INNER LOOP EAST

TRANSFORMATION PROJECT

REMOVE • RESTORE • RECONNECT • REVITALIZE

DRAFT DESIGN REPORT – Volume 3

PIN 4940.T7

JANUARY 2014

City of Rochester, Department of Environmental Services

New York State Department of Transportation

Federal Highway Administration

Inner Loop East
From Barrier to Beautiful

Stantec

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Visual Impact Assessment

Visual Impact Assessment

Inner Loop East
Transformation Project
South Clinton Avenue to
East Main Street
City of Rochester, Monroe County,
New York
P.I.N. 4940.T7

Stantec

December 2013
PN 192500295

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1.0 Project Description

The action to be evaluated by this visual impact assessment is the removal of the Rochester Inner Loop Expressway and the establishment of a community-scale urban street that will re-establish the original street grid system. The action focuses on the section of the Inner Loop from South Clinton Avenue north to East Main Street. This southeast section of the Inner Loop exhibits infrastructure significantly overbuilt for the transportation needs and represents a physical barrier between Rochester's Center City and the southeast neighborhoods.

The primary objectives of this project are to reconnect neighborhoods, spur economic development and provide an appropriately scaled urban street by the elimination of a grade separated, access controlled expressway facility.

The design alternative under consideration provides for the reconstruction of Union Street and complete removal of the Inner Loop between Monroe Avenue and Charlotte Street. This alternative would eliminate bridges at East Avenue, Broad Street and Monroe Avenue and reduces the number of travel lanes from twelve lanes to no more than five lanes. Components of the design alternative under review include signalized intersections, a cycle track, on-street parking, pavement reduction, drainage improvements, pavement markings, and sidewalk, lighting and landscaping installations. The alternative under review also considers how the proposed road alignment and amenities will encourage and facilitate future development.

For purposes of this Visual Impact Assessment, it is assumed that any future development that occurs in the project area will conform to existing zoning regulations or design criteria specifically established for the area. And, if required by the City of Rochester, a visual impact assessment will be provided by the developer for any future projects.

2.0 Visual Environment of Project

2.1 EXISTING LANDSCAPE VISUAL CHARACTER

The Inner Loop is classified as an Urban Expressway on the National Highway System. Much of this roadway within the project area is significantly below the grade of adjacent roadways and uses. Therefore the primary view from vehicles traversing the corridor is one of a long concrete retaining wall.

The predominant land form within the project area is the man-made commercial environment. The commercial development lends a coarse-grained texture (see Lynch, 1981, Smardon, 1984) to the visible landscape. Along Union Street, between Lafayette Street and Chapman Alley, the predominant land use is residential. The architecture is a mix of multi-family, multi-story buildings and two story single family homes. This area of the project reflects a more cohesive visual character due to the style of architecture as well as the presence of large street trees. (Refer to Figure 1 – Land Use Map for clarification of the different land use areas.)

To properly evaluate the visual quality of the corridor, three basic criteria were employed. The criteria include vividness, intactness and unity. The visual impact of each varies depending on the view scope. If the corridor is evaluated based on the view obtained while driving the Inner Loop, we recognize a different level of criteria strength than if the site is evaluated on a larger scale within its greater surrounding context.

"The vividness or memorability of a landscape is derived by contrasting landscape components as they combine in striking and distinctive visual patterns" (Visual Impact Assessment, FHWA, Volume 2, 1988). The concrete retaining walls of the Inner loop present a monotonous view and therefore not a memorable one. The man-made development within the project area offers numerous contrasting visual elements, which negate the overall "vividness" of the visual quality of the area.

"Visual intactness refers to both the integrity of visual pattern and the extent to which the landscape is free from visually encroaching features" (Visual Impact Assessment, FHWA, Volume 2, 1988). Due to the high quantity of encroachments that include varied building sizes, styles, color, condition and textures; bridges subdividing the site; elevation changes of the InnerLoop; large parking lots being juxtaposed next to buildings and the sporadic use of street trees, any chance of intactness has been eliminated.

"Unity is the degree to which the visual resources of the landscape join together to form a coherent harmonious visual pattern" (Visual Impact Assessment, FHWA, Volume 2, 1988). On a site specific scale, unity is achieved to a minor extent with the residential area due to the street trees, scale of buildings and building materials. On a larger scale, the existing landscape does not offer a sense of unity due to a lack of any unifying elements be that street trees, building locations, materials and/or height, lighting or elevation. The visual unity of the project area is actually hindered due to the location and elevation of the Inner Loop, long lengths of railing and varying heights of light poles.

3.0 Visual Resources

3.1 Visual Evaluation

“The visual resources of a landscape are the stimuli upon which actual visual experience is based. “A highway project can alter the visual experience by changing the visual resource base” (Visual Impact Assessment for Highway Projects, March 1981).

The Project View Shed Map (Figure 2) illustrates the area that will be visually impacted by the proposed project. This map depicts the viewshed and visual features as seen primarily from the adjacent uses. There is an argument to be made that there is a separate viewshed for those actually traveling on the Inner Loop. That viewshed is severely limited by the high retaining walls on either side of the roadway. For purposes of this visual analysis, the viewshed at the grade of the adjacent uses will be considered because that is the viewshed that will remain once the project is constructed.

The landscape components (landform, water, vegetation and man-made development) of the existing the overall project view shed includes the man-made environment and a topography with little grade change, other than that of the Inner Loop. The viewshed is quite wide and linear. Large expanses are visible from the majority of the area within the project corridor.

The striking architecture of the National Museum of Play, especially the Butterfly House, is distinctly identifiable as an important location. The view of this structure should be maintained and enhanced if possible.

There are other visually sensitive resources within the project area that should be considered as part of this visual analysis. Those resources are buildings that are National Register Eligible (NRE) or Listed (NRL). The buildings are located at the following addresses. (Refer to Project Viewshed Map, Figure 2).

1. 84 South Union Street
2. 68 South Union Street
3. 8 Lafayette Park
4. 7 Lafayette Park
5. 62 North Union Street (New Hope Free Methodist Church)
6. 324 East Avenue (Bethel Christian Fellowship)
7. 320 East Avenue

As stated in the Phase IB Archaeological and Architectural Reconnaissance Survey prepared by the State University of New York at Buffalo, dated May 2013, there are eight additional NRE and/or NRL sites that are within the project viewshed. These sites are located on the very edge of the viewshed, and the impact of the views to and from the structures is negligible.

8. 302-304 University Avenue
9. 200 University Avenue (School 14)
10. 270 Scio Street (New Bethel CME Church)
11. 261-263 Lyndhurst Street
12. 420 South Clinton Avenue (ABVI Goodwill)
13. 75 Woodbury Boulevard (Geva Theater)
14. 238-242 South Avenue

The most striking visual changes within the project area will be those locations where the view of the below grade Inner Loop is most evident. An example location would be the Union Street on-ramp to the Inner Loop.

An evaluation of the above noted features that form the fabric of the existing visual resources resulted in the selection of a key view of the transportation corridor. Analysis of this critical viewpoint that intimately corresponds to the viewer sensitivity determines how the proposed action affects the integrity of the overall visual resource.

4.0 Viewer Groups and Viewer Exposure

4.1 VIEWER GROUP DESCRIPTION

The visual impacts of the proposed project are evaluated according to the perspective of the public most likely to "use" the travel corridors and include those who will "see" the visual resources from within and without the project area. With respect to user/view groups, raising the Inner Loop to grade and re-establishing the former Union Street alignment serves various purposes. The project will reconnect neighborhoods and provide an appropriately-scaled urban street by the elimination of a grade separated, access controlled expressway facility. Moreover, a designated bicycle system (cycle tack) will be established.

Identified view groups are shown in Table 1 below.

TABLE 1 – VIEWER GROUP SENSITIVITY	
Group A Viewers	**Group B Viewers**
Arranged in order of viewer sensitivity: 1. Bicyclists (High) 2. Visitors/Tourists 3. Local Traffic 4. Commuter Traffic (Low)	Arranged in order of viewer sensitivity: 1. Pedestrians (High) 2. Residents 3. Commercial (Low)

"Group A" viewers are derived from the group of users who may not reside in the vicinity of the project, but experience the view/corridor from the road. These viewers are people who would be traveling either to the project area or through the project area. For example, if someone were traveling to the project site to shop or visit service facilities or a resident but does not live in the area, he/she would be a Group A viewer. Another example would be a group of people commuting to another destination passing through the project area. This group of viewers will most likely not be present in the area long enough to fully view their surroundings. If they are traveling through the site, it is most logical that their focus would primarily be on the destination. Typically a "Group A" viewer uses the quickest route through or into the area so traffic speeds and congestion are a hindrance to truly appreciating the overall site.

"Group B' viewers are predominately the local users living and/or working in the general project vicinity and having a view of the road corridor. These viewers are much more cognizant of their local surroundings. They are typically traveling through the area at a much slower speed on local roads and/or as bicyclists/pedestrians. The basic understanding is that because these users are more fully experiencing their surrounding environment, either consciously or subconsciously, they stake a higher claim in any visual changes within the project area.

4.2 VIEWER EXPOSURE

To determine which viewers will be most heavily impacted by the design alternatives, one must first determine which group is more sensitive to the existing environment. Table 1 gives a breakdown of the most prevalent users in each viewer group and ranks their level of sensitivity.

Viewers that are most sensitive to landscape changes are pedestrians, bicyclists, residents and commuters/local workers. These groups have the most time or opportunity to view their surrounding visual environment and may be engaged in leisure activity that would heighten visual awareness.

Viewers that are the least sensitive to changes in the visual environment are the visitors/tourists and commercial motorists. The visitors/tourists may be less cognizant of the environment within the site area because it is not intended to be an attraction area, and the concentration of traffic may encourage a hurried attitude. Commercial motorists will have a shorter duration of view due to focus and activity that is associated with their typical purpose of being in the area.

Presently there are visual resources in the project environment that are particularly important to local viewers. These resources are as follows:

1. 84 South Union Street
2. 68 South Union Street
3. 8 Lafayette Park
4. 7 Lafayette Park
5. 62 North Union Street (New Hope Free Methodist Church)
6. 321 East Avenue (Bethel Christian Fellowship)
7. 320 East Avenue
8. 302-304 University Avenue

The project will support expectations for the future appearance of the area in that it will improve the overall visual quality of the corridor, thereby improving the visual experience of pedestrians, bicyclists, residents, tourists and motorists alike.

5.0 Project Appearance and Visual Impacts

Visual impacts and the viewer response to those impacts under the proposed build alternative are measured against the existing conditions that articulate visual quality within the project view shed. Existing conditions are documented in Attachment A. A key view was selected to accurately depict the project alternative as it would actually be seen by the viewer. A photo simulation, viewpoint rendered from the initial key view, depicts effects of the proposed project alternative (See Attachment B). The following is a brief proposed appearance summary describing the design physical changes, visual resources changes, visual impacts and potential mitigation techniques.

5.1 DESIGN ALTERNATIVE

The preliminary design development has narrowed the alternatives to one feasible build alternative (see Figure C) and one null alternative (or no build alternative). The Null Alternative is retained and employed as a baseline for gauging the impacts of the build alternative (Alternative 1).

Under the Null Alternative, the existing infrastructure would be retained as is. The existing infrastructure will continue to act as a barrier between neighborhoods and a deterrent to economic development. Moreover, on-going maintenance for an underutilized transportation facility will be required.

Alternative 1: Remove the Inner Loop. This alternative transforms the limited access expressway to a community-scale urban street that will re-establish the street grid system. This option includes complete removal of the Inner Loop to grade between Clinton Avenue and Charlotte Street. This alternative eliminates bridges at East Avenue, Broad Street and possibly Monroe Avenue, and reduces the number of travel lanes from twelve lanes to no more than five lanes. Additionally, on-street parking, bicycle facilities (cycle track), street tree plantings and street lighting will be provided. Ultimately this alternative eliminates underutilized assets/infrastructure, reduces future capital expenses associated with maintenance efforts, and reconnects neighborhoods that were separated during the 1960's when the Inner Loop was constructed. Furthermore, this alternative provides area for future development. Any proposed development should be done in such a manner as to reinforce the streetscape and urban feel as established on the east side of Union Street.

5.2 PROPOSED APPEARANCE SUMMARY

5.2.1 **Key View 1** – Existing Intersection of Union Street and the Inner Loop

User Perspective: Motorists, Bicyclists, Pedestrians

Design Physical Changes

- Inner Loop brought to grade
- Pavement reconfiguration
- Green space/future development area
- Pavement markings and signage
- Cycle track

Visual Resource Changes Due to Design

- View shed area at same approximate grade
- Streetscape plantings
- Street lighting in keeping with the character of the area
- Street lighting at grade of Union Street. (Existing street light fixtures on the Inner Loop are at approximate eye level when viewed from the surrounding areas.)
- Large green space until such time as development occurs
- Unified streetscape once development does occur
- Removal of guide rails that block views

Potential Mitigation

- Minimize glare from street lighting that can be seen from adjacent residential units.
- Locate plantings to enhance views of structures considered to be cultural resources.
- Introduce specialty pavements, possibly within the cycle track and/or sidewalk areas, to minimize the visual impact of the pavement area.

Visual Impact

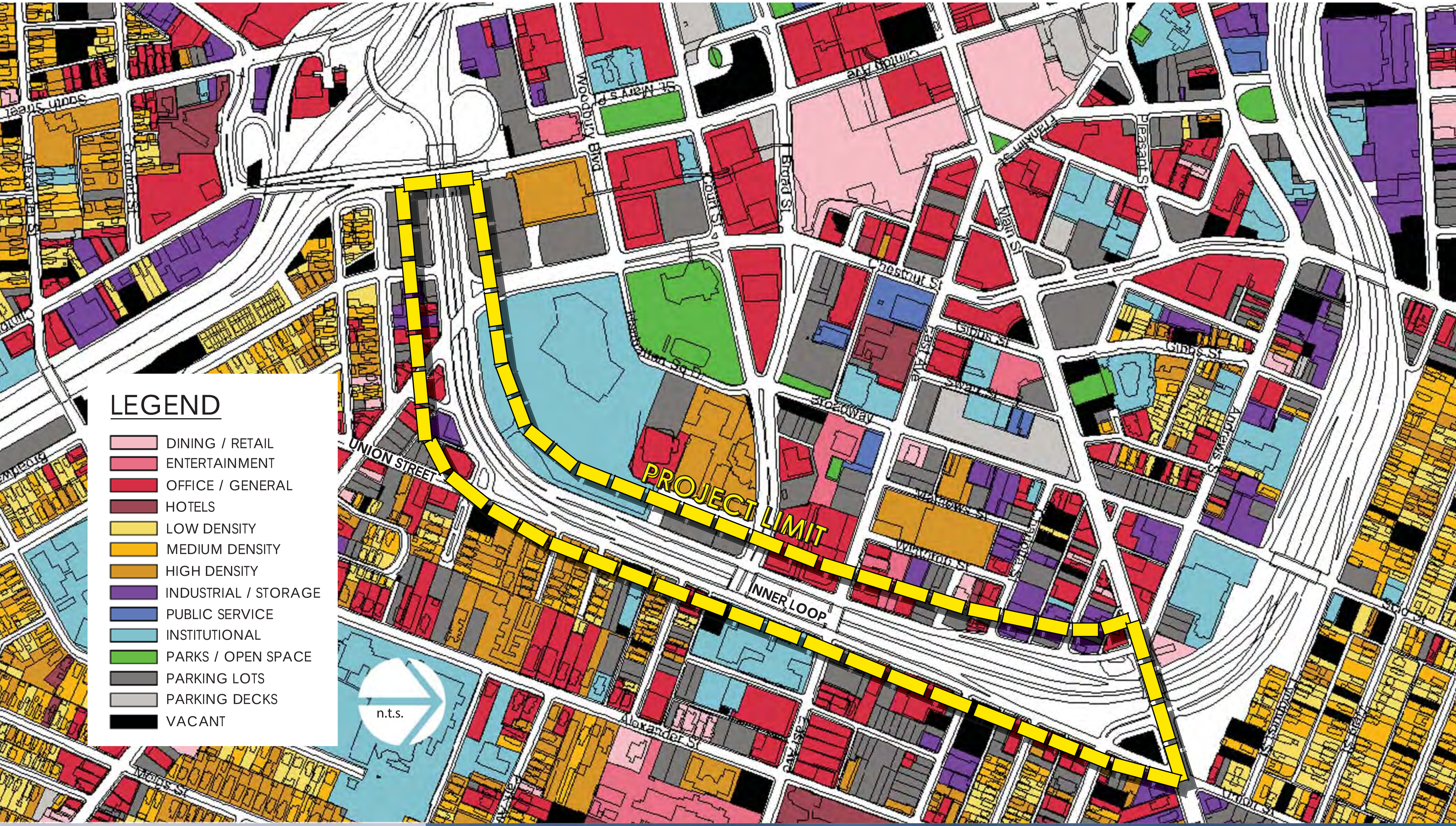
The raising of the Inner Loop and the corresponding reduction in pavement will allow the motorist to experience the views from the travel way due to the imposed reduction of speed. The proposed roadway configuration will create a visual quality of intactness and unity by providing motorists, pedestrians, bicyclists and adjacent uses a view not interrupted by the below grade Inner Loop. A sense of unity will also be achieved by the use of street trees and lighting throughout the corridor.

5.2.5 General Visual Impacts

The impact to the project area visual environment due to the construction of the proposed improvements was assessed by reviewing changes to the affected visual resources. The review included the analysis of planimetrics and cross-sectional views and the design of a photosimulation of the key view point along the travelway.

In general, the following visual changes will occur:

- There will be a decrease in paved roadway surface and a corresponding increase in green space. The paved roadway will become less dominant in scale relative to the corridor's viewshed than current conditions.
- Having the area at approximately the same grade will enhance the views north-south and east-west.
- Removal of guiderails will unify the views from east and west.
- The introduction of trees will serve to frame views, screen undesirable uses and enhance the overall visual experience throughout the corridor.
- The elimination of bridges and the subsequent provision of at-grade interactions will provide a sense of unity and continuity between neighborhoods.
- The use of a standardized street light will provide a unifying visual element with the corridor.



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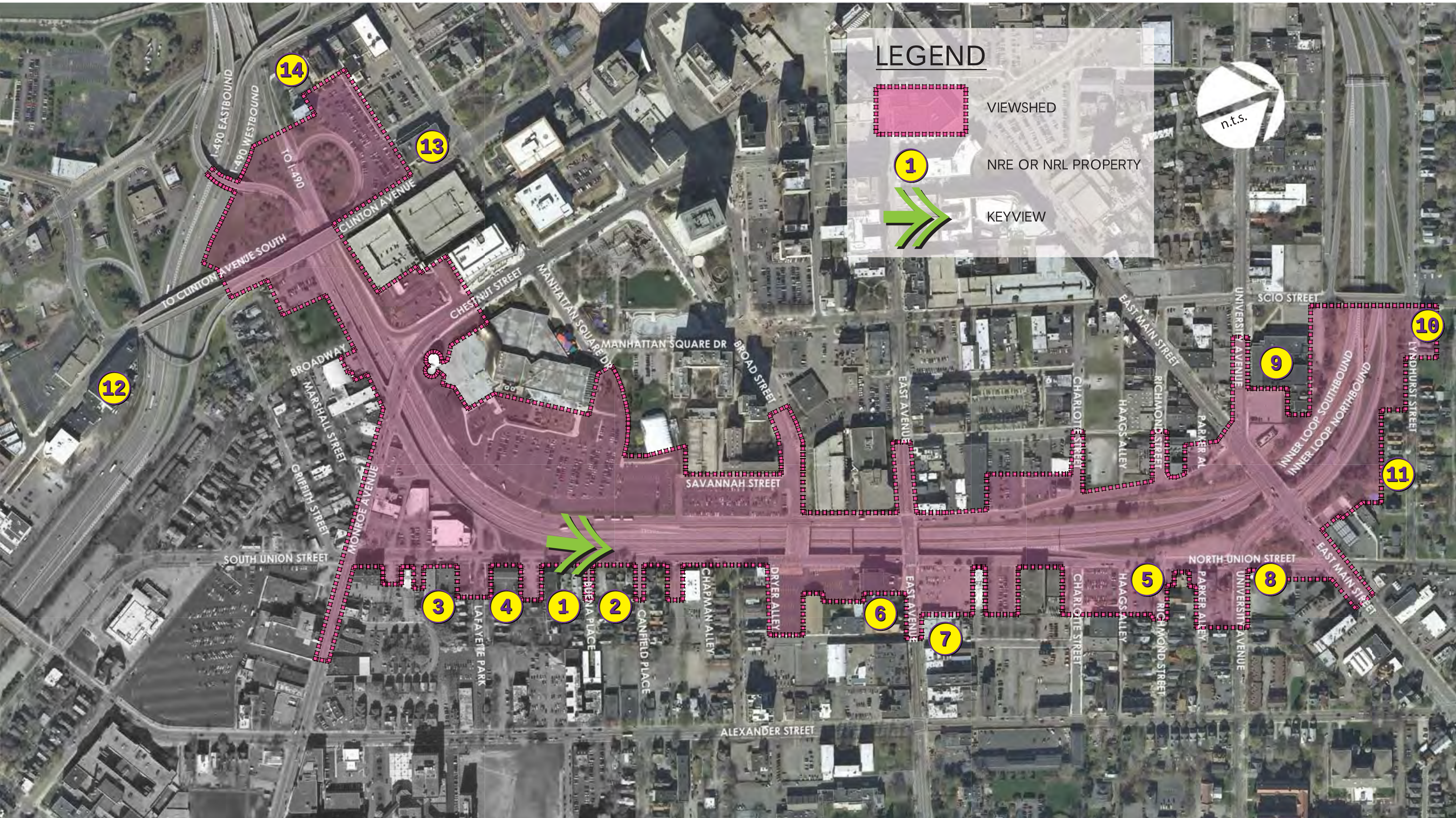
VISUAL IMPACT ASSESSMENT
LAND USE MAP
FIGURE 1



VISUAL IMPACT ASSESSMENT

VIEWSHED MAP

FIGURE 2

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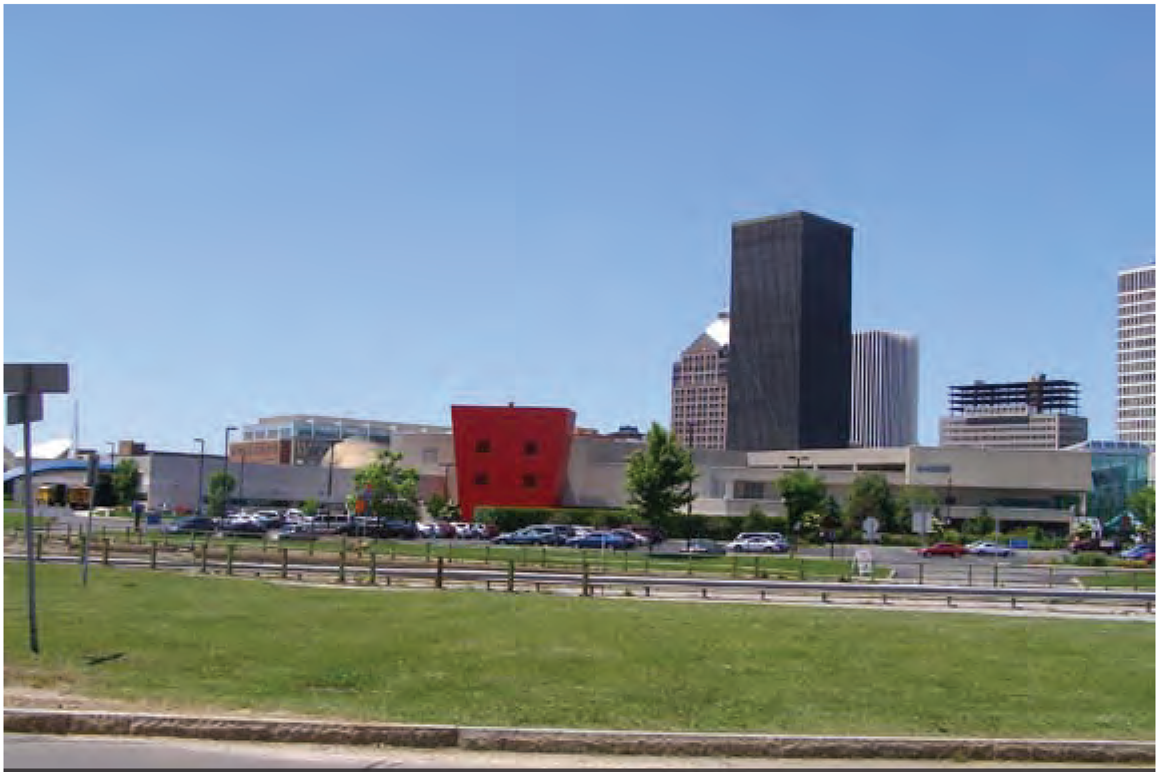


VIEW WEST FROM S. UNION STREET

VIEW EAST - INTERSECTION OF CANFIELD PLACE AND S. UNION STREET

VIEW OF INNER LOOP CORRIDOR FROM MONROE AVENUE BRIDGE

VIEW NORTH LOOKING AT BROAD STREET BRIDGE

VISUAL IMPACT ASSESSMENT

EXISTING CONDITIONS

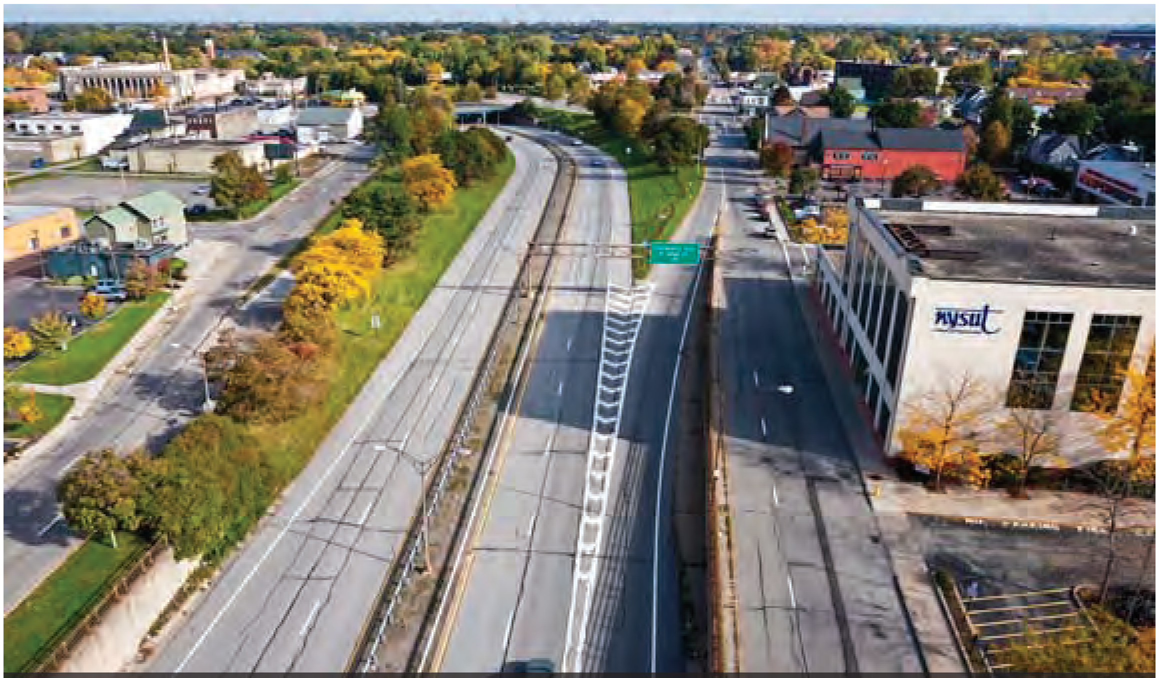
ATTACHMENT A

Stantec

VIEW NORTH LOOKING AT EAST MAIN STREET

VIEW SOUTH LOOKING AT EAST AVENUE AND BROAD STREET BRIDGES

VISUAL IMPACT ASSESSMENT
EXISTING CONDITIONS
ATTACHMENT A



VIEW NORTH LOOKING AT N. UNION STREET OFF-RAMP

VIEW SOUTH LOOKING AT S. UNION STREET
OFF-RAMP AND NATIONAL MUSEUM OF PLAY

APPENDIX J

Hazardous Waste / Contaminated Material Screening

PRELIMINARY SCREENING REPORT

FOR THE

HAZARDOUS WASTE/CONTAMINATED MATERIALS ASSESSMENT

OF THE

INNER LOOP RECONSTRUCTION PROJECT
SOUTH CLINTON AVENUE TO SCIO STREET
CITY OF ROCHESTER, MONROE COUNTY
PIN 4940.T7

VOLUME I of II

JULY 2013

PREPARED FOR:
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61 COMMERCIAL STREET
ROCHESTER, NEW YORK 14614

FOR SUBMISSION TO:
CITY OF ROCHESTER
30 CHURCH STREET
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PRELIMINARY SCREENING REPORT

FOR THE

HAZARDOUS WASTE/CONTAMINATED MATERIALS ASSESSMENT

OF THE

INNER LOOP RECONSTRUCTION PROJECT
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CITY OF ROCHESTER, MONROE COUNTY
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EXECUTIVE SUMMARY

A Hazardous Waste/Contaminated Materials (HW/CM) Assessment was completed by Watts Architecture & Engineering (Watts) for the Inner Loop Reconstruction Project, City of Rochester, Monroe County, New York (PIN 4940T7). This report was prepared for the City of Rochester in technical support of the proposed construction project. Assessment activities included interviews with government agencies and persons knowledgeable with the roadway corridor, a corridor inspection, and a review of various government and historical records.

The feasible alternatives being investigated under this assessment are to either reconstruct/rehabilitate or remove the expressway. The preferred alternative is focused on the elimination of the depressed Inner Loop Expressway around the southeast portion of the City and provding an at-grade boulevard in its place.

Thirty-five sites (A through II) were identified in this Preliminary Screening Investigation Report prepared for the Hazardous Waste/Contaminated Materials (HW/CM) Assessment that may pose environmental risk to the Inner Loop study area. These sites are recommended for possible further investigation if the chosen design alternative will require excavation of subsurface soils, installation of underground utilities, or right-of-way acquisition in these areas.

Recommendations for further work will require modification depending on the final design plans. Once the design alternative has been developed, a Field Sampling Plan (FSP) should be prepared for the performance of a subsequent Detailed Site Investigation (DSI).

The Inner Loop has been an active expressway for approximately 50 years and the area has been a developed urban area since the late 1800's. Due to the urban nature of the project study area, urban/industrial fill is likely present throughout the corridor. This fill was placed at a time when environmental laws were not in place; therefore, there is a potential to encounter historic contaminated fill from unknown sources anywhere along the corridor where backfill materials were used.

Twenty-three (23) of the thirty-five sites contain or have contained petroleum USTs/ASTs or have documented petroleum spill records on file. There is also an elevated potential that these twenty-three sites may have abandoned and unmarked USTs within the site because of known or suspected former use as petroleum storage sites.

Thirty-two (32) of the thirty-five sites are or have been auto repair shops or manufacturing facilities including metal shops, rubber stamp manufacturer, coal and coke companies, photo studios, and printers. In addition, eight (8) of the thirty-five sites are or have been dry cleaners. All of these are types of business that may contribute to contamination of the site soils and groundwater.

If construction work that includes excavation of subsurface soils or the acquisition of private property is anticipated for any of these sites, we recommend an environmental investigation, sample collection, and laboratory analysis to determine whether soil contaminated with industrial type compounds, petroleum or chlorinated solvents is present.

1.0 INTRODUCTION

Watts Architecture & Engineering (Watts) was retained by Stantec, Inc. (Stantec) to perform a preliminary screening for the Hazardous Waste/Contaminated Materials (HW/CM) Assessment of the Inner Loop Reconstruction Project, City of Rochester, Monroe County, New York (PIN 4940T7). This report was prepared for the City of Rochester in technical support of the proposed construction project.

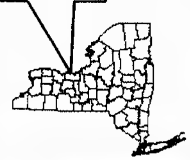
1.1 Project Description

The proposed project involves the reconstruction of the eastern portion of the Inner Loop from South Clinton Street to East Main Street and raising a portion of the corridor (Monroe Avenue to Charlotte Street) to an at-grade boulevard. This report considers the project limits defined by Stantec. The project corridor is shown on Figure 1.

1.2 Purpose

The purpose of the preliminary screening phase of the HW/CM Assessment is to identify potential areas of contamination that may be excavated or impacted by construction. The second phase of the HW/CM Assessment, if warranted, is used for soil (or other material) characterization to determine disposal requirements for excavated soil and to identify environmental concerns that could affect the public or worker safety. It is common practice and good environmental policy to identify potential areas of contamination to avoid unexpected costs and significant delays during the construction of a project.

Source: Google Maps - 2013



Watts Architecture & Engineering
95 Perry Street
Buffalo, New York

Figure 1 – Project Location Map

Inner Loop Reconstruction Project
City of Rochester, Monroe County, New York

Not to Scale | July 2013

2.0 SCOPE AND METHODOLOGY

This preliminary screening conforms to the procedures recommended in NYSDOT's The Environmental Manual (TEM) (including all updates), Section 4.4.20, Hazardous Waste Assessments which is the reference standard for this type of work. The screening consists of collecting information through a record search to investigate previous activities and site uses in the corridor, a review of government databases and records, a field inspection, and interviews with local residents, employees, government personnel, and other knowledgeable individuals. A complete list of sources referenced in this report is found in Attachment A.

2.1 Investigation of Previous Activities and Site Use

A records search is conducted to determine past or current land uses on and in the immediate vicinity of the project corridor that may be of environmental concern. The following sources were used to evaluate potential environmental concerns on the project corridor:

2.1.1 USGS Topographic Maps

The 1898, 1912, 1920, 1935, 1952, 1969, 1971, and 1978 Rochester East, Quadrangle maps were obtained from Environmental Data Resources, Inc. (EDR), an independent research firm. These maps provide a historical reference to land use in addition to showing prominent structures, roadways, bodies of water, and topography.

2.1.2 Historic Land Use Maps

The following atlases were reviewed online at Historic Map Works (www.historicmapworks.com) and Ward Maps websites (www.wardmaps.com) online:

- 1875 Atlas of Rochester, NY
- 1888 Atlas of the City of Rochester, NY
- 1910 Atlas of the City of Rochester, NY
- 1918 Plat Book of the City of Rochester, NY
- 1935 Plat Book of the City of Rochester, NY

The entire project corridor is not covered by all of the atlases.

2.1.3 Sanborn Fire Insurance Maps

The 1892, 1912, 1938, 1950, and 1971 Sanborn Fire Insurance Maps were obtained from EDR. These maps provide a historical reference to land use, building type, businesses present, in addition to showing prominent structures and roadways.

2.1.4 City Directories

Watts reviewed the following City of Rochester, Monroe County, New York, City Directories: 1926, 1930, 1935, 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1982, 1985, 1992, 2000, 2008, and 2012. The city directories were obtained from EDR.

2.1.5 Aerial Photographs

Aerial photographs dated 1938, 1958, 1966, 1971, 1980, 1994, 2006, 2008, 2009 and 2011 were obtained from EDR.

2.1.6 Soil Survey of Monroe County

The Monroe County Soil Survey was reviewed online to determine the different soil types and their distinct characteristics present in the project corridor.

2.2 Review of Government Records and Databases

The government records search included a review of federal, state, and local government databases of known or suspected inactive hazardous waste sites; petroleum and chemical bulk storage tank sites; reported spills, including leaking underground storage tanks; and hazardous waste generation sites.

Environmental Data Resources, Inc. (EDR), an independent research firm, was employed to perform a United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC) database search for the proposed project corridor. The EDR report is found in **Attachment C**.

The federal and state databases searched and the specified radii from the project corridor are summarized below:

- National Priorities List (NPL) – 1.0 mile
- National Priorities List Delisted (NPLD) – 1.0 mile
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – 0.50 miles
- No Further Remedial Action Planned Sites (CERC-NFRAP) – 0.50 miles
- Corrective Action Sites (RCRA COR) – 1.0 mile
- Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal Sites (RCRA TSD) – 0.50 miles
- Resource Conservation and Recovery Act (RCRA) Large and Small Quantity Generators (RCRA GEN) – 0.25 miles
- Federal Institutional and Engineering Controls (Fed IC/EC) – 0.50
- Emergency Response Notification System (ERNS) – target property

- NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (STATE) – 1.0 miles
- State/Tribal Solid Waste Landfills (SWL) – 0.50 miles
- State/Tribal Leaking Underground Storage Tanks (LUST) – 0.50 miles
- State/Tribal Storage Tanks (UST/AST) – 0.25 miles
- State/Tribal Institutional & Engineering Controls (IC/EC) – 0.50 miles
- State/Tribal Voluntary Cleanup Program (VCP) – 0.50 miles
- State/Tribal Brownfield – 0.50 miles
- Federal Brownfield – 0.50 miles
- Hazardous Materials Information Reporting System (HMIRS) – 0.25 miles
- NYSDEC Spills (SPILLS & HIST SPILLS) – 0.25 miles
- No Longer Regulated (RCRA NLR) – target property
- Toxic Chemical Inventory Release System (TRIS) – target property
- Toxic Substances Control Act (TSCA) – target property
- FIFRA/TSCA Tracking Systems (FTTS) – target property
- Integrated Compliance Information System (ICIS) – target property
- PCB Activity Database System (PADS) – target property
- Material Licensing Tracking System (MLTS) – target property
- Radiation Information Database (RADINFO) – target property
- Facility Index System (FINDS) – target property
- RCRA Administrative Action Tracking System (RAATS) – target property
- Risk Management Plan (RMP) – target property
- Hazardous Substance Waste Disposal (HSWDS) – 0.25 miles
- Hazardous Waste Manifest (Manifest) – 0.25
- Drycleaners – 0.25 miles
- National Pollution Discharge Elimination System (NPDES) – 0.25 miles
- Tribal Lands – 1.00 miles
- Potentially Responsible Party (PRP) – target property
- Aerometric Information Retrieval System (AIRS) – target property

Watts also reviewed in-house data including NYSDEC, Division of Environmental Remediation, Freedom of Information Law (FOIL) CD-ROM dated April 1, 2003 and the NYSDEC Environmental Remediation Databases on their website.

Additional site information was also obtained through data searches of local agency files. These files were reviewed to determine past environmental problems, engineering studies, utility locations, and property ownership/boundaries. Watts made the following contacts:

- City of Rochester Department of Environmental Services for hazardous materials information;
- City of Rochester Fire Department for hazardous materials information; and

- Monroe County Department of Environmental Health for hazardous materials information.

2.3 Field Inspection

A site walkover reconnaissance of the subject property was conducted on June 5th, 2013. The field inspection is a walkover of the project corridor to observe potential locations of contamination that may be environmental concerns and affect the design or construction of a project. Potential environmental concerns may be identified by: stained or discolored soil or building foundations; distressed, dead, or absence of vegetation; air emissions or odors; discolored or sheened surface water or ground water discharges; evidence of previous fill placement or waste disposal; and evidence of previous fires. Additional concerns may be identified by: evidence of former or existing underground storage tanks; aboveground storage tanks; monitoring wells; pipes or pipelines; 55-gallon (208 L) drums or other evidence of bulk chemical storage and disposal; old pump islands; possible PCB storage, including transformers and former transformer pads; railroad tracks; sumps or septic systems; and pits, lagoons, or other surface impoundments.

Selected photographs taken during the field inspection are found in **Appendix B**. The project corridor is located in an area of the City of Rochester that has been developed for over 100 years. The majority of the property currently surrounding the corridor is either commercial or residential.

The subject property consists of a grade-separated expressway with three lanes of traffic in both direction. The majority of the Inner Loop in the project area was closed to traffic due to construction at the Clinton Avenue bridge over the Inner Loop. There are four roads that front the Inner Loop, Pitkin Street on the west side, Union Street on the east side, Lyndhurt Street on the north side and Howell Street on the south side.

In general, the east side of the corridor has commercial businesses along Union Street. Residential properties are found east of Union Street and north of Lyndhurst Street. There is a small area of residential properties around Winthrop Street on the west side of the subject corridor. Several parking lots are present along Pitkin and Union Streets. The west side of the corridor is part of the City of Rochester Central Business District containing mostly commercial businesses with some urban residential properties at the north end. The Strong Museum of Play is located on the west side of the project corridor at Chestnut Street. Two gas stations and several auto repair shops were observed along E. Main St. at the north end of the project corridor. Another auto repair shop is located at the southern end of the project corridor at Broadway Street.

The walkover discovered no evidence of concentrated dumping or material disposal along the project corridor. No evidence of petroleum sheen on the soil, ballasts, or any pooled water surfaces were identified. No tanks, fill ports, or old pump islands were found immediately adjacent to the corridor. Subsurface soils would require investigation using a drill rig or soil excavation program to characterize their composition and any evidence of contamination in the subsurface, where materials are to be disturbed during construction.

2.4 Interviews

Government authorities were interviewed as sources of information regarding past and present land uses, potential contamination problems, and other relevant information regarding environmental concerns that may affect the project corridor. A list of formal contacts and sources reviewed is found in **Attachment A**. In addition, during the work within the corridor several visitors stopped by, some of which had some background knowledge of the corridor and its former business and associated operations.

3.0 FINDINGS

A property is included in this section if it showed the potential to be an environmental concern during one of the methods of investigation listed in Section 2.0. Available information from researched sources is listed for each property followed by an evaluation of impacts or potential impacts on the project corridor.

3.1 Specific Properties Considered to be Potential Environmental Concerns

The following properties are considered to be potential environmental concerns with respect to the project study area. The project study area and the location of each property of potential environmental concern to the proposed project are shown in **Figures 2 and 3** by designated site letter. The addresses are taken from the Monroe County GIS Parcel Viewer. Photographs of the sites of potential environmental concern are included in **Attachment B.**

3.1.1 Site A: I-490 Inner Loop Expressway

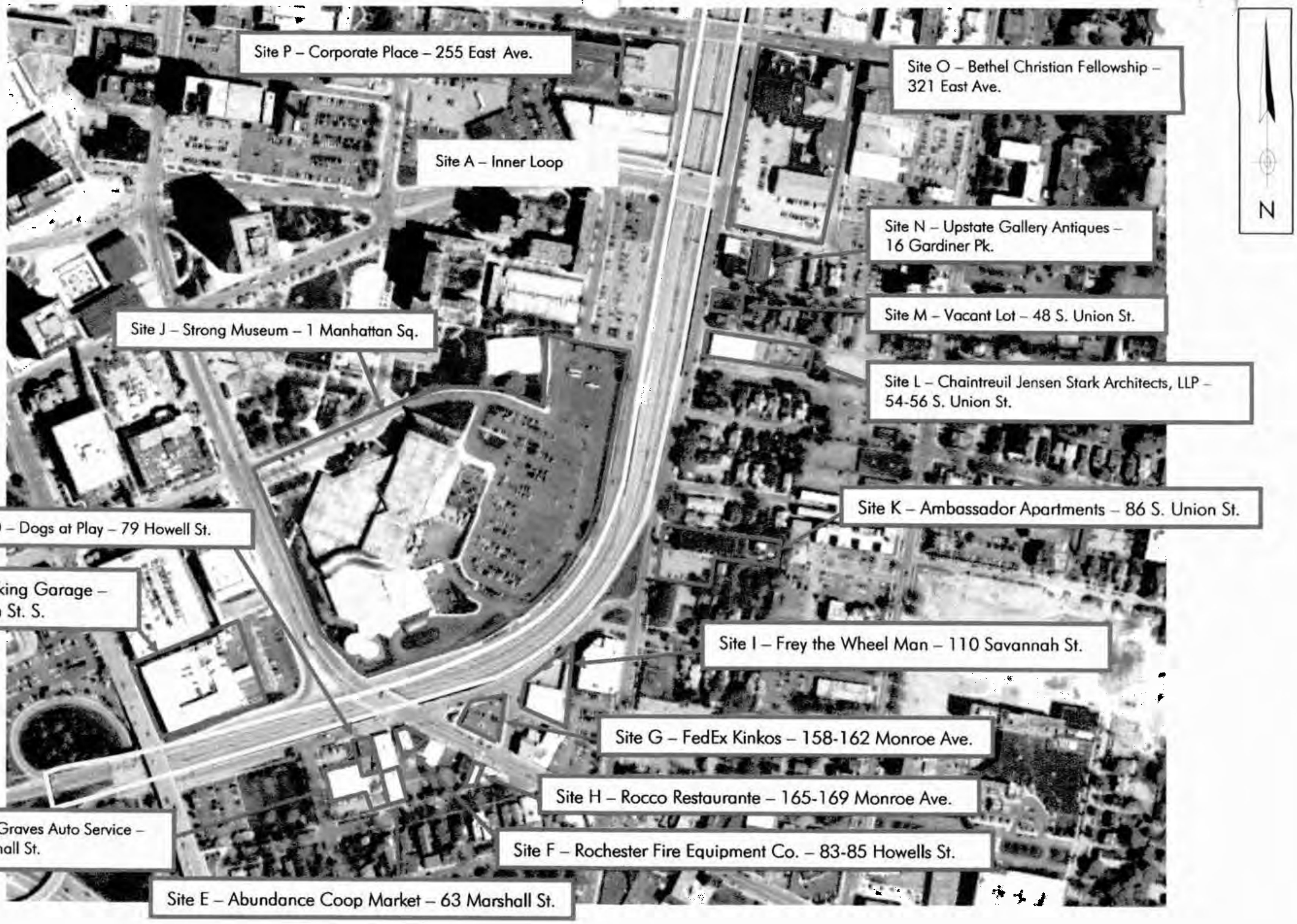
Site Inspection
This site is currently the I-490 Inner Loop Expressway a grade-separated expressway. Refer to Photos #1 – 5 in **Attachment B.**

Historic Maps
The Inner Loop is not depicted on any of the historic maps. The highway was constructed in the 1950's and 1960's. The area is depicted as part of the city with the roads being continuous roadways through the area that is now the Inner Loop. Buildings that were removed to make room for the highway are depicted along the roads.

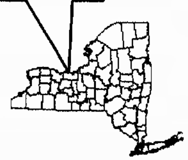
Sanborn Maps
The Inner Loop is not depicted on the 1892, 1912, 1938, and 1950 Sanborn Fire Insurance Maps. Many of the roads which are now bisected by the Inner Loop are depicted as continuous roadways with businesses and structures along them including auto repair shops, gas station, auto sales and service facilities, tire sales, and dry cleaners. On the 1971 map, the Inner Loop is present in its current location. Many of the roads are now bisected and buildings have been removed to make way for the highway.

