

---

## **APPENDICES**

---



---

**APPENDIX A: SCOPING NOTICES AND AGENCY  
CORRESPONDENCE**

---



CEQ Search:

GO

Advanced Search

- >> WHAT IS CEPA?
- >> CEPA STATUTES
- >> CEPA REGULATIONS
- >> WHAT TO EXPECT AT A SCOPING MEETING
- >> WHAT IS SCOPING?
- >> HOW TO REQUEST A PUBLIC MEETING
- >> MONITOR ARCHIVES

Connecticut  
Council on  
Environmental  
Quality  
79 Elm Street  
Hartford, CT 06106

Phone:  
(860) 424-4000  
Fax:  
(860) 424-4070

Karl J. Wagener,  
Executive Director  
E-Mail Address:  
[karl.wagener@  
po.state.ct.us](mailto:karl.wagener@po.state.ct.us)

#### E-ALERTS

Receive CEQ news  
updates by e-mail.

>> [Subscribe now or  
update your e-Alerts](#)

>> LOGIN

## Monitor Archives



## ENVIRONMENTAL MONITOR

The official site for project information under  
the Connecticut Environmental Policy Act

August 8, 2006

### Scoping Notices

1. **NEW!** Improvements to the New Haven Rail Yard Maintenance Facilities (New Haven)

### Environmental Impact Evaluations available for review and comment

1. 950-Car Parking Garage at Eastern Connecticut State University (Willimantic)

**The next issue will be published on August 22, 2006.**  
**[Subscribe to e-alerts](#) to receive an e-mail when The Environmental Monitor is published.**

## Scoping Notices

Scoping Notices have been issued for the following state projects. These projects are in the earliest stages of planning. At the scoping stage, detailed information on a project's design, alternatives, and environmental impacts does not yet exist. Sponsoring agencies are asking for comments from other agencies and from the public as to the scope of alternatives and environmental impacts that should be considered for further study. Send your comments to the contact person listed for the project by the date indicated.

### 1. Notice of Scoping for Improvements to the New Haven Rail Yard Maintenance Facilities

**Municipality where proposed project might be located:** New Haven

**Project Description:** Reconstruction, additions to, and overall improvements and upgrades to the New Haven rail yard maintenance facilities.

**Project Map:** [Click here to view a map of the project](#)

**Written comments from the public are welcomed and will be accepted until the close of business on: **August 31, 2006****

**Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting.**

**Additional information about the project can be viewed in person at or online at:** [www.newhavenrailyard.org](http://www.newhavenrailyard.org).

**Written comments and/or requests for a Public Scoping Meeting should be sent to:**

**Name:** Mr. Edgar T. Hurle - Transportation Planning Director  
**Agency:** Connecticut Department of Transportation  
**Address:** 2800 Berlin Turnpike  
Newington, CT 06131  
**Fax:** 860-594-3028  
**E-Mail:** [Edgar.Hurle@po.state.ct.us](mailto:Edgar.Hurle@po.state.ct.us)

**If you have questions about the public meeting, or other questions about the scoping for this project, contact:**

**Name:** Mr. Keith T. Hall - Transportation Supervising Planner  
**Agency:** Connecticut Department of Transportation  
**Address:** 2800 Berlin Turnpike  
Newington, CT 06131  
**Phone:** 860-594-2926  
**Fax:** 860-594-3028  
**E-Mail:** [Keith.Hall@po.state.ct.us](mailto:Keith.Hall@po.state.ct.us)

**The agency expects to release an Environmental Impact Evaluation for this project, for public review and comment, in July 2007**

---

## **EIE Notices**

The following Environmental Impact Evaluations (EIEs) have been completed by state agencies and are available for review and comment.

---

# 1. EIE Notice for New 950-Car Parking Garage at Eastern Connecticut State University

**Municipality where project is proposed:** Willimantic

**Address of Possible Project Location:** 83 Windham Street, Willimantic, Connecticut

**Project Description:** The purpose of the proposed action is to develop a 950-car parking garage on the site of the existing softball field on the northern end of the main campus of Eastern Connecticut State University.

**Project Map:** [Click here to view a map of the project area.](#)

**Comments on this EIE will be accepted until the close of business on [August 21, 2006](#).**

**The public can view a copy of this EIE at the J. Eugene Smith Library on the campus of Eastern Connecticut State University or online at: <http://w3.sysoff.ctstateu.edu>**

**Any person can ask the sponsoring agency to hold a Public Hearing on this EIE by sending such a request to that address below by [July 30, 2006](#). If a hearing is requested by 25 or more individuals, or by an association that represents 25 or more members, Connecticut State University must schedule a Public Hearing.**

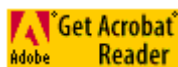
**Send your comments about this EIE to:**

**Name:** Alexandria Roe  
**Agency:** Connecticut State University  
**Address:** 39 Woodland Street  
Hartford, Connecticut 06105  
**E-Mail:** [roea@so.ct.edu](mailto:roea@so.ct.edu)

**If you have questions about the public hearing, or where you can review this EIE, or similar matters, please contact:** same as above.

---

The Adobe Reader is necessary to view and print Adobe Acrobat documents, including some of the maps and illustrations that are linked to this publication. If you have an outdated version of Adobe Reader, it might cause pictures to display incompletely. To download up-to-date versions of the free software, click on the Get Acrobat button, below. This link will also provide information and instructions for downloading and installing the reader.



[Download the free Acrobat Reader!](#)

Access.Adobe is a tool that allows blind and visually impaired users to read any documents in Adobe PDF format. For more information, go to [Welcome to Access.Adobe.Com](#)

Content Last Modified on 8/8/2006 11:44:49 AM

Content Last Modified on 8/22/2006 11:56:46 AM

[Printable Version](#)

---

[Home](#) | [CT.gov Home](#) | [Send Feedback](#)

State of Connecticut [Disclaimer](#) and [Privacy Policy](#) Copyright © 2002 - 2007 State of Connecticut

---





# STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

**RECEIVED**

August 24, 2006

AUG 29 2006

Mr. Edgar T. Hurlle  
Transportation Planning Director  
Connecticut Department of Transportation  
2800 Berlin Turnpike  
Newington, CT 06131

ENVIRONMENTAL PLANNING  
DIVISION

RE: Notice of Scoping for Improvements to the New Haven Rail Yard Maintenance Facilities,  
New Haven, CT

Dear Mr. Hurlle:

The following comments are offered in response to your request concerning the Notice of Scoping for Improvements to the New Haven Rail Yard Maintenance Facilities, New Haven, CT.

A review of this document revealed limited information at this stage of the project. Should the project include any demolition or renovation of buildings, excavation of soils, or disturbance of existing infrastructure, then a plan must be in place to address lead contaminated soils, lead-based paint, and asbestos since these materials may be encountered and/or disturbed during demolition or excavating activities. Should the project include renovation or construction of occupied buildings, and then a plan should be in place to use radon resistant features.

The following summarizes the Department's position with regard to lead, asbestos, and radon issues:

## A. Lead-Based Paint

It does not appear that excavation or construction activities associated with this project are subject to the Department of Public Health (DPH) Lead Poisoning Prevention and Control (LPPC) Regulations (§§19a-111-1 through 19a-111-11).

Additionally, there are other issues that must be addressed related to lead-based paint. Among these issues are the following:

- Lead-based paint testing of paint on existing structures marked for demolition, or sampling for lead-in-soils should be performed by a lead inspector or lead inspector/risk assessor certified by the DPH.
- Planned demolition or soil removal activities should be performed using lead-safe work practices. If lead-based paint or lead contaminated soil is identified, the classification and disposal of generated waste must comply with the Resource Conservation Recovery Act (RCRA) and Connecticut Department of Environmental Protection standards (i.e. Toxicity Characteristics Leaching Procedure [TCLP] testing, reporting, and record keeping requirements).

Phone:



Telephone Device for the Deaf: (860) 509-7191

410 Capitol Avenue - MS # \_\_\_\_\_

P.O. Box 340308 Hartford, CT 06134

*Affirmative Action / An Equal Opportunity Employer*

Page 2

Edgar T. Hurle

Notice of Scoping for Improvements to the New Haven Rail Yard Maintenance Facilities,  
New Haven, CT

- Additionally, if lead-based paint, lead containing paint, or lead contaminated soil is identified, workers must be trained (as a minimum) according to the Occupational Safety and Health Administration (OSHA) lead standard (29 CFR 1926.62). Because other contaminants may also be present on the site, additional health and safety training may be required (e.g. hazardous waste and/or asbestos).

Additional inquiries on the subject of lead-based paint can be directed to Alan Buzzetti, Supervising Environmental Analyst, Lead Poisoning Prevention and Control Program at (860) 509-7299.

#### **B. Asbestos**

Any renovation or demolition of existing facilities that are associated with this proposed project would be subject to the provisions of the asbestos National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61). As such, the facilities would be required to be thoroughly inspected to determine the presence of asbestos prior to the commencement of the renovation/demolition activity. An Inspector must conduct the asbestos inspection or a Management Planner licensed by the DPH. Asbestos abatement that involves more than three (3) linear feet or more than three (3) square feet of asbestos containing material must be performed by an asbestos abatement contractor licensed by the DPH. Asbestos abatement must be performed in accordance with all applicable federal, state and local regulations.

Please contact Ronald Skomro, Supervising Environmental Sanitarian, Asbestos Program at (860) 509-7367 regarding any issues related to asbestos.

#### **C. Radon**

The United States Environmental Protection Agency (EPA) developed a radon potential map using data from studies and surveys conducted in Connecticut. The map assigns each of the counties in Connecticut to one of three zones based on radon potential. The radon zone designation of the highest potential is Zone 1, the moderate potential is Zone 2, and the low potential is Zone 3. The proposed site is located in a high potential, Zone 1 area. Therefore, measures should be taken to help control radon and its harmful effects. The Connecticut Department of Public Health Radon Program recommends that during the construction of the building, radon resistant features should be built into the infrastructure of the building.

Page 3

Edgar T. Hurle

Notice of Scoping for Improvements to the New Haven Rail Yard Maintenance Facilities,  
New Haven, CT

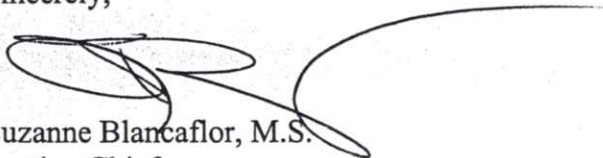
The list below describes the basic components of radon resistant new construction:

- a gas permeable layer, such as 4-inch gravel, placed beneath the slab to allow soil gases to move freely underneath the building
- plastic sheeting over the gas permeable layer and under the slab to help prevent soil gases from entering the home
- sealing and caulking all openings in the foundation floor to reduce soil gas entry
- a vent pipe, such as 6 inch PVC pipe, to run from the gas permeable layer through the building to the roof to safely vent soil gases above the building
- an electrical junction box installed in case an electric venting fan is needed later.

The facility should be tested for radon after construction is completed. If radon results are at or above 4.0 picocuries per liter (pCi/L), the existing system should be activated by installing an in-line fan. For a list of qualified radon mitigation contractors to assist with the system activation, please refer to the following website: [www.dph.state.ct.us/BRS/Radon/radon\\_program.htm](http://www.dph.state.ct.us/BRS/Radon/radon_program.htm)

Please contact Francesca Provenzano, Health Program Supervisor, Radon Program at (860) 509-7367 regarding any issues related to radon.

Sincerely,



Suzanne Blancaflor, M.S.  
Section Chief  
Environmental Health Section





STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ENVIRONMENTAL REVIEW

79 ELM STREET, HARTFORD, CT 06106-5127

---

**To:** . Edgar T. Hurlle - Director of Environmental Planning  
DOT - Bureau of Policy & Planning, 2800 Berlin Turnpike, Newington

**From:** David J. Fox - Senior Environmental Analyst      **Telephone:** (860) 424-4111

**Date:** September 7, 2006      **E-Mail:** david.fox@po.state.ct.us

**Subject:** New Haven Rail Yard Maintenance Facilities

---

The Department of Environmental Protection has received the Notice of Scoping announcing preparation of an Environmental Impact Evaluation (EIE) for proposed reconstruction, additions and upgrades to maintenance facilities at the New Haven Rail Yard. The following commentary is submitted for your consideration.

ConnDOT recently conducted CEPA review for the interim rail car service and inspection facility at the New Haven Rail Yard. Our scoping comments for that document, my memo dated January 21, 2005, as well as our comments on the EIE dated March 24, 2005 outlined the Department's potential concerns to be addressed during CEPA review at this location. These issues should be considered during preparation of the new EIE.

Thank you for the opportunity to review this project. If there are any questions regarding these comments, please contact me.

cc: Robert Kaliszewski, DEP/OPPD  
Carol Szymanski, DEP/OLISP





October 26, 2006

Mr. Michael J. Bartlett  
New England Field Offices Supervisor  
United States Fish & Wildlife Service  
70 Commercial Street, Suite 300  
Concord, NH 03301-5087

Subject: New Haven Rail Maintenance Facility  
New Haven, Connecticut

Dear Mr. Bartlett,

Fitzgerald & Halliday, Inc. is presently under contract to prepare an Environmental Impact Evaluation for the above referenced project. A review of the Connecticut Department of Environmental Protection (CTDEP) State and Federal Listed Species and Significant Natural Communities GIS database dated June 2006 for the project study area indicates that there are locations where potential conflicts with an endangered species and/or significant natural community may exist. A letter has been forwarded to the CTDEP requesting additional information relative to the study area.

To further support FHI's investigation into potential threatened and endangered species concerns, FHI requests that your office kindly forward us any federal threatened and endangered species information related to this project study area. A map depicting the project study area and CTDEP State and Federal Listed Species and Significant Natural Communities data is enclosed. We look forward to receiving any information you can provide us, and to future coordination with your office.

Very truly yours,

FITZGERALD & HALLIDAY, INC.

A handwritten signature in black ink that reads "Laurel J. Stegina". The signature is written in a cursive, flowing style.

Laurel J. Stegina  
Senior Planner

Enclosure

cc: M. Latimer (FHI), K.T. Hall (ConnDOT), File P658.02



**Study Area**

 CTDEP - Natural Diversity Database - 2006

# New Haven Rail Yard EA/EIE

New Haven, CT

1:24,000



U.S.G.S. Quadrangle: New Haven, CT





# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Field Office  
70 Commercial Street, Suite 300  
Concord, New Hampshire 03301-5087

November 27, 2006

Reference:	<u>Project</u>	<u>Location</u>
	Parking structure	Wilton, CT
	Rail maintenance facility	New Haven, CT

Paul Stanton  
Laurel Stegina  
Fitzgerald & Halliday, Inc.  
72 Cedar St.  
Hartford, CT 06106

Dear Mr. Stanton and Ms. Stegina:

This responds to your recent correspondence requesting information on the presence of federally-listed and/or proposed endangered or threatened species in relation to the proposed activity(ies) referenced above.

Based on information currently available to us, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required.

This concludes our review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your coordination. Please contact us at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Anthony P. Tur  
Endangered Species Specialist  
New England Field Office



# Connecticut Natural Diversity Data Base Review Request Form

Please complete this form *only* if you have conducted a review which determined that your activity is located in an area of concern.

Name: **Laurel Stegina**

Affiliation: **Fitzgerald & Halliday, Inc.**

Mailing Address: **72 Cedar Street**

City/Town: **Hartford**

State: **CT**

Zip Code: **06106**

Business Phone: **860-256-4914**

ext.

Fax: **860-760-6213**

Contact Person: **Laurel Stegina**

Title: **Senior Planner**

Project or Site Name: **New Haven Rail Maintenance Facility**

*Project Location*

Town: **New Haven**

USGS Quad: **New Haven**

Brief Description of Proposed Activities:

**Environmental Impact Evaluation for proposed improvements to the Connecticut Department of Transportation New Haven Rail Yard.**

Have you conducted a "State and Federal Listed Species and Natural Communities Map" review?

Yes       No      Date of Map:

Has a field survey been previously conducted to determine the presence of any endangered, threatened or special concern species?       Yes       No

If yes, provide the following information and submit a copy of the field survey with this form.

Biologists Name:

Address:

If the project will require a permit, list type of permit, agency and date or proposed date of application:

The Connecticut Natural Diversity Data Base (CT NDDDB) information will be used for:

- permit application
- environmental assessment (give reasons for assessment):

**State-funded project.**

- other (specify):

"I certify that the information supplied on this form is complete and accurate, and that any material supplied by the CT NDDDB will not be published without prior permission."

*Laura J. Stegura*

Signature

10/26/06

Date

All requests must include a USGS topographic map with the project boundary clearly delineated.


Return completed form to:

WILDLIFE DIVISION  
BUREAU OF NATURAL RESOURCES  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
79 ELM ST, 6TH FLOOR  
HARTFORD, CT 06106-5127

\* You must submit a copy of this completed form with your registration or permit application.



**Study Area**

 CTDEP - Natural Diversity Database - 2006

# New Haven Rail Yard EA/EIE

New Haven, CT

1:24,000



U.S.G.S. Quadrangle: New Haven, CT



STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Natural Resources  
Division of Wildlife  
79 Elm Street, 6<sup>th</sup> Floor  
Hartford, CT 06106  
Natural Diversity Data Base

November 27, 2006

Ms. Laurel Stegina  
Fitzgerald & Halliday, Inc.  
72 Cedar Street  
Hartford, CT 06106

re: Improvements to the New Haven Rail  
Maintenance Facility in New Haven,  
Connecticut

Dear Ms. Stegina:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed improvements to the New Haven rail maintenance facility in New Haven, Connecticut. According to our information, there may be state-listed wildlife species that occur in the vicinity of this project site. I have sent your letter to Julie Victoria (DEP-Wildlife; 860-642-7239) for further review. Ms. Victoria will write to you directly with her comments.

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 Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, 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 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

  
Dawn M. McKay  
Biologist/Environmental Analyst 3

Cc: Julie Victoria  
NDDDB # 14916





STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
FRANKLIN WILDLIFE MANAGEMENT AREA  
391 ROUTE 32  
NORTH FRANKLIN, CT 06254  
TELEPHONE: (860) 642-7239



December 1, 2006

Ms. Laurel Stegina  
Fitzgerald & Halliday, Inc.  
72 Cedar Street  
Hartford, Ct 06106

re: Improvements to the New Haven Rail Maintenance Facility in New Haven, CT

Dear Ms. Stegina:

Your request was forwarded to me on 11/30/06 by Dawn McKay of the Department of Environmental Protection's (DEP) Natural Diversity Data Base. Their records indicate that a threatened species, American kestrel, (*Falco sparverius*) occurs in the vicinity of this project site.

American kestrels nest in late March - April in open areas like woodland edges, parks, and open field habitat. They are cavity nesters and seek out abandoned woodpecker or flicker holes to nest. They catch and eat mice, voles, shrews and insects. They winter over much of the nesting range. Kestrels are cavity nesters and will nest in artificial nesting boxes that are placed in the area. Artificial nesting box plans will be provided at your request. Nesting boxes and silvicultural practices that maintain high densities of nesting and roosting cavities in trees with a minimum diameter of 30.5 cm will benefit this species.

If this work will be conducted in any American kestrel habitat, the Wildlife Division recommends that a ornithologist familiar with the habitat requirements of these species conduct surveys. A report summarizing the results of such surveys should include habitat descriptions, avian species list and a statement/resume giving the ornithologist's qualifications. The DEP doesn't maintain a list of qualified ornithologists. A DEP Wildlife Division permit may be required by the ornithologist to conduct survey work, you should ask if your ornithologist has one. The results of this investigation can be forwarded to the Wildlife Division and, after evaluation, recommendations for additional surveys, if any, will be made.

The Wildlife Division has not been provided with details or a timetable of the work to be done. Consultation with the Wildlife Division should not be substituted for site-specific surveys that may be required for environmental assessments. Please be advised that should state permits be required or should state involvement occur in some other fashion, specific restrictions or conditions relating to the species discussed above may apply. In this situation, additional evaluation of the proposal by the DEP Wildlife Division should be requested. If you have any additional questions, please feel free to contact me (860-642-7239). Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Julie Victoria".

Julie Victoria  
Wildlife Biologist  
Franklin Swamp Wildlife Management Area  
391 Route 32  
N. Franklin, CT 06254

cc: NDDB - 14916

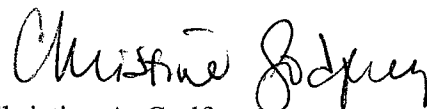




## MEMORANDUM FOR THE RECORD

SUBJECT: Jurisdictional Determination: CT DOT – New Haven Rail Yard – Facilities Improvements; New Haven, Connecticut; File No. NAE-2007-1580

1. CT DOT applied to fill 0.23 acres of wetland to construct a rail yard test track facility at the existing New Haven Rail Yard facility in New Haven, Connecticut. A review of wetlands delineation and wetlands functions and values assessment information by Susan Lee, Project Manager, CENAE-R-PEB, in coordination with Michael Sheehan, Sr. Wetlands Scientist, CENAE-R-PT on March 21, 2007 and May 24, 2007 verified that the PEM (marsh) wetland is isolated with no defined inlet or outlet. It is not hydrologically connected to any other wetland areas. There are no adjacent, bordering, contiguous or neighboring waters or wetlands at the site.
2. The determination of isolation was based on the following information: WETLANDS REPORT (attached) dated MARCH 2007 prepared by PB Americas, Inc., Fitzgerald & Halliday, Inc., supplemental information provided by e-mail (attached) dated May 24, 2007 from Fitzgerald & Halliday, Inc., aerial photos, and historic and current development information.
3. The Court ruling concerning Clean Water Act jurisdiction over isolated waters was Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178 (January 9, 2001) (“SWANCC”). The court concluded, “the ‘Migratory Bird Rule’ is not fairly supported by the CWA.” The Corps should not rely on the use of waters or wetlands as habitat by migratory birds as the only basis for jurisdiction.
4. The New Haven Rail Yard - Facilities Improvements wetlands site is clearly non-navigable, isolated and intrastate. In this particular case, there does not appear to be a reasonable nexus with interstate commerce. Also, the use, degradation or loss of this wetland will not affect other waters of the United States or affect interstate or foreign commerce.
5. This wetland should not be considered a water of the United States and there are no other jurisdictional waters or wetlands on the site. The file should be closed because there is no Federal jurisdiction.



Christine A. Godfrey  
Chief, Regulatory Division



**INFORMATION SHEET**  
**DETERMINATIONS OF NO JURISDICTION FOR ISOLATED, NON-NAVIGABLE, INTRA-STATE WATERS**  
**RESULTING FROM U.S. SUPREME COURT DECISION IN SOLID WASTE AGENCY OF NORTHERN COOK**  
**COUNTY V. U.S. ARMY CORPS OF ENGINEERS**

DISTRICT OFFICE: NEW ENGLAND DISTRICT  
 FILE NUMBER & APPLICANT: NAE-2007-1580

REGULATORY PROJECT MANAGER: Susan Lee Date: 05/31/2007

PROJECT REVIEW/DETERMINATION COMPLETED: In the office Y Date: 05/31/2007  
 At the project site N Date: \_\_\_\_\_

**PROJECT LOCATION INFORMATION:**

State: CT  
 County: New Haven  
 Center coordinates of site by latitude & longitudinal coordinates: 41.2954598, -72.9251003  
 Approximate size of site/property (including uplands & in acres): 100 acres +/-  
 Name of watershed or watershed: Quinnipiac

**SITE CONDITIONS:**

Type of aquatic resource <sup>1</sup>	0-1 ac	1-3 ac	3-5 ac	5-10 ac	10-25 ac	25-50 ac	> 50 ac	Linear feet	Unknown
Lake									
River									
Stream									
Dry Wash									
Mudflat									
Sandflat									
Wetlands	X								
Slough									
Prairie pothole									
Wet meadow									
Playa lake									
Vernal pool									
Natural pond									
Other water (identify type)									

<sup>1</sup>Check appropriate boxes that best describe type of isolated, non-navigable, intra-state water present and best estimate for size of non-jurisdictional aquatic resource area.

Migratory Bird Rule Factors <sup>1</sup> :	If Known		If Unknown Use Best Professional Judgment		
	Yes	No	Predicted to Occur	Not Expected to Occur	Not Able To Make Determination
Is or would be used as habitat for birds protected by Migratory Bird Treaties?	✓			X <i>MP</i>	
Is or would be used as habitat by other migratory birds that cross state lines?	✓			X <i>MP</i>	
Is or would be used as habitat for endangered species?				X	
Is used to irrigate crops sold in interstate commerce?		X			

<sup>1</sup>Check appropriate boxes that best describe potential for applicability of the Migratory Bird Rule to apply to onsite, non-jurisdictional, isolated, non-navigable, intra-state aquatic resource area.

TYPE OF DETERMINATION: Preliminary \_\_ Or Approved X  
 ADDITIONAL INFORMATION SUPPORTING NJD (e.g., paragraph 1 – site conditions; paragraphs 2-3 – rationale used to determine NJD, including information reviewed to assess potential navigation or interstate commerce connections; and paragraph 4 – site information on waters of the U.S. occurring onsite):





Datum: NAD-83  
UTM Zone: 18  
UTM Northing: 4573633  
UTM Easting: 673726  
Latitude: 41.295459792  
Longitude: -72.9251003344

State: Connecticut  
County: New Haven COUNTY  
Township:  
Range:  
Section: -99999999  
Congressional District: 903  
Watershed: 1100004  
Waterway:  
Baseline:  
Meridian:

Action ID: NAE-2007-1580--2

Description:

Comments: New Haven Rail Yard - JD

5/24/07 - ERS reviewed initial info; confirming isolated status; need additional wetlands assessment info.

5/24/2007 - ERS concurs isolated.

Begin Date: 5/18/2007



## **State Historic Preservation Office Coordination**







Connecticut Commission on Culture & Tourism

November 28, 2006

Mr. James H. Norman  
State Design  
ConnDOT  
2800 Berlin Turnpike  
Newington, CT

Historic Preservation  
& Museum Division

59 South Prospect Street  
Hartford, Connecticut  
06106

(v) 860.566.3005  
(f) 860.566.5078

Subject: Stores Facility – Building 10  
New Haven Rail Yard  
New Haven, CT  
ConnDOT #301-0088

Dear Mr. Norman:

The State Historic Preservation Office has reviewed the above-named project. This office notes that the Stores Facility (Building 10) possesses historic importance as a contributing resource to the New Haven Rail Yard, which is eligible for the National Register of Historic Places.

In the opinion of the State Historic Preservation Office, the proposed modification and subsequent demolition will effect the historic integrity of the Stores Facility (Building 10). However, this office believes that the proposed actions will constitute no adverse effect on Connecticut's cultural heritage. This comment is conditional upon the professional implementation of the following mitigative measure:

- o Prior to project-related activities, ConnDOT shall document the Stores Facility (Building 10) to the professional standards of the State Historic Preservation Office. Documentation shall consist of narrative text, photographs and/or high-quality digital images (exterior and interior perspectives and pertinent details), an index of photographs, and a photographic site plan. Final documentation shall be provided to the State Historic Preservation Office for permanent archiving and public accessibility.

For further assistance please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

J. Paul Loether  
Division Director and Deputy  
State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT

FROM THE DESK OF JAMES H. NORMAN	
NOV 30 2006	
HIGHWAY	
FACILITIES	✓
PROJ. DEVELOPMENT	✓

RCM





Connecticut Commission on Culture & Tourism

Historic Preservation  
& Museum Division

August 10, 2006

Mr. Keith T. Hall  
Environmental Planning  
ConnDOT  
2800 Berlin Turnpike  
Newington, CT

Subject: New Haven Rail Yard  
New Haven, CT

59 South Prospect Street  
Hartford, Connecticut  
06106

(v) 860.566.3005  
(f) 860.566.5078

Dear Mr. Hall:

The State Historic Preservation Office acknowledges receipt of the HAER-quality narrative text and photographic images provided by the Public Archaeology Survey Team Inc. concerning the above-named project. This office believes that the submitted materials are consistent with our documentation standards and succinctly document the historic, architectural and engineering aspects of the New Haven Rail Yard. We further understand that the National Park Service has reviewed and accepted the documentation materials.

The State Historic Preservation Office has transferred the documentation materials to the Thomas J. Dodd Research Center at the University of Connecticut (Storrs) for permanent archiving and public accessibility.

In the opinion of the State Historic Preservation Office, ConnDOT has professionally satisfied all of the mitigative measures noted in the Memorandum of Agreement ratified for the New Haven Rail Yard. This office appreciates ConnDOT's efforts to professionally manage and document Connecticut's cultural heritage.

This comment updates and supersedes all previous correspondence for the proposed undertaking. For further information please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

J. Paul Loether  
Division Director and Deputy  
State Historic Preservation Officer

cc: Ms. Mary Harper/PAST





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

REGION II  
Connecticut  
New Jersey  
New York  
Virgin Islands

One Bowling Green  
Room 429  
New York, NY 10004-1415  
212-668-2170  
212-668-2136 (Fax)

December 23, 1999

Mr. Mark D. Neri  
Assistant Rail Administrator  
Bureau of Public Transportation  
Connecticut Department of Transportation  
2800 Berlin Turnpike, P.O. Box 317546  
Newington, Connecticut 06131-7546

Re: Memorandum of Agreement for The  
New Haven Rail Yard and Reconstruction of  
The New Haven Interlocking Projects

Dear Mr. Neri:

Enclosed is a copy of the fully executed Memorandum of Agreement (MOA) for the above-referenced project. The Advisory Council on Historic Preservation's acceptance of the MOA completes the requirement of Section 106 of the National Historic Preservation Act and the Council's regulations.

Sincerely,

Irwin B. Kessman, Director  
Office of Planning and Program Development

FROM THE DESK OF CYNTHIA S. HOLDEN			
JUN 07 2007			
	<input checked="" type="checkbox"/>	PLS. DO NOT SEE	
KEITH T. HALL			
MARK W. ALEXANDER			
PAUL N. CORRENTE			
STEPHEN V. DELPAPA			

RECEIVED  
DEC 27 1999  
OFFICE OF RAIL

MEMORANDUM OF AGREEMENT

AMONG

THE FEDERAL TRANSIT ADMINISTRATION  
FEDERAL RAILROAD ADMINISTRATION  
NATIONAL RAILROAD PASSENGER CORPORATION  
CONNECTICUT DEPARTMENT OF TRANSPORTATION  
CONNECTICUT STATE HISTORIC PRESERVATION OFFICE  
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

FOR

THE RECONSTRUCTION OF THE RAIL MAINTENANCE  
AND STORAGE FACILITIES  
IN THE NEW HAVEN RAIL YARD

AND

THE RECONSTRUCTION OF THE NEW HAVEN INTERLOCKING  
IN NEW HAVEN, CONNECTICUT

WHEREAS, the Federal Transit Administration (FTA) proposes reconstruction of the rail car storage and maintenance facilities in the New Haven Rail Yard in the City of New Haven, Connecticut, which includes demolition of eleven existing buildings, excavation and removal, where necessary, of existing buried foundations of removed buildings, and construction of new rail car storage and maintenance facilities within the rail yard.

WHEREAS, the National Railroad Passenger Corporation (AMTRAK) proposes reconstruction of the New Haven Interlocking trackwork east and west of New Haven Station, with federal funds provided through the Federal Railroad Administration (FRA). The reconstruction includes removal of the existing Interlocking control building and corresponding apparatus contained within, and existing trackwork and site features.

WHEREAS, FTA, FRA, AMTRAK, the Connecticut Department of Transportation (ConnDOT), and the Connecticut State Historic Preservation Office (SHPO) have determined that the proposed demolition and reconstruction activities associated with these rail yard and interlocking improvements will have an adverse effect upon the historical and archaeological resources located within the yard and main line properties affected.

WHEREAS, SHPO, FTA, and FRA concur that the New Haven Rail Yard is a significant example of Connecticut's late 19th and early 20th century railroad related technology, which meets the eligibility criteria for the National Register of Historic Places. SHPO, FTA, and FRA have requested comments from the Advisory Council on Historic Preservation (ACHP), pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) and its implementing regulations, "Protection of Historic and Cultural Properties (36 CFR Part 800)."

NOW, THEREFORE, FTA, FRA, AMTRAK, SHPO and ACHP agree that the undertakings proposed by FTA and AMTRAK shall be implemented in accordance with the following stipulations, in order to take into account the effect of the proposed project on the historic rail yard:

#### Stipulations

FTA and FRA will insure that the following measures are carried out:

1. Prior to any demolition or construction activities in the New Haven Rail Yard, ConnDOT shall record the existing buildings and facilities in the rail yard, including the interlocking relay switches and control panel located in the existing control building, to the "Narrative Format" standards of the Historic American Engineering Record (HAER). Unless otherwise agreed to by the National Park Service (NPS), ConnDOT shall ensure that all documentation is completed and accepted by HAER prior to demolition. Archival copies of the documentation shall be provided to HAER and SHPO.
2. ConnDOT shall contact the Smithsonian Institution regarding their potential acquisition and curation of the existing Interlocking relay switching and control panels, which are located in the existing control building.
3. ConnDOT shall contact all of Connecticut's trolley and railroad museums regarding the potential for salvage and adaptive use of any railroad-related structures and/or material from the New Haven Rail Yard, and offer them a reasonable time frame to investigate and acquire.
4. ConnDOT shall prepare a brief history of the New Haven Rail Yard and the proposed reconstruction program, including pertinent plans and photographs, and submit it to the Society For Industrial Archeology, New England Chapters Newsletter.

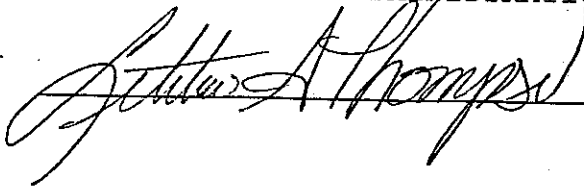
5. ConnDOT shall develop a public-oriented information program which focuses on the history and technology of the New Haven Rail Yard. This shall include, as a minimum, a public-oriented report, brochure, slide presentation, and/or interpretative exhibit.
6. ConnDOT shall, in coordination with the SHPO, develop an archaeological monitoring program for the New Haven Rail Yard. The monitoring program shall be put in place for the former roundhouse and turntable locations. The monitoring program shall be implemented for any underground exploration programs, such as boring programs for geotechnical or environmental investigations. Requirements for implementing the monitoring program, and conducting archaeological investigations where feasible, shall be included in the contract specifications for any demolition and/or construction contracts affecting the roundhouse/turntable areas. The monitoring program shall consist of an evaluation of the pertinent soil and groundwater contamination data, in consideration of health and safety concerns related to on-site archaeological investigations. The monitoring program shall consider and evaluate the application of alternate approaches for data collection, on a site-specific basis. Where feasible, the archaeological monitoring program shall be carried out in accordance with SHPO's Environmental Review Primer for Connecticut's Archaeological Resources.



Execution of this Memorandum of Agreement evidences that FTA and FRA have afforded ACHP a reasonable opportunity to comment on this project and its effects on the historic resource, and that FTA and FRA have taken into account the effects of their undertakings on the historic structures and facilities.

