and state reviews specific to the proposed Staging and Storage Yard are identified in bold italics. All permit applications for the project will include the proposed Staging and Storage Yard.

Federal/State Regulation	Review/Approval/Permit	Receipt Date
National Environmental Policy Act (42 USC 4321 et seq)	Finding of No Significant Impact (FONSI)	07/17/2017
Environmental Re-evaluation	Verification of FONSI	09/19/2019
Consultation	***TBD***	***TBD***
Connecticut Environmental Policy Act (CGS Section 22a-1-22a-1h)	Record of Decision	07/06/2017
Section 4(f), U.S. Department of Transportation Act (49 USC 303)	Individual Evaluation and Finding for potential use of Section 4(f) properties	07/17/2017
Executive Order 11988, Floodplain Protection, as amended by Executive Order 13690, Federal Flood Risk Management	Review for impact to floodplain	07/17/2017
Executive Order 11990, Wetlands Protection	Review for impact to wetlands	07/17/2017
Executive Order 12898, Environmental Justice	Review for assessment of impact to EJ communities	07/17/2017
Title VI Program/FTA Circular 4702.1B of October 1, 2012	Environmental Equity Review	07/17/2017
Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (42 USC 4601 et seq); Uniform Relocation Assistance Act (CGS Section 8-266 et seq)	Review/relocation assistance	ongoing
Clean Air Act (42 USC 7401 et seq)	Conformity Determination	07/17/2017
Section 106, National Historic Preservation Act (36 CFR 800)	Memorandum of Agreement	05/25/2017
Section 7, Endangered Species Act (16 USC 1531 et seq)	Finding/Not Likely to Adversely Affect	07/17/2018, 08/01/2019, 08/20/2019, ***06/18/2020***
Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq)	Finding and Recommendations	08/30/2018, ***01/08/2021***
Coastal Zone Management Act/Connecticut Coastal Management Act (16 USC 1451 et seq)	Consistency Review	Pending
Section 9 of the Rivers and Harbors Act (33 USC 491)	Permit for construction of new bridge	Pending
Section 10 of the Rivers and Harbors Act (33 USC 403)	Permit for dredging and filling in navigable waters/ impacts to waters and wetlands of the U.S.	Pending
Section 404 of the Clean Water Act (33 USC 1344)		Pending

Federal/State Regulation	Review/Approval/Permit	Receipt Date
Section 14 of the Rivers and Harbors Act (33 USC 408)	Permit for impact to federal navigation channel	Pending
Section 401 of the Clean Water Act (33 USC 1341); Connecticut Surface Water Quality Standards (CGS Section 221-426)	Water Quality Certification	Pending
Section 402 of the Clean Water Act (33 USC 1342); General Conditions Applicable to Water Discharge Permits and Procedures and Criteria for Issuing Water Discharge Permits (CGS Section 22a-430b)	General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activity	Filing Pending
49 USC 44718; 14 CFR 77; Safe, Efficient Use and Preservation of the Navigable Airspace	Determination	06/12/2019; 11/10/2020 (extension)
Connecticut Endangered Species Act (CGS Section 26-303)	Natural Diversity Database Review/Determination	05/23/2019
	Natural Diversity Database Review/Determination	***04/16/2020***
Connecticut Coastal Management Act; and Tidal Wetlands Regulations (CGS Section 22a-30-1)	Structures, Dredge and Fill, and Tidal Wetlands Permit	Pending
Connecticut Flood Management Program (CGS Sections 25-68b - 25-68h)	Flood Management Certification	Pending
CGS Section 22a-134, et seq., Hazardous Materials	Review of potential for hazardous material impacts, high-risk sites, site investigations, and environmental audits	Pending
CGS Section 22a-133z and 22a-208a	General Permit for Contaminated Soil and/or Sediment Management	Filing Pending
CGS Chapter 446d and 446k, RCSA Sections 22a-208a-1, 22a-209-1, and 22a-209-8	Authorization for Disposal of Special Waste	Filing Pending
CGS Section 22a-430(b)	General Permit for the Discharge of Groundwater Remediation Wastewater	Filing Pending

Attachment E-4 – CTDEEP NDDB Determination, 4/16/2020

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

April 16, 2020

Christopher Samorajczyk
CT Department of Transportation
2800 Belin Turnpike
P.O. Box 317546
Newington, CT 06131
christopher.samorajczyk@ct.gov

Project: CTDOT Project # 301-176, Use of Manresa Island as Staging Area for Building Replacement of Metro North RR Walk Bridge over the Norwalk River in Norwalk, Connecticut
NDDB Determination No.: 202005282

Dear Christopher Samorajczyk,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed CTDOT Project # 301-176, Use of Manresa Island as Staging Area for Building Replacement of Metro North RR Walk Bridge over the Norwalk River in Norwalk, Connecticut. According to our information we have records for State Threatened *Falco peregrinus* (Peregrine falcon) and State Special Concern *Malaclemys t. terrapin* (Northern diamondback terrapin) from the vicinity of this project. Thank you for including the protocols you will follow to ensure the protection of the nesting peregrine falcon and northern diamondback terrapin with respect to this project. I concur that by utilizing these protection protocols it will lessen the adverse impact on these two species. I attached the protection plans you have proposed. This determination is good for two years. Please re-submit an NDDB Request for Review if the scope of work changes or if work has not begun on this project by April 16, 2022.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base. .
Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

PEREGRINE FALCON
Connecticut Threatened Species

Protective Legislation: *Federal* - Migratory Bird Treaty Act of 1918. *State* - Connecticut General Statutes Sec. 26-311.

Scientific Name: *Falco peregrinus*

Size: 15-20 inches (38.1-50.8 cm) in length

Wingspan: 43-46 inches (109.2-116.8 cm)

Habitat Type:
Open country, from coastal lowlands to mountainous high country. High perches in urban areas, bridges and billboards.

Coloration:

- Adult peregrine falcons have long, pointed wings and a long, rounded tail with narrow, black bands, ending with a broad, dark band tipped with white.
- The barred upperparts are blue-gray, while the underparts are white to light buff and cross-barred with brown.
- The black crown and nape extend to the cheeks, forming a distinct black helmet.
- The feet are yellow.
- Immature peregrines are similar, but the back and underparts are brown and the throat is heavily streaked with brown.
- Both adult and immature peregrines have a bold, dark, vertical whisker-like mark (mustache mark) on the sides of the head.

Characteristics:

- Long-winged, medium-sized bird of prey.
- **Call:** A rasping kack-kack-kack. Also a long ascending wail, WEEchew-WEE-chew.
- **Typical Nesting Period**: April through July.
- Nest sites are located above open areas consisting of a hollow, unlined scrape on a cliff, ledge or rocky outcrop. There are falcon nest boxes (top, right photo) located on bridges across Connecticut. Abandoned hawk or raven nests may also be used.
- Pairs may use the same nest site for years

The peregrine falcon is a highly vocal and aggressive bird. Falcons pose a threat to anyone working around the nest area. Falcons will actively defend their nests by swooping and diving at predators. Falcons are capable of plunging from tremendous heights at speeds estimated at over 180 miles per hour. This is their preferred method of hunting. Falcons have sharp talons for grasping and holding prey and should not at anytime be approached or handled. It is required that there be no harassment, intentional or unintentional, to any falcons under state and federal law.

If any peregrine falcons are observed in or around the project area the Office of Environmental Planning (OEP) must be notified at 860-594-2937 or 860-594-2938. If OEP staff cannot be reached at either of the above referenced phone numbers, the District environmental coordinator will need to be contacted to facilitate further coordination with OEP's Water and Noise Compliance Unit.

SECTION 1.10 ENVIRONMENTAL COMPLIANCE

In Article 1.10.03-Water Pollution Control:
REQUIRED BEST MANAGEMENT PRACTICES

Add the following after Required Best Management Practices Number 13:

14. The peregrine falcon (*Falco peregrinus*) is a State threatened species and Connecticut's largest falcon, measuring up to 20 inches. Adults are slate gray above and pale underneath with fine bars and spots of black; they have long pointed wings with a narrow tail. Young falcons have the same composition but are darker underneath and browner all over. Peregrine falcons have adapted to life in urban settings. In Connecticut, they sometimes utilize bridges for nesting and brood rearing purposes. Peregrines will actively and aggressively defend the nest. The peregrine will attack anyone or anything that comes within the area of its nest. The peregrine falcon nesting season occurs between the months of April and July. For this reason, special conditions regarding the timing of work on the structures, and immediate area that have nesting falcons must be adhered to.

    In order to protect this species and project personnel, any construction and/or inspection activities which are within 400 feet of an identified nest shall not be permitted during nesting season (between April 1st and July 31st.) Any change in construction sequencing or timing affecting work within 400 feet of a known nest shall not be permitted.

    The Contractor shall, through the Engineer, at least 10 days prior to the commencement of any construction activities, arrange for a CT DOT Environmental Inspector from the Office of Environmental Planning (OEP) or their authorized delegate to be available to meet and identify the nest location as well as discuss proper protocol for maintaining environmental commitments made to the protection of this species and habitat.

    This species is protected by State laws which prohibit killing, harming, taking, or keeping them in your possession. Workers shall be notified of the existence of peregrine falcons in the area and be apprised of the laws protecting them. Photographs of, and the laws protecting, peregrine falcons shall be posted in the Contractor's and DOT field offices (species ID sheets will be provided by OEP). Any observations of this species are to be immediately reported to the Department.

Northern Diamondback Terrapin
Connecticut Species of Special Concern

Scientific Name*: Malaclemys t. terrapin*
Size: Males: 4-5.5 inches (10.2-14 cm) in length
Females: 6-9 inches (15.2-22.9 cm) in length

Habitat Type:

The Northern diamondback terrapin is the only species of turtle in North America, including Connecticut, that spends its life in brackish water (water that is less salty than sea water) which includes salt marshes, estuaries and tidal creeks. They hibernate in the winter submerged in the mud of tidal creeks. If a safety boat or barge is to be used, be cognizant of turtles possibly mating within the project area and proceed slowly when in tidal areas. Nests are constructed on the sandy borders of salt marshes and in dunes.

Colorations:

- The terrapin has both a dark and light variation. Both variations have carapaces (top of shell) patterned with concentric rings or ridges.
  - The dark variant has a completely black carapace (top of shell) with a yellow to off-white plastron (bottom chest plate). Their heads are gray to off-white with small black spots or streaks and their legs are dark gray to black.
  - The lighter variant has a gray to light brown carapace with yellow to greenish gray plastrons. Their heads are gray with small pepper-like gray spots and their legs are gray.
- The plastron may or may not be marked with bold, dark markings.
- The limbs and head may be spotted.
- Hatchlings are patterned similar to adults, but are brighter.

Characteristics:

- Small marine turtle. They spend their entire lives in a brackish environment.
- The carapace is wedge-shaped when viewed from above, with the widest part in the rear.
- They have large webbed feet.

If any Northern diamondback terrapins are observed in or around the project area, the Office of Environmental Planning (OEP) must be notified at 860-594-2937 or 860-594-2938. If OEP staff cannot be reached at either of the above referenced phone numbers, the District Environmental Coordinator will need to be contacted to facilitate further coordination with OEP's Water and Noise Compliance Unit.

SECTION 1.10 - ENVIRONMENTAL COMPLIANCE

In Article 1.10.03-Water Pollution Control:
REQUIRED BEST MANAGEMENT PRACTICES

Add the following after Required Best Management Practice Number 13:

14. The Contractor is hereby notified that the State listed species of Special Concern Northern diamondback terrapin (*Malaclemys t. terrapin*), is present within the Project limits. Northern diamondback terrapins are the only species of turtle in North America that spends its life in brackish water (water that is less salty than sea water). They are most abundant in tidal estuaries and will also be found in salt marshes and tidal creeks. Northern diamondback terrapins nest on the sandy borders of these habitats from June to July. Northern diamondback terrapins hibernate during the winter submerged in the mud of tidal creeks. They enter hibernation as early as November and emerge as early as April through the end of May depending on water temperature.

    All construction activities taking place within the Project limits will need to be coordinated with the Office of Environmental Planning (OEP) through the Engineer. At least 10 days prior to the commencement of any physical construction activities, the Contractor shall, through the Engineer, arrange for a CTDOT OEP Environmental Inspector, or their authorized delegate, to meet and discuss proper protocol for maintaining environmental commitments made for the protection of this species and habitat. OEP will provide oversight through the Engineer to ensure that the following protocols are followed and maintained during the course of the Project.

    During the terrapin's dormant period (November 1 to May 31):
    - Once the areas within the Project limits have been inspected and cleared of any nest sites, construction activities will be allowed in upland areas.
    - Work is not allowed in wetland/watercourse and sandy border areas unless these areas were in active construction prior to November 1, and additionally, do not contain any areas of terrapin habitat.