City Directories
The following businesses were identified for the addresses that used to exist on this site however; the structures were removed during the construction of the Inner Loop:

Years Listed	Address	Use
1930-1960	9 N Union St.	Gas Station, Used Car Lot
1950	19 N Union St.	Auto Repair Shop



Source: Google Maps - 2013



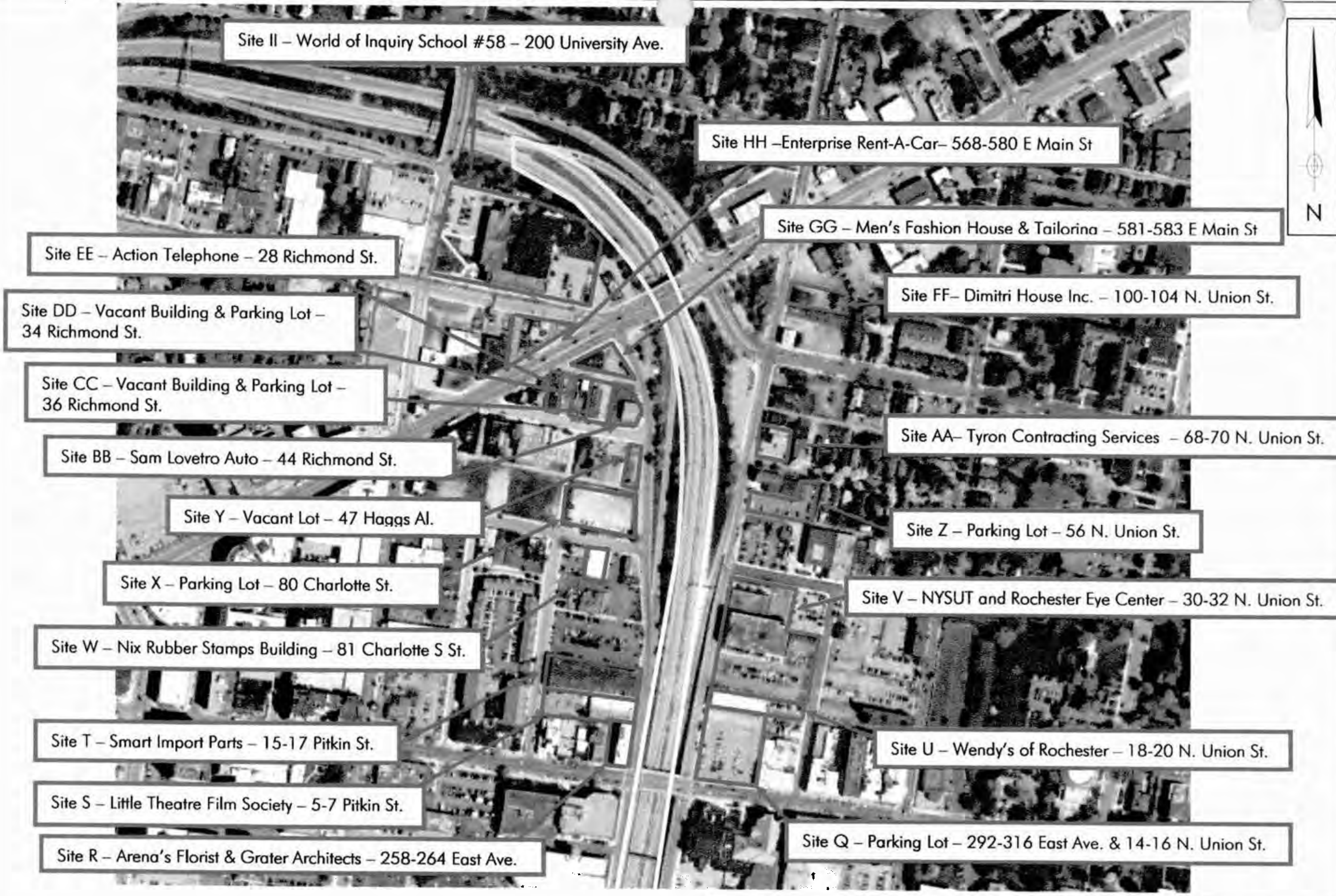
Watts Architecture & Engineering
95 Perry Street
Buffalo, New York

Figure 2 – Sites of Potential Environmental Concern

Inner Loop Reconstruction Project
City of Rochester, Monroe County, New York

Not to Scale

July 2013



Source: Google Maps - 2013

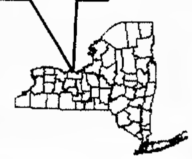


Figure 3 – Sites of Potential Environmental Concern

Watts Architecture & Engineering
95 Perry Street
Buffalo, New York

Inner Loop Reconstruction Project
City of Rochester, Monroe County, New York

Not to Scale | July 2013

Years Listed	Address	Use
1926-1960	21 N Union St.	Auto Repair Shop
1950-1960	33 N Union St.	Auto Sales and Service
1930-1950	51 N Union St.	Auto Sales and Service
1940-1950	13 S Union St.	Used Car Lot
1945	23 S Union St.	Used Car Lot
1926-1955	25 S Union St.	Auto Tire Shop, Dry Cleaner
1926	27 S Union St.	Auto Sales and Service
1930-1960	29 S Union St.	Used Car Lot
1935	31 S Union St.	Auto Repair Shop
1940-1960	35 S Union St.	Auto Sales and Service
1926-1960	37 S Union St.	Auto Sales and Service
1950-1960	41 S Union St.	Auto Sales and Service
1926-1940	286 East Ave.	Auto Tire Shop
1926-1930	265-271 East Ave.	Refrigerator Mfg.
1926-1960	270 East Ave.	Auto Tire Shop, Auto Repair Shop
1940-1945	602 E. Main St.	Used Car Lot
1930	598 E. Main St.	Auto Sales and Service
1930-1940	628 E. Main St.	Gas Station
1955-1960	632 E. Main St.	Auto Repair Shop
1940	622 E. Main St.	Auto Tire Shop
1940-1955	55 Richmond St.	Auto Repair Shop
1926-1960	51 Richmond St.	Auto Repair Shop
1926-1935	62 Richmond St.	Auto Repair Shop
1940-1960	291 University Ave.	Gas Station
1930-1935	297 University Ave.	Gas Station
1950	51 Haags Al.	Auto Repair Shop
1926-1950	55 Haags Al.	Car Wash
1926-1960	6 Pitkin St.	Auto Sales and Service
1935-1940	26 Pitkin St.	Auto Repair Shop

Aerial Photos

The Inner Loop is not depicted on the 1938 aerial photograph. The area is depicted as part of the city with continuous roads through the area that is now the Inner Loop but due to the scale it is not possible to determine what businesses are present. On the 1958 photo, the southern portion of I-490 is present. I-490, in its current configuration, is depicted on the 1966, 1971, 1980, 1994, 2006, 2008, 2009 and 2011 photos.

RCRA No Longer Regulated

One RCRA NLR record was identified for this site:

- NYSDOT BIN 1050149 – Broad Street over Inner Loop – No Violations

This site was identified as a site that no longer generates, transports, treats, stores or disposes of hazardous waste.

NYSDEC Spill Report Database

Twelve spill records were identified for the addresses that comprise this site. The majority of the spills were for motor vehicle accidents on Route 490. All of the Spills have been cleaned up and closed by the NYSDEC.

Historic Auto Database

Fifteen (15) Historic Auto records were identified for the addresses that previously existed on this site:

- Harry C. Bernstein Gas – 90 Griffith St.
- Union Tire & Supply Co. Gas – 9 Union St. N.
- Jason B. Thornton Garage – 21 Union St. N.
- Seneca Stations Inc. Gas – 628 E. Main St.
- Fast Auto Glass – 635 E. Main St.
- Fred F. Anderson Garage – 109 Monroe Ave.
- Ben C. Kiner Gas Station – 123 Monroe Ave.
- Blanchard Service Station – 291 University Ave.
- Standard Oil Co. of New York – 297 University Ave.
- Richmond Garage – 51 Haags Al.
- Richmond Garage – 51 Richmond St.
- Archer Switzer Auto Laundry – 55 Haags Al.
- Rear Archie Switzer Auto Laundry – 55 Richmond St.
- Union Carburetor – 6 Pitkin St.
- Ed Duval Auto Repair – 309 Clinton Ave. S.
- Liberty Service Station – 350 Clinton Ave. S.

These sites were identified as potential gas stations, filling stations, car washes, and/or service stations however; the structures were removed during the construction of the Inner Loop.

Historic Dry Cleaner Database

Three (3) Historic Dry Cleaner records were identified for the addresses that previously existed on this site:

- Samuel's Dry Cleaning – 25 S. Union St.
- Levy Tein Dry Cleaners Inc. – 104 Monroe Ave.
- Tom Lung Laundry – 108 Monroe Ave.

These sites were identified as potential dry cleaners, cleaners, laundries and/or laundromats however; the structures were removed during the construction of the Inner Loop.

Conclusion
This site is currently a six lane grade-separated highway (I-490), also known as the Inner Loop. The highway was constructed in the late 1950's and 1960's. Prior to the construction of the highway, the area was part of the City of Rochester business district. The past presence of businesses such as dry cleaners, gas station, auto sales and service facilities, auto repair shops and manufacturing facilities, indicates the potential for encountering soil and/or groundwater contamination during any excavations completed adjacent to this corridor.

3.1.2 Site B: Parking Garage – 280 Clinton St. S.

Site Inspection
This site is currently a parking garage. Refer to Photo #6 in **Attachment B**.

Sanborn Maps
This site previously consisted of several smaller parcels. 276-278 Clintons St. S. is depicted on the 1938 Sanborn Fire Insurance Map as an awning manufacturer. 77-87 Monroe Ave. is depicted on the 1938 map as an auto sales and service facility.

NYSDEC Petroleum Bulk Storage Database
One (1) PBS record was listed for this site:

- 280 South Clinton St. – 280 Clintons St. S. Two (2) 500-gallon gas USTs (install date unknown, closed-removed 7/2008); one (1) 500-gallon gas UST (install date unknown, closed-removed 8/2008); and one (1) 2,000-gallon gas UST (install date unknown, closed-removed 8/2008) were listed on the state registry for this site.

City of Rochester Records
City of Rochester records indicate that a gas station was constructed at this site in July 1934. Two (2) 3,000-gallon, one (1) 2,000-gallon gas tanks, and six (6) pumps were installed in November 1950. The gas station was demolished in August 1970. One (1) 500-gallon UST was removed in July 2008.

Previous Reports
A Phase II Environmental Site Assessment was completed for 280 Clinton St. S. by LaBella Associates, P.C. in March 2008. According to the report, fill material (including ash, slag, and cinders) was found throughout the site. In addition, petroleum impacted soils were detected in the northwest portion of the site.

Conclusion
The past use of this property as an awning manufacturer, retail petroleum sales, and an auto sales and service facility as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater contamination during excavation near this site.

3.1.3 Site C: Graves Auto Service – 60 Marshall St.

Site Inspection
This site is currently an auto repair shop. Refer to Photo #7 in Attachment B.

Sanborn Maps
This site previously consisted of several smaller parcels. 300 Broadway St. is depicted on the 1971 Sanborn Fire Insurance Map as a telephone company garage and repair shop.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1950	300 Broadway St.	Auto Repair & Tire Shop
1960-1982	300 Broadway St.	Telephone Co. Garage
2000-2008	300 Broadway St.	Auto Repair Shop

NYSDEC Petroleum Bulk Storage Database
One (1) PBS record was listed for this site:

- Thomas Yatteau – 300 Broadway St. Two (2) 2,000-gallon #2 fuel oil USTs (install date unknown, closed-removed 11/2009) and one (1) 2,000-gallon #2 fuel oil UST (installed 2/1975, temporarily out of service) were listed on the state registry for this site.

NYSDEC Spill Report Database
One (1) Spill record was identified for this site:

- Graves Auto Service: 300 Broadway St. – Spill #0510982 (Opened 12/20/2005, Closed 1/6/2006) – NYSDEC received a complaint about the repair shop dumping antifreeze on the driveway and allowing it to wash down into the street. The complaint was found to be unfounded and no further action was needed by the NYSDEC. The spill was closed and met NYSDEC cleanup standards.

Leaking Storage Tanks Database
One (1) LTank record was identified for this site:

- Graves Auto Service: 300 Broadway St. – Spill #0551537 (Opened 01/25/2006, Not Closed) – A tank failed its tightness test. The owner indicated that he intends to remove the tanks. This spill is still active.

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- Graves Auto Service – 60 Marshall St.

This site was identified as a potential gas station, filling station, and/or service station.

City of Rochester Records
City of Rochester records indicate that one (1) 2,000-gallon fuel oil tank was installed in December 1975. In addition, City records indicated that one (1) 4,000-gallon gas tank was removed from the site in January 1983.

Conclusion
The past and present use of this property as an auto repair shop as well as the presence of an underground storage tank with an active Spill record indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.4 Site D: Dogs at Play – 79 Howell St.

Site Inspection
This site is currently a dog daycare. Refer to Photo #8 in **Attachment B**.

Sanborn Maps
This site is depicted on the 1938 Sanborn Fire Insurance Map as an auto repair shop; on the 1950 map as an auto sales and service facility; and on the 1971 map as a garage with one tank.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1935-1950	79 Howell St.	Auto Repair & Tire Shop

Conclusion
The past use of this property as an auto repair and tire shop as well as the presence of an underground storage tank indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.5 Site E: Abundance Cooperative Market – 62 Marshall St.

Site Inspection
This site is currently a natural food store. Refer to Photo #9 in **Attachment B**.

Sanborn Maps
This site is depicted on the 1938 Sanborn Fire Insurance Map as an auto repair shop with one tank.

City of Rochester Records
City of Rochester records indicate that two (2) 2,000-gallon heating oil USTs were removed from this site in November 2009.

Conclusion
The past use of this property as an auto repair shop as well as the presence of an underground storage tank indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.6 Site F: Rochester Fire Equipment Co. – 83-85 Howell St.

Site Inspection
This site is currently a fire equipment store. Refer to Photo #10 in **Attachment B.**

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1945-1985	83 Howell St.	Fire Equipment Shop
1940-1950	85 Howell St.	Coal and Coke Co.
1940-1950	85 Howell St.	Printer
1930	85 Howell St.	Auto Tire Shop

City of Rochester Records
City of Rochester records indicate 4,000-gallon gas tank was installed in March 1972 and a 550-gallon gas tank (and pump) was removed in May 1989.

Conclusion
The past use of this property as an auto tire shop, coal and coke company, and printer as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.7 Site G: FedEx Office – 158-162 Monroe Ave.

Site Inspection
This site is currently a copy/delivery shop. Refer to Photo #11 in **Attachment B.**

Sanborn Maps
This site previously consisted of several smaller parcels. 144 Monroe Ave. is depicted on the 1950 Sanborn Fire Insurance Map as an auto repair and tire shop. 176 Monroe Ave. is depicted on the 1938 map as a gas station with three tanks and on the 1950 map as a used car lot.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1930-1945	144 Monroe Ave.	Auto Tire Shop
1950-1965	176 Monroe Ave.	Used Car Lot
1926-1940	170 Monroe Ave.	Gas Station

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- Sun Oil Co. – 176 Monroe Ave.

This site was identified as a potential gas station, filling station, and/or service station.

Historic Dry Cleaner Database
One (1) Historic Dry Cleaner record was identified for this site:

- Clover Dry Cleaners & Dyers – 170 Monroe Ave.

This site was identified as a potential dry cleaner, cleaner, laundry and/or laundromat.

Conclusion
Despite redevelopment, the past use of the property as a dry cleaner, an auto repair shop, tire shop and used car lot as well as the presence of an underground storage tank indicates the potential for encountering soil and/or groundwater petroleum and/or solvent contamination during any excavations completed adjacent to this site.

3.1.8 Site H: Rocco Restaurante – 165-169 Monroe Ave.

Site Inspection
This site is currently a restaurant. Refer to Photo #12 in Attachment B.

Historic Dry Cleaner Database
One (1) Historic Dry Cleaner record was identified for this site:

- DeLuxe Laundry – 169 Monroe Ave.

This site was identified as a potential dry cleaner, cleaner, laundry and/or laundromat.

Conclusion

The past use of the property as a dry cleaner indicates the potential to encounter soil and/or groundwater solvent contamination during any excavations completed adjacent to this site.

3.1.9 Site I: Frey the Wheel Man – 110 Savannah St.

Site Inspection

This site is currently an auto repair shop. Refer to Photo #13 in **Attachment B**.

Sanborn Maps

This site is depicted on the 1950 and 1971 Sanborn Fire Insurance Maps as auto sales and service facility.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1950-2010	110 Savannah St.	Auto Repair & Tire Shop

NYSDEC Petroleum Bulk Storage Database

One (1) PBS record was listed for this site:

- Frey the Wheel Man – 110 Savannah St. Two (2) 1,500-gallon fuel oil USTs (install date unknown, closed in-place 9/2001) were listed on the state registry for this site.

NYSDEC Spill Report Database

Two (2) Spill records were identified for this site:

- Frey the Wheelman: 110 Savannah St. – Spill #0070490 (Opened 9/29/2000, Closed 7/15/2004) – While conducting a Phase II Environmental Assessment, contaminated soil was encountered. The Spill was cleaned up and closed but did not meet NYSDEC cleanup standards.
- Frey the Wheelman: 110 Savannah St. – Spill # 8607332 (Opened 3/3/1987, Closed 03/26/1987) NYSDEC received a complaint that the company was illegally disposing waste oil. A small amount of oil was identified spilled east of building. A written warning was issued and the contaminated soil was removed from the site. The spill was closed and met NYSDEC cleanup standards.

Historic Auto Database

One (1) Historic Auto record was identified for this site:

- Frey the Wheel Man – 110 Savannah St.

This site was identified as a potential gas station, filling station, and/or service station.

City of Rochester Records

City of Rochester records indicate that an auto repair shop was constructed at this site in March 1946. In addition, two (2) 1,000-gallon tanks were filled in place in September 2001.

Conclusion

The past and present use of this property as an auto sales and service facility and auto repair shop as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.10 Site J: Strong Museum – 1 Manhattan Sq.

Site Inspection

This site is currently a children's museum. Refer to Photos #14 and 15 in **Attachment B**.

Sanborn Maps

This site previously consisted of several smaller parcels. 240 Chestnut St. is depicted on the 1938, 1950 and 1971 Sanborn Fire Insurance Maps as a gas station with three tanks. 103 Manhattan St. is depicted on the 1912 map as an auto painting facility. 88 Manhattan St. is depicted on the 1971 map as an auto repair shop. 101 Manhattan St. is depicted on the 1971 map as an auto repair shop. 104 Monroe Ave. is depicted on the 1971 map as a dry cleaner. 29 Savannah St. is depicted on the 1971 map as an auto repair shop.

RCRA No Longer Regulated

One (1) RCRA NLR record was identified for this site:

- The Strong Museum – 1 Manhattan Sq. – No Violations

This site was identified as a site that no longer generates, transports, treats, stores or disposes of hazardous waste.

NYSDEC Petroleum Bulk Storage Database

One (1) PBS record was listed for this site:

- The Strong Museum – 1 Manhattan Sq. One (1) 2,000-gallon gas UST (installed 7/1981, closed-removed 7/1992) and one (1) 2,000-gallon gas UST (install date unknown, closed-removed 7/1992) were listed on the state registry for this site.

<u>NYSDEC Spill Report Database</u>
Two (2) Spill records were identified for this site:

- The Strong Museum: 1 Manhattan Sq. – Spill #0470290 (Opened 9/17/2004, Closed 5/8/2006) – Contaminated soil was encountered during excavation. The spill was cleaned up and closed but did not meet NYSDEC cleanup standards.
- The Strong Museum: 1 Manhattan Sq. – Spill #1203050 (Opened 6/27/2012, Closed 6/27/2012) – While mixing sodium chlorite solution in sink some went down sink and eventually the sewer. The spill was cleaned up and closed but did not meet NYSDEC cleanup standards.

<u>Historic Auto Database</u>
One (1) Historic Auto record was identified for this site:

- Rabe's Complete Auto – 98 Manhattan St.

This site was identified as a potential gas station, filling station, and/or service station.

<u>Hazardous Waste Manifest</u>
One (1) HW Manifest record was identified for this site:

- The Strong Museum –1 Manhattan Sq.

This site has or has had manifests for hazardous materials that they utilized or stored onsite. This record, by itself, does not represent a recognized environmental concern relative to the subject property.

<u>City of Rochester Records</u>
City of Rochester records indicate that two (2) 2,000-gallon gas tanks and two pumps were installed in December 1981 and removed in June 1992.

<u>Monroe County Department of Health Records</u>
Monroe County Department of Health (MCDOH) records indicate that in September 2004 fuel oil contaminated soil and bedrock was removed from the site. A venting and vapor barrier system was installed as some bedrock contamination remained at the site.

Conclusion

Despite redevelopment, the past use of this property as an auto repair shop, gas station and dry cleaner as well as the presence of underground storage tanks that apparently failed indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.11 Site K: Ambassador Apartments – 86 S. Union St.

Site Inspection

This site is currently an apartment building. Refer to Photo #16 in **Attachment B**.

Historic Maps

This site is depicted as the Ambassador Apartments in the 1935 atlas.

NYSDEC Petroleum Bulk Storage Database

One (1) PBS record was listed for this site:

- Ambassador Apartments – 86 S. Union St. One (1) 5,000-gallon fuel oil UST (install date unknown, closed-in place 10/1993) was listed on the state registry for this site.

City of Rochester Records

City of Rochester records indicate that a 30 family apartment building was constructed in August 1922. In addition, City records indicate that a 5,000-gallom fuel oil was installed in December 1967 and closed in place (by filling with concrete) in October 1993.

Conclusion

The presence of an underground storage tank at this site indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.12 Site L: Chaintreuil Jensen Stark & Roc Brewing Co. – 54-56 S. Union St.

Site Inspection

This site is currently an architectural firm. Refer to Photo#17 in **Attachment B**.

Sanborn Maps

This site is depicted on the 1938, 1950 and 1971 Sanborn Fire Insurance Maps as auto sales and service facility.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1940-1960	54 S. Union St.	Auto Sales & Service

Conclusion

Despite redevelopment, the past use of this property as an auto sales and service facility indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.13 Site M: Vacant Lot – 48 S. Union St.

Site Inspection

This site is currently a vacant lot. Refer to Photo #18 in Attachment B.

Sanborn Maps

This site is depicted on the 1938 Sanborn Fire Insurance Map as a gas station with five tanks and on the 1950 map as a used car lot.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1940	48 S. Union St.	Gas Station
1945-1965	48 S. Union St.	Used Car Lot

City of Rochester Records

City of Rochester records indicate that a gas station was constructed in December 1934. In addition, City records indicated that five 550-gallon tanks were removed from this site in August 1980.

Conclusion

The past use of this property as a used car lot and gas station as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.14 Site N: Upstate Gallery Antiques – 16 Gardiner Pk.

Site Inspection

This site is currently an antique store. Refer to Photo #19 in Attachment B.

Sanborn Maps

This site is depicted on the 1938, 1950, and 1971 Sanborn Fire Insurance Maps as an auto repair shop.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1930-1950	16 Gardiner Pk.	Auto Repair Shop

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- McCraley's Garage – 16 Gardiner Pk.

This site was identified as a potential gas station, filling station, and/or service station.

Conclusion
The past use of this property as a garage and auto repair shop indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.15 Site O: Bethel Christian Fellowship – 321 East Ave.

Site Inspection
This site is currently a church. Refer to Photos #20 and 21 in Attachment B.

Historic Maps
The 1918 atlas depicts the Strong Motors Inc. and the Dudley garage on this site. The 1935 atlas depicts The Firestone Service Station and Fincher Motors (car sales) on this site.

Sanborn Maps
This site previously consisted of several smaller parcels. 2 S. Union St. is depicted on the 1938 and 1950 Sanborn Fire Insurance Maps as a gas station with seven tanks and an auto sales and service facility. 10 S. Union St. is depicted on the 1938 and 1950 maps as an auto tire shop and on the 1971 map as an auto sales and service facility. 12-24 S. Union St. is depicted on the 1938, 1950 and 1971 maps as an auto and tire sales and service facility. 14 S. Union St. is depicted on the 1912 map as an auto sales and service facility with a tank in the road in front of the building. 20 S. Union St. is depicted on the1912 map as garage with a tank. 28-30 S. Union St. is depicted on the 1938 and 1950 maps as an auto sales and service facility and on the 1971 map as a photography studio.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1950-1992	28 S. Union St.	Photography Studio
1926-1640	28 S. Union St.	Auto Sales & Service
1926-1930	8 S. Union St.	Auto Sales & Service
1926-1945	12-14 S. Union St.	Auto Repair and Tire Shop
1926-1950	14 S. Union St.	Auto Sales & Service
1930	16 S. Union St.	Gas Station
1960-1992	18 S. Union St.	Auto Sales & Service
1970	20 S. Union St.	Auto Sales & Service
1926-1935	20 S. Union St.	Auto Repair Shop
1926	26 S. Union St.	Auto Tire Shop
1960	28-30 S. Union St.	Photography Studio
1930-1935	28-30 S. Union St.	Auto Sales & Service
1935-1992	291 East Ave.	Auto Repair Shop
1926-1930	293-297 East Ave.	Auto Tire Shop
1930	305 East Ave.	Auto Sales & Service

RCRA No Longer Regulated

Three (3) RCRA NLR records were identified for this site:

- Star Oldsmobile Inc – 18 S. Union St. – No Violations
- City of Rochester Old Varden Studio – 28-30 S. Union St. – No Violations
- Firestone – 293-297 East Ave. – No Violations

These sites were identified as sites that no longer generates, transports, treats, stores or disposes of hazardous waste.

NYSDEC Petroleum Bulk Storage Database

One (1) PBS record was listed for this site:

- Millbury Oldsmobile Property – 12-24 S. Union St. Two (2) 1,000-gallon gasoline USTs (installed 12/1970, closed prior to 4/1991) and one (1) 500-gallon UST (install date unknown, closed prior to 4/1991) were listed on the state registry for this site.

NYSDEC Spill Report Database

Four (4) Spill records were identified for this site:

- Varden's Studio: 28 S. Union St. – Spill #8908904 (Opened 12/7/1989, Closed 12/8/1989) – Human error caused a spill inside the photo studio. The spill was cleaned up, closed and met NYSDEC cleanup standards.
- Varden Photo Studio: 28 S. Union St. – Spill #8401848 (Opened 10/11/1984, Closed 6/1/1986) – A shelf collapsed breaking 1 quart jar of

flexicolor bleach starter. The spill was cleaned up, closed and met NYSDEC cleanup standards.

- Varden Studio Building: N. Union St. – Spill #9710786 (Opened 12/22/1997, Closed 6/23/2003) – An anonymous caller stated that a demolition company spilled hydraulic oil onto the ground. The spill was cleaned up and closed but did not meet NYSDEC cleanup standards.
- Ryan Murphy Inc.: 293-297 East Ave. – Spill #9412387 (Opened 12/14/1994, Closed 4/4/1996) – While excavating rear hydraulic lift, contaminated soil was encountered. The spill was cleaned up and closed but did not meet NYSDEC cleanup standards.

Leaking Storage Tanks Database

One (1) LTank record was identified for this site:

- Millbury Oldsmobile Co.: Anson St. – Spill # 7680427 (Opened 4/30/1976, Closed 4/30/1976) – Possible leaking underground storage tank, gasoline loss to sanitary sewer. The sewer was flushed. The spill was cleaned up, closed and met NYSDEC cleanup standards.

Hazardous Waste Manifest

Two (2) HW Manifest records were identified for this site:

- City of Rochester Old Varden Studio – 28-30 S. Union St.
- Firestone – 293-297 East Ave.

These sites have or had manifests for hazardous materials that they utilized or stored onsite. These records, by themselves, do not represent a recognized environmental concern relative to the subject property.

City of Rochester Records

City of Rochester records indicate that one (1) 1,000-gallon and one (1) 550-gallon gas tanks were removed and replaced with two (2) 1,000-gallon gas tanks in June 1973. In June 1980, the building changed use from a parking garage to a photo lab. In November 1994, one (1) 550-gallon waste oil tank was removed. Buildings were demolished from the site in April 1997 and January 1999.

Conclusion

Despite redevelopment, the past use of this property as a photography studio, gas station, auto sales and service facility, auto repair shop, and auto tire shop as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.16 Site P: Corporate Place LLC – 255 East Ave.

Site Inspection
This site is currently an office building. Refer to Photos #22 and 23 in **Attachment B.**

Sanborn Maps
This site previously consisted of several smaller parcels. 245 East Avenue is depicted on the 1912 Sanborn Fire Insurance Map as an auto sales and service facility.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1926-1930	247 East Ave.	Auto Sales & Service
1930-1945	245 East Ave.	Auto Repair Shop
1960-1975	245 East Ave.	Typewriter Mfg.
1930	239 East Ave.	Auto Parts
1930	253 East Ave.	Radiator Co.
1935	255 East Ave.	Auto Tire Sales

NYSDEC Petroleum Bulk Storage Database
One (1) PBS record was listed for this site:

- Sprint Telephone: 255 East Ave. One (1) 2,000-gallon diesel AST (install date unknown, active) was listed on the state registry for this site.

NYSDEC Spill Report Database
One (1) Spill record was identified for this site:

- Sprint Telephone: 255 East Ave. – Spill #0803168 (Opened 6/17/2008, Closed 6/17/2008) – Equipment failure caused three gallons of diesel to spill onto concrete. The spill was cleaned up, closed and met NYSDEC cleanup standards.

City of Rochester Records
City of Rochester records indicate that an Auto Salesroom was constructed in October 1923. In addition, City records indicate that a fuel tank was connected to a generator in May 1996.

Conclusion
Despite redevelopment, the past use of this property as an auto sales and service facility, auto repair shop, tire shop, and manufacturing facility as well as the presence of an underground storage tank indicates the potential for encountering soil and/or

groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.17 Site Q: Parking Lot – 292-316 East Ave. and 14-16 N. Union St.

Site Inspection
This site is currently a parking lot. Refer to Photo #24 in **Attachment B.**

Historic Maps
A portion of this site (302-306 East Ave.) is depicted as a garage in the 1918 and 1935 atlases. 14-16 N. Union St. is depicted as Gay's Speedometer Service Station in the 1935 atlas.

Sanborn Maps
This site previously consisted of several smaller parcels. 300 East Avenue is depicted on the 1938 Sanborn Fire Insurance Map as an auto repair shop. 302 East Avenue is depicted on the 1938, 1950 and 1971 maps as an auto sale and service facility. 16 N. Union Street is depicted on the 1938 map as an auto repair shop and sheet metal works, on the 1950 map as an auto repair shop, and on the 1971 map as an auto sales and service facility.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1935-1940	12 N. Union St.	Auto Repair Shop
1926-1960	16 N. Union St.	Auto Repair Shop
1926-1982	292 East Ave.	Auto Repair Shop
1940-1945	296 East Ave.	Dry Cleaner
1935	300 East Ave.	Gas Tank Mfg.
1970-1975	302 East Ave.	Used Car Lot
1926-1950	306 East Ave.	Auto Sales & Service
1940-1945	310 East Ave.	Dry Cleaner
1930-1935	310 East Ave.	Neon Sign Mfg.
1940-1955	310 East Ave.	Auto Repair Shop
1926	312 East Ave.	Auto Sales & Service

Historic Dry Cleaner Database
Two (2) Historic Dry Cleaner records were identified for this site:

- East Avenue Cleaners – 296 East Ave.
- Three Hour Laundry – 312 East Ave.

These sites were identified as potential dry cleaners, cleaners, laundries and/or laundromats.

Historic Auto Database

Three (3) Historic Auto records were identified for the addresses that previously existed on this site:

- Cooperative Auto Body – 310 East Ave.
- Miller Babcock Spring Service – 318 East Ave.
- Tuper Collision – 16 N. Union St.

These sites were identified as potential gas stations, filling stations, and/or service stations.

City of Rochester Records

City of Rochester records indicate that one (1) 3,000-gallon gas tank was installed in February 1964 and one (1) 1,000-gallon gas tank was removed in May 1980.

Conclusion

Despite redevelopment, the past use of this property as an auto sales and service facility, used car lot, auto repair shop, dry cleaner, and neon sign manufacturer indicates the potential for encountering soil and/or groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.18 Site R: Arena's Florist & Grater Architects – 258-264 East Ave.

Site Inspection

This site is currently a storefront. Refer to Photo #25 in **Attachment B**.

Sanborn Maps

This site previously consisted of several smaller parcels. 260 East Avenue is depicted on the 1950 and 1971 Sanborn Fire Insurance Maps as an auto tire shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1926-1985	260 East Ave.	Auto Tire Sales
1926-1945	264 East Ave.	Auto Tire Sales

City of Rochester Records

City of Rochester records indicate that a tire shop located at 264 East Ave. had one (1) 550-gallon and one (1) 1,050-gallon gasoline USTs (installed 3/1939, removed 3/1949) and one (1) 1,000-gallon gasoline UST (installed 2/1950). In 8/1980 a

1,000-gallon gas tank was removed and replaced with another 1,000-gallon gas tank.

Conclusion

The past use of this property as an auto tire shop with underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.19 Site S: Little Theatre Film Society Cafe – 5-7 Pitkin St.

Site Inspection

This site is currently an independent movie theater. Refer to Photo #26 in **Attachment B**.

Historic Maps

A portion of this site (7 Pitkin St.) is depicted as a George Stedman Garage in the 1935 atlas.

Sanborn Maps

This site consisted of two smaller parcels. 5 Pitkin St. is depicted on the 1938 and 1950 Sanborn Fire Insurance Maps as an auto repair shop with two tanks and on the 1971 map as an auto tire shop. 7 Pitkin St. is depicted on the 1938, 1950 and 1971 maps an auto repair shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1926-1940	5 Pitkin St.	Auto Sales & Service
1930-1992	7 Pitkin St.	Auto Repair Shop

RCRA No Longer Regulated

One (1) RCRA NLR record was identified for this site:

- Wolting's Collision Service – 7 Pitkin St. – No Violations

This site was identified as a site that no longer generates, transports, treats, stores or disposes of hazardous waste.

Historic Auto Database

One (1) Historic Auto record was identified for this site:

- Wolting's Collision Service – 7 Pitkin St.

This site was identified as a potential gas station, filling station, and/or service station.

Hazardous Waste Manifest
One (1) HW Manifest record was identified for this site:

- Wolting's Collision Service – 7 Pitkin St.

This site has or has had manifests for hazardous materials that they utilized or stored onsite. This record, by itself, does not represent a recognized environmental concern relative to the subject property.

City of Rochester Records
City of Rochester records indicate that one (1) gas UST was installed in April 1949 (size not indicated) and one (1) 1,000-gallon tank was removed in February 1984 from 5 Pitkin Street. In addition, City records indicate that one (1) 1,000-gallon double-walled tank was installed in November 1987 at this site.

City records also indicated that in June 1994, 7 Pitkin Street changed use from an auto repair shop to a movie theater.

Conclusion
The past use of this property as an auto repair shop as well as the presence of an underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.20 Site T: Smart Import Parts – 15-17 Pitkin St.

Site Inspection
This site is currently an auto parts store. Refer to Photos #27 and 28 in **Attachment B**.

Historic Maps
This site is depicted as the Auto Exchange of Rochester in the 1918 atlas and as General Motors Truck Co. Garage in the 1935 atlas.

Sanborn Maps
This site previously consisted of several smaller parcels. 15 Pitkin St. is depicted on the 1938 Sanborn Fire Insurance Map as an auto sales and service facility with one tank and on the 1971 map as an auto repair shop.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1965-1985	11 Pitkin St.	Truck Repair Shop
1926-1935	15 Pitkin St.	Truck Repair Shop
1965-1975	17 Pitkin St.	Truck Repair Shop

City of Rochester Records

City of Rochester records indicate that a 1,000-gallon gas UST was removed from this site in March 1994.

Conclusion

The past use of this property as an auto repair shop as well as the presence of an underground storage tank indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.21 Site U: Wendy's of Rochester – 18-20 N. Union St.

Site Inspection

This site is currently an office building. Refer to Photo #29 in **Attachment B**.

Sanborn Maps

This site previously consisted of several smaller parcels. 18 N. Union Street is depicted on the 1938 and 1950 Sanborn Fire Insurance Maps as an auto repair shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1926-1930	20 N. Union St.	Auto Repair Shop
1965	20 N. Union St.	Ink Mfg.
1926-1985	18 N. Union St.	Auto Repair Shop

Historic Auto Database

Three (3) Historic Auto records were identified for this site:

- 18 20 Starter & Ignition Service Co. Inc. – 20 N. Union St.
- Sanders Inc. Auto Repair – 18 N. Union St.
- Brewster Automotive – 18 N. Union St.

These sites were identified as potential gas stations, filling stations, and/or service stations.

City of Rochester Records
City of Rochester records indicate that a service station was erected at this site in December 1920.

Conclusion
The past use of this property as an auto repair shop and ink manufacturer indicates the potential for encountering soil and/or groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.22 Site V: NYSUT and Rochester Eye Center – 30-32 N. Union St.

Site Inspection
This site is currently an office and medical facility. Refer to Photos #30 and 31 in **Attachment B**.

Historic Maps
This site is depicted as Gayford & Sons Garage in the 1918 atlas and as the Union Street Garage in the 1935 atlas.

Sanborn Maps
This site previously consisted of several smaller parcels. 26 N. Union Street is depicted on the 1950 Sanborn Fire Insurance Map as an auto repair shop. 30 N. Union Street is depicted on the 1938 map as an auto repair shop with two tanks and on the 1950 and 1971 maps as an auto sales and service facility.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1970-1985	26 N. Union St.	Used Car Lot
1926-1940	30 N. Union St.	Auto Repair Shop
1950-1985	30 N. Union St.	Auto Sales & Service
1926-1940	32 N. Union St.	Auto Sales & Service

RCRA No Longer Regulated
Two (2) RCRA NLR records were identified for this site:

- Union Place Associates – 30 N. Union St. – No Violations
- Lou Holtz Buick Isuzu Inc. – 30 N. Union St. – No Violations

These sites were identified as sites that no longer generates, transports, treats, stores or disposes of hazardous waste.

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- Whiting Buick Inc. – 30 N. Union St.

This site was identified as a potential gas station, filling station, and/or service station.

Hazardous Waste Manifest
One (1) HW Manifest record was identified for this site:

- Union Place Associates – 30 N. Union St.

This site has or has had manifests for hazardous materials that they utilized or stored onsite. This record, by itself, does not represent a recognized environmental concern relative to the subject property.

City of Rochester Records
City of Rochester records indicate that one (1) 10,000-gallon and two (2) 1,000-gallon gas tanks and one (1) 1,000-gallon waste-oil tank were removed and one (1) 275-gallon and one (1) 4,000-gallon gas tanks were filled in-place in April 1988.

Conclusion
Despite redevelopment, the past use of this property as an auto repair shop and auto sales and service facility as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.23 Site W: Nix Rubber Stamps Building – 81 Charlotte St.

Site Inspection
This site is currently a massage therapist office. Refer to Photo #32 in **Attachment B**.

Sanborn Maps
This site is depicted on the 1971 Sanborn Fire Insurance Map as a pipe cleaner manufacturer.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1982-1985	81 Charlotte	Nix Rubber Stamp Plant
1960-1975	81 Charlotte	Rochester Livingston Inc. Pipe

Conclusion

The past use of this property as a rubber stamp plant and pipe cleaner manufacturer indicates the potential for encountering soil and/or groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.24 Site X: Parking Lot – 80 Charlotte St.

Site Inspection

This site is currently a parking lot. Refer to Photo #33 in **Attachment B**.

Sanborn Maps

This site previously consisted of several smaller parcels. 80-100 Charlotte St. is depicted on the 1971 Sanborn Fire Insurance Map as an electric motor repair shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1940-2000	102 Charlotte St.	Electric Machine Mfg.
1970	80-100 Charlotte St.	Electric Machine Mfg.

Historic Dry Cleaner Database

One (1) Historic Dry Cleaner record was identified for this site:

- Rear Lawrence Household – 84 Charlotte St.

This site was identified as a potential dry cleaner, cleaner, laundry and/or Laundromat.

Brownfield

One (1) Brownfield record was identified for this site:

- 80-100 Charlotte Street – The property is owned by the City of Rochester and consists of a single unimproved parcel zoned as vacant commercial land with a lot size of approximately 246.7 ft. x 14.3 ft. (approximately 0.784 acres). Former structures included an approximate 18,988 sf one and two-story steel/masonry building constructed around 1962. Previous to this structure, the property contained several residential structures and garages. Former uses of the property include electric motor repair, warehouse, electrical contractor and residential.

RCRA No Longer Regulated

One (1) RCRA NLR record was identified for this site:

- Vanderlinde Electric Corp. – 100 Charlotte St.– No Violations

This site was identified as a site that no longer generates, transports, treats, stores or disposes of hazardous waste.

<u>NYSDEC Petroleum Bulk Storage Database</u>
One (1) PBS record was listed for this site:

- Vanderlinde Electric Corp. – 100 Charlotte St. One (1) 2,000-gallon gas UST (installed 6/1982, closed-removed 10/1988) was listed on the state registry for this site.

<u>NYSDEC Spill Report Database</u>
One (1) Spill record was identified for this site:

- Vanderlinde Electric: 80-100 Charlotte St. – Spill #0270474 (Opened 11/25/2002, Closed 6/6/2007) – Contamination was discovered during a Phase II environmental study. Contaminated soil and groundwater were removed. The spill was cleaned up, closed and met NYSDEC cleanup standards.

<u>Hazardous Waste Manifest</u>
One (1) HW Manifest record was identified for this site:

- Vanderlinde Electric Corp. – 100 Charlotte St.

This site has or has had manifests for hazardous materials that they utilized or stored onsite. This record, by itself, does not represent a recognized environmental concern relative to the subject property.

<u>City of Rochester Records</u>
City of Rochester records indicate that one (1) 2,500-gallon gas tank and pump were installed at this site in June 1962. One (1) 4,000-gallon UST was removed in October 1988. A two-story commercial building was demolished in September 2003.

<u>Monroe County Department of Health Records</u>
Monroe County Department of Health (MCDOH) records indicate that a Citizen Participation Plan USEPA Grant Funded Clean-up for 80-100 Charlotte was prepared in January 2005. According to the report, the site is currently owned by the City of Rochester. The site was an electric motor repair/service facility from 1962-2001. One 2,000-gallon UST was removed in 1988. A Phase II ESA indicated that petroleum contaminated soil and/or groundwater contamination was found in the NW and SW portions on the site. The contaminated soil was removed from the site. In addition, fill material was found throughout the site. Groundwater monitoring was

performed post-remediation via 10 monitoring wells. The quarterly monitoring report dated November 8, 2007 only had one well with detectable concentrations of target VOCs and they were below groundwater standards. The wells were subsequently decommissioned by the City of Rochester.

Conclusion

Despite redevelopment, the past use of this property as an electric machine manufacturer and dry cleaner as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.25 Site Y: Vacant Lot – 47 Haggs Al.

Site Inspection

This site is currently a vacant lot. Refer to Photos#34 in **Attachment B**.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1930	47 Haggs Al.	Auto Repair Shop

Conclusion

The past use of this property as an auto repair shop indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.26 Site Z: Parking Lot – 56 N. Union St.

Site Inspection

This site is currently a parking lot. Refer to Photos #33 and 34 in **Attachment B**.

Sanborn Maps

This site is depicted on the 1950 Sanborn Fire Insurance Map as an auto repair shop and on the 1971 map as a machine shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1965-1995	56-58 N. Union St.	Auto Repair Shop
1945-1960	56-58 N. Union St.	Auto Sales & Service
1930-1935	56-58 N. Union St.	Auto Tire Shop

NYSDEC Spill Report Database
Two (2) Spill records were identified for this site:

- AAMCO: 56 North Union St. – Spill #8710599 (Opened 3/18/1988, Closed 7/16/1988) – NYSDEC received a complaint about drums leaking on this site. No leaking drums were identified and the spill was closed and met NYSDEC cleanup standards.
- AAMCO: 56 North Union St. – Spill #8708363 (Opened 12/28/1987, Closed 1/6/89) NYSDEC received a complaint about approximately 30 barrels of oil unsecured with spillage. The case was referred to solid waste for follow-up of illegal storage and disposal of waste oil. The spill was closed and met NYSDEC cleanup standards.

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- AAMCO – 56-58 N. Union St.

This site was identified as a potential gas station, filling station, and/or service station.

Conclusion
Despite redevelopment, the past use of this property as an auto repair shop, tire shop and auto sales and service facility indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.27 Site AA: Tyron Contracting Services Inc. – 68-70 N. Union St.

Site Inspection
This site is currently a construction company. Refer to Photos #35 and 36 in Attachment B.

Historic Maps
This site is depicted as the Goodland Tire Co. in the 1935 atlas.

Sanborn Maps
This site previously consisted of several smaller parcels. 68 N. Union Street is depicted on the 1938 Sanborn Fire Insurance Map as a gas station with four tanks, and on the 1950 and 1971 maps as an auto sales and service facility.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1930-1992	68 N. Union St.	Gas Station
1950	70 N. Union St.	Used Car Lot

RCRA No Longer Regulated
One RCRA NLR record was identified for this site:

- Tyron Contracting Service Inc. – 70 N. Union St.– No Violations

This site was identified as a site that no longer generates, transports, treats, stores or disposes of hazardous waste.

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- Richmond Service Station – 68 N. Union St.

This site was identified as a potential gas station, filling station, and/or service station.

City of Rochester Records
City of Rochester records indicate that a gas station was constructed in April 1929.

Conclusion
The past use of this property as a gas station and used car lot as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.28 Site BB: Sam Lovetro Automotive – 44 Richmond St.

Site Inspection
This site is currently an auto repair shop. Refer to Photo #37 in **Attachment B**.

Sanborn Maps
This site is depicted on the 1938, 1950 and 1971 Sanborn Fire Insurance Maps as an auto repair shop.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1930-2006	44 Richmond St.	Auto Repair Shop

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- Lovetro Automotive Auto Repair – 44 Richmond St.

This site was identified as a potential gas station, filling station, and/or service station.

Conclusion
The past and present use of this property as an auto repair shop indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.29 Site CC: Vacant Building and Parking Lot – 36 Richmond St.

Site Inspection
This site is currently a vacant building. Refer to Photos #38 in Attachment B.

Sanborn Maps
This site previously consisted of two smaller parcels (36 and 38 Richmond Street). 36 Richmond St. is depicted on the 1938, 1950 and 1971 Sanborn Fire Insurance Maps as an auto repair shop. 38 Richmond St. is depicted in the 1938 and 1950 maps as a dry cleaner.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1926-1975	36 Richmond St.	Printing Co.
1926-1970	36 Richmond St.	Auto Repair Shop
1940-1975	36 Richmond St.	Heater Mfg.
1926-1945	36 Richmond St.	Dry Cleaner

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- Al's Auto Sales & Service – 36 Richmond St.

This site was identified as a potential gas station, filling station, and/or service station.

Historic Dry Cleaner Database
One (1) Historic Dry Cleaner record was identified for this site:

- Rear Ward Cleaner & Dyer – 38 Richmond St.

This site was identified as a potential dry cleaner, cleaner, laundry and/or laundromat.

Conclusion

The past use of the property as a printer, auto repair shop, heater manufacturer and as a dry cleaner indicates the potential to encounter soil contamination during any excavations completed adjacent to this site.

3.1.30 Site DD: Vacant Building and Parking Lot – 34 Richmond St.

Site Inspection

This site is currently a vacant building and parking lot. Refer to Photo #39 in Attachment B.

Sanborn Maps

This site previously consisted of two smaller parcels (32 and 34 Richmond Street). This site is depicted on the 1938 and 1950 Sanborn Fire Insurance Maps as an auto repair shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1926-1935	34 Richmond St.	Auto Repair Shop

City of Rochester Records

City of Rochester records indicate that an auto trimmers shop was constructed at this site in February 1928.

Conclusion

The past use of this property as an auto repair shop indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.31 Site EE: Action Telephone – 28 Richmond St.

Site Inspection

This site is currently an alarm company. Refer to Photo #40 in Attachment B.

Sanborn Maps

This site is depicted on the 1938 Sanborn Fire Insurance Map as a sheet metal works.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1975-1975	28 Richmond St.	Tool Co.
1960	28 Richmond St.	Auto Repair Shop

Conclusion

The past use of this property as an auto repair shop and tool shop indicates the potential for encountering soil and/or groundwater petroleum contamination and chemical contamination during any excavations completed adjacent to this site.

3.1.32 Site FF: Dimitri House Inc. – 100-104 N. Union St.

Site Inspection

This site is currently a non-profit organization. Refer to Photo #41 in **Attachment B**.

Sanborn Maps

This site previously consisted of several smaller parcels. 104 N. Union Street is depicted on the 1938, 1950 and 1971 Sanborn Fire Insurance Maps as an auto repair shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1930-1985	102 N. Union St.	Auto Repair Shop

Historic Auto Database

Three (3) Historic Auto records were identified for the addresses that previously existed on this site:

- Union Service Garage – 104 N. Union St.
- Etter Carburetor & Ignition – 104 N. Union St.
- Etter Carburetor Tune-up – 102 N. Union St.

These sites were identified as potential gas stations, filling stations, and/or service stations.

Conclusion

The past use of this property as an auto repair shop indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site. However, it appears this parcel will be too far from the area of work to be considered as an environmental concern.

3.1.33 Site GG: Men's Fashion House and Tailoring – 581-583 E. Main St.

Site Inspection

This site is currently a men's clothing shop, tailor and dry cleaner. Refer to Photo #42 in Attachment B.

Sanborn Maps

This site previously consisted of several smaller parcels. 581 E. Main St. is depicted on the 1912 Sanborn Fire Insurance Map as a dry cleaner. 581-583 E. Main St. is depicted on the 1938 and 1950 maps as a gas station with two tanks. 589 E. Main St. is depicted on the 1950 map as an auto sales and service facility and on the 1971 map as an auto repair shop.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1926-1930	581 E. Main St.	Dry Cleaner
1935-1945	581 E. Main St.	Gas Station
1930-1975	589 E. Main St.	Auto Sales & Service
1926-1930	585 E. Main St.	Gas Station
1940-1950	571 E. Main St.	Auto Sales & Service
1960-1975	571 E. Main St.	Rubber Stamp Mfg.

NYSDEC Spill Report Database

One (1) Spill record was identified for this site:

- Budget Rent A Car: 581-583 E. Main St. – Spill #8902893 (Opened 6/20/1989, Closed 12/4/1989) – Soil studies revealed odors, contaminated soils and three 1,000-gallon tanks were removed. The spill was closed and met NYSDEC cleanup standards.

Historic Auto Database

Four (4) Historic Auto records were identified for this site:

- Shell Eastern Petroleum – 581 E. Main St.
- Keystone Auto Mart Inc. – 589 E. Main St.
- John Wilkinson Gas Station – 585 E. Main St.
- Dean Motors – 571 E. Main St.

These sites were identified as potential gas stations, filling stations, and/or service stations.

Historic Dry Cleaner Database
One (1) Historic Dry Cleaner record was identified for this site:

- Ace Cleaners, Dyers & Tailors – 581 E. Main St.

This site was identified as a potential dry cleaner, cleaner, laundry and/or laundromat.

City of Rochester Records
City of Rochester records indicate a dry cleaner was constructed in November 1907. In January 1933, a gas station was constructed at this site. Three (3) 1,000-gallon tanks were removed in November 1989.

Conclusion
Despite redevelopment, the past use of this property as a gas station, dry cleaner, rubber stamp manufacturer and auto sales and service facility as well as the presence of underground storage tanks indicates the potential for encountering soil and/or groundwater petroleum and chemical contamination during any excavations completed adjacent to this site.

3.1.34 Site HH: Enterprise Rent-A-Car – 568-580 E. Main St.

Site Inspection
This site is currently a car rental company. Refer to Photo #43 in **Attachment B**.

City Directories
The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1950	560 E. Main St.	Auto Sales & Service
1926-1930	562 E. Main St.	Dry Cleaner
1940-1950	570 E. Main St.	Auto Sales & Service
1935-1960	580 E. Main St.	Gas Station

Historic Auto Database
One (1) Historic Auto record was identified for this site:

- Roy A Lux Gas Station – 580 E. Main St.

This site was identified as a potential gas station, filling station, and/or service station.

City of Rochester Records
City of Rochester records indicate that a gas station was constructed at the site in September 1932. The site was changed from a gas station to a dry cleaner in February 1964. The gas station was demolished in October 1969. In August 1997,

the site again changed use from an auto oil change service center to an auto rental shop.

Conclusion

Despite redevelopment, the past use of this property as a gas station, dry cleaner, and auto sales and service facility indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.1.35 Site II: World of Inquiry School #58 – 200 University Ave.

Site Inspection

This site is currently a City of Rochester Public School. The school is currently under re-construction. Refer to Photos #44 and 45 in **Attachment B**.

Historic Maps

This site is depicted as a playground, a wading pool and Public School #14 in the 1918 and 1935 atlases.