FEDERAL TRANSIT ADMINISTRATION:

By:

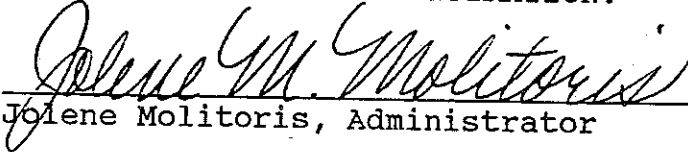


Date:

11/05/99

FEDERAL RAILROAD ADMINISTRATION:

By:

  
Jolene Molitoris, Administrator

Date:

9/25/96

NATIONAL RAILROAD PASSENGER CORPORATION:

By:



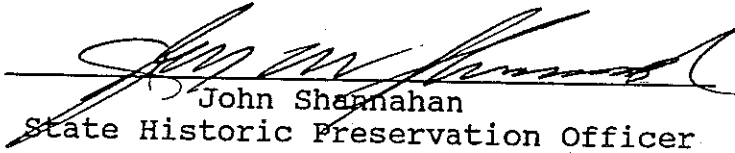
Date:

9/8/96

David J. Carol  
Vice President, High Speed Rail

CONNECTICUT STATE HISTORIC PRESERVATION OFFICE:

By:

  
John Sheehan  
State Historic Preservation Officer

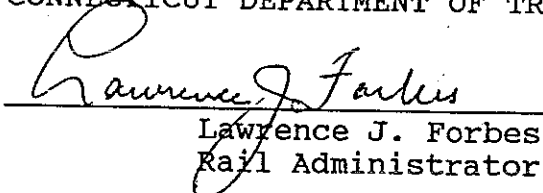
Date:

8/6/96

Concurred:

CONNECTICUT DEPARTMENT OF TRANSPORTATION:

By:

  
Lawrence J. Forbes  
Rail Administrator

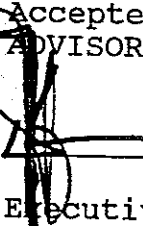
Date:

7-20-96

Accepted:

ADVISORY COUNCIL ON HISTORIC PRESERVATION:

By:

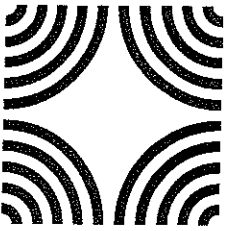


Date:

12/2/99

Executive Director, ACHP





RECEIVED

APR 9 2008

April 4, 2008

ENVIRONMENTAL PLANNING  
DIVISION

Historic Preservation  
and Museum Division

One Constitution Plaza  
Second Floor  
Hartford, Connecticut  
06103

860.256.2800  
860.256.2763 (f)

Mr. Donald Burns  
Federal Transit Administration  
One Bowling Green  
Room 429  
New York, NY 10004-1415

Subject: New Haven Rail Yard  
New Haven, CT  
ConnDOT #301-0088

FROM THE DECK OF CYNTHIA C. HOLDEN			
APR 14 2008			
KEITH T. HALL	<input checked="" type="checkbox"/>		PLS. SEE ME
MARK W. ALEXANDER	<input type="checkbox"/>		
PAUL N. CORRENTE	<input type="checkbox"/>		
STEPHEN V. DELPAPA	<input type="checkbox"/>		

Dear Mr. Burns:

The State Historic Preservation Office has undertaken extensive coordination with the Connecticut Department of Transportation regarding the above-named project. In particular, a Memorandum of Agreement was ratified by the Federal Highway Administration, ConnDOT, and our office with respect to historic and archaeological resource-related impacts. We further note that all of the mitigative measures stipulated within the Memorandum of Agreement have been professionally completed.

In the opinion of the State Historic Preservation Office, no further historic preservation coordination concerning the New Haven Rail Yard is required vis-à-vis the National Historic Preservation Act.

For further assistance, please contact Dr. David a. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich  
State Historic Preservation Officer

cc: Mr. Edgar Hurle/ConnDOT



---

**APPENDIX B: NOISE ASSESSMENT TECHNICAL  
MEMORANDUM AND ASSOCIATED FTANOISE SPREADSHEETS**

---



**FEDERAL TRANSIT ADMINISTRATION  
GENERAL NOISE ASSESSMENT**

**New Haven Rail Maintenance Facility Improvements**

**Prepared under contract to:**

**PB AMERICAS**

**For:**

**THE CONNECTICUT DEPARTMENT OF TRANSPORTATION  
State Project No. 301-0088**

**By:**

**FITZGERALD & HALLIDAY, INC.  
72 Cedar Street  
Hartford, Connecticut 06106**



**April 2008**





**Federal Transit Administration General Noise Assessment  
for  
New Haven Rail Maintenance Facility Improvements  
New Haven, CT**

**PROJECT BACKGROUND**

The New Haven Line of the Metro-North Railroad (MNR) is one of nation's premier commuter rail lines, as well as one of its busiest. The Connecticut portion of the New Haven Line runs from the Connecticut-New York state line to Union Station in New Haven. The New Haven Rail Yard (NHRY), which functions as an existing rail yard for MNR, is located in the Long Wharf section of the city of New Haven, in close proximity to New Haven Harbor to the east and Downtown New Haven to the northwest. Interstate 95 (I-95) and Interstate 91 (I-91), are two major interstate transportation corridors located east and northeast respectively of the New Haven Rail Yard.

The Proposed Action, which consists of a series of improvements to the NHRY, is located on approximately 79 acres of land currently owned by the Connecticut Department of Transportation (ConnDOT). The Proposed Action site is roughly bounded by a study area roughly bounded by Union Avenue to the west, Cedar and Hallock Streets to the south, Church Street Extension and Brewery Street to the east, and Route 34 to the north.

The Proposed Action will provide the facilities to service the new M-8 fleet of rail cars, as well as the existing M-2, M-4, and M-6 rail cars. As the existing fleet of aging rail cars is phased out, ConnDOT will replace them with the next generation of rail cars (M-8s). The first deliveries of these new rail cars will take place in May 2009. The M-2 fleet (dating to the 1970s) was only designed to operate for 30 years. The M-8 cars require different maintenance facilities than the M-2s. The Proposed Action incorporates both new facilities and improvements to existing facilities.

To provide for the new maintenance needs of the M-8 rail cars, improvements (including new equipment) are needed at the NHRY. Additional yard space is also critically important for the acceptance and ultimate storage of the new M-8 cars. By 2030, with increasing M-8 use, space will be needed for 120 additional electric multiple unit (EMU) rail cars.

The proposed improvements will transform the 79-acre NHRY into a coordinated facility, providing for the efficient and effective storage, dispatching, inspection, and maintenance of the M-8 rail cars, as well as existing rail cars. The Proposed Action (i.e., the NHRY improvements) includes:

- Laying down twenty-five new storage yard tracks,
- A two-track, 10-car service and inspection (S&I) shop,

- A component change-out shop with three tracks capable of holding thirteen rail cars and adjacent support shops,
- New wheel true shops,
- A maintenance-of-way building with offices and shops,
- A rail car washer,
- A heavy repair and paint shop, and
- A new parking structure and employee overpass.

To assess the potential for project-related noise impacts to nearby noise sensitive land uses, the Federal Transit Administration's (FTA) General Noise Assessment Spreadsheet (FTANOISE) and associated FTA guidance manual, *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-103-06, May 2006) was implemented. This Technical Memorandum describes how the FTA General Noise Assessment was conducted for this project.

## **FTA GENERAL NOISE ASSESSMENT METHODOLOGY**

The FTA General Noise Assessment procedure involves noise predictions commensurate with the level of detail available in the early planning stages of major investment transit projects. Estimates are made of project noise levels and of existing noise conditions to determine potential impacts on nearby noise sensitive land uses. The assessment is conducted using FTANOISE, a spreadsheet program developed by the consulting firm of Harris Miller Miller & Hanson for the FTA based on detailed analysis of noise impacts from various transit related activities worldwide. It includes complex formulae that calculate predicted noise levels from input criteria entered by the user.

The NHRY is a large *existing* facility which already generates noise. There will be no expansion of the boundary of the existing property, and there will be no work outside of the property. Additionally, the Proposed Action consists of a defined set of new and improved facilities. Therefore, for the purposes of this noise analysis, a central area of noise generated by the Proposed Action (i.e., that location where the bulk of activity will be located, rather than the outer boundary of the existing NHRY) was selected from which to measure distances to potential noise sensitive land uses. This central area (primary center), where most of the rail yard noise is generated under existing conditions and future conditions (from the Proposed Action), lies northeast of the Church Street South Extension (east of Union Avenue) in the vicinity of the Independent Wheel Truer. This area is close to (just north of) the electric multiple unit (EMU) shop and the Service and Inspection (S&I) shop, and just northwest of the existing Union Station and its associated activities. There is also noise from existing roadways in this central area, particularly with Union Avenue to the west and Church Street South extension to the south.

The loop tracks were also identified as a major contributor to noise activity. However, they are, relatively speaking, far from the identified primary center of noise generating activity on the rail yard. Therefore, a secondary center of noise generating activity, in the midst of the loop tracks, was also identified in the noise analysis.

To estimate existing noise levels, the user is prompted by FTANOISE for specific data related to existing noise sources in the project area depending on the type of noise source present (i.e., rail corridor, highway corridor, bus facility, parking garage etc.). Data inputs include distance from noise source to receiver, number of hourly operations, and number of intervening structures (between noise source and receiver), among others. Additionally, the user is prompted for the Land Use Category (defined below) associated with the noise sensitive land use being evaluated. The prediction of future (2030) noise levels resulting from the project also requires the user to input project specific data such as distance from project to receiver, number of daytime and nighttime hourly operations, and number of intervening structures, among others. To determine the actual noise impact at a specific noise sensitive land use, the resulting existing noise levels and future project noise levels are compared using FTA noise impact criteria reported in the FTA guidance manual (FTA-VA-90-103-06, May 2006).

FTANOISE results (spreadsheets) for both existing (2006) and future (2030) conditions at each of the noise sensitive land uses are appended to this Technical Memorandum. Also included in the appendix are marked up maps showing the distance from the primary and the secondary centers of noise generating activity of the Proposed Action to each noise sensitive receptor (screening distances), as well as distances from noise sensitive receptors to noise sources. This information was used as input for FTANOISE.

## **NOISE SENSITIVE LAND USE**

There are three categories of noise sensitive land uses defined by FTA. A Category 1 Land Use is generally defined as a tract of land where quiet is an essential element in its intended purpose, such as an outdoor concert pavilion or a National Historic Landmark where outdoor interpretation routinely takes place. Category 2 Land Uses include residences and buildings where people sleep, and Category 3 Land Uses include institutional land uses with primarily daytime and evening use such as schools, churches, and libraries. Parklands with both active and passive recreational use are also considered to be Category 3 Land Uses (FTA-VA-90-103-06, May 2006).

Land use within the project vicinity has been evaluated for this noise analysis and is characterized by a mix of industrial, commercial, transportation, and residential uses. According to the noise screening procedure contained in Chapter 4 of the FTA guidance manual *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-103-06, May 2006), only those noise sensitive land uses located within a distance of 1,000 unobstructed feet (and 650 feet obstructed with intervening buildings and structures) of the proposed NHRY improvements should be considered in the FTANOISE analysis. The noise screening distance of 1,000 feet unobstructed (and 650 feet obstructed) was used based on guidance relative to rail yards and shops contained in Chapter 4 of the FTA manual.

A site visit was conducted on October 27, 2006 to identify and categorize land uses (receptors) considered to be noise-sensitive within 1,000 feet of the proposed project and to develop a baseline for the existing noise environment at the site. Based on this site

visit, and by overlaying the 1,000-foot (and 650-foot) noise screening buffer on an aerial photo of the project site, a total of four residential, or Category 2 Land Uses, and one church, or Category 3 Land Use, were identified within 1,000 feet (unobstructed) of the Proposed Action. No noise sensitive receptors were found within 650 feet (obstructed), measured from the primary center and the secondary center of noise generating activity.


These five noise sensitive receptors, labeled R1 through R5, are depicted in Figure 1. Receptor 1 (R1), R2, R4, and R5 are Category 2 Land Uses, and R3 is a Category 3 Land Use. The receptor labeled as R1 is the Robert T. Wolfe apartment building. It is a seven-story apartment building that fronts Union Avenue and is located across the street from Union Station. The receptor labeled R2 is the Church Street South Apartments, a planned development with residences and its own convenience stores. The residential units are each two or three stories. Receptor R3 is the Hill Seventh Day Adventist Church, located at the southwest corner of Union Avenue and Church Street. The receptor labeled R4 is a cluster of residential homes and apartment buildings located a bit farther south of the Church Street and Union Avenue intersection. These residential homes and apartment buildings are two and three stories in height. R1-R4 are within 1,000 feet (unobstructed) of the primary center of noise generating activity. R5, a cluster of residences along Hallock Avenue, is located within 1,000 feet (unobstructed) from the secondary center of noise generating activity. R5 is comprised of mostly two-story, single and multi-family dwellings.

## **DETERMINATION OF EXISTING (2006) NOISE LEVELS**

In February 2007, ConnDOT conducted a noise analysis entitled *New Haven Rail Yard Locomotive Fueling Facility Noise and Vibration Impact Assessment*. This noise analysis was specific to the Fueling Facility, rather than the entire scope of NHRY improvements included in the Proposed Action. Therefore, a separate noise analysis was conducted specifically for this Proposed Action. Existing noise levels, for the Proposed Action, were estimated using the FTA General Noise Assessment Spreadsheet (FTANOISE) in conjunction with the FTA guidance manual. To conduct the analysis, existing noise sources within the project area were identified and the distance from each noise source to each sensitive receptor was determined.

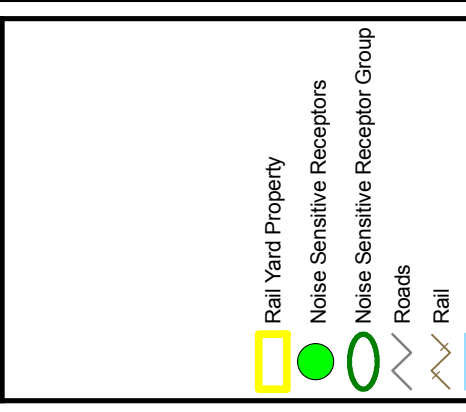
### **Existing Noise Sources**

In general, the NHRY is located in a highly urbanized area, surrounded by many noise sources including Interstate 95, approximately 1,855 feet to the east, and a busy industrial and commercial area immediately to the east. The NHRY itself includes a commuter rail station and a parking garage. Other noise sources include the City of New Haven's police station, immediately to the northwest of the rail yard, and the Route 34 connector to I-95, just north of the rail yard. There are also places of worship, multi-family houses, apartments and other residential units to the west.



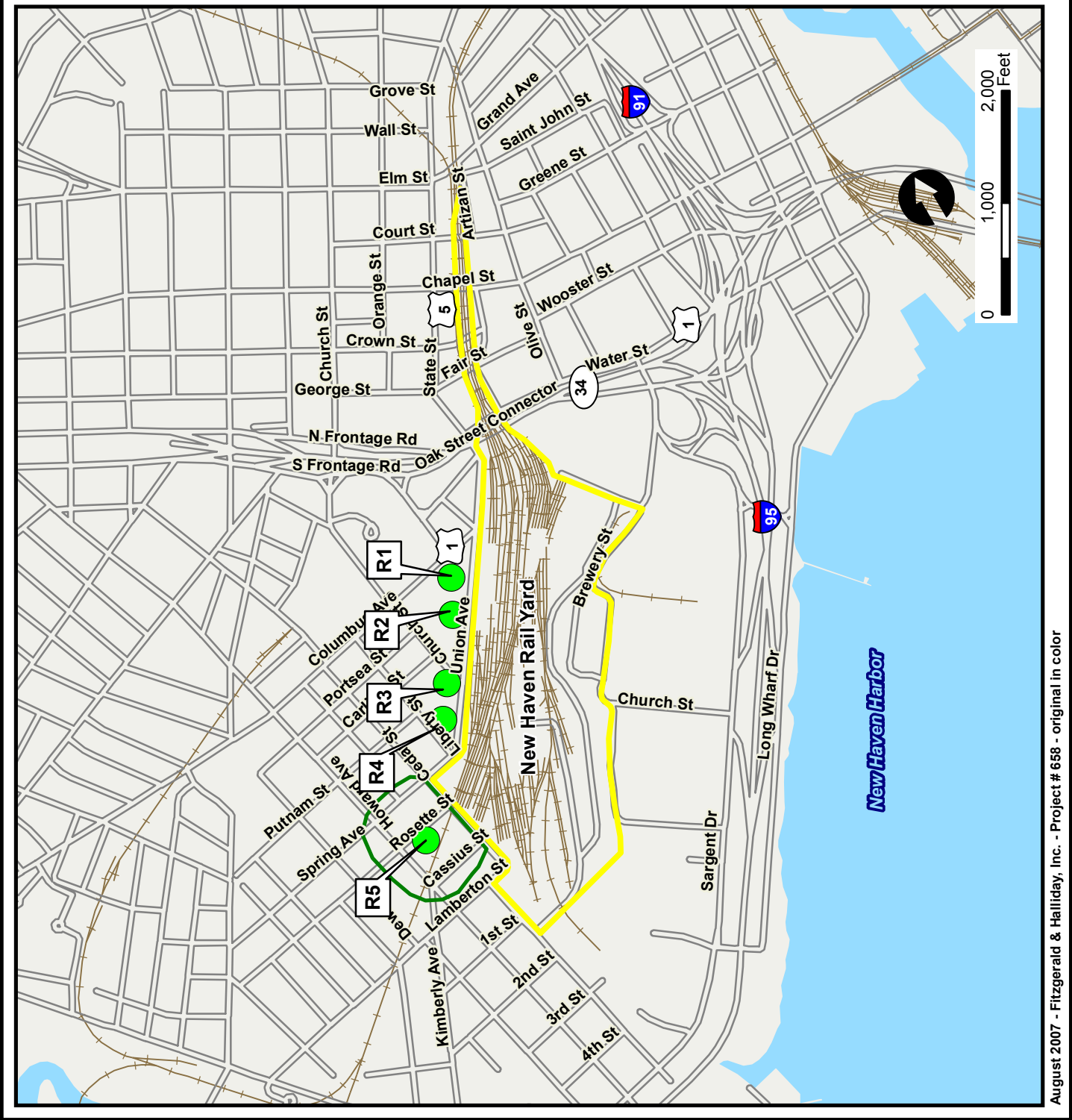


WOODBRIDGE HAMDEN  
Project Site  
NEW HAVEN  
WEST HAVEN  
EAST HAVEN  
NORTH HAVEN

**Figure 1**  
**Noise Sensitive Receptor Locations**  
New Haven Rail Yard EA/EIE  
New Haven, CT  
State Project # 301-0088



- Rail Yard Property
- Noise Sensitive Receptors
- Noise Sensitive Receptor Group
- Roads
- Rail
- Open Water

Although there are many noise sources in this area of New Haven, there are a few which stand out for the purposes of this analysis. Union Avenue and Church Street South provide access to the rail yard. These two roadways are located between the Proposed Action and the noise receptors. Therefore, traffic along these adjacent city streets (Union Avenue and Church Street South) is considered a prominent source of existing noise for this analysis. Another important existing noise source is the existing NHRY itself.

One particular element of the rail yard, the loop tracks, were identified as particularly noisy and, therefore, they were also singled out as a noise source. There have been a few noise-related complaints about the noise generated from these loop tracks from residents living along Hallock Avenue. Cars or joined on the loop tracks to form or “build” a train, and this process generates noise.

All trains moving through the rail yard are limited to a speed of 10 mph, although trains moving along the loop tracks are likely to be moving no more than 5 mph. On average, there are two diesel trains and two or three EMUs moving into and out of the loop tracks each day *and* each night.

### Roadways

According to the FTA guidance manual, Union Avenue and Church Street South are designated as “Other Roadways” for the purpose of estimating existing noise exposure at nearby noise sensitive land uses. “Other Roadways” are defined as “Parkways with traffic at 55 mph, but without trucks, and city streets with the equivalent of 75 or more heavy trucks per hour and 300 or more medium trucks per hour at 30 mph.”

The 2006 average annual daily traffic (AADT) volumes for Union Avenue and Church Street South were derived by converting peak hour traffic counts. The greatest peak hour (p.m. peak for both Union Avenue and Church Street South) was divided by 10% for each street. Using this methodology, Union Street carried an AADT of 8,500 vehicles and Church Street South carried an AADT of 8,300 vehicles.

From these calculated AADT’s, the average number of vehicles per hour during daytime hours and nighttime hours was then derived for each street and was used as input into FTANOISE in order to calculate existing noise levels at each of the identified noise sensitive receptors. The average number of vehicles per hour for each street for both daytime and nighttime hours was derived by assigning 80% of the AADT to the daytime and 20% to the nighttime, and then dividing each AADT fraction by the number of hours comprising the respective daytime (7 A.M. to 10 P.M.) and nighttime (10 P.M. to 7 A.M.) time periods. The results are presented in Table 1: Average Number of Vehicles per Hour on Streets with the Project Study Area.

**Table 1:  
Average Number of Vehicles per Hour  
on Streets within the Project Study Area**

Street Name	Average Number of Vehicles Per Hour	
	Daytime Hours (7AM to 10 PM)	Nighttime Hours (10 PM to 7 AM)
Union Avenue	453	188
Church Street South	442	184

Source: Fitzgerald & Halliday, Inc. 2007.

### Rail Yard

The existing NHRY constitutes another important noise source in the project study area. The number of trains per hour in the daytime and the number of trains per hour in the nighttime were used as input to the FTANOISE to calculate the noise generated by the rail yard. Rail yard characteristics, such as the type of track, whether there are barriers, aerial structures, and intervening rows were also input into the FTANOISE analysis.

Data was obtained through coordination with ConnDOT and PB Americas project engineers and used as input for the noise analysis. The NHRY currently processes up to seven trains per hour during the daytime and up to nine trains per hour during the nighttime. For this analysis, it was assumed that these numbers would not decrease over time. It was assumed that the tracks in the rail yard are a mix of jointed and welded rail. The only embedded rail will be in the new shops, which was assumed for the 2030 future conditions. For a conservative (“worst case”) scenario, it was also assumed that there were no aerial structures, barriers, or intervening rows for either the existing or future conditions.

### Loop Tracks

The loop tracks are where trains lay over, are stored, and where cars are joined, or “built” to form a train. These processes generate noise.

All trains moving through the rail yard are limited to a speed of 10 mph, although trains moving along the loop tracks are likely to be moving no more than 5 mph. On average, there are two diesel trains and two or three EMUs moving into and out of the loop tracks each day *and* each night.

### **Existing Noise Levels**

Noise from nearby streets and the rail yard all contribute to existing noise levels. Traffic volumes (average number of vehicles hour, both in the daytime and the nighttime), automobile speed limits, trains per hour, and the distance between each noise source and each noise sensitive receptor were used as input in the FTANOISE model to estimate the existing noise levels at each of the four noise sensitive receptors. Existing (2006) noise

levels are expressed by FTANOISE as day-night sound level ( $L_{dn}$ ), which describes a receiver's cumulative noise exposure from all events over a full 24 hours, with events between 10 P.M. and 7 A.M. increased by 10 decibels to account for greater nighttime sensitivity to noise. The estimated existing noise levels at each of the four noise sensitive receptors are presented in Table 2: Estimated Existing (2006) Noise Levels.

**Table 2: Estimated Existing (2006) Noise Levels**

<b>Receptor</b>	<b>Site Location</b>	<b>Estimated Existing Noise Level (dBA <math>L_{dn}</math>)</b>	<b>Land Use Category</b>
R1	Robert T. Wolfe apartment building	59	2
R2	Church Street South Apartments	59	2
R3	Hill Seventh Day Adventist Church	53	3
R4	Residences south of Church Street South and Union Avenue intersection	52	2
R5	Residential cluster along Hallock Avenue	64	2

Source: Fitzgerald & Halliday, Inc., July 2007.

FTANOISE spreadsheets used to estimate existing (2006) noise levels at each of the five noise sensitive receptors are included in the appendix to this report. Marked up versions of the preferred NHRY concept are also included in the appendix which document the location of each noise sensitive land use as well as important distances used as input into FTANOISE.

### **DETERMINATION OF FUTURE (2030) PROJECT-ONLY NOISE LEVELS**

The Proposed Action includes installing twenty-five new storage yard tracks, a two-track, 10-car service and inspection (S&I) shop, a component change-out shop with three tracks capable of holding thirteen rail cars and adjacent support shops, new wheel true shops, an engineering building with offices and shops, a rail car washer, a heavy repair and paint shop, and a new parking structure and employee overpass.

As previously mentioned, through coordination with ConnDOT and PB Americas project engineers, seven trains per hour in the daytime and nine trains in the nighttime were used as input into the FTANOISE spreadsheet to estimate future (2030) project-only noise levels at nearby noise sensitive receptors. Although the number of trains may actually decrease, slightly, over time, a conservative approach was taken in this noise analysis.

Nine diesel trains and twelve EMUs would come in and out of the proposed storage tracks each day. These movements would be split evenly between night and day. New



diesel storage tracks are proposed to be equipped with standby power systems that will keep the coaches powered up even when the diesel trains are shut down, allowing the diesel trains to be shut down shortly after entering the storage tracks and started only shortly before leaving the storage tracks. These standby power systems will alleviate the noise generated by diesel trains during the overnight hours.

Future noise levels *strictly attributed* to the NHRY (i.e., excluding other noise sources in the project area) were predicted using FTANOISE for the five noise sensitive receptors located within the 1,000 foot noise screening buffer. Future noise levels at each of the five noise sensitive receptors, as predicted by FTANOISE, are presented in Table 3: Estimated Future (2030) Project-Only Noise Levels. Future noise levels, as shown in Table 3, reflect *only noise associated with the project by itself*.

**Table 3: Estimated Future (2030) Project-Only Noise Levels**

<b>Receptor</b>	<b>Site Location</b>	<b>Estimated Future Noise Level (dBA L<sub>dn</sub>)</b>	<b>Land Use Category</b>
R1	Robert T. Wolfe apartment building	53	2
R2	Church Street South Apartments	54	2
R3	Hill Seventh Day Adventist Church	48	3
R4	Residences south of Church Street South and Union Avenue intersection	53	2
R5	Residential cluster along Hallock Avenue	54	2

Source: Fitzgerald & Halliday, Inc., July 2007.

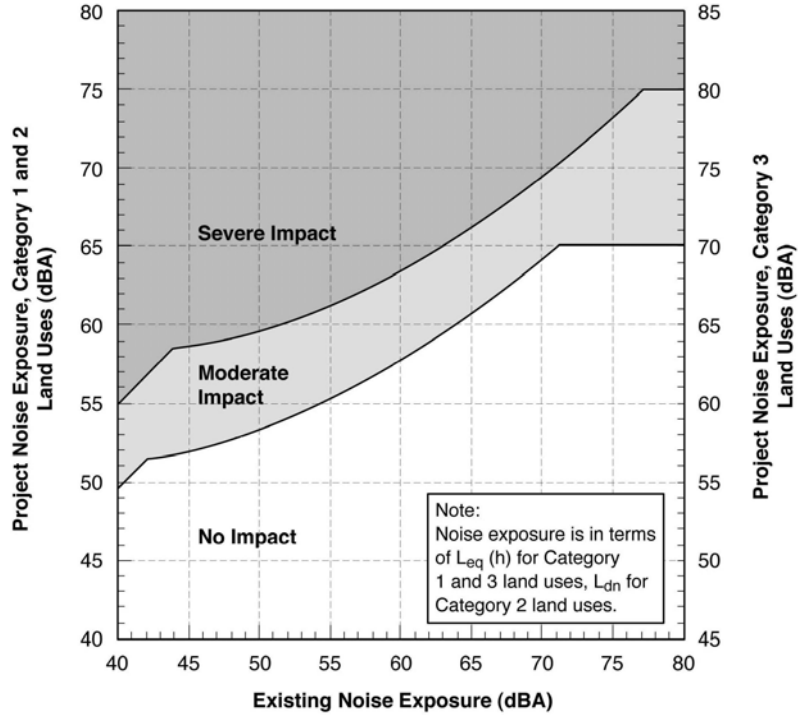
## **INTERPRETATION OF FTANOISE RESULTS**

To determine whether the Proposed Action will result in a noise impact at any one of the five noise sensitive receptors, a comparison of the existing (2006) outdoor noise levels (Table 2) and future (2030) outdoor noise levels resulting from the project (Table 3) is necessary. According to the FTA guidance manual, Figure 2: Noise Impact Criteria for Transit Projects (FTA May 2006), is used to facilitate this comparison.

To conduct the comparison, a vertical line is drawn that intersects the horizontal axis at the decibel level representative of the existing noise exposure (values taken from Table 2) for the specific noise sensitive receptor being compared. Similarly, a horizontal line is drawn that intersects a vertical axis at the decibel level representative of the project noise exposure (values taken from Table 3) for the same noise sensitive receptor. The vertical axis that is used depends on the Land Use Category of the noise sensitive receptor being evaluated. For this project, noise sensitive receptors 1, 2, 4, and 5 are residential land

uses, and are classified as Category 2 Land Uses. Noise sensitive receptor 3, a church, is a Category 3 land use.

**Figure 2: Noise Impact Criteria for Transit Projects**



Source: FTA, May 2006.

The left vertical axis of Figure 2 is used to represent the project noise exposure. The intersection of the existing noise exposure (vertically drawn line) with the project noise exposure (horizontally drawn line) represents the degree of project noise impact at that specific noise sensitive receptor. For instance, receptor #1 (R1) has an estimated existing (2006) noise exposure of 59 dBA  $L_{dn}$  (from Table 2) and a project noise exposure (2030) of 53 dBA  $L_{dn}$  (from Table 3). The intersection of these two noise levels when plotted on the graph illustrated in Figure 2 falls within the No Impact range. Table 4: Anticipated Noise Impact from the Proposed NHRY Project documents the results that are obtained when applying the aforementioned procedure to the five noise sensitive receptors.

For Category 2 Land Uses, noise impacts at specific noise sensitive receptors must also be evaluated in terms of cumulative noise, estimated by the addition of a project-related noise exposure (from Table 3) and the existing noise exposure (from Table 2). The four residential noise sensitive receptors, which are Category 2 Land Uses, were evaluated with respect to cumulative noise impact using Table 5: Noise Impact Criteria: Effect on Cumulative Noise Exposure, which has been reproduced directly from the FTA noise guidance manual. Category 3 Land Uses are not evaluated with respect to cumulative noise impacts, as these land uses are considered less sensitive to noise than Land Use Categories 1 and 2.

**Table 4: Anticipated Noise Impact from the Proposed NHRV Project**

Noise Sensitive Receptor	Existing (2006) Noise Levels	Future (2030) Project-Only Noise Levels	Result
R1	59 dBA ( $L_{dn}$ )	53 dBA ( $L_{dn}$ )	No Impact
R2	59 dBA ( $L_{dn}$ )	54 dBA ( $L_{dn}$ )	No Impact
R3	53 dBA ( $L_{dn}$ )	48 dBA ( $L_{dn}$ )	No Impact
R4	52 dBA ( $L_{dn}$ )	53 dBA ( $L_{dn}$ )	No Impact
R5	64 dBA ( $L_{dn}$ )	54 dBA ( $L_{dn}$ )	No Impact

Source: Fitzgerald & Halliday, Inc., July 2007.

**Table 5: Noise Impact Criteria: Effect on Cumulative Noise Exposure**

Noise Impact Criteria: Effect on Cumulative Noise Exposure			
$L_{dn}$ or $L_{eq}$ in dBA (rounded to nearest whole decibel)			
Existing Noise Exposure	Allowable Project Noise Exposure	Allowable Combined Total Noise Exposure	Allowable Noise Exposure Increase
45	51	52	7
50	53	55	5
55	55	58	3
60	57	62	2
65	60	66	1
70	64	71	1
75	65	75	0

Source: FTA, May 2006.

As previously mentioned, the existing noise exposure at site R1 is 59 dBA ( $L_{dn}$ ), and the project noise exposure is 53 dBA ( $L_{dn}$ ). According to the second column in Table 5, the allowable project noise exposure can be as high as 57 dBA ( $L_{dn}$ ) when the existing noise exposure (column one) is 59 dBA ( $L_{dn}$ ) before a cumulative noise impact is realized. Since the NHRV project noise exposure at receptor R1 (53 dBA ( $L_{dn}$ )) is well below the allowable project noise exposure for an existing noise exposure of 59 dBA ( $L_{dn}$ ), a cumulative noise impact will not occur at this residential noise sensitive receptor from the NHRV project. Similar results are also obtained when applying this method to noise sensitive receptors 2, 4, and 5, the other Category 2 noise sensitive receptors.

## MITIGATION

The project will not result in a noise impact to any of the identified noise sensitive land uses (receptors R1 through R5). There are no noise impacts resulting from the Proposed Action. As such, mitigation measures are not required as part of the project.

## CONSTRUCTION NOISE ASSESSMENT

The New Haven Rail Yard (NHRV) is situated in an urban area, with Interstate 95 and an industrial area to the east and Route 34 and the downtown central business district to the northwest. Union Station is located adjacent to the rail yard, with supporting land uses, such as parking garages nearby. The Hill residential neighborhood is to the south and west of the NHRV. Heavy equipment, vehicles, and construction activity creates noise which impacts nearby residential and other sensitive land uses, such as places of worship. During the construction period, continuous as well as intermittent (or impulse) noise will be experienced in the immediate project vicinity, which may be perceived by some nearby residents to be intrusive, annoying, and discomforting. For rail yards, noise sensitive land uses of particular concern are those within screening distances of 1000 feet (unobstructed by any buildings or other structures that would provide a buffer) or 650 feet (obstructed) of the noise source.

Noise from construction activities was evaluated for the Proposed Action in accordance with FTA Qualitative Noise Assessment procedures stipulated in Chapter 12 of FTA's *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06, May 2006). A qualitative noise analysis was deemed appropriate for this project for several reasons:

- Construction is occurring at many locations within the rail yard and at varying times and for varying lengths of time.
- Ambient noise of the surrounding urban environment, coupled with existing rail yard operations, is already high and in effect will mask the construction noise.
- With the exception of pile driving, construction activity is anticipated to be of moderate intensity, including foundation work, building erection, track laying, earthwork and excavation, and materials transport.

Construction of the Proposed Action will begin in 2008 and be completed by 2020. Construction will occur in three phases:

- Phase I, 2008–2012 — storage tracks, west end of the rail yard, component change out shop, and independent wheel truer
- Phase II, 2012–2015 — east end of the rail yard
- Phase III, 2015–2020 — service and inspection shop, car wash, warehouse, parking garage

Table 6 provides typical noise emission levels in A-weighted decibels (dBA) 50 feet from various types of construction equipment. These are the types of construction equipment, among others, that will be used to demolish existing buildings and ancillary railroad

facilities, prepare the site, and construct the new rail yard buildings and associated improvements.

In general, noise levels from construction equipment are reduced by 6 dBA for each doubling of distance from the construction equipment noise source. For example, a dozer with a noise level of 85 dBA at 50 feet will have a noise level of 79 dBA at 100 feet, 73 dBA at 200 feet, 67 dBA at 400 feet, 61 dBA at 800 feet, and so forth. Buildings and other barriers located between a construction noise source and a sensitive noise receptor further reduce the intensity of construction noise.