    For any work done during the terrapin's active period, which includes the nesting and hatching period, (April 1 to October 31), the CTDOT will require the following precautionary measures to protect the terrapin and terrapin habitat:

    a. All construction personnel working within Northern diamondback terrapin habitat must be apprised of the species description and the possible presence of this listed species.

    b. Exclusionary practices will be required in order to prevent any Northern diamondback terrapin access to construction areas. These measures will need to be installed at the limits of disturbance as shown on the plans.

c. Exclusionary fencing shall be at least 20 inches tall and must be secured to and remain in contact with the ground. The Contractor shall regularly inspect and maintain the fencing to prevent any gaps or openings at ground level. Standard silt fence is adequate; fencing with netting shall not be used.

d. The Contractor must search the work area each morning for the presence of this listed species prior to any work being done.

e. Any Northern diamondback terrapins encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and the Engineer shall be immediately informed to contact OEP with the location.

f. All staging and storage areas in the vicinity of Northern diamondback terrapin habitat, outside of previously paved locations, regardless of the duration of time they will be used, must be reviewed by and receive written approval from OEP through the Engineer.

g. No heavy machinery or vehicles may be parked in any identified Northern diamondback terrapin habitat.

h. Exclusionary fencing shall be removed when it is no longer needed, and silt fence shall be removed as soon as the area is stable, to allow for reptile and amphibian passage to resume.

i. If a safety boat or barge is required for this Project, the Contractor must use special caution when navigating within tidal creeks. Terrapins tend to congregate close to the surface during their active period. Maintaining slow speeds will ensure the turtles' safety.

These practices will be applied to the entire Project unless a sketch is attached which identifies specific areas of concern.

This species is protected by State laws, which prohibit killing, harming, taking, or keeping them in your possession. Photographs and the laws protecting Northern diamondback terrapin shall be posted in the Contractor's and CTDOT field offices (species ID sheet will be provided by OEP).

Attachment E-5 – Coordination with CTDEEP Division of Wildlife, 3/18/2020

From:	Samorajczyk, Christopher W
To:	Sarah Walker
Cc:	Davis, Andrew H
Subject:	Fw: Manresa Island Norwalk_Osprey
Date:	Wednesday, June 24, 2020 8:32:06 AM

From: Hess, Brian
Sent: Thursday, March 19, 2020 8:10 AM
To: Samorajczyk, Christopher W
Cc: Davis, Andrew H; Lesay, Kimberly C
Subject: RE: Manresa Island Norwalk

Sounds good, thanks, Chris,

I think that timing may still be a consideration. If there is going to be activity during the nesting season, it would be best if that activity could begin before the birds arrive.

If they are buying a house on a busy street, they should see what it looks like at rush hour, not just on a Sunday morning.

Thanks,
Brian

From: Samorajczyk, Christopher W <Christopher.Samorajczyk@ct.gov>
Sent: Wednesday, March 18, 2020 7:45 PM
To: Hess, Brian <Brian.Hess@ct.gov>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Lesay, Kimberly C <Kimberly.Lesay@ct.gov>
Subject: Re: Manresa Island Norwalk

Hi Brian-
Yes the central nest is on pole---the nests from west to east are on top of an out building approximately 40 feet in the air then the osprey pole located south of the security fence and then the east nest is atop one of the two dolphin pier clusters. The NRG folks seem to be aware of the ospreys, falcons, and the terrapins that frequent their land. There are a few other nesting poles that they erected around the island. I am planning on working with CTDOT Surveys to plot all the nests. I also plan on another visit in a few weeks to determine which osprey nests are active. Talk soon
Chris

From: Hess, Brian
Sent: Wednesday, March 18, 2020 5:08 PM
To: Samorajczyk, Christopher W; Dickson, Jenny
Cc: Davis, Andrew H; McKay, Dawn; Lesay, Kimberly C

Subject: RE: Manresa Island Norwalk

Hi Chris,

At just a cursory glance, I would agree about the falcons. That central nest is on a 30' telephone pole, right?

Thanks,
Brian

From: Samorajczyk, Christopher W <Christopher.Samorajczyk@ct.gov>
Sent: Wednesday, March 18, 2020 4:23 PM
To: Dickson, Jenny <Jenny.Dickson@ct.gov>
Cc: Hess, Brian <Brian.Hess@ct.gov>; Davis, Andrew H <Andrew.H.Davis@ct.gov>; McKay, Dawn <Dawn.McKay@ct.gov>; Lesay, Kimberly C <Kimberly.Lesay@ct.gov>
Subject: Manresa Island Norwalk

Hi Jenny-
Hope all is well—just wanted to run something by you quick---The Department was recently granted access to survey Manresa Island in Norwalk for possible future use as a staging yard for the WALK Bridge replacement Project. Some of the early coordination is evaluating this area for inclusion into the Departments NEPA re-evaluation. Attached is the area potentially needed that the Contractor is proposing---there will not be any wetland impacts however we have multiple osprey nests on the island and the Norwalk falcons have relocated to the smoke stack. There are 3 potentially active osprey nests in close proximity to the proposed areas for the bridge construction (second attachment ospreys marked as O—Falcon marked as F) just looking for any big issues with us moving forward with this area right now—I believe the falcons are too high for us to impact and the ospreys are usually tolerable to some commotion---talk soon
Thanks, Chris

Christopher W. Samorajczyk
Wildlife Biologist
Office of Environmental Planning
Connecticut Department of Transportation
☎Direct 860-594-2938 / F: 860-594-3028
Christopher.Samorajczyk@ct.gov

Attachment F Environmental Effects Mapping

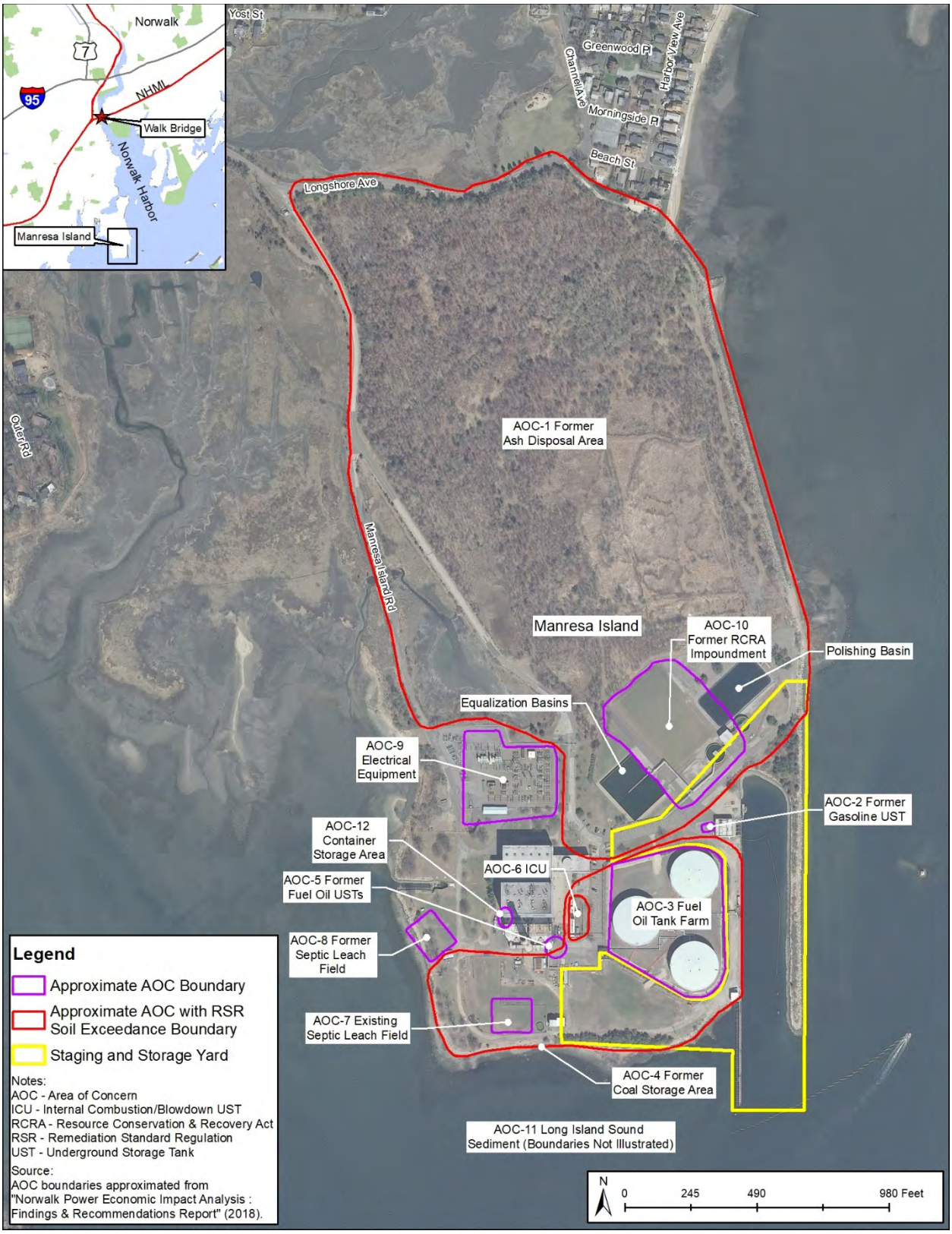


Figure F-1—Areas of Concern at Manresa Island Staging and Storage Yard

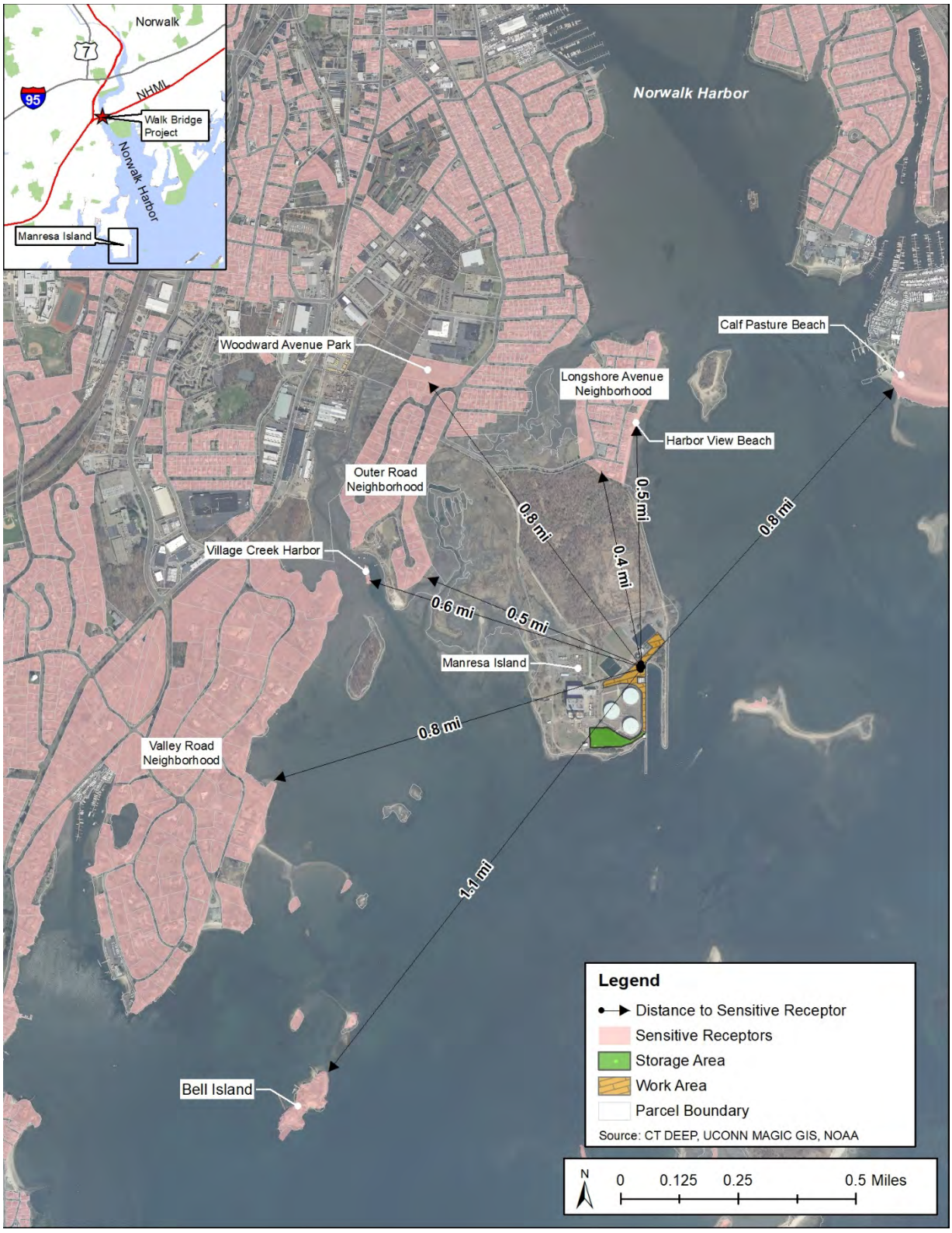


Figure F-2—Proximity of Sensitive Receptors to Manresa Island Staging and Storage Yard