City Directories

The following businesses were identified on this site in the city directories:

Years Listed	Address	Use
1940-2012	200 University Ave.	School

Aerial Photos

A large building, presumably School #58, is depicted on the 1938, 1958, 1966, 1971, 1980, 1994, 2006, 2008, 2009, and 2011.

NYSDEC Spill Report Database

Three (3) Spill records were identified for this site:

- Real Estate Board of Roch: Main & University – Spill #8382328 (Opened 3/28/1983, Closed 3/17/2005) – Minor spillage of #2 fuel oil in basement of Real Estate Board of Rochester. The spill was cleaned up and closed but did not meet NYSDEC cleanup standards.
- National Ambulance/School: 200 University Avenue– Spill #9009284 (Opened 7/4/1990, Closed 5/21/2003) – Principal of School #58 indicated that fumes were present in the school building and suspects source may be National Ambulance property, across the street. Tanks were removed from the National Ambulance Property and a vapor extraction system was installed. The spill was closed but did not meet NYSDEC cleanup standards. This spill is also listed in the LTANKS database which identified spills related to leaking underground storage tanks.

Monroe County Department of Health Records

Monroe County Department of Health (MCDOH) records indicate that this site has a history with gasoline-like fumes. In November 1990, the MCDOH received a request from the principal of School #58 asking for help with gasoline odors within the building. MCDOH recommended ventilation and sealing of floor drains. In addition, two tanks were tested at the National Ambulance site located across the street. A vapor extraction system was installed in the school in 1991 and was shut down in February 1994 when VOC levels were below clearance levels.

Conclusion

The presence of underground storage tanks with spills indicates the potential for encountering soil and/or groundwater petroleum contamination during any excavations completed adjacent to this site.

3.2 Properties Considered to be Potential Environmental Concerns Identified Outside the Project Limits

The following properties were identified in the historic research however, they are located outside of the project study limits. Should the limits of the reconstruction change to require construction along these addresses, the properties might be considered properties of potential environmental concern based on the historical activities and records and further research should be conducted.

- Rochester Gas & Electric - Park & Alexander St
- Alexander & South Clinton
- Clinton Collision & Repair - 17 Alexander St
- Isaac Jones- 92-92.5 Alexander St
- Monroe & Alexander Service - 187 Alexander St
- George Crane Auto - 189 Alexander St
- Genesee Hospital - 224 Alexander St
- Private Dwelling - 231 Alexander St
- City of Rochester - 233 Alexander St
- Normandie-Brownstone - 237-53 Alexander St
- Kirkhaven - 254 Alexander St
- Rear Turk Sid Garage - 255 Alexander St
- Siger Real Estate - 267 Alexander St
- Flower City Management - 268 Alexander St
- Eastern Cleaning Service - 274 Alexander St
- Medical Arts Bldg - 277 Alexander St
- Medical Arts Garage - 278 Alexander St
- Apartment Building - 357 Alexander St
- Ideal Cleaning Service - 315 Alexander St
- Monroe Oil Company - 366-A Alexander St
- Apartment Building - 410 Alexander St
- MVA - 428 Alexander St
- Classic Carpet Cleaners - 488 Alexander St
- Davis Howland Oil Corp. -200 Anderson Ave
- Andrews St Site - 300-320 Andrews St
- Aero Auto Care - 430 Andrews St
- Elite Service Dry Cleaners - 338 Broad St E
- Wrights Dry Cleaners - 332 Broad St E
- Former Gas Station - 491 Broad St E
- Rochester Gas & Electric - 400 Broadway Ave
- School Without Walls - 480 Broadway Ave
- Pit Stop Inc - 481 Broadway Ave
- Bausch & Lomb Inc - 10 Champeney Terr
- Liquitane Corp - 18 Champeney Terr
- Sterling Garage - 6-8 Charlotte St
- Vacant Lot - 14-16 Charlotte St
- Sterling Garage - 22 Charlotte St
- City of Rochester - 26-60 Charlotte St
- Former Auto Garage - 37 Charlotte Street
- Isaac Heating & AC - 180 Charlotte St
- Monroe Brake & Motor - 182-84 Charlotte St
- Ford Hotel Service Station - 100 Chestnut St
- Temple Esso Gas Station - 110 Chestnut St
- Commodore Hand Laundry - 121 Chestnut St
- De Stefano Tailor - 125 Chestnut St
- Canopy Restaurant - 130 Chestnut St
- John E Foster & Co. Gas -132 Chestnut St
- Chestnut 2-Hr Laundry - 162 Chestnut St
- Paramount Dry Cleaners - 176 Chestnut St
- Wilferth Bros. Gas - 182 Chestnut St

- The Pike Company - 1 Circle St
- Asia Trading Co - Clinton St & Gregory St
- Construction Site - Clinton Ave S & Broad St
- Thos E. Townsend Auto - 180 Clinton Ave S
- DiBella Automotive Service - 184 Clinton Ave S
- Wilson Hobart H Gasoline - 192 Clinton Ave S
- Stores Inc. - 200 Clinton Ave S
- A B V I - 422 Clinton Ave S
- John Ames Motor Corp - 455 Clinton Ave S
- Clinkscales Garage - 467 Clinton Ave S
- Eastman Dental Trailer - 485 Clinton Ave S
- Barris Cleaners - 495 Clinton Ave S
- Dray - 504-520 Clinton Ave S
- Arco Products - 510 Clinton Ave S
- Congdon Auto Parts - 532-540 Clinton Ave S
- Kryger Bros Gas Station - 554 Clinton Ave S
- Precision Dental - 556 Clinton Ave S
- Roberts Garage - 567 Clinton Ave S
- Summer Hays & Son - 620 Clinton Ave S
- Betlem Service Corp. - 704 Clinton Ave S
- Dinaburg Distributing - 1012 Clinton Ave S
- Werner Spitz Construction Co. - 11 Comfort St
- Speedy Cleaners - Court St & South Ave
- Blue Cross/Blue Shield - Court St & South Ave
- Court Street Parking Garage - 160 Court St
- Chimes Gas Station - 181 Court St
- Rochester Laundry - 190 Court St
- Chimes Service Station - 195 Court St
- Speedy Cleaners Inc. - 196 Court St
- Rochester Laundry Co. - 200 Court St
- Speedy B A Hat Cleaners - 212 Court St
- Speedy B Anton Bootblack - 216 Court St
- Mangurian Avedius Nouvart - 246 Court St
- Three Hour Laundry Stores - 282 Court St
- Tydol Gas Station - 285 Court St
- De Luxe Laundry - 286 Court St
- Dry Cleaners - 291 Court St
- De Luxe Hand Laundry - 296 Court St
- Star Palace Laundry - 326 Court St
- Eddy's Garage - 351 Court St
- Leon Drake Garage - 353 Court St
- Hdwd J Trowell Gas Station - 355 Court St
- Standard Major Auto Garage - 354 Court St
- Jacob Nevelezer Laundry - 358 Court St
- Harry Sommerfield - 369 Court St
- Clearys Stations Inc. Gas - 390 Court St
- Independent Cleaners - 419 Court St
- Salvatore C Muscarella - 450 Court St
- Shell Eastern Petro Products - 479 Court St
- 143 Davis St
- James L McCabe Garage - 16 Delevan St
- Monroe Lithographic Co. - 39 Delevan St
- Russell Gas & Electric - 89 East Ave
- Arsen Solickian Inc. - 106 East Ave
- Leary's Cleaners & Dyers - 117 East Ave
- East Avenue at Swan Street - 120 East Ave
- Leary's Cleaners & Dyers - 146 East Ave
- Sam's East Scio Service Station - 170 East Ave
- Monroe Union Oil Co Gasoline - 171 East Ave
- De Luxe Laundry - 183 East Ave
- United Cleaners & Laundrers- 187 East Ave
- WHEC Channel 10 - 191 East Ave
- Schaefer's Dry Cleaners - 197 East Ave
- Former Hallman Chevrolet - 200 East Ave
- Bidwell Howard Gas Station - 216 East Ave
- Robinson Rochester Cycles - 219 East Ave
- Schumaker Tire & Auto Service - 230 East Ave
- Leary's Cleaners & Dyers - 242 East Ave
- Jomor Enterprises - 246 East Ave
- Monroe Reprographics Inc. - 334 East Ave
- City of Rochester - 339 East Ave
- Union Oil Works Gas Station - 345 East Ave
- Valley Cadillac Corp. - 333 East Ave
- Snyder Auto Seat Covers - 336 East Ave
- Sattari & Paddock Properties - 342 East Ave
- C. L. Whiting Inc. - 352 East Ave
- WVHF-TV - 360 East Ave
- Genesee Valley Club - 421 East Ave
- Blue Bird Coach Line - Erion Cresent
- Monroe County Sheriff - 180-182 Exchange St
- Eastman School of Music - 26 Gibbs St
- David M Matz Gasoline Station - 92 Gibbs St
- William J Gucker Gasoline - 96 Gibbs St
- Univ. of Roch. Former YMCA - 100 Gibbs St
- Rochester Drug Coop - 320 N. Goodman St
- Stern Roofing - 305 N. Goodman St
- Davidson Collision - 399 Gregory St
- F K Hillen Inc. - 160 Griffith St
- Markham John D Auto Repair - 166 Griffith St
- Sero A Ernest Auto Uphol - 174 Griffith St
- Griffith/South Union St
- In Street - Griffith St & Broadway
- Grove Street Parking Station - 10 Grove St
- Guss Auto Service - 70 Grove St
- Craig Autometrics Inc. - 74-80 Grove St
- City of Rochester - 98 Grove St
- Gall & Paul Auto Repairers -18 Haags Alley
- Adam Bros. Auto Repairs - 42 Haags Alley
- Former Laboratory - 31 Howell
- N&W Associates - The Tire - 180 Hudson Ave
- Mitchell Beaucaire Inc - 5 Lawrence St
- The Pig (Restaurant) - 7 Lawrence St
- Quick Fix Service Co - 30 Lawrence St
- Johnson & Lund - 167 Liberty Pole Way

- Rear T Guck Richd J Garage - 93 Lyndhurst St
- NYSDOT - E Main St @ RR St Bridge
- Pal Oil - E Main St
- E Main St & Stillson St
- Parking Lot - 420 E Main St
- Toth's 3 Hour Laundry - 424-26 E Main St
- Elite Hat Shop - 431 E Main St
- Launderette Serv - 432 E Main St
- U Wash N Dry - 439 E Main St
- 444 E Main St
- Anthony Kristo Hat Cleaner - 449 E Main St
- C L Sing Laundry - 454 E Main St
- E Decker Clothing Cleaners - 453 E Main St
- Three Hour Laundry Stores - 458 E Main St
- Beebe's Bug Cleaners - 470 E Main St
- Silver Star Dry Cleaners - 493 E Main St
- Sanitary Dollar Dry Cleaning - 497 E Main St
- Windsor Lofts - 480-488 E Main St
- Pats Tailor Shop Dry - 496 E Main St
- Flower City Auto Radiator - 504 E Main St
- Elite Custom Tailoring - 525-27 E Main St
- Hennessey & Thomas Auto - 709 E Main St
- Nicholas Beloseroff - 707 E Main St
- J J V Realty - 727 E Main St
- Johnnies Dry Cleaners - 737 E Main St
- The Dutch Cleaners & Dyers - 739 E Main St
- East Main (#785) Street - 785 E Main St
- Blue Bird Coach Lines Inc. - 795 E Main St
- RSG Auto Group Inc. - 795 E Main St
- Burroughs Corporation - 800 E Main St
- Hause Tydol Service Gas - 833 E Main St
- Midas Auto Service Experts - 834 E Main St
- Brancato Sam Dry Cleaners - 836 E Main St
- Jos Minardo Gas Station - 839 E Main St
- Rahns Esso Service Inc. - 840 E Main St
- Cropo (Carl)Service Station - 895 E Main St
- Staub's Dry Cleaners - 935-951 E Main St
- Artco Industrial Laundry - 331-337 W Main St
- East Housing Corporation - 10 Manhattan St
- 6 Marshall St
- City of Rochester - 81 Marshall St
- Mill Street Drums - 208 Mill St
- Vernon Cleaners & Dyers- 201 Monroe Ave
- Edward Kelly Cleaner - 202 Monroe Ave
- 208 Monroe Ave
- Union Dry Cleaning Co. - 209 Monroe Ave
- Launder Ease - 215 Monroe Ave
- Jay L Howard Garage - 232 Monroe Ave
- WCMF Radio - 259 Monroe Ave
- John J Hahn Gas - 259 Monroe Ave
- Sears Service Station - 225 Monroe Ave
- Moon Wong Laundry - 243 Monroe Ave
- Shell Eastern Petroleum - 270 Monroe Ave
- Nulook Collision Inc - 280 Monroe Ave
- Barnet Ben Cleaners - 288 Monroe Ave
- Nu-Look Collision - 289 Monroe Ave
- Monroe Avenue Aban Drum - 297 Monroe Ave
- 300 Monroe/Dunkin Donut - 300 Monroe Ave
- Scotty's Service Station - 313 Monroe Ave
- City of Rochester - 330 Monroe Ave
- Mayfair Cleaners & Dyers - 334 Monroe Ave
- Monroe Bargain - 334-336 Monroe Ave
- Williams Jas J Inc - 350 Monroe Ave
- Archer Motor Co. Inc Gas - 370 Monroe Ave
- Crop Cair Route - 490 W Monroe Ave
- Esso Service Station - 24 Mount Hope Ave
- Not Reported - 32 Mt Hope Ave
- Frank B Hennen Inc - 60 Mt Hope Ave
- Time Warner - 71 Mt Hope Ave
- 80-92 Mt Hope Ave
- D & B Auto Repair & Service - 90 Mt Hope Ave
- 151-191 Mount Hope Ave
- Genesee Gateway House - 185 Mt Hope Ave
- River Park Commons - 205-405 Mt Hope Ave
- Fraina's Service Station - 462 North St
- Ontario-Finney St
- Waste Management Recycle - 101 Ontario St
- Alley Behind 105 Ontario St
- 105 1/2 Ontario St
- Aiken Head Alley - 117 Ontario St(Behind)
- Atkins Alley - Near 125 Ontario St -Atkins Alley
- Williams (Paulette) Res - 140 Ontario St
- East Rochester DPW - 200 Ontario St
- Ferrari Park Service - 210 Park Ave
- WHEC-TV Transmitter Site - Pinnacle Hill
- Monroe County Jail - 130 South Plymouth Ave
- Pearce Basinger & Associates - 7 Prince St
- Empire State College - 8 Prince St
- 22 Prince St
- School of the Arts - 45 Prince St
- Oil City Dump Hinchey - 46 Prince St
- American Red Cross - 50 Prince St
- 94 Prince St
- Prince (#99) Street - 99 Prince St
- Prince (601) Street - 106 Prince St
- Krieger Waste Paper Co. - 50 Portland Ave
- Aoam Bros. Auto Repair - 25 Richmond St
- Former Hallman's Warehouse 6 - 4 Scio St
- Edwd Schiff Gas Station - 25 Scio St
- Martin T Gullen & James J Part - 38 Scio St
- C A Merkel Inc. Automobile - 48 -50 Scio St
- Speedy's Cleaners - 50 Scio St
- Automobile Greasing & Oil Co. - 51 Scio St
- City of Rochester - 62-64 Scio St

- Sanders The Radiator Co. - 73 Scio St
- E G Snyder Company Inc. - 86 Scio St
- Black Perry Auto Laundry - 91 Scio St
- Sokolows Auto Radiator - 104 Scio St
- Louis Gibaud Gas Station - 123 Scio St
- 142 Scio St
- Clark Dry Cleaners - 296 Scio St
- Ilas Dry Cleaners - 301 Scio St
- Laube-Rogers Fuel Co. - 34 Skue St
- A & E Transportation - 140 Skye St
- Arcy Sales & Service Gas - 68 South Ave
- Skyline Gas Station - 94 South Ave
- Briter Cleaners Henry A Echter - 132 South Ave
- Wilber Earl Gas Station - 136 South Ave
- UCS Laundromat - 144 South Ave
- Robt F Eshelman Garage - 154 South Ave
- Southgate Gas Station - 160-168 South Ave
- Weiss Dry Cleaning Co. -172 South Ave
- Tarrant Sales Inc Auto Repair - 174 South Ave
- Rear Sport Car Service - 176 South Ave
- Metro Tire & Service Center - 188 South Ave
- Shell Eastern Petroleum - 193 South Ave
- Merkel Donohue Inc - 200 South Ave
- 228 South Ave
- Lou Frank Laundry - 242 South Ave
- City of Rochester Warehouse - 250 South Ave
- Clifton F Tarrant Auto - 300 South Ave
- Hing Lung Laundry - 316 South Ave
- 320 South Ave
- Mileage Master Center - 370 South Ave
- Vacant Travelodge Motel - 390 South Ave
- Rapps Inc. Clothing Cleaners - 398 South Ave
- City of Rochester - 420 South Ave
- Lung Hing Laundry - 433 South Ave
- The Laundromat - 451 South Ave
- Laurelton & Meo Dry - 455 South Ave
- William H Longman Cleanser - 475 South Ave
- The Radiator Shop - 462 South Ave
- 488 South Ave
- St. Mary's Church - 15 St. Mary's Pl
- Fort Howard Paper Co. - St Paul St
- Cultural Districts Imports - 70 Stillson St
- P F H Enterprises Auto Repair - 71 Stillson St
- Craig Autometrics Auto Repair - 80 Stillson St
- Roche Biomedical Labs - 245 Summit Point Dr
- Harry Duckitt Gas Station - 14 Swan St
- Burroughs Corporation - 215 Tremont Ave
- Helpee Selfee Laundry - 151 Union St N
- N Union Service Station - 229 Union St N
- Wilson Valley Property - 227 Union St N
- Not Reported - 33 University Ave
- Ibero-American - 58 University Ave
- Koetter & Sayre Inc Gas - 62 University Ave
- Automotive Source 74 University Ave
- Monroe Litho Inc - 109 University Ave
- University Esso Gas - 113 University Ave
- 123-125 University Ave
- National Ambulance – 177 University Ave
- Ferrel's Garage Gas - 365 University Ave
- University of Rochester - 500 University Ave
- PWB Properties - 54 Weld St
- Howard E Cook Garage - 16 Windsor St
- Rochester Gas & Electric - 24 Windsor St
- Hallman Chevrolet Ltd - 12 Winthrop St
- Sagamore Garage - 10 Winthrop St
- Former Service Station - 24 Winthrop St
- Washington Sq Garage - 111 Woodbury Blvd
- Buddys Dry Cleaner - 26 Woodward St
- Martinez (Jose) Residence - 41 Woodward St

4.0 CONCLUSIONS AND RECOMMENDATIONS

Thirty-five sites (A through II) were identified in this Preliminary Screening Report prepared for the Hazardous Waste/Contaminated Materials (HW/CM) Assessment that may pose environmental risk to the Inner Loop proposed study area. These sites are recommended for further investigation if the chosen design alternative will require excavation or right-of-way acquisition in these areas. Each potentially contaminated site is listed with a recommendation for further work in Table 4-1.

Recommendations for further work may require alteration depending on the chosen design alternative. Once the design alternative has been chosen, a Field Sampling Plan (FSP) should be prepared for the performance of a subsequent Detailed Site Investigation (DSI). The FSP and DSI should include the areas near the sites of potential environmental concern that would be affected by right-of-way (ROW) acquisition or construction for the proposed project. If the results of the DSI indicate that construction will involve the excavation of areas of contamination, a Soil Management Plan will be necessary. For many of the identified sites, recommendations are based on multiple environmental concerns (e.g. petroleum spills and leaks, USTs, industrial use, undocumented fill) reflecting the changing land uses throughout the decades of occupation in this area. Detailed findings for each site that support these recommendations were described previously in Section 3.1.

The Inner Loop (Site A) has been an active highway for more than 50 years and the area has been an urban area since the late 1800's. Due to the urban nature of the project study area, urban/industrial fill is likely present throughout the corridor. This fill was placed at a time when environmental laws were not in place; therefore, there is a potential to encounter historic contaminated fill from unknown sources at these sites. If construction or ROW acquisition is anticipated in the area of these sites, we recommend that soil boring inspections (and laboratory analysis for general industrial compounds, if warranted) be conducted in the area of each involved site, to determine whether contaminated soil or groundwater is present within the existing or proposed ROW.

Twenty-three (23) of the thirty-five sites (Sites A, B, C, D, E, F, G, I, J, K, M, O, P, Q, R, S, T, V, X, Z, AA, GG, and II) contain or have contained petroleum USTs/ASTs or have petroleum spills on record. If construction is anticipated on these sites, we recommend that a soil gas/volatile vapor screening and soil boring inspections (and laboratory analysis for petroleum compounds, if warranted) be considered in the area of each involved site to determine whether petroleum contaminated soil is present.

There is also an elevated potential that these twenty-three sites may have abandoned and unmarked USTs within the site because of known or suspected former use as petroleum storage sites. If property acquisition or construction is anticipated in the area of these sites, we recommend that a geophysical survey be considered in the area proposed to be acquired or involved with construction to determine whether USTs and/or ancillary piping are present.

Thirty-two (32) of the thirty-five sites (Sites A, B, C, D, E, F, G, I, J, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, BB, CC, DD, EE, FF, GG, and HH) are or have been auto repair shops or manufacturing facilities including metal shops, rubber stamp manufacturer, coal and coke companies, photo studios, and printers. *(Please note: Some of these sites are in addition to or overlap with the land use on the twenty-three sites identified above as potentially petroleum contaminated.)* If construction is anticipated in the area of these industrial sites, we recommend an environmental investigation (and laboratory analysis for general industrial compounds) be conducted at each site to determine whether soil or groundwater contaminated with industrial type compounds is present.

Eight (8) of the thirty-five sites (Sites A, H, J, Q, X, CC, GG, and HH) are or have been dry cleaners. If construction is anticipated on these sites, they should be investigated for the presence of chlorinated solvent contamination in the subsurface by analyzing select soils samples for Target Compound List (TCL) volatiles.

Please note, if soil sample collection is warranted at any of the sites through soil gas survey or soil boring inspection, a groundwater sample may also be collected if groundwater is encountered within the soil boring. Laboratory analysis should include the parameters identified above for the soil sample proposed at each individual site.

These recommendations are based on a generic assessment of the project corridor. Once design plans are developed, the conclusions and recommendations of this assessment may require alteration.

Table 4-1
Summary of Recommendations

Site	Property Name and Address	Environmental Concerns		Recommendation
		Known	Potential	
A	I-490 Inner Loop	Former Manufacturing Facilities, Former Gas Station, Former Auto Repair Shop, Former Auto Sales & Service; Former Dry Cleaner; Spill Record	Petroleum and General Industrial Contamination; Abandoned USTs	Monitoring During Construction and Soil Sampling/Soil Characterization of Excavated Materials
B	Parking Garage – 280 Clinton St. S.	Former Auto Tire Shop; Former Manufacturing Facility; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
C	Graves Auto Service – 60 Marshall St.	Former Auto Repair Shop; USTs; Active Spill Record	Petroleum Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
D	Dogs at Play – 79 Howell St.	Former Auto Repair Shop; USTs	Petroleum Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
E	Abundance Cooperative Market – 62 Marshall St.	Former Auto Repair Shop; USTs	Petroleum Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
F	Rochester Fire Equipment Co. – 83-85 Howell St.	Former Auto Repair Shop; Former Printer; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
G	FedEx Office – 158-162 Monroe Ave.	Former Auto Repair & Tire Shop; Former Dry Cleaner; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
H	Rocco Restautante – 165-169 Monroe Ave.	Former Dry Cleaner	Solvent Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
I	Frey the Wheel Man – 110 Savannah St.	Former Auto Repair Shop; USTs; Spill Record	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
J	Strong Museum – 1 Manhattan Sq.	Former Auto Repair Shops; Former Dry Cleaners; Former Gas Stations; USTs; Spill Record	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters

Table 4-1
Summary of Recommendations

Site	Property Name and Address	Environmental Concerns		Recommendation
		Known	Potential	
K	Ambassador Apartments – 86 S. Union St.	USTs	Petroleum Contamination, Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
L	Chaintreuil Jensen Stark Architects, LLP & Roc Brewing Co. – 54-56 S. Union St.	Former Auto Sales & Service	Petroleum and General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
M	Vacant Lot – 48 S. Union St.	Former Gas Station; Former Used Car Lot; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
N	Upstate Gallery Antiques – 16 Gardiner Pk.	Former Auto Repair Shop	Petroleum Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
O	Bethel Christian Fellowship – 321 East Ave.	Former Gas Station; Former Auto Sales & Service; Former Auto Repair Shop; USTs; Spill Record	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
P	Corporate Place LLC – 255 East Ave.	Former Auto Sales & Service; Former Auto Repair Shop; Former Manufacturing Facility; ASTs; Spill Record	Petroleum and General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
Q	Parking Lot – 292-316 East Ave. & 14-16 N. Union St.	Former Auto Sales & Service; Former Dry Cleaner; Former Neon Sign Mfg; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
R	Arena's Florist & Grater Architects – 258-264 East Ave.	Former Auto Tire Shop; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
S	Little Theatre Film Society Café – 5-7 Pitkin St.	Former Auto Repair Shop; USTs	Petroleum Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
T	Smart Import Parts – 15-17 Pitkin St.	Former Truck Repair Shop; USTs	Petroleum Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters

Table 4-1
Summary of Recommendations

Site	Property Name and Address	Environmental Concerns		Recommendation
		Known	Potential	
U	Wendy's of Rochester – 18-20 N. Union St.	Former Auto Repair Shop; Former Manufacturing Facility	Petroleum and General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
V	NYSUT and Rochester Eye & Laser Center – 30-32 N. Union St.	Former Auto Repair Shop; Former Auto Sales & Service; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
W	Nix Rubber Stamp – 81 Charlotte St.	Former Manufacturing Facility	General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
X	Parking Lot – 80 Charlotte St.	Former Dry Cleaner; Brownfield; Former Manufacturing Facility; USTs; Spill Record	Petroleum and General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
Y	Vacant Lot – 47 Haggs Al.	Former Auto Repair Shop	Petroleum Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
Z	Parking Lot – 56 N. Union St.	Former Auto Repair Shop; Former Auto Sales & Service; Spill Record	Petroleum Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
AA	Tyron Contracting Services Inc. – 68-70 N. Union St.	Former Gas Station; Former Used Car Lot; USTs	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
BB	Sam Lovetro Automotive – 44 Richmond St.	Auto Repair Shop	Petroleum Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
CC	Vacant Building and Parking Lot – 36 Richmond St.	Former Auto Repair Shop; Former Dry Cleaner; Former Printer; Former Manufacturing Facility	Petroleum and General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
DD	Vacant Building and Parking Lot – 34 Richmond St.	Former Auto Repair Shop	Petroleum Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
EE	Action Telephone – 28 Richmond St.	Former Auto Repair Shop; Former Tool Shop	Petroleum and General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters

Table 4-1
Summary of Recommendations

Site	Property Name and Address	Environmental Concerns		Recommendation
		Known	Potential	
FF	Dimitri House Inc. – 100-104 N. Union St.	Former Auto Repair Shop	Petroleum Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
GG	Men's Fashion House & Tailoring – 581-583 E. Main St.	Former Gas Station; Former Auto Sales & Service; Former Dry Cleaner; USTs; Spill Record	Petroleum and General Industrial Contamination; Abandoned USTs	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
HH	Enterprise Rent-A-Car – 568-580 E. Main St.	Former Gas Station; Former Auto Sales & Service; Former Dry Cleaner	Petroleum and General Industrial Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters
II	World of Inquiry School #58 – 200 University Ave.	Spill Record	Petroleum Contamination	Limited Subsurface Investigation Depending on Alternative Selected and Design Parameters

APPENDIX K

Air Analysis

AIR QUALITY ANALYSIS REPORT

for

P.I.N. 4940.T7
INNER LOOP RECONSTRUCTION PROJECT
SOUTH CLINTON AVENUE TO SCIO STREET
CITY OF ROCHESTER, MONROE COUNTY

December 2013

Prepared For:

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For Submission To:

CITY OF ROCHESTER
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EXECUTIVE SUMMARY

Watts Architecture & Engineering (Watts) was retained by Stantec to perform an Air Quality Analysis for the City of Rochester, on the Inner Loop Transformation Project, City of Rochester, Monroe County, New York (PIN 4940.T7).

This Air Quality Analysis Report evaluates the effect of the proposed design alternative on transportation related pollutant emissions within the study area of the reconstruction project. For this project, a conformity review, a mesoscale analysis and a microscale analysis screening were performed to satisfy the requirements of the National Environmental Protection Act (NEPA), the State Environmental Quality Review Act (SEQRA), and the Clean Air Act Amendment 1990 (CAAA90). The methodology conformed to NYSDOT's The Environmental Manual (TEM) 2010 which, for the Air Quality Section, currently adheres to the Environmental Procedures Manual (EPM), Section 1.1.

Conformity Review:

The proposed project is located in Monroe County, which is part of the Genesee Transportation Council (GTC). GTC is the designated Metropolitan Planning Organization (MPO) in the Genesee-Finger Lakes Region. The USEPA has designated Monroe County as in attainment for all applicable transportation related priority pollutants. Therefore, the region is not currently subject to conformity procedures per Section 176 of the CAAA90 and 40 CFR Parts 51 and 93; the GTC is not currently required to perform air quality analysis for the Region; and a conformity determination is not required for this project.

Mesoscale Analysis:

A mesoscale analysis was performed for this project. The results of a mesoscale analysis are relative and do not directly indicate that emissions in the study area are expected to be above regulatory thresholds. The mesoscale analysis is used to compare alternatives and as a screening tool to identify individual pollutants that may require additional study. The mesoscale analysis was performed for five indicator pollutants under years 2015, 2025, and 2035 for both the No-Build and Build alternatives. The emission factors for the analysis were determined from the MOVES (Motor Vehicle Emission Simulator) 2010b computer model, which is currently the approved emission factor model.

The results of the mesoscale analysis indicated that the emissions burdens for all five pollutants are expected to increase within the project area if the Build Alternative is constructed. Pollutant increases predicted under the Build Alternative ranged from 4% to 27% for all years. However, for this project it should be noted that, percent changes were inflated due to the limited study area. This project is expected to affect only the immediate area of the project corridor and not the surrounding roadway network. The effect of a limited study area can yield inflated percent changes for a mesoscale analysis since there is no dilution of the project's effects from the surrounding roadways with minor changes.

The higher pollutant emission rates for the Build Alternative are due to the conversion of a limited access roadway with consistent free-flow speeds averaging 50 mph to a full access roadway with 30 mph signal controlled stop-and-go traffic. Generally, the changes represented by this project will slow traffic along this corridor to speeds similar to that of other City streets within the surrounding roadway network such as Monroe Avenue, East Avenue, and East Main Street. Therefore, regardless of the percent increase in emissions from the downgrade of this freeway to a City street, future emissions along the proposed corridor would likely be similar to the expected background emissions found on other comparable volume streets present in this area of the City.

There is no EPM specified mesoscale percentage level change that would indicate that these pollutants would require further study or documentation; however, the general rule of thumb is an increase of more than 10% for the build alternatives. Since the maximum percentage increases for these pollutants is more than 10% for four of the pollutants, these percentage increases were further screened and documented in the design approval document. Further screening of the project was performed to indicate whether additional study in the form of microscale or hot-spot analyses would be appropriate.

Microscale Screening:

Microscale screenings indicated that microscale analysis is <u>not</u> warranted and; therefore, the proposed project is not expected to have significant air-quality impacts. The microscale screening of the corridor indicated that the overall volumes and the heavy vehicle volumes along the corridor are too low (below the thresholds) to warrant an in-depth microscale analysis for the indicator compounds carbon monoxide (CO) or particulate matter (PM). Therefore, in accordance with the EPM guidance, the screening indicates that a violation of the NAAQS regulatory thresholds is considered "extremely unlikely" for CO and PM and no further study is warranted. Additionally, due to the mandatory reduction of lead in gasoline, the FHWA has advised that a microscale lead analysis for highway projects is not needed or warranted.

Construction Air Quality:

Construction related air quality screening has indicated that no detailed analysis will be required for this project. Although air quality within the project corridor and the immediate vicinity will experience impacts during the construction period, the use of abatement measures for dust control and proper vehicle maintenance should lessen the severity of these impacts.

1.0 INTRODUCTION

Watts Architecture & Engineering (Watts) was retained by Stantec to perform an Air Quality Analysis for the City of Rochester, on the Inner Loop Transformation Project, City of Rochester, Monroe County, New York (PIN 4940.T7). See **Figure 1** in **Attachment A** for the Project Location Map.

1.1 Purpose

This Air Quality Analysis Report evaluates the effect of the proposed design alternative on transportation related pollutant emissions within the study area of the reconstruction project. For this project, a Mesoscale Analysis and a Microscale Analysis screening were performed to satisfy the requirements of the National Environmental Protection Act (NEPA), the State Environmental Quality Review Act (SEQRA), and the Clean Air Act Amendment 1990 (CAAA90). Requirements are codified in 23 CFR Part 771, 17NYCRR Part 15, and Titles I and II of the CAAA90, respectively.

1.2 Scope

The methodology for the analysis conforms to the NYSDOT The Environmental Manual (TEM) 2010 which, for the Air Quality Section, currently adheres to the Environmental Procedures Manual (EPM), Section 1.1. The EPM has been approved by the United States Environmental Protection Agency (USEPA), the New York State Department of Environmental Conservation (NYSDEC), and the Federal Highway Administration (FHWA) for use in the assessment of the air quality effects from highway projects.

The existing air quality within the project study area has been reviewed and the proposed project's conformity with the State Implementation Plan for air quality, the Transportation Improvement Plan, and the Long Range Transportation Plan were also reviewed.

An air quality screening was performed for this project. The air quality screening involves an analysis of the project's potential air quality impacts to the surrounding environment to determine if further in-depth studies are appropriate (such as a mesoscale or a microscale analysis).

The air quality screening indicated that a Mesoscale Analysis should be performed for this project. The scope of the Mesoscale Analysis included assessment of the proposed project's relative effects on the air quality of the project study area resulting from changing traffic patterns. The total project emissions burden for each of five pollutants were calculated for the estimated time of completion (ETC), ETC+10, and ETC+20 for the No-Build Alternative and the Build Alternative. The emissions burdens for the No-

Build Alternative were compared to the Build Alternative to determine the potential overall effects of the proposed project on the air quality of the project study area.

2.0 BACKGROUND

2.1 Project Location

The proposed project is located in the City of Rochester, Monroe County, New York. The project study area limits for the air study are shown in **Figure 2** in **Attachement A.**

2.2 Project Description

The proposed project involves raising the eastern portion of the Inner Loop from East Main Street to Monroe Avenue/Chestnut Street, to an at-grade boulevard.

Due to the relatively low traffic volume currently serviced by this section of the Inner Loop, the project is expected to mainly affect the immediate construction area and have a relatively negligible effect on the traffic volumes of the surrounding roadway network.

This project has two alternatives, a No-Build Alternative and a Build Alternative. The No-Build Alternative would involve only maintenance to the existing highway. The build alternative would involve raising this section of the Inner Loop to grade.

Additional information on Build Alternative is available in the project's Design Approval Document.

2.3 Existing Air Quality

The CAAA90 requires air monitoring throughout New York State. The monitoring is performed by the NYSDEC, in accordance with USEPA requirements, using standardized air monitoring equipment, siting locations, and procedures. The NYSDEC annually reports levels of various National Ambient Air Quality Standards (NAAQS) priority pollutants to the USEPA and publishes them periodically.

2.3.1 Regional Priority Pollutants

The following summary of regional priority pollutants was obtained from the NYSDEC New York State Ambient Air Quality Report for 2012. Pollutant data from various local monitoring stations have been compiled since there is no single station near the project corridor that monitors all the pollutants. A summary of the Regional Priority Pollutants and corresponding NAAQS can be found in **Table 2-1**.

Carbon monoxide concentrations at the monitoring station in the Rochester area indicate compliance with the one-hour and eight-hour average emission NAAQS in 2012. Generally, annual CO concentrations have remained stable or declined for the past few years. This trend reflects better emission controls on new motor vehicles and their inspection/maintenance.

Ozone (one-hour and eight-hour averages) concentrations at the Rochester area monitoring station were below the NAAQS in 2012. The implementation of more stringent volatile organic compound (VOC) emission controls including the mandatory use of less volatile gasoline in all areas of New York State since 1990 have lowered statewide ozone concentrations.

Inhalable Particulate levels less than 2.5 microns (PM 2.5) in the Rochester area were below the NAAQS in 2010, 2011, and 2012 for the three year annual mean. The reductions in PM 2.5 concentrations during the past 30 years have been achieved mainly through the implementation of New York State and Federal regulations on particulate emissions from incinerators, industrial processes, and fuel sources.

Inhalable Particulate (PM 10) levels in the Rochester area were below the NAAQS in 2012. PM 10 levels in this region are primarily linked to the fine particulate emissions from diesel-powered vehicles.

Sulfur dioxide concentrations, both long term (annual) and short term (one-hour, three-hour and 24-hour) were below the NAAQS in 2012. The Statewide reduction in ambient sulfur dioxide concentrations during the past 30+ years is a result of New York State fossil fuel regulations and the limitations on sulfur content in industrial processes.

Nitrogen dioxide concentrations were reported less than the NAAQS levels in 2012. Like carbon monoxide, there has been a general trend of decreasing concentrations since 1988. These trends reflect better emission controls on new motor vehicles and their inspection/maintenance.

Lead concentrations were reported less than the NAAQS levels in 2012. The continued decline of lead emissions throughout the State is the result of the elimination of lead additives in motor fuel.

TABLE 2-1
Regional Priority Pollutants
Air Quality Data Summary - 2012

Pollutant	Units	Interval	Nearest Monitoring Station			AAQS	
			Name (ID Number)	Concentration		State	Federal
				Average	Maximum		
Carbon Monoxide	(ppm)	Annual A.M. 8-Hr. Average 1-Hr. Average	Rochester 2 (2701-22)	0.2 --- ---	--- 0.9 1.3	NC 9 35	NC 9 35
Ozone	(ppm)	Annual A.M. 1-Hr. Average 8-Hr. 4th Average (3-year)	Rochester 2 (2701-22)	0.028 --- 0.071	--- 0.104 0.075 0.072 (2010) 0.066 (2011)	NC NC 0.075	NC NC 0.075
Inhalable Particulates (PM 2.5)	(ug/m^3)	3 yr Annual A.M. 98% 3yr Average (24-hour)	Rochester 2 (2701-22)	8.7 23	--- ---	15 35	15 35
Inhalable Particulates (PM 10)	(ug/m^3)	Annual A.M. 24-Hr. Average	Rochester 2 (2701-22)	13 ---	--- 27	NC 150	NC 150
Sulfur Dioxide	(ppb)	Annual A.M. 24-Hr. Average 3-Hr. Average 1-Hr. Avg. of 3 yrs	Rochester 2 (2701-22)	0.99 --- --- 23	--- 8.0 16.2 ---	30 140 500 75	30 140 500 75
Nitrogen Dioxide	(ppb)	Annual A.M. 1-Hr. Avg. of 3 yrs	Buffalo (1401-18)	10.46 56	--- ---	53 75	53 75
Lead	(ug/m^3)	Annual G.M. 3 Month Average (lead-PM10 Sampler)	Rochester 2 (2701-22)	0.002 0.003	---	0.15 0.15	0.15 0.15

Notes: ppm - parts per million; A.M. - Arithmetic Mean; AAQS - Ambient Air Quality Standard; ug/m^3 - micrograms per cubic meter; G.M. - Geometric Mean; Concentration in bold indicates that it exceeds the standard; NC - No Current standard. SOURCE: NYSDEC New York State Ambient Air Quality Report for 2012

2.3.2 Attainment Classification

The proposed project is located in Monroe County, which is part of the Genesee Transportation Council (GTC). GTC is the designated Metropolitan Planning Organization (MPO) in the Genesee-Finger Lakes Region. The USEPA has designated Monroe County as in attainment for all applicable transportation related priority pollutants. Therefore, the region is not currently subject to conformity procedures and the GTC is not currently required to perform air quality analysis for the Region.

2.4 Conformity

The conformity requirements for local transportation plans and the proposed project are found in Section 176 of the CAAA90 and 40 CFR Parts 51 and 93 *Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act*.

Since the GTC Region is in attainment for all applicable transportation related pollutants a conformity determination is not required for this project.

3.0 MESOSCALE EMISSION ANALYSIS

3.1 Methodology

The methodology for the analysis conforms to the NYSDOT EPM, Chapter I and subsequent updates that have been distributed by the Engineering Division - Office of Environment (ref. 1). The analysis was performed for nitrogen oxides (NOx), volatile organic compounds (VOCs), carbon monoxide (CO), and two particulate matter (PM) fractions: PM-10, and PM-2.5. Peak hour emissions were estimated for all five pollutants based on the peak hour traffic volume and speed for each segment of the affected roadways (see **Attachment C** for volumes). This information resulted in a comparison of the proposed project's total emissions (per alternative) relative to the No-Build Alternative total emissions.

Mesoscale assumptions and inputs were agreed upon, prior to starting, in a proposed methodology letter dated July 2, 2013. Mesoscale assumptions, inputs, and results are presented below.

3.2 Emission Factors

The emission factors were determined from the MOVES (Motor Vehicle Emission Simulator) 2010b computer model, which is currently the approved emission factor model. MOVES generates emission factors based on varying characteristics of the vehicle fleet and adopted emission control strategies. Characteristics include the vehicle type, speed, operating mode of the vehicles, ambient temperature, and other factors.

County level emission rates for 2015, 2025, and 2035 from the MOVES 2010b computer model were predicted for all five pollutants by speed and road type. These MOVES values were then used to determine the all-vehicle emissions for roadways in the proposed project study area. See **Attachment B** for a summary of emission factors used and the MOVES model input printouts.

3.3 Traffic Volumes

PM peak hour traffic volumes were used for the analysis. All traffic volumes for the mesoscale analysis were obtained from Stantec. Due to the proposed roadway realignments and ramp modifications, traffic patterns within the project corridor will be changed. In addition, the proposed improvements are expected to generate additional traffic within the project corridor. Additional information on traffic volumes can be found in the design approval document for this project.

3.4 Traffic Speeds

The vehicle operating speeds used for the analysis are generally the free flow speeds obtained from the design approval document and modified to accommodate traffic control along the corridor. For the build scenario, the speeds were lowered along Union Road (former Inner Loop) to accommodate for the traffic calming measures that have been incorporated into the proposed design. Speeds used for each link in the analysis are presented in the tables within **Attachment C**.

3.5 Mesoscale Analysis Results

The emission estimates for each alternative were based on the vehicle volume, vehicle classifications, and speed for each segment of the roadway on a link-by-link basis. Vehicle emissions from the affected roadways have been analyzed to study the proposed project's total emissions (per alternative) relative to the No-Build Alternative total emissions.

Vehicle average speed, segment lengths, traffic volumes, and emission factors for each segment of the affected roadways are summarized in the tables in **Attachment C**. The tables in **Attachment C** list the calculated peak-hour, vehicle-miles-traveled (VMT) and total hourly emissions for each roadway segment for VOC, CO, NOx, PM10, and PM2.5 in years 2015 (ETC), 2025 (ETC+10), and 2035 (ETC+20) for the no-build and build alternatives.

Table 3-1 is a summary of total emissions (in grams) for the No-Build and Build Alternative. The results indicate that the Build Alternative generally has a greater amount of emissions for all five pollutants than the No-Build Alternative. The results of the Mesoscale analysis indicate that construction of the Build Alternative would result in emissions burden increases in the project study area, for all three years of study, ranging from:

- 4.00% to 13.41% for CO
- 6.83% to 9.12% for NOx
- 14.68% to 21.75% for VOCs
- 17.38% to 26.72% for PM-10
- 9.90% to 20.86% for PM-2.5

3.6 Mesoscale Analysis Conclusions

The emissions burdens for all five pollutants are expected to increase within the project area if the Build Alternative is constructed. The maximum expected increases over all three years of study for CO (13.41%), NOx (9.12%), VOCs (21.75%), PM-10 (26.72%), and PM-2.5 (20.86%) should be noted in the appropriate section of the design approval document. However, the results of the Mesoscale analysis are relative and do not directly indicate that the emissions in the area are expected to be above regulatory thresholds. The Mesoscale results may be used as a screening tool to identify individual pollutants that are more likely to exceed regulatory levels in the future.

The higher pollutant emission rates for the Build Alternative are due to the conversion of a limited access roadway with consistent free-flow speeds averaging 50 mph to a full access roadway with 30 mph signal controlled stop-and-go traffic. Slower speed stop-and-go traffic is less efficient and would generate higher emission levels for all five of the studied pollutants. However, it should be noted that, since this project is expected to affect only the immediate area of the project corridor and not the surrounding roadway network, this study was performed on a limited study area as shown in Appendix A. The effect of a limited study area can yield inflated percent changes for a mesoscale analysis since there is no dilution of the project's effects from the surrounding roadways with minor changes.

Generally, the changes represented by this project will slow traffic along this corridor to speeds similar to that of other City streets within the surrounding roadway network such as Monroe Avenue, East Avenue, and East Main Street. Therefore, regardless of the percent increase in emissions from the downgrade of this freeway to a City street, future emissions along the proposed corridor would likely be similar to the expected background emissions found on other comparable volume streets present in this area of the City.

There is no EPM specified percentage level that would indicate that these pollutants would require further study; however, the general rule of thumb is an increase of more than 10% for the build alternatives. Since the maximum percentage increases for these pollutants is more than 10% for four of the pollutants, these percentage increases must be further screened and documented in the design approval document. A screening of the project was performed to indicate whether additional analysis in the form of microscale or hot-spot analyses would be appropriate (see Section 4.0).

Table 3-1
P.I.N. 4940.T7
INNER LOOP RECONSTRUCTION PROJECT
SOUTH CLINTON AVENUE TO SCIO STREET
CITY OF ROCHESTER, MONROE COUNTY
Mesoscale Analysis Comparison Table

Comparison of Project Study Area Emissions Burdens (units = g/hr)

	Alternative 1 - No Build			Alternative 2A – Preferred Build Alternative						Potential Significant Env. Impact Thresholds Met*
	ETC	ETC+10	ETC+20	ETC	*% Change*	ETC+10	*% Change*	ETC+20	*% Change*	
VOCs	236	158	134	271	***14.68%***	184	***16.56%***	164	***21.75%***	Yes*
NOx	1,019	612	527	1,090	***6.94%***	653	***6.83%***	575	***9.12%***	None
CO	6,460	5,420	4,797	6,728	***4.15%***	5,637	***4.00%***	5,440	***13.41%***	Yes*
PM-10	93	85	83	109	***17.38%***	103	***20.44%***	105	***26.72%***	Yes*
PM-2.5	52	42	38	57	***9.90%***	47	***12.18%***	46	***20.86%***	Yes*

Notes: * All impacts must be listed in the design approval document. Specific thresholds are not set for these compounds; however, a greater than 10% increase over the No-Build is the commonly used threshold for these compounds.
NOx = nitrogen oxides
VOCs = volatile organic compounds
CO = carbon Monoxide
PM = particulate matter
ETC = Estimated Time of Completion
TEM/EPM = NYSDOT's The Environmental Manual (TEM) 2010 which, for the Air Quality Section, currently adheres to the Environmental Procedures Manual (EPM)

4.0 MICROSCALE/HOT-SPOT ANALYSIS

4.1 Methodology

The methodology for this analysis conforms to the NYSDOT EPM, Chapter I and all subsequent updates that have been distributed by the Engineering Division - Office of Environment (ref. 1). The project was screened per the EPM criteria identified below to determine if microscale analysis was appropriate.

4.2 CO Microscale Analysis Screening

The EPM CO microscale screening is a screening of the corridor to identify potential locations, for further study, that may exceed the air quality standards in the future. The project corridor was screened to determine if any of the intersections under the project's build alternative met the EPM level-of-service, capture criteria, and volume thresholds to warrant a microscale analysis for carbon monoxide (CO). There are three sets of criteria, each of which must be met to warrant the performance of a CO microscale air-quality analysis. These are:

- *Level-of-Service (LOS) Screening*. This criterion states that intersections with a build ETC, ETC+10, and ETC+20 LOS of D, E, or F should be considered for a microscale analysis;

- *Capture Criteria Screening*. Intersections meeting the LOS Screening Criterion should be screened against the following:

  - A 10% or more reduction in source-receptor distance (the straight-line distance between the edge of the travel lane closest to the receptor and that point of the receptor closest to the roadway);

  - A 10% or more increase in traffic volume on affected roadways for ETC, ETC+10, or ETC+20;

  - A 10% or more increase in vehicle emissions for ETC, ETC+10, or ETC+20. Increases in vehicle emissions can be due to speed changes, changes in operating conditions (hot/cold starts), changes in vehicle mix, etc;

  - Any increase in the number of queued lanes; or

- A 20% reduction in speed, when the estimated average speed is 48 km/hr; and

- *Volume Threshold Screening*. Intersections that meet both the LOS Screening and the Capture Criteria Screening must also meet the volume/emission factor thresholds that are presented in the EPM.

Intersections that meet both the volume threshold screening, the LOS screening, and any one of the capture criteria should be considered for CO microscale air-quality analysis.

This project meets some of the above capture criteria; however, under the projected emission factors (based on MOVES analysis), this corridor does not have sufficient volume to meet the volume/emission factor thresholds that are presented under the EPM "Volume Threshold Screening". Therefore, the screening indicated that none of the project's intersections or free-flow areas warrant microscale analysis for CO.

4.3 PM-10 and PM-2.5 Microscale Analysis Screening

In accordance with the TEM/EPM, this project has been screened through the requirements identified in the December 2010 EPA document "Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas" (EPA-420-B-10-040). In accordance with EPA-420-B-10-040, the requirement for a microscale (a.k.a hot-spot) analysis is triggered by a project related significant increase in diesel vehicles. EPA's final rule on PM hot-spot analyses requires localized assessment for projects of air quality concern. The final rule defines the projects of air quality concern that require a $PM_{2.5}$ or PM_{10} hot-spot analysis in 40 CFR 93.123(b)(1) as:

1. New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
2. Projects affecting intersections that are Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
3. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
4. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
5. Projects in or affecting locations, areas, or categories of sites which are identified in the $PM_{2.5}$ or PM_{10} applicable implementation plan or

implementation plan submission, as appropriate, as sites of violation or possible violation.