**Table 6: Noise Emission Levels from Construction Equipment**

<b>Equipment</b>	<b>Typical Noise Level (dBA) 50 ft. from Source</b>
Air Compressor	81
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozers	85
Generator	81
Graders	85
Impact Wrench	85
Jack Hammer	88
Loader	85

<b>Equipment</b>	<b>Typical Noise Level (dBA) 50 ft. from Source</b>
Paver	89
Pile drivers (impact)	101
Pile drivers (sonic)	96
Pneumatic Tool	85
Pump	76
Rail Saw	90
Rock Drill	98
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	88

Source: FTA, *Transit Noise and Vibration Impact Assessment*, FTA-VA-90-1003-06, May 2006. Based on EPA Report (“Noise from Construction Equipment and Operations, Building Equipment and Home Appliances” NTID300.1, December 31, 1971), measured data from railroad construction equipment taken during the Northeast Corridor Improvement Project, and other measured data.

Construction for the Proposed Action will be located in two general areas on the New Haven Rail Yard (NHRY) site:

- Southwest of Church Street extension
- Northeast of Church Street Extension

## Southwest of Church Street Extension

Construction activities taking place southwest of Church Street Extension will involve the laying down of new storage tracks, improvements to existing storage tracks, construction of the heavy paint/repair shop, and improvements to the existing car shop and diesel shop. Construction vehicles and equipment will enter the site from the Long Wharf Avenue and Brewery Street entrances. The Hallock Avenue entrance (which abuts several homes) will not be used for construction.

Work on the storage tracks will involve some excavation, earthmoving, and grading, placement of subsurface utilities, installation of manifold system for dumping of waste, laying down of subsurface ballast, rail, ties, and stone. Construction will also include stone tamping. Some of the equipment used for this work includes dozers, backhoes, dump trucks, loaders, graders, and cranes. Cranes are also used to set-up the framework for the overhead catenary structures. Construction of the heavy paint/repair shop will involve the use of pile drivers. Piles will be used to provide foundation support for the heavy paint/repair shop. After the ground is augured to ensure the absence of utility lines, a pile driver will be used to fix the position of the piles. The use of pile drivers will be minimized, and fewer than 20 piles will be needed southwest of Church Street Extension. The pile driving southwest of the Church Street Extension will be limited in duration, taking between two weeks and one month to complete. Cranes will also be used in the building of the heavy paint/repair shop.

Construction work on the west end storage tracks will take place between 2008 and 2012. Construction of the heavy paint/repair shop and improvements to the existing car shop and diesel shop will also take place between 2008 and 2012. Construction work on the east end rail yard will take place between 2012 and 2015.

### Phase I — 2008–2012

The noisiest construction activity between 2008 and 2012 will involve the use of pile drivers for the construction of the heavy paint/repair shop. This activity will take place approximately 650 feet from the nearest noise sensitive receptors (a residential cluster), but it will be limited in its duration (up to one month).

<b>Noisiest Equipment 2008–2012 Southwest of Church St. Ext.</b>	<b>Typical Noise Level (dBA) 50 ft. from Source</b>	<b>Noise Level (dBA) 650 ft. from Source*</b>
Pile drivers (impact)	101	Up to 83

\*Assumes reduction of 6 (dBA) for additional 50 feet from noise source.

The noise level at the noise sensitive receptor (residential cluster) located 650 feet from the noise source (the pile driver) is 83 dBA. This noise level does not exceed daytime

(90 dBA) levels for residential, or daytime (100 dBA) or nighttime (100 dBA) levels for commercial or industrial. Therefore, there is no anticipated impact.

However, this noise level of 83 dBA does exceed the nighttime (80 dBA) levels for residential. Therefore, restrictions will be placed on nighttime construction (relating to pile driving activities) to avoid this impact.

Phase II — 2012–2015

The noisiest and most persistent construction activity between 2012 and 2015 will be the use of cranes and trucks. Construction activity will be located approximately 900 feet from the nearest noise sensitive receptors (a residential cluster).

<b>Noisiest Equipment 2012-2015 Southwest of Church St. Ext.</b>	<b>Typical Noise Level (dBA) 50 ft. from Source</b>	<b>Noise Level (dBA) 900 ft. from Source*</b>
Crane (mobile)	83	Up to 59
Trucks	88	Up to 64
Combined Noise Level**	89	Up to 65

\*Assumes reduction of 6 (dBA) for additional 50 feet from noise source.

\*\*Because noise is measured on a decibel scale, combining two noise levels is not achieved by simple addition. When combining two noise levels whose values differ by 5 decibels, the combined noise level is 1 decibel greater than the highest of the two noise levels.

The combined noise level from cranes and trucks (up to 65 dBA) is well below daytime (90 dBA) or nighttime (80 dBA) levels for residential, or daytime (100 dBA) or nighttime (100 dBA) levels for commercial or industrial. Therefore, there is no anticipated impact.

**Northeast of Church Street Extension**

Construction activities taking place northeast of Church Street Extension will involve construction of the component change-out shop, service and inspection shop, independent wheel true shop, and improvements to the EMU shop. Construction vehicles will only enter the site from the Long Wharf and Brewery Street entrances minimizing the noise impacts to the residential buildings.

Construction on the northeast side of Church Street Extension will be similar in nature throughout the duration of construction (all three phases, from 2008–2020). Work on the component change-out shop, service and inspection shop, and independent wheel true shop will involve some excavation, earth moving, and building construction. Some of the equipment used for this work includes dozers, backhoes, dump trucks, loaders, graders,



and cranes. A large number of piles will need to be driven into place. The piles are used in the foundation support for the heavy paint/repair shop.

The noisiest construction activities taking place northeast of Church Street Extension, and within approximately 780 feet of noise sensitive receptors, involves the use of pile drivers. There are intervening structures such as Union Station and other buildings between the construction activities and the noise sensitive receptors that will provide additional reduction in noise levels. Noise sensitive receptors within 1,000 feet (obstructed) of the construction activity include: Robert T. Wolfe apartment building, Church Street South Apartments, Hill Seventh Day Adventist Church, and residences south of the Church Street South and Union Avenue intersection.

<b>Noisiest Equipment Northeast of Church St. Ext.</b>	<b>Typical Noise Level (dBA) 50 ft. from Source</b>	<b>Noise Level (dBA) 780 ft. from Source*</b>
Pile drivers (impact)	101	Up to 83

\*Assumes reduction of 6 (dBA) for additional 50 feet from noise source. The estimated noise level 780 feet from the source also does not take into account the dampening effect that will result from the intervening structures so in reality the noise level at the noise sensitive receptors will be lower than the reported value in this table.

The noise level at the noise sensitive receptors located about 780 feet from the noise source (pile driver) is 83 dBA. This noise level does not exceed daytime (90 dBA) levels for residential, or daytime (100 dBA) or nighttime (100 dBA) levels for commercial or industrial. Therefore, there is no anticipated impact.

However, the noise level of 83 dBA does exceed the nighttime (80 dBA) levels for residential. Therefore, restrictions will be placed on nighttime construction activities to avoid this impact.

**Public Comment**

There will be an opportunity for public comment at the public hearing for the EA/EIE. Information will be provided at the public hearing on the construction process, such as the kinds of equipment that will be used, the expected noise levels, and duration of construction. Communication with local residents and businesses and the City of New Haven will help coordinate construction activities and avoid, minimize, and mitigate for noise impacts.

**MITIGATION**

While construction noise is exempt under Section 22a-69-1.8(g) of the RCSA, construction documents will require the contractor to limit the duration and intensity of noise generated by construction. To mitigate the potential impacts during construction:

- Noise abatement measures in accordance with ConnDOT Form 816 will be included in construction specifications. Such measures include appropriate mufflers on all construction vehicles and restrictions on hours of operation. Nighttime activities will be avoided.
- Truck traffic will be routed onto streets with the fewest homes. Construction vehicles and equipment will enter the site from Long Wharf Avenue and Brewery Street entrance, which has good access to I-95, I-91, and Route 34. The Hallock Avenue entrance (adjacent to several residences) will be restricted from use for construction. And, it is not anticipated that Union Avenue will need to be used for construction purposes.
- There are some existing obstructions, such as buildings, already buffering noise. However, there may be an additional need for the erection of temporary noise barriers around the work site where such barriers are deemed effective at buffering adjacent land uses from construction noise.
- Ensure muffler devices on construction equipment are installed and maintained properly.
- The project team will conduct ongoing coordination with the City of New Haven to employ other measures that may be effective to minimize noise disturbance to nearby residents.
- Overall, the Proposed Action is envisioned to be in compliance with the Connecticut Noise Regulations. The City of New Haven Noise Ordinance is contained within Section 18-19 of the City's Zoning Regulations. While State of Connecticut projects are not required to comply with local zoning, the operation of the Proposed Action will be conducted in a manner that meets the objectives of the City's noise regulations to the extent feasible.

## **REFERENCE**

U.S. Department of Transportation, Federal Transit Administration, May 2006. *Transit Noise and Vibration Impact Assessment*, (FTA-VA-90-103-06).

**APPENDIX**

**FTANOISE SPREADSHEETS  
AND SCREENING DISTANCE MAPS**



**Federal Transit Administration**  
**General Transit Noise Assessment**  
**Case: NHRY EA/EIE - Receptor #1 (2006)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	59	55	52
Source 1	58	54	51
Source 2	42	39	35
Source 3	53	46	47

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>					
<b>Parameter</b>	<b>Source 1 - Union Ave.</b>		<b>Source 2 - Church St. So.</b>		<b>Source 3 - NHRY</b>
Source Num.	Automobiles	9	Automobiles	9	Rail Yard or Shop 12
Dist. to receiver	distance (ft)	84	distance (ft)	919	distance (ft) 980
Daytime Hours (7 AM - 10 PM)	speed (mph)	25	speed (mph)	25	trains/hour 7
	vehicles/hour	453	vehicles/hour	442	
Nighttime Hours (10 PM - 7 AM)	speed (mph)	25	speed (mph)	25	trains/hour 9
	vehicles/hour	188	vehicles/hour	184	
Jointed Track?		Y		Y	Y
Embedded Track?		N		N	N
Aerial Structure?		N		N	N
Barrier Present?	Y/N	N	Y/N	N	Y/N N
Intervening Rows of Buildings	number	0	number	0	number 0

**Federal Transit Administration**  
**General Transit Noise Assessment**  
**Case: NHRY EA/EIE - Receptor #2 (2006)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	59	55	52
Source 1	57	53	50
Source 2	49	46	42
Source 3	54	47	48

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>					
<b>Parameter</b>	<b>Source 1 - Union Ave.</b>		<b>Source 2 - Church St. So.</b>		<b>Source 3 - NHRY</b>
Source Num.	Automobiles	9	Automobiles	9	Rail Yard or Shop 12
Dist. to receiver	distance (ft)	98	distance (ft)	315	distance (ft) 893
Daytime Hours (7 AM - 10 PM)	speed (mph)	25	speed (mph)	25	trains/hour
	vehicles/hour	453	vehicles/hour	442	7
Nighttime Hours (10 PM - 7 AM)	speed (mph)	25	speed (mph)	25	trains/hour
	vehicles/hour	188	vehicles/hour	184	9
Jointed Track?		Y		Y	Y
Embedded Track?		N		N	N
Aerial Structure?		N		N	N
Barrier Present?	Y/N	N	Y/N	N	Y/N N
Intervening Rows of Buildings	number	0	number	0	number 0

**Federal Transit Administration**  
**General Transit Noise Assessment**  
**Case: NHRY EA/EIE - Receptor #3 (2006)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Leq - 1-hr (dB)</b>		
All Sources	53		
Source 1	40		
Source 2	51		
Source 3	48		

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	3

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>						
<b>Parameter</b>	<b>Source 1 - Union Ave.</b>		<b>Source 2 - Church St. So.</b>		<b>Source 3 - NHRY</b>	
Source Num.	Automobiles	9	Automobiles	9	Rail Yard or Shop	12
Dist. to receiver	distance (ft)	750	distance (ft)	142	distance (ft)	783
Noisiest Hour of Activity During Sensitive Hours	speed (mph)	25	speed (mph)	25	trains/hour	7
	vehicles/hour	453	vehicles/hour	442		
		25		25		9
		188		184		
Jointed Track?		Y		Y		Y
Embedded Track?		N		N		N
Aerial Structure?		N		N		N
Barrier Present?	Y/N	N	Y/N	N	Y/N	N
Intervening Rows of Buildings	number	0	number	0	number	0

**Federal Transit Administration**  
**General Transit Noise Assessment**  
**Case: NHRY EA/EIE - Receptor #4 (2006)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	52	54	17
Source 1	43	45	-4
Source 2	51	53	3
Source 3	45	47	17

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>					
<b>Parameter</b>	<b>Source 1 - Union Ave.</b>		<b>Source 2 - Church St. So.</b>		<b>Source 3 - NHRY</b>
Source Num.	Automobiles	9	Automobiles	9	Rail Yard or Shop
Dist. to receiver	distance (ft)	525	distance (ft)	166	distance (ft)
Daytime Hours (7 AM - 10 PM)	speed (mph)	25	speed (mph)	25	trains/hour
	vehicles/hour	850	vehicles/hour	830	
Nighttime Hours (10 PM - 7 AM)	speed (mph)		speed (mph)		trains/hour
	vehicles/hour		vehicles/hour		
Jointed Track?		Y		Y	Y
Embedded Track?		N		N	N
Aerial Structure?		N		N	N
Barrier Present?	Y/N	N	Y/N	N	Y/N
Intervening Rows of Buildings	number	0	number	0	number
					0



**Federal Transit Administration**  
**General Transit Noise Assessment**  
**Case: NHRY EA/EIE - Receptor #5 (2006)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	64	66	42
Source 1	42	38	35
Source 2	64	66	42
Source 3	44	46	18

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>						
<b>Parameter</b>	<b>Source 1 - Union Ave.</b>		<b>Source 2 - Loop Tracks</b>		<b>Source 3 - NHRY</b>	
Source Num.	Automobiles	9	Layover Tracks	13	Rail Yard or Shop	12
Dist. to receiver	distance (ft)	961	distance (ft)	285	distance (ft)	921
Daytime Hours (7 AM - 10 PM)	speed (mph)	25	trains/hour	3	trains/hour	7
	vehicles/hour	453				
Nighttime Hours (10 PM - 7 AM)	speed (mph)	25	trains/hour		trains/hour	
	vehicles/hour	188				
Jointed Track?		Y		Y		Y
Embedded Track?		N		N		N
Aerial Structure?		N		N		N
Barrier Present?	Y/N	N	Y/N	N	Y/N	N
Intervening Rows of Buildings	number	0	number	0	number	0

**Federal Transit Administration**  
**General Transit Noise Assessment**  
**Case: NHRY EA/EIE - Receptor #1 (2030)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	53	46	47
Source 1	53	46	47
Source 2	0	0	0
Source 3	0	0	0

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>			
<b>Parameter</b>	<b>Source 1 - NHRY</b>	<b>Source 2</b>	<b>Source 3</b>
Source Num.	Rail Yard or Shop	12	
Dist. to receiver	distance (ft)	980	
Daytime Hours (7 AM - 10 PM)	trains/hour	7	
Nighttime Hours (10 PM - 7 AM)	trains/hour	9	
Jointed Track?		Y	
Embedded Track?		Y	
Aerial Structure?		N	
Barrier Present?	Y/N	N	
Intervening Rows of Buildings	number	0	

**Federal Transit Administration  
 General Transit Noise Assessment  
 Case: NHRY EA - Receptor #2 (2030)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	54	47	48
Source 1	54	47	48
Source 2	0	0	0
Source 3	0	0	0

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>			
<b>Parameter</b>	<b>Source 1 - NHRY</b>	<b>Source 2</b>	<b>Source 3</b>
Source Num.	Rail Yard or Shop	12	
Dist. to receiver	distance (ft)	885	
Daytime Hours (7 AM - 10 PM)	trains/hour	7	
Nighttime Hours (10 PM - 7 AM)	trains/hour	9	
Jointed Track?		Y	
Embedded Track?		Y	
Aerial Structure?		N	
Barrier Present?	Y/N	N	
Intervening Rows of Buildings	number	0	

**Federal Transit Administration  
 General Transit Noise Assessment  
 Case: NHRY EA - Receptor #3 (2030)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Leq - 1-hr (dB)</b>		
All Sources	48		
Source 1	48		
Source 2	0		
Source 3	0		

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	3

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>			
<b>Parameter</b>	<b>Source 1 - NHRY</b>	<b>Source 2</b>	<b>Source 3</b>
Source Num.	Rail Yard or Shop	12	
Dist. to receiver	distance (ft)	783	
Noisiest Hour of Activity During Sensitive Hours	trains/hour	7	
		9	
Jointed Track?		Y	
Embedded Track?		Y	
Aerial Structure?		N	
Barrier Present?	Y/N	N	
Intervening Rows of Buildings	number	0	

**Federal Transit Administration  
 General Transit Noise Assessment  
 Case: NHRY EA - Receptor #4 (2030)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	53	45	47
Source 1	53	45	47
Source 2	0	0	0
Source 3	0	0	0

*Enter noise receiver land use category below.*

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>			
<b>Parameter</b>	<b>Source 1 - NHRY</b>	<b>Source 2</b>	<b>Source 3</b>
Source Num.	Rail Yard or Shop	12	
Dist. to receiver	distance (ft)	988	
Daytime Hours (7 AM - 10 PM)	trains/hour	7	
Nighttime Hours (10 PM - 7 AM)	trains/hour	9	
Jointed Track?		Y	
Embedded Track?		Y	
Aerial Structure?		N	
Barrier Present?	Y/N	N	
Intervening Rows of Buildings	number	0	

**Federal Transit Administration  
 General Transit Noise Assessment  
 Case: NHRY EA - Receptor #5 (2030)**

**Copyright 1997, HMMH Inc.**  
 Sponsored by FTA contract #DTUM60-92-C-41008  
 Government users have unrestricted rights to this program

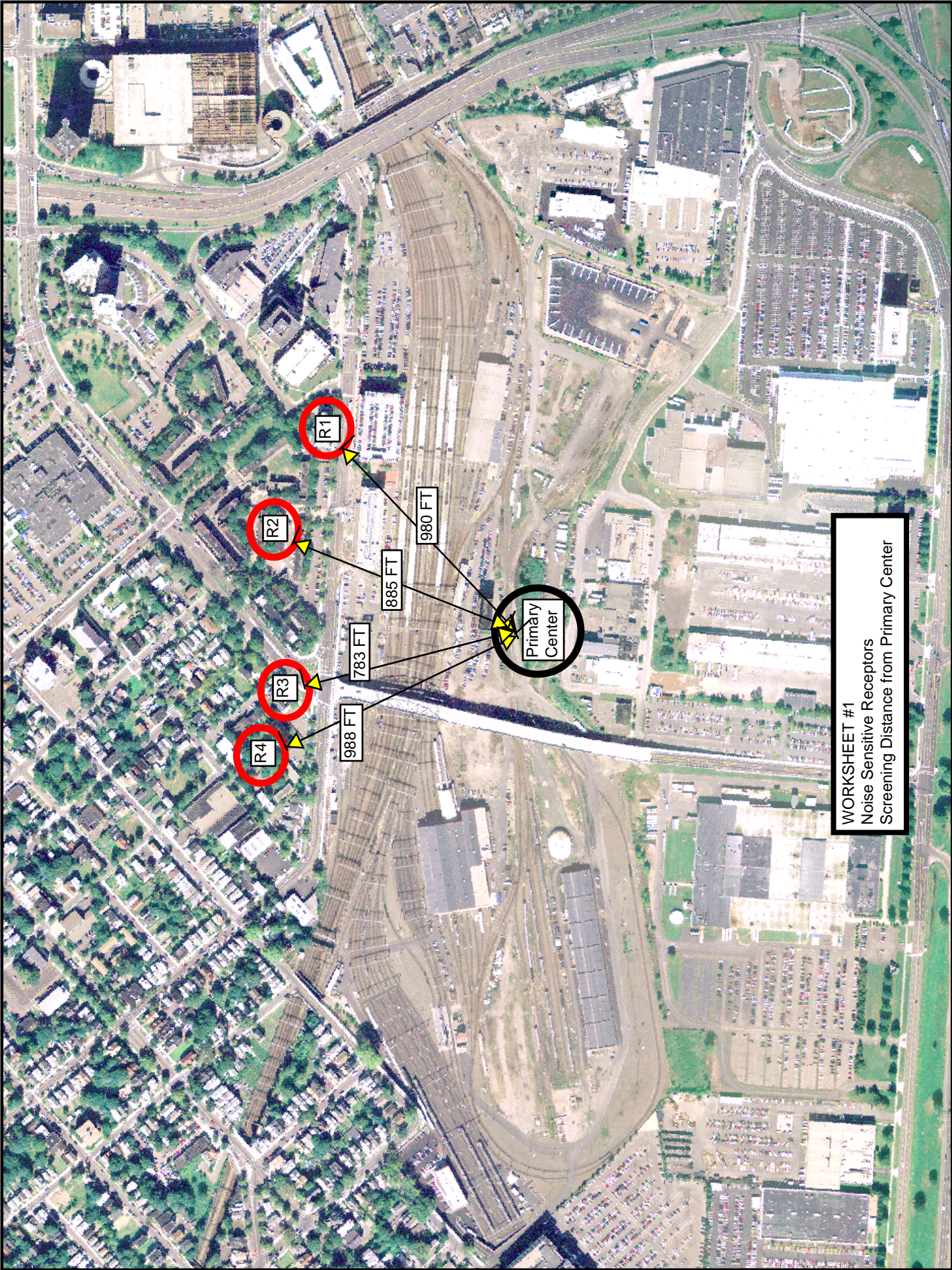
<b>RESULTS</b>			
<b>Noise Source</b>	<b>Ldn (dB)</b>	<b>Leq - daytime (dB)</b>	<b>Leq - nighttime (dB)</b>
All Sources	54	56	29
Source 1	54	56	29
Source 2	0	0	0
Source 3	0	0	0

*Enter noise receiver land use category below.*

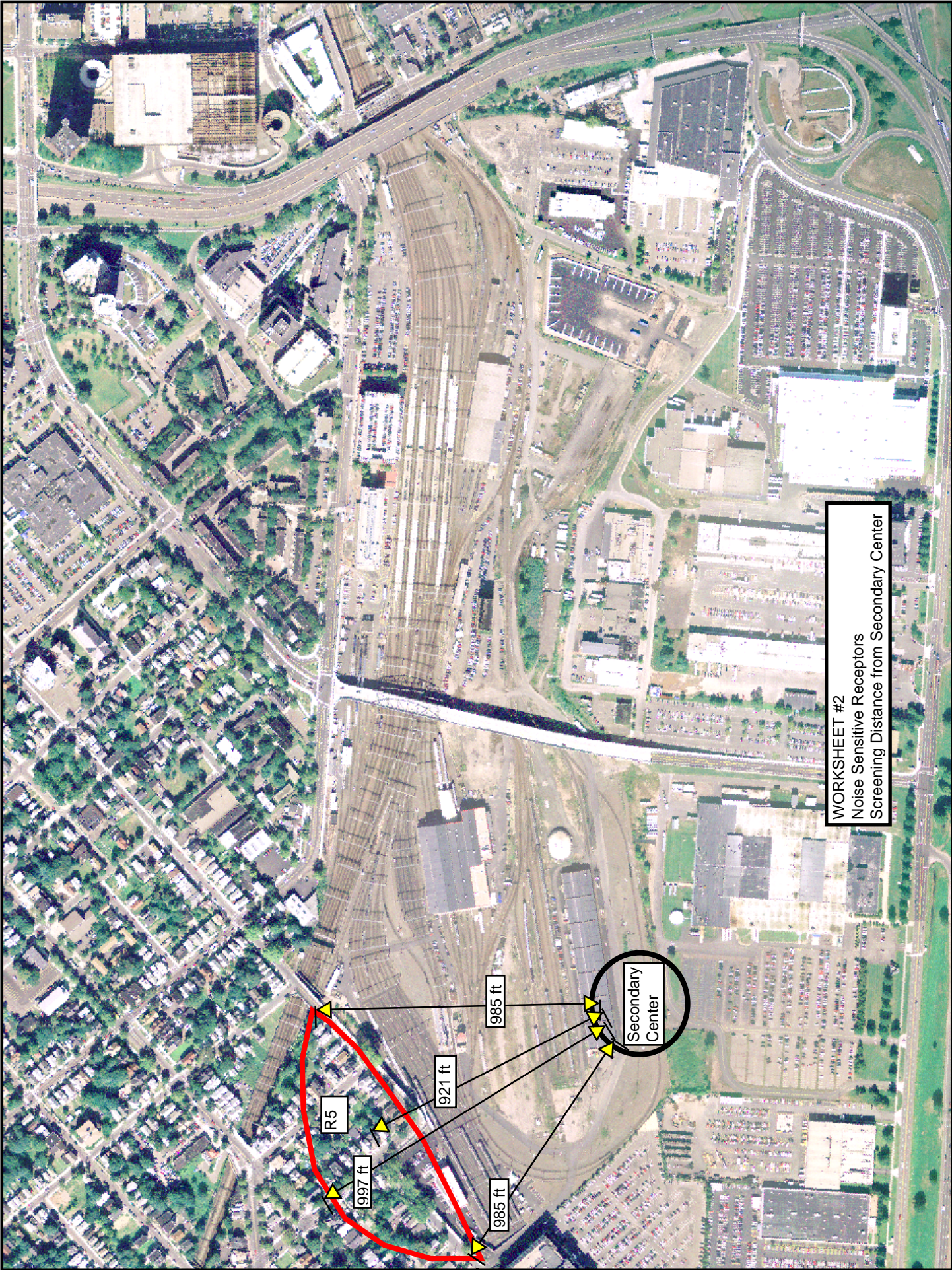
<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

*Enter data for each noise source below - see reference list for source numbers.*

<b>NOISE SOURCE PARAMETERS</b>			
<b>Parameter</b>	<b>Source 1 - Storage Tracks</b>	<b>Source 2</b>	<b>Source 3</b>
Source Num.	Layover Tracks 13		
Dist. to receiver	distance (ft) 921		
Daytime Hours (7 AM - 10 PM)	trains/hour 5		
Nighttime Hours (10 PM - 7 AM)	trains/hour		
Jointed Track?	Y		
Embedded Track?	Y		
Aerial Structure?	N		
Barrier Present?	Y/N N		
Intervening Rows of Buildings	number 0		



WORKSHEET #1  
Noise Sensitive Receptors  
Screening Distance from Primary Center



WORKSHEET #2  
Noise Sensitive Receptors  
Screening Distance from Secondary Center

Secondary Center

985 ft

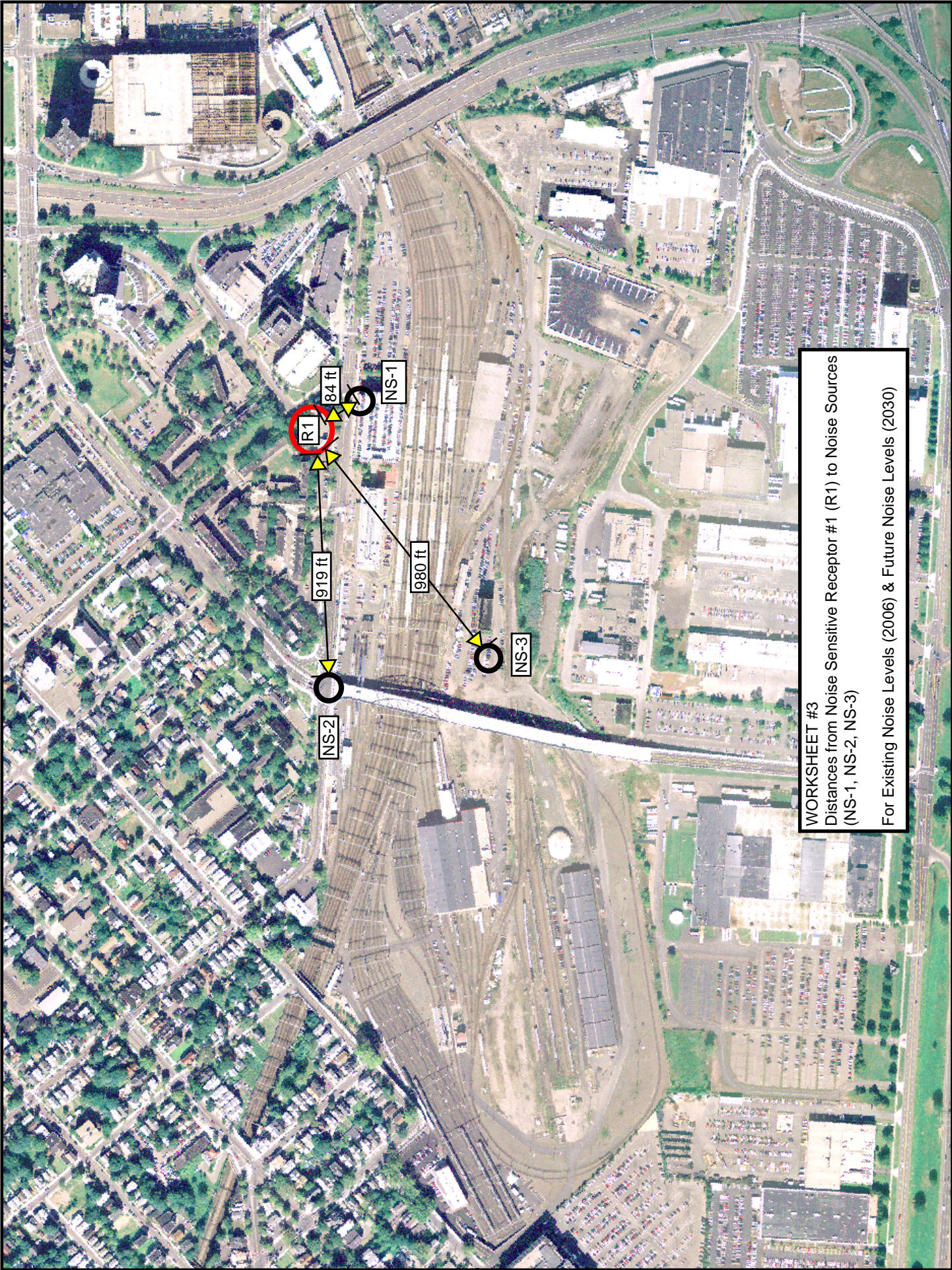
921 ft

997 ft

985 ft

R5





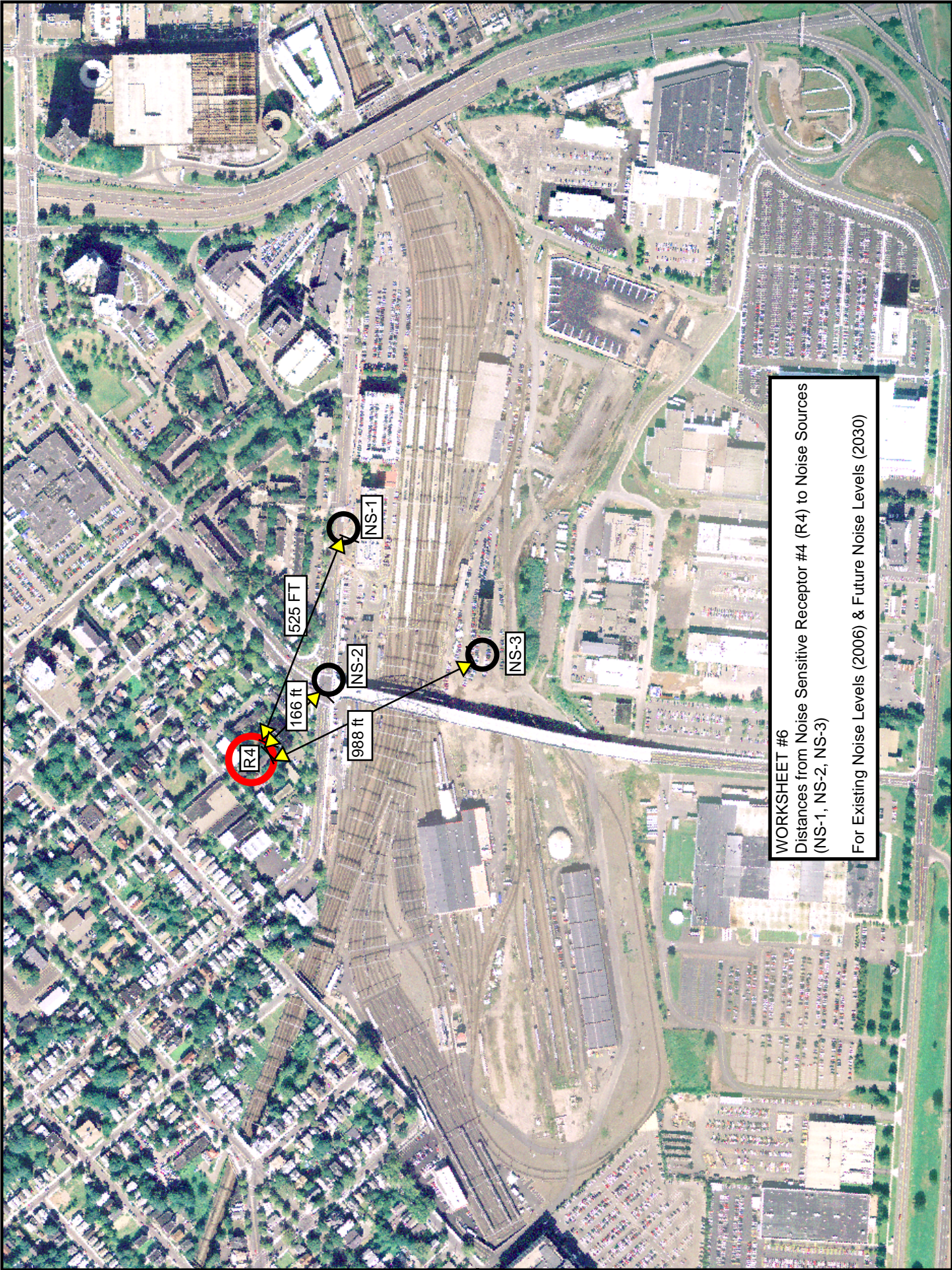
**WORKSHEET #3**  
Distances from Noise Sensitive Receptor #1 (R1) to Noise Sources  
(NS-1, NS-2, NS-3)  
For Existing Noise Levels (2006) & Future Noise Levels (2030)