Figure F-3 – Manresa Island Staging and Storage Yard Barge Berthing Layout

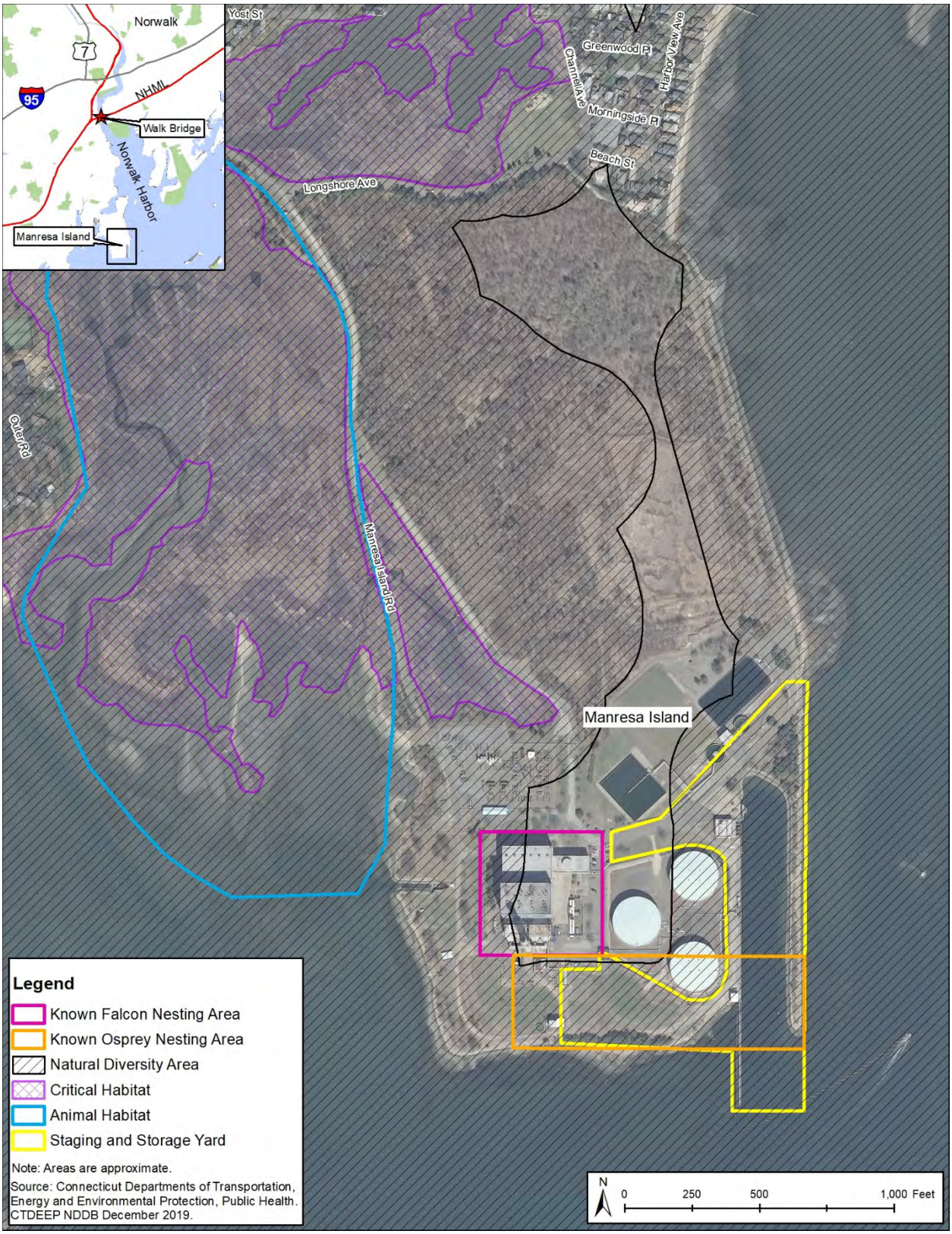


Figure F-4 – Habitat at Manresa Island

Attachment A-4 FTA Verification of FONSI, June 15, 2021

CTDOT and FTA Correspondence, May-June 2021

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION I
Connecticut, Maine,
Massachusetts,
New Hampshire,
Rhode Island, Vermont

Volpe Center
55 Broadway Suite 920
Cambridge, MA 02142-1093
617-494-2055
617-494-2865 (fax)

June 15, 2021

Mr. Joseph Giulietti
Commissioner
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06111

Subject: Re-Evaluation of the Walk Bridge Replacement Project Environmental Assessment – Finding of No Significant Impact

Dear Commissioner Giulietti:

The Federal Transit Administration (FTA) has completed our review of the Connecticut Department of Transportation's (CTDOT) proposed changes to the Walk Bridge Replacement Project, which CTDOT described and submitted via email dated May 24, 2021. FTA discussed these minor project changes and CTDOT's request for a re-evaluation under the National Environmental Policy Act (NEPA) of the Finding of No Significant Impact (FONSI) issued on July 17, 2017 for the Walk Bridge Replacement Project with Kevin Carifa of your staff on June 8, 2021. FTA completed two previous NEPA re-evaluations for the Project documented in determination letters dated September 19, 2019 and March 12, 2021 respectively. As part of the Project, CTDOT now proposes to make changes to the following elements of the Project:

- Changed acquisition approach for 68 Water Street parcel from a partial acquisition to a full acquisition of the entire parcel; and,

- Additional use of a waste stockpile area and reuse stockpile area (WSA/RSA) at the I-95 Westbound on-ramp at Exit 18 in Westport.

Based on FTA's independent review of the project changes and potential effects to the human and natural environment, FTA concurs that the proposed changes to the Project described in CTDOT's May 24, 2021 e-mail will not result in significant adverse environmental impacts. The information provided satisfies the NEPA requirements as outlined in 23 C.F.R. § 771.129 and no supplemental environmental review is necessary for the proposed changes. FTA affirms that the July 17, 2017 FONSI associated with Walk Bridge Replacement Project remains valid.

CTDOT is reminded that all real estate activities must be conducted in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 U.S.C. §§ 4601-4655 and 49 C.F.R. Part 24, the implementing regulations. Going forward, if

any further changes to the Project are proposed, CTDOT must notify the FTA in writing prior to implementing the change so that FTA can determine whether additional environmental studies or analysis will be necessary before the changes are approved. Should you have any questions concerning this Project, please contact Leah Sirmin at 617-494-2459 or leah.sirmin@dot.gov.

Sincerely,

Peter Butler
Regional Administrator

cc: Kevin Carifa, CTDOT

From: Carifa, Kevin F
To: Sarah Walker
Cc: Hanifin, John D.; McMillan, Mark J.
Subject: FW: Walk Bridge - FTA NEPA Review for Project Updates
Date: Thursday, June 17, 2021 3:13:43 PM

FYI

Please note that I am currently teleworking and the best way to reach me is via my state email address or Microsoft Teams.

Kevin Carifa
Department of Transportation
Office of Environmental Planning
2800 Berlin Turnpike
Newington, CT. 06131
860-594-2946
kevin.carifa@ct.gov

From: Sirmin, Leah (FTA) <leah.sirmin@dot.gov>
Sent: Thursday, June 17, 2021 2:46 PM
To: Carifa, Kevin F <Kevin.Carifa@ct.gov>
Cc: Wood, Kristin (FTA) <kristin.wood@dot.gov>; Hanifin, John D. <John.Hanifin@ct.gov>; Martinez, Amy N. <Amy.Martinez@ct.gov>; Mason, James I. <James.Mason@ct.gov>
Subject: RE: Walk Bridge - FTA NEPA Review for Project Updates

Kevin,

Thank you for the additional information about the intended acquisition approach for 68 Water Street. A partial acquisition of that property does not change the determination FTA has made regarding the continuing validity of the FONSI for this project.

Please let me know if you have questions.

Thanks,
Leah Sirmin

From: Carifa, Kevin F <Kevin.Carifa@ct.gov>
Sent: Wednesday, June 16, 2021 11:28 AM
To: Sirmin, Leah (FTA) <leah.sirmin@dot.gov>
Cc: Wood, Kristin (FTA) <kristin.wood@dot.gov>; Hanifin, John D. <John.Hanifin@ct.gov>; Martinez, Amy N. <Amy.Martinez@ct.gov>; Mason, James I. <James.Mason@ct.gov>

Subject: RE: Walk Bridge - FTA NEPA Review for Project Updates

Hi Leah,

Thank you very much for the approval letter.

I just wanted to clarify the following statement from the approval letter.

"Changed acquisition approach for 68 Water Street parcel from a partial acquisition to a full acquisition of the entire parcel; and…"

The change in acquisition approach for the 68 Water Street parcel went from a construction easement to a partial fee acquisition.
CTDOT does not intend on buying 68 Water Street in total, we are only proposing a partial fee acquisition.

Given this information, I still believe that the change will not result in any significant adverse environmental impacts.

My apologies, as I should of clarified this better on my end when I emailed you on 5/24/2021 & when we met on 6/8/2021.

Let me know if you have any questions.

Thank you,
Kevin

Please note that I am currently teleworking and the best way to reach me is via my state email address or Microsoft Teams.

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From: Sirmin, Leah (FTA) <leah.sirmin@dot.gov>
Sent: Tuesday, June 15, 2021 2:08 PM
To: Carifa, Kevin F <Kevin.Carifa@ct.gov>
Cc: Wood, Kristin (FTA) <kristin.wood@dot.gov>; Hanifin, John D. <John.Hanifin@ct.gov>
Subject: RE: Walk Bridge - FTA NEPA Review for Project Updates

Good afternoon Kevin,

Please find attached FTA's re-evaluation of the project changes discussed in your email below.

Let us know if you have any questions.

Thanks,
Leah

From: Carifa, Kevin F [mailto:Kevin.Carifa@ct.gov]
Sent: Monday, May 24, 2021 4:40 PM
To: Sirmin, Leah (FTA) <leah.sirmin@dot.gov>
Cc: Wood, Kristin (FTA) <kristin.wood@dot.gov>; Hanifin, John D. <John.Hanifin@ct.gov>
Subject: Walk Bridge - FTA NEPA Review for Project Updates

Hi Leah,

Hope your doing well.

I was recently notified by our Walk Bridge Design Team of project refinements in which I wanted to share with you and determine what course of action CTDOT would need to take as it relates to NEPA.

The first project refinement consists of parcel needs for **68 Water Street – Changes from Easement to Take:**

1. The EA/EIE identified 68 Water Street as a partial construction easement.
2. The 2019 Re-evaluation evaluated the change for 70 and 90 Water Street from construction easements to full parcel takes, but indicated that 68 Water Street would remain as a partial construction easement.
3. The EA/EIE includes language as it relates to parcel needs for the project:
    - *As design progresses, property impacts, including parcel acquisitions and temporary and permanent easements, will continue to be refined.*
    - *In cooperation with the property owners and as design advances, CTDOT will determine the size of temporary easements to be required.*

Attached for your consideration is highlighted text from the Re-evaluation that addresses the change for 70 and 90 Water Street from an easement to a take and impacts identified in Table 1. What does CTDOT need to provide to FTA as it relates to the change in easement to a parcel take for 68 Water Street?

The second project refinement consists of **additional RSA/WSAs (I-95 Westbound on-ramp at Exit 18 - Westport)** needed for the project:

1. The EA/EIE identified that WSAs will be required, but did not identify specific sites.
2. The 2021 Re-evaluation cited the need for WSAs and RSAs, and identified three CTDOT-owned areas, currently used for sediment management for ongoing CTDOT-projects.

Attached for your consideration is the highlighted text from the Re-evaluation that addresses the change and impacts identified in Table 2. What does CTDOT need to provide to FTA as it relates to the change to adding in the additional RSA/WSA in Westport?

Please let me know if you have any questions or if you like to have a teams meeting to walk you through the latest project updates.

Thank you,
Kevin

Please note that I am currently teleworking and the best way to reach me is via my state email address or Microsoft Teams.