Since it is not anticipated that the Build Alternative will cause an increase in diesel vehicles, a PM microscale analysis is not warranted for this project.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Emission Analyses

Emission analyses and screenings indicated that the proposed project is not expected to have significant CO, NOx, VOCs, PM-10, and PM-2.5 air-quality impacts. The replacement of the expressway with a full access City street is expected to raise pollutant emission rates between 9% and 27% for the immediate area of the corridor. Regardless, the screening of the corridor indicated that the overall volumes and the heavy vehicle volumes along the corridor are too low (below the thresholds) to warrant an in-depth microscale analysis for CO or PM. Therefore, in accordance with the EPM guidance, the screening indicates that a violation of the NAAQS is considered "extremely unlikely" for CO and PM and no further study is warranted.

5.2 Lead Emissions

The FHWA has advised that a microscale lead analysis for highway projects is not needed or warranted. Lead emissions have been substantially reduced from past levels due to the reduction of lead in gasoline. Future lead emissions will continue to be reduced and eventually eliminated as a result of regulation and legislation. Measures include the prohibition of the manufacture, sale, or introduction into commerce of any engine requiring leaded gasoline (since model year 1992) and the requirement for reformulated gasoline to contain no heavy metals.

5.3 Construction Impacts on Air Quality

Construction vehicles emit pollutants and generate dust during the construction phase. Most pollutants, emitted by either gasoline or diesel powered engines, will have a temporary, minor impact on the study area's air quality. Dust particulates may remain airborne for several hours and, under conducive meteorological conditions, may settle at some distance from the construction site.

Provisions to control construction-generated pollution are specified in Section 107-11 of the NYSDOT <u>Standard Specifications - Construction and Materials</u> (ref. 3). Additional abatement measures to control dust include watering, cover materials, and the application of calcium chloride. The maintenance of construction equipment in proper operating condition will aid in the reduction of vehicle emissions.

Although air quality within the project corridor and the immediate vicinity will experience impacts during the construction period, the use of abatement measures for dust control and proper vehicle maintenance should lessen the severity of these impacts.

6.0 REFERENCES

1. NYSDOT. Environmental Procedures Manual (EPM), prepared by the NYSDOT Engineering Division - Office of Environment (formerly the Environmental Analysis Bureau) 2008. Air Quality Analysis Procedures (Section 8 of Chapter 1.1 was updated in December 2012).

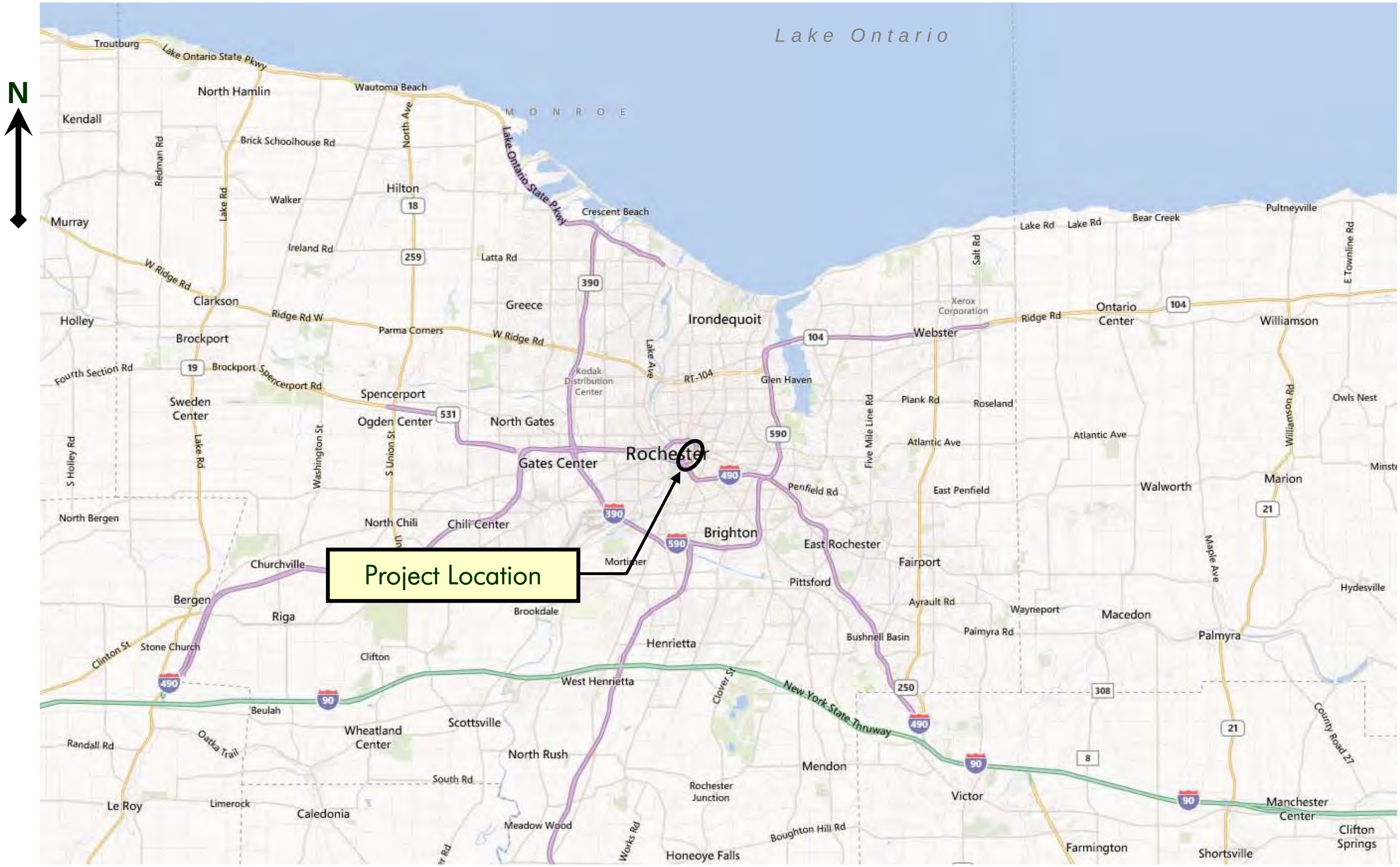
2. NYSDEC. 2011 Annual New York State Air Quality Report, Ambient Air Monitoring System.

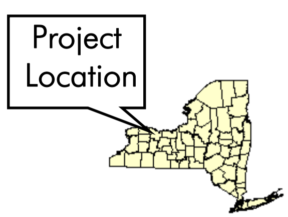
3. NYSDOT. Standard Specifications - Construction and Materials, Section 107-11.

4. USEPA. Transportation Conformity Guidance for 2008 Ozone Nonattainment Areas (EPA-420-B-12-045), July 2012

ATTACHMENT A

Project Location and Study Area Maps





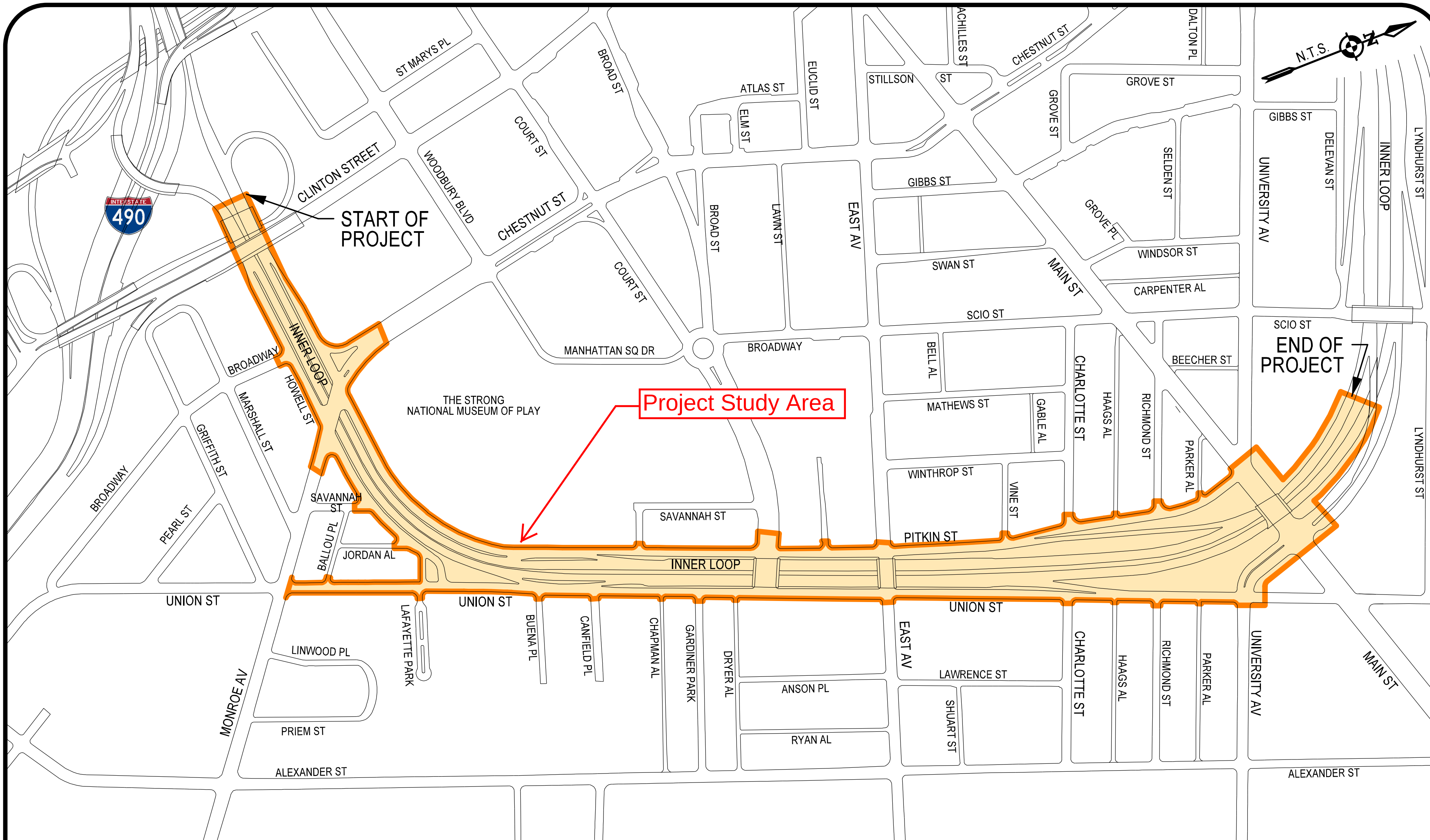
Source: Microsoft Bing 2013.

Watts AE
95 Perry Street
Buffalo, New York

FIGURE 1 – PROJECT LOCATION MAP

P.I.N. 4940.T7
Inner Loop Reconstruction Project
City of Rochester, Monroe County, New York

Not to Scale | November 2013



Stantec
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www.stantec.com

Figure 2 - Project Study Area Map

INNER LOOP EAST RECONSTRCTION PROJECT
SOUTH CLINTON STREET TO EAST MAIN STREET
P.I.N. 4940.T7

ATTACHMENT B

Mesoscale Analysis Summary of Emission Factors

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
MOVES Emission Factors (Watts 9/2013)
For Monroe County
Year: 2015

VOC Rate - Summer Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	MOVES Road Description	2.5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	1.081508	0.572245	0.31938	0.237092	0.185321	0.155468	0.13749	0.125204	0.11582	0.108256	0.101169	0.094288	0.088768	0.086105	0.088565	0.09439
5	Urban Unrestricted Access	1.071215	0.567553	0.317656	0.234841	0.191896	0.161529	0.14081	0.122405	0.108111	0.097443	0.089767	0.084246	0.080382	0.079099	0.082099	0.088955

NOx Rate - Summer Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	MOVES Road Description	2.5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	2.681111	1.611364	1.042925	0.728324	0.587334	0.548596	0.53551	0.527486	0.532107	0.532916	0.526879	0.520129	0.516755	0.539598	0.571631	0.598979
5	Urban Unrestricted Access	2.593106	1.564192	1.037699	0.832118	0.704896	0.61976	0.547747	0.507834	0.490483	0.482247	0.49106	0.497329	0.496267	0.514063	0.548659	0.580553

CO Rate - Winter Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	MOVES Road Description	2.5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	12.08563	7.209222	4.752505	3.874111	3.382078	3.183108	3.203366	3.482826	3.708658	3.847209	3.812181	3.667325	3.561075	3.568721	3.832803	4.456034
5	Urban Unrestricted Access	11.85443	7.478211	5.32956	4.626892	4.150836	3.559637	3.356793	3.084239	2.866326	2.733848	2.690815	2.698389	2.747147	2.871509	3.144278	3.875934

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
MOVES Emission Factors (Watts 9/2013)
For Monroe County
Year: 2025

VOC Rate - Summer Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	MOVES Road Description	2.5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	0.684799	0.362735	0.20281	0.151481	0.118106	0.09845	0.086731	0.078916	0.072749	0.067793	0.063223	0.058496	0.054753	0.053009	0.055311	0.059642
5	Urban Unrestricted Access	0.678224	0.360256	0.20262	0.150336	0.122603	0.102239	0.089263	0.076655	0.066684	0.059267	0.054057	0.05038	0.047897	0.047356	0.050272	0.055471

NOx Rate - Summer Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	MOVES Road Description	2.5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	1.509165	0.897917	0.575973	0.402342	0.325513	0.304449	0.298909	0.298446	0.303775	0.306383	0.304274	0.301369	0.300399	0.315728	0.338687	0.36183
5	Urban Unrestricted Access	1.460643	0.873476	0.573581	0.45716	0.385724	0.337404	0.303924	0.285875	0.27879	0.275985	0.282553	0.287536	0.287741	0.299322	0.323825	0.350271

CO Rate - Winter Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	MOVES Road Description	2.5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	8.250216	5.044826	3.418162	2.835281	2.510799	2.395314	2.450694	2.754228	2.988908	3.139342	3.125572	3.007364	2.924974	2.937968	3.18667	3.767711
5	Urban Unrestricted Access	8.065041	5.310443	3.965906	3.530085	3.191286	2.711528	2.599227	2.396234	2.226845	2.127754	2.104955	2.125659	2.182693	2.300646	2.556421	3.238882

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
MOVES Emission Factors (Watts 9/2013)
For Monroe County
Year: 2035

VOC Rate - Summer Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	**Off-Network**																
2	**Rural Restricted Access**																
3	**Rural Unrestricted Access**																
4	**Urban Restricted Access**	0.567475	0.30144	0.170317	0.127616	0.098167	0.080596	0.069432	0.060226	0.053335	0.047969	0.043968	0.040792	0.038477	0.038146	0.041817	0.047444
5	**Urban Unrestricted Access**	0.56265	0.30006	0.170009	0.126888	0.103751	0.086323	0.075604	0.064648	0.055897	0.049405	0.04473	0.041466	0.03942	0.039191	0.042252	0.047446

NOx Rate - Summer Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	**Off-Network**																
2	**Rural Restricted Access**																
3	**Rural Unrestricted Access**																
4	**Urban Restricted Access**	1.230452	0.743894	0.486032	0.332431	0.262206	0.243704	0.236076	0.232933	0.23583	0.237744	0.236589	0.234959	0.235838	0.250005	0.271486	0.294417
5	**Urban Unrestricted Access**	1.208043	0.72306	0.476519	0.380754	0.319554	0.277961	0.251701	0.238115	0.233443	0.231999	0.237819	0.242231	0.243007	0.251238	0.271288	0.294261

CO Rate - Winter Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	**Off-Network**																
2	**Rural Restricted Access**																
3	**Rural Unrestricted Access**																
4	**Urban Restricted Access**	7.460764	4.644716	3.228764	2.686324	2.359333	2.24149	2.174622	2.103657	2.058939	2.023967	1.983402	1.947225	1.9395	2.065514	2.409576	3.097349
5	**Urban Unrestricted Access**	7.426303	4.958616	3.75493	3.36555	3.046706	2.58054	2.479096	2.288393	2.127027	2.033317	2.012397	2.032672	2.087954	2.19903	2.447254	3.097807

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
MOVES Emission Factors (Watts 9/2013)
For Monroe County

2015 PM10 Rate - Yearly Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	**Off-Network**																
2	**Rural Restricted Access**																
3	**Rural Unrestricted Access**																
4	**Urban Restricted Access**	0.447712	0.24248	0.140535	0.106321	0.081981	0.066806	0.05794	0.051856	0.04776	0.044233	0.03997	0.035004	0.031276	0.029129	0.028086	0.028372
5	**Urban Unrestricted Access**	0.42802	0.229002	0.13071	0.097418	0.080235	0.068696	0.056676	0.04635	0.038894	0.033032	0.028281	0.024983	0.023075	0.022095	0.021878	0.022865

2025 PM10 Rate - Yearly Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	**Off-Network**																
2	**Rural Restricted Access**																
3	**Rural Unrestricted Access**																
4	**Urban Restricted Access**	0.414027	0.224305	0.129196	0.096954	0.073735	0.059115	0.050269	0.04434	0.039933	0.036242	0.032214	0.027839	0.024581	0.022723	0.021819	0.022229
5	**Urban Unrestricted Access**	0.396364	0.211591	0.119537	0.087904	0.071687	0.061348	0.049707	0.04038	0.033345	0.027784	0.023043	0.01978	0.01808	0.01712	0.016827	0.017737

2035 PM10 Rate - Yearly Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	**Off-Network**																
2	**Rural Restricted Access**																
3	**Rural Unrestricted Access**																
4	**Urban Restricted Access**	0.419977	0.224542	0.128004	0.095795	0.072042	0.057132	0.047176	0.039064	0.032898	0.028113	0.023907	0.020323	0.017832	0.016727	0.01651	0.017615
5	**Urban Unrestricted Access**	0.388212	0.207319	0.117093	0.086013	0.069965	0.05983	0.048251	0.039095	0.032139	0.026641	0.022019	0.018854	0.017222	0.016206	0.015829	0.016688

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
MOVES Emission Factors (Watts 9/2013)
For Monroe County

2015 PM2.5 Rate - Yearly Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	0.179187	0.098305	0.058657	0.044713	0.036159	0.03152	0.02975	0.029153	0.029356	0.029181	0.027724	0.025194	0.02327	0.022446	0.022326	0.022992
5	Urban Unrestricted Access	0.171471	0.094402	0.057134	0.04505	0.03856	0.033137	0.028962	0.024773	0.022087	0.020086	0.018688	0.017713	0.017066	0.017083	0.017705	0.019048

2025 PM2.5 Rate - Yearly Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	0.146342	0.080624	0.047661	0.03564	0.028182	0.024091	0.022358	0.021945	0.021873	0.021556	0.020331	0.018361	0.016881	0.016327	0.016339	0.017126
5	Urban Unrestricted Access	0.14067	0.077526	0.046365	0.035907	0.030351	0.026067	0.022258	0.019029	0.016746	0.015031	0.013643	0.012703	0.012258	0.012296	0.012851	0.014129

2035 PM2.5 Rate - Yearly Average PM Peak (gram/mile) - By MOVES Road Type

		Average Vehicle Speed (mph)														
Road Type	**MOVES Road Description**	**2.5**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
1	Off-Network																
2	Rural Restricted Access																
3	Rural Unrestricted Access																
4	Urban Restricted Access	0.140896	0.077181	0.045418	0.033776	0.02628	0.022165	0.019512	0.017186	0.015584	0.014339	0.013024	0.011845	0.011136	0.011284	0.011944	0.013348
5	Urban Unrestricted Access	0.132762	0.07339	0.044007	0.034087	0.028693	0.024601	0.020851	0.017789	0.015582	0.01393	0.012657	0.011812	0.011434	0.011419	0.011895	0.013125

EPA MOVES RunSpec File Name:
    C:\Users\jkellogg\Downloads\Air\MOVES\MOVES Inputs\2015 Monroe Co ERates v05

Description:
Monroe County Emission Rates for 2015

Domain/Scale: County
Calculation Type: Emission Rates
    MOVESScenarioID: Monroe County 2015 Emission Rates

Time Spans:
    Aggregate By: Hour
    Years:
        2015

    Months:
        January
        April
        July
        October
    Days:
        Weekdays
    Hours:
        Begin Hour: 00:00 - 00:59
        End Hour: 23:00 - 23:59

Geographic Bounds:
    LINK geography
    Selection: NEW YORK - Monroe County

On Road Vehicle Equipment:
    Compressed Natural Gas (CNG) - Transit Bus
    Diesel Fuel - Combination Long-haul Truck
    Diesel Fuel - Combination Short-haul Truck
    Diesel Fuel - Intercity Bus
    Diesel Fuel - Light Commercial Truck
    Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car
Diesel Fuel - Passenger Truck
Diesel Fuel - Refuse Truck
Diesel Fuel - School Bus
Diesel Fuel - Single Unit Long-haul Truck
Diesel Fuel - Single Unit Short-haul Truck
Diesel Fuel - Transit Bus
Gasoline - Combination Short-haul Truck
Gasoline - Light Commercial Truck
Gasoline - Motor Home
Gasoline - Motorcycle
Gasoline - Passenger Car
Gasoline - Passenger Truck
Gasoline - Refuse Truck
Gasoline - School Bus
Gasoline - Single Unit Long-haul Truck
Gasoline - Single Unit Short-haul Truck
Gasoline - Transit Bus

Road Types:
Off-Network
Rural Restricted Access
Rural Unrestricted Access
Urban Restricted Access
Urban Unrestricted Access

Pollutants And Processes:
Running Exhaust Carbon Monoxide (CO)
Start Exhaust Carbon Monoxide (CO)
Crankcase Running Exhaust Carbon Monoxide (CO)
Crankcase Start Exhaust Carbon Monoxide (CO)
Crankcase Extended Idle Exhaust Carbon Monoxide (CO)
Extended Idle Exhaust Carbon Monoxide (CO)
Running Exhaust Non-Methane Hydrocarbons
Start Exhaust Non-Methane Hydrocarbons
Evap Permeation Non-Methane Hydrocarbons
Evap Fuel Vapor Venting Non-Methane Hydrocarbons
Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons
Crankcase Start Exhaust Non-Methane Hydrocarbons
Crankcase Extended Idle Exhaust Non-Methane Hydrocarbons
Refueling Displacement Vapor Loss Non-Methane Hydrocarbons
Refueling Spillage Loss Non-Methane Hydrocarbons
Extended Idle Exhaust Non-Methane Hydrocarbons
Running Exhaust Oxides of Nitrogen (NOx)
Start Exhaust Oxides of Nitrogen (NOx)
Crankcase Running Exhaust Oxides of Nitrogen (NOx)
Crankcase Start Exhaust Oxides of Nitrogen (NOx)
Crankcase Extended Idle Exhaust Oxides of Nitrogen (NOx)
Extended Idle Exhaust Oxides of Nitrogen (NOx)
Running Exhaust Primary Exhaust PM10 - Total
Start Exhaust Primary Exhaust PM10 - Total
Crankcase Running Exhaust Primary Exhaust PM10 - Total
Crankcase Start Exhaust Primary Exhaust PM10 - Total
Crankcase Extended Idle Exhaust Primary Exhaust PM10 - Total
Extended Idle Exhaust Primary Exhaust PM10 - Total
Running Exhaust Primary Exhaust PM2.5 - Total
Start Exhaust Primary Exhaust PM2.5 - Total
Crankcase Running Exhaust Primary Exhaust PM2.5 - Total
Crankcase Start Exhaust Primary Exhaust PM2.5 - Total
Crankcase Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Brakewear Primary PM10 - Brakewear Particulate
Running Exhaust Primary PM10 - Elemental Carbon
Start Exhaust Primary PM10 - Elemental Carbon
Crankcase Running Exhaust Primary PM10 - Elemental Carbon
Crankcase Start Exhaust Primary PM10 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Elemental Carbon
Extended Idle Exhaust Primary PM10 - Elemental Carbon
Running Exhaust Primary PM10 - Organic Carbon
Start Exhaust Primary PM10 - Organic Carbon
Crankcase Running Exhaust Primary PM10 - Organic Carbon
Crankcase Start Exhaust Primary PM10 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Organic Carbon
Extended Idle Exhaust Primary PM10 - Organic Carbon

Running Exhaust Primary PM10 - Sulfate Particulate
Start Exhaust Primary PM10 - Sulfate Particulate
Crankcase Running Exhaust Primary PM10 - Sulfate Particulate
Crankcase Start Exhaust Primary PM10 - Sulfate Particulate
Crankcase Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Tirewear Primary PM10 - Tirewear Particulate
Brakewear Primary PM2.5 - Brakewear Particulate
Running Exhaust Primary PM2.5 - Elemental Carbon
Start Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Running Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Start Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Running Exhaust Primary PM2.5 - Organic Carbon
Start Exhaust Primary PM2.5 - Organic Carbon
Crankcase Running Exhaust Primary PM2.5 - Organic Carbon
Crankcase Start Exhaust Primary PM2.5 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Running Exhaust Primary PM2.5 - Sulfate Particulate
Start Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Running Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Start Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Tirewear Primary PM2.5 - Tirewear Particulate
Running Exhaust Total Energy Consumption
Start Exhaust Total Energy Consumption
Extended Idle Exhaust Total Energy Consumption
Running Exhaust Total Gaseous Hydrocarbons
Start Exhaust Total Gaseous Hydrocarbons
Evap Permeation Total Gaseous Hydrocarbons
Evap Fuel Vapor Venting Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons
Crankcase Running Exhaust Total Gaseous Hydrocarbons
Crankcase Start Exhaust Total Gaseous Hydrocarbons
Crankcase Extended Idle Exhaust Total Gaseous Hydrocarbons
Refueling Displacement Vapor Loss Total Gaseous Hydrocarbons
Refueling Spillage Loss Total Gaseous Hydrocarbons
Extended Idle Exhaust Total Gaseous Hydrocarbons
Running Exhaust Volatile Organic Compounds
Start Exhaust Volatile Organic Compounds
Evap Permeation Volatile Organic Compounds
Evap Fuel Vapor Venting Volatile Organic Compounds
Evap Fuel Leaks Volatile Organic Compounds
Crankcase Running Exhaust Volatile Organic Compounds
Crankcase Start Exhaust Volatile Organic Compounds
Crankcase Extended Idle Exhaust Volatile Organic Compounds
Refueling Displacement Vapor Loss Volatile Organic Compounds
Refueling Spillage Loss Volatile Organic Compounds
Extended Idle Exhaust Volatile Organic Compounds

Strategies:

Strategies:

Rate of Progress:
    Rate of Progress calculations are disabled

Manage Input Data Sets:

General Output:
    Output Database Server Name: localhost
    Output Database Name: 2015Monroecoratesv05
    Units:
        Mass Units: Grams
        Energy Units: Million BTU
        Distance Units: Miles
    Activity Outputs:
        Distance Traveled
        Source Hours

        Population

Output Emissions Breakdown:
    Emission Process
    On Road/Off Road
    Road Type
    Source Use Type
    Output Time Step
        Hour
    Geographic Output Detail
        LINK

Advanced Performance Features:
    Do Not Execute:
    Save Data From:
    Do Not Save Generator Data
    Saved Data Database Server Name: [using default]
    Saved Data Database Name: [using default]
    Custom Default Database Server Name: [using default]
    Custom Default Database Name: [using default]
    Perform Final Aggregation (if necessary)
    Remove data from MOVESOutput after creating rates   Remove data from MOVESActivityOutput after creating rates

EPA MOVES RunSpec File Name:
    C:\Users\jkellogg\Downloads\Air\MOVES\MOVES Inputs\2025 Monroe Co ERates v03

Description:
Monroe County Emission Rates for 2025

Domain/Scale: County
Calculation Type: Emission Rates
    MOVESScenarioID: 2025_MonroeCoEmissionRates

Time Spans:
    Aggregate By: Hour
    Years:
        2025

    Months:
        January
        April
        July
        October
    Days:
        Weekdays
    Hours:
        Begin Hour: 00:00 - 00:59
        End Hour: 23:00 - 23:59

Geographic Bounds:
    LINK geography
    Selection: NEW YORK - Monroe County

On Road Vehicle Equipment:
    Compressed Natural Gas (CNG) - Transit Bus
    Diesel Fuel - Combination Long-haul Truck
    Diesel Fuel - Combination Short-haul Truck
    Diesel Fuel - Intercity Bus
    Diesel Fuel - Light Commercial Truck
    Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car
Diesel Fuel - Passenger Truck
Diesel Fuel - Refuse Truck
Diesel Fuel - School Bus
Diesel Fuel - Single Unit Long-haul Truck
Diesel Fuel - Single Unit Short-haul Truck
Diesel Fuel - Transit Bus
Gasoline - Combination Short-haul Truck
Gasoline - Light Commercial Truck
Gasoline - Motor Home
Gasoline - Motorcycle
Gasoline - Passenger Car
Gasoline - Passenger Truck
Gasoline - Refuse Truck
Gasoline - School Bus
Gasoline - Single Unit Long-haul Truck
Gasoline - Single Unit Short-haul Truck
Gasoline - Transit Bus

Road Types:
Off-Network
Rural Restricted Access
Rural Unrestricted Access
Urban Restricted Access
Urban Unrestricted Access

Pollutants And Processes:
Running Exhaust Carbon Monoxide (CO)
Start Exhaust Carbon Monoxide (CO)
Crankcase Running Exhaust Carbon Monoxide (CO)
Crankcase Start Exhaust Carbon Monoxide (CO)
Crankcase Extended Idle Exhaust Carbon Monoxide (CO)
Extended Idle Exhaust Carbon Monoxide (CO)
Running Exhaust Non-Methane Hydrocarbons
Start Exhaust Non-Methane Hydrocarbons
Evap Permeation Non-Methane Hydrocarbons
Evap Fuel Vapor Venting Non-Methane Hydrocarbons
Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons
Crankcase Start Exhaust Non-Methane Hydrocarbons
Crankcase Extended Idle Exhaust Non-Methane Hydrocarbons
Refueling Displacement Vapor Loss Non-Methane Hydrocarbons
Refueling Spillage Loss Non-Methane Hydrocarbons
Extended Idle Exhaust Non-Methane Hydrocarbons
Running Exhaust Oxides of Nitrogen (NOx)
Start Exhaust Oxides of Nitrogen (NOx)
Crankcase Running Exhaust Oxides of Nitrogen (NOx)
Crankcase Start Exhaust Oxides of Nitrogen (NOx)
Crankcase Extended Idle Exhaust Oxides of Nitrogen (NOx)
Extended Idle Exhaust Oxides of Nitrogen (NOx)
Running Exhaust Primary Exhaust PM10 - Total
Start Exhaust Primary Exhaust PM10 - Total
Crankcase Running Exhaust Primary Exhaust PM10 - Total
Crankcase Start Exhaust Primary Exhaust PM10 - Total
Crankcase Extended Idle Exhaust Primary Exhaust PM10 - Total
Extended Idle Exhaust Primary Exhaust PM10 - Total
Running Exhaust Primary Exhaust PM2.5 - Total
Start Exhaust Primary Exhaust PM2.5 - Total
Crankcase Running Exhaust Primary Exhaust PM2.5 - Total
Crankcase Start Exhaust Primary Exhaust PM2.5 - Total
Crankcase Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Brakewear Primary PM10 - Brakewear Particulate
Running Exhaust Primary PM10 - Elemental Carbon
Start Exhaust Primary PM10 - Elemental Carbon
Crankcase Running Exhaust Primary PM10 - Elemental Carbon
Crankcase Start Exhaust Primary PM10 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Elemental Carbon
Extended Idle Exhaust Primary PM10 - Elemental Carbon
Running Exhaust Primary PM10 - Organic Carbon
Start Exhaust Primary PM10 - Organic Carbon
Crankcase Running Exhaust Primary PM10 - Organic Carbon
Crankcase Start Exhaust Primary PM10 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Organic Carbon
Extended Idle Exhaust Primary PM10 - Organic Carbon

Running Exhaust Primary PM10 - Sulfate Particulate
Start Exhaust Primary PM10 - Sulfate Particulate
Crankcase Running Exhaust Primary PM10 - Sulfate Particulate
Crankcase Start Exhaust Primary PM10 - Sulfate Particulate
Crankcase Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Tirewear Primary PM10 - Tirewear Particulate
Brakewear Primary PM2.5 - Brakewear Particulate
Running Exhaust Primary PM2.5 - Elemental Carbon
Start Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Running Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Start Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Running Exhaust Primary PM2.5 - Organic Carbon
Start Exhaust Primary PM2.5 - Organic Carbon
Crankcase Running Exhaust Primary PM2.5 - Organic Carbon
Crankcase Start Exhaust Primary PM2.5 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Running Exhaust Primary PM2.5 - Sulfate Particulate
Start Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Running Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Start Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Tirewear Primary PM2.5 - Tirewear Particulate
Running Exhaust Total Energy Consumption
Start Exhaust Total Energy Consumption
Extended Idle Exhaust Total Energy Consumption
Running Exhaust Total Gaseous Hydrocarbons
Start Exhaust Total Gaseous Hydrocarbons
Evap Permeation Total Gaseous Hydrocarbons
Evap Fuel Vapor Venting Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons
Crankcase Running Exhaust Total Gaseous Hydrocarbons
Crankcase Start Exhaust Total Gaseous Hydrocarbons
Crankcase Extended Idle Exhaust Total Gaseous Hydrocarbons
Refueling Displacement Vapor Loss Total Gaseous Hydrocarbons
Refueling Spillage Loss Total Gaseous Hydrocarbons
Extended Idle Exhaust Total Gaseous Hydrocarbons
Running Exhaust Volatile Organic Compounds
Start Exhaust Volatile Organic Compounds
Evap Permeation Volatile Organic Compounds
Evap Fuel Vapor Venting Volatile Organic Compounds
Evap Fuel Leaks Volatile Organic Compounds
Crankcase Running Exhaust Volatile Organic Compounds
Crankcase Start Exhaust Volatile Organic Compounds
Crankcase Extended Idle Exhaust Volatile Organic Compounds
Refueling Displacement Vapor Loss Volatile Organic Compounds
Refueling Spillage Loss Volatile Organic Compounds
Extended Idle Exhaust Volatile Organic Compounds

Strategies:

Strategies:

Rate of Progress:
Rate of Progress calculations are disabled

Manage Input Data Sets:

General Output:
Output Database Server Name: localhost
Output Database Name: 2025Monroecoratesv05
Units:
Mass Units: Grams
Energy Units: Million BTU
Distance Units: Miles
Activity Outputs:
Distance Traveled
Source Hours

Population

Output Emissions Breakdown:

Emission Process

On Road/Off Road

Road Type

Source Use Type

Output Time Step

Hour

Geographic Output Detail

LINK

Advanced Performance Features:

Do Not Execute:

Save Data From:

Do Not Save Generator Data

Saved Data Database Server Name: [using default]

Saved Data Database Name: [using default]

Custom Default Database Server Name: [using default]

Custom Default Database Name: [using default]

Perform Final Aggregation (if necessary)

Remove data from MOVESOutput after creating rates   Remove data from MOVESActivityOutput after creating rates

EPA MOVES RunSpec File Name:
    C:\Users\jkellogg\Downloads\Air\MOVES\MOVES Inputs\2035 Monroe Co ERates v05

Description:
MonroeCoER2035

Domain/Scale: County
Calculation Type: Emission Rates
    MOVESScenarioID: 2035_MonroeCoEmissionRates

Time Spans:
    Aggregate By: Hour
    Years:
        2035

    Months:
        January
        April
        July
        October
    Days:
        Weekdays
    Hours:
        Begin Hour: 00:00 - 00:59
        End Hour: 23:00 - 23:59

Geographic Bounds:
    LINK geography
    Selection: NEW YORK - Monroe County

On Road Vehicle Equipment:
    Compressed Natural Gas (CNG) - Transit Bus
    Diesel Fuel - Combination Long-haul Truck
    Diesel Fuel - Combination Short-haul Truck
    Diesel Fuel - Intercity Bus
    Diesel Fuel - Light Commercial Truck
    Diesel Fuel - Motor Home

    Diesel Fuel - Passenger Car
    Diesel Fuel - Passenger Truck
    Diesel Fuel - Refuse Truck
    Diesel Fuel - School Bus
    Diesel Fuel - Single Unit Long-haul Truck
    Diesel Fuel - Single Unit Short-haul Truck
    Diesel Fuel - Transit Bus
    Gasoline - Combination Short-haul Truck
    Gasoline - Light Commercial Truck
    Gasoline - Motor Home
    Gasoline - Motorcycle
    Gasoline - Passenger Car
    Gasoline - Passenger Truck
    Gasoline - Refuse Truck
    Gasoline - School Bus
    Gasoline - Single Unit Long-haul Truck
    Gasoline - Single Unit Short-haul Truck
    Gasoline - Transit Bus

Road Types:
    Off-Network
    Rural Restricted Access
    Rural Unrestricted Access
    Urban Restricted Access
    Urban Unrestricted Access

Pollutants And Processes:
    Running Exhaust Carbon Monoxide (CO)
    Start Exhaust Carbon Monoxide (CO)
    Crankcase Running Exhaust Carbon Monoxide (CO)
    Crankcase Start Exhaust Carbon Monoxide (CO)
    Crankcase Extended Idle Exhaust Carbon Monoxide (CO)
    Extended Idle Exhaust Carbon Monoxide (CO)
    Running Exhaust Non-Methane Hydrocarbons
    Start Exhaust Non-Methane Hydrocarbons
    Evap Permeation Non-Methane Hydrocarbons
    Evap Fuel Vapor Venting Non-Methane Hydrocarbons
    Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons
Crankcase Start Exhaust Non-Methane Hydrocarbons
Crankcase Extended Idle Exhaust Non-Methane Hydrocarbons
Refueling Displacement Vapor Loss Non-Methane Hydrocarbons
Refueling Spillage Loss Non-Methane Hydrocarbons
Extended Idle Exhaust Non-Methane Hydrocarbons
Running Exhaust Oxides of Nitrogen (NOx)
Start Exhaust Oxides of Nitrogen (NOx)
Crankcase Running Exhaust Oxides of Nitrogen (NOx)
Crankcase Start Exhaust Oxides of Nitrogen (NOx)
Crankcase Extended Idle Exhaust Oxides of Nitrogen (NOx)
Extended Idle Exhaust Oxides of Nitrogen (NOx)
Running Exhaust Primary Exhaust PM10 - Total
Start Exhaust Primary Exhaust PM10 - Total
Crankcase Running Exhaust Primary Exhaust PM10 - Total
Crankcase Start Exhaust Primary Exhaust PM10 - Total
Crankcase Extended Idle Exhaust Primary Exhaust PM10 - Total
Extended Idle Exhaust Primary Exhaust PM10 - Total
Running Exhaust Primary Exhaust PM2.5 - Total
Start Exhaust Primary Exhaust PM2.5 - Total
Crankcase Running Exhaust Primary Exhaust PM2.5 - Total
Crankcase Start Exhaust Primary Exhaust PM2.5 - Total
Crankcase Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Brakewear Primary PM10 - Brakewear Particulate
Running Exhaust Primary PM10 - Elemental Carbon
Start Exhaust Primary PM10 - Elemental Carbon
Crankcase Running Exhaust Primary PM10 - Elemental Carbon
Crankcase Start Exhaust Primary PM10 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Elemental Carbon
Extended Idle Exhaust Primary PM10 - Elemental Carbon
Running Exhaust Primary PM10 - Organic Carbon
Start Exhaust Primary PM10 - Organic Carbon
Crankcase Running Exhaust Primary PM10 - Organic Carbon
Crankcase Start Exhaust Primary PM10 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Organic Carbon
Extended Idle Exhaust Primary PM10 - Organic Carbon

Running Exhaust Primary PM10 - Sulfate Particulate
Start Exhaust Primary PM10 - Sulfate Particulate
Crankcase Running Exhaust Primary PM10 - Sulfate Particulate
Crankcase Start Exhaust Primary PM10 - Sulfate Particulate
Crankcase Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Tirewear Primary PM10 - Tirewear Particulate
Brakewear Primary PM2.5 - Brakewear Particulate
Running Exhaust Primary PM2.5 - Elemental Carbon
Start Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Running Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Start Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Running Exhaust Primary PM2.5 - Organic Carbon
Start Exhaust Primary PM2.5 - Organic Carbon
Crankcase Running Exhaust Primary PM2.5 - Organic Carbon
Crankcase Start Exhaust Primary PM2.5 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Running Exhaust Primary PM2.5 - Sulfate Particulate
Start Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Running Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Start Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Tirewear Primary PM2.5 - Tirewear Particulate
Running Exhaust Total Energy Consumption
Start Exhaust Total Energy Consumption
Extended Idle Exhaust Total Energy Consumption
Running Exhaust Total Gaseous Hydrocarbons
Start Exhaust Total Gaseous Hydrocarbons
Evap Permeation Total Gaseous Hydrocarbons
Evap Fuel Vapor Venting Total Gaseous Hydrocarbons

    Evap Fuel Leaks Total Gaseous Hydrocarbons
    Crankcase Running Exhaust Total Gaseous Hydrocarbons
    Crankcase Start Exhaust Total Gaseous Hydrocarbons
    Crankcase Extended Idle Exhaust Total Gaseous Hydrocarbons
    Refueling Displacement Vapor Loss Total Gaseous Hydrocarbons
    Refueling Spillage Loss Total Gaseous Hydrocarbons
    Extended Idle Exhaust Total Gaseous Hydrocarbons
    Running Exhaust Volatile Organic Compounds
    Start Exhaust Volatile Organic Compounds
    Evap Permeation Volatile Organic Compounds
    Evap Fuel Vapor Venting Volatile Organic Compounds
    Evap Fuel Leaks Volatile Organic Compounds
    Crankcase Running Exhaust Volatile Organic Compounds
    Crankcase Start Exhaust Volatile Organic Compounds
    Crankcase Extended Idle Exhaust Volatile Organic Compounds
    Refueling Displacement Vapor Loss Volatile Organic Compounds
    Refueling Spillage Loss Volatile Organic Compounds
    Extended Idle Exhaust Volatile Organic Compounds

Strategies:

Strategies:

Rate of Progress:
    Rate of Progress calculations are disabled

Manage Input Data Sets:

General Output:
    Output Database Server Name: localhost
    Output Database Name: 2035monroecoratesv05
    Units:
        Mass Units: Grams
        Energy Units: Million BTU
        Distance Units: Miles
    Activity Outputs:
        Distance Traveled
        Source Hours

Population

Output Emissions Breakdown:

Emission Process

On Road/Off Road

Road Type

Source Use Type

Output Time Step

Hour

Geographic Output Detail

LINK

Advanced Performance Features:

Do Not Execute:

Save Data From:

Do Not Save Generator Data

Saved Data Database Server Name: [using default]

Saved Data Database Name: [using default]

Custom Default Database Server Name: [using default]

Custom Default Database Name: [using default]

Perform Final Aggregation (if necessary)

Remove data from MOVESOutput after creating rates   Remove data from MOVESActivityOutput after creating rates

ATTACHMENT C

Mesoscale Analysis Calculation Tables/Spreadsheets

Inner Loop Corridor (PIN 4940.T7)

MESOSCALE ANALYSIS

No-Build ETC — ETC Year = 2015; % Project Growth RATE = NA

Link Input Data

TOTAL NO-BUILD ETC VOC EMISSIONS BURDEN =	236	g/hr
TOTAL NO-BUILD ETC NOx EMISSIONS BURDEN =	1,019	g/hr
TOTAL NO-BUILD ETC CO EMISSIONS BURDEN =	6,460	g/hr
TOTAL NO-BUILD ETC PM-10 EMISSIONS BURDEN =	93	g/hr
TOTAL NO-BUILD ETC PM-2.5 EMISSIONS BURDEN =	52	g/hr

(fill in yellow shaded areas only)

Link No.	Link Description	MOVES Source	Speed (5 mph incr)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (ft)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
1	C IL EB-1	4	50	1409364	1149606	1409460	1149625	230	97.86	0.019	4.26	0.10117	0.43	0.52688	2.25	3.81218	16.25	0.03997	0.17	0.02772	0.12
2	C IL EB-2	4	50	1409460	1149625	1409653	1149655	230	195.32	0.037	8.51	0.10117	0.86	0.52688	4.48	3.81218	32.43	0.03997	0.34	0.02772	0.24
3	C IL EB-3	4	50	1409653	1149655	1410128	1149703	230	477.42	0.090	20.80	0.10117	2.10	0.52688	10.96	3.81218	79.28	0.03997	0.83	0.02772	0.58
4	C IL EB-4	4	50	1410128	1149703	1410299	1149720	230	171.84	0.033	7.49	0.10117	0.76	0.52688	3.94	3.81218	28.54	0.03997	0.30	0.02772	0.21
5	C IL EB-5	4	50	1410299	1149720	1410497	1149743	230	199.33	0.038	8.68	0.10117	0.88	0.52688	4.57	3.81218	33.10	0.03997	0.35	0.02772	0.24
6	C IL EB-6	4	50	1410497	1149743	1410660	1149798	230	172.03	0.033	7.49	0.10117	0.76	0.52688	3.95	3.81218	28.57	0.03997	0.30	0.02772	0.21
7	C IL EB-7	4	50	1410660	1149798	1410795	1149883	230	159.53	0.030	6.95	0.10117	0.70	0.52688	3.66	3.81218	26.49	0.03997	0.28	0.02772	0.19
8	C IL EB-8	4	50	1410795	1149883	1410907	1149991	230	155.59	0.029	6.78	0.10117	0.69	0.52688	3.57	3.81218	25.84	0.03997	0.27	0.02772	0.19
9	C IL EB-9	4	50	1410907	1149991	1410958	1150059	230	85.00	0.016	3.70	0.10117	0.37	0.52688	1.95	3.81218	14.12	0.03997	0.15	0.02772	0.10
10	C IL EB-10	4	50	1410958	1150059	1411056	1150245	203	210.24	0.040	8.08	0.10117	0.82	0.52688	4.26	3.81218	30.81	0.03997	0.32	0.02772	0.22
11	C IL EB-11	4	50	1411056	1150245	1411132	1150430	203	200.00	0.038	7.69	0.10117	0.78	0.52688	4.05	3.81218	29.31	0.03997	0.31	0.02772	0.21
12	C IL EB-12	4	50	1411132	1150430	1411181	1150560	203	138.93	0.026	5.34	0.10117	0.54	0.52688	2.81	3.81218	20.36	0.03997	0.21	0.02772	0.15
13	C IL EB-13	4	50	1411181	1150560	1411412	1151135	430	619.67	0.117	50.47	0.10117	5.11	0.52688	26.59	3.81218	192.38	0.03997	2.02	0.02772	1.40
14	C IL EB-14	4	50	1411412	1151135	1411485	1151320	430	198.88	0.038	16.20	0.10117	1.64	0.52688	8.53	3.81218	61.75	0.03997	0.65	0.02772	0.45
15	C IL EB-15	4	50	1411485	1151320	1411641	1151745	224	452.73	0.086	19.21	0.10117	1.94	0.52688	10.12	3.81218	73.22	0.03997	0.77	0.02772	0.53
16	C IL EB-16	4	50	1411641	1151745	1411798	1152227	224	506.93	0.096	21.51	0.10117	2.18	0.52688	11.33	3.81218	81.98	0.03997	0.86	0.02772	0.60
17	C IL EB-17	4	50	1411798	1152227	1411825	1152365	224	140.62	0.027	5.97	0.10117	0.60	0.52688	3.14	3.81218	22.74	0.03997	0.24	0.02772	0.17
18	C IL EB-18	4	50	1411825	1152365	1411834	1152489	224	124.33	0.024	5.27	0.10117	0.53	0.52688	2.78	3.81218	20.11	0.03997	0.21	0.02772	0.15
19	C IL EB-19	4	50	1411834	1152489	1411823	1152653	224	164.37	0.031	6.97	0.10117	0.71	0.52688	3.67	3.81218	26.58	0.03997	0.28	0.02772	0.19
20	C IL EB-20	4	50	1411823	1152653	1411780	1152836	224	187.98	0.036	7.98	0.10117	0.81	0.52688	4.20	3.81218	30.40	0.03997	0.32	0.02772	0.22
21	C IL EB-21	4	50	1411780	1152836	1411684	1153037	224	222.75	0.042	9.45	0.10117	0.96	0.52688	4.98	3.81218	36.02	0.03997	0.38	0.02772	0.26
22	C IL EB-22	4	50	1411684	1153037	1411617	1153138	224	121.20	0.023	5.14	0.10117	0.52	0.52688	2.71	3.81218	19.60	0.03997	0.21	0.02772	0.14
23	C IL EB-23	4	50	1411617	1153138	1411545	1153222	224	110.63	0.021	4.69	0.10117	0.47	0.52688	2.47	3.81218	17.89	0.03997	0.19	0.02772	0.13
24	C IL WB-1	4	50	1411498	1153176	1411571	1153102	375	103.95	0.020	7.38	0.10117	0.75	0.52688	3.89	3.81218	28.14	0.03997	0.30	0.02772	0.20
25	C IL WB-2	4	50	1411571	1153102	1411639	1153016	375	109.64	0.021	7.79	0.10117	0.79	0.52688	4.10	3.81218	29.68	0.03997	0.31	0.02772	0.22
26	C IL WB-3	4	50	1411639	1153016	1411736	1152830	375	209.77	0.040	14.90	0.10117	1.51	0.52688	7.85	3.81218	56.80	0.03997	0.60	0.02772	0.41
27	C IL WB-4	4	50	1411736	1152830	1411784	1152652	375	184.36	0.035	13.09	0.10117	1.32	0.52688	6.90	3.81218	49.92	0.03997	0.52	0.02772	0.36
28	C IL WB-5	4	50	1411784	1152652	1411796	1152489	224	163.44	0.031	6.93	0.10117	0.70	0.52688	3.65	3.81218	26.43	0.03997	0.28	0.02772	0.19
29	C IL WB-6	4	50	1411796	1152489	1411786	1152371	224	118.42	0.022	5.02	0.10117	0.51	0.52688	2.65	3.81218	19.15	0.03997	0.20	0.02772	0.14
30	C IL WB-7	4	50	1411786	1152371	1411752	1152230	224	145.04	0.027	6.15	0.10117	0.62	0.52688	3.24	3.81218	23.46	0.03997	0.25	0.02772	0.17
31	C IL WB-8	4	50	1411752	1152230	1411601	1151755	224	498.42	0.094	21.15	0.10117	2.14	0.52688	11.14	3.81218	80.61	0.03997	0.85	0.02772	0.59
32	C IL WB-9	4	50	1411601	1151755	1411374	1151161	224	635.90	0.120	26.98	0.10117	2.73	0.52688	14.21	3.81218	102.84	0.03997	1.08	0.02772	0.75
33	C IL WB-10	4	50	1411374	1151161	1411134	1150550	224	656.45	0.124	27.85	0.10117	2.82	0.52688	14.67	3.81218	106.17	0.03997	1.11	0.02772	0.77
34	C IL WB-11	4	50	1411134	1150550	1411020	1150257	224	314.40	0.060	13.34	0.10117	1.35	0.52688	7.03	3.81218	50.85	0.03997	0.53	0.02772	0.37
35	C IL WB-12	4	50	1411020	1150257	1410933	1150077	179	199.92	0.038	6.78	0.10117	0.69	0.52688	3.57	3.81218	25.84	0.03997	0.27	0.02772	0.19
36	C IL WB-13	4	50	1410933	1150077	1410881	1150005	179	88.81	0.017	3.01	0.10117	0.30	0.52688	1.59	3.81218	11.48	0.03997	0.12	0.02772	0.08
37	C IL WB-14	4	50	1410881	1150005	1410784	1149910	476	135.77	0.026	12.24	0.10117	1.24	0.52688	6.45	3.81218	46.66	0.03997	0.49	0.02772	0.34
38	C IL WB-15	4	50	1410784	1149910	1410702	1149857	476	97.64	0.018	8.80	0.10117	0.89	0.52688	4.64	3.81218	33.56	0.03997	0.35	0.02772	0.24
39	C IL WB-16	4	50	1410702	1149857	1410604	1149806	476	110.48	0.021	9.96	0.10117	1.01	0.52688	5.25	3.81218	37.97	0.03997	0.40	0.02772	0.28
40	C IL WB-17	4	50	1410604	1149806	1410490	1149773	476	118.68	0.022	10.70	0.10117	1.08	0.52688	5.64	3.81218	40.79	0.03997	0.43	0.02772	0.30
41	C IL WB-18	4	50	1410490	1149773	1410275	1149749	476	216.34	0.041	19.50	0.10117	1.97	0.52688	10.28	3.81218	74.35	0.03997	0.78	0.02772	0.54
42	C IL WB-19	4	50	1410275	1149749	1410114	1149731	476	162.00	0.031	14.60	0.10117	1.48	0.52688	7.69	3.81218	55.68	0.03997	0.58	0.02772	0.40
43	C IL WB-20	4	50	1410114	1149731	1409478	1149672	476	638.73	0.121	57.58	0.10117	5.83	0.52688	30.34	3.81218	219.52	0.03997	2.30	0.02772	1.60
44	C IL WB-21	4	50	1409478	1149672	1409359	1149672	476	119.00	0.023	10.73	0.10117	1.09	0.52688	5.65	3.81218	40.90	0.03997	0.43	0.02772	0.30
45	C IL WB-22	4	50	1409359	1149672	1409359	1149672	1902	0.00	0.000	0.00	0.10117	0.00	0.52688	0.00	3.81218	0.00	0.03997	0.00	0.02772	0.00
46	A Union-1	5	25	1410726	1149275	1410794	1149464	365	200.86	0.038	13.89	0.16153	2.24	0.61976	8.61	3.55964	49.43	0.06870	0.95	0.03314	0.46
47	A Union-2	5	30	1410794	1149464	1410911	1149769	365	326.67	0.062	22.58	0.14081	3.18	0.54775	12.37	3.35679	75.80	0.05668	1.28	0.02896	0.65
48	A Union-3	5	30	1410911	1149769	1410943	1149866	365	102.14	0.019	7.06	0.14081	0.99	0.54775	3.87	3.35679	23.70	0.05668	0.40	0.02896	0.20
49	A Union-4	5	35	1410943	1149866	1410991	1149988	435	131.10	0.025	10.80	0.12241	1.32	0.50783	5.49	3.08424	33.31	0.04635	0.50	0.02477	0.27
50	C Union-5	5	35	1410991	1149988	1411077	1150170	435	201.30	0.038	16.58	0.12241	2.03	0.50783	8.42	3.08424	51.15	0.04635	0.77	0.02477	0.41
51	C Union-6	5	35	1411077	1150170	1411114	1150254	435	91.79	0.017	7.56	0.12241	0.93	0.50783	3.84	3.08424	23.32	0.04635	0.35	0.02477	0.19
52	C Union-7	5	35	1411114	1150254	1411158	1150359	226	113.85	0.022	4.87	0.12241	0.60	0.50783	2.47	3.08424	15.03	0.04635	0.23	0.02477	0.12