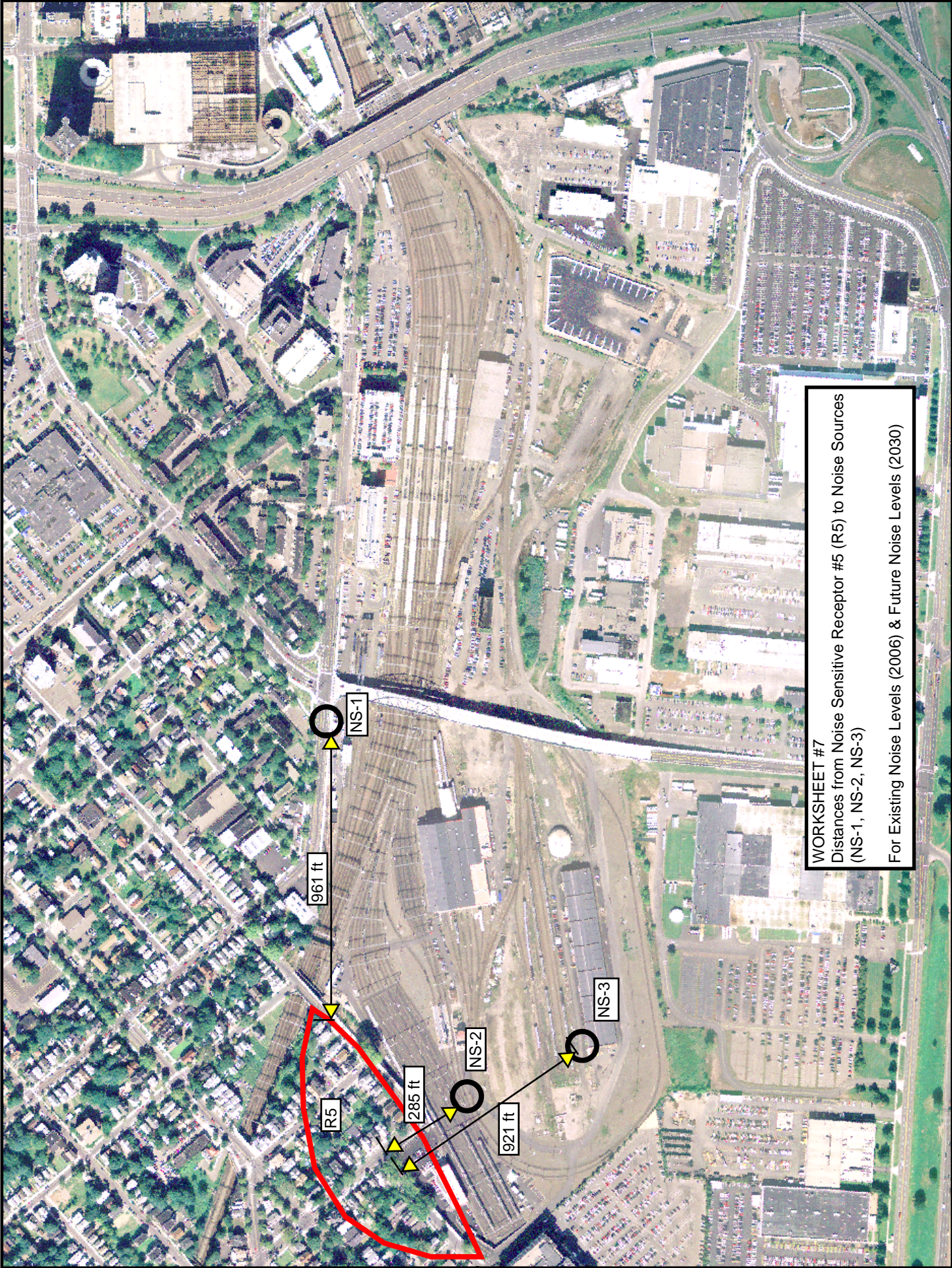
**WORKSHEET #4**  
Distances from Noise Sensitive Receptor #2 (R2) to Noise Sources  
(NS-1, NS-2, NS-3)  
For Existing Noise Levels (2006) & Future Noise Levels (2030)



**WORKSHEET #5**  
Distances from Noise Sensitive Receptor #3 (R3) to Noise Sources (NS-1, NS-2, NS-3)  
For Existing Noise Levels (2006) & Future Noise Levels (2030)



**WORKSHEET #6**  
Distances from Noise Sensitive Receptor #4 (R4) to Noise Sources  
(NS-1, NS-2, NS-3)  
For Existing Noise Levels (2006) & Future Noise Levels (2030)



**WORKSHEET #7**  
Distances from Noise Sensitive Receptor #5 (R5) to Noise Sources  
(NS-1, NS-2, NS-3)  
For Existing Noise Levels (2006) & Future Noise Levels (2030)



---

**APPENDIX C: CIRCULATION LIST**

---





**CIRCULATION LIST**

The following agencies/persons received a copy of the Environmental Assessment/Draft Environmental Impact Evaluation for the New Haven Rail Maintenance Facility:

**U.S. Representatives and Senators**

Hon. Joseph I. Lieberman U.S. Senator 316 Senate Hart Office Building Washington, D.C. 20510	Hon. Christopher J. Dodd U.S. Senator 225 Senate Russell Office Building Washington, D.C. 20510
Hon. Rosa L. DeLauro U.S. Representative 3 <sup>rd</sup> District 2262 Rayburn House Office Building Washington, D.C. 20515	Hon. Christopher Shays U.S. Representative 4 <sup>th</sup> District 1502 Longworth House Office Building Washington, D.C. 20515

**Chief State and City Elected Officials**

Hon. M. Jodi Rell Governor, State of Connecticut State Capitol Hartford, CT 06106	Mayor John DeStefano, Jr. City of New Haven 165 Church Street New Haven, CT 06511
--	--

**Other City Officials/Representatives**

Hon. Gerald Antunes Alderman, Ward 12 195 Weybosset Street New Haven, CT 06513	Hon. Charles Blango Alderman, Ward 20 197 Newhall Street New Haven, CT 06511	Hon. Migdalia Castro Alderman, Ward 16 200 Pine Street New Haven, CT 06513
Hon. Gina Calder Alderman, Ward 2 182 Dwight Street #1F New Haven, CT 06511	Hon. Dolores Colon Alderman, Ward 6 34 Salem Street New Haven, CT 06519	Hon. Arlene DePino Alderman, Ward 18 1354 Dean Street New Haven, CT 06512
Hon. Michelle Edmonds-Sepulveda Alderman, Ward 30 27 Rock Creek Road New Haven, CT 06515	Hon. Alfreda Edwards Alderman, Ward 19 122 Sheffield Avenue New Haven, CT 06511	Hon. Carl Goldfield Alderman, Ward 29 25 Roydon Rd. New Haven, CT 06511

**Other City Officials/Representatives (continued)**

Hon. Mordechai Sandman Alderman Ward 28 195 Colony Road New Haven, CT 06511	Hon. Yusuf Shah Alderman Ward 23 730 George Street, #309 New Haven, CT 06511	Hon. Nicholas Shalek Alderman Ward 1 32 High Street, #105 New Haven, CT 06510
Hon. Ina Silverman Alderman Ward 25 25 Woodside Terrace New Haven, CT 06515	Hon. Michael Smart Alderman Ward 8 1 Lyon Street, 2nd Floor New Haven, CT 06511	Hon. Erin Sturgis-Pascale Alderman Ward 14 332 Front Street New Haven, CT 06513
Hon. Juan Candelaria State Representative 95th District Legislative Office Building Hartford, CT 06106	Hon. Vincent Candelora State Representative 86th District Legislative Office Building Hartford, CT 06106	Hon. Stephen Dargen State Representative 115th District Legislative Office Building Hartford, CT 06106
Hon. Paul Davis State Representative 117th District Legislative Office Building Hartford, CT 06106	Hon. Toni Walker State Representative 93rd District Legislative Office Building Hartford, CT 06106	Hon. Patricia Dillon State Representative 92nd District Legislative Office Building Hartford, CT 06106
Hon. Cameron Staples State Representative 96th District Legislative Office Building Hartford, CT 06106	Hon. William Dyson State Representative 94th District Legislative Office Building Hartford, CT 06106	Hon. Louis Esposito State Representative 116th District Legislative Office Building Hartford, CT 06106
Hon. Robert Megna State Representative 97th District Legislative Office Building Hartford, CT 06106	Hon. Steve Fontana State Representative 87th District Legislative Office Building Hartford, CT 06106	Hon. Toni Harp State Senator 10th District Legislative Office Building Hartford, CT 06106
Hon. Michael Lawlor State Representative 99th District Legislative Office Building Hartford, CT 06106	Hon. Gayle Slossberg State Senator 14th District Legislative Office Building Hartford, CT 06106	Hon. Martin Looney State Senator 11th District Legislative Office Building Hartford, CT 06106

Mr. Michael Piscitelli City of New Haven –Transp., Traffic & Parking 200 Orange St. New Haven, CT 06510	Mr. Richard Miller City Engineer City of New Haven Engineering 270 Knollwood Dr. New Haven, CT 06515	Ms. Karyn Gilvarg Director City of New Haven Plan 165 Church St. New Haven, CT 06510
Mr. Tony Bialecki New Haven Office of Business Development 970 Chapel Street New Haven, CT 06510	Mr. Joseph Polio New Haven Police Department 165 Church Street New Haven, CT 06510	Mr. John Russo, Chairman Port Authority Commission 95 Roger Rd. New Haven, CT 06515
Mr. Robert Levine City of New Haven Parks and Recreation 720 Edgewood Avenue New Haven, CT 06515	Ms. Judi Sheffele City of New Haven Real Estate Services 209 Orange Street New Haven, CT 06510	Dr. Reginald Mayo City of New Haven Department of Education 54 Meadow Street New Haven, CT 06519

**State Departments/Officials**

Ms. Gina McCarthy Commissioner CT DEP 79 Elm Street Hartford, CT 06106	Ms. Joan McDonald Commissioner Connecticut DECD 505 Hudson Street Hartford, CT 06106	Mr. Kendall Wiggin State Librarian Connecticut State Library 231 Capitol Avenue Hartford, CT 06106
Mr. Brian Emerick Supervising Environmental Analyst Connecticut DEP 79 Elm Street Hartford, CT 06106	Ms. Julie Fagan State Coordinator CT Department of Housing and Urban Development One Corporate Center, 19th Fl. Hartford, CT 06103	

**State Departments/Officials (continued)**

<p>Hon. J. Robert Glavin, M.D., M.P.H. Commissioner Department of Public Health 410 Capitol Avenue, MS#13COM Hartford, CT 06106</p>	<p>Ms. Karen Senich Historic Preservation Office CT Commission on Culture &amp; Tourism Historic Preservation &amp; Museum Division 59 South Prospect Street Hartford, CT 06106</p>	<p>Hon. Robert Genuario Secretary Office of Policy and Management 450 Capitol Avenue Hartford, CT 06106</p>
<p>Ms. Lori Mathieu Water Supply Section CT Dept of Public Health 410 Capital Ave. Hartford, CT 06134-0308</p>	<p>Hon. Raeanne V. Curtis Commissioner Connecticut Department of Public Works 165 Capitol Avenue Hartford, CT 06106</p>	<p>Mr. Karl J. Wagener Executive Director Council on Environmental Quality 79 Elm Street Hartford, CT 06106</p>

**U.S. Departments/Officials**

<p>Dr. Willie R. Taylor Director U.S. Department of the Interior Office of Environmental Policy and Compliance Main Interior Building 1849 C. Street, NW Washington, D.C. 20240</p>	<p>Mr. Michael Bartlett Field Supervisor U.S. Department of the Interior Fish and Wildlife Service New England Field Offices 70 Commercial Street Suite 300 Concord, NH 03301-5087</p>
<p>Ms. Christine Godfrey Chief Regulatory Branch U.S. Army Corps of Engineers New England Division 696 Virginia Road Concord, MA 01742-2751</p>	<p>Mr. Robert W. Varney Regional Administrator U.S. EPA Region 1 One Congress Street, Suite 1100 Boston, MA 02114-2023</p>

**Others**

<p>Ms. Judy Gott, Director South Central Regional Council of Governments 127 Washington Avenue, 4th Floor West North Haven, CT 06473</p>	<p>Mr. Tom Chaplik South Central Regional Water Authority 90 Sargent Drive New Haven, CT 06511-5966</p>
--	---

---

**APPENDIX D: WETLANDS REPORT**

---



# Connecticut Ecosystems LLC

- Wetland Delineation
- Wetland & Aquatic Evaluation
- Mitigation
- Natural Resource Inventory
- Permit Assistance
- Expert Testimony



## ON-SITE SOIL INVESTIGATION REPORT

### Project Name & Location

New Haven Rail Maintenance Facility

New Haven, CT

### CE Job No.: 06-61

Field Investigation Date(s): 9/6/06

Field Investigation Method(s):

Spade & Auger

Backhoe & Test Pits

### Report Prepared For:

Fitzgerald and Halliday, Inc.

Attn.: Ms. Marianne Latimer

72 Cedar Street

Hartford, CT 06106

### Field Conditions:

Weather: partly cloudy, 80F

Recent Precipitation: average

Soil Moisture: average

Snow Depth: ---

Frost Depth: ---

### Purpose of Investigation:

Wetland Delineation/Flagging

Sketch Wetland Boundaries on Base Map (No Flagging)

High Intensity Soil Mapping by Soil Scientist

Medium Intensity Soil Mapping from SCS Soil Survey Maps

### Base Map:

- Type: PDF Map

Wetland Boundary Marker Series: CE 1-1/18 2-1/23

Intermittent Watercourse Marker Series: ---

### Wetland Notes:

- Type(s): marsh
- Hydroperiod(s): temporarily flooded
- Soil Parent Material(s): glacial till
- Drainage Class(es): poorly
- Slope: gentle

38 Westland Avenue • West Hartford, CT 06107

Phone (860) 561-8598 • Fax (860) 561-0223 • email ecosys@comcast.net

**CONNECTICUT ECOSYSTEMS LLC**  
**ON-SITE SOIL INVESTIGATION REPORT (CONTINUED)**

**Project Name & Location: New Haven Rail Maintenance Facility, New Haven, CT**  
**Project #: 04-61**

**SOIL MAP UNITS**

Soil symbols used below and on the accompanying Wetland Sketch Map correspond to those in the National Cooperative Soil Survey.

**WETLAND SOIL SERIES**

**Aquents (Disturbed Wetland Soils) (Aq)**

This soil map unit consists of poorly drained and very poorly drained, disturbed land areas. They are most often found on landscapes that were subject to prior filling and/or excavation activities. In general this soil map unit occurs where two or more feet of the original soil surface has been filled over or excavated. Aquents are characterized by a seasonal to prolonged high ground water table and either support or are capable of supporting wetland vegetation.

Aquents are recently formed soils that have an aquic moisture regime. An aquic moisture regime is associated with a reducing soil environment that is virtually free of dissolved oxygen because the soil is saturated by groundwater or by water of the capillary fringe. The key feature is the presence of a ground water table at or very near to the soil surface for a period of fourteen days or longer during the growing season

The Aquents soil mapping unit is a miscellaneous unit that includes a large variety of soil materials and landscape features. Common locations of Aquents include former gravel pits, urban areas abutting marshland and broad ditches along highways.

Aquents are poorly and very poorly drained. Soil saturation may vary from periodic saturation during the growing season in poorly drained areas, to extended saturation for long periods throughout the year along with periodic ponding in very poorly drained areas. Due to the wide variation of soil materials included in this soil map unit predictions of water table elevations and soil permeabilities require on-site investigations and evaluations.

**UPLAND (NON-WETLAND) SOIL SERIES**

**Urban Land (307)**

The Urban land soil mapping unit consists mainly of areas that are covered by paved roads, parking lots, buildings and other structures. The areas are mostly in densely populated regions of the State. They range in size mostly from 5 to several hundred acres. Most of the original soils underlying Urban land have been altered by excavation or have been covered with fill material. Slopes range from 0 to 25 percent but are mostly 0-8 percent. Included with this mapping unit are small, intermingled areas of Udorthents.



**CONNECTICUT ECOSYSTEMS LLC**  
**ON-SITE SOIL INVESTIGATION REPORT (CONTINUED)**

**Project Name & Location: New Haven Rail Maintenance Facility, New Haven, CT**  
**Project #: 04-61**

The wetlands were field delineated in accordance with the standards of the National Cooperative Soil Survey and the definition of wetlands as found in the Connecticut General Statutes, Chapter 440, Section 22A-38. The investigation was conducted and reviewed by a Registered Soil Scientist.

Respectfully submitted,

Connecticut Ecosystems LLC



Edward M. Pawlak  
Registered Soil Scientist  
Certified Professional Wetland Scientist

File c:\soils2006\06-61.doc





1400 CAPACITY \* 113 CARS

TRACK	LENGTH OF STORAGE	NO. OF CARS	TRACK	LENGTH OF STORAGE	NO. OF CARS
Yard Track F	730	7	Yard Track E	850	10
Yard Track G	850	9	Yard Track L	1100	12
Yard Track H	1030	11	Yard Track M	915	10
Yard Track I	1230	13	Yard Track N	915	10
Yard Track J			Yard Track O		

**PROGRESS PRINT**  
FOR INFORMATION ONLY  
07-14-2008

- LEGEND:**
- EXISTING FACILITIES
  - EXISTING PROPERTY LINES
  - SHORT TERM IMPROVEMENT
  - PROPOSED FACILITIES
  - PROPOSED TRACK
  - PROPOSED ROADWAY
  - YARD SIGNAL
  - MAIN LINE SIGNAL

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

**PB**

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS**

SCENARIO 1 - PROGRAM 1

DATE: \_\_\_\_\_

SCALE: 1" = 100'

SCALE: 1" = 200'

APPROVED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

PROJECT NO: 301-0088

SHEET NO: XXX-XXXX

SHEET NO: XXX-XXXX

*approximate areas where wetlands exist.*

*Church street  
(This street ties into long wharf to the south.)*



---

## **APPENDIX E: TRAFFIC ANALYSIS**

---



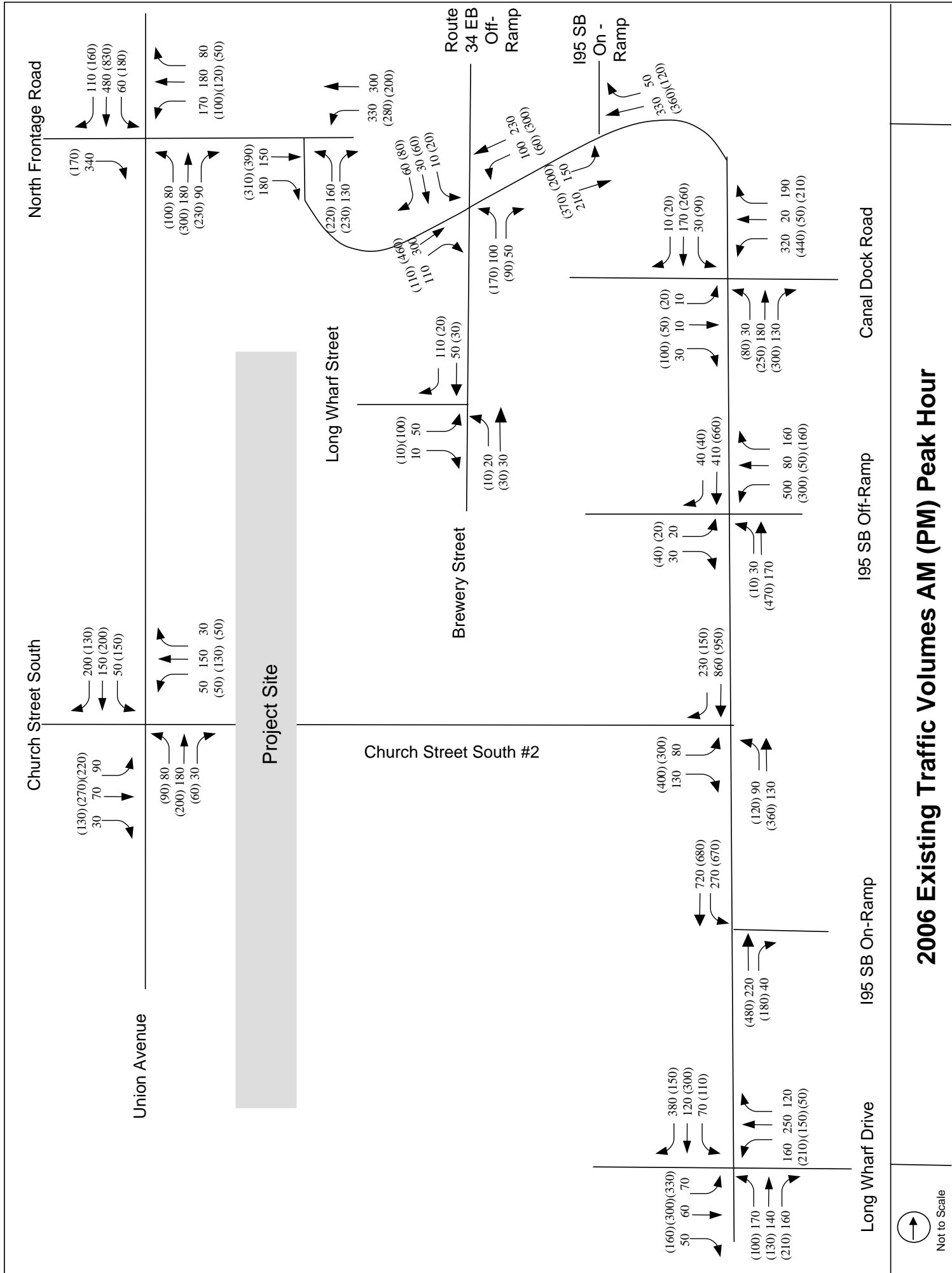
---

## TRAFFIC VOLUMES

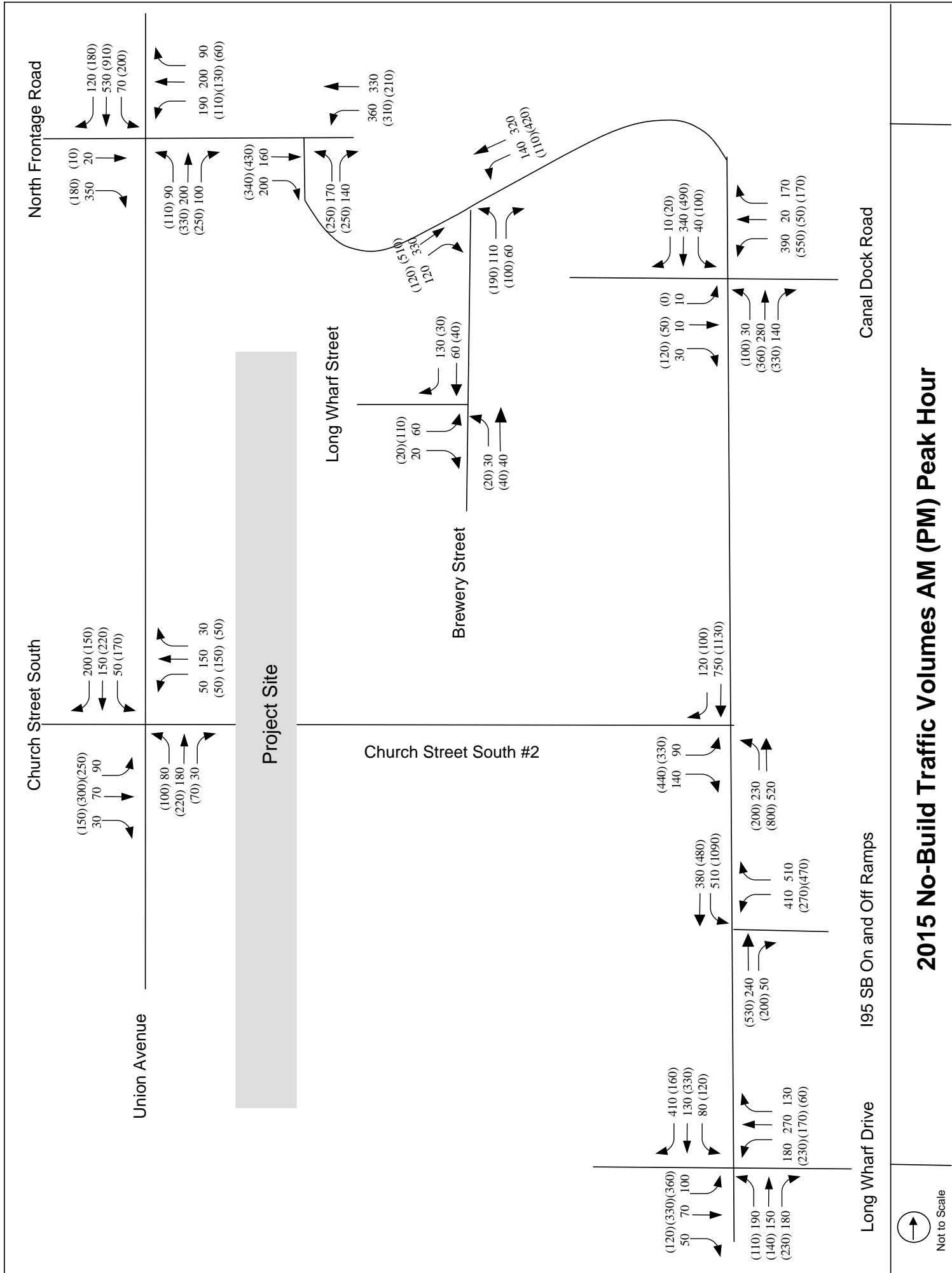
---

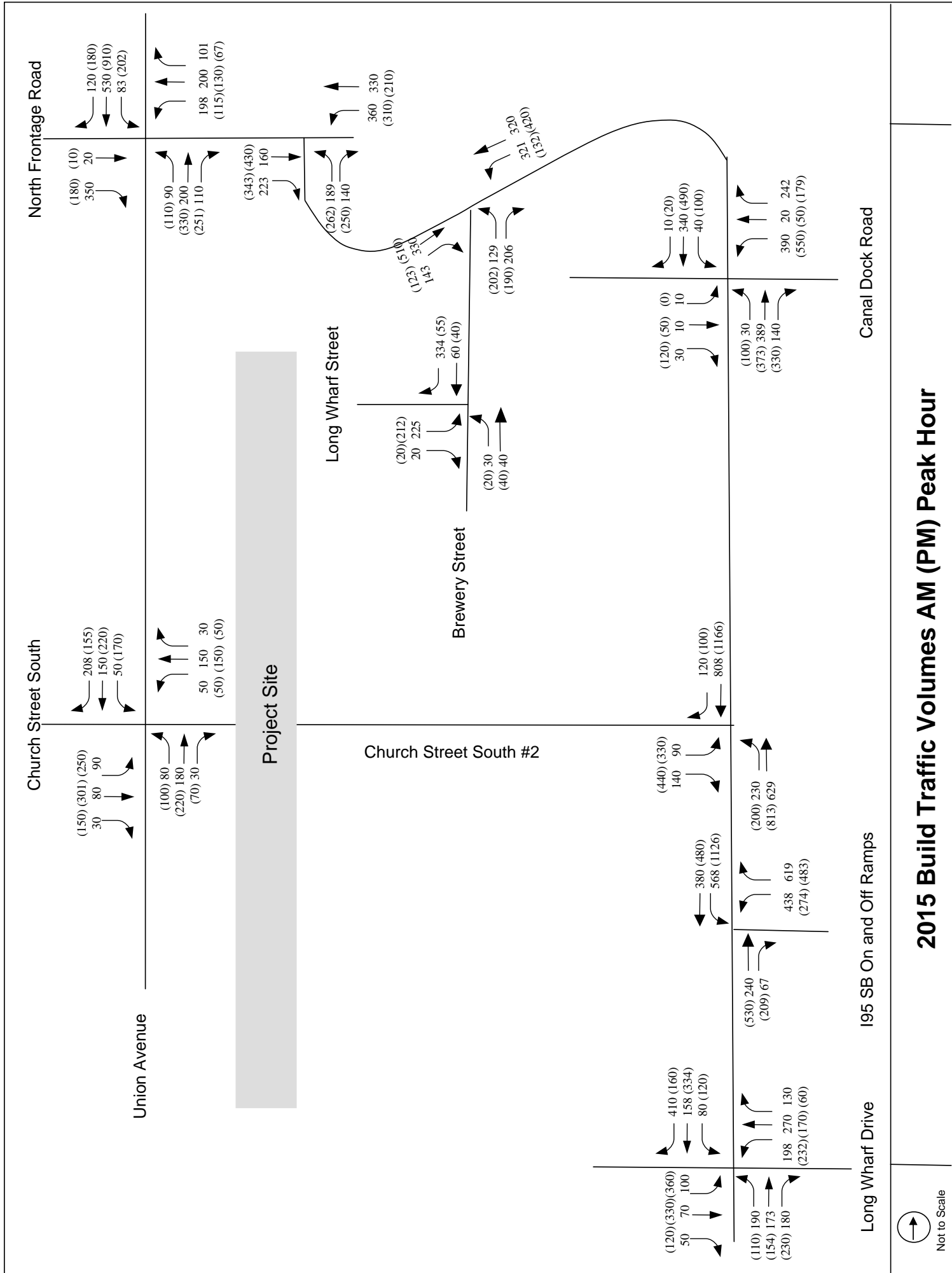






Not to Scale





(180) (10)  
350 20  
120 (180)  
530 (910)  
83 (202)

(110) 90  
(330) 200  
(251) 110  
(343)(430)  
223 160  
198 200 101  
(115)(130) (67)

(262) 189  
(250) 140  
360 330  
(310)(210)

(202) 129  
(190) 206  
321 320  
321 320  
(310)(210)

(10) (20)  
340 (490)  
40 (100)

390 20 242  
(550)(50)(179)

(120) (50) (0)  
30 10 10  
(100) 30  
(373) 389  
(330) 140

208 (155)  
150 (220)  
50 (170)

50 150 30  
(50) (150) (50)

(20)(212)  
20 225  
334 (55)  
60 (40)

(20) 30  
(40) 40

120 (100)  
808 (1166)

(150) (301) (250)  
30 80 90

(100) 80  
(220) 180  
(70) 30

(440) (330)  
140 90

(530) 240  
(209) 67  
(200) 230  
(813) 629

380 (480)  
568 (1126)

438 619  
(274) (483)

410 (160)  
158 (334)  
80 (120)

(120)(330)(360)  
50 70 100

(110) 190  
(154) 173  
(230) 180

198 270 130  
(232)(170) (60)