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Attachment B Summary Table of Project Mitigation Measures

Attachment B
Summary Table of Project Mitigation Measures

Environmental Resource	Reference Document	Mitigation Measures
Rail Transportation	EA Sections 3.1 & 5.3.1; FTA 2017 FONSI	CTDOT will maintain weekday passenger train service by keeping at least two tracks in service throughout nearly all the construction period. CTDOT will schedule limited four-track outages required during construction time during an off-peak and/or weekend period, to the extent possible.
		CTDOT will complete planned independent NHL-improvement projects on the main line and Danbury Branch prior to implementing the long-term, two-track outages; these projects will facilitate considerable train movement flexibility on the NHL main line and minimize schedule adjustments associated with long-term two-track outages.
		CTDOT will minimize temporary impacts to rail traffic by coordinating the construction of the project with the East Avenue Bridge Project (Bridge No. 42.14) and associated roadway and the Osborne Avenue Bridge Project (Bridge No. 41.96).
		CTDOT will work with Metro-North, Amtrak, and freight service providers to ensure that train operations proceed in a manner that maintains service, facilitates passenger boarding and alighting at East Norwalk and South Norwalk Stations, and prioritizes the overall safety of the railroad corridor.
Marine Transportation	EA Sections 3.2 & 5.3.2; FTA FONSI Appendix 2-1; final design	CTDOT will coordinate channel closures with the City of Norwalk, Norwalk Harbor Management Commission, the Norwalk Harbor Master, the U.S. Coast Guard (USCG), the U.S. Army Corps of Engineers (USACE), and waterway users to the maximum extent possible.
		CTDOT will develop a Marine Use Plan as a Construction Coordination Plan to address temporary impacts to water-based businesses, marina users, rowers, and ferry and vessel operations, in coordination with the City of Norwalk Police and Fire Departments, water-dependent businesses, the Connecticut Department of Energy and Environmental Protection (CTDEEP), and the USCG. CTDOT will develop and update emergency preparedness, communications and response measures for businesses and properties upstream of Walk Bridge through the construction period. Refer to FTA FONSI Appendix 2-1.
		CTDOT will coordinate the existing bridge removal and new bridge construction activities with the USCG Sector Long Island Sound to limit channel restrictions and outages. Aids to

Environmental Resource	Reference Document	Mitigation Measures
		navigation will include Notices to Mariners, on-site signs, and lighting.
		CTDOT will require the construction contractor to prepare a Marine Safety Plan for approval by CTDOT in consultation with the Norwalk Harbormaster and USCG Sector Long Island Sound.
Traffic, Transit and Parking	EA Sections 3.3 & 5.3.3; FTA 2017 FONSI; FTA Environmental Re-evaluation Consultation Worksheet, February 2021	CTDOT will prepare a Transportation Management Plan (TMP) as a Construction Coordination Plan to accommodate the Project and other Walk Bridge Program projects; the TMP will include vehicle, pedestrian, and bicycle detour plans for the stages of the Project; temporary bus routes; rail user updates; and construction material haul routes. The TMP will accommodate the replacement of Walk Bridge and Fort Point Street Bridge in conjunction with the East Avenue Bridge replacement (and associated roadway) project and the Osborne Avenue Bridge replacement project.
		CTDOT will develop an Alternative/Replacement Parking Plan to identify replacement parking due to temporary closures of parking facilities, in coordination with the City of Norwalk, the Norwalk Parking Authority, and the business community. The Plan will identify replacement parking due to temporary closures of parking facilities (including the North Water Street Lot) and identify access to available parking facilities unaffected by the project.
		CTDOT will implement the following mitigation measures to improve current and anticipated traffic conditions due to the proposed staging and storage yard at Manresa Island: • Add pavement markings for the crosswalks on Grove St. and Burritt Ave. and trim vegetation that interferes with the sight line from Burritt St. • Provide flaggers to assist with navigation of oversize trucks through the Route 136 (Meadows St.)/ Woodward Ave. intersection.
		CTDOT will construct improvements and alterations along the south side of Marshall Street in South Norwalk to accommodate pedestrian traffic during limited closures of North Water Street during construction, including developing a pedestrian access compliant with Americans with Disabilities Act (ADA) requirements, sidewalk and driveway improvements, and signage as needed.
Pedestrian and Bicycle Facilities		CTDOT will develop a TMP which will include pedestrian and bicycle detour plans for the stages of the project, including bridge construction.

Environmental Resource	Reference Document	Mitigation Measures
	EA Sections 3.4 & 5.3.3	CTDOT will restore the Norwalk River Trail (NRVT) adjacent to the North Water Street parking lot in South Norwalk to pre-construction conditions following completion of construction.
Property Acquisition and Displacement	EA Sections 3.6 & 5.3.4; FTA Environmental Re-evaluation Consultation Worksheets, July 2019 and February 2021	In accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended, and the Connecticut Uniform Relocation Assistance Act, CTDOT will aid businesses and residents whose properties are acquired by the project, including payment of fair market value for the parcels and appropriate relocation costs.
		Following project completion, CTDOT will release excess property in accordance with Connecticut General Statute (CGS) 4b-21. Regarding the sale of properties with existing water-dependent uses, CTDOT will market the excess property indicating the highest priority and preference for water-dependent use of the site.
		Following project completion, CTDOT will restore properties with construction easements to pre-construction conditions or as coordinated with the property owner.
Socioeconomics	EA Sections 3.8 & 5.3.5	CTDOT will develop a Communications Management Plan which outlines the objectives of the communications and public involvement efforts for the Walk Bridge Program. Through the project website - www.walkbridgect.com - CTDOT will continue to provide continuous updates to the community on the Walk Bridge Replacement Project and nearby projects.
		CTDOT will develop a Business Coordination Plan in cooperation with affected businesses in Norwalk to identify the concerns of the business community and address construction-related impacts.
		CTDOT will sell the parcels (excess property) acquired for construction upon completion of the Project, returning them to the City of Norwalk's tax base.
		CTDOT entered into an agreement with the City of Norwalk providing for the future development of a replacement facility for the IMAX Theater. In February 2021, a new cinema with a two-story 4D screen opened at the Maritime Aquarium's parcel north of the bridge.
Water Quality	EA Sections 3.9 & 5.3.6; FTA 2017 FONSI; federal and state agency coordination	CTDOT will develop a Water Quality Control Plan as a Construction Coordination Plan, pursuant to the requirements of Section 401 Water Quality Certification and the National Pollutant Discharge Elimination System (NPDES) program.
		CTDOT will develop a Stormwater Pollution Control Plan (SWPCP) for the Project, and other Walk Bridge Program projects, to comply with the requirements of the CTDEEP General Permit for

Environmental Resource	Reference Document	Mitigation Measures
		the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Construction General Permit). The SWPCP will identify soil and erosion control (SESC) measures consistent with the Connecticut 2002 Erosion and Sediment Control Guidelines.
		CTDOT will comply with the requirements of the Municipal Separate Stormwater Sewer Systems (MS4) General Permit requirements for linear transportation infrastructure.
		CTDOT will pre-treat stormwater discharged to the Norwalk River to the maximum extent practicable in accordance with the Connecticut Stormwater Quality Manual.
		CTDOT will conduct water quality monitoring for turbidity, specific conductivity, salinity, dissolved oxygen, pH, temperature, and water level (at one location) whenever in-water work is being performed.
		Barge movements will take place such that there will be no adverse impacts to the river bottom or increase in ambient turbidity beyond that allowed by permit conditions.
		All pile driving and extraction (including sheet piles) activity will be enclosed within turbidity curtains.
		Marine enclosures will be installed prior to the start of certain construction activities. All marine enclosures will be protected from navigation impacts with a temporary fender system. To further prevent siltation outside of the marine enclosure, a turbidity curtain will be deployed around its exterior perimeter.
Water Quality	EA Sections 3.9 & 5.3.6; FTA 2017 FONSI; final design plans	Type 3 Permeable Turbidity Barriers will be installed prior to the start of the following activities: • Marine enclosure installation, • Pier construction (with marine enclosure), • Pier removal (with marine enclosure), • Existing submarine cable removal, • Slide rail installation and removal for swing span removal, • Control house independent fender system installation and existing fender removal, • Navigational/maintenance dredging, • Construction platform pile driving, • Pile installation and removal at the temporary vessel dock relocation site, • New dredging (with marine enclosure if outside the dredging work window) at the temporary and permanent vessel dock relocation sites, • Bulkhead installation,

Environmental Resource	Reference Document	Mitigation Measures
		• Sheet pile installation and outfall reconstruction at the IMAX, • IMAX Theater foundation removal (with marine enclosure), and • Wetland restoration.
Tidal Wetlands	EA Sections 3.10 & 5.3.7; FTA Environmental Re-evaluation Consultation Worksheet, July 2019; final design	CTDOT will implement a Tidal Wetland Mitigation Plan exceeding the required mitigation of 34,800 sf, using a mitigation ratio of 4:1 for permanent impacts and 1:1 for temporary impacts, at six sites along the Norwalk River proximate to the bridge site, as follows: ○ Invasive *Phragmites* treatment; ○ Invasive *Phragmites* treatment with subsequent shrub planting; ○ Tidal salt marsh restoration through invasive Phragmites removal, living shoreline riprap sill installation, grading and topsoil placement, salt marsh restoration through vegetation planting, and establishment of a northern diamondback terrapin (*Malaclemys terrapin terrapin*) habitat area in the buffer above the high tide line; ○ Excavation and removal of in-water rock riprap, living shoreline riprap sill installation from reused existing riprap, regrading and topsoil placement, and salt marsh restoration through vegetation planting; vegetation replanting.
Floodplains	EA Sections 3.12 & 5.3.8; FTA Environmental Re-evaluation Consultation Worksheet, February 2021; final design	CTDOT will incorporate best management practices (BMPs) for the storage and handling of materials and equipment in floodplain areas: ○ Flood-proof containers will be used on the site for secure storage and to provide weather protection. ○ Critical activities, such as petroleum fuels, oil tanks for site generators, and other construction related hazardous or flammable materials, will be stored within double-walled and flood-proof containers. ○ The size of containers will be limited to less than 1,300 gallons. ○ In the event of a forecasted storm, containerized materials will be moved off-site.
		CTDOT will develop a Flood Contingency Plan, incorporating floodproofing into the Project as needed.
		At the construction staging parcels where buildings will be removed, CTDOT will stabilize the areas with 1-1/4-inch processed aggregate to avoid increasing impervious cover on the sites while providing a stable working surface.

Environmental Resource	Reference Document	Mitigation Measures
Terrestrial Resources, Species, and Critical Habitats	EA Sections 3.13 & 5.3.9; FTA Environmental Re-evaluation Consultation Worksheet, February 2021; state agency coordination	CTDOT will implement the following mitigation measures to protect the terrestrial species and critical habitats: ○ No construction and/or inspection activities which are within 400 feet of an identified peregrine falcon (*Falco peregrinus*) nest will be permitted during nesting season, between April 1st and July 31st. ○ Use of the Manresa Island Staging and Storage Yard will be started before April 15th or after August 1st to allow for the nesting ospreys (*Pandion haliaetus*) to acclimate to this new activity within their nesting areas. ○ Special precautions will be implemented during the Northern diamondback terrapin's (*Malaclemys t. terrapin*) active season from April 1st through October 31st, in accordance with CTDOT Section 1.10 Environmental Compliance. ○ At least 10 days prior to the commencement of any construction activities, the contractor shall arrange for a CT DOT Environmental Inspector from the Office of Environmental Planning (OEP) or their authorized delegate to be available to meet and identify the nest location as well as discuss proper protocol for maintaining environmental commitments made to the protection of *Falco peregrinus* and *Malaclemys t. terrapin* and their habitats.
Aquatic Resources, Species and Critical Habitats	EA Section 3.14 & 5.3.10; federal and state agency coordination	CTDOT will provide compensatory mitigation for habitat displacement due to the construction-phase temporary direct impacts to intertidal and subtidal habitats, and for indirect shading impacts to tidal vegetated wetlands, in coordination with the USACE and CTDEEP (See **Tidal Wetlands**).
		CTDOT will implement the following time of year (TOY) restrictions during Project construction: ○ All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset. (Per coordination with CTDEEP Marine Fisheries, shaft drilling and micro pile drilling conducted within a caisson and marine enclosure are not subject to this TOY restriction.) ○ No unconfined turbidity producing activities will be allowed between February 1st and September 30th. ○ A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, whether located within or outside of a marine enclosure, as well as following cessation of activity for a period of 30 minutes or longer.