Link No.	Link Description	MOVES Source	Speed (5 mph incr)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (ft)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
53	C Union-8	5	35	1411158	1150359	1411247	1150588	226	245.69	0.047	10.52	0.12241	1.29	0.50783	5.34	3.08424	32.43	0.04635	0.49	0.02477	0.26
54	C Union-9	5	35	1411247	1150588	1411296	1150708	226	129.62	0.025	5.55	0.12241	0.68	0.50783	2.82	3.08424	17.11	0.04635	0.26	0.02477	0.14
55	C Union-10	5	30	1411296	1150708	1411333	1150786	226	86.33	0.016	3.70	0.14081	0.52	0.54775	2.02	3.35679	12.40	0.05668	0.21	0.02896	0.11
56	Q Union-11 2 Broad	5	25	1411333	1150786	1411371	1150880	170	101.39	0.019	3.26	0.16153	0.53	0.61976	2.02	3.55964	11.62	0.06870	0.22	0.03314	0.11
57	A Union-12	5	35	1411371	1150880	1411495	1151218	420	360.03	0.068	28.64	0.12241	3.51	0.50783	14.54	3.08424	88.33	0.04635	1.33	0.02477	0.71
58	Q Union-13 2 East	5	25	1411495	1151218	1411534	1151314	210	103.62	0.020	4.12	0.16153	0.67	0.61976	2.55	3.55964	14.67	0.06870	0.28	0.03314	0.14
59	A Union-14	5	35	1411534	1151314	1411798	1151958	259	696.01	0.132	34.14	0.12241	4.18	0.50783	17.34	3.08424	105.30	0.04635	1.58	0.02477	0.85
60	C Union-15	5	30	1411798	1151958	1411898	1152195	317	257.23	0.049	15.44	0.14081	2.17	0.54775	8.46	3.35679	51.84	0.05668	0.88	0.02896	0.45
61	C Union-16	5	30	1411898	1152195	1411977	1152406	561	225.30	0.043	23.94	0.14081	3.37	0.54775	13.11	3.35679	80.36	0.05668	1.36	0.02896	0.69
62	Q Union-17 2 University	5	25	1411977	1152406	1412017	1152506	561	107.70	0.020	11.44	0.16153	1.85	0.61976	7.09	3.55964	40.73	0.06870	0.79	0.03314	0.38
63	A Union-18	5	30	1412017	1152506	1412106	1152728	300	239.18	0.045	13.59	0.14081	1.91	0.54775	7.44	3.35679	45.62	0.05668	0.77	0.02896	0.39
64	Q Union 2 Broad Lt	5	10	1411320	1150792	1411357	1150885	56	100.09	0.019	1.06	0.31766	0.34	1.03770	1.10	5.32956	5.66	0.13071	0.14	0.05713	0.06
65	Q Union 2 East Rt	5	15	1411513	1151212	1411550	1151310	210	104.75	0.020	4.17	0.23484	0.98	0.83212	3.47	4.62689	19.28	0.09742	0.41	0.04505	0.19
66	A Pitkin-1	5	35	1411534	1152741	1411600	1152704	140	75.66	0.014	2.01	0.12241	0.25	0.50783	1.02	3.08424	6.19	0.04635	0.09	0.02477	0.05
67	A Pitkin-2	5	35	1411600	1152704	1411634	1152640	140	72.47	0.014	1.92	0.12241	0.24	0.50783	0.98	3.08424	5.93	0.04635	0.09	0.02477	0.05
68	A Pitkin-3	5	40	1411634	1152640	1411659	1152545	140	98.23	0.019	2.60	0.10811	0.28	0.49048	1.28	2.86633	7.47	0.03889	0.10	0.02209	0.06
69	A Pitkin-4	5	40	1411659	1152545	1411662	1152454	140	91.05	0.017	2.41	0.10811	0.26	0.49048	1.18	2.86633	6.92	0.03889	0.09	0.02209	0.05
70	A Pitkin-5	5	40	1411662	1152454	1411645	1152364	140	91.59	0.017	2.43	0.10811	0.26	0.49048	1.19	2.86633	6.96	0.03889	0.09	0.02209	0.05
71	C Pitkin-6	5	40	1411645	1152364	1411584	1152097	140	273.88	0.052	7.26	0.10811	0.79	0.49048	3.56	2.86633	20.82	0.03889	0.28	0.02209	0.16
72	C Pitkin-7	5	40	1411584	1152097	1411544	1151894	126	206.90	0.039	4.94	0.10811	0.53	0.49048	2.42	2.86633	14.15	0.03889	0.19	0.02209	0.11
73	C Pitkin-8	5	35	1411544	1151894	1411537	1151806	126	88.28	0.017	2.11	0.12241	0.26	0.50783	1.07	3.08424	6.50	0.04635	0.10	0.02477	0.05
74	C Pitkin-9	5	35	1411537	1151806	1411451	1151533	338	286.23	0.054	18.32	0.12241	2.24	0.50783	9.30	3.08424	56.51	0.04635	0.85	0.02477	0.45
75	Q Pitkin-10 2 East	5	25	1411451	1151533	1411417	1151431	338	107.52	0.020	6.88	0.16153	1.11	0.61976	4.27	3.55964	24.50	0.06870	0.47	0.03314	0.23
76	A Pitkin-11	5	35	1411417	1151431	1411313	1151145	263	304.32	0.058	15.16	0.12241	1.86	0.50783	7.70	3.08424	46.75	0.04635	0.70	0.02477	0.38
77	Q Pitkin-12 2 Broad	5	25	1411313	1151145	1411274	1151045	263	107.34	0.020	5.35	0.16153	0.86	0.61976	3.31	3.55964	19.03	0.06870	0.37	0.03314	0.18
78	A Pitkin-13	5	40	1411274	1151045	1411076	1150549	377	534.06	0.101	38.13	0.10811	4.12	0.49048	18.70	2.86633	109.30	0.03889	1.48	0.02209	0.84
79	A Pitkin-14	5	35	1411076	1150549	1410982	1150298	397	268.02	0.051	20.15	0.12241	2.47	0.50783	10.23	3.08424	62.16	0.04635	0.93	0.02477	0.50
80	A Pitkin-15	5	35	1410982	1150298	1410914	1150138	159	173.85	0.033	5.24	0.12241	0.64	0.50783	2.66	3.08424	16.15	0.04635	0.24	0.02477	0.13
81	C Pitkin-16	5	35	1410914	1150138	1410855	1150035	159	118.70	0.022	3.57	0.12241	0.44	0.50783	1.82	3.08424	11.02	0.04635	0.17	0.02477	0.09
82	C Pitkin-17	5	35	1410855	1150035	1410729	1149918	241	171.94	0.033	7.85	0.12241	0.96	0.50783	3.99	3.08424	24.21	0.04635	0.36	0.02477	0.19
83	C Pitkin-18	5	35	1410729	1149918	1410615	1149853	241	131.23	0.025	5.99	0.12241	0.73	0.50783	3.04	3.08424	18.47	0.04635	0.28	0.02477	0.15
84	C Pitkin-19	5	35	1410615	1149853	1410495	1149813	241	126.49	0.024	5.77	0.12241	0.71	0.50783	2.93	3.08424	17.81	0.04635	0.27	0.02477	0.14
85	C Pitkin-20	5	35	1410495	1149813	1410311	1149789	241	185.56	0.035	8.47	0.12241	1.04	0.50783	4.30	3.08424	26.12	0.04635	0.39	0.02477	0.21
86	Q Pitkin-21 W 2 Chestnut	5	25	1410311	1149789	1410191	1149778	241	120.50	0.023	5.50	0.16153	0.89	0.61976	3.41	3.55964	19.58	0.06870	0.38	0.03314	0.18
87	A Pitkin-22	5	35	1410191	1149778	1410150	1149775	241	41.11	0.008	1.88	0.12241	0.23	0.50783	0.95	3.08424	5.79	0.04635	0.09	0.02477	0.05
88	A Pitkin-23	5	35	1410150	1149775	1409937	1149749	318	214.58	0.041	12.92	0.12241	1.58	0.50783	6.56	3.08424	39.86	0.04635	0.60	0.02477	0.32
89	A Pitkin-24	5	35	1409937	1149749	1409725	1149728	1426	213.04	0.040	57.54	0.12241	7.04	0.50783	29.22	3.08424	177.46	0.04635	2.67	0.02477	1.43
90	C Pitkin-25	5	35	1409725	1149728	1409476	1149694	1426	251.31	0.048	67.87	0.12241	8.31	0.50783	34.47	3.08424	209.34	0.04635	3.15	0.02477	1.68
91	C Howell-1	5	35	1409364	1149606	1409675	1149624	165	311.52	0.059	9.74	0.12241	1.19	0.50783	4.94	3.08424	30.03	0.04635	0.45	0.02477	0.24
92	C Howell-2	5	35	1409675	1149624	1409962	1149652	165	288.36	0.055	9.01	0.12241	1.10	0.50783	4.58	3.08424	27.79	0.04635	0.42	0.02477	0.22
93	C Howell-3	5	30	1409962	1149652	1410121	1149667	165	159.71	0.030	4.99	0.14081	0.70	0.54775	2.73	3.35679	16.75	0.05668	0.28	0.02896	0.14
94	Q Howell-4 E 2 Monroe	5	20	1410121	1149667	1410202	1149673	165	81.22	0.015	2.54	0.19190	0.49	0.70490	1.79	4.15084	10.54	0.08023	0.20	0.03856	0.10
95	A Howell-5	5	25	1410202	1149673	1410308	1149672	76	106.00	0.020	1.53	0.16153	0.25	0.61976	0.95	3.55964	5.43	0.06870	0.10	0.03314	0.05
96	A Howell-6	5	35	1410308	1149672	1410586	1149728	76	283.58	0.054	4.08	0.12241	0.50	0.50783	2.07	3.08424	12.59	0.04635	0.19	0.02477	0.10
97	C Howell-7	5	30	1410586	1149728	1410805	1149840	70	245.98	0.047	3.26	0.14081	0.46	0.54775	1.79	3.35679	10.95	0.05668	0.18	0.02896	0.09
98	C Howell-8	5	15	1410805	1149840	1410855	1149874	70	60.46	0.011	0.80	0.23484	0.19	0.83212	0.67	4.62689	3.71	0.09742	0.08	0.04505	0.04
99	Q Howell-9 2 Union	5	10	1410855	1149874	1410926	1149862	70	72.01	0.014	0.95	0.31766	0.30	1.03770	0.99	5.32956	5.09	0.13071	0.12	0.05713	0.05
100	C Clinton NB-2	5	45	1409587	1149436	1409518	1149816	1654	386.21	0.073	120.98	0.09744	11.79	0.48225	58.34	2.73385	330.75	0.03303	4.00	0.02009	2.43
101	Q Monroe N-6 2 Howell	5	25	1410413	1149572	1410329	1149638	530	106.83	0.020	10.72	0.16153	1.73	0.61976	6.65	3.55964	38.17	0.06870	0.74	0.03314	0.36
102	A Monroe N-7	5	35	1410329	1149638	1410242	1149704	601	109.20	0.021	12.43	0.12241	1.52	0.50783	6.31	3.08424	38.34	0.04635	0.58	0.02477	0.31
103	Q Monroe N 2 Chestnut	5	25	1410242	1149704	1410190	1149743	601	65.00	0.012	7.40	0.16153	1.20	0.61976	4.59	3.55964	26.34	0.06870	0.51	0.03314	0.25
104	A Chestnut N-1	5	35	1410190	1149743	1410150	1149775	392	51.22	0.010	3.80	0.12241	0.47	0.50783	1.93	3.08424	11.73	0.04635	0.18	0.02477	0.09
105	A Chestnut N-2	5	35	1410150	1149775	1410099	1149832	392	76.49	0.014	5.68	0.12241	0.70	0.50783	2.88	3.08424	17.51	0.04635	0.26	0.02477	0.14
106	A Chestnut N-3	5	35	1410099	1149832	1410056	1149907	392	86.45	0.016	6.42	0.12241	0.79	0.50783	3.26	3.08424	19.80	0.04635	0.30	0.02477	0.16
107	A Chestnut N-4	5	35	1410056	1149907	1410021	1150013	392	111.63	0.021	8.29	0.12241	1.01	0.50783	4.21	3.08424	25.56	0.04635	0.38	0.02477	0.21
108	C Chestnut S-1	5	35	1409995	1150019	1410026	1149915	530	108.52	0.021	10.89	0.12241	1.33	0.50783	5.53	3.08424	33.60	0.04635	0.50	0.02477	0.27
109	Q Chestnut S-2 2 Pitkin	5	25	1410026	1149915	1410086	1149802	530	127.94	0.024	12.84	0.16153	2.07	0.61976	7.96	3.55964	45.72	0.06870	0.88	0.03314	0.43
110	A Chestnut S-3	5	35	1410086	1149802	1410125	1149754	650	61.85	0.012	7.61	0.12241	0.93	0.50783	3.87	3.08424	23.48	0.04635	0.35	0.02477	0.19
111	Q Chestnut S-4 2 Monroe	5	25	1410125	1149754	1410188	1149705	650	79.81	0.015	9.83	0.16153	1.59	0.61976	6.09	3.55964	34.97	0.06870	0.67	0.03314	0.33
112	A Monroe S-1	5	35	1410188	1149705	1410414	1149543	671	278.06	0.053	35.34	0.12241	4.33	0.50783	17.95	3.08424	108.99	0.04635	1.64	0.02477	0.88

Link No.	Link Description	MOVES Source	Speed (5 mph incr)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (ft)	Length (mi)	VMT (veh*mi/hr)	VOC		NOx		CO		PM-10		PM-2.5	
												EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)
113	Q Broad WB-1 Bridge	5	15	1411368	1150966	1411283	1151006	73	93.94	0.018	1.30	0.23484	0.31	0.83212	1.08	4.62689	6.01	0.09742	0.13	0.04505	0.06
114	A Broad WB-2	5	30	1411283	1151006	1411234	1151024	81	52.20	0.010	0.80	0.14081	0.11	0.54775	0.44	3.35679	2.69	0.05668	0.05	0.02896	0.02
115	A Broad WB-3	5	30	1411234	1151024	1411136	1151062	81	105.11	0.020	1.61	0.14081	0.23	0.54775	0.88	3.35679	5.41	0.05668	0.09	0.02896	0.05
116	Q Broad EB-3 2 Pitkin	5	20	1411128	1151036	1411219	1150998	236	98.62	0.019	4.41	0.19190	0.85	0.70490	3.11	4.15084	18.30	0.08023	0.35	0.03856	0.17
117	A Broad EB-4	5	15	1411219	1150998	1411275	1150972	250	61.74	0.012	2.92	0.23484	0.69	0.83212	2.43	4.62689	13.53	0.09742	0.28	0.04505	0.13
118	Q Broad EB-5 Bridge	5	10	1411275	1150972	1411358	1150933	250	91.71	0.017	4.34	0.31766	1.38	1.03770	4.51	5.32956	23.14	0.13071	0.57	0.05713	0.25
119	Q Broad 2 Pitkin Rt	5	10	1411121	1151020	1411213	1150981	138	99.92	0.019	2.61	0.31766	0.83	1.03770	2.71	5.32956	13.92	0.13071	0.34	0.05713	0.15
120	A East WB-2	5	20	1411586	1151352	1411537	1151364	404	50.45	0.010	3.86	0.19190	0.74	0.70490	2.72	4.15084	16.02	0.08023	0.31	0.03856	0.15
121	Q East WB-3 Bridge	5	20	1411537	1151364	1411435	1151398	394	107.52	0.020	8.02	0.19190	1.54	0.70490	5.66	4.15084	33.30	0.08023	0.64	0.03856	0.31
122	A East WB-4	5	20	1411435	1151398	1411374	1151422	343	65.55	0.012	4.26	0.19190	0.82	0.70490	3.00	4.15084	17.68	0.08023	0.34	0.03856	0.16
123	A East EB-1	5	20	1411366	1151389	1411426	1151380	645	60.67	0.011	7.41	0.19190	1.42	0.70490	5.22	4.15084	30.76	0.08023	0.59	0.03856	0.29
124	Q East EB-2 Bridge	5	20	1411426	1151380	1411524	1151347	645	103.41	0.020	12.63	0.19190	2.42	0.70490	8.90	4.15084	52.43	0.08023	1.01	0.03856	0.49
125	A East EB-3	5	20	1411524	1151347	1411594	1151322	820	74.33	0.014	11.54	0.19190	2.22	0.70490	8.14	4.15084	47.92	0.08023	0.93	0.03856	0.45
126	A University NB-1	5	30	1412065	1152544	1411993	1152583	658	81.88	0.016	10.20	0.14081	1.44	0.54775	5.59	3.35679	34.25	0.05668	0.58	0.02896	0.30
127	A University NB-2	5	30	1411993	1152583	1411963	1152623	658	50.00	0.009	6.23	0.14081	0.88	0.54775	3.41	3.35679	20.92	0.05668	0.35	0.02896	0.18
128	A University NB-3	5	30	1411963	1152623	1411940	1152704	658	84.20	0.016	10.49	0.14081	1.48	0.54775	5.75	3.35679	35.22	0.05668	0.59	0.02896	0.30
129	Q University NB-4 2 Main	5	25	1411940	1152704	1411926	1152747	658	45.22	0.009	5.64	0.16153	0.91	0.61976	3.49	3.55964	20.06	0.06870	0.39	0.03314	0.19
130	A University NB-5	5	30	1411926	1152747	1411903	1152859	864	114.34	0.022	18.71	0.14081	2.63	0.54775	10.25	3.35679	62.80	0.05668	1.06	0.02896	0.54
131	A University NB-6	5	40	1411903	1152859	1411858	1152970	864	119.77	0.023	19.60	0.10811	2.12	0.49048	9.61	2.86633	56.18	0.03889	0.76	0.02209	0.43
132	Q University SB-6 2 Main	5	10	1411823	1152953	1411863	1152849	719	111.43	0.021	15.17	0.31766	4.82	1.03770	15.75	5.32956	80.87	0.13071	1.98	0.05713	0.87
133	A University SB-7	5	30	1411863	1152849	1411883	1152791	532	61.35	0.012	6.18	0.14081	0.87	0.54775	3.39	3.35679	20.75	0.05668	0.35	0.02896	0.18
134	A University SB-8	5	30	1411883	1152791	1411941	1152605	532	194.83	0.037	19.63	0.14081	2.76	0.54775	10.75	3.35679	65.90	0.05668	1.11	0.02896	0.57
135	Q University SB-9 2 Union	5	25	1411941	1152605	1411994	1152548	532	77.83	0.015	7.84	0.16153	1.27	0.61976	4.86	3.55964	27.92	0.06870	0.54	0.03314	0.26
136	A University SB-10	5	30	1411994	1152548	1412057	1152523	612	67.78	0.013	7.86	0.14081	1.11	0.54775	4.30	3.35679	26.37	0.05668	0.45	0.02896	0.23
137	A Main WB-2	5	25	1411954	1152836	1411733	1152767	738	231.52	0.044	32.36	0.16153	5.23	0.61976	20.06	3.55964	115.19	0.06870	2.22	0.03314	1.07
138	Q Main WB-3 2 Pitkin	5	25	1411733	1152767	1411616	1152729	738	123.02	0.023	17.19	0.16153	2.78	0.61976	10.66	3.55964	61.21	0.06870	1.18	0.03314	0.57
139	A Main WB-4	5	30	1411616	1152729	1411526	1152703	457	93.68	0.018	8.11	0.14081	1.14	0.54775	4.44	3.35679	27.22	0.05668	0.46	0.02896	0.23
140	A Main EB-1	5	30	1411543	1152679	1411738	1152734	763	202.61	0.038	29.28	0.14081	4.12	0.54775	16.04	3.35679	98.28	0.05668	1.66	0.02896	0.85
141	Q Main EB-2 2 University	5	25	1411738	1152734	1411852	1152771	763	119.85	0.023	17.32	0.16153	2.80	0.61976	10.73	3.55964	61.65	0.06870	1.19	0.03314	0.57
142	A Main EB-3	5	30	1411852	1152771	1412006	1152821	933	161.91	0.031	28.61	0.14081	4.03	0.54775	15.67	3.35679	96.04	0.05668	1.62	0.02896	0.83
143	C Chestnut Ramp 1	4	30	1409975	1150015	1410001	1149888	1108	129.63	0.025	27.20	0.13749	3.74	0.53551	14.57	3.20337	87.14	0.05794	1.58	0.02975	0.81
144	C Chestnut Ramp 2	4	30	1410001	1149888	1410006	1149831	1108	57.22	0.011	12.01	0.13749	1.65	0.53551	6.43	3.20337	38.46	0.05794	0.70	0.02975	0.36
145	Q Chestnut Ramp-3 2 Pitkin	4	25	1410006	1149831	1409992	1149792	1108	41.44	0.008	8.70	0.15547	1.35	0.54860	4.77	3.18311	27.68	0.06681	0.58	0.03152	0.27
146	A Chestnut Ramp 4	4	30	1409992	1149792	1409937	1149749	1108	69.81	0.013	14.65	0.13749	2.01	0.53551	7.85	3.20337	46.93	0.05794	0.85	0.02975	0.44
147	C Union Ramp 2 IL-3	4	35	1410966	1150054	1411022	1150119	27	85.80	0.016	0.44	0.12520	0.05	0.52749	0.23	3.48283	1.53	0.05186	0.02	0.02915	0.01
148	C Union Ramp 2 IL-2	4	35	1411022	1150119	1411065	1150186	27	79.61	0.015	0.41	0.12520	0.05	0.52749	0.21	3.48283	1.42	0.05186	0.02	0.02915	0.01
149	C Union Ramp 2 IL-1	4	35	1411065	1150186	1411098	1150260	27	81.02	0.015	0.41	0.12520	0.05	0.52749	0.22	3.48283	1.44	0.05186	0.02	0.02915	0.01
150	A Union Ramp 2 IL-1	4	35	1411098	1150260	1411128	1150348	227	92.97	0.018	4.00	0.12520	0.50	0.52749	2.11	3.48283	13.92	0.05186	0.21	0.02915	0.12
151	A Union Ramp 2 IL-2	4	35	1411128	1150348	1411152	1150435	227	90.25	0.017	3.88	0.12520	0.49	0.52749	2.05	3.48283	13.51	0.05186	0.20	0.02915	0.11
152	A Union Ramp 2 IL-3	4	35	1411152	1150435	1411198	1150557	227	130.38	0.025	5.61	0.12520	0.70	0.52749	2.96	3.48283	19.52	0.05186	0.29	0.02915	0.16
153	C IL Ramp 2 PitkinS-1	4	35	1411117	1150553	1411036	1150394	45	178.44	0.034	1.52	0.12520	0.19	0.52749	0.80	3.48283	5.30	0.05186	0.08	0.02915	0.04
154	C IL Ramp 2 PitkinS-2	4	35	1411036	1150394	1410994	1150289	45	113.09	0.021	0.96	0.12520	0.12	0.52749	0.51	3.48283	3.36	0.05186	0.05	0.02915	0.03
155	A Pitkin Ramp 2 IL-1	4	35	1410994	1150289	1410950	1150175	283	122.20	0.023	6.55	0.12520	0.82	0.52749	3.45	3.48283	22.81	0.05186	0.34	0.02915	0.19
156	A Pitkin Ramp 2 IL-2	4	35	1410950	1150175	1410928	1150080	283	97.51	0.018	5.23	0.12520	0.65	0.52749	2.76	3.48283	18.20	0.05186	0.27	0.02915	0.15
157	C IL Ramp 2 Union-1	4	35	1411502	1151313	1411577	1151510	206	210.79	0.040	8.22	0.12520	1.03	0.52749	4.34	3.48283	28.64	0.05186	0.43	0.02915	0.24
158	C IL Ramp 2 Union-2	4	35	1411577	1151510	1411642	1151684	206	185.74	0.035	7.25	0.12520	0.91	0.52749	3.82	3.48283	25.24	0.05186	0.38	0.02915	0.21
159	C IL Ramp 2 Union-3	4	35	1411642	1151684	1411679	1151780	206	102.88	0.019	4.01	0.12520	0.50	0.52749	2.12	3.48283	13.98	0.05186	0.21	0.02915	0.12
160	C IL Ramp 2 Union-4	4	35	1411679	1151780	1411736	1151908	206	140.12	0.027	5.47	0.12520	0.68	0.52749	2.88	3.48283	19.04	0.05186	0.28	0.02915	0.16
161	C IL Ramp 2 Union-5	4	35	1411736	1151908	1411819	1152064	206	176.71	0.033	6.89	0.12520	0.86	0.52749	3.64	3.48283	24.01	0.05186	0.36	0.02915	0.20
162	C IL Ramp 2 Union-6	4	35	1411819	1152064	1411880	1152201	206	149.97	0.028	5.85	0.12520	0.73	0.52749	3.09	3.48283	20.38	0.05186	0.30	0.02915	0.17
163	C IL Ramp 2 Pitkin N-1	4	45	1411762	1152657	1411756	1152567	151	90.20	0.017	2.58	0.10826	0.28	0.53292	1.37	3.84721	9.92	0.04423	0.11	0.02918	0.08
164	C IL Ramp 2 Pitkin N-2	4	45	1411756	1152567	1411746	1152509	151	58.86	0.011	1.68	0.10826	0.18	0.53292	0.90	3.84721	6.48	0.04423	0.07	0.02918	0.05
165	C IL Ramp 2 Pitkin N-3	4	40	1411746	1152509	1411572	1151913	151	620.88	0.118	17.76	0.11582	2.06	0.53211	9.45	3.70866	65.85	0.04776	0.85	0.02936	0.52
166	C IL Ramp 2 Pitkin N-4	4	35	1411572	1151913	1411545	1151804	151	112.29	0.021	3.21	0.12520	0.40	0.52749	1.69	3.48283	11.18	0.05186	0.17	0.02915	0.09

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
No-Build ETC+10

ETC+10 Year =	2025
ETC+10 Growth FACTOR =	NA

Link Input Data

TOTAL NO-BUILD ETC+10 VOC EMISSIONS BURDEN =	**158**	**g/hr**
TOTAL NO-BUILD ETC+10 NOx EMISSIONS BURDEN =	**612**	**g/hr**
TOTAL NO-BUILD ETC+10 CO EMISSIONS BURDEN =	**5,420**	**g/hr**
TOTAL NO-BUILD ETC+10 PM-10 EMISSIONS BURDEN =	**85**	**g/hr**
TOTAL NO-BUILD ETC+10 PM-2.5 EMISSIONS BURDEN =	**42**	**g/hr**

(ALL DATA (except yellow fields) ON THIS PAGE IS FORMULA GENERATED - enter data on ETC input page)

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
1	C IL EB-1	4	50	1409364	1149606	1409460	1149625	241	97.86	0.019	4.47	0.06322	0.28	0.30427	1.36	3.12557	13.96	0.03221	0.14	0.02033	0.09
2	C IL EB-2	4	50	1409460	1149625	1409653	1149655	241	195.32	0.037	8.92	0.06322	0.56	0.30427	2.71	3.12557	27.86	0.03221	0.29	0.02033	0.18
3	C IL EB-3	4	50	1409653	1149655	1410128	1149703	241	477.42	0.090	21.79	0.06322	1.38	0.30427	6.63	3.12557	68.11	0.03221	0.70	0.02033	0.44
4	C IL EB-4	4	50	1410128	1149703	1410299	1149720	241	171.84	0.033	7.84	0.06322	0.50	0.30427	2.39	3.12557	24.52	0.03221	0.25	0.02033	0.16
5	C IL EB-5	4	50	1410299	1149720	1410497	1149743	241	199.33	0.038	9.10	0.06322	0.58	0.30427	2.77	3.12557	28.44	0.03221	0.29	0.02033	0.18
6	C IL EB-6	4	50	1410497	1149743	1410660	1149798	241	172.03	0.033	7.85	0.06322	0.50	0.30427	2.39	3.12557	24.54	0.03221	0.25	0.02033	0.16
7	C IL EB-7	4	50	1410660	1149798	1410795	1149883	241	159.53	0.030	7.28	0.06322	0.46	0.30427	2.22	3.12557	22.76	0.03221	0.23	0.02033	0.15
8	C IL EB-8	4	50	1410795	1149883	1410907	1149991	241	155.59	0.029	7.10	0.06322	0.45	0.30427	2.16	3.12557	22.20	0.03221	0.23	0.02033	0.14
9	C IL EB-9	4	50	1410907	1149991	1410958	1150059	241	85.00	0.016	3.88	0.06322	0.25	0.30427	1.18	3.12557	12.13	0.03221	0.12	0.02033	0.08
10	C IL EB-10	4	50	1410958	1150059	1411056	1150245	214	210.24	0.040	8.52	0.06322	0.54	0.30427	2.59	3.12557	26.63	0.03221	0.27	0.02033	0.17
11	C IL EB-11	4	50	1411056	1150245	1411132	1150430	214	200.00	0.038	8.11	0.06322	0.51	0.30427	2.47	3.12557	25.34	0.03221	0.26	0.02033	0.16
12	C IL EB-12	4	50	1411132	1150430	1411181	1150560	214	138.93	0.026	5.63	0.06322	0.36	0.30427	1.71	3.12557	17.60	0.03221	0.18	0.02033	0.11
13	C IL EB-13	4	50	1411181	1150560	1411412	1151135	463	619.67	0.117	54.34	0.06322	3.44	0.30427	16.53	3.12557	169.84	0.03221	1.75	0.02033	1.10
14	C IL EB-14	4	50	1411412	1151135	1411485	1151320	463	198.88	0.038	17.44	0.06322	1.10	0.30427	5.31	3.12557	54.51	0.03221	0.56	0.02033	0.35
15	C IL EB-15	4	50	1411485	1151320	1411641	1151745	235	452.73	0.086	20.15	0.06322	1.27	0.30427	6.13	3.12557	62.98	0.03221	0.65	0.02033	0.41
16	C IL EB-16	4	50	1411641	1151745	1411798	1152227	235	506.93	0.096	22.56	0.06322	1.43	0.30427	6.87	3.12557	70.52	0.03221	0.73	0.02033	0.46
17	C IL EB-17	4	50	1411798	1152227	1411825	1152365	235	140.62	0.027	6.26	0.06322	0.40	0.30427	1.90	3.12557	19.56	0.03221	0.20	0.02033	0.13
18	C IL EB-18	4	50	1411825	1152365	1411834	1152489	235	124.33	0.024	5.53	0.06322	0.35	0.30427	1.68	3.12557	17.30	0.03221	0.18	0.02033	0.11
19	C IL EB-19	4	50	1411834	1152489	1411823	1152653	235	164.37	0.031	7.32	0.06322	0.46	0.30427	2.23	3.12557	22.87	0.03221	0.24	0.02033	0.15
20	C IL EB-20	4	50	1411823	1152653	1411780	1152836	235	187.98	0.036	8.37	0.06322	0.53	0.30427	2.55	3.12557	26.15	0.03221	0.27	0.02033	0.17
21	C IL EB-21	4	50	1411780	1152836	1411684	1153037	235	222.75	0.042	9.91	0.06322	0.63	0.30427	3.02	3.12557	30.99	0.03221	0.32	0.02033	0.20
22	C IL EB-22	4	50	1411684	1153037	1411617	1153138	235	121.20	0.023	5.39	0.06322	0.34	0.30427	1.64	3.12557	16.86	0.03221	0.17	0.02033	0.11
23	C IL EB-23	4	50	1411617	1153138	1411545	1153222	235	110.63	0.021	4.92	0.06322	0.31	0.30427	1.50	3.12557	15.39	0.03221	0.16	0.02033	0.10
24	C IL WB-1	4	50	1411498	1153176	1411571	1153102	397	103.95	0.020	7.82	0.06322	0.49	0.30427	2.38	3.12557	24.43	0.03221	0.25	0.02033	0.16
25	C IL WB-2	4	50	1411571	1153102	1411639	1153016	397	109.64	0.021	8.24	0.06322	0.52	0.30427	2.51	3.12557	25.77	0.03221	0.27	0.02033	0.17
26	C IL WB-3	4	50	1411639	1153016	1411736	1152830	397	209.77	0.040	15.77	0.06322	1.00	0.30427	4.80	3.12557	49.30	0.03221	0.51	0.02033	0.32
27	C IL WB-4	4	50	1411736	1152830	1411784	1152652	397	184.36	0.035	13.86	0.06322	0.88	0.30427	4.22	3.12557	43.33	0.03221	0.45	0.02033	0.28
28	C IL WB-5	4	50	1411784	1152652	1411796	1152489	235	163.44	0.031	7.27	0.06322	0.46	0.30427	2.21	3.12557	22.74	0.03221	0.23	0.02033	0.15
29	C IL WB-6	4	50	1411796	1152489	1411786	1152371	235	118.42	0.022	5.27	0.06322	0.33	0.30427	1.60	3.12557	16.47	0.03221	0.17	0.02033	0.11
30	C IL WB-7	4	50	1411786	1152371	1411752	1152230	235	145.04	0.027	6.46	0.06322	0.41	0.30427	1.96	3.12557	20.18	0.03221	0.21	0.02033	0.13
31	C IL WB-8	4	50	1411752	1152230	1411601	1151755	235	498.42	0.094	22.18	0.06322	1.40	0.30427	6.75	3.12557	69.34	0.03221	0.71	0.02033	0.45
32	C IL WB-9	4	50	1411601	1151755	1411374	1151161	235	635.90	0.120	28.30	0.06322	1.79	0.30427	8.61	3.12557	88.46	0.03221	0.91	0.02033	0.58
33	C IL WB-10	4	50	1411374	1151161	1411134	1150550	235	656.45	0.124	29.22	0.06322	1.85	0.30427	8.89	3.12557	91.32	0.03221	0.94	0.02033	0.59
34	C IL WB-11	4	50	1411134	1150550	1411020	1150257	235	314.40	0.060	13.99	0.06322	0.88	0.30427	4.26	3.12557	43.74	0.03221	0.45	0.02033	0.28
35	C IL WB-12	4	50	1411020	1150257	1410933	1150077	190	199.92	0.038	7.19	0.06322	0.45	0.30427	2.19	3.12557	22.49	0.03221	0.23	0.02033	0.15
36	C IL WB-13	4	50	1410933	1150077	1410881	1150005	190	88.81	0.017	3.20	0.06322	0.20	0.30427	0.97	3.12557	9.99	0.03221	0.10	0.02033	0.06
37	C IL WB-14	4	50	1410881	1150005	1410784	1149910	507	135.77	0.026	13.04	0.06322	0.82	0.30427	3.97	3.12557	40.75	0.03221	0.42	0.02033	0.27
38	C IL WB-15	4	50	1410784	1149910	1410702	1149857	507	97.64	0.018	9.38	0.06322	0.59	0.30427	2.85	3.12557	29.30	0.03221	0.30	0.02033	0.19
39	C IL WB-16	4	50	1410702	1149857	1410604	1149806	507	110.48	0.021	10.61	0.06322	0.67	0.30427	3.23	3.12557	33.16	0.03221	0.34	0.02033	0.22
40	C IL WB-17	4	50	1410604	1149806	1410490	1149773	507	118.68	0.022	11.40	0.06322	0.72	0.30427	3.47	3.12557	35.62	0.03221	0.37	0.02033	0.23
41	C IL WB-18	4	50	1410490	1149773	1410275	1149749	507	216.34	0.041	20.77	0.06322	1.31	0.30427	6.32	3.12557	64.93	0.03221	0.67	0.02033	0.42
42	C IL WB-19	4	50	1410275	1149749	1410114	1149731	507	162.00	0.031	15.56	0.06322	0.98	0.30427	4.73	3.12557	48.62	0.03221	0.50	0.02033	0.32
43	C IL WB-20	4	50	1410114	1149731	1409478	1149672	507	638.73	0.121	61.33	0.06322	3.88	0.30427	18.66	3.12557	191.70	0.03221	1.98	0.02033	1.25
44	C IL WB-21	4	50	1409478	1149672	1409359	1149672	507	119.00	0.023	11.43	0.06322	0.72	0.30427	3.48	3.12557	35.71	0.03221	0.37	0.02033	0.23
45	C IL WB-22	4	50	1409359	1149672	1409359	1149672	2032	0.00	0.000	0.00	0.06322	0.00	0.30427	0.00	3.12557	0.00	0.03221	0.00	0.02033	0.00
46	A Union-1	5	25	1410726	1149275	1410794	1149464	387	200.86	0.038	14.72	0.10224	1.51	0.33740	4.97	2.71153	39.92	0.06135	0.90	0.02607	0.38
47	A Union-2	5	30	1410794	1149464	1410911	1149769	387	326.67	0.062	23.94	0.08926	2.14	0.30392	7.28	2.59923	62.23	0.04971	1.19	0.02226	0.53
48	A Union-3	5	30	1410911	1149769	1410943	1149866	387	102.14	0.019	7.49	0.08926	0.67	0.30392	2.28	2.59923	19.46	0.04971	0.37	0.02226	0.17
49	A Union-4	5	35	1410943	1149866	1410991	1149988	468	131.10	0.025	11.62	0.07665	0.89	0.28588	3.32	2.39623	27.85	0.04038	0.47	0.01903	0.22
50	C Union-5	5	35	1410991	1149988	1411077	1150170	468	201.30	0.038	17.84	0.07665	1.37	0.28588	5.10	2.39623	42.75	0.04038	0.72	0.01903	0.34
51	C Union-6	5	35	1411077	1150170	1411114	1150254	468	91.79	0.017	8.14	0.07665	0.62	0.28588	2.33	2.39623	19.50	0.04038	0.33	0.01903	0.15
52	C Union-7	5	35	1411114	1150254	1411158	1150359	237	113.85	0.022	5.11	0.07665	0.39	0.28588	1.46	2.39623	12.25	0.04038	0.21	0.01903	0.10

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
53	C Union-8	5	35	1411158	1150359	1411247	1150588	237	245.69	0.047	11.03	0.07665	0.85	0.28588	3.15	2.39623	26.43	0.04038	0.45	0.01903	0.21
54	C Union-9	5	35	1411247	1150588	1411296	1150708	237	129.62	0.025	5.82	0.07665	0.45	0.28588	1.66	2.39623	13.94	0.04038	0.23	0.01903	0.11
55	C Union-10	5	30	1411296	1150708	1411333	1150786	237	86.33	0.016	3.88	0.08926	0.35	0.30392	1.18	2.59923	10.07	0.04971	0.19	0.02226	0.09
56	Q Union-11 2 Broad	5	25	1411333	1150786	1411371	1150880	178	101.39	0.019	3.42	0.10224	0.35	0.33740	1.15	2.71153	9.27	0.06135	0.21	0.02607	0.09
57	A Union-12	5	35	1411371	1150880	1411495	1151218	453	360.03	0.068	30.89	0.07665	2.37	0.28588	8.83	2.39623	74.02	0.04038	1.25	0.01903	0.59
58	Q Union-13 2 East	5	25	1411495	1151218	1411534	1151314	227	103.62	0.020	4.45	0.10224	0.46	0.33740	1.50	2.71153	12.08	0.06135	0.27	0.02607	0.12
59	A Union-14	5	35	1411534	1151314	1411798	1151958	281	696.01	0.132	37.04	0.07665	2.84	0.28588	10.59	2.39623	88.76	0.04038	1.50	0.01903	0.70
60	C Union-15	5	30	1411798	1151958	1411898	1152195	339	257.23	0.049	16.52	0.08926	1.47	0.30392	5.02	2.59923	42.93	0.04971	0.82	0.02226	0.37
61	C Union-16	5	30	1411898	1152195	1411977	1152406	597	225.30	0.043	25.47	0.08926	2.27	0.30392	7.74	2.59923	66.21	0.04971	1.27	0.02226	0.57
62	Q Union-17 2 University	5	25	1411977	1152406	1412017	1152506	597	107.70	0.020	12.18	0.10224	1.25	0.33740	4.11	2.71153	33.02	0.06135	0.75	0.02607	0.32
63	A Union-18	5	30	1412017	1152506	1412106	1152728	322	239.18	0.045	14.59	0.08926	1.30	0.30392	4.43	2.59923	37.91	0.04971	0.73	0.02226	0.32
64	Q Union 2 Broad Lt	5	10	1411320	1150792	1411357	1150885	59	100.09	0.019	1.12	0.20262	0.23	0.57358	0.64	3.96591	4.44	0.11954	0.13	0.04636	0.05
65	Q Union 2 East Rt	5	15	1411513	1151212	1411550	1151310	226	104.75	0.020	4.48	0.15034	0.67	0.45716	2.05	3.53008	15.83	0.08790	0.39	0.03591	0.16
66	A Pitkin-1	5	35	1411534	1152741	1411600	1152704	151	75.66	0.014	2.16	0.07665	0.17	0.28588	0.62	2.39623	5.19	0.04038	0.09	0.01903	0.04
67	A Pitkin-2	5	35	1411600	1152704	1411634	1152640	151	72.47	0.014	2.07	0.07665	0.16	0.28588	0.59	2.39623	4.97	0.04038	0.08	0.01903	0.04
68	A Pitkin-3	5	40	1411634	1152640	1411659	1152545	151	98.23	0.019	2.81	0.06668	0.19	0.27879	0.78	2.22685	6.26	0.03335	0.09	0.01675	0.05
69	A Pitkin-4	5	40	1411659	1152545	1411662	1152454	151	91.05	0.017	2.60	0.06668	0.17	0.27879	0.73	2.22685	5.80	0.03335	0.09	0.01675	0.04
70	A Pitkin-5	5	40	1411662	1152454	1411645	1152364	151	91.59	0.017	2.62	0.06668	0.17	0.27879	0.73	2.22685	5.83	0.03335	0.09	0.01675	0.04
71	C Pitkin-6	5	40	1411645	1152364	1411584	1152097	151	273.88	0.052	7.83	0.06668	0.52	0.27879	2.18	2.22685	17.44	0.03335	0.26	0.01675	0.13
72	C Pitkin-7	5	40	1411584	1152097	1411544	1151894	137	206.90	0.039	5.37	0.06668	0.36	0.27879	1.50	2.22685	11.95	0.03335	0.18	0.01675	0.09
73	C Pitkin-8	5	35	1411544	1151894	1411537	1151806	137	88.28	0.017	2.29	0.07665	0.18	0.28588	0.65	2.39623	5.49	0.04038	0.09	0.01903	0.04
74	C Pitkin-9	5	35	1411537	1151806	1411451	1151533	360	286.23	0.054	19.52	0.07665	1.50	0.28588	5.58	2.39623	46.76	0.04038	0.79	0.01903	0.37
75	Q Pitkin-10 2 East	5	25	1411451	1151533	1411417	1151431	360	107.52	0.020	7.33	0.10224	0.75	0.33740	2.47	2.71153	19.88	0.06135	0.45	0.02607	0.19
76	A Pitkin-11	5	35	1411417	1151431	1411313	1151145	285	304.32	0.058	16.43	0.07665	1.26	0.28588	4.70	2.39623	39.36	0.04038	0.66	0.01903	0.31
77	Q Pitkin-12 2 Broad	5	25	1411313	1151145	1411274	1151045	285	107.34	0.020	5.79	0.10224	0.59	0.33740	1.95	2.71153	15.71	0.06135	0.36	0.02607	0.15
78	A Pitkin-13	5	40	1411274	1151045	1411076	1150549	399	534.06	0.101	40.36	0.06668	2.69	0.27879	11.25	2.22685	89.87	0.03335	1.35	0.01675	0.68
79	A Pitkin-14	5	35	1411076	1150549	1410982	1150298	420	268.02	0.051	21.32	0.07665	1.63	0.28588	6.09	2.39623	51.09	0.04038	0.86	0.01903	0.41
80	A Pitkin-15	5	35	1410982	1150298	1410914	1150138	170	173.85	0.033	5.60	0.07665	0.43	0.28588	1.60	2.39623	13.41	0.04038	0.23	0.01903	0.11
81	C Pitkin-16	5	35	1410914	1150138	1410855	1150035	170	118.70	0.022	3.82	0.07665	0.29	0.28588	1.09	2.39623	9.16	0.04038	0.15	0.01903	0.07
82	C Pitkin-17	5	35	1410855	1150035	1410729	1149918	254	171.94	0.033	8.27	0.07665	0.63	0.28588	2.36	2.39623	19.82	0.04038	0.33	0.01903	0.16
83	C Pitkin-18	5	35	1410729	1149918	1410615	1149853	254	131.23	0.025	6.31	0.07665	0.48	0.28588	1.80	2.39623	15.13	0.04038	0.25	0.01903	0.12
84	C Pitkin-19	5	35	1410615	1149853	1410495	1149813	254	126.49	0.024	6.08	0.07665	0.47	0.28588	1.74	2.39623	14.58	0.04038	0.25	0.01903	0.12
85	C Pitkin-20	5	35	1410495	1149813	1410311	1149789	254	185.56	0.035	8.93	0.07665	0.68	0.28588	2.55	2.39623	21.39	0.04038	0.36	0.01903	0.17
86	Q Pitkin-21 W 2 Chestnut	5	25	1410311	1149789	1410191	1149778	254	120.50	0.023	5.80	0.10224	0.59	0.33740	1.96	2.71153	15.72	0.06135	0.36	0.02607	0.15
87	A Pitkin-22	5	35	1410191	1149778	1410150	1149775	254	41.11	0.008	1.98	0.07665	0.15	0.28588	0.57	2.39623	4.74	0.04038	0.08	0.01903	0.04
88	A Pitkin-23	5	35	1410150	1149775	1409937	1149749	338	214.58	0.041	13.74	0.07665	1.05	0.28588	3.93	2.39623	32.92	0.04038	0.55	0.01903	0.26
89	A Pitkin-24	5	35	1409937	1149749	1409725	1149728	1525	213.04	0.040	61.53	0.07665	4.72	0.28588	17.59	2.39623	147.44	0.04038	2.48	0.01903	1.17
90	C Pitkin-25	5	35	1409725	1149728	1409476	1149694	1525	251.31	0.048	72.58	0.07665	5.56	0.28588	20.75	2.39623	173.93	0.04038	2.93	0.01903	1.38
91	C Howell-1	5	35	1409364	1149606	1409675	1149624	176	311.52	0.059	10.38	0.07665	0.80	0.28588	2.97	2.39623	24.88	0.04038	0.42	0.01903	0.20
92	C Howell-2	5	35	1409675	1149624	1409962	1149652	176	288.36	0.055	9.61	0.07665	0.74	0.28588	2.75	2.39623	23.03	0.04038	0.39	0.01903	0.18
93	C Howell-3	5	30	1409962	1149652	1410121	1149667	176	159.71	0.030	5.32	0.08926	0.48	0.30392	1.62	2.59923	13.84	0.04971	0.26	0.02226	0.12
94	Q Howell-4 E 2 Monroe	5	20	1410121	1149667	1410202	1149673	176	81.22	0.015	2.71	0.12260	0.33	0.38572	1.04	3.19129	8.64	0.07169	0.19	0.03035	0.08
95	A Howell-5	5	25	1410202	1149673	1410308	1149672	82	106.00	0.020	1.65	0.10224	0.17	0.33740	0.56	2.71153	4.46	0.06135	0.10	0.02607	0.04
96	A Howell-6	5	35	1410308	1149672	1410586	1149728	82	283.58	0.054	4.40	0.07665	0.34	0.28588	1.26	2.39623	10.55	0.04038	0.18	0.01903	0.08
97	C Howell-7	5	30	1410586	1149728	1410805	1149840	75	245.98	0.047	3.49	0.08926	0.31	0.30392	1.06	2.59923	9.08	0.04971	0.17	0.02226	0.08
98	C Howell-8	5	15	1410805	1149840	1410855	1149874	75	60.46	0.011	0.86	0.15034	0.13	0.45716	0.39	3.53008	3.03	0.08790	0.08	0.03591	0.03
99	Q Howell-9 2 Union	5	10	1410855	1149874	1410926	1149862	75	72.01	0.014	1.02	0.20262	0.21	0.57358	0.59	3.96591	4.06	0.11954	0.12	0.04636	0.05
100	C Clinton NB-2	5	45	1409587	1149436	1409518	1149816	1770	386.21	0.073	129.47	0.05927	7.67	0.27598	35.73	2.12775	275.48	0.02778	3.60	0.01503	1.95
101	Q Monroe N-6 2 Howell	5	25	1410413	1149572	1410329	1149638	560	106.83	0.020	11.33	0.10224	1.16	0.33740	3.82	2.71153	30.72	0.06135	0.70	0.02607	0.30
102	A Monroe N-7	5	35	1410329	1149638	1410242	1149704	641	109.20	0.021	13.26	0.07665	1.02	0.28588	3.79	2.39623	31.77	0.04038	0.54	0.01903	0.25
103	Q Monroe N 2 Chestnut	5	25	1410242	1149704	1410190	1149743	641	65.00	0.012	7.89	0.10224	0.81	0.33740	2.66	2.71153	21.40	0.06135	0.48	0.02607	0.21
104	A Chestnut N-1	5	35	1410190	1149743	1410150	1149775	414	51.22	0.010	4.02	0.07665	0.31	0.28588	1.15	2.39623	9.62	0.04038	0.16	0.01903	0.08
105	A Chestnut N-2	5	35	1410150	1149775	1410099	1149832	414	76.49	0.014	6.00	0.07665	0.46	0.28588	1.71	2.39623	14.37	0.04038	0.24	0.01903	0.11
106	A Chestnut N-3	5	35	1410099	1149832	1410056	1149907	414	86.45	0.016	6.78	0.07665	0.52	0.28588	1.94	2.39623	16.24	0.04038	0.27	0.01903	0.13
107	A Chestnut N-4	5	35	1410056	1149907	1410021	1150013	414	111.63	0.021	8.75	0.07665	0.67	0.28588	2.50	2.39623	20.97	0.04038	0.35	0.01903	0.17
108	C Chestnut S-1	5	35	1409995	1150019	1410026	1149915	570	108.52	0.021	11.72	0.07665	0.90	0.28588	3.35	2.39623	28.07	0.04038	0.47	0.01903	0.22
109	Q Chestnut S-2 2 Pitkin	5	25	1410026	1149915	1410086	1149802	570	127.94	0.024	13.81	0.10224	1.41	0.33740	4.66	2.71153	37.45	0.06135	0.85	0.02607	0.36
110	A Chestnut S-3	5	35	1410086	1149802	1410125	1149754	694	61.85	0.012	8.13	0.07665	0.62	0.28588	2.32	2.39623	19.48	0.04038	0.33	0.01903	0.15
111	Q Chestnut S-4 2 Monroe	5	25	1410125	1149754	1410188	1149705	694	79.81	0.015	10.49	0.10224	1.07	0.33740	3.54	2.71153	28.45	0.06135	0.64	0.02607	0.27
112	A Monroe S-1	5	35	1410188	1149705	1410414	1149543	715	278.06	0.053	37.65	0.07665	2.89	0.28588	10.76	2.39623	90.23	0.04038	1.52	0.01903	0.72