**Project Site**

**Church Street South #2**

**Long Wharf Street**

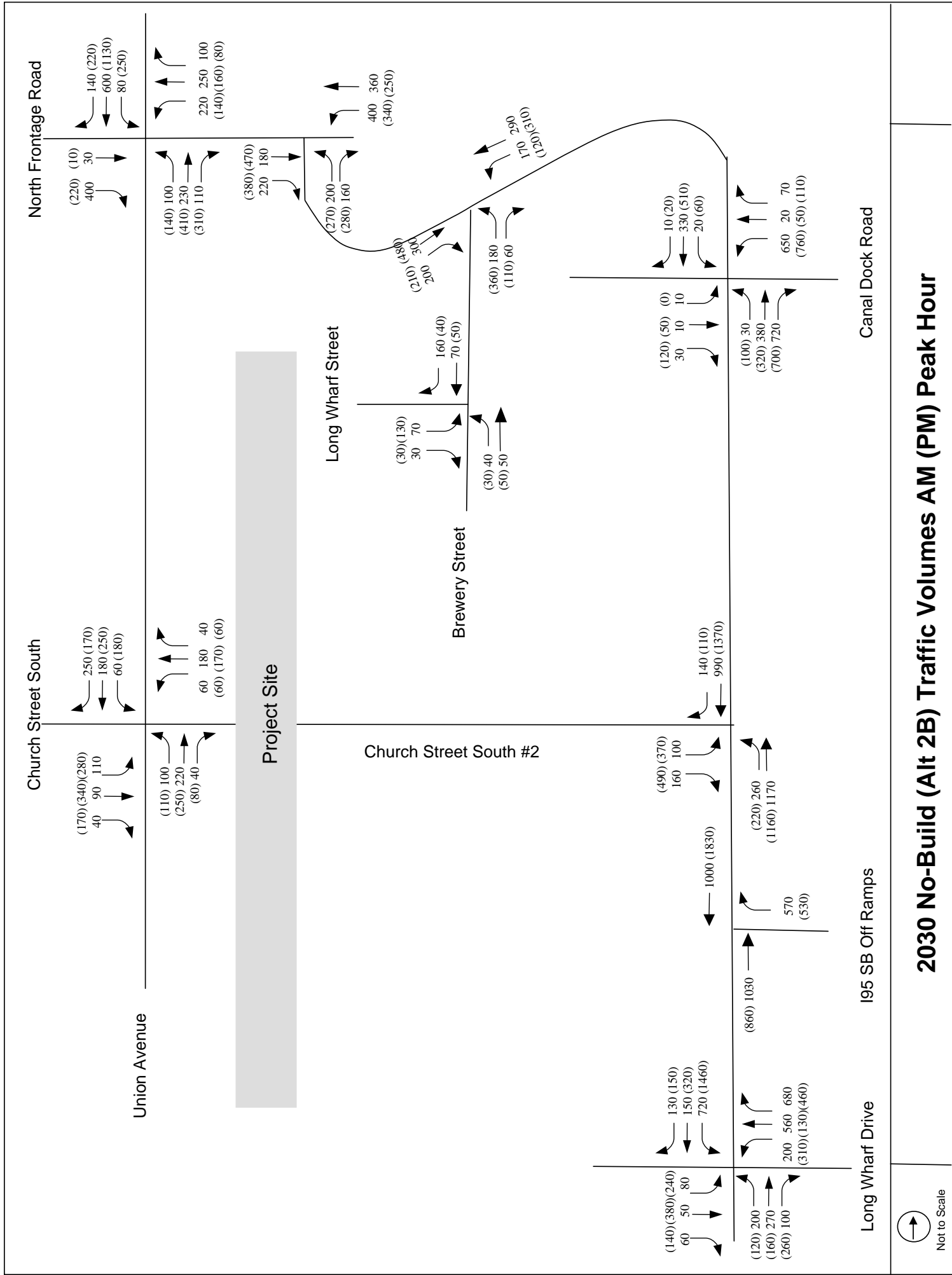
**Brewery Street**


**195 SB On and Off Ramps**

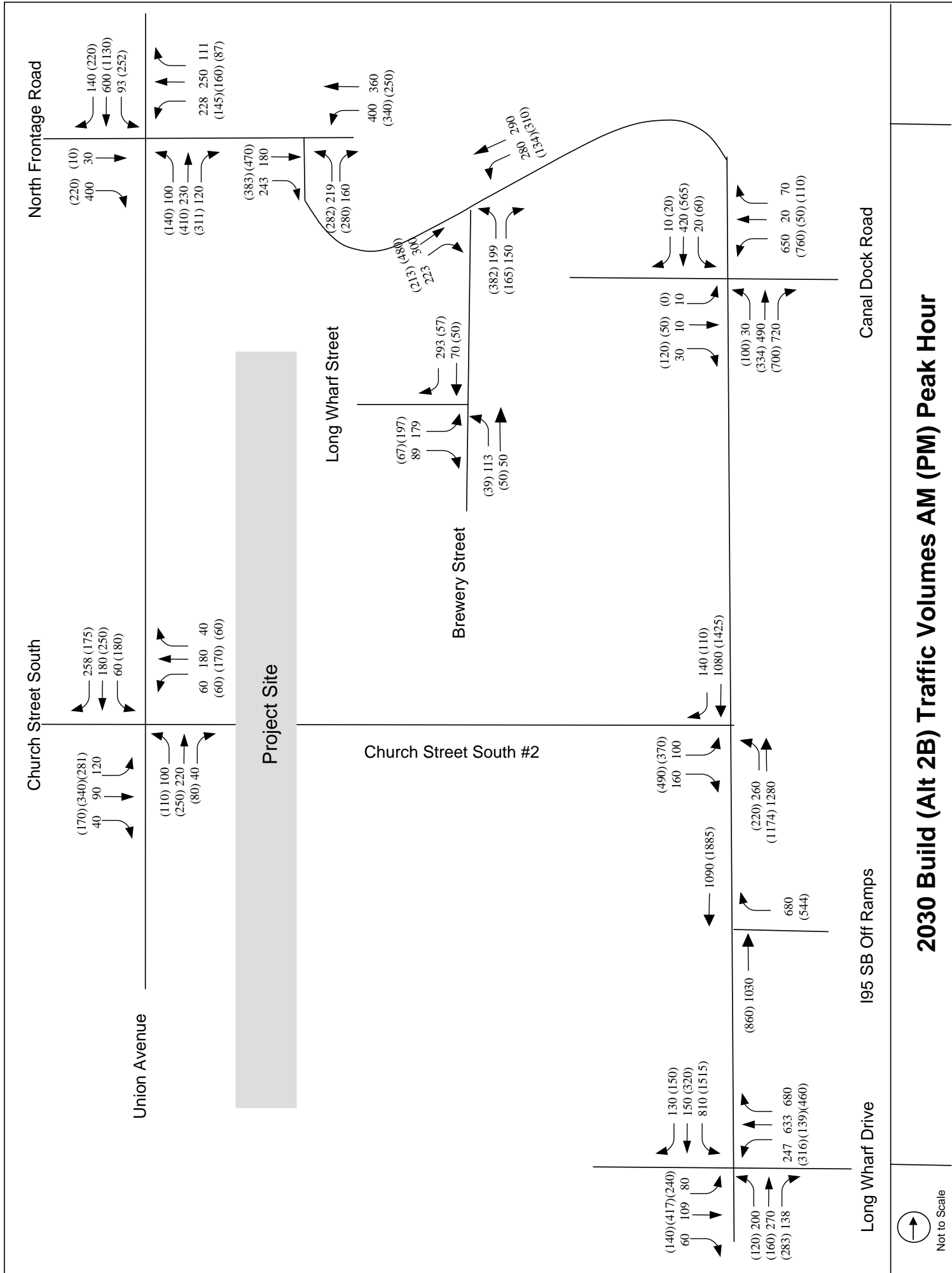
**Long Wharf Drive**

**2015 Build Traffic Volumes AM (PM) Peak Hour**

Not to Scale




  
 Not to Scale



**2030 Build (Alt 2B) Traffic Volumes AM (PM) Peak Hour**



Not to Scale



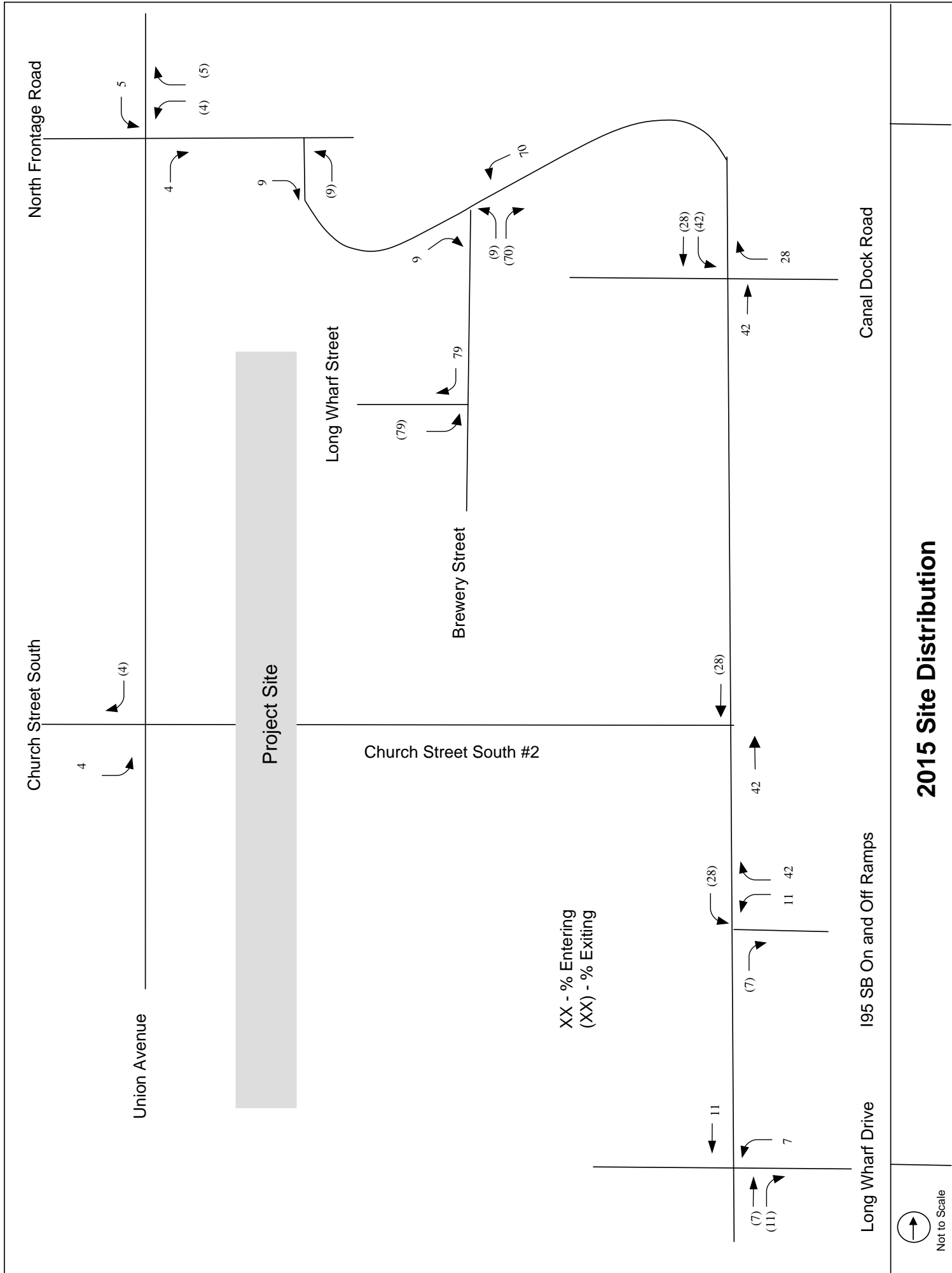
---

**TRIP DISTRIBUTION & SITE GENERATED TRIPS**

---



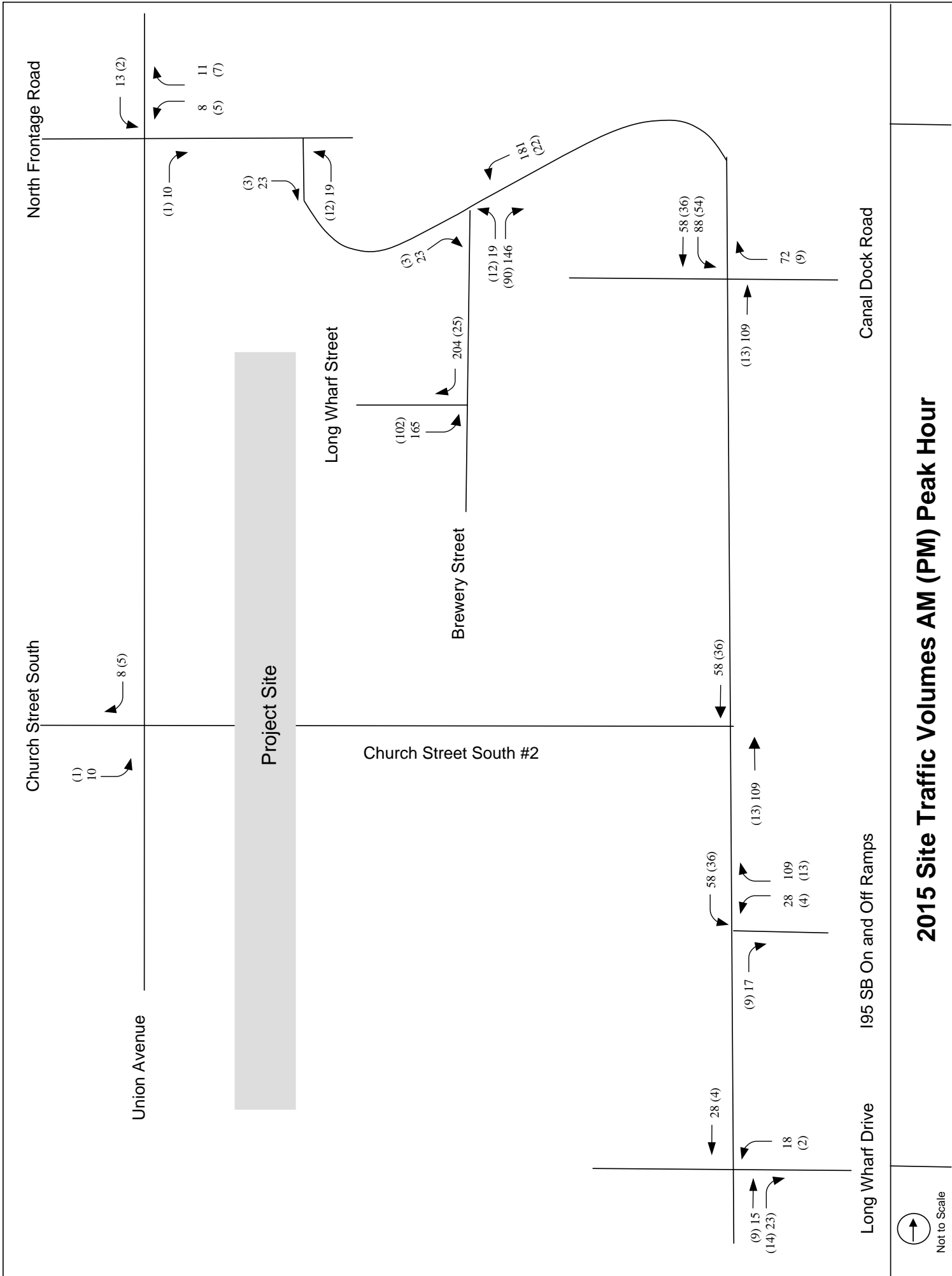


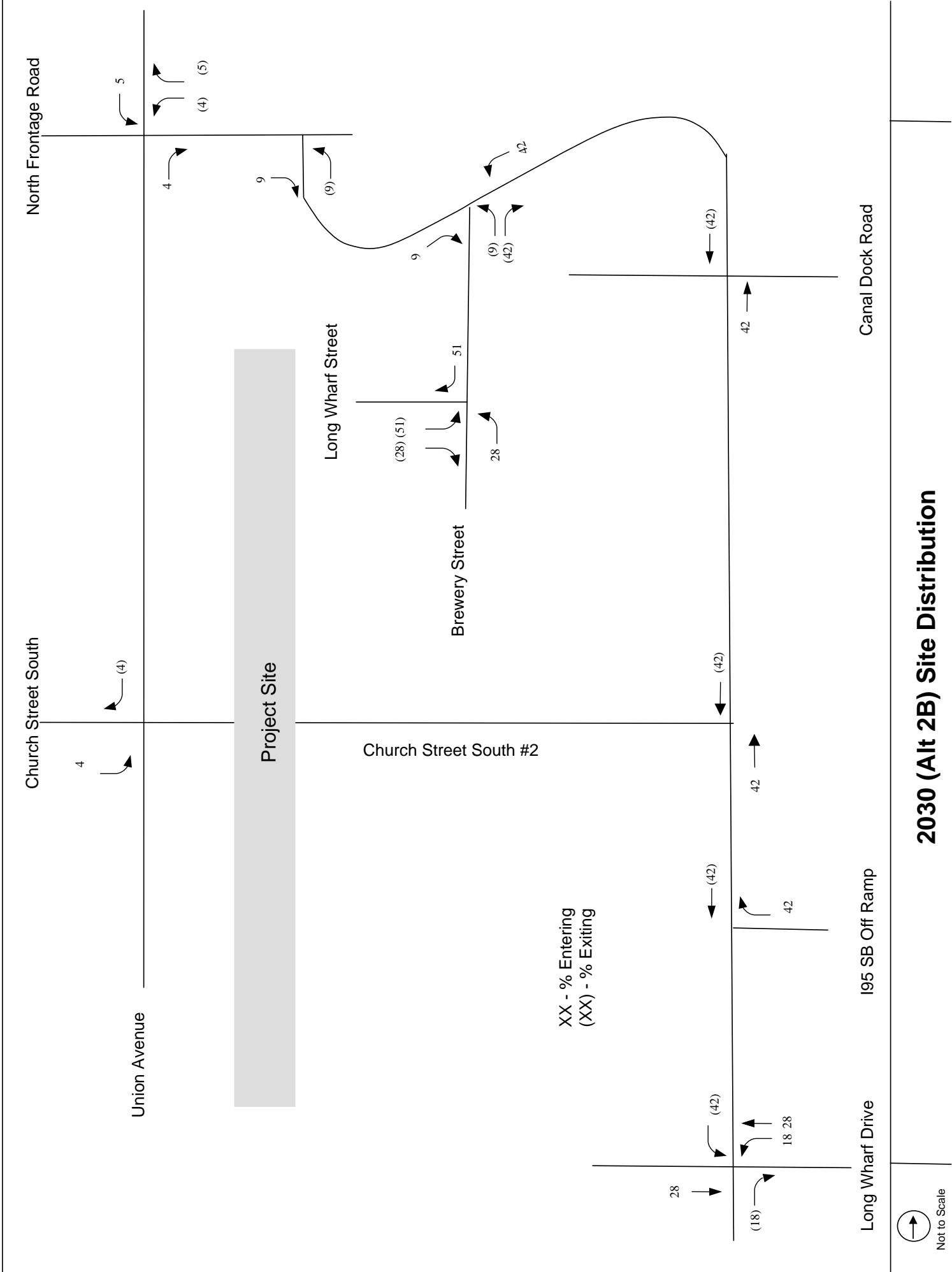


## 2015 Site Distribution

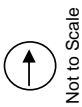


Not to Scale

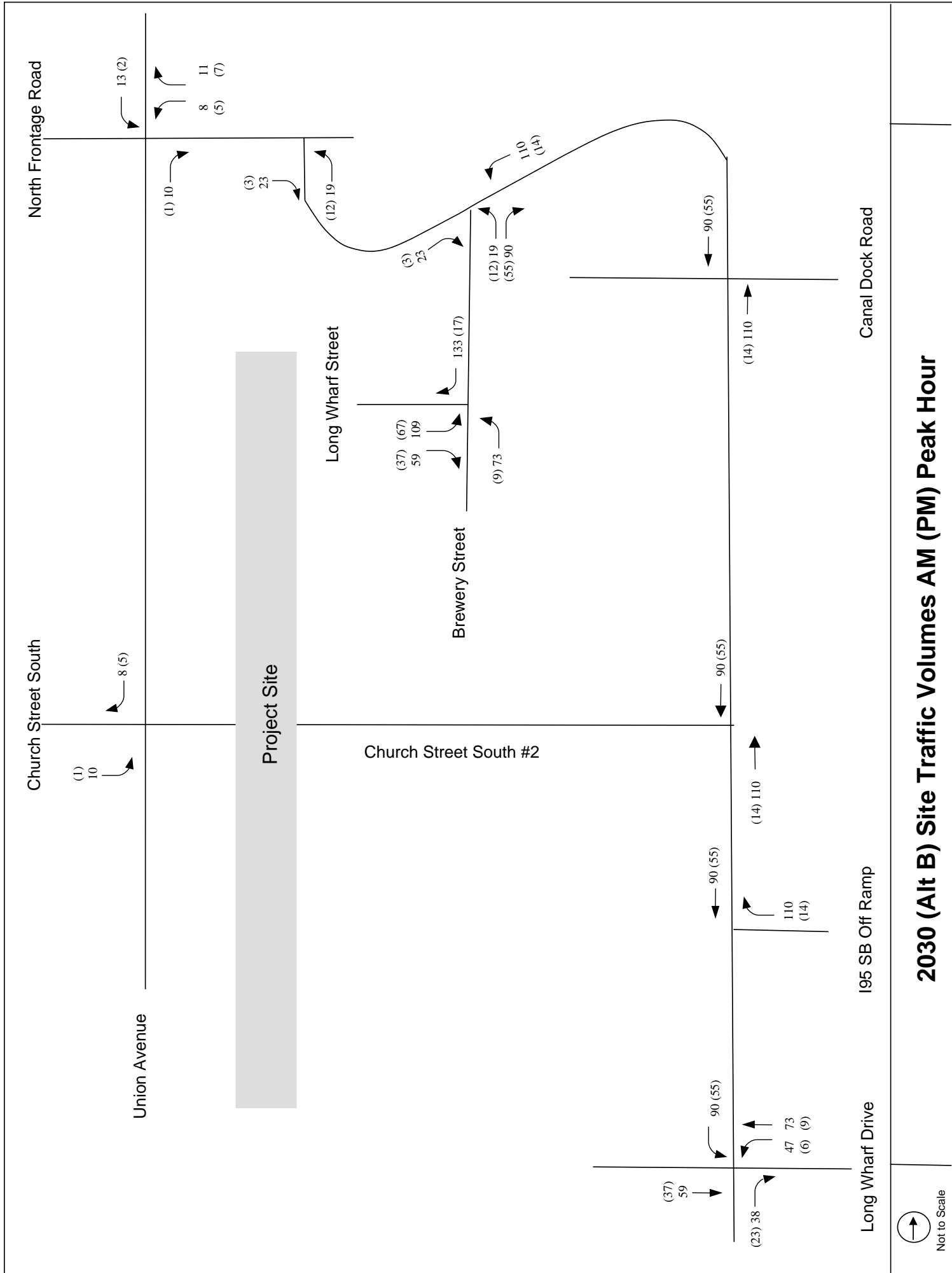




**2030 (Alt 2B) Site Distribution**



Not to Scale



---

## **CRASH DATA**

---



ConnDOT Crash Data (2003-2005)

Intersection/Segment	Total Number of Accidents	Number of Accidents Resulting in Injuries	Type of Collision	Number of Accidents
Church Street South at Union Avenue	17	3	Head On	6
			Rear End	4
			Sideswipe, Same Dir.	2
			Turning, Same Dir.	2
			Backing	1
			Pedestrian	1
			Turning, Intersecting	1
Union Street from Church Street South to Union Station Entrance	8	3	Rear End	2
			Turning, Intersecting	2
			Turning, Same Dir.	2
			Parking	1
			Sideswipe, Same Dir.	1
Union Street at Union Station Entrance	20	6	Sideswipe, Same Dir.	6
			Turning, Intersecting	4
			Rear End	3
			Head On	2
			Parking	2
			Backing	1
			Pedestrian	1
			Turning, Same Dir.	1
			Sideswipe, Opp. Dir.	0
			Union Street from Union Station Entrance to So. Parking Entrance	6
Parking	1			
Pedestrian	1			
Turning, Intersecting	1			
Union Street at So. Parking Garage Entrance	14	3	Head On	3
			Rear End	3
			Sideswipe, Same Dir.	3
			Turning, Intersecting	2
			Turning, Same Dir.	2
			Sideswipe, Opp. Dir.	1
Union Street from So. Parking Garage Ent. to Columbus Ave. #2	3	1	Backing	1
			Rear End	1
			Turning, Intersecting	1
Union Street at Columbus Ave. #2	14	5	Head On	5
			Rear End	3
			Sideswipe, Same Dir.	2
			Turning, Intersecting	2
			Parking	1
Union Street at N. Parking Garage Entrance	5	0	Turning, Same Dir.	1
			Sideswipe, Same Dir.	2
			Backing	1
			Parking	1
Union Street from N. Parking Garage Entrance to Meadow Street	4	1	Sideswipe, Opp. Dir.	1
			Sideswipe, Same Dir.	2
			Parking	1
Union Street at Meadow Street	6	1	Pedestrian	1
			Rear End	5
Union Street from Meadow Street to West Water Street	21	3	Sideswipe, Same Dir.	1
			Sideswipe, Same Dir.	7
			Rear End	4
			Parking	3
			Turning, Same Dir.	3
			Fixed Obj	2
			Head On	1
			Moving Obj	1





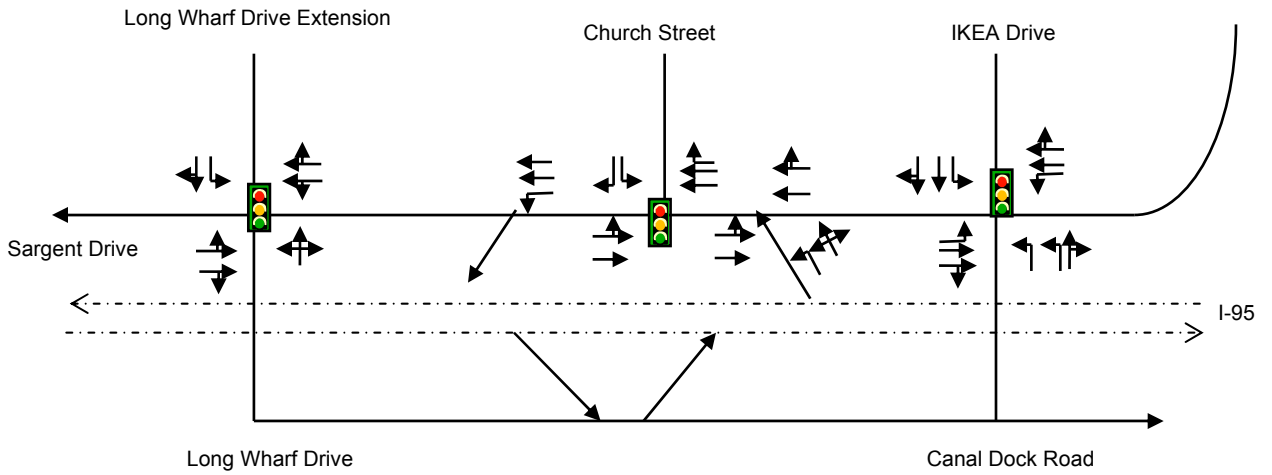
---

## **SARGENT DRIVE ROADWAY CONFIGURATION**

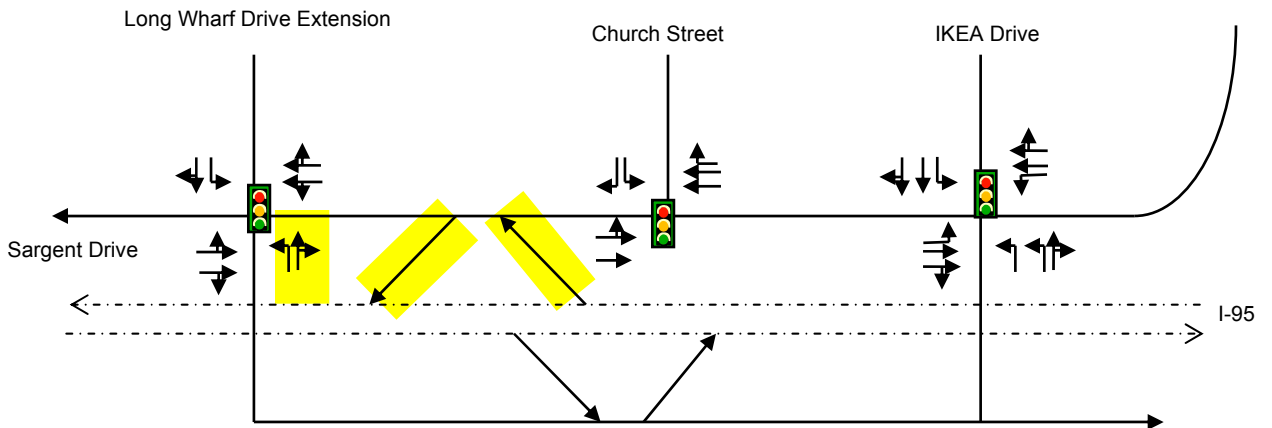
---



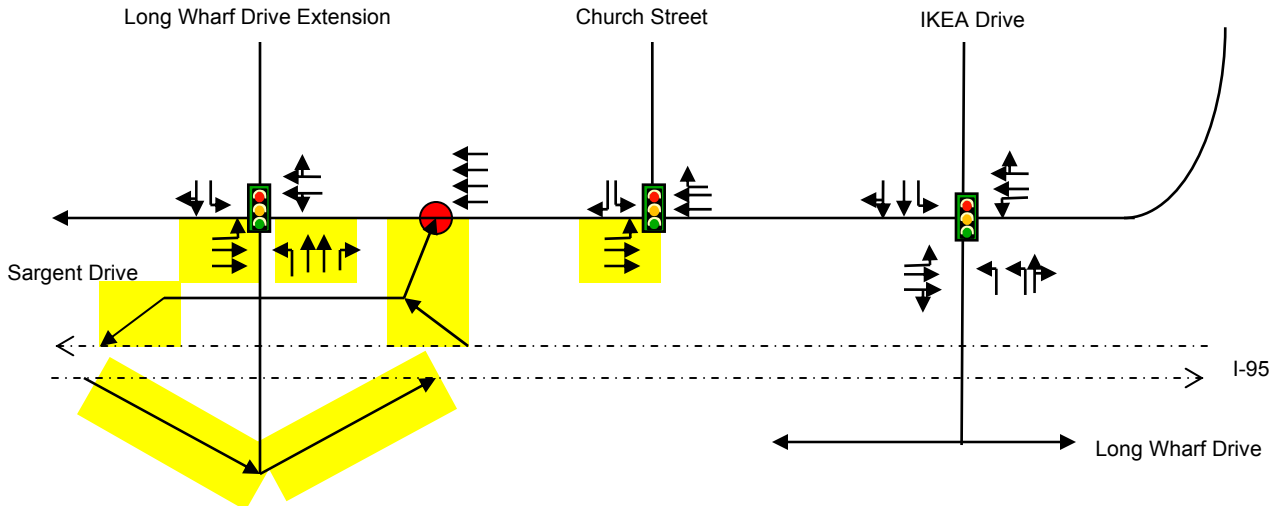
## Existing Condition 2007



## Design Year 2015



## Design Year 2030





---

**APPENDIX F: AIR QUALITY ANALYSIS**

---



**Attachment A**

**MOBILE6.2 Input and Output Files**





# MOBILE6.2 2015 Input File – New Haven Railyard

```
MOBILE6 INPUT FILE :
* For VOC CO and NOx
SPREADSHEET       :
DATABASE OUTPUT   :
POLLUTANTS        : HC CO NOX
DATABASE OPTIONS  : CTdb.opt

RUN DATA
> 2015 input file with 2002 registration data; created 4/8/05 PMB

>*****New Haven Expressway *****

* Northeast NLEV inputs
94+ LDG IMP       : NLEVNE.D

* Fuel Data
FUEL PROGRAM      : 2 N
NO REFUELING      :

REG DIST          : CTreg02.d

EXPRESS HC AS VOC :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE    : CTIM05.d
ANTI-TAMP PROG   :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR      : 2015Exp.def
SPEED VMT        : 20sdvmt6.cty
VMT BY FACILITY  : FCVMTF.CTY

* 2015 expressway/ramp VMT fractions
VMT FRACTIONS    :
0.2899 0.1056 0.3514 0.1083 0.0499 0.0301 0.0030 0.0025
0.0019 0.0068 0.0080 0.0087 0.0308 0.0015 0.0008 0.0008

SCENARIO RECORD  : New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2
CALENDAR YEAR    : 2015
EVALUATION MONTH : 1
FUEL RVP         : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP     : 18. 44.
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                  54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>*****New Haven Arterials/Collectors *****

* Northeast NLEV inputs
94+ LDG IMP       : NLEVNE.D

* Fuel Data
FUEL PROGRAM      : 2 N
NO REFUELING      :

REG DIST          : CTreg02.d

EXPRESS HC AS VOC :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE    : CTIM05.d
ANTI-TAMP PROG   :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR      : 2015Art.def
SPEED VMT        : 20sdvmt6.cty
VMT BY FACILITY  : FCVMTA.CTY

* 2015 arterial/collector VMT fractions
VMT FRACTIONS    :
0.3100 0.1128 0.3754 0.1157 0.0532 0.0100 0.0010 0.0008
0.0006 0.0022 0.0026 0.0029 0.0102 0.0005 0.0003 0.0018

SCENARIO RECORD  : New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2
CALENDAR YEAR    : 2015
```

EVALUATION MONTH : 1  
FUEL RVP : 13.0

\* Weather Data for SWCT NA area  
MIN/MAX TEMP : 18. 44.  
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.  
54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>\*\*\*\*\*New Haven Local \*\*\*\*\*

\* Northeast NLEV inputs  
94+ LDG IMP : NLEVNE.D

\* Fuel Data  
FUEL PROGRAM : 2 N  
NO REFUELING :

REG DIST : CTreg02.d

EXPRESS HC AS VOC :

\* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests  
I/M DESC FILE : CTIM05.d  
ANTI-TAMP PROG :  
83 71 50 22222 21111111 1 12 096. 12111112

\* VMT Data  
VMT BY HOUR : 2015Loc.def  
SPEED VMT : 20sdvmt6.cty  
VMT BY FACILITY : FVMTL.CTY

\* 2015 Local VMT fractions  
VMT FRACTIONS :  
0.3119 0.1134 0.3775 0.1163 0.0535 0.0085 0.0008 0.0007  
0.0005 0.0019 0.0023 0.0025 0.0087 0.0004 0.0002 0.0009

SCENARIO RECORD : New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2  
CALENDAR YEAR : 2015  
EVALUATION MONTH : 1  
FUEL RVP : 13.0

\* Weather Data for SWCT NA area  
MIN/MAX TEMP : 18. 44.  
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.  
54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>\*\*\*\*\*New Haven Ramp \*\*\*\*\*

\* Northeast NLEV inputs  
94+ LDG IMP : NLEVNE.D

\* Fuel Data  
FUEL PROGRAM : 2 N  
NO REFUELING :

REG DIST : CTreg02.d

EXPRESS HC AS VOC :

\* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests  
I/M DESC FILE : CTIM05.d  
ANTI-TAMP PROG :  
83 71 50 22222 21111111 1 12 096. 12111112

\* VMT Data  
VMT BY HOUR : 2015Exp.def  
SPEED VMT : 20sdvmt6.cty  
VMT BY FACILITY : FVMTTR.CTY

\* 2015 expressway/ramp VMT fractions  
VMT FRACTIONS :  
0.2899 0.1056 0.3514 0.1083 0.0499 0.0301 0.0030 0.0025  
0.0019 0.0068 0.0080 0.0087 0.0308 0.0015 0.0008 0.0008

SCENARIO RECORD : New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2  
CALENDAR YEAR : 2015  
EVALUATION MONTH : 1  
FUEL RVP : 13.0

\* Weather Data for SWCT NA area  
MIN/MAX TEMP : 18. 44.  
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.  
54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

MOBILE6 INPUT FILE :  
\* For VOC CO and NOx  
SPREADSHEET :  
DATABASE OUTPUT :  
POLLUTANTS : HC CO NOX  
DATABASE OPTIONS : CTdb.opt

RUN DATA

> 2015 input file with 2002 registration data; created 4/8/05 PMB

>\*\*\*\*\*New Haven Expressway \*\*\*\*\*

\* Northeast NLEV inputs  
94+ LDG IMP : NLEVNE.D

\* Fuel Data  
FUEL PROGRAM : 2 N  
NO REFUELING :

REG DIST : CTreg02.d

EXPRESS HC AS VOC :

\* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests  
I/M DESC FILE : CTIM05.d  
ANTI-TAMP PROG :  
83 71 50 22222 21111111 1 12 096. 12111112

\* VMT Data  
VMT BY HOUR : 2015Exp.def  
SPEED VMT : 20sdvmt6.cty  
VMT BY FACILITY : FCVMTF.CTY

\* 2015 expressway/ramp VMT fractions  
VMT FRACTIONS :  
0.2899 0.1056 0.3514 0.1083 0.0499 0.0301 0.0030 0.0025  
0.0019 0.0068 0.0080 0.0087 0.0308 0.0015 0.0008 0.0008

SCENARIO RECORD : New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2  
CALENDAR YEAR : 2015  
EVALUATION MONTH : 1  
FUEL RVP : 13.0

\* Weather Data for SWCT NA area  
MIN/MAX TEMP : 18. 44.  
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.  
54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>\*\*\*\*\*New Haven Arterials/Collectors \*\*\*\*\*

\* Northeast NLEV inputs  
94+ LDG IMP : NLEVNE.D

\* Fuel Data  
FUEL PROGRAM : 2 N  
NO REFUELING :

REG DIST : CTreg02.d

EXPRESS HC AS VOC :

\* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests  
I/M DESC FILE : CTIM05.d  
ANTI-TAMP PROG :  
83 71 50 22222 21111111 1 12 096. 12111112

\* VMT Data  
VMT BY HOUR : 2015Art.def  
SPEED VMT : 20sdvmt6.cty  
VMT BY FACILITY : FCVMTA.CTY

\* 2015 arterial/collector VMT fractions  
VMT FRACTIONS :  
0.3100 0.1128 0.3754 0.1157 0.0532 0.0100 0.0010 0.0008

0.0006 0.0022 0.0026 0.0029 0.0102 0.0005 0.0003 0.0018

SCENARIO RECORD : New Haven County 2015 03 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2  
CALENDAR YEAR : 2015  
EVALUATION MONTH : 1  
FUEL RVP : 13.0

\* Weather Data for SWCT NA area  
MIN/MAX TEMP : 18. 44.  
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.  
54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>\*\*\*\*\*New Haven Local \*\*\*\*\*

\* Northeast NLEV inputs  
94+ LDG IMP : NLEVNE.D

\* Fuel Data  
FUEL PROGRAM : 2 N  
NO REFUELING :

REG DIST : CTreg02.d

EXPRESS HC AS VOC :

\* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests  
I/M DESC FILE : CTIM05.d  
ANTI-TAMP PROG :  
83 71 50 22222 21111111 1 12 096. 12111112

\* VMT Data  
VMT BY HOUR : 2015Loc.def  
SPEED VMT : 20sdvmt6.cty  
VMT BY FACILITY : FCVMTL.CTY

\* 2015 Local VMT fractions  
VMT FRACTIONS :  
0.3119 0.1134 0.3775 0.1163 0.0535 0.0085 0.0008 0.0007  
0.0005 0.0019 0.0023 0.0025 0.0087 0.0004 0.0002 0.0009

SCENARIO RECORD : New Haven County 2015 03 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2  
CALENDAR YEAR : 2015  
EVALUATION MONTH : 1  
FUEL RVP : 13.0

\* Weather Data for SWCT NA area  
MIN/MAX TEMP : 18. 44.  
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.  
54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>\*\*\*\*\*New Haven Ramp \*\*\*\*\*

\* Northeast NLEV inputs  
94+ LDG IMP : NLEVNE.D

\* Fuel Data  
FUEL PROGRAM : 2 N  
NO REFUELING :

REG DIST : CTreg02.d

EXPRESS HC AS VOC :

\* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests  
I/M DESC FILE : CTIM05.d  
ANTI-TAMP PROG :  
83 71 50 22222 21111111 1 12 096. 12111112

\* VMT Data  
VMT BY HOUR : 2015Exp.def  
SPEED VMT : 20sdvmt6.cty  
VMT BY FACILITY : FCVMTR.CTY

\* 2015 expressway/ramp VMT fractions  
VMT FRACTIONS :  
0.2899 0.1056 0.3514 0.1083 0.0499 0.0301 0.0030 0.0025  
0.0019 0.0068 0.0080 0.0087 0.0308 0.0015 0.0008 0.0008

SCENARIO RECORD : New Haven County 2015 03 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2

CALENDAR YEAR : 2015  
EVALUATION MONTH : 1  
FUEL RVP : 13.0

\* Weather Data for SWCT NA area

MIN/MAX TEMP : 18. 44.  
RELATIVE HUMIDITY : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.  
54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN





LEV phase-in data read from file NLEVNE.D  
 Calendar Year: 2015

Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 18.0 (F)  
 Maximum Temperature: 44.0 (F)  
 Minimum Rel. Hum.: 39.0 (%)  
 Maximum Rel. Hum.: 87.0 (%)  
 Fuel Sul Fur Content: 90. ppm

Exhaust I/M Program: Yes  
 Evap I/M Program: Yes  
 ATP Program: Yes  
 Reformulated Gas: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000								
VMT Distribution:	0.2895	0.4570	0.1559		0.0280	0.0004	0.0023	0.0661	0.0008	1.0000

Composite Emission Factors (g/ml):

Composite VOC :	0.697	0.636	0.934	0.712	0.704	0.396	0.379	0.362	4.06	0.686
Composite CO :	24.63	27.37	25.32	26.85	14.27	1.315	0.781	2.362	18.74	24.157
Composite NOx :	1.204	1.486	1.915	1.595	5.735	1.514	1.516	17.017	2.90	2.618

\*\*\*\*\*  
 \* MOBILE6.2.01 (31-Oct-2002) \*  
 \* Input file: HRT2015.IN (file 1, run 2). \*  
 \* \*\*\*\*\*New Haven Arterials/Collectors \*\*\*\*\*  
 \* \*\*\*\*\*

\* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external  
 \* data file: NLEVNE.D  
 \* M616 Comment: User has supplied post-1999 sulfur levels.