Environmental Resource	Reference Document	Mitigation Measures
		○ Dredging will be conducted within a turbidity curtain between December 1st and January 31st. Dredging from February 1st through November 30th will be conducted within a marine enclosure enclosed by a turbidity curtain.
		CTDOT will implement the following resource protection measure: explosives and hydraulic breakers (e.g., jackhammers and hoe rams) will not be used below the high tide line (HTL).
Endangered and Threatened Species	EA Sections 3.15 & 5.3.11; federal and state agency coordination	CTDOT will incorporate best management practices (BMPs) and implement time of year (TOY) restrictions to address the potential presence of endangered and threatened species (See **Aquatic Resources, Species and Critical Habitats**).
		CTDOT will conduct vegetation clearing during the off-season prior to the arrival of the Bald Eagle and will monitor the area for the presence of protected bird species during construction using BMPs.
		CTDOT will incorporate a construction period BMP into the contract specifications to address the potential presence of the state-listed Peregrine Falcon nesting within the project area (See **Terrestrial Resources, Species, and Critical Habitats**).
Consistency with CT Coastal Management Act	EA Section 3.16; final design	CTDOT will incorporate mitigation measures for unavoidable impacts and refine the design to minimize impacts to be consistent with the CT Coastal Management Act's policies for the protection of coastal resources and policies on development of those resources. In November 2021, CTDEEP issued a draft Structures, Dredge and Fill and Tidal Wetlands Permit for the Project in accordance with CGS Section 22a90 to 112, the CT Coastal Management Act.
Navigable Waterways and Water-Dependent Uses	EA Sections 3.17 & 5.3.12; FTA 2017 FONSI Appendix 2-1; final design	CTDOT will coordinate pile driving/extraction and drilled shaft and micropile drilling activities to ensure that the navigation channel is available for marine traffic and fish passage; activities will occupy less than 50% of the navigation channel when working in the middle of the waterway (also applicable to **Aquatic Resources, Species and Critical Habitats**.)
		CTDOT will develop a Marine Use Plan as a Construction Coordination Plan to address temporary impacts to water-based businesses, marina users, rowers, and ferry and vessel operations (see **Marine Transportation**).
Navigable Waterways and Water-Dependent Uses	EA Sections 3.17 & 5.3.12;	CTDOT developed a mitigation plan for the Sheffield Island Ferry and Maritime Aquarium research vessel to minimize the effects of project construction on vessel operations while maintaining safety for waterway users. The existing docking facilities will be replaced with a reconfigured single new dock and accessible gangway to provide operational flexibility as needed.

Environmental Resource	Reference Document	Mitigation Measures
	FTA 2017 FONSI Appendix 2-1; FTA Environmental Re-evaluation Consultation Worksheet, February 2021; final design	Additionally, passenger operations during certain construction activities and vessel storage can be relocated to a new temporary docking facility to be built by CTDOT waterward of 68 and 90 Water Street. To maximize both operator flexibility and vessel safety, both locations will be available during project construction.
		CTDOT relocated the Maritime Rowing Club, displaced due to the acquisition of a water-front parcel (1 Goldstein Place) for project construction use, to facilities at a nearby location (3 Jennings Place) upstream from the existing bridge.
		Following project construction, CTDOT will market the excess property of waterfront parcels indicating the highest priority and preference for water-dependent use of the site. With approval from the Commissioner of the Department of Energy and Environmental Protection, CTDOT will select the highest bid that best demonstrates an integrated, quality, water-dependent use.
Parklands, Public Recreation, and Community Facilities	EA Sections 3.18 & 5.3.13; FTA 2017 FONSI	CTDOT will restore the existing NRVT trails on the east side and west sides of the Norwalk River to pre-construction condition following completion of construction.
		CTDOT is developing a Maritime Aquarium Coordination Plan to identify and address the impacts of the project construction upon the Aquarium's outdoor and indoor exhibits, its terrestrial and aquatic animals, guests, and employees. CTDOT has agreed to several measures to mitigate the impact of the project on the Maritime Aquarium, including functional replacement of the IMAX Theater and an existing exhibit (see **Socioeconomics**); land-based and water-based noise and vibration monitoring (see **Noise and Vibration**); and exhibits and/or educational programs for institutions and educators in the community, including the Maritime Aquarium (**see Section 106 MOA, FTA 2017 FONSI Appendix 1**).
Visual Resources	EA Sections 3.19 & 5.3.14	CTDOT conducted meetings with the City of Norwalk's Design Advisory Committee to review design and solicit feedback on those design elements of the replacement bridge that will contribute to the aesthetics of the replacement bridge, including (but not limited to) façade treatments, color, and landscaping.
Air Quality	EA Sections 3.20 & 5.3.15; FTA 2017 FONSI Appendix; final design	CTDOT will develop an Air Quality/Dust Control Plan as a Construction Coordination Plan.
		CTDOT will utilize its Standard Specification 1.10 Environmental Compliance, which requires BMPs for dust control, erosion and sediment control, vehicle emission control, and controls for hazardous materials to protect air quality.

Environmental Resource	Reference Document	Mitigation Measures
Noise and Vibration	EA Sections 3.21 & 5.3.16; FTA 2017 FONSI; federal agency coordination	CTDOT will develop a Land-Based Construction Coordination Plan and a Noise-Based Construction Coordination Plan to address potential impacts of land-based and water-based noise.
		Between March 16th and October 31st, pile driving and extraction activities will require a soft start. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, whether located within or outside of a marine enclosure, as well as following cessation of activity for a period of 30 minutes or longer.
		CTDOT will develop an Historic Building Protection Plan to minimize the effects of construction-period vibration upon nearby historic buildings. The historic buildings to be included in the Plan consist of the Interlocking Tower (South Norwalk Switch Tower Museum) and historic buildings on the north side of Washington Street in the South Main and Washington Streets Historic District, the Former Norwalk Lock Company, the Former Norwalk Iron Works, and the circa 1910 commercial buildings at 68 Water Street.
Cultural Resources	EA Sections 3.22 & 5.3.17; FTA 2017 FONSI Appendix 1	In coordination with FTA, CTSHPO, and local historic stakeholders, mitigation measures have been developed for the loss of the historic bridge and other resources. The mitigation measures are memorialized in a Memorandum of Agreement (MOA) among FTA, CTSHPO and CTDOT (as signatory parties) and local historic stakeholders (as concurring parties), in consultation with Native American tribes, pursuant to Section 106 of the National Historic Preservation Act. Refer to **FTA 2017 FONSI Appendix 1.**
Hazardous and Contaminated Materials/ Environmental Risk Sites	EA Section 3.23; FTA 2017 FONSI; FTA Environmental Re-evaluation Consultation Worksheet, February 2021; CTDOT consultation with FTA, June	CTDOT will manage the operation of the waste stockpile areas (WSAs) and RSAs in accordance with project permits and contract specifications. The WSAs and RSAs will be included in the Walk Bridge Program's Construction General Permit and General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer).
		CTDOT will adhere to Office of Environmental Compliance (OEC)-developed specifications regarding the handling, testing, management, and off-site disposal of project-generated sediment.
		CTDOT will manage excavated sediments in accordance with the CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). CTDOT will manage

Environmental Resource	Reference Document	Mitigation Measures
	2021; final design	wastewater generated during dewatering activities in accordance with CTDEEP requirements.
		To provide a layer of separation from two Areas of Concern (AOCs) at the Manresa Island Staging and Storage Yard (a former ash disposal area and a former coal storage area), the ground surface will be covered with 6-inches of crushed stone over geotextile fabric.
		CTDOT will develop a Materials Management Plan as a Construction Coordination Plan.
Hazardous Waste	Final Design	CTDOT will adhere to OEC-developed contract specifications for the excavation, transport, handling, disposal, and documentation of contaminated and controlled material during construction activities, including the dewatering, handling, and disposal of contaminated groundwater.
Safety and Security	EA Section 3.24; FTA 2017 FONSI Appendix 2-1	CTDOT will prepare project safety and security documents that will apply to the project elements and construction use parcels, including a Safety and Security Management Plan (SSMP), Preliminary Hazard Analysis (PHA), Threat, Vulnerability and Risk Assessment (TVRA), Health and Safety Plan (HASP), Construction Site Safety and Security Plan, and Emergency Response Plan.
		CTDOT will develop a Safety and Security Information Bulletin as a Construction Coordination Plan.
Utilities	EA Section 3.25; final design	Prior to the start of the Walk Bridge Replacement Project, CTDOT is implementing an advance utility relocation project in the North Water Street area to minimize impacts to utility services during Project construction.
Title VI and Environmental Justice	EA Section 3.26 & 5.3.21; FTA 2017 FONSI;	As part of its overall Communications Management Plan (included in the Project Management Plan), CTDOT developed an EJ and Title VI Outreach Plan to ensure that EJ and Title VI populations have equal access to information about the project. Outreach methods include translating communications materials in appropriate languages (Spanish and Haitian Creole); advertising in multi-language publications (e.g., *El Sol News)*; and conducting grassroots outreach by establishing partnerships in low-income neighborhoods, including community organizations, neighborhood groups, and small neighborhood businesses.
Secondary & Cumulative Impacts	EA Section 3.27 EA Section 3.27; FTA 2017 FONSI	CTDOT is coordinating with Eversource Energy, LLC on the timing of its replacement of the Eversource powerlines located on the existing high towers.
		CTDOT is preparing a Regional Transportation Management Plan (Regional TMP) to address the potential cumulative impacts of these projects. The Regional TMP, which will include Norwalk and surrounding communities, will address potential traffic

Environmental Resource	Reference Document	Mitigation Measures
		impacts of the multiple projects, facilitate comprehensive public outreach efforts, and provide coordination with stakeholder agencies in the region.
		Through the MOA, CTDOT has identified mitigation measures for the loss of the historic bridge and other resources which could address the historic bridge technology in Connecticut. Mitigation measures include developing exhibits that are historic- and/or STEM-related; obtaining salvaged material from the project to be used for public education purposes; and creating permanent interpretative panels related to the history of Walk Bridge, the railroad, and railroad engineering and transportation history in Connecticut. (Refer to the Section MOA included in the FTA 2017 FONSI).

Attachment C Summary Table of Project Benefits

Attachment C
Summary Table of Project Benefits

Environmental Resource	Reference Documents	Project Benefit
Rail Transportation	EA Section 3.1	The project will improve bridge operation and reliability, resulting in improved NHL operations. (Operational benefits are listed in the FTA 2017 FONSI, Table ES-1.)
Marine Transportation	EA Section 3.2; FTA Environmental Re-evaluation Consultation Worksheet, July 2019	The project will increase the bridge's vertical clearance (in the closed position) by approximately 10 feet. The proposed increased bridge height will reduce the frequency of bridge openings, which will benefit commercial and recreational marine users.
		The project will substantially increase the bridge's horizontal clearance (from the existing 58 feet in the west channel); providing a horizontal width of 170 feet, to match the federal navigation channel width. The elimination of the center pivot pier that divided the navigation channel at the existing Walk Bridge will result in an effective increase in the width of the navigation channel of the replacement bridge, improving passage through the replacement bridge. The widened channel at Walk Bridge via the removal of the pivot pier and fender system also will improve rowing conditions and rower (and other small boat) safety, by providing more visibility for rowers and boaters.
		The project will improve the navigational channel alignment. The required channel maintenance dredging to the authorized dredge depth will straighten the alignment between Walk Bridge and the Stroffolino Bridge and improve the navigability of the river between and through the two bridges, improving overall conditions for large and small vessel users.
Traffic, Transit and Parking	EA Section 3.3; FTA Environmental Re-evaluation Consultation Worksheets, July 2019 and February 2021	Realignment of Fort Point Street will reduce Project construction-related traffic impacts. While Fort Point Street replacement will require temporary closures during periods when traffic is shifted from the existing Fort Point Street alignment to the proposed Fort Point Street alignment, for most of the construction duration, existing Fort Point Street will remain open to traffic.
		Realignment of Fort Point Street will provide long-term transportation infrastructure and traffic improvements in East Norwalk, including modifying the roadway design to better accommodate trucks and improving pedestrian movements through South Smith/Fort Point Streets. The Fort Point Street realignment improves the functionality and safety of the intersection of Fort Point Street and South Street and addresses a traffic improvement priority of the City of Norwalk.