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
113	Q Broad WB-1 Bridge	5	15	1411368	1150966	1411283	1151006	78	93.94	0.018	1.39	0.15034	0.21	0.45716	0.63	3.53008	4.90	0.08790	0.12	0.03591	0.05
114	A Broad WB-2	5	30	1411283	1151006	1411234	1151024	86	52.20	0.010	0.85	0.08926	0.08	0.30392	0.26	2.59923	2.21	0.04971	0.04	0.02226	0.02
115	A Broad WB-3	5	30	1411234	1151024	1411136	1151062	86	105.11	0.020	1.71	0.08926	0.15	0.30392	0.52	2.59923	4.45	0.04971	0.09	0.02226	0.04
116	Q Broad EB-3 2 Pitkin	5	20	1411128	1151036	1411219	1150998	243	98.62	0.019	4.54	0.12260	0.56	0.38572	1.75	3.19129	14.48	0.07169	0.33	0.03035	0.14
117	A Broad EB-4	5	15	1411219	1150998	1411275	1150972	272	61.74	0.012	3.18	0.15034	0.48	0.45716	1.45	3.53008	11.23	0.08790	0.28	0.03591	0.11
118	Q Broad EB-5 Bridge	5	10	1411275	1150972	1411358	1150933	272	91.71	0.017	4.72	0.20262	0.96	0.57358	2.71	3.96591	18.74	0.11954	0.56	0.04636	0.22
119	Q Broad 2 Pitkin Rt	5	10	1411121	1151020	1411213	1150981	143	99.92	0.019	2.71	0.20262	0.55	0.57358	1.55	3.96591	10.73	0.11954	0.32	0.04636	0.13
120	A East WB-2	5	20	1411586	1151352	1411537	1151364	430	50.45	0.010	4.11	0.12260	0.50	0.38572	1.58	3.19129	13.11	0.07169	0.29	0.03035	0.12
121	Q East WB-3 Bridge	5	20	1411537	1151364	1411435	1151398	416	107.52	0.020	8.47	0.12260	1.04	0.38572	3.27	3.19129	27.03	0.07169	0.61	0.03035	0.26
122	A East WB-4	5	20	1411435	1151398	1411374	1151422	365	65.55	0.012	4.53	0.12260	0.56	0.38572	1.75	3.19129	14.46	0.07169	0.32	0.03035	0.14
123	A East EB-1	5	20	1411366	1151389	1411426	1151380	689	60.67	0.011	7.92	0.12260	0.97	0.38572	3.05	3.19129	25.27	0.07169	0.57	0.03035	0.24
124	Q East EB-2 Bridge	5	20	1411426	1151380	1411524	1151347	689	103.41	0.020	13.49	0.12260	1.65	0.38572	5.20	3.19129	43.06	0.07169	0.97	0.03035	0.41
125	A East EB-3	5	20	1411524	1151347	1411594	1151322	875	74.33	0.014	12.32	0.12260	1.51	0.38572	4.75	3.19129	39.31	0.07169	0.88	0.03035	0.37
126	A University NB-1	5	30	1412065	1152544	1411993	1152583	702	81.88	0.016	10.89	0.08926	0.97	0.30392	3.31	2.59923	28.30	0.04971	0.54	0.02226	0.24
127	A University NB-2	5	30	1411993	1152583	1411963	1152623	702	50.00	0.009	6.65	0.08926	0.59	0.30392	2.02	2.59923	17.28	0.04971	0.33	0.02226	0.15
128	A University NB-3	5	30	1411963	1152623	1411940	1152704	702	84.20	0.016	11.20	0.08926	1.00	0.30392	3.40	2.59923	29.10	0.04971	0.56	0.02226	0.25
129	Q University NB-4 2 Main	5	25	1411940	1152704	1411926	1152747	702	45.22	0.009	6.01	0.10224	0.61	0.33740	2.03	2.71153	16.30	0.06135	0.37	0.02607	0.16
130	A University NB-5	5	30	1411926	1152747	1411903	1152859	919	114.34	0.022	19.90	0.08926	1.78	0.30392	6.05	2.59923	51.73	0.04971	0.99	0.02226	0.44
131	A University NB-6	5	40	1411903	1152859	1411858	1152970	919	119.77	0.023	20.85	0.06668	1.39	0.27879	5.81	2.22685	46.42	0.03335	0.70	0.01675	0.35
132	Q University SB-6 2 Main	5	10	1411823	1152953	1411863	1152849	766	111.43	0.021	16.17	0.20262	3.28	0.57358	9.27	3.96591	64.11	0.11954	1.93	0.04636	0.75
133	A University SB-7	5	30	1411863	1152849	1411883	1152791	562	61.35	0.012	6.53	0.08926	0.58	0.30392	1.98	2.59923	16.97	0.04971	0.32	0.02226	0.15
134	A University SB-8	5	30	1411883	1152791	1411941	1152605	562	194.83	0.037	20.74	0.08926	1.85	0.30392	6.30	2.59923	53.90	0.04971	1.03	0.02226	0.46
135	Q University SB-9 2 Union	5	25	1411941	1152605	1411994	1152548	562	77.83	0.015	8.28	0.10224	0.85	0.33740	2.80	2.71153	22.46	0.06135	0.51	0.02607	0.22
136	A University SB-10	5	30	1411994	1152548	1412057	1152523	656	67.78	0.013	8.42	0.08926	0.75	0.30392	2.56	2.59923	21.89	0.04971	0.42	0.02226	0.19
137	A Main WB-2	5	25	1411954	1152836	1411733	1152767	790	231.52	0.044	34.64	0.10224	3.54	0.33740	11.69	2.71153	93.93	0.06135	2.13	0.02607	0.90
138	Q Main WB-3 2 Pitkin	5	25	1411733	1152767	1411616	1152729	790	123.02	0.023	18.41	0.10224	1.88	0.33740	6.21	2.71153	49.91	0.06135	1.13	0.02607	0.48
139	A Main WB-4	5	30	1411616	1152729	1411526	1152703	490	93.68	0.018	8.69	0.08926	0.78	0.30392	2.64	2.59923	22.60	0.04971	0.43	0.02226	0.19
140	A Main EB-1	5	30	1411543	1152679	1411738	1152734	818	202.61	0.038	31.39	0.08926	2.80	0.30392	9.54	2.59923	81.59	0.04971	1.56	0.02226	0.70
141	Q Main EB-2 2 University	5	25	1411738	1152734	1411852	1152771	818	119.85	0.023	18.57	0.10224	1.90	0.33740	6.27	2.71153	50.35	0.06135	1.14	0.02607	0.48
142	A Main EB-3	5	30	1411852	1152771	1412006	1152821	999	161.91	0.031	30.63	0.08926	2.73	0.30392	9.31	2.59923	79.63	0.04971	1.52	0.02226	0.68
143	C Chestnut Ramp 1	4	30	1409975	1150015	1410001	1149888	1178	129.63	0.025	28.92	0.08673	2.51	0.29891	8.65	2.45069	70.88	0.05027	1.45	0.02236	0.65
144	C Chestnut Ramp 2	4	30	1410001	1149888	1410006	1149831	1178	57.22	0.011	12.77	0.08673	1.11	0.29891	3.82	2.45069	31.29	0.05027	0.64	0.02236	0.29
145	Q Chestnut Ramp-3 2 Pitkin	4	25	1410006	1149831	1409992	1149792	1178	41.44	0.008	9.24	0.09845	0.91	0.30445	2.81	2.39531	22.14	0.05911	0.55	0.02409	0.22
146	A Chestnut Ramp 4	4	30	1409992	1149792	1409937	1149749	1178	69.81	0.013	15.58	0.08673	1.35	0.29891	4.66	2.45069	38.17	0.05027	0.78	0.02236	0.35
147	C Union Ramp 2 IL-3	4	35	1410966	1150054	1411022	1150119	29	85.80	0.016	0.47	0.07892	0.04	0.29845	0.14	2.75423	1.30	0.04434	0.02	0.02195	0.01
148	C Union Ramp 2 IL-2	4	35	1411022	1150119	1411065	1150186	29	79.61	0.015	0.44	0.07892	0.03	0.29845	0.13	2.75423	1.20	0.04434	0.02	0.02195	0.01
149	C Union Ramp 2 IL-1	4	35	1411065	1150186	1411098	1150260	29	81.02	0.015	0.45	0.07892	0.04	0.29845	0.13	2.75423	1.23	0.04434	0.02	0.02195	0.01
150	A Union Ramp 2 IL-1	4	35	1411098	1150260	1411128	1150348	238	92.97	0.018	4.19	0.07892	0.33	0.29845	1.25	2.75423	11.54	0.04434	0.19	0.02195	0.09
151	A Union Ramp 2 IL-2	4	35	1411128	1150348	1411152	1150435	238	90.25	0.017	4.07	0.07892	0.32	0.29845	1.21	2.75423	11.20	0.04434	0.18	0.02195	0.09
152	A Union Ramp 2 IL-3	4	35	1411152	1150435	1411198	1150557	238	130.38	0.025	5.88	0.07892	0.46	0.29845	1.75	2.75423	16.19	0.04434	0.26	0.02195	0.13
153	C IL Ramp 2 PitkinS-1	4	35	1411117	1150553	1411036	1150394	48	178.44	0.034	1.62	0.07892	0.13	0.29845	0.48	2.75423	4.47	0.04434	0.07	0.02195	0.04
154	C IL Ramp 2 PitkinS-2	4	35	1411036	1150394	1410994	1150289	48	113.09	0.021	1.03	0.07892	0.08	0.29845	0.31	2.75423	2.83	0.04434	0.05	0.02195	0.02
155	A Pitkin Ramp 2 IL-1	4	35	1410994	1150289	1410950	1150175	305	122.20	0.023	7.06	0.07892	0.56	0.29845	2.11	2.75423	19.44	0.04434	0.31	0.02195	0.15
156	A Pitkin Ramp 2 IL-2	4	35	1410950	1150175	1410928	1150080	305	97.51	0.018	5.63	0.07892	0.44	0.29845	1.68	2.75423	15.51	0.04434	0.25	0.02195	0.12
157	C IL Ramp 2 Union-1	4	35	1411502	1151313	1411577	1151510	217	210.79	0.040	8.66	0.07892	0.68	0.29845	2.59	2.75423	23.86	0.04434	0.38	0.02195	0.19
158	C IL Ramp 2 Union-2	4	35	1411577	1151510	1411642	1151684	217	185.74	0.035	7.63	0.07892	0.60	0.29845	2.28	2.75423	21.03	0.04434	0.34	0.02195	0.17
159	C IL Ramp 2 Union-3	4	35	1411642	1151684	1411679	1151780	217	102.88	0.019	4.23	0.07892	0.33	0.29845	1.26	2.75423	11.65	0.04434	0.19	0.02195	0.09
160	C IL Ramp 2 Union-4	4	35	1411679	1151780	1411736	1151908	217	140.12	0.027	5.76	0.07892	0.45	0.29845	1.72	2.75423	15.86	0.04434	0.26	0.02195	0.13
161	C IL Ramp 2 Union-5	4	35	1411736	1151908	1411819	1152064	217	176.71	0.033	7.26	0.07892	0.57	0.29845	2.17	2.75423	20.00	0.04434	0.32	0.02195	0.16
162	C IL Ramp 2 Union-6	4	35	1411819	1152064	1411880	1152201	217	149.97	0.028	6.16	0.07892	0.49	0.29845	1.84	2.75423	16.98	0.04434	0.27	0.02195	0.14
163	C IL Ramp 2 Pitkin N-1	4	45	1411762	1152657	1411756	1152567	162	90.20	0.017	2.77	0.06779	0.19	0.30638	0.85	3.13934	8.69	0.03624	0.10	0.02156	0.06
164	C IL Ramp 2 Pitkin N-2	4	45	1411756	1152567	1411746	1152509	162	58.86	0.011	1.81	0.06779	0.12	0.30638	0.55	3.13934	5.67	0.03624	0.07	0.02156	0.04
165	C IL Ramp 2 Pitkin N-3	4	40	1411746	1152509	1411572	1151913	162	620.88	0.118	19.05	0.07275	1.39	0.30377	5.79	2.98891	56.94	0.03993	0.76	0.02187	0.42
166	C IL Ramp 2 Pitkin N-4	4	35	1411572	1151913	1411545	1151804	162	112.29	0.021	3.45	0.07892	0.27	0.29845	1.03	2.75423	9.49	0.04434	0.15	0.02195	0.08

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
No-Build ETC+20

ETC+20 Year = 2035
ETC+20 Growth FACTOR = NA

Link Input Data

TOTAL NO-BUILD ETC+20 VOC EMISSIONS BURDEN =	134	g/hr
TOTAL NO-BUILD ETC+20 NOx EMISSIONS BURDEN =	527	g/hr
TOTAL NO-BUILD ETC+20 CO EMISSIONS BURDEN =	4,797	g/hr
TOTAL NO-BUILD ETC+20 PM-10 EMISSIONS BURDEN =	83	g/hr
TOTAL NO-BUILD ETC+20 PM-2.5 EMISSIONS BURDEN =	38	g/hr

(ALL DATA (except yellow fields) ON THIS PAGE IS FORMULA GENERATED - enter data on ETC input page)

Link	Link Description	MOVES	Speed	X1	Y1	X2	Y2	PM Peak	Length	Length	VMT	VOC		NOx		CO		PM-10		PM-2.5	
No.		Source	(mph)	(ft)	(ft)	(ft)	(ft)	(veh/hr)	(m)	(mi)	(veh*mi/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)
1	C IL EB-1	4	50	1409364	1149606	1409460	1149625	260	97.86	0.019	4.82	0.04397	0.21	0.23659	1.14	1.98340	9.56	0.02391	0.12	0.01302	0.06
2	C IL EB-2	4	50	1409460	1149625	1409653	1149655	260	195.32	0.037	9.62	0.04397	0.42	0.23659	2.28	1.98340	19.08	0.02391	0.23	0.01302	0.13
3	C IL EB-3	4	50	1409653	1149655	1410128	1149703	260	477.42	0.090	23.51	0.04397	1.03	0.23659	5.56	1.98340	46.63	0.02391	0.56	0.01302	0.31
4	C IL EB-4	4	50	1410128	1149703	1410299	1149720	260	171.84	0.033	8.46	0.04397	0.37	0.23659	2.00	1.98340	16.78	0.02391	0.20	0.01302	0.11
5	C IL EB-5	4	50	1410299	1149720	1410497	1149743	260	199.33	0.038	9.82	0.04397	0.43	0.23659	2.32	1.98340	19.47	0.02391	0.23	0.01302	0.13
6	C IL EB-6	4	50	1410497	1149743	1410660	1149798	260	172.03	0.033	8.47	0.04397	0.37	0.23659	2.00	1.98340	16.80	0.02391	0.20	0.01302	0.11
7	C IL EB-7	4	50	1410660	1149798	1410795	1149883	260	159.53	0.030	7.86	0.04397	0.35	0.23659	1.86	1.98340	15.58	0.02391	0.19	0.01302	0.10
8	C IL EB-8	4	50	1410795	1149883	1410907	1149991	260	155.59	0.029	7.66	0.04397	0.34	0.23659	1.81	1.98340	15.20	0.02391	0.18	0.01302	0.10
9	C IL EB-9	4	50	1410907	1149991	1410958	1150059	260	85.00	0.016	4.19	0.04397	0.18	0.23659	0.99	1.98340	8.30	0.02391	0.10	0.01302	0.05
10	C IL EB-10	4	50	1410958	1150059	1411056	1150245	229	210.24	0.040	9.12	0.04397	0.40	0.23659	2.16	1.98340	18.09	0.02391	0.22	0.01302	0.12
11	C IL EB-11	4	50	1411056	1150245	1411132	1150430	229	200.00	0.038	8.67	0.04397	0.38	0.23659	2.05	1.98340	17.20	0.02391	0.21	0.01302	0.11
12	C IL EB-12	4	50	1411132	1150430	1411181	1150560	229	138.93	0.026	6.03	0.04397	0.26	0.23659	1.43	1.98340	11.95	0.02391	0.14	0.01302	0.08
13	C IL EB-13	4	50	1411181	1150560	1411412	1151135	486	619.67	0.117	57.04	0.04397	2.51	0.23659	13.49	1.98340	113.13	0.02391	1.36	0.01302	0.74
14	C IL EB-14	4	50	1411412	1151135	1411485	1151320	486	198.88	0.038	18.31	0.04397	0.80	0.23659	4.33	1.98340	36.31	0.02391	0.44	0.01302	0.24
15	C IL EB-15	4	50	1411485	1151320	1411641	1151745	253	452.73	0.086	21.69	0.04397	0.95	0.23659	5.13	1.98340	43.03	0.02391	0.52	0.01302	0.28
16	C IL EB-16	4	50	1411641	1151745	1411798	1152227	253	506.93	0.096	24.29	0.04397	1.07	0.23659	5.75	1.98340	48.18	0.02391	0.58	0.01302	0.32
17	C IL EB-17	4	50	1411798	1152227	1411825	1152365	253	140.62	0.027	6.74	0.04397	0.30	0.23659	1.59	1.98340	13.36	0.02391	0.16	0.01302	0.09
18	C IL EB-18	4	50	1411825	1152365	1411834	1152489	253	124.33	0.024	5.96	0.04397	0.26	0.23659	1.41	1.98340	11.82	0.02391	0.14	0.01302	0.08
19	C IL EB-19	4	50	1411834	1152489	1411823	1152653	253	164.37	0.031	7.88	0.04397	0.35	0.23659	1.86	1.98340	15.62	0.02391	0.19	0.01302	0.10
20	C IL EB-20	4	50	1411823	1152653	1411780	1152836	253	187.98	0.036	9.01	0.04397	0.40	0.23659	2.13	1.98340	17.87	0.02391	0.22	0.01302	0.12
21	C IL EB-21	4	50	1411780	1152836	1411684	1153037	253	222.75	0.042	10.67	0.04397	0.47	0.23659	2.53	1.98340	21.17	0.02391	0.26	0.01302	0.14
22	C IL EB-22	4	50	1411684	1153037	1411617	1153138	253	121.20	0.023	5.81	0.04397	0.26	0.23659	1.37	1.98340	11.52	0.02391	0.14	0.01302	0.08
23	C IL EB-23	4	50	1411617	1153138	1411545	1153222	253	110.63	0.021	5.30	0.04397	0.23	0.23659	1.25	1.98340	10.51	0.02391	0.13	0.01302	0.07
24	C IL WB-1	4	50	1411498	1153176	1411571	1153102	424	103.95	0.020	8.35	0.04397	0.37	0.23659	1.97	1.98340	16.56	0.02391	0.20	0.01302	0.11
25	C IL WB-2	4	50	1411571	1153102	1411639	1153016	424	109.64	0.021	8.80	0.04397	0.39	0.23659	2.08	1.98340	17.46	0.02391	0.21	0.01302	0.11
26	C IL WB-3	4	50	1411639	1153016	1411736	1152830	424	209.77	0.040	16.85	0.04397	0.74	0.23659	3.99	1.98340	33.41	0.02391	0.40	0.01302	0.22
27	C IL WB-4	4	50	1411736	1152830	1411784	1152652	424	184.36	0.035	14.80	0.04397	0.65	0.23659	3.50	1.98340	29.36	0.02391	0.35	0.01302	0.19
28	C IL WB-5	4	50	1411784	1152652	1411796	1152489	253	163.44	0.031	7.83	0.04397	0.34	0.23659	1.85	1.98340	15.53	0.02391	0.19	0.01302	0.10
29	C IL WB-6	4	50	1411796	1152489	1411786	1152371	253	118.42	0.022	5.67	0.04397	0.25	0.23659	1.34	1.98340	11.25	0.02391	0.14	0.01302	0.07
30	C IL WB-7	4	50	1411786	1152371	1411752	1152230	253	145.04	0.027	6.95	0.04397	0.31	0.23659	1.64	1.98340	13.78	0.02391	0.17	0.01302	0.09
31	C IL WB-8	4	50	1411752	1152230	1411601	1151755	253	498.42	0.094	23.88	0.04397	1.05	0.23659	5.65	1.98340	47.37	0.02391	0.57	0.01302	0.31
32	C IL WB-9	4	50	1411601	1151755	1411374	1151161	253	635.90	0.120	30.47	0.04397	1.34	0.23659	7.21	1.98340	60.43	0.02391	0.73	0.01302	0.40
33	C IL WB-10	4	50	1411374	1151161	1411134	1150550	253	656.45	0.124	31.45	0.04397	1.38	0.23659	7.44	1.98340	62.39	0.02391	0.75	0.01302	0.41
34	C IL WB-11	4	50	1411134	1150550	1411020	1150257	253	314.40	0.060	15.06	0.04397	0.66	0.23659	3.56	1.98340	29.88	0.02391	0.36	0.01302	0.20
35	C IL WB-12	4	50	1411020	1150257	1410933	1150077	202	199.92	0.038	7.65	0.04397	0.34	0.23659	1.81	1.98340	15.17	0.02391	0.18	0.01302	0.10
36	C IL WB-13	4	50	1410933	1150077	1410881	1150005	202	88.81	0.017	3.40	0.04397	0.15	0.23659	0.80	1.98340	6.74	0.02391	0.08	0.01302	0.04
37	C IL WB-14	4	50	1410881	1150005	1410784	1149910	538	135.77	0.026	13.83	0.04397	0.61	0.23659	3.27	1.98340	27.44	0.02391	0.33	0.01302	0.18
38	C IL WB-15	4	50	1410784	1149910	1410702	1149857	538	97.64	0.018	9.95	0.04397	0.44	0.23659	2.35	1.98340	19.73	0.02391	0.24	0.01302	0.13
39	C IL WB-16	4	50	1410702	1149857	1410604	1149806	538	110.48	0.021	11.26	0.04397	0.49	0.23659	2.66	1.98340	22.33	0.02391	0.27	0.01302	0.15
40	C IL WB-17	4	50	1410604	1149806	1410490	1149773	538	118.68	0.022	12.09	0.04397	0.53	0.23659	2.86	1.98340	23.98	0.02391	0.29	0.01302	0.16
41	C IL WB-18	4	50	1410490	1149773	1410275	1149749	538	216.34	0.041	22.04	0.04397	0.97	0.23659	5.22	1.98340	43.72	0.02391	0.53	0.01302	0.29
42	C IL WB-19	4	50	1410275	1149749	1410114	1149731	538	162.00	0.031	16.51	0.04397	0.73	0.23659	3.91	1.98340	32.74	0.02391	0.39	0.01302	0.21
43	C IL WB-20	4	50	1410114	1149731	1409478	1149672	538	638.73	0.121	65.08	0.04397	2.86	0.23659	15.40	1.98340	129.09	0.02391	1.56	0.01302	0.85
44	C IL WB-21	4	50	1409478	1149672	1409359	1149672	538	119.00	0.023	12.13	0.04397	0.53	0.23659	2.87	1.98340	24.05	0.02391	0.29	0.01302	0.16
45	C IL WB-22	4	50	1409359	1149672	1409359	1149672	2149	0.00	0.000	0.00	0.04397	0.00	0.23659	0.00	1.98340	0.00	0.02391	0.00	0.01302	0.00
46	A Union-1	5	25	1410726	1149275	1410794	1149464	412	200.86	0.038	15.67	0.08632	1.35	0.27796	4.36	2.58054	40.45	0.05983	0.94	0.02460	0.39
47	A Union-2	5	30	1410794	1149464	1410911	1149769	412	326.67	0.062	25.49	0.07560	1.93	0.25170	6.42	2.47910	63.19	0.04825	1.23	0.02085	0.53
48	A Union-3	5	30	1410911	1149769	1410943	1149866	412	102.14	0.019	7.97	0.07560	0.60	0.25170	2.01	2.47910	19.76	0.04825	0.38	0.02085	0.17
49	A Union-4	5	35	1410943	1149866	1410991	1149988	492	131.10	0.025	12.22	0.06465	0.79	0.23811	2.91	2.28839	27.96	0.03909	0.48	0.01779	0.22
50	C Union-5	5	35	1410991	1149988	1411077	1150170	492	201.30	0.038	18.76	0.06465	1.21	0.23811	4.47	2.28839	42.92	0.03909	0.73	0.01779	0.33
51	C Union-6	5	35	1411077	1150170	1411114	1150254	492	91.79	0.017	8.55	0.06465	0.55	0.23811	2.04	2.28839	19.57	0.03909	0.33	0.01779	0.15
52	C Union-7	5	35	1411114	1150254	1411158	1150359	255	113.85	0.022	5.50	0.06465	0.36	0.23811	1.31	2.28839	12.58	0.03909	0.21	0.01779	0.10

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
53	C Union-8	5	35	1411158	1150359	1411247	1150588	255	245.69	0.047	11.87	0.06465	0.77	0.23811	2.83	2.28839	27.15	0.03909	0.46	0.01779	0.21
54	C Union-9	5	35	1411247	1150588	1411296	1150708	255	129.62	0.025	6.26	0.06465	0.40	0.23811	1.49	2.28839	14.33	0.03909	0.24	0.01779	0.11
55	C Union-10	5	30	1411296	1150708	1411333	1150786	255	86.33	0.016	4.17	0.07560	0.32	0.25170	1.05	2.47910	10.34	0.04825	0.20	0.02085	0.09
56	Q Union-11 2 Broad	5	25	1411333	1150786	1411371	1150880	192	101.39	0.019	3.69	0.08632	0.32	0.27796	1.02	2.58054	9.51	0.05983	0.22	0.02460	0.09
57	A Union-12	5	35	1411371	1150880	1411495	1151218	475	360.03	0.068	32.39	0.06465	2.09	0.23811	7.71	2.28839	74.12	0.03909	1.27	0.01779	0.58
58	Q Union-13 2 East	5	25	1411495	1151218	1411534	1151314	237	103.62	0.020	4.65	0.08632	0.40	0.27796	1.29	2.58054	12.00	0.05983	0.28	0.02460	0.11
59	A Union-14	5	35	1411534	1151314	1411798	1151958	293	696.01	0.132	38.62	0.06465	2.50	0.23811	9.20	2.28839	88.39	0.03909	1.51	0.01779	0.69
60	C Union-15	5	30	1411798	1151958	1411898	1152195	358	257.23	0.049	17.44	0.07560	1.32	0.25170	4.39	2.47910	43.24	0.04825	0.84	0.02085	0.36
61	C Union-16	5	30	1411898	1152195	1411977	1152406	634	225.30	0.043	27.05	0.07560	2.05	0.25170	6.81	2.47910	67.07	0.04825	1.31	0.02085	0.56
62	Q Union-17 2 University	5	25	1411977	1152406	1412017	1152506	634	107.70	0.020	12.93	0.08632	1.12	0.27796	3.59	2.58054	33.37	0.05983	0.77	0.02460	0.32
63	A Union-18	5	30	1412017	1152506	1412106	1152728	339	239.18	0.045	15.36	0.07560	1.16	0.25170	3.87	2.47910	38.07	0.04825	0.74	0.02085	0.32
64	Q Union 2 Broad Lt	5	10	1411320	1150792	1411357	1150885	63	100.09	0.019	1.19	0.17001	0.20	0.47652	0.57	3.75493	4.48	0.11709	0.14	0.04401	0.05
65	Q Union 2 East Rt	5	15	1411513	1151212	1411550	1151310	238	104.75	0.020	4.72	0.12689	0.60	0.38075	1.80	3.36555	15.89	0.08601	0.41	0.03409	0.16
66	A Pitkin-1	5	35	1411534	1152741	1411600	1152704	158	75.66	0.014	2.26	0.06465	0.15	0.23811	0.54	2.28839	5.18	0.03909	0.09	0.01779	0.04
67	A Pitkin-2	5	35	1411600	1152704	1411634	1152640	158	72.47	0.014	2.17	0.06465	0.14	0.23811	0.52	2.28839	4.96	0.03909	0.08	0.01779	0.04
68	A Pitkin-3	5	40	1411634	1152640	1411659	1152545	158	98.23	0.019	2.94	0.05590	0.16	0.23344	0.69	2.12703	6.25	0.03214	0.09	0.01558	0.05
69	A Pitkin-4	5	40	1411659	1152545	1411662	1152454	158	91.05	0.017	2.72	0.05590	0.15	0.23344	0.64	2.12703	5.80	0.03214	0.09	0.01558	0.04
70	A Pitkin-5	5	40	1411662	1152454	1411645	1152364	158	91.59	0.017	2.74	0.05590	0.15	0.23344	0.64	2.12703	5.83	0.03214	0.09	0.01558	0.04
71	C Pitkin-6	5	40	1411645	1152364	1411584	1152097	158	273.88	0.052	8.20	0.05590	0.46	0.23344	1.91	2.12703	17.43	0.03214	0.26	0.01558	0.13
72	C Pitkin-7	5	40	1411584	1152097	1411544	1151894	142	206.90	0.039	5.56	0.05590	0.31	0.23344	1.30	2.12703	11.84	0.03214	0.18	0.01558	0.09
73	C Pitkin-8	5	35	1411544	1151894	1411537	1151806	142	88.28	0.017	2.37	0.06465	0.15	0.23811	0.57	2.28839	5.43	0.03909	0.09	0.01779	0.04
74	C Pitkin-9	5	35	1411537	1151806	1411451	1151533	383	286.23	0.054	20.76	0.06465	1.34	0.23811	4.94	2.28839	47.51	0.03909	0.81	0.01779	0.37
75	Q Pitkin-10 2 East	5	25	1411451	1151533	1411417	1151431	383	107.52	0.020	7.80	0.08632	0.67	0.27796	2.17	2.58054	20.13	0.05983	0.47	0.02460	0.19
76	A Pitkin-11	5	35	1411417	1151431	1411313	1151145	297	304.32	0.058	17.12	0.06465	1.11	0.23811	4.08	2.28839	39.17	0.03909	0.67	0.01779	0.30
77	Q Pitkin-12 2 Broad	5	25	1411313	1151145	1411274	1151045	297	107.34	0.020	6.04	0.08632	0.52	0.27796	1.68	2.58054	15.58	0.05983	0.36	0.02460	0.15
78	A Pitkin-13	5	40	1411274	1151045	1411076	1150549	426	534.06	0.101	43.09	0.05590	2.41	0.23344	10.06	2.12703	91.65	0.03214	1.38	0.01558	0.67
79	A Pitkin-14	5	35	1411076	1150549	1410982	1150298	449	268.02	0.051	22.79	0.06465	1.47	0.23811	5.43	2.28839	52.16	0.03909	0.89	0.01779	0.41
80	A Pitkin-15	5	35	1410982	1150298	1410914	1150138	180	173.85	0.033	5.93	0.06465	0.38	0.23811	1.41	2.28839	13.56	0.03909	0.23	0.01779	0.11
81	C Pitkin-16	5	35	1410914	1150138	1410855	1150035	180	118.70	0.022	4.05	0.06465	0.26	0.23811	0.96	2.28839	9.26	0.03909	0.16	0.01779	0.07
82	C Pitkin-17	5	35	1410855	1150035	1410729	1149918	272	171.94	0.033	8.86	0.06465	0.57	0.23811	2.11	2.28839	20.27	0.03909	0.35	0.01779	0.16
83	C Pitkin-18	5	35	1410729	1149918	1410615	1149853	272	131.23	0.025	6.76	0.06465	0.44	0.23811	1.61	2.28839	15.47	0.03909	0.26	0.01779	0.12
84	C Pitkin-19	5	35	1410615	1149853	1410495	1149813	272	126.49	0.024	6.52	0.06465	0.42	0.23811	1.55	2.28839	14.91	0.03909	0.25	0.01779	0.12
85	C Pitkin-20	5	35	1410495	1149813	1410311	1149789	272	185.56	0.035	9.56	0.06465	0.62	0.23811	2.28	2.28839	21.87	0.03909	0.37	0.01779	0.17
86	Q Pitkin-21 W 2 Chestnut	5	25	1410311	1149789	1410191	1149778	272	120.50	0.023	6.21	0.08632	0.54	0.27796	1.73	2.58054	16.02	0.05983	0.37	0.02460	0.15
87	A Pitkin-22	5	35	1410191	1149778	1410150	1149775	272	41.11	0.008	2.12	0.06465	0.14	0.23811	0.50	2.28839	4.85	0.03909	0.08	0.01779	0.04
88	A Pitkin-23	5	35	1410150	1149775	1409937	1149749	360	214.58	0.041	14.63	0.06465	0.95	0.23811	3.48	2.28839	33.48	0.03909	0.57	0.01779	0.26
89	A Pitkin-24	5	35	1409937	1149749	1409725	1149728	1611	213.04	0.040	65.00	0.06465	4.20	0.23811	15.48	2.28839	148.75	0.03909	2.54	0.01779	1.16
90	C Pitkin-25	5	35	1409725	1149728	1409476	1149694	1611	251.31	0.048	76.68	0.06465	4.96	0.23811	18.26	2.28839	175.47	0.03909	3.00	0.01779	1.36
91	C Howell-1	5	35	1409364	1149606	1409675	1149624	186	311.52	0.059	10.97	0.06465	0.71	0.23811	2.61	2.28839	25.11	0.03909	0.43	0.01779	0.20
92	C Howell-2	5	35	1409675	1149624	1409962	1149652	186	288.36	0.055	10.16	0.06465	0.66	0.23811	2.42	2.28839	23.25	0.03909	0.40	0.01779	0.18
93	C Howell-3	5	30	1409962	1149652	1410121	1149667	187	159.71	0.030	5.66	0.07560	0.43	0.25170	1.42	2.47910	14.02	0.04825	0.27	0.02085	0.12
94	Q Howell-4 E 2 Monroe	5	20	1410121	1149667	1410202	1149673	187	81.22	0.015	2.88	0.10375	0.30	0.31955	0.92	3.04671	8.76	0.06996	0.20	0.02869	0.08
95	A Howell-5	5	25	1410202	1149673	1410308	1149672	87	106.00	0.020	1.75	0.08632	0.15	0.27796	0.49	2.58054	4.51	0.05983	0.10	0.02460	0.04
96	A Howell-6	5	35	1410308	1149672	1410586	1149728	87	283.58	0.054	4.67	0.06465	0.30	0.23811	1.11	2.28839	10.69	0.03909	0.18	0.01779	0.08
97	C Howell-7	5	30	1410586	1149728	1410805	1149840	79	245.98	0.047	3.68	0.07560	0.28	0.25170	0.93	2.47910	9.12	0.04825	0.18	0.02085	0.08
98	C Howell-8	5	15	1410805	1149840	1410855	1149874	79	60.46	0.011	0.90	0.12689	0.11	0.38075	0.34	3.36555	3.04	0.08601	0.08	0.03409	0.03
99	Q Howell-9 2 Union	5	10	1410855	1149874	1410926	1149862	79	72.01	0.014	1.08	0.17001	0.18	0.47652	0.51	3.75493	4.05	0.11709	0.13	0.04401	0.05
100	C Clinton NB-2	5	45	1409587	1149436	1409518	1149816	1869	386.21	0.073	136.71	0.04941	6.75	0.23200	31.72	2.03332	277.98	0.02664	3.64	0.01393	1.90
101	Q Monroe N-6 2 Howell	5	25	1410413	1149572	1410329	1149638	599	106.83	0.020	12.12	0.08632	1.05	0.27796	3.37	2.58054	31.27	0.05983	0.73	0.02460	0.30
102	A Monroe N-7	5	35	1410329	1149638	1410242	1149704	680	109.20	0.021	14.06	0.06465	0.91	0.23811	3.35	2.28839	32.18	0.03909	0.55	0.01779	0.25
103	Q Monroe N 2 Chestnut	5	25	1410242	1149704	1410190	1149743	680	65.00	0.012	8.37	0.08632	0.72	0.27796	2.33	2.58054	21.60	0.05983	0.50	0.02460	0.21
104	A Chestnut N-1	5	35	1410190	1149743	1410150	1149775	443	51.22	0.010	4.30	0.06465	0.28	0.23811	1.02	2.28839	9.84	0.03909	0.17	0.01779	0.08
105	A Chestnut N-2	5	35	1410150	1149775	1410099	1149832	443	76.49	0.014	6.42	0.06465	0.41	0.23811	1.53	2.28839	14.69	0.03909	0.25	0.01779	0.11
106	A Chestnut N-3	5	35	1410099	1149832	1410056	1149907	443	86.45	0.016	7.25	0.06465	0.47	0.23811	1.73	2.28839	16.60	0.03909	0.28	0.01779	0.13
107	A Chestnut N-4	5	35	1410056	1149907	1410021	1150013	443	111.63	0.021	9.37	0.06465	0.61	0.23811	2.23	2.28839	21.43	0.03909	0.37	0.01779	0.17
108	C Chestnut S-1	5	35	1409995	1150019	1410026	1149915	599	108.52	0.021	12.31	0.06465	0.80	0.23811	2.93	2.28839	28.17	0.03909	0.48	0.01779	0.22
109	Q Chestnut S-2 2 Pitkin	5	25	1410026	1149915	1410086	1149802	599	127.94	0.024	14.51	0.08632	1.25	0.27796	4.03	2.58054	37.46	0.05983	0.87	0.02460	0.36
110	A Chestnut S-3	5	35	1410086	1149802	1410125	1149754	735	61.85	0.012	8.61	0.06465	0.56	0.23811	2.05	2.28839	19.70	0.03909	0.34	0.01779	0.15
111	Q Chestnut S-4 2 Monroe	5	25	1410125	1149754	1410188	1149705	735	79.81	0.015	11.11	0.08632	0.96	0.27796	3.09	2.58054	28.67	0.05983	0.66	0.02460	0.27
112	A Monroe S-1	5	35	1410188	1149705	1410414	1149543	758	278.06	0.053	39.92	0.06465	2.58	0.23811	9.51	2.28839	91.35	0.03909	1.56	0.01779	0.71