M603 Comment: User has disabled the calculation of REFUELING emissions.

\* Reading Registration Distributions from the following external  
 \* data file: CTREG02.D

\* Reading I/M program description records from the following external  
 \* data file: CTIM05.D  
 \* CT I/M PROGRAMS for all years 2015 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)  
 \* Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that  
 replaced the ASM  
 \* Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR  
 \* Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)  
 \* Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)  
 \* Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading ASM I/M Test Credits from ASMDATA.D  
 \* Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading Hourly VMT distribution from the following external  
 \* data file: 2015ART.DEF



\* \* Reading Hourly, Roadway, and Speed VMT dist. from the following external data file: 20SDVMT6.CTY

\* \* Reading Hourly Roadway VMT distribution from the following external data file: FCVMTA.CTY

Reading User Supplied ROADWAY VMT Factors  
M615 Comment: User supplied VMT mix.

\* \* \* \* \*  
\* \* New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2  
\* \* File 1, Run 2, Scenario 1.  
\* \* \* \* \*  
M112 Warning:

\*\*\* I/M credits for Tech1&2 vehicles were read from the following external data file: TECH12.D  
M 48 Warning: there are no sales for vehicle class HDGV8b

LEV phase-in data read from file NLEVNE.D

Calendar Year: 2015  
Month: Jan.  
Altitude: Low  
Minimum Temperature: 18.0 (F)  
Maximum Temperature: 44.0 (F)  
Minimum Rel. Hum.: 39.0 (%)  
Maximum Rel. Hum.: 87.0 (%)  
Fuel Sul Fur Content: 90. ppm

Exhaust I/M Program: Yes  
Evap I/M Program: Yes  
ATP Program: Yes  
Reformulated Gas: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	>6000	(All)						
VMT Distribution:	0.3096	0.4882	0.1665		0.0092	0.0004	0.0025	0.0219	0.0018	1.0000

Composite Emission Factors (g/ml):  
Composite VOC : 0.787 0.719 1.061 0.806 1.133 0.482 0.491 0.532 4.01 0.802  
Composite CO : 21.78 24.19 22.38 23.73 13.69 1.414 0.856 2.747 15.60 22.491  
Composite NOX : 1.126 1.405 1.848 1.517 4.828 0.998 0.988 10.181 2.20 1.616

\* \* \* \* \*  
\* \* MOBILE6.2.01 (31-Oct-2002)  
\* \* Input file: HRT2015.IN (file 1, run 3).  
\* \* \* \* \*  
\*\*\*\*\*New Haven Local \*\*\*\*\*

\* \* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external data file: NLEVNE.D  
M616 Comment: User has supplied post-1999 sulfur levels.

M603 Comment: User has disabled the calculation of REFUELING emissions.



GVWR:		<6000		>6000		(All)			
VMT Distribution:	0.3115	0.4909	0.1673	0.0079	0.0004	0.0025	0.0186	0.0009	1.0000
Composite Emission Factors (g/mi):									
Composite VOC :	1.018	0.918	1.343	1.026	0.741	0.830	1.046	5.38	1.041
Composite CO :	18.95	21.11	19.81	20.78	2.369	1.586	6.398	28.26	19.984
Composite NOx :	1.024	1.297	1.735	1.408	1.260	1.256	11.638	1.81	1.500

\*\*\*\*\*  
 \* MOBILE6.2.01 (31-Oct-2002) \*  
 \* Input file: HRT2015.IN (file 1, run 4). \*  
 \* \*\*\*\*\*New Haven Ramp \*\*\*\*\*

\* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external  
 \* data file: NLEVNE.D  
 \* M616 Comment: User has disabled the calculation of REFUELING emissions.

\* M603 Comment: User has disabled the calculation of REFUELING emissions.

\* Reading Registration Distributions from the following external  
 \* data file: CTREG02.D

\* Reading I/M program description records from the following external  
 \* data file: CTIM05.D  
 \* CT I/M PROGRAMS for all years 2015 and later (modified Jun 05 PNB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)  
 \* Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM  
 \* Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR  
 \* Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)  
 \* Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)  
 \* Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading ASM I/M Test Credits from ASMDATA.D  
 \* Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading Hourly VMT distribution from the following external  
 \* data file: 2015EXP.DEF

\* Reading Hourly, Roadway, and Speed VMT dist. from the following external  
 \* data file: 20SDVMT6.CTY

\* Reading Hourly Roadway VMT distribution from the following external  
 \* data file: FCVMT6.CTY

Reading User Supplied ROADWAY VMT Factors  
 M615 Comment: User supplied VMT mix.

\* \* \* \* \*  
 \* New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2  
 \* File 1, Run 4, Scenario 1.  
 \* \* \* \* \*  
 \* M112 Warning: Wintertime Reformulated Gasoline Rules Apply

\*\*\* I/M credits for Tech1&2 vehicles were read from the following external data file: TECH12.D  
 M 48 Warning:

there are no sales for vehicle class HDGV8b

LEV phase-in data read from file NLEVNE.D

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 18.0 (F)  
 Maximum Temperature: 44.0 (F)  
 Minimum Rel. Hum.: 39.0 (%)  
 Maximum Rel. Hum.: 87.0 (%)  
 Fuel Sulfur Content: 90. ppm

Exhaust I/M Program: Yes  
 Evap I/M Program: Yes  
 ATP Program: Yes  
 Reformulated Gas: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.2895	0.4570	0.1559	0.0280	0.0004	0.0023	0.0661	0.0008	1.0000	
Composite Emission Factors (g/mi):										
Composite VOC :	0.901	0.829	1.172	0.916	0.992	0.464	0.469	0.498	3.86	0.887
Composite CO :	31.12	32.48	29.87	31.82	11.87	1.330	0.792	2.418	14.24	29.017
Composite NOX :	1.370	1.636	2.115	1.758	4.810	0.940	0.929	8.835	2.21	2.197

\*\*\*\*\*  
 \* MOBILE6.2.01 (31-Oct-2002) \*  
 \* Input file: MDSX2015.IN (file 1, run 1). \*  
 \* \*\*\*\*\* \*  
 \* 2015 input file with 2002 registration data; created 4/8/05 PMB \*  
 \* \*\*\*\*\*New Haven Expressway \*\*\*\*\*

\* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external data file: NLEVNE.D

M616 Comment: User has supplied post-1999 sulfur levels.  
 M603 Comment: User has disabled the calculation of REFUELING emissions.

\* Reading Registration Distributions from the following external data file: CTREG02.D

\* Reading I/M program description records from the following external data file: CTIM05.D

\* CT I/M PROGRAMS for all years 2015 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)  
 \* Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM  
 \* Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR  
 \* Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)  
 \* Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)  
 \* Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading ASM I/M Test Credits from ASMDATA.D  
 \*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR  
 \* Reading Hourly VMT distribution from the following external  
 \* data file: 2015EXP.DEF

\* Reading Hourly Roadway, and Speed VMT dist. from the following external  
 \* data file: 20SDVMT6.CTY  
 \* Reading Hourly Roadway VMT distribution from the following external  
 \* data file: FCVMTF.CTY

Reading User Supplied ROADWAY VMT Factors  
 M615 Comment: User supplied VMT mi x.

\* \* \* \* \*  
 \* New Haven County 2015 03 SEASON w/OBD/ASM/idle I/M w/gascap, ATP, RFG2  
 \* File 1, Run 1, Scenario 1.  
 \* \* \* \* \*  
 M112 Warning:

\*\*\* I/M credits for Wintertime Reformulated Gasoline Rules Apply  
 data file: TECH12.D  
 M 48 Warning: there are no sales for vehicle class HDGV8b

LEV phase-in data read from file NLEVNE.D  
 Calendar Year: 2015

Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 18.0 (F)  
 Maximum Temperature: 44.0 (F)  
 Minimum Rel. Hum.: 39.0 (%)  
 Maximum Rel. Hum.: 87.0 (%)  
 Fuel Sulfur Content: 90. ppm

Exhaust I/M Program: Yes  
 Evap I/M Program: Yes  
 ATP Program: Yes  
 Reformulated Gas: Yes

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2895	0.4570	0.1559		0.0280	0.0004	0.0023	0.0661	0.0008	1.0000
-----										
Composite Emission Factors (g/mi):										
Composite VOC :	0.697	0.636	0.934	0.712	0.704	0.396	0.379	0.362	4.06	0.686
Composite CO :	24.63	27.37	25.32	26.85	14.27	1.315	0.781	2.362	18.74	24.157
Composite NOx :	1.204	1.486	1.915	1.595	5.735	1.514	1.516	17.017	2.90	2.618

\*\*\*\*\*  
 \* MOBILE6.2.01 (31-Oct-2002) \*  
 \* Input file: MDSX2015.IN (file 1, run 2). \*  
 \*\*\*\*\*  
 \*\*\*\*\*New Haven Arterials/Collctors \*\*\*\*\*

\* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external  
data file: NLEVNE.D  
M616 Comment: User has supplied post-1999 sulfur levels.  
M603 Comment: User has disabled the calculation of REFUELING emissions.

\* Reading Registration Distributions from the following external  
data file: CTREG02.D

\* Reading I/M program description records from the following external  
data file: CTIM05.D

\*CT I/M PROGRAMS for all years 2015 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lbs get TSI & GC (no OBD)  
\*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM  
\*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR  
\*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)  
\*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)  
\*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading ASM I/M Test Credits from ASMDATA.D  
\*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading Hourly VMT distribution from the following external  
data file: 2015ART.DEF

\* Reading Hourly, Roadway, and Speed VMT dist. from the following external  
data file: 20SDVMT6.CTY

\* Reading Hourly Roadway VMT distribution from the following external  
data file: FCVMTA.CTY

Reading User Supplied ROADWAY VMT Factors  
M615 Comment: User supplied VMT mi x.

\* \* \* \* \*  
\* New Haven County 2015 03 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2  
\* File 1, Run 2, Scenario 1.  
\* \* \* \* \*  
M112 Warning: Wintertime Reformulated Gasoline Rules Apply  
\*\*\* I/M credits for Tech1&2 vehicles were read from the following external  
data file: TECH12.D  
M 48 Warning: there are no sales for vehicle class HDGV8b

LEV phase-in data read from file NLEVNE.D  
Calendar Year: 2015  
Month: Jan.  
Altitude: Low  
Minimum Temperature: 18.0 (F)  
Maximum Temperature: 44.0 (F)  
Minimum Rel. Hum.: 39.0 (%)  
Maximum Rel. Hum.: 87.0 (%)  
Fuel Sulfur Content: 90. ppm

Exhaust I/M Program: Yes  
 Evap I/M Program: Yes  
 ATP Program: Yes  
 Reformulated Gas: Yes

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3096	0.4882	0.1665		0.0092	0.0004	0.0025	0.0219	0.0018	1.0000

Composite Emission Factors (g/ml):

Composite VOC : 0.787 0.719 1.061 0.806 1.133 0.482 0.491 0.532 4.01 0.802  
 Composite CO : 21.78 24.19 22.38 23.73 13.69 1.414 0.856 2.747 15.60 22.491  
 Composite NOx : 1.126 1.405 1.848 1.517 4.828 0.998 0.988 10.181 2.20 1.616

\*\*\*\*\*  
 \* MOBILE6.2.01 (31-Oct-2002) \*  
 \* Input file: MDSX2015.IN (file 1, run 3). \*  
 \* \*\*\*\*\*New Haven Local \*\*\*\*\* \*  
 \* \*\*\*\*\*

\* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external  
 data file: NLEVNE.D  
 M616 Comment:

M603 Comment: User has disabled the calculation of REFUELING emissions.  
 User has supplied post-1999 sulfur levels.

\* Reading Registration Distributions from the following external  
 data file: CTREG02.D

\* Reading I/M program description records from the following external  
 data file: CTIM05.D

\*CT I/M PROGRAMS for all years 2015 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)  
 \*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that  
 replaced the ASM  
 \*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR  
 \*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)  
 \*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)  
 \*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading ASM I/M Test Credits from ASMDATA.D  
 \*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

\* Reading Hourly VMT distribution from the following external  
 data file: 2015LOC.DEF

\* Reading Hourly, Roadway, and Speed VMT dist. from the following external  
 data file: 20SDVMT6.CTY

\* Reading Hourly Roadway VMT distribution from the following external  
 data file: FCVMTL.CTY

Reading User Supplied ROADWAY VMT Factors  
 M615 Comment: User supplied VMT mi x.

\* \* \* \* \*  
 \* New Haven County 2015 03 SEASON w/OBD/ASM/Idle I/M W/gascap, ATP, RFG2  
 \* File 1, Run 3, Scenario 1.  
 \* \* \* \* \*  
 M112 Warning:

Wintertime Reformulated Gasoline Rules Apply  
 \*\*\* I/M credits for Tech1&2 vehicles were read from the following external  
 data file: TECH12.D

M 48 Warning:  
 there are no sales for vehicle class HDGV8b

LEV phase-in data read from file NLEVNE.D

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 18.0 (F)  
 Maximum Temperature: 44.0 (F)  
 Minimum Rel. Hum.: 39.0 (%)  
 Maximum Rel. Hum.: 87.0 (%)  
 Fuel Sulfur Content: 90. ppm

Exhaust I/M Program: Yes  
 Evap I/M Program: Yes  
 ATP Program: Yes  
 Reformulated Gas: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	>6000							
VMT Distribution:	0.3115	0.4909	0.1673		0.0079	0.0004	0.0025	0.0186	0.0009	1.0000

Composite Emission Factors (g/ml):

Composite VOC :	1.018	0.918	1.343	1.026	2.796	0.741	0.830	1.046	5.38	1.041
Composite CO :	18.95	21.11	19.81	20.78	32.07	2.369	1.586	6.398	28.26	19.984
Composite NOX :	1.024	1.297	1.735	1.408	4.001	1.260	1.256	11.638	1.81	1.500

\*\*\*\*\*  
 \* MOBILE6.2.01 (31-Oct-2002) \*  
 \* Input file: MDSX2015.IN (file 1, run 4). \*  
 \* \*\*\*\*\*New Haven Ramp \*\*\*\*\*  
 \* \*\*\*\*\*

\* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external  
 data file: NLEVNE.D

M616 Comment: User has supplied post-1999 sulfur levels.

M603 Comment: User has disabled the calculation of REFUELING emissions.

\* Reading Registration Distributions from the following external  
 data file: CTREG02.D

\* Reading I/M program description records from the following external  
 data file: CTIM05.D

\*CT I/M PROGRAMS for all years 2015 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)







**Attachment B**  
**CALQVIEW2 Model Input and Output Files**

2015AM\_Sargent-I95\_NoBuild\_input

' Sargent @ I-95 2015 AM No Build', 60 , 175 , 0 , 0 , 7 , 0.3048 , 1 , 1  
' SB W Corner', 190 , 217.5 , 6  
' SB N Mi dblock', 190 , 317.5 , 6  
' SB S Mi dblock', 190 , 117.5 , 6  
' SE Corner', 255 , 187 , 6  
' NE Corner', 255 , 225 , 6  
' NB N Mi dblock', 255 , 317.5 , 6  
' NB S Mi dblock', 255 , 117.5 , 6  
' Sargent @ I-95 2015 AM No Build', 6 , 1 , 1 , 'CO'  
1  
' I-95 OnRamp', 'AG', 223 , 205.5 , 444 , 205.5 , 1 , 51.5 , 0 , 24  
2  
' Sargent NB TR', 'AG', 234.5 , 0 , 234.5 , 193.5 , 0 , 24 , 2  
76 , 62 , 4 , 290 , 128.66 , 3447 , 2 , 4  
1  
' Sargent NB', 'AG', 234.5 , 217.5 , 234.5 , 445.5 , 290 , 51.5 , 0 , 24  
2  
' Sargent SB L', 'AG', 216.5 , 445.5 , 216.5 , 217.5 , 0 , 12 , 1  
76 , 1 , 4 , 510 , 128.66 , 844 , 2 , 3  
2  
' Sargent SB T', 'AG', 205 , 445 , 205 , 217.5 , 0 , 12 , 1  
76 , 38 , 4 , 380 , 128.66 , 1863 , 2 , 3  
1  
' Sargent SB', 'AG', 211 , 217.5 , 211 , 0 , 890 , 51.5 , 0 , 24  
1 , 0 , 4 , 1000 , 4.3 , 'Y', 10 , 0 , 36

2015PM\_Sargent-I95\_NoBuild\_input

' Sargent @ I-95 2015 PM No Build', 60 , 175 , 0 , 0 , 7 , 0.3048 , 1 , 1  
 ' SB W Corner', 190 , 217.5 , 6  
 ' SB N Mi dblock', 190 , 317.5 , 6  
 ' SB S Mi dblock', 190 , 117.5 , 6  
 ' SE Corner', 255 , 187 , 6  
 ' NE Corner', 255 , 225 , 6  
 ' NB N Mi dblock', 255 , 317.5 , 6  
 ' NB S Mi dblock', 255 , 117.5 , 6  
 ' Sargent @ I-95 2015 PM No Build', 6 , 1 , 1 , 'CO'  
 1  
 ' I-95 OnRamp', 'AG', 223 , 205.5 , 444 , 205.5 , 1 , 51.5 , 0 , 24  
 2  
 ' Sargent NB TR', 'AG', 234.5 , 0 , 234.5 , 193.5 , 0 , 24 , 2  
 76 , 62 , 4 , 730 , 128.66 , 3394 , 2 , 4  
 1  
 ' Sargent NB', 'AG', 234.5 , 217.5 , 234.5 , 445.5 , 730 , 51.5 , 0 , 24  
 2  
 ' Sargent SB L', 'AG', 216.5 , 445.5 , 216.5 , 217.5 , 0 , 12 , 1  
 76 , 1 , 4 , 1090 , 128.66 , 324 , 2 , 3  
 2  
 ' Sargent SB T', 'AG', 205 , 445 , 205 , 217.5 , 0 , 12 , 1  
 76 , 38 , 4 , 480 , 128.66 , 1863 , 2 , 3  
 1  
 ' Sargent SB', 'AG', 211 , 217.5 , 211 , 0 , 1570 , 51.5 , 0 , 24  
 1 , 0 , 4 , 1000 , 4.3 , 'Y', 10 , 0 , 36

2015AM\_Sargent-I95\_Build\_input

' Sargent @ I-95 2015 AM Build', 60 , 175 , 0 , 0 , 7 , 0.3048 , 1 , 1  
 ' SB W Corner', 190 , 217.5 , 6  
 ' SB N Mi dblock', 190 , 317.5 , 6  
 ' SB S Mi dblock', 190 , 117.5 , 6  
 ' SE Corner', 255 , 187 , 6  
 ' NE Corner', 255 , 225 , 6  
 ' NB N Mi dblock', 255 , 317.5 , 6  
 ' NB S Mi dblock', 255 , 117.5 , 6  
 ' Sargent @ I-95 2015 AM Build', 6 , 1 , 1 , 'CO'  
 1  
 ' I-95 OnRamp', 'AG', 223 , 205.5 , 444 , 205.5 , 1 , 51.5 , 0 , 24  
 2  
 ' Sargent NB TR', 'AG', 234.5 , 0 , 234.5 , 193.5 , 0 , 24 , 2  
 76 , 62 , 4 , 307 , 128.66 , 3422 , 2 , 4  
 1  
 ' Sargent NB', 'AG', 234.5 , 217.5 , 234.5 , 445.5 , 307 , 51.5 , 0 , 24  
 2  
 ' Sargent SB L', 'AG', 216.5 , 445.5 , 216.5 , 217.5 , 0 , 12 , 1  
 76 , 1 , 4 , 568 , 128.66 , 795 , 2 , 3  
 2  
 ' Sargent SB T', 'AG', 205 , 445 , 205 , 217.5 , 0 , 12 , 1  
 76 , 38 , 4 , 380 , 128.66 , 1863 , 2 , 3  
 1  
 ' Sargent SB', 'AG', 211 , 217.5 , 211 , 0 , 948 , 51.5 , 0 , 24  
 1 , 0 , 4 , 1000 , 4.3 , 'Y', 10 , 0 , 36

2015PM\_Sargent-I95\_Build\_input

' Sargent @ I-95 2015 PM Build', 60 , 175 , 0 , 0 , 7 , 0.3048 , 1 , 1  
 ' SB W Corner', 190 , 217.5 , 6  
 ' SB N Mi dblock', 190 , 317.5 , 6  
 ' SB S Mi dblock', 190 , 117.5 , 6  
 ' SE Corner', 255 , 187 , 6  
 ' NE Corner', 255 , 225 , 6  
 ' NB N Mi dblock', 255 , 317.5 , 6  
 ' NB S Mi dblock', 255 , 117.5 , 6  
 ' Sargent @ I-95 2015 PM Build', 6 , 1 , 1 , 'CO'  
 1  
 ' I-95 OnRamp', 'AG', 223 , 205.5 , 444 , 205.5 , 1 , 51.5 , 0 , 24  
 2  
 ' Sargent NB TR', 'AG', 234.5 , 0 , 234.5 , 193.5 , 0 , 24 , 2  
 86 , 63 , 4 , 739 , 128.66 , 3391 , 2 , 4  
 1  
 ' Sargent NB', 'AG', 234.5 , 217.5 , 234.5 , 445.5 , 739 , 51.5 , 0 , 24  
 2  
 ' Sargent SB L', 'AG', 216.5 , 445.5 , 216.5 , 217.5 , 0 , 12 , 1  
 86 , 1 , 4 , 1126 , 128.66 , 324 , 2 , 3  
 2  
 ' Sargent SB T', 'AG', 205 , 445 , 205 , 217.5 , 0 , 12 , 1  
 86 , 25 , 4 , 480 , 128.66 , 1863 , 2 , 3  
 1  
 ' Sargent SB', 'AG', 211 , 217.5 , 211 , 0 , 1606 , 51.5 , 0 , 24  
 1 , 0 , 4 , 1000 , 4.3 , 'Y', 10 , 0 , 36





**CALQVIEW2 2015 AM No-Build Peak Output File**



JOB: Sargent @ I-95 2015 AM No Bui l d

RUN: Sargent @ I-95 2015 AM No Bui l d

DATE : 8/30/ 7  
 TIME : 11: 17: 47

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S      VD = .0 CM/S      ZO = 175. CM  
 U = 1.0 M/S      CLAS = 4 (D)      ATIM = 60. MINUTES      MIXH = 1000. M      AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG TYPE (DEG)	VPH	EF (G/MI)	H (FT)	W (FT)	V/C QUEUE (VEH)
1. I-95 OnRamp	223.0	205.5	444.0	205.5	221.	90.	AG	51.5	0	24.0	
2. Sargent NB TR	234.5	.0	234.5	49.2	49.	360.	AG	100.0	0	24.0	.40
3. Sargent NB L	234.5	217.5	234.5	445.5	228.	360.	AG	51.5	0	24.0	2.5
4. Sargent SB L	216.5	445.5	216.5	439.3	6.	180.	AG	100.0	0	12.0	.67
5. Sargent SB T	205.0	445.0	205.0	366.0	79.	180.	AG	173.	0	12.0	.48
6. Sargent SB	211.0	217.5	211.0	.0	217.	180.	AG	890.	0	24.0	

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Sargent NB TR	76	62	4.0	290	3447	128.66	2	4
4. Sargent SB L	76	1	4.0	510	844	128.66	2	3
5. Sargent SB T	76	38	4.0	380	1863	128.66	2	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SB W Corner	190.0	217.5	6.0
2. SB N Mi dblock	190.0	317.5	6.0
3. SB S Mi dblock	190.0	117.5	6.0
4. SE Corner	255.0	187.0	6.0
5. NE Corner	255.0	225.0	6.0
6. NB N Mi dblock	255.0	317.5	6.0
7. NB S Mi dblock	255.0	117.5	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE (DEGR)	WIND ANGLE RANGE (DEGR)	* CONCENTRATION (PPM)	REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.		4.5	4.5	5.0	4.7	4.6	4.6	4.6	4.6
10.		4.6	4.6	5.6	4.5	4.5	4.4	4.4	4.4
20.		4.6	4.7	6.0	4.4	4.4	4.3	4.3	4.3
30.		4.6	4.7	6.0	4.3	4.3	4.3	4.3	4.3
40.		4.6	4.7	6.0	4.3	4.3	4.3	4.3	4.3
50.		4.6	4.6	5.8	4.3	4.3	4.3	4.3	4.3
60.		4.7	4.6	5.7	4.3	4.3	4.3	4.3	4.3
70.		4.7	4.6	5.6	4.3	4.3	4.3	4.3	4.3
80.		4.9	4.6	5.6	4.3	4.3	4.3	4.3	4.3
90.		5.1	4.6	5.6	4.3	4.3	4.3	4.3	4.3
100.		5.3	4.6	5.6	4.3	4.3	4.3	4.3	4.3
110.		5.4	4.6	5.6	4.3	4.3	4.3	4.3	4.3
120.		5.6	4.6	5.7	4.3	4.3	4.3	4.3	4.3
130.		5.7	4.6	6.0	4.3	4.3	4.3	4.3	4.3
140.		5.9	4.7	6.2	4.3	4.3	4.3	4.3	4.3
150.		6.2	4.7	6.4	4.3	4.3	4.3	4.3	4.3
160.		6.3	5.0	6.3	4.3	4.3	4.3	4.3	4.4
170.		6.1	5.2	5.8	4.5	4.5	4.6	4.5	4.5
180.		5.4	5.0	5.1	4.8	4.8	5.0	4.8	4.8
190.		4.8	4.6	4.6	5.1	5.2	5.4	5.1	5.1
200.		4.5	4.4	4.4	5.4	5.3	5.4	5.3	5.3
210.		4.3	4.3	4.3	5.4	5.3	5.2	5.4	5.3
220.		4.3	4.3	4.3	5.3	5.4	5.0	5.3	5.3
230.		4.3	4.3	4.3	5.2	5.2	4.8	5.2	5.2
240.		4.3	4.3	4.3	5.2	5.2	4.8	5.2	5.2
250.		4.3	4.3	4.3	5.2	5.1	4.7	5.2	5.2
260.		4.3	4.3	4.3	5.2	5.0	4.7	5.2	5.2
270.		4.3	4.3	4.3	5.2	5.0	4.7	5.2	5.2
280.		4.3	4.3	4.3	5.1	4.8	4.7	5.2	5.2
290.		4.3	4.3	4.3	5.0	4.7	4.7	5.2	5.2
300.		4.3	4.3	4.3	4.9	4.8	4.8	5.2	5.2
310.		4.3	4.3	4.3	4.8	4.8	4.9	5.2	5.2
320.		4.3	4.3	4.3	4.7	4.8	5.0	5.2	5.2
330.		4.3	4.3	4.3	4.7	4.9	5.1	5.1	5.1
340.		4.3	4.3	4.4	4.8	5.0	4.9	4.9	4.9
350.		4.3	4.4	4.6	4.9	4.9	4.8	4.7	4.7
360.		4.5	4.5	5.0	4.6	4.7	4.6	4.6	4.6
MAX		6.3	5.2	6.4	5.4	5.4	5.4	5.4	5.4
DEGR.		160	170	150	200	220	190	210	210

THE HIGHEST CONCENTRATION OF 6.40 PPM OCCURRED AT RECEPTOR REC3 .

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING  
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

LINK #	CO/LINK (PPM)		ANGLE (DEGREES)						
	REC1 160	REC2 170	REC3 150	REC4 200	REC5 220	REC6 190	REC7 210		
1	.0	.0	.0	.0	.0	.0	.0		
2	.2	.1	.4	.2	.0	.1	.3		
3	.0	.1	.0	.0	.1	.4	.0		
4	.0	.0	.0	.0	.0	.0	.0		
5	.0	.0	.0	.0	.0	.0	.0		
6	1.8	.7	1.7	.9	1.0	.6	.8		



**CALQVIEW2 2015 PM No-Build Peak Output File**

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: Sargent @ 1-95 2015 PM No Bui Id

RUN: Sargent @ 1-95 2015 PM No Bui Id

DATE : 8/30/ 7  
 TIME : 11:31: 8

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S      VD = .0 CM/S      ZO = 175. CM  
 U = 1.0 M/S      CLAS = 4 (D)      ATIM = 60. MINUTES      MIXH = 1000. M      AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG TYPE (DEG)	VPH	EF (G/MI)	H (FT)	W (FT)	V/C QUEUE (VEH)
1. I-95 OnRamp	223.0	205.5	444.0	205.5	221.	90. AG	1.	51.5	.0	24.0	
2. Sargent NB TR	234.5	.0	234.5	262.4	262.	360. AG	563.	100.0	.0	24.0	13.3
3. Sargent NB L	234.5	217.5	234.5	445.5	228.	360. AG	730.	51.5	.0	24.0	
4. Sargent SB L	216.5	445.5	216.5	-7660.4	8106.	180. AG	5.	100.0	.0	12.0	411.8
5. Sargent SB T	205.0	445.0	205.0	345.3	100.	180. AG	173.	100.0	.0	12.0	5.1
6. Sargent SB	211.0	217.5	211.0	.0	217.	180. AG	1570.	51.5	.0	24.0	

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Sargent NB TR	76	62	4.0	730	3394	128.66	2	4
4. Sargent SB L	76	1	4.0	1090	324	128.66	2	3
5. Sargent SB T	76	38	4.0	480	1863	128.66	2	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z	COORDINATES (FT)
1. SB W Corner	190.0	217.5	6.0	6.0
2. SB N Mi dblock	190.0	317.5	6.0	6.0
3. SB S Mi dblock	190.0	117.5	6.0	6.0
4. SE Corner	255.0	187.0	6.0	6.0
5. NE Corner	255.0	225.0	6.0	6.0
6. NB N Mi dblock	255.0	317.5	6.0	6.0
7. NB S Mi dblock	255.0	117.5	6.0	6.0



MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE (DEGR)	WIND ANGLE RANGE (DEGR)	* CONCENTRATION (PPM)	REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.			4.7	4.7	6.0	5.8	5.5	5.0	6.0
10.			4.9	5.0	7.3	4.9	4.8	4.6	5.1
20.			5.3	5.2	8.3	4.5	4.4	4.4	4.5
30.			5.4	5.3	8.6	4.3	4.3	4.3	4.3
40.			5.6	5.3	8.4	4.3	4.3	4.3	4.3
50.			5.9	5.2	8.0	4.3	4.3	4.3	4.3
60.			6.1	5.0	7.8	4.3	4.3	4.3	4.3
70.			6.3	5.0	7.8	4.3	4.3	4.3	4.3
80.			6.6	5.0	7.7	4.3	4.3	4.3	4.3
90.			7.0	5.0	7.7	4.3	4.3	4.3	4.3
100.			7.2	5.0	7.7	4.3	4.3	4.3	4.3
110.			7.5	5.0	7.8	4.3	4.3	4.3	4.3
120.			7.7	5.1	7.9	4.3	4.3	4.3	4.3
130.			7.9	5.3	8.0	4.3	4.3	4.3	4.3
140.			8.4	5.7	8.2	4.3	4.3	4.3	4.3
150.			8.7	6.1	8.2	4.3	4.3	4.3	4.3
160.			8.6	6.6	7.8	4.5	4.5	4.6	4.4
170.			7.9	6.7	6.9	5.0	6.2	6.6	5.4
180.			6.5	5.9	5.7	6.0	6.2	7.5	7.7
190.			5.3	5.1	4.8	7.2	7.5	7.7	6.5
200.			4.6	4.5	4.5	8.0	8.3	8.4	7.4
210.			4.3	4.3	4.3	8.3	8.4	6.9	7.9
220.			4.3	4.3	4.3	8.1	8.2	6.2	7.9
230.			4.3	4.3	4.3	7.8	7.9	5.7	7.7
240.			4.3	4.3	4.3	7.6	7.8	5.5	7.6
250.			4.3	4.3	4.3	7.5	7.7	5.4	7.5
260.			4.3	4.3	4.3	7.5	7.5	5.4	7.5
270.			4.3	4.3	4.3	7.5	7.3	5.4	7.6
280.			4.3	4.3	4.3	7.4	7.1	5.4	7.5
290.			4.3	4.3	4.3	7.2	7.1	5.5	7.6
300.			4.3	4.3	4.3	7.1	7.2	5.6	7.6
310.			4.3	4.3	4.3	7.1	7.2	5.7	7.7
320.			4.3	4.3	4.3	7.0	7.3	5.8	7.9
330.			4.3	4.3	4.3	7.1	7.2	5.9	7.9
340.			4.3	4.3	4.4	7.2	6.8	5.9	7.7
350.			4.5	4.4	4.9	6.8	6.3	5.5	7.0
360.			4.7	4.7	6.0	5.8	5.5	5.0	6.0
MAX			8.7	6.7	8.6	8.3	8.4	7.7	7.9
DEGR.			150	170	30	210	210	190	210

THE HIGHEST CONCENTRATION OF 8.70 PPM OCCURRED AT RECEPTOR REC1

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING  
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

LINK #	CO/LINK (PPM)			ANGLE (DEGREES)						
	REC1 150	REC2 170	REC3 30	REC4 210	REC5 210	REC6 190	REC7 210	REC8 190	REC9 210	
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	
2	1.3	1.0	1.1	2.2	2.2	1.4	2.1			
3	.0	.2	.3	.0	.1	1.0	.0			
4	.0	.0	.0	.0	.0	.0	.0			
5	.0	.0	.0	.0	.0	.0	.0			
6	3.1	1.2	2.9	1.8	1.8	1.0	1.5			

**CALQVIEW2 2015 AM Build Peak Output File**



CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: Sargent @ I-95 2015 AM Build

RUN: Sargent @ I-95 2015 AM Build

DATE : 8/30/7  
TIME : 11:37:41

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S      VD = .0 CM/S      ZO = 175. CM      MIXH = 1000. M      AMB = 4.3 PPM  
U = 1.0 M/S      CLAS = 4 (D)      ATIM = 60. MINUTES

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG TYPE (DEG)	VPH	EF (G/MI)	H (FT)	W (FT)	V/C QUEUE (VEH)
1. I-95 OnRamp	223.0	205.5	444.0	205.5	221.	90. AG	1.	51.5	.0	24.0	
2. Sargent NB TR	234.5	.0	234.5	51.9	52.	360. AG	563.	100.0	.0	24.0	.43
3. Sargent NB L	234.5	217.5	234.5	445.5	228.	360. AG	307.	51.5	.0	24.0	
4. Sargent SB L	216.5	445.5	216.5	429.9	16.	180. AG	5.	100.0	.0	12.0	.79
5. Sargent SB T	205.0	445.0	205.0	366.0	79.	180. AG	173.	100.0	.0	12.0	.48
6. Sargent SB	211.0	217.5	211.0	.0	217.	180. AG	948.	51.5	.0	24.0	

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Sargent NB TR	76	62	4.0	307	3422	128.66	2	4
4. Sargent SB L	76	1	4.0	568	795	128.66	2	3
5. Sargent SB T	76	38	4.0	380	1863	128.66	2	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z	COORDINATES (FT)
1. SB W Corner	190.0	217.5	6.0	6.0
2. SB N MI dblock	190.0	317.5	6.0	6.0
3. SB S MI dblock	190.0	117.5	6.0	6.0
4. SE Corner	255.0	187.0	6.0	6.0
5. NE Corner	255.0	225.0	6.0	6.0
6. NB N MI dblock	255.0	317.5	6.0	6.0
7. NB S MI dblock	255.0	117.5	6.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE (DEGR)	WIND ANGLE RANGE (DEGR)	* CONCENTRATION (PPM)	REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.		4.5	4.5	5.1	4.7	4.7	4.6	4.6	4.6
10.		4.6	4.6	5.7	4.5	4.5	4.4	4.4	4.4
20.		4.6	4.7	6.1	4.4	4.4	4.3	4.3	4.3
30.		4.7	4.7	6.1	4.3	4.3	4.3	4.3	4.3
40.		4.6	4.7	6.1	4.3	4.3	4.3	4.3	4.3
50.		4.6	4.6	5.9	4.3	4.3	4.3	4.3	4.3
60.		4.7	4.6	5.8	4.3	4.3	4.3	4.3	4.3
70.		4.8	4.6	5.7	4.3	4.3	4.3	4.3	4.3
80.		4.9	4.6	5.7	4.3	4.3	4.3	4.3	4.3
90.		5.2	4.6	5.7	4.3	4.3	4.3	4.3	4.3
100.		5.4	4.6	5.7	4.3	4.3	4.3	4.3	4.3
110.		5.5	4.6	5.7	4.3	4.3	4.3	4.3	4.3
120.		5.7	4.6	5.9	4.3	4.3	4.3	4.3	4.3
130.		5.8	4.6	6.1	4.3	4.3	4.3	4.3	4.3
140.		6.0	4.7	6.3	4.3	4.3	4.3	4.3	4.3
150.		6.3	4.8	6.5	4.3	4.3	4.3	4.3	4.3
160.		6.4	5.1	6.4	4.3	4.3	4.3	4.3	4.4
170.		6.2	5.2	5.9	4.5	4.5	4.6	4.5	4.5
180.		5.5	5.0	5.2	4.8	4.9	5.0	4.8	4.8
190.		4.8	4.7	4.6	5.1	5.2	5.4	5.4	5.1
200.		4.5	4.4	4.4	5.4	5.4	5.4	5.4	5.4
210.		4.3	4.3	4.3	5.5	5.4	5.3	5.5	5.5
220.		4.3	4.3	4.3	5.4	5.4	5.1	5.4	5.4
230.		4.3	4.3	4.3	5.3	5.3	4.8	5.3	5.3
240.		4.3	4.3	4.3	5.3	5.3	4.8	5.2	5.2
250.		4.3	4.3	4.3	5.2	5.2	4.8	5.2	5.2
260.		4.3	4.3	4.3	5.3	5.3	5.1	4.8	5.2
270.		4.3	4.3	4.3	5.2	5.2	5.0	4.8	5.2
280.		4.3	4.3	4.3	5.2	5.2	4.8	4.8	5.2
290.		4.3	4.3	4.3	5.1	4.8	4.8	4.8	5.2
300.		4.3	4.3	4.3	4.9	4.8	4.8	4.8	5.2
310.		4.3	4.3	4.3	4.8	4.8	4.9	4.9	5.3
320.		4.3	4.3	4.3	4.7	4.9	5.1	5.1	5.2
330.		4.3	4.3	4.3	4.7	4.9	5.1	5.1	5.2
340.		4.3	4.3	4.4	4.9	5.0	5.0	5.0	5.0
350.		4.3	4.4	4.6	4.9	5.0	4.9	4.9	4.8
360.		4.5	4.5	5.1	4.7	4.7	4.6	4.6	4.6
MAX		6.4	5.2	6.5	5.5	5.5	5.4	5.5	5.5
DEGR.		160	170	150	210	220	190	210	210

THE HIGHEST CONCENTRATION OF 6.50 PPM OCCURRED AT RECEPTOR REC3 .