Environmental Resource	Reference Documents	Project Benefit
		Sidewalk and driveway improvements on the south side of Marshall Street to accommodate pedestrian traffic during North Water Street closures will be retained in the permanent condition, thereby expanding ADA accessibility in downtown Norwalk.
Pedestrian and Bicycle Facilities	EA Section 3.4	The project will provide a new north-south pedestrian and bicycle connection to the Norwalk Harbor Loop Trail at the existing bridge's eastern abutment, which will extend the Norwalk River Valley Trail (NRVT)/Harbor Loop Trail on the Norwalk River's eastern shorefront.
Consistency with Planning	EA Section 3.7	The project is consistent with local, regional, state plans of conservation and development; the regional and statewide Transportation Improvement Program (TIP), and regional, state, and multi-state transportation plans and policies.
Socioeconomics	EA Sections 3.8 & 5.3.5	The project will create construction period jobs, which include direct on-site jobs, indirect jobs in supplier industries, and jobs that are induced in consumer goods and service industries as workers with direct and indirect jobs spend their incomes.
		The project will increase the reliability of rail service on the NEC and improve the reliability of the bridge for commercial navigation, resulting in long-term benefits to the local and regional economy.
Water Quality	EA Section 3.9; final design	The project will include new water quality protections. The land-based rail approach grades will be constructed on retained fill and sheet flow runoff will be directed to side slopes by the rail bed and ballast drainage system and away from the river. Drainage swales may be used in locations where drainage requires conveyance. Where applicable, the closed deck approach span sections of the bridge will include drainage methods to direct water away from the river.
		Following the construction of the wetland mitigation, water quality within the Norwalk River will improve; native saltmarsh areas will be created to aid in sediment retention and water quality improvement through the thousands of plantings of shrubs and native grasses in the low marsh restoration areas
Tidal Wetlands	EA Section 3.10	CTDOT's proposed wetland restoration will be a positive permanent impact: it will enhance the City's parks and waterfront and provide a permanent benefit to the community. The tidal wetland restoration that is located adjacent to Oyster Shell Park is identified in the City of Norwalk's Oyster Shell Park Master Plan as part of planned waterfront improvements.
Floodplains	EA Section 3.12; FTA Environmental Re-evaluation	The project will decrease hydraulic constraints and reduce upstream flooding due to the increased hydraulic opening.
		The project will increase the flood storage volume of the Norwalk River due to removal of the existing large granite pivot pier and rest piers.

Environmental Resource	Reference Documents	Project Benefit
	Consultation Worksheet, July 2019	Due to the removal of the large existing pivot pier, combined with the removal of the existing rest piers and the placement of the proposed lift span piers, the 100-year flood velocities will decrease through the project area, thereby reducing risk to future damage including property and loss of human life.
		The elevations of key bridge elements of the replacement bridge will be higher than the freeboard elevation mandate of Public Act No. 18-82, An Act Concerning Climate Change Planning and Resiliency. The elevations of key bridge elements of the replacement bridge will be higher than the freeboard elevation mandate of Public Act No. 18-82. Compared to existing Walk Bridge, the resistance to hurricane inundation levels with a 2-foot sea level rise will be substantially improved with the replacement bridge.
Consistency with CT Coastal Management Act	EA Section 3.16	The project will enhance coastal resources and coastal uses, by improving conditions in the Norwalk River for commercial and recreational boaters and enhancing the federal navigation channel and Norwalk Harbor. The project will expand coastal recreation and coastal access by providing opportunities to link to the Norwalk Harbor Loop Trail on the east side of the Norwalk River.
Water Dependent Uses	EA Section 3.17; FTA Environmental Re-evaluation Consultation Worksheet, February 2021; final design	The project will improve navigation along the Norwalk River and will benefit water-dependent uses, particularly upriver commercial marine users, and vessels with restricted maneuverability.
		The project will improve water-dependent uses and the developed Norwalk shorefront via the following: a new waterside pedestrian/bicycle path on the east bank of the Norwalk River, connecting to the NRVT; a new single, longer dock and accessible[1] gangway facility (in addition to the two relocated existing non-accessible gangways) for the Sheffield Island Lighthouse Ferry and the Maritime Aquarium's research vessel waterward of 4 North Water Street; removal of derelict piles and docks waterward of the Marine Staging Yard waterward of 68 and 90 Water Street.
		Following construction completion, the parcels acquired for construction use will be sold; CTDOT will market the excess property of waterfront parcels indicating the highest priority and preference for water-dependent use of the site. There are opportunities for these parcels to be redeveloped with water-dependent uses, a priority use of waterfront parcels per the Norwalk Harbor Plan and the Connecticut Coastal Management Act.
Parklands, Public Recreation and Community Facilities	EA Sections 3.18	The project will provide a north-south connection with the NRVT's Norwalk Harbor Loop Trail on the east side of the Norwalk River at the existing bridge's eastern abutment; it will provide opportunities for additional pedestrian/bicycle path extensions connections in East Norwalk; and it will contribute to the city's open space and water views.

[1] Accessible refers to compliance with The Americans with Disabilities Act.

Environmental Resource	Reference Documents	Project Benefit
Visual Resources	EA Section 3.19	The project will improve the landscape of Norwalk River shore due to saltmarsh restoration.
Air Quality	EA Section 3.20	The project will provide a resilient bridge that will not lead to diversion to other travel modes during bridge opening failures, such as automobiles or additional bus trips, resulting in improved air quality.
Hazardous and Contaminated Materials/ Environmental Risk Sites	EA Section 3.23	The use of Re-use Stockpile Areas (RSAs) will facilitate the reuse of existing on-site materials as structural fill for the project. The recycling will allow the diversion of minimally impacted materials from landfills and will reduce the air pollution caused both by trucking this material to out-of-state landfills and importing new material onto the project site.
Safety and Security	EA Section 3.24	The project will be designed to current design standards, including the minimum requirements for loading and safety margins. The project will improve safety and security measures at the bridge site.
Title VI and Environmental Justice	EA Section 3.26; FTA Environmental Re-evaluation Consultation Worksheet, July 2019	The Fort Point Street Bridge and roadway realignment will directly benefit the East Norwalk community, an EJ Community of Concern (see **Traffic, Transit and Parking**). The overall Walk Bridge Replacement Project is important to the continued economic prosperity of the community and the region and will benefit EJ communities, which comprise the study area as well as a substantial portion of the local community.
Secondary and Cumulative Impacts	EA Section 3.27	The project will provide regional secondary economic benefits on a temporary basis due to increased construction spending.
		The project will provide cumulative benefits on a permanent basis through improved NHL performance and reliability, improved marine conditions in Norwalk Harbor, and an expanded NRVT network in Norwalk.

Attachment D FRA Request

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

April 13, 2022

Mr. Peter Butler, Regional Administrator
Federal Transit Administration, Region 1
Volpe Center
55 Broadway, Suite 920
Cambridge, MA 02142-1093

Re: Walk Bridge Replacement Project
FY19&20 Federal State Partnership for State of Good Repair Program
City of Norwalk, Fairfield County, Connecticut
Section 106 Lead Federal Agency Designation

Dear Mr. Butler,

As you are aware, the Federal Railroad Administration (FRA) is administering Fiscal Year 2019 and 2020 Federal State Partnership for State of Good Repair (SOGR) Program funds to the Connecticut Department of Transportation (CTDOT) for the Walk Bridge Replacement Project (Project). The Project is the heart of a larger Program, consisting of more than a half-dozen infrastructure projects that will increase safety and reliability and advance the Northeast Corridor (NEC) and New Haven Line (NHL) railroad infrastructure into the 21st century. The scope of FRA's grant administration is specifically for the Walk Bridge Replacement component and the proposed award amount between the two SOGR grants is $109,600,000.

The Project involves the replacement of the existing Walk Bridge (Bridge Number 04288R) on the NHL over the Norwalk River in the City of Norwalk, Fairfield County, Connecticut with a new railroad bridge and other improvements within the NHL railroad right-of-way (ROW), including replacement of track and ballast and overhead catenary and supports from approximately the Washington Street Bridge to approximately 300 feet east of the Fort Point Street Bridge; realignment and replacement of the Fort Point Street Bridge, realignment of Fort Point Street, and functional replacement of the existing northeast stone retaining wall between Fort Point Street and the railroad corridor; replacement of retaining walls on both sides of the railroad corridor to the west of Walk Bridge; construction of new support walls at the Walk Bridge west abutment; and construction of a new retaining wall to the southeast of Walk Bridge. Additionally, the Project involves improvements outside the railroad ROW in the vicinity of the existing bridge, including construction of a pedestrian/bicycle trail connection to the Norwalk River Valley Trail's Harbor

Loop Trail in East Norwalk, and mitigation of Project impacts to existing wetlands on the east and west sides of the river.

In August 2016, the Federal Transit Administration (FTA), in cooperation with CTDOT, prepared an Environmental Assessment (EA) and Section 4(f) Evaluation for the Project pursuant to FTA's Environmental Impact and Related Procedures (23 Code of Federal Regulations [C.F.R.] Part 771), Section 4(f) of the U.S. Department of Transportation Act (23 C.F.R. Part 774), and the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) (40 C.F.R. 1500). FRA participated in the EA as a NEPA Cooperating Agency because of its role leading long term intercity passenger rail service planning efforts and also a potential Federal funding source for rail projects on the NEC.

In 2016 and 2017 FTA reviewed the Project in accordance with Section 106 of the National Historic Preservation Act of 1966 (Section 106) and its implementing regulations (36 C.F.R. Part 800). Pursuant to the Section 106 regulations at 36 C.F.R. 800.14(b), a 15-year duration Memorandum of Agreement (MOA) was executed on May 25, 2017 among FTA, CTDOT, and the Connecticut SHPO (CT SHPO) to guide the continuance of the Section 106 process through the design and construction phases of the Project and stipulate measures for the resolution of adverse effects of the Project on historic architectural and archaeological resources. At that time FRA did not have funding in the Project and was not a signatory to the MOA. The MOA was included in FTA's Finding of No Significant Impact (FONSI) for the Project's EA on July 17, 2017. FTA subsequently approved three NEPA re-evaluations on September 19, 2019, March 12, 2021, and June 15, 2021 for CTDOT's proposed changes to the Project scope as design of the Project advanced.

To satisfy its compliance responsibilities for FRA funding for the Project under NEPA and its implementing regulations at 40 C.F.R. Parts 1500-1508; 23 C.F.R. Part 771; Section 4(f) of the United States Department of Transportation Act (49 USC §303) and the FHWA/FTA/FRA joint implementing regulations (23 C.F.R. Part 774); and related laws, and to document its own decision-making under NEPA, FRA is adopting FTA's EA, FONSI, and NEPA re-evaluations for the Project and incorporating those documents by reference into FRA's FONSI. Part of FRA's adoption includes the 2017 MOA executed to support the Project's Section 106 compliance needs.

By way of this letter, FRA is designating FTA Region 1 as the Lead Federal Agency for the purpose of complying with Section 106. Designation of a Lead Federal Agency is permitted by the Section 106 regulations at 36 C.F.R. 800.2(a)(2). FRA intends to sign its own FONSI within the next 30 days and **requests FTA's acknowledgement of the Section 106 Lead Federal Agency designation prior to April 20, 2022, if possible.** FTA's acknowledgement of this arrangement will be included in FRA's FONSI and attachments, per past discussions with FTA regional and headquarters staff.

Please contact Lydia Kachadoorian, FRA Environmental Protection Specialist, at (781) 227-0778 or lydia.kachadoorian@dot.gov if you have questions about the Project or this Lead Federal Agency designation request, and to **promptly confirm FTA's role as Lead Federal Agency for Section 106**.

We appreciate FTA's leadership role in this Project and past efforts to comply with environmental and historic preservation laws and regulations. Thank you for your time and rapid response to this request.

Sincerely,

Katherine Zeringue
FRA Federal Preservation Officer
Office of Railroad Policy and Development

cc: Eric Papetti, FTA Environmental Protection Specialist
Sharyn LaCombe, FTA Federal Preservation Officer
Lydia Kachadoorian, FRA Environmental Protection Specialist

From:	Muhlanger, Michelle (FTA)
To:	Kachadoorian, Lydia (FRA); Butler, Peter (FTA)
Cc:	Papetti, Eric (FTA); LaCombe, Sharyn (FTA); Zeringue, Katherine (FRA); Bartlett, Ryan (FTA); Dyer, Charles (FTA)
Subject:	RE: FRA REQUEST TO FRA: Walk Bridge Replacement Project, CT - Section 106 Lead Federal Agency Written Confirmation
Date:	Wednesday, April 13, 2022 2:39:34 PM

Lydia,

This email confirms that FTA agrees to continue to be the Lead Federal Agency for compliance with Section 106 of the National Historic Preservation Act of 1966 (Section 106) for the Walk Bridge Replacement Project.

Thank you,
Michelle

Michelle Muhlanger
Deputy Regional Administrator
Federal Transit Administration, Region 1
Cell: (617) 877-9763
michelle.muhlanger@dot.gov

From: Kachadoorian, Lydia (FRA) <lydia.kachadoorian@dot.gov>
Sent: Wednesday, April 13, 2022 1:31 PM
To: Butler, Peter (FTA) <Peter.Butler@dot.gov>; Muhlanger, Michelle (FTA) <Michelle.Muhlanger@dot.gov>
Cc: Papetti, Eric (FTA) <eric.papetti@dot.gov>; LaCombe, Sharyn (FTA) <sharyn.lacombe@dot.gov>; Zeringue, Katherine (FRA) <katherine.zeringue@dot.gov>; Bartlett, Ryan (FTA) <ryan.bartlett@dot.gov>
Subject: FRA REQUEST TO FRA: Walk Bridge Replacement Project, CT - Section 106 Lead Federal Agency Written Confirmation

Good afternoon Peter and Michelle,

Per the recommendation of Eric Papetti, FTA Region 1 Environmental Protection Specialist, FRA is submitting the attached request for written confirmation that FTA agrees to continue to be the Lead Federal Agency for compliance with Section 106 of the National Historic Preservation Act of 1966 (Section 106) for the Walk Bridge Replacement Project (Project).