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
113	Q Broad WB-1 Bridge	5	15	1411368	1150966	1411283	1151006	83	93.94	0.018	1.48	0.12689	0.19	0.38075	0.56	3.36555	4.97	0.08601	0.13	0.03409	0.05
114	A Broad WB-2	5	30	1411283	1151006	1411234	1151024	92	52.20	0.010	0.91	0.07560	0.07	0.25170	0.23	2.47910	2.25	0.04825	0.04	0.02085	0.02
115	A Broad WB-3	5	30	1411234	1151024	1411136	1151062	92	105.11	0.020	1.83	0.07560	0.14	0.25170	0.46	2.47910	4.54	0.04825	0.09	0.02085	0.04
116	Q Broad EB-3 2 Pitkin	5	20	1411128	1151036	1411219	1150998	266	98.62	0.019	4.97	0.10375	0.52	0.31955	1.59	3.04671	15.14	0.06996	0.35	0.02869	0.14
117	A Broad EB-4	5	15	1411219	1150998	1411275	1150972	283	61.74	0.012	3.31	0.12689	0.42	0.38075	1.26	3.36555	11.14	0.08601	0.28	0.03409	0.11
118	Q Broad EB-5 Bridge	5	10	1411275	1150972	1411358	1150933	283	91.71	0.017	4.92	0.17001	0.84	0.47652	2.34	3.75493	18.46	0.11709	0.58	0.04401	0.22
119	Q Broad 2 Pitkin Rt	5	10	1411121	1151020	1411213	1150981	157	99.92	0.019	2.97	0.17001	0.51	0.47652	1.42	3.75493	11.16	0.11709	0.35	0.04401	0.13
120	A East WB-2	5	20	1411586	1151352	1411537	1151364	456	50.45	0.010	4.36	0.10375	0.45	0.31955	1.39	3.04671	13.27	0.06996	0.30	0.02869	0.13
121	Q East WB-3 Bridge	5	20	1411537	1151364	1411435	1151398	445	107.52	0.020	9.06	0.10375	0.94	0.31955	2.90	3.04671	27.61	0.06996	0.63	0.02869	0.26
122	A East WB-4	5	20	1411435	1151398	1411374	1151422	388	65.55	0.012	4.82	0.10375	0.50	0.31955	1.54	3.04671	14.68	0.06996	0.34	0.02869	0.14
123	A East EB-1	5	20	1411366	1151389	1411426	1151380	729	60.67	0.011	8.38	0.10375	0.87	0.31955	2.68	3.04671	25.52	0.06996	0.59	0.02869	0.24
124	Q East EB-2 Bridge	5	20	1411426	1151380	1411524	1151347	729	103.41	0.020	14.28	0.10375	1.48	0.31955	4.56	3.04671	43.50	0.06996	1.00	0.02869	0.41
125	A East EB-3	5	20	1411524	1151347	1411594	1151322	926	74.33	0.014	13.04	0.10375	1.35	0.31955	4.17	3.04671	39.72	0.06996	0.91	0.02869	0.37
126	A University NB-1	5	30	1412065	1152544	1411993	1152583	733	81.88	0.016	11.37	0.07560	0.86	0.25170	2.86	2.47910	28.18	0.04825	0.55	0.02085	0.24
127	A University NB-2	5	30	1411993	1152583	1411963	1152623	733	50.00	0.009	6.94	0.07560	0.52	0.25170	1.75	2.47910	17.21	0.04825	0.33	0.02085	0.14
128	A University NB-3	5	30	1411963	1152623	1411940	1152704	733	84.20	0.016	11.69	0.07560	0.88	0.25170	2.94	2.47910	28.98	0.04825	0.56	0.02085	0.24
129	Q University NB-4 2 Main	5	25	1411940	1152704	1411926	1152747	733	45.22	0.009	6.28	0.08632	0.54	0.27796	1.75	2.58054	16.20	0.05983	0.38	0.02460	0.15
130	A University NB-5	5	30	1411926	1152747	1411903	1152859	978	114.34	0.022	21.18	0.07560	1.60	0.25170	5.33	2.47910	52.50	0.04825	1.02	0.02085	0.44
131	A University NB-6	5	40	1411903	1152859	1411858	1152970	978	119.77	0.023	22.19	0.05590	1.24	0.23344	5.18	2.12703	47.19	0.03214	0.71	0.01558	0.35
132	Q University SB-6 2 Main	5	10	1411823	1152953	1411863	1152849	813	111.43	0.021	17.16	0.17001	2.92	0.47652	8.18	3.75493	64.42	0.11709	2.01	0.04401	0.76
133	A University SB-7	5	30	1411863	1152849	1411883	1152791	601	61.35	0.012	6.98	0.07560	0.53	0.25170	1.76	2.47910	17.31	0.04825	0.34	0.02085	0.15
134	A University SB-8	5	30	1411883	1152791	1411941	1152605	601	194.83	0.037	22.18	0.07560	1.68	0.25170	5.58	2.47910	54.98	0.04825	1.07	0.02085	0.46
135	Q University SB-9 2 Union	5	25	1411941	1152605	1411994	1152548	601	77.83	0.015	8.86	0.08632	0.76	0.27796	2.46	2.58054	22.86	0.05983	0.53	0.02460	0.22
136	A University SB-10	5	30	1411994	1152548	1412057	1152523	725	67.78	0.013	9.31	0.07560	0.70	0.25170	2.34	2.47910	23.07	0.04825	0.45	0.02085	0.19
137	A Main WB-2	5	25	1411954	1152836	1411733	1152767	834	231.52	0.044	36.57	0.08632	3.16	0.27796	10.16	2.58054	94.37	0.05983	2.19	0.02460	0.90
138	Q Main WB-3 2 Pitkin	5	25	1411733	1152767	1411616	1152729	834	123.02	0.023	19.43	0.08632	1.68	0.27796	5.40	2.58054	50.14	0.05983	1.16	0.02460	0.48
139	A Main WB-4	5	30	1411616	1152729	1411526	1152703	516	93.68	0.018	9.16	0.07560	0.69	0.25170	2.30	2.47910	22.70	0.04825	0.44	0.02085	0.19
140	A Main EB-1	5	30	1411543	1152679	1411738	1152734	862	202.61	0.038	33.08	0.07560	2.50	0.25170	8.33	2.47910	82.00	0.04825	1.60	0.02085	0.69
141	Q Main EB-2 2 University	5	25	1411738	1152734	1411852	1152771	862	119.85	0.023	19.57	0.08632	1.69	0.27796	5.44	2.58054	50.49	0.05983	1.17	0.02460	0.48
142	A Main EB-3	5	30	1411852	1152771	1412006	1152821	1055	161.91	0.031	32.35	0.07560	2.45	0.25170	8.14	2.47910	80.20	0.04825	1.56	0.02085	0.67
143	C Chestnut Ramp 1	4	30	1409975	1150015	1410001	1149888	1252	129.63	0.025	30.74	0.06943	2.13	0.23608	7.26	2.17462	66.85	0.04718	1.45	0.01951	0.60
144	C Chestnut Ramp 2	4	30	1410001	1149888	1410006	1149831	1252	57.22	0.011	13.57	0.06943	0.94	0.23608	3.20	2.17462	29.50	0.04718	0.64	0.01951	0.26
145	Q Chestnut Ramp-3 2 Pitkin	4	25	1410006	1149831	1409992	1149792	1252	41.44	0.008	9.83	0.08060	0.79	0.24370	2.39	2.24149	22.02	0.05713	0.56	0.02216	0.22
146	A Chestnut Ramp 4	4	30	1409992	1149792	1409937	1149749	1252	69.81	0.013	16.55	0.06943	1.15	0.23608	3.91	2.17462	36.00	0.04718	0.78	0.01951	0.32
147	C Union Ramp 2 IL-3	4	35	1410966	1150054	1411022	1150119	31	85.80	0.016	0.50	0.06023	0.03	0.23293	0.12	2.10366	1.06	0.03906	0.02	0.01719	0.01
148	C Union Ramp 2 IL-2	4	35	1411022	1150119	1411065	1150186	31	79.61	0.015	0.47	0.06023	0.03	0.23293	0.11	2.10366	0.98	0.03906	0.02	0.01719	0.01
149	C Union Ramp 2 IL-1	4	35	1411065	1150186	1411098	1150260	31	81.02	0.015	0.48	0.06023	0.03	0.23293	0.11	2.10366	1.00	0.03906	0.02	0.01719	0.01
150	A Union Ramp 2 IL-1	4	35	1411098	1150260	1411128	1150348	257	92.97	0.018	4.53	0.06023	0.27	0.23293	1.05	2.10366	9.52	0.03906	0.18	0.01719	0.08
151	A Union Ramp 2 IL-2	4	35	1411128	1150348	1411152	1150435	257	90.25	0.017	4.39	0.06023	0.26	0.23293	1.02	2.10366	9.24	0.03906	0.17	0.01719	0.08
152	A Union Ramp 2 IL-3	4	35	1411152	1150435	1411198	1150557	257	130.38	0.025	6.35	0.06023	0.38	0.23293	1.48	2.10366	13.35	0.03906	0.25	0.01719	0.11
153	C IL Ramp 2 PitkinS-1	4	35	1411117	1150553	1411036	1150394	51	178.44	0.034	1.72	0.06023	0.10	0.23293	0.40	2.10366	3.63	0.03906	0.07	0.01719	0.03
154	C IL Ramp 2 PitkinS-2	4	35	1411036	1150394	1410994	1150289	51	113.09	0.021	1.09	0.06023	0.07	0.23293	0.25	2.10366	2.30	0.03906	0.04	0.01719	0.02
155	A Pitkin Ramp 2 IL-1	4	35	1410994	1150289	1410950	1150175	320	122.20	0.023	7.41	0.06023	0.45	0.23293	1.73	2.10366	15.58	0.03906	0.29	0.01719	0.13
156	A Pitkin Ramp 2 IL-2	4	35	1410950	1150175	1410928	1150080	320	97.51	0.018	5.91	0.06023	0.36	0.23293	1.38	2.10366	12.43	0.03906	0.23	0.01719	0.10
157	C IL Ramp 2 Union-1	4	35	1411502	1151313	1411577	1151510	233	210.79	0.040	9.30	0.06023	0.56	0.23293	2.17	2.10366	19.57	0.03906	0.36	0.01719	0.16
158	C IL Ramp 2 Union-2	4	35	1411577	1151510	1411642	1151684	233	185.74	0.035	8.20	0.06023	0.49	0.23293	1.91	2.10366	17.24	0.03906	0.32	0.01719	0.14
159	C IL Ramp 2 Union-3	4	35	1411642	1151684	1411679	1151780	233	102.88	0.019	4.54	0.06023	0.27	0.23293	1.06	2.10366	9.55	0.03906	0.18	0.01719	0.08
160	C IL Ramp 2 Union-4	4	35	1411679	1151780	1411736	1151908	233	140.12	0.027	6.18	0.06023	0.37	0.23293	1.44	2.10366	13.01	0.03906	0.24	0.01719	0.11
161	C IL Ramp 2 Union-5	4	35	1411736	1151908	1411819	1152064	233	176.71	0.033	7.80	0.06023	0.47	0.23293	1.82	2.10366	16.40	0.03906	0.30	0.01719	0.13
162	C IL Ramp 2 Union-6	4	35	1411819	1152064	1411880	1152201	233	149.97	0.028	6.62	0.06023	0.40	0.23293	1.54	2.10366	13.92	0.03906	0.26	0.01719	0.11
163	C IL Ramp 2 Pitkin N-1	4	45	1411762	1152657	1411756	1152567	171	90.20	0.017	2.92	0.04797	0.14	0.23774	0.69	2.02397	5.91	0.02811	0.08	0.01434	0.04
164	C IL Ramp 2 Pitkin N-2	4	45	1411756	1152567	1411746	1152509	171	58.86	0.011	1.91	0.04797	0.09	0.23774	0.45	2.02397	3.86	0.02811	0.05	0.01434	0.03
165	C IL Ramp 2 Pitkin N-3	4	40	1411746	1152509	1411572	1151913	171	620.88	0.118	20.11	0.05334	1.07	0.23583	4.74	2.05894	41.40	0.03290	0.66	0.01558	0.31
166	C IL Ramp 2 Pitkin N-4	4	35	1411572	1151913	1411545	1151804	171	112.29	0.021	3.64	0.06023	0.22	0.23293	0.85	2.10366	7.65	0.03906	0.14	0.01719	0.06

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
Build Alternative ETC

Link Input Data

ETC Year =	2015
% Project Growth RATE =	0.50

TOTAL BUILD ETC VOC EMISSIONS BURDEN =	271	g/hr
TOTAL BUILD ETC NOx EMISSIONS BURDEN =	1,090	g/hr
TOTAL BUILD ETC CO EMISSIONS BURDEN =	6,728	g/hr
TOTAL BUILD ETC PM-10 EMISSIONS BURDEN =	109	g/hr
TOTAL BUILD ETC PM-2.5 EMISSIONS BURDEN =	57	g/hr

(fill in yellow shaded areas only)

Link No.	Link Description	MOVES Source	Speed (5 mph incr)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (ft)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
1	C IL Ramp EB-1	4	40	1409362	1149611	1409454	1149630	394	93.94	0.018	7.01	0.11582	0.81	0.53211	3.73	3.70866	26.00	0.04776	0.33	0.02936	0.21
2	C IL Ramp EB-2	4	40	1409454	1149630	1409653	1149655	394	200.56	0.038	14.97	0.11582	1.73	0.53211	7.96	3.70866	55.51	0.04776	0.71	0.02936	0.44
3	C IL Ramp EB-3	4	40	1409653	1149655	1410050	1149692	394	398.72	0.076	29.75	0.11582	3.45	0.53211	15.83	3.70866	110.34	0.04776	1.42	0.02936	0.87
4	Q IL Ramp EB-4	4	30	1410050	1149692	1410157	1149711	394	108.67	0.021	8.11	0.13749	1.11	0.53551	4.34	3.20337	25.98	0.05794	0.47	0.02975	0.24
5	C Howell EB-1	5	30	1410157	1149711	1410275	1149749	303	123.97	0.023	7.11	0.14081	1.00	0.54775	3.90	3.35679	23.88	0.05668	0.40	0.02896	0.21
6	C Howell EB-2	5	30	1410275	1149749	1410519	1149773	303	245.18	0.046	14.07	0.14081	1.98	0.54775	7.71	3.35679	47.23	0.05668	0.80	0.02896	0.41
7	C Howell EB-3	5	30	1410519	1149773	1410620	1149784	303	101.60	0.019	5.83	0.14081	0.82	0.54775	3.19	3.35679	19.57	0.05668	0.33	0.02896	0.17
8	C Howell EB-4	5	30	1410620	1149784	1410708	1149798	303	89.11	0.017	5.11	0.14081	0.72	0.54775	2.80	3.35679	17.16	0.05668	0.29	0.02896	0.15
9	C Howell EB-5	5	30	1410708	1149798	1410768	1149823	303	65.00	0.012	3.73	0.14081	0.53	0.54775	2.04	3.35679	12.52	0.05668	0.21	0.02896	0.11
10	Q Howell EB-6 2 Union	5	25	1410768	1149823	1410818	1149849	303	56.36	0.011	3.23	0.16153	0.52	0.61976	2.00	3.55964	11.51	0.06870	0.22	0.03314	0.11
11	A Howell EB-7	5	30	1410818	1149849	1410858	1149871	662	45.65	0.009	5.72	0.14081	0.81	0.54775	3.14	3.35679	19.21	0.05668	0.32	0.02896	0.17
12	A Union NB-1	5	30	1410858	1149871	1410889	1149887	662	34.89	0.007	4.37	0.14081	0.62	0.54775	2.40	3.35679	14.68	0.05668	0.25	0.02896	0.13
13	A Union NB-2	5	30	1410889	1149887	1410961	1149954	662	98.35	0.019	12.33	0.14081	1.74	0.54775	6.75	3.35679	41.39	0.05668	0.70	0.02896	0.36
14	A Union NB-3	5	30	1410961	1149954	1411010	1150018	662	80.60	0.015	10.11	0.14081	1.42	0.54775	5.54	3.35679	33.92	0.05668	0.57	0.02896	0.29
15	A Union NB-4	5	30	1411010	1150018	1411033	1150060	662	47.89	0.009	6.00	0.14081	0.85	0.54775	3.29	3.35679	20.15	0.05668	0.34	0.02896	0.17
16	C Union NB-5	5	30	1411033	1150060	1411081	1150174	662	123.69	0.023	15.51	0.14081	2.18	0.54775	8.49	3.35679	52.06	0.05668	0.88	0.02896	0.45
17	C Union NB-6	5	30	1411081	1150174	1411114	1150254	662	86.54	0.016	10.85	0.14081	1.53	0.54775	5.94	3.35679	36.42	0.05668	0.61	0.02896	0.31
18	C Union NB-7	5	30	1411114	1150254	1411157	1150362	662	116.25	0.022	14.57	0.14081	2.05	0.54775	7.98	3.35679	48.92	0.05668	0.83	0.02896	0.42
19	C Union NB-8	5	30	1411157	1150362	1411248	1150589	662	244.56	0.046	30.66	0.14081	4.32	0.54775	16.80	3.35679	102.93	0.05668	1.74	0.02896	0.89
20	C Union NB-9	5	30	1411248	1150589	1411303	1150724	662	145.77	0.028	18.28	0.14081	2.57	0.54775	10.01	3.35679	61.35	0.05668	1.04	0.02896	0.53
21	C Union NB-10	5	30	1411303	1150724	1411329	1150804	637	84.12	0.016	10.15	0.14081	1.43	0.54775	5.56	3.35679	34.07	0.05668	0.58	0.02896	0.29
22	Q Union NB-11 2 Broad	5	25	1411329	1150804	1411369	1150904	637	107.70	0.020	12.99	0.16153	2.10	0.61976	8.05	3.55964	46.25	0.06870	0.89	0.03314	0.43
23	A Union NB-12	5	30	1411369	1150904	1411484	1151190	829	308.25	0.058	48.40	0.14081	6.81	0.54775	26.51	3.35679	162.46	0.05668	2.74	0.02896	1.40
24	Q Union NB-13 2 East	5	25	1411484	1151190	1411532	1151308	829	127.39	0.024	20.00	0.16153	3.23	0.61976	12.40	3.55964	71.20	0.06870	1.37	0.03314	0.66
25	A Union NB-14	5	30	1411532	1151308	1411564	1151387	749	85.23	0.016	12.09	0.14081	1.70	0.54775	6.62	3.35679	40.59	0.05668	0.69	0.02896	0.35
26	A Union NB-15	5	30	1411564	1151387	1411736	1151829	749	474.29	0.090	67.28	0.14081	9.47	0.54775	36.85	3.35679	225.85	0.05668	3.81	0.02896	1.95
27	Q Union NB-16 2 Charlotte	5	25	1411736	1151829	1411773	1151922	749	100.09	0.019	14.20	0.16153	2.29	0.61976	8.80	3.55964	50.54	0.06870	0.98	0.03314	0.47
28	A Union NB-17	5	30	1411773	1151922	1411804	1151986	418	71.11	0.013	5.63	0.14081	0.79	0.54775	3.08	3.35679	18.90	0.05668	0.32	0.02896	0.16
29	A Union NB-18	5	30	1411804	1151986	1411856	1152112	418	136.31	0.026	10.79	0.14081	1.52	0.54775	5.91	3.35679	36.22	0.05668	0.61	0.02896	0.31
30	C Union NB-19	5	30	1411856	1152112	1411915	1152254	418	153.77	0.029	12.17	0.14081	1.71	0.54775	6.67	3.35679	40.86	0.05668	0.69	0.02896	0.35
31	C Union NB-20	5	30	1411915	1152254	1411977	1152406	418	164.16	0.031	13.00	0.14081	1.83	0.54775	7.12	3.35679	43.62	0.05668	0.74	0.02896	0.38
32	Q Union NB-21 2 University	5	25	1411977	1152406	1412017	1152506	418	107.70	0.020	8.53	0.16153	1.38	0.61976	5.28	3.55964	30.35	0.06870	0.59	0.03314	0.28
33	A Union NB-22	5	30	1412017	1152506	1412106	1152728	303	239.18	0.045	13.73	0.14081	1.93	0.54775	7.52	3.35679	46.07	0.05668	0.78	0.02896	0.40
34	A Union SB-1	5	30	1411775	1152003	1411750	1151941	561	66.85	0.013	7.10	0.14081	1.00	0.54775	3.89	3.35679	23.84	0.05668	0.40	0.02896	0.21
35	A Union SB-2	5	30	1411750	1151941	1411659	1151716	561	242.71	0.046	25.79	0.14081	3.63	0.54775	14.13	3.35679	86.56	0.05668	1.46	0.02896	0.75
36	C Union SB-3	5	30	1411659	1151716	1411638	1151646	561	73.08	0.014	7.76	0.14081	1.09	0.54775	4.25	3.35679	26.07	0.05668	0.44	0.02896	0.22
37	C Union SB-4	5	30	1411638	1151646	1411584	1151497	561	158.48	0.030	16.84	0.14081	2.37	0.54775	9.22	3.35679	56.52	0.05668	0.95	0.02896	0.49
38	Q Union SB-5 2 East	5	25	1411584	1151497	1411544	1151396	561	108.63	0.021	11.54	0.16153	1.86	0.61976	7.15	3.55964	41.09	0.06870	0.79	0.03314	0.38
39	A Union SB-6	5	30	1411544	1151396	1411507	1151326	490	79.18	0.015	7.35	0.14081	1.03	0.54775	4.02	3.35679	24.67	0.05668	0.42	0.02896	0.21
40	A Union SB-7	5	30	1411507	1151326	1411454	1151189	490	146.89	0.028	13.63	0.14081	1.92	0.54775	7.47	3.35679	45.76	0.05668	0.77	0.02896	0.39
41	A Union SB-8	5	30	1411454	1151189	1411428	1151097	490	95.60	0.018	8.87	0.14081	1.25	0.54775	4.86	3.35679	29.78	0.05668	0.50	0.02896	0.26
42	Q Union SB-9 2 Broad	5	25	1411428	1151097	1411383	1150987	490	118.85	0.023	11.03	0.16153	1.78	0.61976	6.84	3.55964	39.26	0.06870	0.76	0.03314	0.37
43	A Union SB-10	5	30	1411383	1150987	1411356	1150919	576	73.16	0.014	7.98	0.14081	1.12	0.54775	4.37	3.35679	26.79	0.05668	0.45	0.02896	0.23
44	A Union SB-11	5	30	1411356	1150919	1411281	1150732	576	201.48	0.038	21.98	0.14081	3.09	0.54775	12.04	3.35679	73.78	0.05668	1.25	0.02896	0.64
45	C Union SB-12	5	30	1411281	1150732	1411135	1150370	633	390.33	0.074	46.80	0.14081	6.59	0.54775	25.63	3.35679	157.08	0.05668	2.65	0.02896	1.36
46	C Union SB-13	5	30	1411135	1150370	1411026	1150100	633	291.17	0.055	34.91	0.14081	4.92	0.54775	19.12	3.35679	117.18	0.05668	1.98	0.02896	1.01
47	C Union SB-14	5	30	1411026	1150100	1410990	1150033	633	76.06	0.014	9.12	0.14081	1.28	0.54775	4.99	3.35679	30.61	0.05668	0.52	0.02896	0.26
48	C Union SB-15	5	30	1410990	1150033	1410963	1149985	633	55.07	0.010	6.60	0.14081	0.93	0.54775	3.62	3.35679	22.16	0.05668	0.37	0.02896	0.19
49	Q Union SB-16 to Howell	5	25	1410963	1149985	1410879	1149902	633	118.09	0.022	14.16	0.16153	2.29	0.61976	8.77	3.55964	50.39	0.06870	0.97	0.03314	0.47
50	A Union SB-17	5	30	1410879	1149902	1410850	1149884	506	34.13	0.006	3.27	0.14081	0.46	0.54775	1.79	3.35679	10.98	0.05668	0.19	0.02896	0.09
51	A Howell WB-1	5	30	1410850	1149884	1410770	1149845	506	89.00	0.017	8.53	0.14081	1.20	0.54775	4.67	3.35679	28.63	0.05668	0.48	0.02896	0.25
52	C Howell WB-2	5	30	1410770	1149845	1410695	1149820	506	79.06	0.015	7.58	0.14081	1.07	0.54775	4.15	3.35679	25.43	0.05668	0.43	0.02896	0.22

Link No.	Link Description	MOVES Source	Speed (5 mph incr)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (ft)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
53	C Howell WB-3	5	30	1410695	1149820	1410604	1149806	506	92.07	0.017	8.82	0.14081	1.24	0.54775	4.83	3.35679	29.62	0.05668	0.50	0.02896	0.26
54	C Howell WB-4	5	30	1410604	1149806	1410321	1149783	506	283.93	0.054	27.21	0.14081	3.83	0.54775	14.90	3.35679	91.34	0.05668	1.54	0.02896	0.79
55	Q Howell WB-5 2 Chestnut	5	25	1410321	1149783	1410224	1149770	506	97.87	0.019	9.38	0.16153	1.51	0.61976	5.81	3.55964	33.39	0.06870	0.64	0.03314	0.31
56	C Howell WB-6	5	30	1410224	1149770	1410114	1149731	778	116.71	0.022	17.20	0.14081	2.42	0.54775	9.42	3.35679	57.73	0.05668	0.97	0.02896	0.50
57	C IL Ramp WB-1	4	40	1410114	1149731	1409478	1149672	778	638.73	0.121	94.12	0.11582	10.90	0.53211	50.08	3.70866	349.04	0.04776	4.49	0.02936	2.76
58	C IL Ramp WB-2	4	40	1409478	1149672	1409359	1149672	1884	119.00	0.023	42.46	0.11582	4.92	0.53211	22.59	3.70866	157.47	0.04776	2.03	0.02936	1.25
59	A IL N Ramp NB-1	4	40	1411773	1151922	1411794	1151989	373	70.21	0.013	4.96	0.11582	0.57	0.53211	2.64	3.70866	18.40	0.04776	0.24	0.02936	0.15
60	A IL N Ramp NB-2	4	40	1411794	1151989	1411825	1152074	373	90.48	0.017	6.39	0.11582	0.74	0.53211	3.40	3.70866	23.70	0.04776	0.31	0.02936	0.19
61	A IL N Ramp NB-3	4	40	1411825	1152074	1411844	1152181	373	108.67	0.021	7.68	0.11582	0.89	0.53211	4.09	3.70866	28.47	0.04776	0.37	0.02936	0.23
62	C IL N Ramp NB-4	4	40	1411844	1152181	1411833	1152490	373	309.20	0.059	21.84	0.11582	2.53	0.53211	11.62	3.70866	81.01	0.04776	1.04	0.02936	0.64
63	C IL N Ramp NB-5	4	40	1411833	1152490	1411820	1152654	373	164.51	0.031	11.62	0.11582	1.35	0.53211	6.18	3.70866	43.10	0.04776	0.56	0.02936	0.34
64	C IL N Ramp NB-6	4	40	1411820	1152654	1411776	1152832	373	183.36	0.035	12.95	0.11582	1.50	0.53211	6.89	3.70866	48.04	0.04776	0.62	0.02936	0.38
65	C IL N Ramp NB-7	4	40	1411776	1152832	1411744	1152926	373	99.30	0.019	7.01	0.11582	0.81	0.53211	3.73	3.70866	26.02	0.04776	0.34	0.02936	0.21
66	C IL N Ramp NB-8	4	40	1411744	1152926	1411684	1153037	373	126.18	0.024	8.91	0.11582	1.03	0.53211	4.74	3.70866	33.06	0.04776	0.43	0.02936	0.26
67	C IL N Ramp NB-9	4	40	1411684	1153037	1411617	1153138	373	121.20	0.023	8.56	0.11582	0.99	0.53211	4.56	3.70866	31.75	0.04776	0.41	0.02936	0.25
68	C IL N Ramp NB-10	4	40	1411617	1153138	1411545	1153222	373	110.63	0.021	7.82	0.11582	0.91	0.53211	4.16	3.70866	28.99	0.04776	0.37	0.02936	0.23
69	C IL N Ramp SB-1	4	40	1411498	1153176	1411571	1153102	404	103.95	0.020	7.95	0.11582	0.92	0.53211	4.23	3.70866	29.50	0.04776	0.38	0.02936	0.23
70	C IL N Ramp SB-2	4	40	1411571	1153102	1411639	1153024	404	103.48	0.020	7.92	0.11582	0.92	0.53211	4.21	3.70866	29.36	0.04776	0.38	0.02936	0.23
71	C IL N Ramp SB-3	4	40	1411639	1153024	1411699	1152925	404	115.76	0.022	8.86	0.11582	1.03	0.53211	4.71	3.70866	32.85	0.04776	0.42	0.02936	0.26
72	C IL N Ramp SB-4	4	40	1411699	1152925	1411743	1152830	404	104.69	0.020	8.01	0.11582	0.93	0.53211	4.26	3.70866	29.71	0.04776	0.38	0.02936	0.24
73	C IL N Ramp SB-5	4	40	1411743	1152830	1411792	1152649	404	187.52	0.036	14.35	0.11582	1.66	0.53211	7.63	3.70866	53.21	0.04776	0.69	0.02936	0.42
74	C IL N Ramp SB-6	4	40	1411792	1152649	1411806	1152490	404	159.62	0.030	12.21	0.11582	1.41	0.53211	6.50	3.70866	45.29	0.04776	0.58	0.02936	0.36
75	C IL N Ramp SB-7	4	40	1411806	1152490	1411821	1152265	404	225.50	0.043	17.25	0.11582	2.00	0.53211	9.18	3.70866	63.99	0.04776	0.82	0.02936	0.51
76	C IL N Ramp SB-8	4	40	1411821	1152265	1411824	1152185	404	80.06	0.015	6.13	0.11582	0.71	0.53211	3.26	3.70866	22.72	0.04776	0.29	0.02936	0.18
77	C IL N Ramp SB-9	4	30	1411824	1152185	1411809	1152095	404	91.24	0.017	6.98	0.13749	0.96	0.53551	3.74	3.20337	22.36	0.05794	0.40	0.02975	0.21
78	Q IL N Ramp SB-10	4	25	1411809	1152095	1411775	1152003	404	98.08	0.019	7.50	0.15547	1.17	0.54860	4.12	3.18311	23.89	0.06681	0.50	0.03152	0.24
79	A Pitkin-1	5	20	1411534	1152741	1411600	1152704	167	75.66	0.014	2.39	0.19190	0.46	0.70490	1.69	4.15084	9.93	0.08023	0.19	0.03856	0.09
80	A Pitkin-2	5	20	1411600	1152704	1411620	1152656	167	52.00	0.010	1.64	0.19190	0.32	0.70490	1.16	4.15084	6.83	0.08023	0.13	0.03856	0.06
81	A Pitkin-3	5	20	1411620	1152656	1411653	1152539	167	121.56	0.023	3.84	0.19190	0.74	0.70490	2.71	4.15084	15.96	0.08023	0.31	0.03856	0.15
82	A Pitkin-4	5	20	1411653	1152539	1411656	1152455	167	84.05	0.016	2.66	0.19190	0.51	0.70490	1.87	4.15084	11.04	0.08023	0.21	0.03856	0.10
83	A Pitkin-5	5	20	1411656	1152455	1411640	1152367	167	89.44	0.017	2.83	0.19190	0.54	0.70490	1.99	4.15084	11.74	0.08023	0.23	0.03856	0.11
84	C Pitkin-6	5	20	1411640	1152367	1411605	1152216	167	155.00	0.029	4.90	0.19190	0.94	0.70490	3.46	4.15084	20.35	0.08023	0.39	0.03856	0.19
85	C Pitkin-7	5	20	1411605	1152216	1411566	1152047	167	173.44	0.033	5.49	0.19190	1.05	0.70490	3.87	4.15084	22.77	0.08023	0.44	0.03856	0.21
86	A Pitkin-8	5	20	1411566	1152047	1411548	1151876	30	171.94	0.033	0.98	0.19190	0.19	0.70490	0.69	4.15084	4.06	0.08023	0.08	0.03856	0.04
87	A Pitkin-9	5	20	1411548	1151876	1411538	1151795	30	81.61	0.015	0.46	0.19190	0.09	0.70490	0.33	4.15084	1.92	0.08023	0.04	0.03856	0.02
88	C Pitkin-10	5	20	1411538	1151795	1411451	1151533	30	276.07	0.052	1.57	0.19190	0.30	0.70490	1.11	4.15084	6.51	0.08023	0.13	0.03856	0.06
89	Q Pitkin-11 2 East	5	15	1411451	1151533	1411413	1151425	30	114.49	0.022	0.65	0.23484	0.15	0.83212	0.54	4.62689	3.01	0.09742	0.06	0.04505	0.03
90	A Pitkin-12	5	20	1411413	1151425	1411390	1151357	20	71.78	0.014	0.27	0.19190	0.05	0.70490	0.19	4.15084	1.13	0.08023	0.02	0.03856	0.01
91	A Pitkin-13	5	20	1411390	1151357	1411309	1151150	20	222.28	0.042	0.84	0.19190	0.16	0.70490	0.59	4.15084	3.49	0.08023	0.07	0.03856	0.03
92	Q Pitkin-14 2 Broad	5	15	1411309	1151150	1411254	1151017	20	143.92	0.027	0.55	0.23484	0.13	0.83212	0.45	4.62689	2.52	0.09742	0.05	0.04505	0.02
93	A Union Spur NB-1	5	30	1410726	1149275	1410794	1149464	371	200.86	0.038	14.11	0.14081	1.99	0.54775	7.73	3.35679	47.38	0.05668	0.80	0.02896	0.41
94	C Union Spur NB-2	5	30	1410794	1149464	1410889	1149706	371	259.98	0.049	18.27	0.14081	2.57	0.54775	10.01	3.35679	61.32	0.05668	1.04	0.02896	0.53
95	A Union Spur NB-3	5	30	1410889	1149706	1410903	1149751	371	47.13	0.009	3.31	0.14081	0.47	0.54775	1.81	3.35679	11.12	0.05668	0.19	0.02896	0.10
96	A Union Spur NB-4	5	30	1410903	1149751	1410905	1149789	371	38.05	0.007	2.67	0.14081	0.38	0.54775	1.46	3.35679	8.98	0.05668	0.15	0.02896	0.08
97	Q Union Spur NB-5	5	25	1410905	1149789	1410896	1149823	371	35.17	0.007	2.47	0.16153	0.40	0.61976	1.53	3.55964	8.80	0.06870	0.17	0.03314	0.08
98	Q Union Spur NB-6	5	25	1410896	1149823	1410877	1149856	371	38.08	0.007	2.68	0.16153	0.43	0.61976	1.66	3.55964	9.52	0.06870	0.18	0.03314	0.09
99	A Union Spur SB-1	5	25	1410864	1149852	1410890	1149803	139	55.47	0.011	1.46	0.16153	0.24	0.61976	0.91	3.55964	5.20	0.06870	0.10	0.03314	0.05
100	A Union Spur SB-2	5	25	1410890	1149803	1410892	1149754	139	49.04	0.009	1.29	0.16153	0.21	0.61976	0.80	3.55964	4.60	0.06870	0.09	0.03314	0.04
101	C Union Spur SB-3	5	30	1410892	1149754	1410878	1149709	139	47.13	0.009	1.24	0.14081	0.17	0.54775	0.68	3.35679	4.16	0.05668	0.07	0.02896	0.04
102	C Union Spur SB-4	5	30	1410878	1149709	1410784	1149468	139	258.68	0.049	6.81	0.14081	0.96	0.54775	3.73	3.35679	22.86	0.05668	0.39	0.02896	0.20
103	Q Union Spur SB-5	5	25	1410784	1149468	1410743	1149361	139	114.59	0.022	3.02	0.16153	0.49	0.61976	1.87	3.55964	10.74	0.06870	0.21	0.03314	0.10
104	A Union Spur SB-6	5	30	1410743	1149361	1410711	1149280	139	87.09	0.016	2.29	0.14081	0.32	0.54775	1.26	3.35679	7.70	0.05668	0.13	0.02896	0.07
105	C Clinton NB 2	5	45	1409574	1149436	1409518	1149816	1654	384.10	0.073	120.32	0.09744	11.72	0.48225	58.03	2.73385	328.95	0.03303	3.97	0.02009	2.42
106	C Old Howell-1	5	20	1410239	1149662	1409965	1149639	10	274.96	0.052	0.52	0.19190	0.10	0.70490	0.37	4.15084	2.16	0.08023	0.04	0.03856	0.02
107	C Monroe N-6	5	30	1410413	1149572	1410316	1149647	534	122.61	0.023	12.40	0.14081	1.75	0.54775	6.79	3.35679	41.63	0.05668	0.70	0.02896	0.36
108	Q Monroe N-7 2 Howell	5	25	1410316	1149647	1410255	1149695	534	77.62	0.015	7.85	0.16153	1.27	0.61976	4.87	3.55964	27.94	0.06870	0.54	0.03314	0.26
109	A Monroe N-8	5	30	1410255	1149695	1410138	1149785	395	147.61	0.028	11.04	0.14081	1.55	0.54775	6.05	3.35679	37.07	0.05668	0.63	0.02896	0.32
110	A Chestnut N-1	5	30	1410138	1149785	1410098	1149829	395	59.46	0.011	4.45	0.14081	0.63	0.54775	2.44	3.35679	14.93	0.05668	0.25	0.02896	0.13
111	A Chestnut N-2	5	30	1410098	1149829	1410051	1149906	395	90.21	0.017	6.75	0.14081	0.95	0.54775	3.70	3.35679	22.65	0.05668	0.38	0.02896	0.20
112	A Chestnut N-3	5	30	1410051	1149906	1410021	1150013	395	111.13	0.021	8.31	0.14081	1.17	0.54775	4.55	3.35679	27.91	0.05668	0.47	0.02896	0.24

Link No.	Link Description	MOVES Source	Speed (5 mph incr)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (ft)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
113	C Chestnut S-1	5	30	1409991	1150018	1410002	1149970	488	49.24	0.009	4.55	0.14081	0.64	0.54775	2.49	3.35679	15.28	0.05668	0.26	0.02896	0.13
114	C Chestnut S-2	5	30	1410002	1149970	1410018	1149921	488	51.55	0.010	4.76	0.14081	0.67	0.54775	2.61	3.35679	15.99	0.05668	0.27	0.02896	0.14
115	C Chestnut S-3	5	30	1410018	1149921	1410052	1149856	488	73.36	0.014	6.78	0.14081	0.95	0.54775	3.71	3.35679	22.76	0.05668	0.38	0.02896	0.20
116	Q Chestnut S-4 2 Howell	5	25	1410052	1149856	1410112	1149782	488	95.27	0.018	8.81	0.16153	1.42	0.61976	5.46	3.55964	31.34	0.06870	0.60	0.03314	0.29
117	A Monroe S-1	5	30	1410112	1149782	1410414	1149543	556	385.13	0.073	40.56	0.14081	5.71	0.54775	22.21	3.35679	136.14	0.05668	2.30	0.02896	1.17
118	C Chestnut Ramp 1	5	30	1409978	1150016	1409989	1149965	1106	52.17	0.010	10.93	0.14081	1.54	0.54775	5.99	3.35679	36.69	0.05668	0.62	0.02896	0.32
119	C Chestnut Ramp 2	5	30	1409989	1149965	1410006	1149914	1106	53.76	0.010	11.26	0.14081	1.59	0.54775	6.17	3.35679	37.80	0.05668	0.64	0.02896	0.33
120	C Chestnut Ramp 3	5	30	1410006	1149914	1410046	1149845	1106	79.76	0.015	16.71	0.14081	2.35	0.54775	9.15	3.35679	56.08	0.05668	0.95	0.02896	0.48
121	Q Chestnut Ramp-4	5	25	1410046	1149845	1410050	1149786	1106	59.14	0.011	12.39	0.16153	2.00	0.61976	7.68	3.55964	44.09	0.06870	0.85	0.03314	0.41
122	A Chestnut Ramp 5	5	30	1410050	1149786	1410011	1149741	1106	59.55	0.011	12.47	0.14081	1.76	0.54775	6.83	3.35679	41.87	0.05668	0.71	0.02896	0.36
123	A Chestnut Ramp 6	5	30	1410011	1149741	1409934	1149733	1106	77.41	0.015	16.22	0.14081	2.28	0.54775	8.88	3.35679	54.43	0.05668	0.92	0.02896	0.47
124	A Chestnut Ramp 7	5	30	1409934	1149733	1409725	1149714	1106	209.86	0.040	43.96	0.14081	6.19	0.54775	24.08	3.35679	147.56	0.05668	2.49	0.02896	1.27
125	C Chestnut Ramp 8	5	35	1409725	1149714	1409476	1149692	1106	249.97	0.047	52.36	0.12241	6.41	0.50783	26.59	3.08424	161.49	0.04635	2.43	0.02477	1.30
126	A Broad WB-1	5	25	1411364	1150963	1411251	1151010	105	122.38	0.023	2.43	0.16153	0.39	0.61976	1.51	3.55964	8.66	0.06870	0.17	0.03314	0.08
127	A Broad WB-2	5	30	1411251	1151010	1411136	1151062	115	126.21	0.024	2.75	0.14081	0.39	0.54775	1.51	3.35679	9.23	0.05668	0.16	0.02896	0.08
128	C Broad EB-3	5	30	1411128	1151036	1411228	1150998	381	106.98	0.020	7.72	0.14081	1.09	0.54775	4.23	3.35679	25.91	0.05668	0.44	0.02896	0.22
129	Q Broad EB-4 Bridge	5	15	1411228	1150998	1411322	1150960	391	101.39	0.019	7.51	0.23484	1.76	0.83212	6.25	4.62689	34.74	0.09742	0.73	0.04505	0.34
130	A Broad EB-5	5	20	1411322	1150960	1411357	1150946	391	37.70	0.007	2.79	0.19190	0.54	0.70490	1.97	4.15084	11.59	0.08023	0.22	0.03856	0.11
131	A East WB-2	5	20	1411594	1151345	1411534	1151365	388	63.25	0.012	4.65	0.19190	0.89	0.70490	3.28	4.15084	19.29	0.08023	0.37	0.03856	0.18
132	Q East WB-3 Bridge	5	25	1411534	1151365	1411435	1151398	388	104.36	0.020	7.67	0.16153	1.24	0.61976	4.75	3.55964	27.30	0.06870	0.53	0.03314	0.25
133	A East WB-4	5	30	1411435	1151398	1411370	1151419	393	68.31	0.013	5.08	0.14081	0.72	0.54775	2.78	3.35679	17.07	0.05668	0.29	0.02896	0.15
134	A East EB-1	5	25	1411364	1151400	1411426	1151380	491	65.15	0.012	6.06	0.16153	0.98	0.61976	3.75	3.55964	21.56	0.06870	0.42	0.03314	0.20
135	Q East EB-2 Bridge	5	20	1411426	1151380	1411475	1151363	491	51.87	0.010	4.82	0.19190	0.93	0.70490	3.40	4.15084	20.02	0.08023	0.39	0.03856	0.19
136	A East EB-3	5	30	1411475	1151363	1411594	1151322	812	125.87	0.024	19.36	0.14081	2.73	0.54775	10.60	3.35679	64.98	0.05668	1.10	0.02896	0.56
137	Q Charlotte WB-2	5	25	1411870	1151931	1411831	1151948	71	42.54	0.008	0.57	0.16153	0.09	0.61976	0.35	3.55964	2.04	0.06870	0.04	0.03314	0.02
138	A Charlotte WB-3	5	30	1411831	1151948	1411722	1151991	78	117.18	0.022	1.73	0.14081	0.24	0.54775	0.95	3.35679	5.81	0.05668	0.10	0.02896	0.05
139	A Charlotte WB-4	5	30	1411722	1151991	1411582	1152046	78	150.42	0.028	2.22	0.14081	0.31	0.54775	1.22	3.35679	7.46	0.05668	0.13	0.02896	0.06
140	A Charlotte WB-5	5	30	1411582	1152046	1411518	1152072	78	69.08	0.013	1.02	0.14081	0.14	0.54775	0.56	3.35679	3.43	0.05668	0.06	0.02896	0.03
141	A Charlotte EB-1	5	30	1411513	1152061	1411576	1152035	186	68.15	0.013	2.40	0.14081	0.34	0.54775	1.32	3.35679	8.06	0.05668	0.14	0.02896	0.07
142	A Charlotte EB-2	5	30	1411576	1152035	1411646	1152007	186	75.39	0.014	2.66	0.14081	0.37	0.54775	1.45	3.35679	8.92	0.05668	0.15	0.02896	0.08
143	Q Charlotte EB-3	5	25	1411646	1152007	1411717	1151979	186	76.32	0.014	2.69	0.16153	0.43	0.61976	1.67	3.55964	9.57	0.06870	0.18	0.03314	0.09
144	A Charlotte EB-4	5	30	1411717	1151979	1411826	1151935	67	117.55	0.022	1.49	0.14081	0.21	0.54775	0.82	3.35679	5.01	0.05668	0.08	0.02896	0.04
145	A Charlotte EB-5	5	30	1411826	1151935	1411865	1151919	67	42.15	0.008	0.53	0.14081	0.08	0.54775	0.29	3.35679	1.80	0.05668	0.03	0.02896	0.02
146	A University NB-1	5	30	1412065	1152544	1411993	1152583	442	81.88	0.016	6.85	0.14081	0.97	0.54775	3.75	3.35679	23.01	0.05668	0.39	0.02896	0.20
147	A University NB-2	5	30	1411993	1152583	1411963	1152623	442	50.00	0.009	4.19	0.14081	0.59	0.54775	2.29	3.35679	14.05	0.05668	0.24	0.02896	0.12
148	A University NB-3	5	30	1411963	1152623	1411940	1152704	442	84.20	0.016	7.05	0.14081	0.99	0.54775	3.86	3.35679	23.66	0.05668	0.40	0.02896	0.20
149	Q University NB-4 2 Main	5	25	1411940	1152704	1411926	1152747	442	45.22	0.009	3.79	0.16153	0.61	0.61976	2.35	3.55964	13.48	0.06870	0.26	0.03314	0.13
150	A University NB-5	5	30	1411926	1152747	1411903	1152859	729	114.34	0.022	15.79	0.14081	2.22	0.54775	8.65	3.35679	52.99	0.05668	0.89	0.02896	0.46
151	A University NB-6	5	40	1411903	1152859	1411858	1152970	729	119.77	0.023	16.54	0.10811	1.79	0.49048	8.11	2.86633	47.40	0.03889	0.64	0.02209	0.37
152	Q University SB-6 2 Main	5	10	1411823	1152953	1411863	1152849	718	111.43	0.021	15.15	0.31766	4.81	1.03770	15.72	5.32956	80.76	0.13071	1.98	0.05713	0.87
153	A University SB-7	5	30	1411863	1152849	1411883	1152791	486	61.35	0.012	5.65	0.14081	0.80	0.54775	3.09	3.35679	18.96	0.05668	0.32	0.02896	0.16
154	A University SB-8	5	30	1411883	1152791	1411941	1152605	486	194.83	0.037	17.93	0.14081	2.53	0.54775	9.82	3.35679	60.20	0.05668	1.02	0.02896	0.52
155	Q University SB-9 2 Union	5	25	1411941	1152605	1411994	1152548	486	77.83	0.015	7.16	0.16153	1.16	0.61976	4.44	3.55964	25.50	0.06870	0.49	0.03314	0.24
156	A University SB-10	5	30	1411994	1152548	1412057	1152523	594	67.78	0.013	7.63	0.14081	1.07	0.54775	4.18	3.35679	25.60	0.05668	0.43	0.02896	0.22
157	A Main WB-2	5	25	1411954	1152836	1411733	1152767	688	231.52	0.044	30.17	0.16153	4.87	0.61976	18.70	3.55964	107.39	0.06870	2.07	0.03314	1.00
158	Q Main WB-3 2 Pitkin	5	25	1411733	1152767	1411616	1152729	688	123.02	0.023	16.03	0.16153	2.59	0.61976	9.93	3.55964	57.06	0.06870	1.10	0.03314	0.53
159	A Main WB-4	5	30	1411616	1152729	1411526	1152703	406	93.68	0.018	7.20	0.14081	1.01	0.54775	3.95	3.35679	24.18	0.05668	0.41	0.02896	0.21
160	A Main EB-1	5	30	1411543	1152679	1411738	1152734	683	202.61	0.038	26.21	0.14081	3.69	0.54775	14.36	3.35679	87.98	0.05668	1.49	0.02896	0.76
161	Q Main EB-2 2 University	5	25	1411738	1152734	1411852	1152771	683	119.85	0.023	15.50	0.16153	2.50	0.61976	9.61	3.55964	55.19	0.06870	1.07	0.03314	0.51
162	A Main EB-3	5	30	1411852	1152771	1412006	1152821	891	161.91	0.031	27.32	0.14081	3.85	0.54775	14.97	3.35679	91.72	0.05668	1.55	0.02896	0.79

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
Build Alternative ETC+10 ETC+10 Year = 2025
ETC+10 Growth FACTOR = 1.05

Link Input Data

TOTAL BUILD ETC VOC EMISSIONS BURDEN =	184	g/hr
TOTAL BUILD ETC NOx EMISSIONS BURDEN =	653	g/hr
TOTAL BUILD ETC CO EMISSIONS BURDEN =	5,637	g/hr
TOTAL BUILD ETC PM-10 EMISSIONS BURDEN =	103	g/hr
TOTAL BUILD ETC PM-2.5 EMISSIONS BURDEN =	47	g/hr

(ALL DATA (except yellow fields) ON THIS PAGE IS FORMULA GENERATED - enter data on ETC input page)

Link	Link Description	MOVES	Speed	X1	Y1	X2	Y2	PM Peak	Length	Length	VMT	VOC		NOx		CO		PM-10		PM-2.5	
No.		Source	(mph)	(ft)	(ft)	(ft)	(ft)	(veh/hr)	(m)	(mi)	(veh*mi/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)	EFs (g/mi)	EBs (g/hr)
1	C IL Ramp EB-1	4	40	1409362	1149611	1409454	1149630	424	93.94	0.018	7.54	0.07275	0.55	0.30377	2.29	2.98891	22.55	0.03993	0.30	0.02187	0.17
2	C IL Ramp EB-2	4	40	1409454	1149630	1409653	1149655	424	200.56	0.038	16.11	0.07275	1.17	0.30377	4.89	2.98891	48.14	0.03993	0.64	0.02187	0.35
3	C IL Ramp EB-3	4	40	1409653	1149655	1410050	1149692	424	398.72	0.076	32.02	0.07275	2.33	0.30377	9.73	2.98891	95.70	0.03993	1.28	0.02187	0.70
4	Q IL Ramp EB-4	4	30	1410050	1149692	1410157	1149711	424	108.67	0.021	8.73	0.08673	0.76	0.29891	2.61	2.45069	21.39	0.05027	0.44	0.02236	0.20
5	C Howell EB-1	5	30	1410157	1149711	1410275	1149749	323	123.97	0.023	7.58	0.08926	0.68	0.30392	2.30	2.59923	19.71	0.04971	0.38	0.02226	0.17
6	C Howell EB-2	5	30	1410275	1149749	1410519	1149773	323	245.18	0.046	15.00	0.08926	1.34	0.30392	4.56	2.59923	38.98	0.04971	0.75	0.02226	0.33
7	C Howell EB-3	5	30	1410519	1149773	1410620	1149784	323	101.60	0.019	6.22	0.08926	0.55	0.30392	1.89	2.59923	16.15	0.04971	0.31	0.02226	0.14
8	C Howell EB-4	5	30	1410620	1149784	1410708	1149798	323	89.11	0.017	5.45	0.08926	0.49	0.30392	1.66	2.59923	14.17	0.04971	0.27	0.02226	0.12
9	C Howell EB-5	5	30	1410708	1149798	1410768	1149823	323	65.00	0.012	3.98	0.08926	0.35	0.30392	1.21	2.59923	10.34	0.04971	0.20	0.02226	0.09
10	Q Howell EB-6 2 Union	5	25	1410768	1149823	1410818	1149849	323	56.36	0.011	3.45	0.10224	0.35	0.33740	1.16	2.71153	9.35	0.06135	0.21	0.02607	0.09
11	A Howell EB-7	5	30	1410818	1149849	1410858	1149871	712	45.65	0.009	6.16	0.08926	0.55	0.30392	1.87	2.59923	16.00	0.04971	0.31	0.02226	0.14
12	A Union NB-1	5	30	1410858	1149871	1410889	1149887	712	34.89	0.007	4.70	0.08926	0.42	0.30392	1.43	2.59923	12.23	0.04971	0.23	0.02226	0.10
13	A Union NB-2	5	30	1410889	1149887	1410961	1149954	712	98.35	0.019	13.26	0.08926	1.18	0.30392	4.03	2.59923	34.47	0.04971	0.66	0.02226	0.30
14	A Union NB-3	5	30	1410961	1149954	1411010	1150018	712	80.60	0.015	10.87	0.08926	0.97	0.30392	3.30	2.59923	28.25	0.04971	0.54	0.02226	0.24
15	A Union NB-4	5	30	1411010	1150018	1411033	1150060	712	47.89	0.009	6.46	0.08926	0.58	0.30392	1.96	2.59923	16.78	0.04971	0.32	0.02226	0.14
16	C Union NB-5	5	30	1411033	1150060	1411081	1150174	712	123.69	0.023	16.68	0.08926	1.49	0.30392	5.07	2.59923	43.35	0.04971	0.83	0.02226	0.37
17	C Union NB-6	5	30	1411081	1150174	1411114	1150254	712	86.54	0.016	11.67	0.08926	1.04	0.30392	3.55	2.59923	30.33	0.04971	0.58	0.02226	0.26
18	C Union NB-7	5	30	1411114	1150254	1411157	1150362	712	116.25	0.022	15.68	0.08926	1.40	0.30392	4.76	2.59923	40.74	0.04971	0.78	0.02226	0.35
19	C Union NB-8	5	30	1411157	1150362	1411248	1150589	712	244.56	0.046	32.98	0.08926	2.94	0.30392	10.02	2.59923	85.72	0.04971	1.64	0.02226	0.73
20	C Union NB-9	5	30	1411248	1150589	1411303	1150724	712	145.77	0.028	19.66	0.08926	1.75	0.30392	5.97	2.59923	51.09	0.04971	0.98	0.02226	0.44
21	C Union NB-10	5	30	1411303	1150724	1411329	1150804	687	84.12	0.016	10.95	0.08926	0.98	0.30392	3.33	2.59923	28.45	0.04971	0.54	0.02226	0.24
22	Q Union NB-11 2 Broad	5	25	1411329	1150804	1411369	1150904	687	107.70	0.020	14.01	0.10224	1.43	0.33740	4.73	2.71153	38.00	0.06135	0.86	0.02607	0.37
23	A Union NB-12	5	30	1411369	1150904	1411484	1151190	893	308.25	0.058	52.13	0.08926	4.65	0.30392	15.84	2.59923	135.51	0.04971	2.59	0.02226	1.16
24	Q Union NB-13 2 East	5	25	1411484	1151190	1411532	1151308	893	127.39	0.024	21.55	0.10224	2.20	0.33740	7.27	2.71153	58.42	0.06135	1.32	0.02607	0.56
25	A Union NB-14	5	30	1411532	1151308	1411564	1151387	809	85.23	0.016	13.06	0.08926	1.17	0.30392	3.97	2.59923	33.95	0.04971	0.65	0.02226	0.29
26	A Union NB-15	5	30	1411564	1151387	1411736	1151829	809	474.29	0.090	72.67	0.08926	6.49	0.30392	22.09	2.59923	188.89	0.04971	3.61	0.02226	1.62
27	Q Union NB-16 2 Charlotte	5	25	1411736	1151829	1411773	1151922	809	100.09	0.019	15.34	0.10224	1.57	0.33740	5.17	2.71153	41.58	0.06135	0.94	0.02607	0.40
28	A Union NB-17	5	30	1411773	1151922	1411804	1151986	448	71.11	0.013	6.03	0.08926	0.54	0.30392	1.83	2.59923	15.68	0.04971	0.30	0.02226	0.13
29	A Union NB-18	5	30	1411804	1151986	1411856	1152112	448	136.31	0.026	11.57	0.08926	1.03	0.30392	3.52	2.59923	30.06	0.04971	0.57	0.02226	0.26
30	C Union NB-19	5	30	1411856	1152112	1411915	1152254	448	153.77	0.029	13.05	0.08926	1.16	0.30392	3.97	2.59923	33.91	0.04971	0.65	0.02226	0.29
31	C Union NB-20	5	30	1411915	1152254	1411977	1152406	448	164.16	0.031	13.93	0.08926	1.24	0.30392	4.23	2.59923	36.20	0.04971	0.69	0.02226	0.31
32	Q Union NB-21 2 University	5	25	1411977	1152406	1412017	1152506	448	107.70	0.020	9.14	0.10224	0.93	0.33740	3.08	2.71153	24.78	0.06135	0.56	0.02607	0.24
33	A Union NB-22	5	30	1412017	1152506	1412106	1152728	323	239.18	0.045	14.63	0.08926	1.31	0.30392	4.45	2.59923	38.03	0.04971	0.73	0.02226	0.33
34	A Union SB-1	5	30	1411775	1152003	1411750	1151941	602	66.85	0.013	7.62	0.08926	0.68	0.30392	2.32	2.59923	19.81	0.04971	0.38	0.02226	0.17
35	A Union SB-2	5	30	1411750	1151941	1411659	1151716	602	242.71	0.046	27.67	0.08926	2.47	0.30392	8.41	2.59923	71.93	0.04971	1.38	0.02226	0.62
36	C Union SB-3	5	30	1411659	1151716	1411638	1151646	602	73.08	0.014	8.33	0.08926	0.74	0.30392	2.53	2.59923	21.66	0.04971	0.41	0.02226	0.19
37	C Union SB-4	5	30	1411638	1151646	1411584	1151497	602	158.48	0.030	18.07	0.08926	1.61	0.30392	5.49	2.59923	46.97	0.04971	0.90	0.02226	0.40
38	Q Union SB-5 2 East	5	25	1411584	1151497	1411544	1151396	602	108.63	0.021	12.39	0.10224	1.27	0.33740	4.18	2.71153	33.58	0.06135	0.76	0.02607	0.32
39	A Union SB-6	5	30	1411544	1151396	1411507	1151326	530	79.18	0.015	7.95	0.08926	0.71	0.30392	2.42	2.59923	20.66	0.04971	0.40	0.02226	0.18
40	A Union SB-7	5	30	1411507	1151326	1411454	1151189	530	146.89	0.028	14.75	0.08926	1.32	0.30392	4.48	2.59923	38.33	0.04971	0.73	0.02226	0.33
41	A Union SB-8	5	30	1411454	1151189	1411428	1151097	530	95.60	0.018	9.60	0.08926	0.86	0.30392	2.92	2.59923	24.94	0.04971	0.48	0.02226	0.21
42	Q Union SB-9 2 Broad	5	25	1411428	1151097	1411383	1150987	530	118.85	0.023	11.93	0.10224	1.22	0.33740	4.03	2.71153	32.35	0.06135	0.73	0.02607	0.31
43	A Union SB-10	5	30	1411383	1150987	1411356	1150919	621	73.16	0.014	8.61	0.08926	0.77	0.30392	2.62	2.59923	22.37	0.04971	0.43	0.02226	0.19
44	A Union SB-11	5	30	1411356	1150919	1411281	1150732	621	201.48	0.038	23.70	0.08926	2.12	0.30392	7.20	2.59923	61.59	0.04971	1.18	0.02226	0.53
45	C Union SB-12	5	30	1411281	1150732	1411135	1150370	683	390.33	0.074	50.49	0.08926	4.51	0.30392	15.35	2.59923	131.24	0.04971	2.51	0.02226	1.12
46	C Union SB-13	5	30	1411135	1150370	1411026	1150100	683	291.17	0.055	37.66	0.08926	3.36	0.30392	11.45	2.59923	97.90	0.04971	1.87	0.02226	0.84
47	C Union SB-14	5	30	1411026	1150100	1410990	1150033	683	76.06	0.014	9.84	0.08926	0.88	0.30392	2.99	2.59923	25.57	0.04971	0.49	0.02226	0.22
48	C Union SB-15	5	30	1410990	1150033	1410963	1149985	683	55.07	0.010	7.12	0.08926	0.64	0.30392	2.17	2.59923	18.52	0.04971	0.35	0.02226	0.16
49	Q Union SB-16 to Howell	5	25	1410963	1149985	1410879	1149902	683	118.09	0.022	15.28	0.10224	1.56	0.33740	5.15	2.71153	41.42	0.06135	0.94	0.02607	0.40
50	A Union SB-17	5	30	1410879	1149902	1410850	1149884	546	34.13	0.006	3.53	0.08926	0.32	0.30392	1.07	2.59923	9.17	0.04971	0.18	0.02226	0.08
51	A Howell WB-1	5	30	1410850	1149884	1410770	1149845	546	89.00	0.017	9.20	0.08926	0.82	0.30392	2.80	2.59923	23.92	0.04971	0.46	0.02226	0.20
52	C Howell WB-2	5	30	1410770	1149845	1410695	1149820	546	79.06	0.015	8.18	0.08926	0.73	0.30392	2.48	2.59923	21.25	0.04971	0.41	0.02226	0.18