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING  
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

LINK #	CO/LINK (PPM)		ANGLE (DEGREES)						
	REC1 160	REC2 170	REC3 150	REC4 210	REC5 220	REC6 190	REC7 210		
1	.0	.0	.0	.0	.0	.0	.0		
2	.2	.1	.4	.1	.0	.1	.3		
3	.0	.1	.0	.0	.1	.4	.0		
4	.0	.0	.0	.0	.0	.0	.0		
5	.0	.0	.0	.0	.0	.0	.0		
6	1.9	.7	1.8	1.1	1.1	.6	.9		





**CALQVIEW2 2015 PM Build Peak Output File**

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: Sargent @ I-95 2015 PM Build

RUN: Sargent @ I-95 2015 PM Build

DATE : 8/30/7  
TIME : 11:40:54

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S      VD = .0 CM/S      ZO = 175. CM      MIXH = 1000. M      AMB = 4.3 PPM  
U = 1.0 M/S      CLAS = 4 (D)      ATIM = 60. MINUTES

LINK VARIABLES

LINK DESCRIPTION	X1	X2	Y1	Y2	LENGTH (FT)	BRG TYPE (DEG)	VPH	EF (G/MI)	H (FT)	W (FT)	V/C QUEUE (VEH)
1. I-95 OnRamp	223.0	205.5	444.0	205.5	221.	90.	AG 1.	51.5	.0	24.0	
2. Sargent NB TR	234.5	.0	234.5	127.1	127.	360.	AG 506.	100.0	.0	24.0	.55 6.5
3. Sargent NB L	234.5	217.5	234.5	445.5	228.	360.	AG 739.	51.5	.0	24.0	
4. Sargent SB L	216.5	445.5	216.5	-7992.8	8438.	180.	AG 4.	100.0	.0	12.0	3.79 428.7
5. Sargent SB T	205.0	445.0	205.0	379.4	66.	180.	AG 100.	100.0	.0	12.0	.40 3.3
6. Sargent SB	211.0	217.5	211.0	.0	217.	180.	AG 1606.	51.5	.0	24.0	

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Sargent NB TR	86	63	4.0	739	3391	128.66	2	4
4. Sargent SB L	86	1	4.0	1126	324	128.66	2	3
5. Sargent SB T	86	25	4.0	480	1863	128.66	2	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SB W Corner	190.0	217.5	6.0
2. SB N Mi dblock	190.0	317.5	6.0
3. SB S Mi dblock	190.0	117.5	6.0
4. SE Corner	255.0	187.0	6.0
5. NE Corner	255.0	225.0	6.0
6. NB N Mi dblock	255.0	317.5	6.0
7. NB S Mi dblock	255.0	117.5	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE (DEGR)	WIND ANGLE RANGE (DEGR)	* CONCENTRATION (PPM)	REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.			4.6	4.5	5.7	5.2	5.2	5.0	4.9
10.			4.9	4.7	6.8	4.7	4.7	4.6	4.6
20.			5.1	4.9	7.5	4.4	4.4	4.4	4.4
30.			5.2	5.0	7.5	4.3	4.3	4.3	4.3
40.			5.1	5.1	7.3	4.3	4.3	4.3	4.3
50.			5.2	5.1	6.9	4.3	4.3	4.3	4.3
60.			5.2	5.0	6.9	4.3	4.3	4.3	4.3
70.			5.3	5.0	7.0	4.3	4.3	4.3	4.3
80.			5.5	5.0	7.2	4.3	4.3	4.3	4.3
90.			5.9	5.0	7.4	4.3	4.3	4.3	4.3
100.			6.1	5.0	7.6	4.3	4.3	4.3	4.3
110.			6.5	5.0	7.6	4.3	4.3	4.3	4.3
120.			6.7	5.0	7.8	4.3	4.3	4.3	4.3
130.			7.0	5.0	7.9	4.3	4.3	4.3	4.3
140.			7.4	5.1	8.2	4.3	4.3	4.3	4.3
150.			7.9	5.4	8.2	4.3	4.3	4.3	4.3
160.			8.1	5.7	7.9	4.4	4.4	4.5	4.4
170.			7.7	6.0	6.8	4.8	4.8	5.0	4.7
180.			6.5	5.7	5.7	5.5	5.4	5.8	5.3
190.			5.3	5.0	4.8	6.2	6.1	6.7	6.3
200.			4.6	4.5	4.5	6.6	6.4	6.7	7.2
210.			4.3	4.3	4.3	6.5	6.5	6.3	7.7
220.			4.3	4.3	4.3	6.3	6.3	5.9	7.8
230.			4.3	4.3	4.3	6.1	6.1	5.6	7.6
240.			4.3	4.3	4.3	5.9	6.1	5.5	7.5
250.			4.3	4.3	4.3	5.9	6.0	5.4	7.4
260.			4.3	4.3	4.3	5.9	5.9	5.4	7.3
270.			4.3	4.3	4.3	5.9	5.8	5.4	7.3
280.			4.3	4.3	4.3	5.8	5.5	5.4	7.1
290.			4.3	4.3	4.3	5.6	5.5	5.4	6.8
300.			4.3	4.3	4.3	5.4	5.5	5.5	6.5
310.			4.3	4.3	4.3	5.3	5.5	5.5	6.3
320.			4.3	4.3	4.3	5.2	5.7	5.8	6.2
330.			4.3	4.3	4.3	5.2	5.8	5.8	5.9
340.			4.3	4.3	4.4	5.4	5.9	5.8	5.7
350.			4.4	4.3	4.9	5.5	5.7	5.4	5.3
360.			4.6	4.5	5.7	5.2	5.2	5.0	4.9
MAX			8.1	6.0	8.2	6.6	6.5	6.7	7.8
DEGR.			160	170	140	200	210	190	220

THE HIGHEST CONCENTRATION OF 8.20 PPM OCCURRED AT RECEPTOR REC3 .

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING  
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

LINK #	CO/LINK (PPM)		ANGLE (DEGREES)						
	REC1 160	REC2 170	REC3 140	REC4 200	REC5 210	REC6 190	REC7 220		
1	.0	.0	.0	.0	.0	.0	.0		
2	.5	.3	1.0	.7	.2	.3	1.8		
3	.0	.2	.0	.0	.1	1.0	.0		
4	.0	.0	.0	.0	.0	.0	.0		
5	.0	.0	.0	.0	.0	.0	.0		
6	3.3	1.2	2.9	1.6	1.9	1.1	1.7		

---

**APPENDIX G: CONNDOT POLICY ON SYSTEMATIC  
CONSIDERATION AND MANAGEMENT OF WORK ZONE  
IMPACTS**

---





# CONNECTICUT DEPARTMENT OF TRANSPORTATION

## POLICY STATEMENT

POLICY NO. E&H.O.- 57  
August 10, 2007

SUBJECT: Policy on Systematic Consideration and Management of Work Zone Impacts

It is the policy of the Department to systematically consider and manage work zone impacts of significant projects.

In establishing this Work Zone policy, the Department's objectives are to:

1. Provide a high level of safety for both workers and the public.
2. Minimize congestion and community impacts.
3. Provide both maintenance forces and contractors adequate access to the highway to efficiently conduct their work.

In order to meet these objectives, appropriate planning, design, construction, maintenance, and public awareness strategies shall be employed on all significant projects. For the purposes of this policy, a significant project is defined as:

A stationary highway construction or maintenance activity which causes sustained mobility impacts on I-84, I-91, I-95, I-291, I-384, or I-691 for more than three (3) days with either intermittent or continuous lane closures. In addition, any highway construction or maintenance activity that alone or in combination with other concurrent activities nearby, which is expected based on engineering judgment, to cause sustained mobility impacts that are considered greater than what is considered tolerable relative to typical traffic operations experienced in the area of the work zone, may be declared a significant project.

It is recognized that the Department's emergency operations may not always allow a systematic consideration of work zone impacts. In such situations, the objectives of this policy will be honored as much as practicable.

  
\_\_\_\_\_  
Ralph J. Carpenter  
COMMISSIONER

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

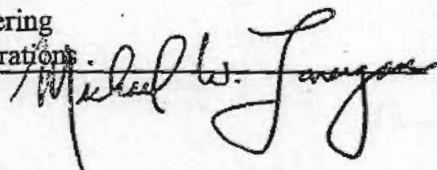
*subject* Work Zone Safety and Mobility Policy and  
Implementation Plan

*memorandum*

*date:* August 6, 2007

*To* Mr. Charles Barone  
Mr. James H. Norman  
Mr. Robert P. Mongillo  
Mr. Lewis Cannon

*from* Michael W. Lonergan  
Acting Bureau Chief  
Bureau of Engineering  
and Highway Operations



In September 2004, the Federal Highway Administration (FHWA) published updates to the Work Zone regulations contained in 23 CFR 630 Subpart J. The updated rule is referred to as the Work Zone Safety and Mobility Rule (Rule) and applies to all State and local governments that received Federal-aid highway funding. Transportation agencies are required to comply with the provisions of the Rule by October 12, 2007.

The Rule requires agencies to develop and implement an agency-level Work Zone Safety and Mobility policy to support systematic consideration and management of work zone impacts across all stages of project development. In order to develop this required policy, as well as prepare an associated implementation plan, a Rule Steering Committee was established by the Department. Members of this multi-disciplinary committee included representatives from the FHWA and Offices of Construction, Maintenance, Engineering, and Intermodal Planning.

The attached draft Department policy entitled "Policy on Systematic Consideration and Management of Work Zone Impacts" is in conformance with the Rule and by copy of this memorandum is being forwarded to Commissioner Carpenter's Office for approval. The policy defines which Department projects are subject to the Rule and allows an exception for unplanned emergency operations.

The attached implementation plan has been developed to provide guidance to your offices in complying with the Rule. The plan identifies several assignments and ongoing responsibilities for the units under your supervision which will be necessary for compliance. It should be noted that your Offices will need to develop more specific project and program level procedures to institutionalize the letter and spirit of the Rule. Your representatives to the Rule Steering Committee should be utilized as resources in this effort.

It has been determined that in Connecticut all "significant" projects, as defined by the policy, that begin their planning, preliminary engineering or preliminary design phase on or after October 1, 2007, or whose design completion date (DCD) is on or after October 1, 2008, shall be in accordance with the Rule. For those "significant" projects with a DCD during Federal Fiscal Year 2008 (October 1, 2007 to September 30, 2008), the FHWA, in coordination with the Department, will approve PS&E following confirmation that the appropriate TMP components have been incorporated in compliance with the Rule. Please take the steps necessary to ensure the Department's compliance with the Rule by these dates.

Attachment(s)

cc: Bradley Keazer (FHWA)  
Robert Ramirez (FHWA)



John F. Carey:jyk

cc: Comr. Carpenter – Dep. Comr. Boice – Dep. Comr. Curtis – Dep. Comr. Martin

David Crowther – Please process the attached Policy for Commissioner Carpenter's approval.

Arthur W. Grubn – Michael W. Lonergan - Richard T. Jankovich

James H. Norman, Acting Engineering Administrator

Timothy Wilson

Carmine Trotta

Robert P. Mongillo-Charles A. Drda-Ronald Cormier-David A. Sawicki-John Carey (Maintenance)

Mark Rolfe

John F. Carey





# CONNECTICUT DEPARTMENT OF TRANSPORTATION

# POLICY STATEMENT

POLICY NO. E&HO

August 6, 2007

SUBJECT: Policy on Systematic Consideration and Management of Work Zone Impacts

It is the policy of the Department to systematically consider and manage work zone impacts of significant projects.

In establishing this Work Zone policy, the Department's objectives are:

1. Provide a high level of safety for both workers and the public.
2. Minimize congestion and community impacts.
3. To provide both maintenance forces and contractors adequate access to the highway to efficiently conduct their work.

In order to meet these objectives, appropriate planning, design, construction, maintenance and public awareness strategies shall be employed on all significant projects. For the purposes of this policy, a significant project is defined as:

A stationary highway construction or maintenance activity which causes sustained mobility impacts on I-84, I-91, I-95, I-691, I-291 or I-384 for more than 3 days with either intermittent or continuous lane closures. In addition, any highway construction or maintenance activity that alone or in combination with other concurrent activities nearby, which is expected based on engineering judgment, to cause sustained mobility impacts that are considered greater than what is considered tolerable relative to typical traffic operations experienced in the area of the work zone, may be declared a significant project.

It is recognized that the Department's emergency operations may not always allow a systematic consideration of work zone impacts. In such situations, the objectives of this policy will be honored as much as practicable.

## WORK ZONE SAFETY AND MOBILITY IMPLEMENTATION PLAN GUIDANCE

The Connecticut Department of Transportation (Department) shall establish and implement a program to improve safety and mobility within work zones for certain interstate and state roadway construction projects, in accordance with the Federal Highway Administration Work Zone Safety and Mobility Final Rule.

### COMPLIANCE

The Department, in compliance with the Federal Highway Administration Final Rule, has developed a Policy regarding Work Zone Safety and Mobility (WZS&M). Implementation of this policy is effective October 1, 2007. All State transportation planning documents (e.g. planning studies, Master Plans, Long Range Plans, Strategic Highway Safety Plans) that include certain interstate or state roads and are initiated on or following October 1, 2007, shall address WZS&M in accordance with the Final Rule and Department policy. In addition, WZS&M compliance shall be implemented for those interstate or state roadway transportation projects that have been designated as "significant" in accordance with this Policy and Implementation Plan, which have been in development prior to October 1, 2007, and that begin the preliminary engineering or preliminary design phase of development on or after October 1, 2007, or whose design completion date (DCD) is on or after October 1, 2008.

For those "significant" projects with a DCD during Federal Fiscal Year 2008 (October 1, 2007 to September 30, 2008), the FHWA, in coordination with the Department, will approve PS&E following confirmation that the appropriate TMP components have been incorporated in compliance with the WZS&M Final Rule.

The Department WZS&M Policy and Implementation Plan (and associated procedures) shall be reviewed every two years (or as needed) to determine the effectiveness of its application and consistency with FHWA direction.

### INTRODUCTION

On September 9, 2004, the Federal Highway Administration (FHWA) issued a final rule on Work Zone Safety and Mobility. This rule addresses the changing times of more traffic, more congestion, greater safety issues, and more work zones. The FHWA revised the regulation to facilitate comprehensive consideration of the broader safety and mobility impacts of work zones across all stages of project development, and the adoption of additional strategies that help manage these impacts during project implementation. The new FHWA provisions are intended to help State Departments of Transportation (DOTs) meet current and future work zone safety and mobility challenges, and serve the needs of the American people. DOTs must be in compliance with the final Rule by October 12, 2007. The key features of the Final Rule are as follows:

- A policy driven focus that will institutionalize work zone processes and procedures at the agency level, with specific language for application at the project level.
- A systems engineering approach that includes provisions to work zone considerations starting early in planning, and progressing through project design, implementation, and performance assessment.
- Emphasis on addressing the broader impacts of work zones to develop transportation management strategies that address traffic safety and control through the work zone, transportation operations, and public information and outreach.
- Emphasis on a partner driven approach, whereby transportation agencies and the FHWA will work together towards improving work zone safety and mobility.
- Overall flexibility, scalability, and adaptability of the provisions, so as to customize the application of the regulations according to the needs of individual agencies, and to meet the needs of the various types of highway projects.

Section 135 of Title 23 and Section 5304 of Title 49 of the United States Code (USC), as amended by the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) requires each State to carry out a transportation planning process that provides for consideration of projects and strategies that will increase the safety of the transportation system for motorized and non-motorized users. With respect to Work Zone Safety, SAFETEA-LU contains several provisions that address safety in highway construction work zones. They are as follows:

Work Zone Safety Grants – Under the Work Zone Safety Grants program, the U.S. Department of Transportation (USDOT) will make grants to nonprofit and not-for-profit organizations to provide training to prevent and reduce work zone injuries and fatalities. Such grants may be used for:

- construction worker training to prevent injuries and fatalities
- development of guidelines to prevent work zone injuries and fatalities
- training for State and local governments, transportation agencies, and other groups implementing these guidelines

Temporary Traffic Control Devices (TTC) - Projects may not be approved on Federal-aid highways or under the Federal Lands Highway program unless proper temporary traffic control devices to improve safety in work zones will be installed and maintained during construction, utility, and maintenance operations on the portion of the highway to be improved by such projects. Installation and maintenance of the devices must be in accordance with the Manual on Uniform Traffic Control Devices.

The Secretary of Transportation, after consultation with appropriate Federal and State officials, is to issue regulations establishing the conditions for the appropriate use of, and expenditure of funds for, uniformed law enforcement officer, positive protective measures between workers and motorized traffic, and installation and maintenance of temporary traffic control devices during construction, utility, and maintenance operations.

Worker Injury Prevention and Free Flow of Vehicular Traffic – By August 10, 2006, the Secretary of U.S. DOT must establish regulations requiring highway workers to wear high visibility garments.

National Work Zone Safety Information Clearinghouse - Under this program, the U.S. DOT will make grants to a national nonprofit foundation for the operation of the National Work Zone Information Clearinghouse to be used for assembling and disseminating, electronically or otherwise, information relating to the improvement of work zone safety.

Implementation of the Department policy on WZS&M involves a number of actions to address:

- Data collection and Reporting during project construction.
- Data retention.
- Data analysis.
- Early evaluation and documentation in the identification of "significant" proposed projects.
- Establishment of specific project scope and limits.
- Reassessment of "significant" project determinations at each phase of project development.
- Development of a TTC plan, Transportation Operations (TO) plan and Public Outreach (PO)/Public Information (PI) program components, as warranted.
- Application during project construction.
- Monitoring during project construction.
- Post-construction analysis of significant projects.

## BACKGROUND

WZS&M focuses on those projects that are determined to be "significant" as defined by Department policy (and consistent with FHWA guidelines). The scope and limits of all projects that are advanced to construction by the Department evolves as information becomes available and analysis is refined. In addressing WZS&M, it is essential that an initial determination regarding the project "significance" is made as early as possible and that there is an opportunity to reassess that determination at the various phases of project development and definition (i.e. planning, preliminary engineering, preliminary design, and final design).

The initial stage in the overall development and determination of a "significant project" as defined by the Department policy on WZS&M, is the conduct of a planning analysis to identify the transportation needs and deficiencies to be addressed for both the existing and future (20-year horizon) "No Build" conditions. Once such needs are identified, options are considered towards the development of a recommended action to modify the transportation system to address those needs. An implementation plan which may consist of both near-term (if any) and long-term recommendations is recommended. This is typically accomplished by a State/Federal (Federal Highway Administration) study team representing planning, maintenance, and engineering design disciplines, often in coordination with a stakeholder committee.

Recommendations documented at the planning phase are considered conceptual, possibly consisting of various transportation modes, and must be refined and more precisely defined as the recommended action(s) is further developed through the National Environmental Policy Act / Connecticut Environmental Policy Act (NEPA/CEPA) documentation, preliminary engineering, preliminary design and final design processes. A determination of a "significant project" must be reassessed for every project at each of these stages of project development.

## **IMPLEMENTATION**

### **Training:**

The Final Rule specifies that agencies require appropriate training and periodic updates, for personnel involved in the development, design, implementation operations, inspection and enforcement of work zone related transportation management and traffic control. These include transportation planners, design engineers, traffic and safety engineers, temporary traffic control designers and program managers, regional construction managers, construction project staff, maintenance staff, and contractor and utility staff. This may include executive level decision-makers, policy makers, senior managers, information officers, and law enforcement and incident responders.

The Department and Industry Organizations will provide the opportunity for training through a number of initiatives. The Department, through the Training Coordinator and in coordination with the FHWA, will seek to sponsor available related courses for Department personnel. In addition, annual training provided for Department Construction Inspectors will include a discussion addressing WZS&M.

### **Data Collection / Reporting Procedures:**

The Department's Offices of Traffic Engineering, Maintenance, Construction and Inventory and Forecasting will establish procedures for the collection, reporting and retention of WZS&M data, for "significant" projects. Such information may include but may not be limited to:

- Incident type and duration.
- Residual traffic queue and duration.
- Police reporting records.

Data shall be collected and retained for all projects determined to be "significant", within the work zone limits, defined as the display point of the approach "Series 16" limited liability sign, through to the exiting "End Construction" sign.

### **Data Retention / Analysis:**

The Final Rule requires States to use field observations, available Work Zone Crash data, and operational information to manage Work Zone impacts for specific significant projects during construction. In addition, States are required to continually pursue improvement of Work Zone Safety and mobility by analyzing Work Zone Crash and operational data from multiple significant projects to improve State processes and procedures.

The satisfaction of these two requirements will require updates to the Department's computerized data retention system that are in progress but not yet



available. While the Department's roadway characteristics file has been revised to a relational data base, the Department's accident record, traffic volume, and pre-design project status/location files currently reside on a legacy main frame computer system and are not readily linked. Such linkage is necessary to identify construction project limits and reflect accident, traffic volume, and roadway inventory records. The Department is presently pursuing improvements to these mainframe files which will move these records to relational databases similar to the roadway characteristics file. Improvements to the electronic entry of accident records into the DOT system are also planned. Such improvements will allow efficient and timely reviews.

For the interim, the Department will rely on the Offices of Maintenance and Construction field personnel to monitor their work zones and make appropriate adjustments based on their observations of accidents and traffic operations. Multiple reviews will be limited in scope until the planned improvements to the data system become available. All data collected will be retained by the Offices of Maintenance and Construction, with a copy to the Traffic Division and the Bureau of Policy and Planning's office of Inventory and Forecasting.

#### **Planning:**

As required by Section 135 of Title 23 USC, the Department identifies in its Long-Range Transportation Plan (LRP), safety and security issues, including work zone safety, and actions being taken to address them. Also, the State 2007 Master Transportation Plan (MTP) identifies safety and mobility needs among the primary principles the Department has committed to strive towards. Work Zone Safety and Mobility is presented as one component of "Transportation Safety and Security Programs and Plans". Updates of these plans will address work zone safety and mobility as a component of "Transportation Safety Programs and Plans".

The State LRP and MTP will identify and discuss actions that the Department has taken or plans to take to comply with the FHWA September 9, 2004 Final Rule on WZS&M. The Department's actions and plans to comply with work zone safety-related regulations required by SAFETEA-LU will be discussed in these plans, as will work zone safety programs undertaken with any funding received from U.S. Department of Transportation Work Zone Safety Grants program.

A preliminary determination of "significance" as it relates to WZS&M will be made for each roadway component of the study corridor near-term and long-term roadway project recommendations. Based upon the following definition of a "**significant project**" as established by the Department WZS&M policy in accordance with the FHWA Final Rule:

*A stationary highway construction or maintenance activity which causes sustained mobility impacts on I-84, I-91, I-95, I-691, I-291, or I-384 for more than 3 days with either intermittent or continuous lane closures. In*

*addition, any highway construction or maintenance activity that alone or in combination with other concurrent activities nearby, which is expected based on engineering judgment, to cause sustained mobility impacts that are considered greater than what is considered tolerable relative to typical traffic operations experienced in the area of the work zone, may be declared a significant project.*

WZS&M will be addressed in initial planning studies and in the NEPA/CEPA documentation processes as part of an assessment regarding project Constructability, and Maintenance and Protection of Traffic, for each roadway component (near-term and long-term) of the recommended action(s). In determining the significance of a recommended roadway action(s) at the planning phase of project development, consideration will be given to:

- recommended project(s) definition and scope, for each near-term and long-term component;
  - whether the recommended action(s) meets the definition of significance in accordance with the Department WZS&M policy;
  - whether the recommended action(s) is on existing or new alignment;
  - the primary type of travel being served (e.g. commuter / recreational / affected stakeholders);
  - the existing and predicted future No-Build hourly traffic volumes and vehicle types, and roadway capacity along the study corridor major routes (including the primary corridor, parallel corridors, alternate routes);
  - the availability of other than roadway modes for travel; and
  - possible other planned/scheduled projects in the study area.
- A qualitative assessment will be made regarding the "significance" of each component (near-term and long-term) of the recommended action. A determination will be made regarding the anticipated need (or not) for a specific WZS&M Transportation Management Plan (TMP) as it relates to each component of the recommended action (near-term and long-term). Possible elements of a TMP will be presented for consideration during further development of the project(s) through preliminary engineering, preliminary design and final design processes.

### **Preliminary Engineering/Preliminary Design**

The determination of "significance" for recommended transportation improvement modifications previously made during the planning stage will be reviewed for reconfirmation or modification during the preliminary engineering/preliminary design phases as the scope and limits of the project are more clearly defined. For those projects that did not involve a planning stage, an initial determination of significance will need to be made and documented in the Recommended Project Memorandum.

During the preliminary engineering/preliminary design phases, development of the Transportation Management Plan (TMP), including the appropriate preliminary TTC Plan, TO Plan, and PO/PI Program are initiated. Available data collected from similar projects will be reviewed and used in developing this information. Alternative roadway routes, as well as alternative modes of transportation (e.g., rail, bus, and ferry) will be identified as a component of the TMP. Bicycle and pedestrian access will also be addressed.

Confirmation of the determination of significance and the development of the TMP will be documented at the initial project scoping and at the preliminary design/design approval stages. Any change from the initial determination of significance will be approved by the Engineering Administrator.

### **Final Design**

Once again during the final design, the determination of "significance" for recommended transportation improvement modifications made during the preliminary engineering/preliminary design phases will be reviewed for reconfirmation or modification. During this phase, the TMP will be finalized, including the appropriate final TTC Plan(s), TO Plan, and PO/PI Program. The specific work zone limits shall be defined for each construction project.

Appropriate documentation confirming the determination of significance and relating to the development of the TMP will be included in the final design report and in the Stewardship Agreement Checklist. Any change in the determination of significance will be approved by the Engineering Administrator.

Regarding the development of the TMP, it is recognized that each improvement project may present unique considerations; as such, developing the TMP is an iterative process that evolves as the design progresses. However, for purposes of uniformity, standardization of TMPs for projects with similar scopes should be considered.

### **Construction:**

As a significant project progresses into the construction phase, special consideration will be given in terms of design and constructability review, inspection staffing, monitoring and reporting procedures for field activity and general oversight and administration.

Within the design review process, construction staff will ensure that Plans, Specifications and Estimates (PS&E's) include appropriate pay items to implement the Transportation Management Plan (TMP). On active projects, Construction and the Contractor will each designate a trained person (Responsible Person) to properly implement the TMP. In addition to the

inspection of Temporary Traffic Control (TTC) and Transportation Operation (TO) components of the TMP, Construction will take the lead in the coordination and implementation of Public Awareness (PI) strategies. Construction will monitor and collect data on work zone incidents for the purpose of identifying problematic trends and implementing appropriate adjustments.

All data collected will be retained by the Office of Construction, with a copy to the Traffic Division and the Bureau of Policy and Planning's office of Inventory and Forecasting

**Maintenance:**

A review of all maintenance and utility activities will be conducted. During the earliest possible stages of the review, it will be determined if the scope of work to be performed is within the Department's definition of "significant project" as it applies to the final rule. Final approval of the determination will be made by the District Maintenance Director.

The TMP for significant maintenance or utility projects will consist of a TTC plan with a PI / PO component. This plan will also apply to permit activities.

Maintenance will monitor and collect data on work zone incidents for the purpose of identifying problematic trends and implementing appropriate adjustments. All data collected will be retained by the Office of Maintenance with a copy to the Traffic Division and the Bureau of Policy and Planning's office of Inventory and Forecasting

**Exceptions:**

The FHWA Final Rule provides for an exception process for those Interstate system projects, or classes of projects, that are deemed to be significant according to the Rule or Department Policy, but in reality, may not have a high level of sustained work zone impacts. For such projects that are classified as "significant" as applied to work zone safety and mobility, through the application of this provision, but in the judgment of the Department they do not cause sustained work zone impacts, the Department may request an exception, from the FHWA Division Office, to the requirements triggered by the classification. Exceptions to these provisions may be granted by the FHWA Division Office based upon the Department's ability to demonstrate that the specific Interstate system project or categories of Interstate system projects do not have sustained work zone impacts. The Department can submit to the FHWA Division Office, qualitative and/or quantitative criteria documentation to demonstrate that the specific project or categories of projects will not have sustained work zone impacts.

**Appendix A:** Implementation – Office Assignments

**Appendix B:** Training Needs

**Appendix C:** Acronyms



## **APPENDIX A**

### **IMPLEMENTATION – ASSIGNMENTS**

This information is intended to provide general guidance regarding the responsibilities of the various ConnDOT stakeholders involved in the implementation of the WZS&M Final Rule. The specific mechanism(s) for implementation must be developed by the individual offices.





**WORK ZONE SAFETY AND MOBILITY**

**IMPLEMENTATION PLAN – DIVISION ASSIGNMENTS**

<u>CONNDOT DIVISION</u>	<u>FUNCTIONS</u>	<u>WZS &amp; M RESPONSIBILITIES / ASSIGNMENTS</u>
PLANNING		
SYSTEMS INFORMATION	<ul style="list-style-type: none"> <li>▪ Systems Inventory.</li> <li>▪ Accident records.</li> <li>▪ Traffic Data Collection</li> <li>▪ Traffic Data Monitoring.</li> <li>▪ Census/Modeling.</li> <li>▪ Trip Analysis.</li> <li>▪ GIS/Computer Systems.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training</li> <li>▪ Data Collection and Retention.</li> <li>▪ Assist in Developing Electronic Documentation and Queries.</li> <li>▪ Project WZ Limits – Electronic (GIS) mapping and database.</li> </ul>
POLICY	<ul style="list-style-type: none"> <li>▪ STIP.</li> <li>▪ Long Range / Master Plans</li> <li>▪ Legislative Analysis.</li> <li>▪ State / Federal Funding Programs.</li> <li>▪ Field Coordination (RPOs).</li> <li>▪ Safety Program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training</li> <li>▪ Address WZS&amp;M in Long Range and Master Plans.</li> <li>▪ Include in Strategic Highway Safety Plan (SHSP) and in the 2008 Highway Safety Plan (HSP)*.</li> </ul>
INTERMODAL (PROJECT) PLANNING	<ul style="list-style-type: none"> <li>▪ Aviation / Ports.</li> <li>▪ Transit. / Bike &amp; Pedestrian.</li> <li>▪ Location (Highway).</li> <li>▪ Security / Evacuation Planning.</li> </ul>	<p>* Note: Work Zone Safety Grants are available to qualifying municipalities on a one-time basis.</p>
ENVIRONMENTAL PLANNING	<ul style="list-style-type: none"> <li>▪ Environmental / Historic Documents.</li> <li>▪ Water Resources.</li> <li>▪ Water Compliance.</li> <li>▪ Air and Noise Analysis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training</li> <li>▪ Studies Documentation –               <ul style="list-style-type: none"> <li>- Provide Preliminary determination of “Significant Project”.</li> <li>- Constructability Review.</li> </ul> </li> <li>▪ Studies Documentation –               <ul style="list-style-type: none"> <li>- Provide Preliminary determination of “Significant Project”.</li> <li>- Constructability Review.</li> </ul> </li> </ul>
ASSET MANAGEMENT	<ul style="list-style-type: none"> <li>▪ Document and Maintain Department Assets Inventory and Determine Financial Investment Needs (5).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training</li> <li>▪ To Be Determined.</li> </ul>

**WORK ZONE SAFETY AND MOBILITY**

**IMPLEMENTATION PLAN – DIVISION ASSIGNMENTS (Continued)**

<b><u>CONNDOT DIVISION</u></b>	<b><u>FUNCTIONS</u></b>	<b><u>WZS &amp; M RESPONSIBILITIES / ASSIGNMENTS</u></b>
<b>ENGINEERING</b>	<ul style="list-style-type: none"> <li>▪ Define Project Scope and Limits.</li> <li>▪ Funding.</li> <li>▪ Preliminary Engineering.</li> <li>▪ Traffic Analysis.</li> <li>▪ Preliminary Design.</li> <li>▪ Final Design.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training.</li> <li>▪ Determination/Verification of project "significance".</li> <li>▪ Stewardship Agreement.</li> <li>▪ Work Zone mapping.</li> <li>▪ Operational analysis of collected data.</li> <li>▪ Develop TMP, including TTC, TO and PI.</li> <li>▪ Public Outreach.</li> </ul>
<b>CONSTRUCTION</b>	<ul style="list-style-type: none"> <li>▪ Project Administration.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training.</li> <li>▪ Implement TMP.</li> <li>▪ Public Outreach.</li> <li>▪ Data Collection and dissemination.</li> </ul>
<b>MAINTENANCE</b>	<ul style="list-style-type: none"> <li>▪ Daily facility maintenance and repairs.</li> <li>▪ Project Administration.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training.</li> <li>▪ Determination/Verification of project "significance".</li> <li>▪ Stewardship Agreement?</li> <li>▪ Work Zone mapping.</li> <li>▪ Operational analysis of collected data.</li> <li>▪ Develop TMP, including TTC, TO and PI.</li> <li>▪ Public Outreach.</li> </ul>

## **APPENDIX B**

### **TRAINING NEEDS**

This information is intended to provide general overview of the extent of initial and subsequent training needs to of the various ConnDOT stakeholders involved in the implementation of the WZS&M Final Rule. The specific mechanism(s) for implementation must be developed by the individual offices.