In 2017 FTA executed a 15-year long Section 106 Memorandum of Agreement (MOA) with the Connecticut Department of Transportation (CTDOT) and the Connecticut State Historic Preservation Officer (CTSHPO) to guide the Section 106 process through the design and construction phases of the Project. At that time FRA did not have funding in the Project and was not a signatory to the MOA, but we did collaborate with FTA on their National Environmental Policy Act (NEPA) compliance document as a Cooperating Agency.

As you are aware FRA currently has grant administration responsibilities for FY 19&20 SOGR grants to CTDOT for the Walk Bridge Replacement Project. In order to avoid duplication of effort and to expedite FRA's NEPA and NHPA compliance duties, we request the FTA continue to be the Lead Federal Agency for Section 106. **We are asking that you provide written confirmation as soon as possible so that we may include the confirmation in our NEPA Finding of No Significant Impact (FONSI) which we intend to sign shortly.**

FRA's signing of our own FONSI will allow us to authorize CTDOT to move ahead with certain critical actions. This is a very high priority for CTDOT and FRA and we appreciate any efforts you can make to quickly provide written confirmation. Written confirmation via email is sufficient for this purpose. Once confirmation is received, FRA will include a copy of this correspondence record in Attachment D of our FONSI. We will provide your office with a signed copy of our FONSI once FRA leadership has authorized it.

We appreciate your support to minimize duplication of effort and thank you very much for your time and attention to this important USDOT funded Project.

Lydia Kachadoorian, Registered Professional Archaeologist 15668
FRA Environmental Protection Specialist
Email: Lydia.Kachadoorian@dot.gov //Cell: (781) 227-0778

U.S. Department of Transportation, Federal Railroad Administration
Office of Railroad Policy & Development (RPD-1)
Office of Infrastructure Investment (RPD-10)
Environment and Project Engineering Division (RPD-13)

Attachment E Section 4(f) Findings

E-1 U.S. Department of Interior, Draft Section 4(f) Evaluation, November 17, 2016

E-2 Section 4(f) Exception Concurrence from City of Norwalk, May 31, 2018

Attachment E-1 U.S. Department of Interior, Draft Section 4(f) Evaluation, November 17, 2016

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
15 State Street – Suite 400
Boston, Massachusetts 02109-3572

November 17, 2016

9043.1
ER 16/0517

Mark W. Alexander
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131

Subject: Draft Section 4(f) Evaluation – Walk Bridge Replacement, Norwalk, Connecticut.

Dear Mr. Alexander:

The U.S. Department of the Interior (Department) has reviewed the Section 4(f) Evaluation for the proposed replacement of the Walk Bridge, which carries Amtrak and New Haven Line railroad traffic over the Norwalk River in Norwalk, CT. This project includes replacement of the swing bridge, catenary towers, and electric towers, along with related infrastructure, with a vertical lift bridge. The following comments on this project are offered for your consideration.

Section 4(f) Evaluation Comments

The Department concurs that there is no prudent and feasible alternative to the proposed use of 4(f) lands, which consist of the existing bridge, high electric towers, catenary support structures, stone retaining walls, Fort Point Street Railroad Bridge, and the Industrial Buildings historic district, all eligible for or listed on the National Register of Historic Places (NRHP). The measures to minimize harm must be explicitly consistent with the Memorandum of Agreement under development in consultation by the Federal Transit Administration, the Connecticut State Historic Preservation Office, and the Connecticut Department of Transportation.

Thank you for the opportunity to review and comment on this project. If you have questions regarding these comments, please contact Cheryl Sams at (215) 597-5822 or Cheryl_Sams@nps.gov. Please contact me at (617) 223-8565 if I can be of further assistance.

Sincerely,

Andrew L. Raddant
Regional Environmental Officer

CC: SHPO-CT (Kristina.newmanscott@ct.gov)

Attachment E-2 Section 4(f) Exception Concurrence from City of Norwalk, May 31, 2018

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: 860-594-2975

April 19, 2017

The Honorable Harry Rilling
Mayor
City of Norwalk
125 East Avenue
P.O. Box 5125
Norwalk, Connecticut 06856-5125

Dear Mayor Rilling:

Subject: Section 4(f) Exception Concurrence Request
Replacement of Bridge No. 04288R (Walk Bridge)
City of Norwalk
State Project No. 0301-0176

The purpose of this letter is to document the Department of Transportation's (Department) analysis of, and to request your concurrence with, the Department's recommendation that an exception to Section 4(f) of the U.S. Department of Transportation (USDOT) Act is appropriate for the temporary use of the Norwalk River Valley Trail (NRVT); and for the various mitigation activities within parks owned by the City of Norwalk (City) for the subject project, in accordance with 23 CFR 774.13.

Section 4(f) applies to publicly owned parks, recreation areas, wildlife and waterfowl refuges or any historic site of national, state, or local significance. Under 23 CFR 774.13(d), an exception may be granted to temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f) under the following conditions:

1. Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;

2. Scope of work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;

3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;

4. The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and

5. There must be documented agreement of the official(s) with jurisdiction (City of Norwalk) over the Section 4(f) resource regarding the above conditions.

Temporary closure of small segments of the NRVT at both the terminus west of the Norwalk River and east of the Norwalk River adjacent to the Walk Bridge will be necessary for construction staging and pedestrian safety during construction. This is a minor impact to the resource since it will not segment the trail, the impacts are to the ends of the trail, and the remainder of the trail will remain open during construction.

Additionally, project mitigation will require various enhancement/beautification efforts in Norwalk city parks near the project area, including, but not limited to the creation/restoration of wetlands. Any mitigation performed will not interfere with any activities that qualify the parks for protection under Section 4(f) and will be a benefit/improvement to the parks. The specific locations have not yet been finalized as this will take place as the project moves forward. The Department will continue to work with the City to develop specific mitigation measures and select locations. Under 23 CFR 774.13(g), transportation enhancement projects and mitigation activities qualify as an exception to Section 4(f) use where:

1. The use of the Section 4(f) property is solely for the purpose of preserving or enhancing an activity, feature, or attribute that qualifies the property for Section 4(f) protection; and

2. The officials with jurisdiction (City of Norwalk) over the Section 4(f) resource agrees to item No. 1 above.

Based upon the information provided above and previously presented, the Department intends to pursue an exception to Section 4(f) of the USDOT Act for the temporary use of the NRVT and for the mitigation activities within selected city parks. Your concurrence below signifies that the City agrees with the Department that the impacts to the NRVT and the use of selected city parks for mitigation activities for the subject project qualify as exceptions to Section 4(f) under CFR 774.13. Since the approval of Section 4(f) is critical to completion of the NEPA process, we kindly ask that you respond prior to the close of business on May 5, 2017.

The Department looks forward to continued coordination with the City regarding the items stated above, as well as toward the successful completion of the subject project. Should you have any questions or concerns, please contact Mr. Kevin Fleming, Transportation Planner, at (860) 594-2924, or via e-mail at Kevin.Fleming@ct.gov.

Very truly yours,

James A. Fallon, P.E.
Manager of Facilities and Transit
Bureau of Engineering and Construction

Enclosure

cc: Elizabeth Stocker, Director of Economic Development

Concurrence:

Harry W. Rilling

The Honorable Harry Rilling
Mayor
City of Norwalk

Date: May 31, 2017

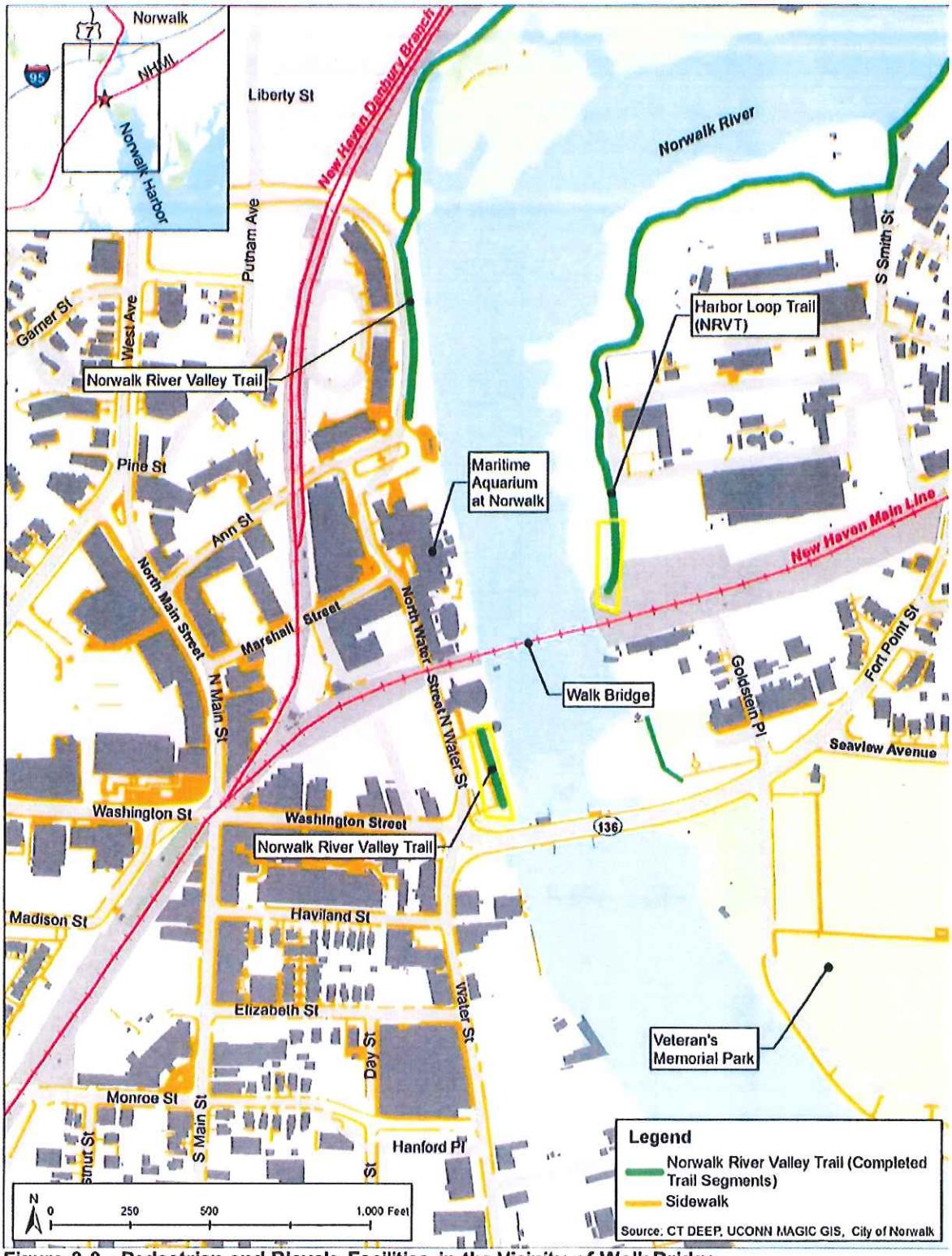

Figure 3-9—Pedestrian and Bicycle Facilities in the Vicinity of Walk Bridge

Attachment F List of Federal and State Permits and Approvals

Attachment F
List of Federal and State Permits and Approvals

Agency	Type Approval	Identification Number	Date Applied	Date Approved	Date Denied
Federal Transit Administration	National Environmental Policy Act/Finding of No Significant Impact (FONSI)	State Project 0301-0176	August 2016	7/17/2017	
	Verification of FONSI		7/12/2019	9/19/2019	
	Verification of FONSI		2/4/2021	3/12/2021	
	Verification of FONSI		5/24/2021-6/16/2021	6/15/2021	
Federal Railroad Administration	National Environmental Policy Act/FONSI	State Project 0301-0176	Pending		
National Marine Fisheries Service/ Greater Atlantic Regional Fisheries Office (NMFS/GARFO)	Not Likely to Adversely Affect (NLAA)	State Project 0301-0176	6/13/2018	7/17/2018; 8/1/2019; 8/20/2019	
	Confirmation of NLAA Finding		6/18/2020	6/18/2020	
	Essential Fish Habitat Finding and Recommendations		6/13/2018	8/30/2018	
	Confirmation of EFH Finding		3/18/2020	1/8/2021	
U.S. Fish & Wildlife Service (USFWS)	ESA – Verification Letter (4(d) Rule)	Consultation Code:05E1NE00-2021-TA-3046; Event Code: 05E1NE00-2021-E-09319		5/17/2021	

Agency	Type Approval	Identification Number	Date Applied	Date Approved	Date Denied
	ESA No-Effect Determination	CTDOT 301-176		5/8/2021	
US Coast Guard	Section 9 Bridge Permit	State Project 0301-0176	6/16/2021		
US Army Corps of Engineers (USACE)	Section 404/10 Permit	File NAE-2015-00625	8/7/2020; 6/7/2021 update		
	Section 408 Approval		12/13/2019; 9/23/2020; 6/4/2021 update		
Federal Transit Administration, CTDOT, and Connecticut State Historic Preservation Officer	Memorandum of Agreement	State Project 0301-0176	--	5/25/2017	
Federal Aviation Administration	Determination of No Hazard to Air Navigation	2019-ANE-1991-OE (west tower)	11/2/2020 (extension)	6/12/2019; 11/10/2020 (extension)	
		2019-ANE-1992-OE (east tower)	11/2/2020 (extension)	6/12/2019; 11/10/2020 (extension)	
Connecticut Office of Policy & Management (CTOPM)	Connecticut Environmental Policy Act/Record of Decision (ROD)	State Project 0301-0176	August 2016	7/6/2017	
Connecticut Department of Energy &	Division of Fisheries, Marine Fisheries Program	State Project 0301-0176	October 2018, 6/3/2020	8/23/2019; 6/3/2020	

Agency	Type Approval	Identification Number	Date Applied	Date Approved	Date Denied
Environmental Protection (CTDEEP)	Division of Wildlife, Review	State Project 0301-0176	March 2020	3/19/2020	
	Natural Diversity Data Base (NDDB) Review	NDDB Determination No. 202106690	May 2021	5/16/2021	
Connecticut Department of Energy & Environmental Protection (CTDEEP)	Structures, Dredge and Fill, and Tidal Wetlands Permit and 401 Water Quality Certificate	State Project 0301-0176/ CTDEEP File #201909990	9/3/2019; 6/26/2020; 3/5/2021; 5/24/2021 update		
	Flood Management Certification	State Project 0301-0176	8/15/2019; 9/4/2020; 5/20/2021 update		
	General Permit for Contaminated Soil and/or Sediment Management	State Project 0301-0176	pending		
	General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activity	State Project 0301-0176	pending		
	General Permit for the Discharge of Groundwater Remediation Wastewater	State Project 0301-0176	pending		

Attachment G Coordination and Consultation

Walk Bridge Replacement Project
Conceptual Engineering, Environmental Review Documentation, and Pre-Permitting Timeline
City of Norwalk and Public Coordination Activities

	Local Coordination Activities	Date
Initial NEPA Activities	Historic Stakeholder Meeting (kick-off)	08.27.14
	Norwalk Shellfish Commission Notification of Project/Information Request	12.05.14
	Waterway user consultation in support of Conceptual Engineering Report	07.18.14 - 12.14.14
	NHMC/Harbor Master Coordination Kick-off Meeting	01.06.15
	reviewed	02.11.15
	Public Scoping Meeting	02.24.15
EA Development	Meeting with Waterway users for Grade Raise	07.28.15
	First Charrette with Local Historic Stakeholders	08.13.15
	NHMC, Special Bridge Committee Meeting	08.27.15
	Presentation to Maritime Aquarium	08.31.15
	Update Meeting with City of Norwalk	09.21.15
	Meeting with Maritime Aquarium	10.13.15
	Meeting with Norwalk Seaport Association	11.18.15
	City of Norwalk & Maritime Aquarium Update Meeting	11.19.15
	Public Outreach Meeting	11.20.15
	Partnering Session #1, Team	12.02.15
	Partnering Session #1, Stakeholders	12.03.15
	Participating Agency Request Letter to City of Norwalk	12.01.15
	NHMC, Outline of Preliminary Recommendations, Norwalk River Railroad Bridge (Walk Bridge) Project	12.02.15
	City of Norwalk Participating Agency Acceptance	12.09.15
	NHMC State of the Harbor Report	12.16.15
	City of Norwalk Parks and Recreation Information Meeting	03.05.16
	City of Norwalk Coordination/Update Meeting	02.18.16
	Design Charette #2 with Historic Stakeholders	02.24.16
	Norwalk Rowing Community Meeting	03.23.16
	City of Norwalk NHMC Special Meeting	03.29.16
	City Coordination Meeting (inc. Maritime Aquarium)	05.03.16
	Public Information Meeting - - Walk Bridge Update	05.11.16
	City Fire Department Coordination Meeting	05.25.16
	Partnering Session #2	06.23.16
	Public Presentation/Open House (at IMAX)	08.16.16
	Public Hearing	11.17.16
	Walk Bridge Environmental Process/Extension of Comment Period	12.05.16
	Presentations to Public and Elected Officials: Walk Bridge Structure Type Selection - - Public	12.05.16
	Norwalk Design Review Committee Kick-off Meeting	12.06.16
	EA/EIE Stakeholder comment meetings	
	Norwalk Department of Public Works	12.20.16
	Norwalk Redevelopment Agency Meeting	12.20.16
	Norwalk Harbor Management Commission Meeting	12.20.16
	Norwalk Departments of Public Works and Economic Development Meeting	01.06.17

Walk Bridge Replacement Project
Conceptual Engineering, Environmental Review Documentation, and Pre-Permitting Timeline
City of Norwalk and Public Coordination Activities

	Local Coordination Activities	Date
FONSI Development	Norwalk Department of Public Works Meeting	01.07.17
	Maritime Aquarium at Norwalk Meeting	01.09.17
	Norwalk Historical Commission, Arts Commission, SoNo Task Force Meeting	01.09.17
	City of Norwalk Engineering Meeting	01.10.17
	Norwalk Common Council Meeting	01.19.17
	Spinnaker Real Estate Partners, Inc. Meeting	01.26.17
	Norwalk River Valley Trail Committee & Mayor's Bike/Walk Task Force Meeting	01.30.17
	Norwalk Upstream Businesses Meeting	01.30.17
	City of Norwalk Engineering Meeting	02.07.17
	Norwalk Parking Authority Meeting	03.06.17
	Norwalk Third Taxing District Meeting	03.06.17
	City Executive Committee Meeting	03.15.17
	Liberty Square Coordination Meeting	04.06.17
	Public Meeting	04.12.17
	City of Norwalk concurs with Section 4(f) Exception	04.19.17
	City of Norwalk Engineering Meeting	05.16.17
	Section 106 Stakeholders Meeting (Third Charrette)	05.10.17
	City Executive Committee Meeting	06.06.17
	Presentation to Chamber of Commerce	06.13.17
	Spinnaker Coordination Meeting	06.13.17
	City of Norwalk Engineering Meeting	06.20.17
	Upstream Businesses Coordination Meeting	06.27.17
	EA FONSI received	07.17.17
Post-FONSI/Pre-Permit Application	Design Advisory Committee Meeting	08.15.17
	Maritime Aquarium Coordination Meeting: Stakeholder Coordination	08.24.17
	Maritime Aquarium Coordination	09.24.17
	Public Information Meeting: Public meeting	09.27.17
	Design Advisory Committee Meeting: Stakeholder Coordination	10.17.17
	City Engineering Meeting: City Coordination	10.18.17
	Business Coordination Plan Update Meeting: Stakeholder Coordination	11.28.17
	Design Advisory Committee Meeting: Stakeholder Coordination	11.28.17
	City Engineering Meeting	12.11.17
	Spinnaker Meeting	01.31.18
	Norwalk Tourism Meeting	02.06.18
	City Engineering Meeting	02.08.18
	Utilities Follow-up with City of Norwalk Meeting	02.20.18
	Partnering Team Session	02.27.18
	Partnering Stakeholder Session	02.28.18
	City Engineering Meeting	03.14.18
	Business Coordination Meeting	03.29.18
	City Engineering Meeting	04.03.18
	Construction Coordination Plan with City Meeting	04.24.18
	City Engineering Meeting	05.08.18

Walk Bridge Replacement Project
Conceptual Engineering, Environmental Review Documentation, and Pre-Permitting Timeline
City of Norwalk and Public Coordination Activities

	Local Coordination Activities	Date
Post FONSI/Pre-Permit Application	Mayor Walk Bridge Update Meeting	05.10.18
	Design Advisory Committee Meeting	05.10.18
	City of Norwalk - WALK Bridge Program Executive Meeting	05.10.18
	Harbor Management Commission Meeting	05.23.18
	Maritime Aquarium Meeting	05.31.18
	Spinnaker Coordination Meeting	05.31.18
	Open House for City Council Meeting	05.31.18
	Walk Bridge Construction Public Meeting	06.05.18
	Maritime Aquarium/IMAX Functional Replacement Meeting	06.06.18
	Shellfish Commission Meeting	06.07.18
	City Engineering Meeting	06.12.18
	City Engineering Meeting	07.12.18
	Vessel Coordination Meeting	07.16.18
	Liberty Square Public Meeting	09.12.18
	City Engineering Meeting	10.16.18
	Marine Police/Rower's Coordination Meeting	10.17.18
	Shellfish Commission Meeting	11.01.18
	Norwalk Transit District Meeting	11.06.18
	City Engineering Meeting	11.06.18
	Norwalk Westport Regional TMP Progress Meeting	11.14.18
	Public Information Meeting	11.28.18
	Walk Bridge Welcome Center Open House	12.08.18
	Shellfish Commission Meeting	01.03.19
	Shellfish Commission Meeting	02.07.19
	City Engineering Meeting	02.13.19
	Harbor Management Commission Meeting	02.27.19
	Shellfish Commission Meeting	03.07.19
	Harbor Management Commission Meeting	03.27.19
	City Engineering Meeting	04.01.19
	Maritime Aquarium Coordination Meeting	04.03.19
	Norwalk Transit Authority Meeting	04.03.19
	East Norwalk Neighborhood Association Public Meeting	04.15.19
	Norwalk Men's Group Meeting	04.16.19
	Norwalk Arts Commission Meeting	05.05.19
	Harbor Management Commission Meeting	05.22.19
	Rotary Club of Norwalk Meeting	05.22.19
	Shellfish Commission Meeting	06.06.19
	Amtrak Coordination Meeting	06.06.19
	Amtrak Coordination Meeting	06.10.19
	Norwalk Chamber of Commerce Meeting	06.11.19
	City Recreation, Parks, and Cultural Affairs Council Meeting	06.12.19
	East Norwalk Business Association Meeting	06.20.19
	Spinaker Coordination Meeting	06.26.19
	League of Women Voters of Norwalk Meeting	06.27.19

Walk Bridge Replacement Project
Conceptual Engineering, Environmental Review Documentation, and Pre-Permitting Timeline
City of Norwalk and Public Coordination Activities

	Local Coordination Activities	Date
Pre-Permit Application	Pine Street Condo Association Meeting	06.30.19
	Shellfish Commission Meeting	07.11.19
	Shellfish Commission Meeting	08.01.19
	City of Norwalk Coordination Meeting	08.03.19
	Congressman Jim Himes Meeting	08.08.19
	Senior Men's Association of Stamford Meeting	08.15.19
	Harbor Management Commission Meeting	09.25.19
	Vanderbilt Global Services Meeting	10.03.19
	Norwalk Historic Stakeholders Meeting	10.22.19
	Maritime Aquarium Meeting	01.23.20
	City of Norwalk Business Coordination Meeting	01.31.20
	City of Norwalk Coordination Meeting	02.07.20
	Lockwood Matthews Mansion Historic Commission Meeting	03.01.20
	Commercial Waterway Users Meeting	04.02.20
	Meeting with Shellfish & Harbor Management Commissions	04.22.20
	Harbor Management Commission and Harbor Master Meeting	05.08.20
	Legislative Briefing (Manresa)	06.11.20
	City of Norwalk Coordination Meeting	06.12.20
	Manresa Island Online Public Meeting	06.16.20
	Harbor Management Commission Meeting	08.26.20
	Shellfish Commission Meeting	09.03.20
	City of Norwalk Engineering Coordination Meeting	09.15.20
	Marine Users-Safety and Emergency Vessels	10.09.20
	Marine Users-Commercial and Industrial Businesses	10.13.20
	Marine Users - Norwalk River Rowing Stakeholders	10.19.20
	Marine Users - Norwalk River Marina and Special Vessel Stakeholders	10.27.20
	City of Norwalk - Design Advisory Committee Meeting	10.30.20
	Meeting with Norwalk Marine Police - Channel Closures	11.05.20
	Meeting with Vessel Operators	12.08.20
	East Norwalk Neighborhood Association Virtual Public Meeting	12.10.20
	Harbor Management Commission Meeting	01.27.21
	Shellfish Commission Meeting	02.04.21
	Marine Use Stakeholder/Norwalk Harbor Master Meeting	02.08.21
	Marine Use Stakeholder Meeting	04.22.21
	Harbor Management Commission Meeting	04.28.21
	Shellfish Commission Meeting	05.06.21