## Work Zone Safety and Mobility

### ANTICIPATED TRAINING NEEDS

#### Bureau of Policy and Planning

<u>ConnDOT Division</u>	<u>FUNCTIONS</u> <i>(Estimated Number of Positions)</i>	<u>TRAINING NEEDS</u>
4202/57522 (Systems Information)	<ul style="list-style-type: none"> <li>▪ Systems Inventory (10)</li> <li>▪ Accident records (12)</li> <li>▪ Traffic Monitoring (16)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Data Collection needs</li> <li>▪ Electronic Documentation and Queries</li> </ul>
4203/57523 (Systems Information)	<ul style="list-style-type: none"> <li>▪ GIS/Computer Systems (5)</li> </ul>	<ul style="list-style-type: none"> <li>▪ WZ Mapping Database – establishment and maintenance</li> </ul>
4503/57533 (Policy)	<ul style="list-style-type: none"> <li>▪ Long Range Plan / Legislative Analysis (4)</li> <li>▪ State/Federal Programs (1)</li> <li>▪ Field Coordination (4)</li> <li>▪ Safety (11)</li> </ul>	<ul style="list-style-type: none"> <li>▪ LRP/MTP Policy Statement</li> <li>▪ Funding Opportunities</li> <li>▪ Regional Coordination</li> <li>▪ Training Course / Annual Reporting?</li> </ul>
4502/57532 (Intermodal Planning)	<ul style="list-style-type: none"> <li>▪ Location (Highway) (4)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Studies Documentation (“Significant Project”)</li> </ul>
4503/57542 (Environmental Planning)	<ul style="list-style-type: none"> <li>▪ Environmental Documents/ Historic Documents (5)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Studies Documentation (“Significant Project”)</li> </ul>
4601/57551 (Asset Management)	<ul style="list-style-type: none"> <li>▪ Document and Maintain Department Assets Inventory and Determine Financial Investment Needs (5).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Initial Awareness Training.</li> <li>▪ Potential Future Training as Required.</li> </ul>

## Work Zone Safety and Mobility

### ANTICIPATED TRAINING NEEDS (Continued)

#### Bureau of Engineering and Highway Operations

<u>ConnDOT Division</u>	<u>FUNCTION</u> <i>(Number of Positions)</i>	<u>TRAINING NEEDS</u>
<b>ENGINEERING</b>  Unit 1400 Traffic Engineering  Unit 1300 Consultant Design  Unit 1305 State Design	TE2 (20) TE3 (15) Supervising Engineer (8)  TE3 (35) Supervising Engineer (10)  TE2 (30) TE3 (30) Supervising Engineer (12)	}  1 – Design & Operation of Work Zone Traffic Control  2 – Construction Staging
<b>CONSTRUCTION</b>  ▪ 501 Headquarters ▪ 601 District 1 ▪ 701 District 2 ▪ 801 District 3 ▪ 901 District 4	▪ Administrators/Managers (2) ▪ District Management (9) ▪ HQ Supervisors (7) ▪ District Supervisors (16) ▪ HQ Engineers -TE3 (5) ▪ District Project Engineers (44)  ▪ District Inspectors - TE2 (95) ▪ District Inspectors - TE1 (79) ▪ District Inspectors – Intern (9) ▪ HQ Engineers – TE2,TE1 (8)	▪ FHWA-NHI-380003 Design and Operation of Work Zone Traffic Control ▪ Annual presentation updating WZ policy and practice through winter “Supervisor School”.  ▪ FHWA-NHI-380063 Construction Zone Safety Inspection ▪ Annual refresher on Work Zone Traffic Control Best Practices through winter “Inspector School”.
<b>MAINTENANCE</b>  1510 1530 1610 1710 1810 1910  The training numbers reflect all sub-units within Maintenance.	▪ Administrators/Managers (27)  ▪ Gen. Supv (62) ▪ Crew Leader (128) ▪ Maint’s (990)  ▪ Planning (14) ▪ Dist Serv Agent (18)  ▪ District Traffic Engineer (4) ▪ Highway Operations (3) ▪ Dist Bridge Eng + Newington Staff (7)	▪ Roadway Safety Awareness  ▪ Work Zone Safety for Roadway Maintenance Operations  ▪ Roadway Safety Awareness Inspection  ▪ Design /Operation

## List of Acronyms

AASHTO	-	American Association of State Highway and Transportation officials
ADT	-	Average Daily Traffic
CEPA	-	Connecticut Environmental Policy Act
Department	-	Connecticut Department of Transportation
FHWA	-	Federal Highway Administration
Final Rule	-	Federal Highway Administration Work Zone Safety and Mobility Final Rule
GIS	-	Geographic Information Systems
HSP	-	Highway Safety Plan
LRP	-	Long Range Transportation Plan
MTP	-	Master Transportation Plan
NEPA	-	National Environmental Policy Act
No-Build	-	The analysis condition of imposing future (20 year horizon) traffic on the existing transportation system.
PI	-	Public Information
PO	-	Public Outreach
PS&E	-	Plans, Specifications and Estimates
SAFETA-LU	-	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SHSP	-	Strategic Highway Safety Plan
Significant	-	Significant project as defined by Department Policy on Work Zone Safety and Mobility
TMP	-	Transportation Management Plan
TO	-	Transportation Operations
TTC	-	Temporary Traffic Control Device
USDOT	-	United States Department of Transportation
WZ	-	Work Zone
WZS&M	-	Work Zone Safety and Mobility



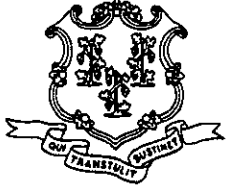


---

**APPENDIX H: SECTION 4(F) DE MINIMIS IMPACTS FINDING**

---





STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



2800 BERLIN TURNPIKE, P.O. BOX 317546  
NEWINGTON, CONNECTICUT 06131-7546

Phone:

April 29, 2008

Ms. Brigid Hynes-Cherin  
Federal Transit Authority  
One Bowling Green, Room 429  
New York, New York 10004-1415

Subject: State Project No. 301-0088  
New Haven Rail Yard Improvements  
Section 4(f) De Minimis Impacts Finding Concurrence Request

Dear Ms. Hynes-Cherin:

The purpose of this letter is to document the Connecticut Department of Transportation's (Department) Section 4(f) De Minimis Impacts Finding for the above-referenced project and to request your concurrence. The Department recommends that, in accordance with Section 6009 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: Legacy for Users (SAFETEA-LU) and the associated Federal Transit Administration (FTA) - Federal Highway Administration (FHWA) joint guidance dated of December 2005, a Section 4(f) De Minimis Impacts Finding is appropriate for this project.

The subject project is being funded, in part, with federal funds administered by FTA. The project is currently the subject of a federal Environmental Assessment which is currently being prepared.

The project involves a series of changes to the existing rail yard in order to accommodate the continued maintenance of the existing M-2, M-4, and M-6 rail cars and the future storage and maintenance of the next generation of rail cars, the M-8s. The first deliveries of the fleet of M-8s will take place in 2009. As the M-8s arrive, the aging M-2s will be phased out. The M-8 cars require different storage needs, maintenance facilities and maintenance equipment than the New Haven Rail Yard currently provides.

### **Project Purpose and Need**

The purpose of the New Haven Rail Yard improvements is to transform and expand the existing New Haven Rail Yard into a fully functional and coordinated facility that provides for efficient and effective storage, dispatching, inspection, maintenance and cleaning of an

increasing fleet of rail cars. The improvements will provide the space, equipment, and administrative support structure needed to operate and maintain a new generation of rail cars and will coordinate the new facilities with the existing facilities.

The Department's proposed program of improvements to the New Haven Rail Yard will support rail transit services in Connecticut well into the twenty-first century. The new generation of M-8 electric multiple-unit (EMU) rail cars will replace the existing M-2 fleet of cars, originally procured in the early 1970s. The M-2 cars were designed to operate for thirty years and have exceeded their life expectancy. The increase in the fleet size will overwhelm the already inadequate rail car maintenance and inspection facilities, as well as the rail yard tracks needed to store and prepare train sets for revenue service. The project will address existing compliance, location, operational and space deficiencies.

The New Haven Rail Yard was selected as the appropriate facility for the M-8 fleet because New Haven is the northeastern-most terminus of the Metro-North rail line, which logically dictates efficiency in providing storage, dispatching, inspection, maintenance, cleaning and support functions. This terminus operates on an approximately 74-acre parcel of land that currently functions as a rail yard owned by the Department, and is the connecting point for Shore Line East and the proposed New Haven-Hartford-Springfield commuter rail lines.

#### **Section 4(f) Resources and Impacts**

Potential historic, architectural and archaeological resources located within the vicinity of the New Haven Rail Yard Improvements were comprehensively investigated by the Department in the 1990s, in order to properly manage important cultural resources during modernization efforts at the rail yard. During those investigations, the New Haven Rail Yard was identified as a significant example of Connecticut's late 19<sup>th</sup> and early 20<sup>th</sup> century railroad-related technology. The New Haven Rail Yard was determined eligible for the National Register of Historic Places as a complex of interrelated buildings and potential archaeological remains. The modernization of the property, therefore, constituted an adverse effect under Section 106 of the National Historic Preservation Act (see State Historic Preservation Office (SHPO) letter dated July 8, 1994). A Memorandum of Agreement (MOA) was subsequently executed and approved by the Advisory Council on Historic Preservation on December 2, 1999 (copy enclosed). All measures in the MOA were successfully carried out and approved by SHPO (see SHPO letter dated April 4, 2008).

As described in the Historic American Engineering Record Documentation for New Haven Rail Yard (HAER No. CT-160, Public Archaeology Survey Team, 2006), the New Haven Rail Yard's historical significance derives from its role in the operations of the New York, New Haven, and Hartford Railroad, commonly called the New Haven Railroad. During the late 1800s, the New Haven Railroad grew to achieve a near monopoly of rail service in southern New England, providing both passenger and freight service within this densely industrialized region. Prior to the early 1900s, the New Haven Rail Yard was the railroad's largest and most complete shop complex. The New Haven Rail Yard was the site of construction for large numbers of locomotives and freight cars, and of repair and general maintenance of rolling stock.

The capabilities of the New Haven Rail Yard shops were vital in maintaining the railroad's viability at two critical points of the New Haven Railroad's history in the 1900s. After World War One, when the railroad found itself with an aged and obsolete freight car fleet but no capital for purchasing new equipment, the railroad initiated its own large-scale freight-car construction and rebuilding program. It improved and expanded the shops at New Haven, which became the center for the program. In the early 1960s, short on locomotive power, the railroad undertook another rebuilding program, this one focused on rebuilding its pioneering electric locomotives. The rebuilding of the EP-5 passenger locomotives and the refurbishing of the EF-4 freight locomotives took place at the Lamberton Street shops. The more efficient electric service (compared to all diesel) postponed, for a short while, the company's ultimate descent into bankruptcy.

Investigations for this Environmental Assessment / Environmental Impact Evaluation identified one contributing historic resource in the New Haven Rail Yard complex to be affected by the improvements, which was not previously documented and mitigated. This resource is the Stores Facility, also known as Building 10 (see enclosed figure). Built in 1947, Building 10 was one of the long, narrow structures in the area of the historic Lamberton Street Shops. As part of the shops' complex, the building played a role in constructing and rebuilding the New Haven Railroad's rolling stock, which was critical to the railroad's success and longevity in the late 19<sup>th</sup> and early 20<sup>th</sup> Centuries. After World War One, in the 1920s, over 12,000 boxcars were refurbished at the Lamberton Street Shops, a cost-cutting measure that helped the company forestall bankruptcy and saved the yard from imminent closure.

### **De Minimis Impacts Determination**

After reviewing the potential effects of the project on Building 10, which requires demolition of the building, SHPO issued a conditional determination of no adverse effect, indicating no adverse effect if mitigation is implemented. The mitigation stipulated by SHPO was the historic documentation of the building to state-level professional standards (see enclosed correspondence from SHPO dated November 28, 2006). The Department submitted this documentation and SHPO subsequently approved the mitigation measures. (see correspondence from SHPO dated May 31, 2007).

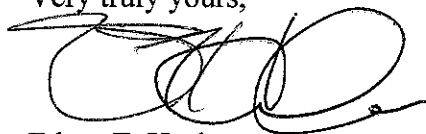
Building 10 currently provides for material storage, office space, training space and as a support shop for mechanical work for rail fleet maintenance and upgrade. Building 10 was not built for these uses, and the building configuration is not optimal for the functions it currently serves. The storage area is insufficient for current and future material, as well as spare part storage. In the future, these functions will be relocated into new and expanded facilities to provide for enhanced safety and efficiency. In order to accommodate the future maintenance needs of the new M-8 fleet, the existing storage yard needs to be expanded and upgraded, including the installation of electrified tracks. This expansion is proposed to spread from the new Running Repair Shop to the Diesel Shop, and requires the proposed demolition of Building 10 to provide for sufficient track capacity for the expanded fleet of rail cars. There are no other locations at the New Haven Rail Yard that would be feasible for situating the storage yard expansion.

An alternative to provide sufficient car storage on another location at the yard would require extensive reconfiguration of the historic track patterns and would be prohibitively expensive. As such, there are no prudent and feasible alternatives to the demolition of Building 10.

Considering that all mitigation measures addressed in the MOA were approved by SHPO and all mitigation required by SHPO for a determination of no adverse effect for Building 10 has been satisfied, the Department believes that the proposed improvements to the New Haven Rail Yard qualify for a *de minimis* finding. Furthermore, the use of the property has not changed and the Department has pursued impact avoidance, minimization, enhancement, and mitigation options, to the extent possible. Based on the foregoing analysis, the Department recommends that a Section 4(f) De Minimis Impacts Finding be approved by FTA for the project.

The Department looks forward to your consideration of this matter. Should you have questions or need additional information, please contact Mr. Keith T. Hall, Transportation Supervising Planner, at (860) 594-2926.

Very truly yours,



Edgar T. Hurle  
Transportation Planning Director  
Bureau of Policy and Planning

Concurrence:

\_\_\_\_\_  
Brigid Hynes-Cherin  
Regional Administrator  
Federal Transit Administration

Date: \_\_\_\_\_

Enclosures

cc: Ms. Karen Senich - SHPO



# STATE OF CONNECTICUT

STATE BOARD OF EDUCATION

CONNECTICUT HISTORICAL COMMISSION

July 8, 1994

Mr. Bradley J. Smith  
State Design  
CONNDOT  
PO Box 317546  
Newington, CT 06131-7546

Subject: New Haven Rail Yard Improvements (CONNDOT #15-212)  
New Haven Interlocking Projects (CONNDOT #301-004)  
New Haven, CT

Dear Mr. Smith:

The State Historic Preservation Office has reviewed supplemental information provided by CONNDOT concerning the above-named projects. This office notes that residential properties along Howard Avenue and Rosette Street, located within the proposed project limits, are contributing structures within the Howard Avenue and Trowbridge Square National Register Historic Districts, respectively. In addition, the New Haven Rail Yard is a significant example of Connecticut's late 19th and early 20th-century railroad-related technology, which this office believes meets the eligibility criteria for the National Register.

In the opinion of the State Historic Preservation Office, the proposed undertakings will constitute an adverse effect upon these historic properties. However, this office concurs with CONNDOT that no feasible and prudent alternative exists which would permit retention and/or rehabilitation of the historic New Haven Rail Yard.

Therefore, we recommend that the responsible federal agency consult with the Advisory Council on Historic Preservation in accordance with the National Historic Preservation Act of 1966. In particular, this office encourages the responsible federal agency to draft a Memorandum of Agreement which would provide for appropriate mitigative actions vis-a-vis the historic resources which will be impacted by the proposed actions. The State Historic Preservation Office recommends inclusion of the following stipulations:

1. CONNDOT will document the New Haven Rail Yard to the professional standards of the Historic American Engineering Record (HAER). The extant interlocking relay switches and control panel should be a particular focus of the documentation effort. Copies of the final documentation will be provided to both HAER and the State Historic Preservation Office.

TEL: (203) 566-3005 FAX 5078

59 SOUTH PROSPECT ST. — HARTFORD, CONN. 06106

AN EQUAL OPPORTUNITY EMPLOYER

2. CONNDOT, in coordination with the State Historic Preservation Office, will undertake archaeological investigations of the New Haven Rail Yard's roundhouse and turntable. All archaeological studies will be carried out in accordance with the State Historic Preservation Office's Environmental Review Primer for Connecticut's Archaeological Resources.

3. CONNDOT will consult with the Smithsonian Institution regarding the potential acquisition and curation of the interlocking relay switches and control panel. CONNDOT will also consult with Connecticut's trolley and railroad museums regarding the potential salvage and adaptive use of railroad-related structures and/or material from the New Haven Rail Yard.

4. CONNDOT will develop an informative, public-oriented component which focuses upon the history and technology of the New Haven Rail Yard. The public aspect may include, but should not be limited to, the preparation of a popular report, brochure, slide presentation and/or interpretative exhibit.

6. CONNDOT will prepare a brief history of the New Haven Rail Yard, with pertinent photographs, and submit it to the Society for Industrial Archeology New England Chapters Newsletter.

The State Historic Preservation Office requests that CONNDOT provide preliminary design plans, when available, for the proposed wall stabilization along Howard Avenue and Rosette Street to our office for review and comment vis-a-vis an assessment of potential impact to the National Register historic districts located in these areas.

For further information please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,



Dawn Maddox  
Deputy State Historic  
Preservation Officer

cc: Mr. Ralph Steadham/CONNDOT



MEMORANDUM OF AGREEMENT

AMONG

THE FEDERAL TRANSIT ADMINISTRATION  
FEDERAL RAILROAD ADMINISTRATION  
NATIONAL RAILROAD PASSENGER CORPORATION  
CONNECTICUT DEPARTMENT OF TRANSPORTATION  
CONNECTICUT STATE HISTORIC PRESERVATION OFFICE  
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

FOR

THE RECONSTRUCTION OF THE RAIL MAINTENANCE  
AND STORAGE FACILITIES  
IN THE NEW HAVEN RAIL YARD

AND

THE RECONSTRUCTION OF THE NEW HAVEN INTERLOCKING  
IN NEW HAVEN, CONNECTICUT

WHEREAS, the Federal Transit Administration (FTA) proposes reconstruction of the rail car storage and maintenance facilities in the New Haven Rail Yard in the City of New Haven, Connecticut, which includes demolition of eleven existing buildings, excavation and removal, where necessary, of existing buried foundations of removed buildings, and construction of new rail car storage and maintenance facilities within the rail yard.

WHEREAS, the National Railroad Passenger Corporation (AMTRAK) proposes reconstruction of the New Haven Interlocking trackwork east and west of New Haven Station, with federal funds provided through the Federal Railroad Administration (FRA). The reconstruction includes removal of the existing Interlocking control building and corresponding apparatus contained within, and existing trackwork and site features.

WHEREAS, FTA, FRA, AMTRAK, the Connecticut Department of Transportation (ConnDOT), and the Connecticut State Historic Preservation Office (SHPO) have determined that the proposed demolition and reconstruction activities associated with these rail yard and interlocking improvements will have an adverse effect upon the historical and archaeological resources located within the yard and main line properties affected.

WHEREAS, SHPO, FTA, and FRA concur that the New Haven Rail Yard is a significant example of Connecticut's late 19th and early 20th century railroad related technology, which meets the eligibility criteria for the National Register of Historic Places. SHPO, FTA, and FRA have requested comments from the Advisory Council on Historic Preservation (ACHP), pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) and its implementing regulations, "Protection of Historic and Cultural Properties (36 CFR Part 800)."

NOW, THEREFORE, FTA, FRA, AMTRAK, SHPO and ACHP agree that the undertakings proposed by FTA and AMTRAK shall be implemented in accordance with the following stipulations, in order to take into account the effect of the proposed project on the historic rail yard:

#### Stipulations

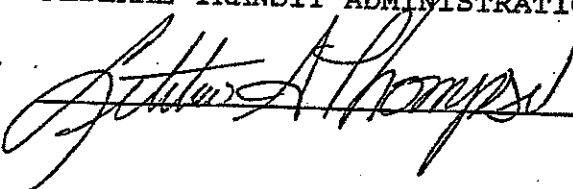
FTA and FRA will insure that the following measures are carried out:

1. Prior to any demolition or construction activities in the New Haven Rail Yard, ConnDOT shall record the existing buildings and facilities in the rail yard, including the interlocking relay switches and control panel located in the existing control building, to the "Narrative Format" standards of the Historic American Engineering Record (HAER). Unless otherwise agreed to by the National Park Service (NPS), ConnDOT shall ensure that all documentation is completed and accepted by HAER prior to demolition. Archival copies of the documentation shall be provided to HAER and SHPO.
2. ConnDOT shall contact the Smithsonian Institution regarding their potential acquisition and curation of the existing Interlocking relay switching and control panels, which are located in the existing control building.
3. ConnDOT shall contact all of Connecticut's trolley and railroad museums regarding the potential for salvage and adaptive use of any railroad-related structures and/or material from the New Haven Rail Yard, and offer them a reasonable time frame to investigate and acquire.
4. ConnDOT shall prepare a brief history of the New Haven Rail Yard and the proposed reconstruction program, including pertinent plans and photographs, and submit it to the Society For Industrial Archeology, New England Chapters Newsletter.

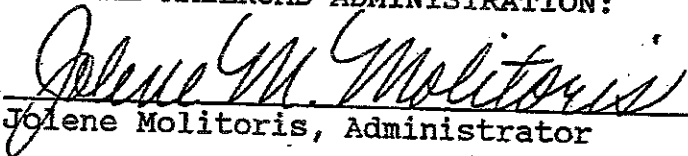
5. ConnDOT shall develop a public-oriented information program which focuses on the history and technology of the New Haven Rail Yard. This shall include, as a minimum, a public-oriented report, brochure, slide presentation, and/or interpretative exhibit.
6. ConnDOT shall, in coordination with the SHPO, develop an archaeological monitoring program for the New Haven Rail Yard. The monitoring program shall be put in place for the former roundhouse and turntable locations. The monitoring program shall be implemented for any underground exploration programs, such as boring programs for geotechnical or environmental investigations. Requirements for implementing the monitoring program, and conducting archaeological investigations where feasible, shall be included in the contract specifications for any demolition and/or construction contracts affecting the roundhouse/turntable areas. The monitoring program shall consist of an evaluation of the pertinent soil and groundwater contamination data, in consideration of health and safety concerns related to on-site archaeological investigations. The monitoring program shall consider and evaluate the application of alternate approaches for data collection, on a site-specific basis. Where feasible, the archaeological monitoring program shall be carried out in accordance with SHPO's Environmental Review Primer for Connecticut's Archaeological Resources.

Execution of this Memorandum of Agreement evidences that FTA and FRA have afforded ACHP a reasonable opportunity to comment on this project and its effects on the historic resource, and that FTA and FRA have taken into account the effects of their undertakings on the historic structures and facilities.

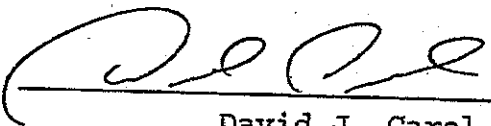
FEDERAL TRANSIT ADMINISTRATION:

By:  Date: 11/05/99

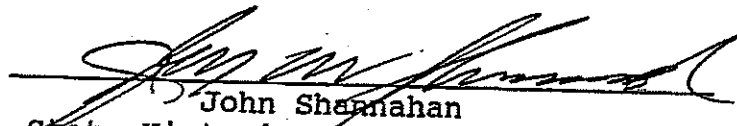
FEDERAL RAILROAD ADMINISTRATION:

By:  Date: 9/25/96  
Jolene Molitoris, Administrator

NATIONAL RAILROAD PASSENGER CORPORATION:

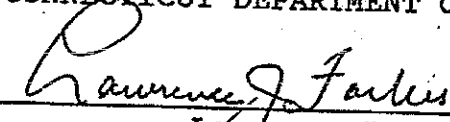
By:  Date: 9/8/96  
David J. Carol  
Vice President, High Speed Rail

CONNECTICUT STATE HISTORIC PRESERVATION OFFICE:

By:  Date: 8/6/96  
John Shanahan  
State Historic Preservation Officer

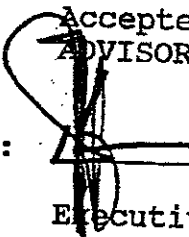
Concurred:

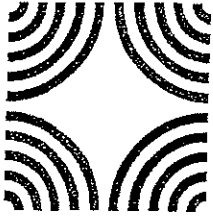
CONNECTICUT DEPARTMENT OF TRANSPORTATION:

By:  Date: 7-27-96  
Lawrence J. Forbes  
Rail Administrator

Accepted:

ADVISORY COUNCIL ON HISTORIC PRESERVATION:

By:  Date: 12/2/99  
Executive Director, ACHP



Connecticut Commission on Culture & Tourism

April 4, 2008

Historic Preservation  
and Museum Division

One Constitution Plaza  
Second Floor  
Hartford, Connecticut  
06103

860.256.2800  
860.256.2763 (f)

Mr. Donald Burns  
Federal Transit Administration  
One Bowling Green  
Room 429  
New York, NY 10004-1415

Subject: New Haven Rail Yard  
New Haven, CT  
ConnDOT #301-0088

Dear Mr. Burns:

The State Historic Preservation Office has undertaken extensive coordination with the Connecticut Department of Transportation regarding the above-named project. In particular, a Memorandum of Agreement was ratified by the Federal Highway Administration, ConnDOT, and our office with respect to historic and archaeological resource-related impacts. We further note that all of the mitigative measures stipulated within the Memorandum of Agreement have been professionally completed.

In the opinion of the State Historic Preservation Office, no further historic preservation coordination concerning the New Haven Rail Yard is required vis-à-vis the National Historic Preservation Act.

For further assistance, please contact Dr. David a. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich  
State Historic Preservation Officer

cc: Mr. Edgar Hurle/ConnDOT

**CONNECTICUT**

[www.cultureandtourism.org](http://www.cultureandtourism.org)

An Affirmative Action  
Equal Opportunity Employer



Connecticut Commission on Culture & Tourism

November 28, 2006

Mr. James H. Norman  
State Design  
ConnDOT  
2800 Berlin Turnpike  
Newington, CT

Historic Preservation  
& Museum Division

Subject: Stores Facility – Building 10  
New Haven Rail Yard  
New Haven, CT  
ConnDOT #301-0088

59 South Prospect Street  
Hartford, Connecticut  
06106

(v) 860.566.3005  
(f) 860.566.5078

Dear Mr. Norman:

The State Historic Preservation Office has reviewed the above-named project. This office notes that the Stores Facility (Building 10) possesses historic importance as a contributing resource to the New Haven Rail Yard, which is eligible for the National Register of Historic Places.

In the opinion of the State Historic Preservation Office, the proposed modification and subsequent demolition will effect the historic integrity of the Stores Facility (Building 10). However, this office believes that the proposed actions will constitute no adverse effect on Connecticut's cultural heritage. This comment is conditional upon the professional implementation of the following mitigative measure:

- o Prior to project-related activities, ConnDOT shall document the Stores Facility (Building 10) to the professional standards of the State Historic Preservation Office. Documentation shall consist of narrative text, photographs and/or high-quality digital images (exterior and interior perspectives and pertinent details), an index of photographs, and a photographic site plan. Final documentation shall be provided to the State Historic Preservation Office for permanent archiving and public accessibility.

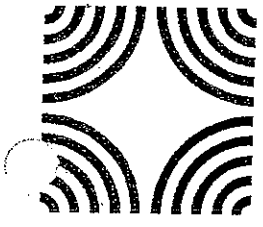
For further assistance please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

J. Paul Loether  
Division Director and Deputy  
State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT

cc



Connecticut Commission on Culture & Tourism

May 31, 2007

Historic Preservation  
& Museum Division

Mr. James H. Norman  
State Design  
ConnDOT  
2800 Berlin Turnpike  
Newington, CT

59 South Prospect Street  
Hartford, Connecticut  
06106

(v) 860.566.3005  
(f) 860.566.5078

Subject: Stores Facility – Building 10  
New Haven Rail Yard  
New Haven, CT  
ConnDOT #301-0088

Dear Mr. Norman:

The State Historic Preservation Office acknowledges receipt of the narrative text and digital photographs provided by Fitzgerald & Halliday Inc. concerning the above-named project. This office believes that the submitted materials are consistent with our documentation standards and succinctly record the historic and architectural aspects of the Stores Facility – Building 10.

The State Historic Preservation Office has transferred the documentation materials to the Thomas J. Dodd Research Center at the University of Connecticut (Storrs) for permanent archiving and public accessibility.

This office believes that ConnDOT has satisfied the mitigative measure stipulated in our previous review, dated November 28, 2006, for the proposed undertaking. We appreciate ConnDOT's efforts to professionally manage and document Connecticut's cultural heritage.

This comment updates and supersedes all previous correspondence for the proposed undertaking.

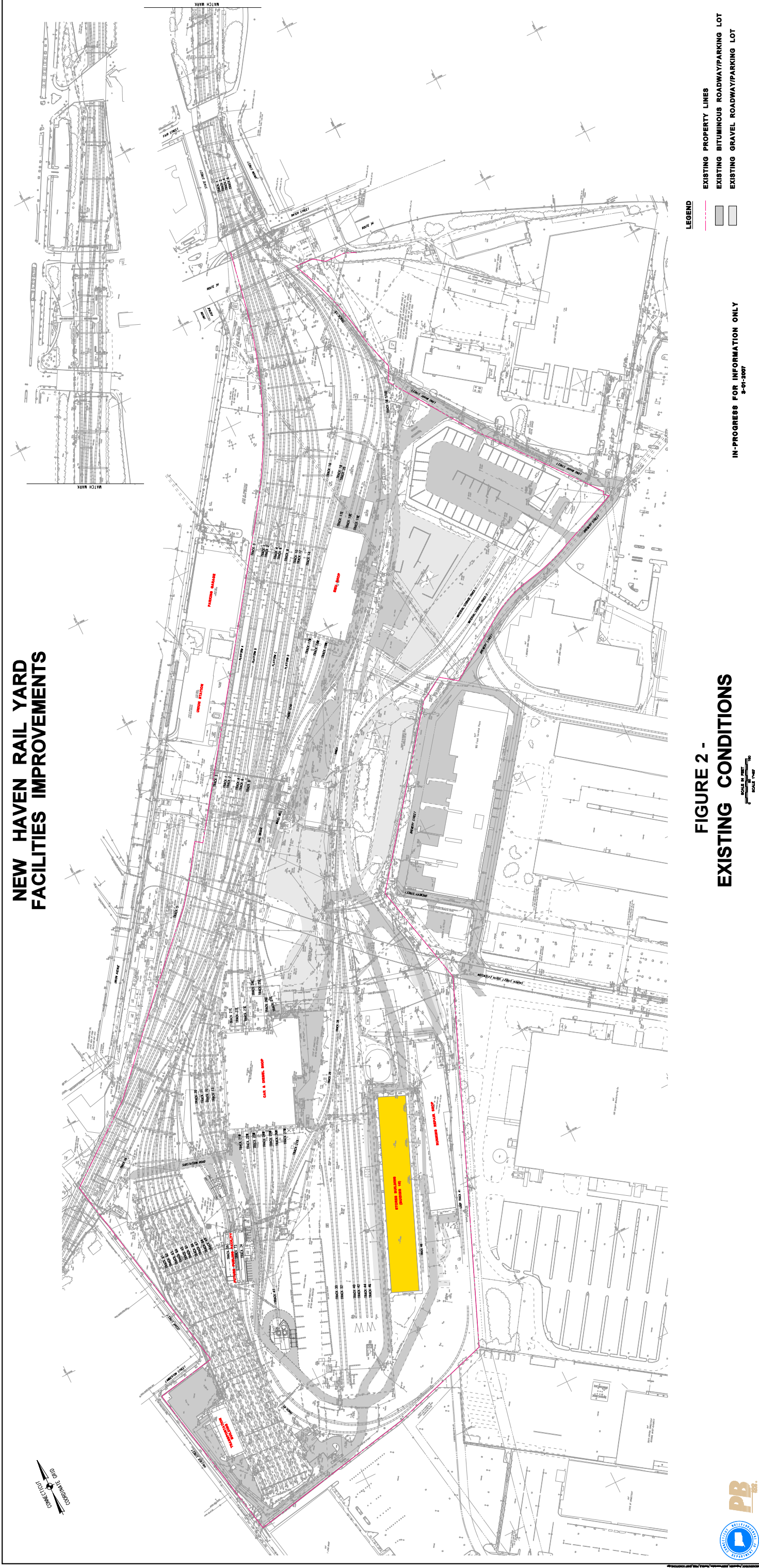
For further information please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich  
Deputy State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT

# NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS



CONNECTION  
JOB NO. 210000  
DATE 3/1/2000

FIGURE 2 -  
EXISTING CONDITIONS

- LEGEND**
- EXISTING PROPERTY LINES
  - EXISTING BITUMINOUS ROADWAY/PARKING LOT
  - EXISTING GRAVEL ROADWAY/PARKING LOT



IN-PROGRESS FOR INFORMATION ONLY  
9-01-2007

SCALE AS SHOWN  
SCALE 1/8" = 1'-0"