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
53	C Howell WB-3	5	30	1410695	1149820	1410604	1149806	546	92.07	0.017	9.52	0.08926	0.85	0.30392	2.89	2.59923	24.75	0.04971	0.47	0.02226	0.21
54	C Howell WB-4	5	30	1410604	1149806	1410321	1149783	546	283.93	0.054	29.36	0.08926	2.62	0.30392	8.92	2.59923	76.32	0.04971	1.46	0.02226	0.65
55	Q Howell WB-5 2 Chestnut	5	25	1410321	1149783	1410224	1149770	546	97.87	0.019	10.12	0.10224	1.03	0.33740	3.41	2.71153	27.44	0.06135	0.62	0.02607	0.26
56	C Howell WB-6	5	30	1410224	1149770	1410114	1149731	838	116.71	0.022	18.52	0.08926	1.65	0.30392	5.63	2.59923	48.15	0.04971	0.92	0.02226	0.41
57	C IL Ramp WB-1	4	40	1410114	1149731	1409478	1149672	838	638.73	0.121	101.37	0.07275	7.37	0.30377	30.79	2.98891	303.00	0.03993	4.05	0.02187	2.22
58	C IL Ramp WB-2	4	40	1409478	1149672	1409359	1149672	2031	119.00	0.023	45.77	0.07275	3.33	0.30377	13.91	2.98891	136.82	0.03993	1.83	0.02187	1.00
59	A IL N Ramp NB-1	4	40	1411773	1151922	1411794	1151989	403	70.21	0.013	5.36	0.07275	0.39	0.30377	1.63	2.98891	16.02	0.03993	0.21	0.02187	0.12
60	A IL N Ramp NB-2	4	40	1411794	1151989	1411825	1152074	403	90.48	0.017	6.91	0.07275	0.50	0.30377	2.10	2.98891	20.64	0.03993	0.28	0.02187	0.15
61	A IL N Ramp NB-3	4	40	1411825	1152074	1411844	1152181	403	108.67	0.021	8.29	0.07275	0.60	0.30377	2.52	2.98891	24.79	0.03993	0.33	0.02187	0.18
62	C IL N Ramp NB-4	4	40	1411844	1152181	1411833	1152490	403	309.20	0.059	23.60	0.07275	1.72	0.30377	7.17	2.98891	70.54	0.03993	0.94	0.02187	0.52
63	C IL N Ramp NB-5	4	40	1411833	1152490	1411820	1152654	403	164.51	0.031	12.56	0.07275	0.91	0.30377	3.81	2.98891	37.53	0.03993	0.50	0.02187	0.27
64	C IL N Ramp NB-6	4	40	1411820	1152654	1411776	1152832	403	183.36	0.035	13.99	0.07275	1.02	0.30377	4.25	2.98891	41.83	0.03993	0.56	0.02187	0.31
65	C IL N Ramp NB-7	4	40	1411776	1152832	1411744	1152926	403	99.30	0.019	7.58	0.07275	0.55	0.30377	2.30	2.98891	22.65	0.03993	0.30	0.02187	0.17
66	C IL N Ramp NB-8	4	40	1411744	1152926	1411684	1153037	403	126.18	0.024	9.63	0.07275	0.70	0.30377	2.93	2.98891	28.79	0.03993	0.38	0.02187	0.21
67	C IL N Ramp NB-9	4	40	1411684	1153037	1411617	1153138	403	121.20	0.023	9.25	0.07275	0.67	0.30377	2.81	2.98891	27.65	0.03993	0.37	0.02187	0.20
68	C IL N Ramp NB-10	4	40	1411617	1153138	1411545	1153222	403	110.63	0.021	8.44	0.07275	0.61	0.30377	2.57	2.98891	25.24	0.03993	0.34	0.02187	0.18
69	C IL N Ramp SB-1	4	40	1411498	1153176	1411571	1153102	434	103.95	0.020	8.54	0.07275	0.62	0.30377	2.60	2.98891	25.54	0.03993	0.34	0.02187	0.19
70	C IL N Ramp SB-2	4	40	1411571	1153102	1411639	1153024	434	103.48	0.020	8.51	0.07275	0.62	0.30377	2.58	2.98891	25.42	0.03993	0.34	0.02187	0.19
71	C IL N Ramp SB-3	4	40	1411639	1153024	1411699	1152925	434	115.76	0.022	9.52	0.07275	0.69	0.30377	2.89	2.98891	28.44	0.03993	0.38	0.02187	0.21
72	C IL N Ramp SB-4	4	40	1411699	1152925	1411743	1152830	434	104.69	0.020	8.61	0.07275	0.63	0.30377	2.61	2.98891	25.72	0.03993	0.34	0.02187	0.19
73	C IL N Ramp SB-5	4	40	1411743	1152830	1411792	1152649	434	187.52	0.036	15.41	0.07275	1.12	0.30377	4.68	2.98891	46.07	0.03993	0.62	0.02187	0.34
74	C IL N Ramp SB-6	4	40	1411792	1152649	1411806	1152490	434	159.62	0.030	13.12	0.07275	0.95	0.30377	3.99	2.98891	39.21	0.03993	0.52	0.02187	0.29
75	C IL N Ramp SB-7	4	40	1411806	1152490	1411821	1152265	434	225.50	0.043	18.54	0.07275	1.35	0.30377	5.63	2.98891	55.40	0.03993	0.74	0.02187	0.41
76	C IL N Ramp SB-8	4	40	1411821	1152265	1411824	1152185	434	80.06	0.015	6.58	0.07275	0.48	0.30377	2.00	2.98891	19.67	0.03993	0.26	0.02187	0.14
77	C IL N Ramp SB-9	4	30	1411824	1152185	1411809	1152095	434	91.24	0.017	7.50	0.08673	0.65	0.29891	2.24	2.45069	18.38	0.05027	0.38	0.02236	0.17
78	Q IL N Ramp SB-10	4	25	1411809	1152095	1411775	1152003	434	98.08	0.019	8.06	0.09845	0.79	0.30445	2.45	2.39531	19.31	0.05911	0.48	0.02409	0.19
79	A Pitkin-1	5	20	1411534	1152741	1411600	1152704	177	75.66	0.014	2.54	0.12260	0.31	0.38572	0.98	3.19129	8.09	0.07169	0.18	0.03035	0.08
80	A Pitkin-2	5	20	1411600	1152704	1411620	1152656	177	52.00	0.010	1.74	0.12260	0.21	0.38572	0.67	3.19129	5.56	0.07169	0.12	0.03035	0.05
81	A Pitkin-3	5	20	1411620	1152656	1411653	1152539	177	121.56	0.023	4.08	0.12260	0.50	0.38572	1.57	3.19129	13.01	0.07169	0.29	0.03035	0.12
82	A Pitkin-4	5	20	1411653	1152539	1411656	1152455	177	84.05	0.016	2.82	0.12260	0.35	0.38572	1.09	3.19129	8.99	0.07169	0.20	0.03035	0.09
83	A Pitkin-5	5	20	1411656	1152455	1411640	1152367	177	89.44	0.017	3.00	0.12260	0.37	0.38572	1.16	3.19129	9.57	0.07169	0.21	0.03035	0.09
84	C Pitkin-6	5	20	1411640	1152367	1411605	1152216	177	155.00	0.029	5.20	0.12260	0.64	0.38572	2.00	3.19129	16.58	0.07169	0.37	0.03035	0.16
85	C Pitkin-7	5	20	1411605	1152216	1411566	1152047	177	173.44	0.033	5.81	0.12260	0.71	0.38572	2.24	3.19129	18.55	0.07169	0.42	0.03035	0.18
86	A Pitkin-8	5	20	1411566	1152047	1411548	1151876	30	171.94	0.033	0.98	0.12260	0.12	0.38572	0.38	3.19129	3.12	0.07169	0.07	0.03035	0.03
87	A Pitkin-9	5	20	1411548	1151876	1411538	1151795	30	81.61	0.015	0.46	0.12260	0.06	0.38572	0.18	3.19129	1.48	0.07169	0.03	0.03035	0.01
88	C Pitkin-10	5	20	1411538	1151795	1411451	1151533	30	276.07	0.052	1.57	0.12260	0.19	0.38572	0.61	3.19129	5.01	0.07169	0.11	0.03035	0.05
89	Q Pitkin-11 2 East	5	15	1411451	1151533	1411413	1151425	30	114.49	0.022	0.65	0.15034	0.10	0.45716	0.30	3.53008	2.30	0.08790	0.06	0.03591	0.02
90	A Pitkin-12	5	20	1411413	1151425	1411390	1151357	20	71.78	0.014	0.27	0.12260	0.03	0.38572	0.10	3.19129	0.87	0.07169	0.02	0.03035	0.01
91	A Pitkin-13	5	20	1411390	1151357	1411309	1151150	20	222.28	0.042	0.84	0.12260	0.10	0.38572	0.32	3.19129	2.69	0.07169	0.06	0.03035	0.03
92	Q Pitkin-14 2 Broad	5	15	1411309	1151150	1411254	1151017	20	143.92	0.027	0.55	0.15034	0.08	0.45716	0.25	3.53008	1.92	0.08790	0.05	0.03591	0.02
93	A Union Spur NB-1	5	30	1410726	1149275	1410794	1149464	401	200.86	0.038	15.25	0.08926	1.36	0.30392	4.64	2.59923	39.65	0.04971	0.76	0.02226	0.34
94	C Union Spur NB-2	5	30	1410794	1149464	1410889	1149706	401	259.98	0.049	19.74	0.08926	1.76	0.30392	6.00	2.59923	51.32	0.04971	0.98	0.02226	0.44
95	A Union Spur NB-3	5	30	1410889	1149706	1410903	1149751	401	47.13	0.009	3.58	0.08926	0.32	0.30392	1.09	2.59923	9.30	0.04971	0.18	0.02226	0.08
96	A Union Spur NB-4	5	30	1410903	1149751	1410905	1149789	401	38.05	0.007	2.89	0.08926	0.26	0.30392	0.88	2.59923	7.51	0.04971	0.14	0.02226	0.06
97	Q Union Spur NB-5	5	25	1410905	1149789	1410896	1149823	401	35.17	0.007	2.67	0.10224	0.27	0.33740	0.90	2.71153	7.24	0.06135	0.16	0.02607	0.07
98	Q Union Spur NB-6	5	25	1410896	1149823	1410877	1149856	401	38.08	0.007	2.89	0.10224	0.30	0.33740	0.98	2.71153	7.84	0.06135	0.18	0.02607	0.08
99	A Union Spur SB-1	5	25	1410864	1149852	1410890	1149803	149	55.47	0.011	1.57	0.10224	0.16	0.33740	0.53	2.71153	4.24	0.06135	0.10	0.02607	0.04
100	A Union Spur SB-2	5	25	1410890	1149803	1410892	1149754	149	49.04	0.009	1.38	0.10224	0.14	0.33740	0.47	2.71153	3.75	0.06135	0.08	0.02607	0.04
101	C Union Spur SB-3	5	30	1410892	1149754	1410878	1149709	149	47.13	0.009	1.33	0.08926	0.12	0.30392	0.40	2.59923	3.46	0.04971	0.07	0.02226	0.03
102	C Union Spur SB-4	5	30	1410878	1149709	1410784	1149468	149	258.68	0.049	7.30	0.08926	0.65	0.30392	2.22	2.59923	18.97	0.04971	0.36	0.02226	0.16
103	Q Union Spur SB-5	5	25	1410784	1149468	1410743	1149361	149	114.59	0.022	3.23	0.10224	0.33	0.33740	1.09	2.71153	8.77	0.06135	0.20	0.02607	0.08
104	A Union Spur SB-6	5	30	1410743	1149361	1410711	1149280	149	87.09	0.016	2.46	0.08926	0.22	0.30392	0.75	2.59923	6.39	0.04971	0.12	0.02226	0.05
105	C Clinton NB 2	5	45	1409574	1149436	1409518	1149816	1754	384.10	0.073	127.60	0.05927	7.56	0.27598	35.22	2.12775	271.50	0.02778	3.55	0.01503	1.92
106	C Old Howell-1	5	20	1410239	1149662	1409965	1149639	10	274.96	0.052	0.52	0.12260	0.06	0.38572	0.20	3.19129	1.66	0.07169	0.04	0.03035	0.02
107	C Monroe N-6	5	30	1410413	1149572	1410316	1149647	574	122.61	0.023	13.33	0.08926	1.19	0.30392	4.05	2.59923	34.65	0.04971	0.66	0.02226	0.30
108	Q Monroe N-7 2 Howell	5	25	1410316	1149647	1410255	1149695	574	77.62	0.015	8.44	0.10224	0.86	0.33740	2.85	2.71153	22.88	0.06135	0.52	0.02607	0.22
109	A Monroe N-8	5	30	1410255	1149695	1410138	1149785	425	147.61	0.028	11.88	0.08926	1.06	0.30392	3.61	2.59923	30.88	0.04971	0.59	0.02226	0.26
110	A Chestnut N-1	5	30	1410138	1149785	1410098	1149829	425	59.46	0.011	4.79	0.08926	0.43	0.30392	1.45	2.59923	12.44	0.04971	0.24	0.02226	0.11
111	A Chestnut N-2	5	30	1410098	1149829	1410051	1149906	425	90.21	0.017	7.26	0.08926	0.65	0.30392	2.21	2.59923	18.87	0.04971	0.36	0.02226	0.16
112	A Chestnut N-3	5	30	1410051	1149906	1410021	1150013	425	111.13	0.021	8.94	0.08926	0.80	0.30392	2.72	2.59923	23.25	0.04971	0.44	0.02226	0.20

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
113	C Chestnut S-1	5	30	1409991	1150018	1410002	1149970	525	49.24	0.009	4.90	0.08926	0.44	0.30392	1.49	2.59923	12.73	0.04971	0.24	0.02226	0.11
114	C Chestnut S-2	5	30	1410002	1149970	1410018	1149921	525	51.55	0.010	5.13	0.08926	0.46	0.30392	1.56	2.59923	13.32	0.04971	0.25	0.02226	0.11
115	C Chestnut S-3	5	30	1410018	1149921	1410052	1149856	525	73.36	0.014	7.29	0.08926	0.65	0.30392	2.22	2.59923	18.96	0.04971	0.36	0.02226	0.16
116	Q Chestnut S-4 2 Howell	5	25	1410052	1149856	1410112	1149782	525	95.27	0.018	9.47	0.10224	0.97	0.33740	3.20	2.71153	25.69	0.06135	0.58	0.02607	0.25
117	A Monroe S-1	5	30	1410112	1149782	1410414	1149543	596	385.13	0.073	43.47	0.08926	3.88	0.30392	13.21	2.59923	113.00	0.04971	2.16	0.02226	0.97
118	C Chestnut Ramp 1	5	30	1409978	1150016	1409989	1149965	1193	52.17	0.010	11.79	0.08926	1.05	0.30392	3.58	2.59923	30.64	0.04971	0.59	0.02226	0.26
119	C Chestnut Ramp 2	5	30	1409989	1149965	1410006	1149914	1193	53.76	0.010	12.15	0.08926	1.08	0.30392	3.69	2.59923	31.57	0.04971	0.60	0.02226	0.27
120	C Chestnut Ramp 3	5	30	1410006	1149914	1410046	1149845	1193	79.76	0.015	18.02	0.08926	1.61	0.30392	5.48	2.59923	46.84	0.04971	0.90	0.02226	0.40
121	Q Chestnut Ramp-4	5	25	1410046	1149845	1410050	1149786	1193	59.14	0.011	13.36	0.10224	1.37	0.33740	4.51	2.71153	36.23	0.06135	0.82	0.02607	0.35
122	A Chestnut Ramp 5	5	30	1410050	1149786	1410011	1149741	1193	59.55	0.011	13.45	0.08926	1.20	0.30392	4.09	2.59923	34.97	0.04971	0.67	0.02226	0.30
123	A Chestnut Ramp 6	5	30	1410011	1149741	1409934	1149733	1193	77.41	0.015	17.49	0.08926	1.56	0.30392	5.32	2.59923	45.46	0.04971	0.87	0.02226	0.39
124	A Chestnut Ramp 7	5	30	1409934	1149733	1409725	1149714	1193	209.86	0.040	47.42	0.08926	4.23	0.30392	14.41	2.59923	123.25	0.04971	2.36	0.02226	1.06
125	C Chestnut Ramp 8	5	35	1409725	1149714	1409476	1149692	1193	249.97	0.047	56.48	0.07665	4.33	0.28588	16.15	2.39623	135.34	0.04038	2.28	0.01903	1.07
126	A Broad WB-1	5	25	1411364	1150963	1411251	1151010	115	122.38	0.023	2.67	0.10224	0.27	0.33740	0.90	2.71153	7.23	0.06135	0.16	0.02607	0.07
127	A Broad WB-2	5	30	1411251	1151010	1411136	1151062	125	126.21	0.024	2.99	0.08926	0.27	0.30392	0.91	2.59923	7.77	0.04971	0.15	0.02226	0.07
128	C Broad EB-3	5	30	1411128	1151036	1411228	1150998	411	106.98	0.020	8.33	0.08926	0.74	0.30392	2.53	2.59923	21.64	0.04971	0.41	0.02226	0.19
129	Q Broad EB-4 Bridge	5	15	1411228	1150998	1411322	1150960	421	101.39	0.019	8.08	0.15034	1.22	0.45716	3.70	3.53008	28.54	0.08790	0.71	0.03591	0.29
130	A Broad EB-5	5	20	1411322	1150960	1411357	1150946	421	37.70	0.007	3.01	0.12260	0.37	0.38572	1.16	3.19129	9.59	0.07169	0.22	0.03035	0.09
131	A East WB-2	5	20	1411594	1151345	1411534	1151365	418	63.25	0.012	5.01	0.12260	0.61	0.38572	1.93	3.19129	15.98	0.07169	0.36	0.03035	0.15
132	Q East WB-3 Bridge	5	25	1411534	1151365	1411435	1151398	418	104.36	0.020	8.26	0.10224	0.84	0.33740	2.79	2.71153	22.40	0.06135	0.51	0.02607	0.22
133	A East WB-4	5	30	1411435	1151398	1411370	1151419	423	68.31	0.013	5.47	0.08926	0.49	0.30392	1.66	2.59923	14.22	0.04971	0.27	0.02226	0.12
134	A East EB-1	5	25	1411364	1151400	1411426	1151380	531	65.15	0.012	6.55	0.10224	0.67	0.33740	2.21	2.71153	17.76	0.06135	0.40	0.02607	0.17
135	Q East EB-2 Bridge	5	20	1411426	1151380	1411475	1151363	531	51.87	0.010	5.22	0.12260	0.64	0.38572	2.01	3.19129	16.65	0.07169	0.37	0.03035	0.16
136	A East EB-3	5	30	1411475	1151363	1411594	1151322	874	125.87	0.024	20.83	0.08926	1.86	0.30392	6.33	2.59923	54.15	0.04971	1.04	0.02226	0.46
137	Q Charlotte WB-2	5	25	1411870	1151931	1411831	1151948	81	42.54	0.008	0.65	0.10224	0.07	0.33740	0.22	2.71153	1.77	0.06135	0.04	0.02607	0.02
138	A Charlotte WB-3	5	30	1411831	1151948	1411722	1151991	88	117.18	0.022	1.95	0.08926	0.17	0.30392	0.59	2.59923	5.08	0.04971	0.10	0.02226	0.04
139	A Charlotte WB-4	5	30	1411722	1151991	1411582	1152046	88	150.42	0.028	2.51	0.08926	0.22	0.30392	0.76	2.59923	6.52	0.04971	0.12	0.02226	0.06
140	A Charlotte WB-5	5	30	1411582	1152046	1411518	1152072	88	69.08	0.013	1.15	0.08926	0.10	0.30392	0.35	2.59923	2.99	0.04971	0.06	0.02226	0.03
141	A Charlotte EB-1	5	30	1411513	1152061	1411576	1152035	196	68.15	0.013	2.53	0.08926	0.23	0.30392	0.77	2.59923	6.58	0.04971	0.13	0.02226	0.06
142	A Charlotte EB-2	5	30	1411576	1152035	1411646	1152007	196	75.39	0.014	2.80	0.08926	0.25	0.30392	0.85	2.59923	7.27	0.04971	0.14	0.02226	0.06
143	Q Charlotte EB-3	5	25	1411646	1152007	1411717	1151979	196	76.32	0.014	2.83	0.10224	0.29	0.33740	0.96	2.71153	7.68	0.06135	0.17	0.02607	0.07
144	A Charlotte EB-4	5	30	1411717	1151979	1411826	1151935	77	117.55	0.022	1.71	0.08926	0.15	0.30392	0.52	2.59923	4.46	0.04971	0.09	0.02226	0.04
145	A Charlotte EB-5	5	30	1411826	1151935	1411865	1151919	77	42.15	0.008	0.61	0.08926	0.05	0.30392	0.19	2.59923	1.60	0.04971	0.03	0.02226	0.01
146	A University NB-1	5	30	1412065	1152544	1411993	1152583	473	81.88	0.016	7.34	0.08926	0.65	0.30392	2.23	2.59923	19.07	0.04971	0.36	0.02226	0.16
147	A University NB-2	5	30	1411993	1152583	1411963	1152623	473	50.00	0.009	4.48	0.08926	0.40	0.30392	1.36	2.59923	11.64	0.04971	0.22	0.02226	0.10
148	A University NB-3	5	30	1411963	1152623	1411940	1152704	473	84.20	0.016	7.54	0.08926	0.67	0.30392	2.29	2.59923	19.61	0.04971	0.37	0.02226	0.17
149	Q University NB-4 2 Main	5	25	1411940	1152704	1411926	1152747	473	45.22	0.009	4.05	0.10224	0.41	0.33740	1.37	2.71153	10.98	0.06135	0.25	0.02607	0.11
150	A University NB-5	5	30	1411926	1152747	1411903	1152859	789	114.34	0.022	17.09	0.08926	1.53	0.30392	5.19	2.59923	44.41	0.04971	0.85	0.02226	0.38
151	A University NB-6	5	40	1411903	1152859	1411858	1152970	789	119.77	0.023	17.90	0.06668	1.19	0.27879	4.99	2.22685	39.86	0.03335	0.60	0.01675	0.30
152	Q University SB-6 2 Main	5	10	1411823	1152953	1411863	1152849	775	111.43	0.021	16.36	0.20262	3.31	0.57358	9.38	3.96591	64.86	0.11954	1.96	0.04636	0.76
153	A University SB-7	5	30	1411863	1152849	1411883	1152791	526	61.35	0.012	6.11	0.08926	0.55	0.30392	1.86	2.59923	15.89	0.04971	0.30	0.02226	0.14
154	A University SB-8	5	30	1411883	1152791	1411941	1152605	526	194.83	0.037	19.41	0.08926	1.73	0.30392	5.90	2.59923	50.45	0.04971	0.96	0.02226	0.43
155	Q University SB-9 2 Union	5	25	1411941	1152605	1411994	1152548	526	77.83	0.015	7.75	0.10224	0.79	0.33740	2.62	2.71153	21.02	0.06135	0.48	0.02607	0.20
156	A University SB-10	5	30	1411994	1152548	1412057	1152523	643	67.78	0.013	8.25	0.08926	0.74	0.30392	2.51	2.59923	21.45	0.04971	0.41	0.02226	0.18
157	A Main WB-2	5	25	1411954	1152836	1411733	1152767	740	231.52	0.044	32.45	0.10224	3.32	0.33740	10.95	2.71153	87.98	0.06135	1.99	0.02607	0.85
158	Q Main WB-3 2 Pitkin	5	25	1411733	1152767	1411616	1152729	740	123.02	0.023	17.24	0.10224	1.76	0.33740	5.82	2.71153	46.75	0.06135	1.06	0.02607	0.45
159	A Main WB-4	5	30	1411616	1152729	1411526	1152703	436	93.68	0.018	7.74	0.08926	0.69	0.30392	2.35	2.59923	20.11	0.04971	0.38	0.02226	0.17
160	A Main EB-1	5	30	1411543	1152679	1411738	1152734	733	202.61	0.038	28.13	0.08926	2.51	0.30392	8.55	2.59923	73.11	0.04971	1.40	0.02226	0.63
161	Q Main EB-2 2 University	5	25	1411738	1152734	1411852	1152771	733	119.85	0.023	16.64	0.10224	1.70	0.33740	5.61	2.71153	45.12	0.06135	1.02	0.02607	0.43
162	A Main EB-3	5	30	1411852	1152771	1412006	1152821	961	161.91	0.031	29.47	0.08926	2.63	0.30392	8.96	2.59923	76.60	0.04971	1.46	0.02226	0.66

Inner Loop Corridor (PIN 4940.T7)
MESOSCALE ANALYSIS
Build Alternative ETC+20

ETC+20 Year =	2035
ETC+20 Growth FACTOR =	1.10

Link Input Data

TOTAL BUILD ETC VOC EMISSIONS BURDEN =	164	g/hr
TOTAL BUILD ETC NOx EMISSIONS BURDEN =	575	g/hr
TOTAL BUILD ETC CO EMISSIONS BURDEN =	5,440	g/hr
TOTAL BUILD ETC PM-10 EMISSIONS BURDEN =	105	g/hr
TOTAL BUILD ETC PM-2.5 EMISSIONS BURDEN =	46	g/hr

(ALL DATA (except yellow fields) ON THIS PAGE IS FORMULA GENERATED - enter data on ETC input page)

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
1	C IL Ramp EB-1	4	40	1409362	1149611	1409454	1149630	454	93.94	0.018	8.08	0.05334	0.43	0.23583	1.90	2.05894	16.63	0.03290	0.27	0.01558	0.13
2	C IL Ramp EB-2	4	40	1409454	1149630	1409653	1149655	454	200.56	0.038	17.25	0.05334	0.92	0.23583	4.07	2.05894	35.51	0.03290	0.57	0.01558	0.27
3	C IL Ramp EB-3	4	40	1409653	1149655	1410050	1149692	454	398.72	0.076	34.28	0.05334	1.83	0.23583	8.09	2.05894	70.59	0.03290	1.13	0.01558	0.53
4	Q IL Ramp EB-4	4	30	1410050	1149692	1410157	1149711	454	108.67	0.021	9.34	0.06943	0.65	0.23608	2.21	2.17462	20.32	0.04718	0.44	0.01951	0.18
5	C Howell EB-1	5	30	1410157	1149711	1410275	1149749	349	123.97	0.023	8.19	0.07560	0.62	0.25170	2.06	2.47910	20.31	0.04825	0.40	0.02085	0.17
6	C Howell EB-2	5	30	1410275	1149749	1410519	1149773	349	245.18	0.046	16.21	0.07560	1.23	0.25170	4.08	2.47910	40.18	0.04825	0.78	0.02085	0.34
7	C Howell EB-3	5	30	1410519	1149773	1410620	1149784	349	101.60	0.019	6.72	0.07560	0.51	0.25170	1.69	2.47910	16.65	0.04825	0.32	0.02085	0.14
8	C Howell EB-4	5	30	1410620	1149784	1410708	1149798	349	89.11	0.017	5.89	0.07560	0.45	0.25170	1.48	2.47910	14.60	0.04825	0.28	0.02085	0.12
9	C Howell EB-5	5	30	1410708	1149798	1410768	1149823	349	65.00	0.012	4.30	0.07560	0.32	0.25170	1.08	2.47910	10.65	0.04825	0.21	0.02085	0.09
10	Q Howell EB-6 2 Union	5	25	1410768	1149823	1410818	1149849	349	56.36	0.011	3.73	0.08632	0.32	0.27796	1.04	2.58054	9.61	0.05983	0.22	0.02460	0.09
11	A Howell EB-7	5	30	1410818	1149849	1410858	1149871	768	45.65	0.009	6.64	0.07560	0.50	0.25170	1.67	2.47910	16.46	0.04825	0.32	0.02085	0.14
12	A Union NB-1	5	30	1410858	1149871	1410889	1149887	768	34.89	0.007	5.07	0.07560	0.38	0.25170	1.28	2.47910	12.58	0.04825	0.24	0.02085	0.11
13	A Union NB-2	5	30	1410889	1149887	1410961	1149954	768	98.35	0.019	14.31	0.07560	1.08	0.25170	3.60	2.47910	35.47	0.04825	0.69	0.02085	0.30
14	A Union NB-3	5	30	1410961	1149954	1411010	1150018	768	80.60	0.015	11.72	0.07560	0.89	0.25170	2.95	2.47910	29.07	0.04825	0.57	0.02085	0.24
15	A Union NB-4	5	30	1411010	1150018	1411033	1150060	768	47.89	0.009	6.97	0.07560	0.53	0.25170	1.75	2.47910	17.27	0.04825	0.34	0.02085	0.15
16	C Union NB-5	5	30	1411033	1150060	1411081	1150174	768	123.69	0.023	17.99	0.07560	1.36	0.25170	4.53	2.47910	44.60	0.04825	0.87	0.02085	0.38
17	C Union NB-6	5	30	1411081	1150174	1411114	1150254	768	86.54	0.016	12.59	0.07560	0.95	0.25170	3.17	2.47910	31.21	0.04825	0.61	0.02085	0.26
18	C Union NB-7	5	30	1411114	1150254	1411157	1150362	768	116.25	0.022	16.91	0.07560	1.28	0.25170	4.26	2.47910	41.92	0.04825	0.82	0.02085	0.35
19	C Union NB-8	5	30	1411157	1150362	1411248	1150589	768	244.56	0.046	35.57	0.07560	2.69	0.25170	8.95	2.47910	88.19	0.04825	1.72	0.02085	0.74
20	C Union NB-9	5	30	1411248	1150589	1411303	1150724	768	145.77	0.028	21.20	0.07560	1.60	0.25170	5.34	2.47910	52.57	0.04825	1.02	0.02085	0.44
21	C Union NB-10	5	30	1411303	1150724	1411329	1150804	738	84.12	0.016	11.76	0.07560	0.89	0.25170	2.96	2.47910	29.15	0.04825	0.57	0.02085	0.25
22	Q Union NB-11 2 Broad	5	25	1411329	1150804	1411369	1150904	738	107.70	0.020	15.05	0.08632	1.30	0.27796	4.18	2.58054	38.85	0.05983	0.90	0.02460	0.37
23	A Union NB-12	5	30	1411369	1150904	1411484	1151190	963	308.25	0.058	56.22	0.07560	4.25	0.25170	14.15	2.47910	139.38	0.04825	2.71	0.02085	1.17
24	Q Union NB-13 2 East	5	25	1411484	1151190	1411532	1151308	963	127.39	0.024	23.23	0.08632	2.01	0.27796	6.46	2.58054	59.96	0.05983	1.39	0.02460	0.57
25	A Union NB-14	5	30	1411532	1151308	1411564	1151387	870	85.23	0.016	14.04	0.07560	1.06	0.25170	3.53	2.47910	34.82	0.04825	0.68	0.02085	0.29
26	A Union NB-15	5	30	1411564	1151387	1411736	1151829	870	474.29	0.090	78.15	0.07560	5.91	0.25170	19.67	2.47910	193.74	0.04825	3.77	0.02085	1.63
27	Q Union NB-16 2 Charlotte	5	25	1411736	1151829	1411773	1151922	870	100.09	0.019	16.49	0.08632	1.42	0.27796	4.58	2.58054	42.56	0.05983	0.99	0.02460	0.41
28	A Union NB-17	5	30	1411773	1151922	1411804	1151986	483	71.11	0.013	6.51	0.07560	0.49	0.25170	1.64	2.47910	16.13	0.04825	0.31	0.02085	0.14
29	A Union NB-18	5	30	1411804	1151986	1411856	1152112	483	136.31	0.026	12.47	0.07560	0.94	0.25170	3.14	2.47910	30.91	0.04825	0.60	0.02085	0.26
30	C Union NB-19	5	30	1411856	1152112	1411915	1152254	483	153.77	0.029	14.07	0.07560	1.06	0.25170	3.54	2.47910	34.87	0.04825	0.68	0.02085	0.29
31	C Union NB-20	5	30	1411915	1152254	1411977	1152406	483	164.16	0.031	15.02	0.07560	1.14	0.25170	3.78	2.47910	37.23	0.04825	0.72	0.02085	0.31
32	Q Union NB-21 2 University	5	25	1411977	1152406	1412017	1152506	483	107.70	0.020	9.85	0.08632	0.85	0.27796	2.74	2.58054	25.42	0.05983	0.59	0.02460	0.24
33	A Union NB-22	5	30	1412017	1152506	1412106	1152728	348	239.18	0.045	15.76	0.07560	1.19	0.25170	3.97	2.47910	39.08	0.04825	0.76	0.02085	0.33
34	A Union SB-1	5	30	1411775	1152003	1411750	1151941	652	66.85	0.013	8.26	0.07560	0.62	0.25170	2.08	2.47910	20.47	0.04825	0.40	0.02085	0.17
35	A Union SB-2	5	30	1411750	1151941	1411659	1151716	652	242.71	0.046	29.97	0.07560	2.27	0.25170	7.54	2.47910	74.30	0.04825	1.45	0.02085	0.62
36	C Union SB-3	5	30	1411659	1151716	1411638	1151646	652	73.08	0.014	9.02	0.07560	0.68	0.25170	2.27	2.47910	22.37	0.04825	0.44	0.02085	0.19
37	C Union SB-4	5	30	1411638	1151646	1411584	1151497	652	158.48	0.030	19.57	0.07560	1.48	0.25170	4.93	2.47910	48.52	0.04825	0.94	0.02085	0.41
38	Q Union SB-5 2 East	5	25	1411584	1151497	1411544	1151396	652	108.63	0.021	13.41	0.08632	1.16	0.27796	3.73	2.58054	34.62	0.05983	0.80	0.02460	0.33
39	A Union SB-6	5	30	1411544	1151396	1411507	1151326	570	79.18	0.015	8.55	0.07560	0.65	0.25170	2.15	2.47910	21.19	0.04825	0.41	0.02085	0.18
40	A Union SB-7	5	30	1411507	1151326	1411454	1151189	570	146.89	0.028	15.86	0.07560	1.20	0.25170	3.99	2.47910	39.31	0.04825	0.77	0.02085	0.33
41	A Union SB-8	5	30	1411454	1151189	1411428	1151097	570	95.60	0.018	10.32	0.07560	0.78	0.25170	2.60	2.47910	25.59	0.04825	0.50	0.02085	0.22
42	Q Union SB-9 2 Broad	5	25	1411428	1151097	1411383	1150987	570	118.85	0.023	12.83	0.08632	1.11	0.27796	3.57	2.58054	33.11	0.05983	0.77	0.02460	0.32
43	A Union SB-10	5	30	1411383	1150987	1411356	1150919	671	73.16	0.014	9.30	0.07560	0.70	0.25170	2.34	2.47910	23.05	0.04825	0.45	0.02085	0.19
44	A Union SB-11	5	30	1411356	1150919	1411281	1150732	671	201.48	0.038	25.60	0.07560	1.94	0.25170	6.44	2.47910	63.48	0.04825	1.24	0.02085	0.53
45	C Union SB-12	5	30	1411281	1150732	1411135	1150370	733	390.33	0.074	54.19	0.07560	4.10	0.25170	13.64	2.47910	134.34	0.04825	2.61	0.02085	1.13
46	C Union SB-13	5	30	1411135	1150370	1411026	1150100	733	291.17	0.055	40.42	0.07560	3.06	0.25170	10.17	2.47910	100.21	0.04825	1.95	0.02085	0.84
47	C Union SB-14	5	30	1411026	1150100	1410990	1150033	733	76.06	0.014	10.56	0.07560	0.80	0.25170	2.66	2.47910	26.18	0.04825	0.51	0.02085	0.22
48	C Union SB-15	5	30	1410990	1150033	1410963	1149985	733	55.07	0.010	7.65	0.07560	0.58	0.25170	1.92	2.47910	18.95	0.04825	0.37	0.02085	0.16
49	Q Union SB-16 to Howell	5	25	1410963	1149985	1410879	1149902	733	118.09	0.022	16.39	0.08632	1.42	0.27796	4.56	2.58054	42.30	0.05983	0.98	0.02460	0.40
50	A Union SB-17	5	30	1410879	1149902	1410850	1149884	586	34.13	0.006	3.79	0.07560	0.29	0.25170	0.95	2.47910	9.39	0.04825	0.18	0.02085	0.08
51	A Howell WB-1	5	30	1410850	1149884	1410770	1149845	586	89.00	0.017	9.88	0.07560	0.75	0.25170	2.49	2.47910	24.49	0.04825	0.48	0.02085	0.21
52	C Howell WB-2	5	30	1410770	1149845	1410695	1149820	586	79.06	0.015	8.77	0.07560	0.66	0.25170	2.21	2.47910	21.75	0.04825	0.42	0.02085	0.18

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
53	C Howell WB-3	5	30	1410695	1149820	1410604	1149806	586	92.07	0.017	10.22	0.07560	0.77	0.25170	2.57	2.47910	25.33	0.04825	0.49	0.02085	0.21
54	C Howell WB-4	5	30	1410604	1149806	1410321	1149783	586	283.93	0.054	31.51	0.07560	2.38	0.25170	7.93	2.47910	78.12	0.04825	1.52	0.02085	0.66
55	Q Howell WB-5 2 Chestnut	5	25	1410321	1149783	1410224	1149770	586	97.87	0.019	10.86	0.08632	0.94	0.27796	3.02	2.58054	28.03	0.05983	0.65	0.02460	0.27
56	C Howell WB-6	5	30	1410224	1149770	1410114	1149731	904	116.71	0.022	19.98	0.07560	1.51	0.25170	5.03	2.47910	49.54	0.04825	0.96	0.02085	0.42
57	C IL Ramp WB-1	4	40	1410114	1149731	1409478	1149672	904	638.73	0.121	109.36	0.05334	5.83	0.23583	25.79	2.05894	225.16	0.03290	3.60	0.01558	1.70
58	C IL Ramp WB-2	4	40	1409478	1149672	1409359	1149672	2189	119.00	0.023	49.34	0.05334	2.63	0.23583	11.63	2.05894	101.58	0.03290	1.62	0.01558	0.77
59	A IL N Ramp NB-1	4	40	1411773	1151922	1411794	1151989	433	70.21	0.013	5.76	0.05334	0.31	0.23583	1.36	2.05894	11.86	0.03290	0.19	0.01558	0.09
60	A IL N Ramp NB-2	4	40	1411794	1151989	1411825	1152074	433	90.48	0.017	7.42	0.05334	0.40	0.23583	1.75	2.05894	15.28	0.03290	0.24	0.01558	0.12
61	A IL N Ramp NB-3	4	40	1411825	1152074	1411844	1152181	433	108.67	0.021	8.91	0.05334	0.48	0.23583	2.10	2.05894	18.35	0.03290	0.29	0.01558	0.14
62	C IL N Ramp NB-4	4	40	1411844	1152181	1411833	1152490	433	309.20	0.059	25.36	0.05334	1.35	0.23583	5.98	2.05894	52.21	0.03290	0.83	0.01558	0.40
63	C IL N Ramp NB-5	4	40	1411833	1152490	1411820	1152654	433	164.51	0.031	13.49	0.05334	0.72	0.23583	3.18	2.05894	27.78	0.03290	0.44	0.01558	0.21
64	C IL N Ramp NB-6	4	40	1411820	1152654	1411776	1152832	433	183.36	0.035	15.04	0.05334	0.80	0.23583	3.55	2.05894	30.96	0.03290	0.49	0.01558	0.23
65	C IL N Ramp NB-7	4	40	1411776	1152832	1411744	1152926	433	99.30	0.019	8.14	0.05334	0.43	0.23583	1.92	2.05894	16.77	0.03290	0.27	0.01558	0.13
66	C IL N Ramp NB-8	4	40	1411744	1152926	1411684	1153037	433	126.18	0.024	10.35	0.05334	0.55	0.23583	2.44	2.05894	21.31	0.03290	0.34	0.01558	0.16
67	C IL N Ramp NB-9	4	40	1411684	1153037	1411617	1153138	433	121.20	0.023	9.94	0.05334	0.53	0.23583	2.34	2.05894	20.46	0.03290	0.33	0.01558	0.15
68	C IL N Ramp NB-10	4	40	1411617	1153138	1411545	1153222	433	110.63	0.021	9.07	0.05334	0.48	0.23583	2.14	2.05894	18.68	0.03290	0.30	0.01558	0.14
69	C IL N Ramp SB-1	4	40	1411498	1153176	1411571	1153102	464	103.95	0.020	9.13	0.05334	0.49	0.23583	2.15	2.05894	18.81	0.03290	0.30	0.01558	0.14
70	C IL N Ramp SB-2	4	40	1411571	1153102	1411639	1153024	464	103.48	0.020	9.09	0.05334	0.49	0.23583	2.14	2.05894	18.72	0.03290	0.30	0.01558	0.14
71	C IL N Ramp SB-3	4	40	1411639	1153024	1411699	1152925	464	115.76	0.022	10.17	0.05334	0.54	0.23583	2.40	2.05894	20.95	0.03290	0.33	0.01558	0.16
72	C IL N Ramp SB-4	4	40	1411699	1152925	1411743	1152830	464	104.69	0.020	9.20	0.05334	0.49	0.23583	2.17	2.05894	18.94	0.03290	0.30	0.01558	0.14
73	C IL N Ramp SB-5	4	40	1411743	1152830	1411792	1152649	464	187.52	0.036	16.48	0.05334	0.88	0.23583	3.89	2.05894	33.93	0.03290	0.54	0.01558	0.26
74	C IL N Ramp SB-6	4	40	1411792	1152649	1411806	1152490	464	159.62	0.030	14.03	0.05334	0.75	0.23583	3.31	2.05894	28.88	0.03290	0.46	0.01558	0.22
75	C IL N Ramp SB-7	4	40	1411806	1152490	1411821	1152265	464	225.50	0.043	19.82	0.05334	1.06	0.23583	4.67	2.05894	40.80	0.03290	0.65	0.01558	0.31
76	C IL N Ramp SB-8	4	40	1411821	1152265	1411824	1152185	464	80.06	0.015	7.04	0.05334	0.38	0.23583	1.66	2.05894	14.49	0.03290	0.23	0.01558	0.11
77	C IL N Ramp SB-9	4	30	1411824	1152185	1411809	1152095	464	91.24	0.017	8.02	0.06943	0.56	0.23608	1.89	2.17462	17.44	0.04718	0.38	0.01951	0.16
78	Q IL N Ramp SB-10	4	25	1411809	1152095	1411775	1152003	464	98.08	0.019	8.62	0.08060	0.69	0.24370	2.10	2.24149	19.32	0.05713	0.49	0.02216	0.19
79	A Pitkin-1	5	20	1411534	1152741	1411600	1152704	187	75.66	0.014	2.68	0.10375	0.28	0.31955	0.86	3.04671	8.16	0.06996	0.19	0.02869	0.08
80	A Pitkin-2	5	20	1411600	1152704	1411620	1152656	187	52.00	0.010	1.84	0.10375	0.19	0.31955	0.59	3.04671	5.61	0.06996	0.13	0.02869	0.05
81	A Pitkin-3	5	20	1411620	1152656	1411653	1152539	187	121.56	0.023	4.31	0.10375	0.45	0.31955	1.38	3.04671	13.12	0.06996	0.30	0.02869	0.12
82	A Pitkin-4	5	20	1411653	1152539	1411656	1152455	187	84.05	0.016	2.98	0.10375	0.31	0.31955	0.95	3.04671	9.07	0.06996	0.21	0.02869	0.09
83	A Pitkin-5	5	20	1411656	1152455	1411640	1152367	187	89.44	0.017	3.17	0.10375	0.33	0.31955	1.01	3.04671	9.65	0.06996	0.22	0.02869	0.09
84	C Pitkin-6	5	20	1411640	1152367	1411605	1152216	187	155.00	0.029	5.49	0.10375	0.57	0.31955	1.75	3.04671	16.73	0.06996	0.38	0.02869	0.16
85	C Pitkin-7	5	20	1411605	1152216	1411566	1152047	187	173.44	0.033	6.14	0.10375	0.64	0.31955	1.96	3.04671	18.72	0.06996	0.43	0.02869	0.18
86	A Pitkin-8	5	20	1411566	1152047	1411548	1151876	30	171.94	0.033	0.98	0.10375	0.10	0.31955	0.31	3.04671	2.98	0.06996	0.07	0.02869	0.03
87	A Pitkin-9	5	20	1411548	1151876	1411538	1151795	30	81.61	0.015	0.46	0.10375	0.05	0.31955	0.15	3.04671	1.41	0.06996	0.03	0.02869	0.01
88	C Pitkin-10	5	20	1411538	1151795	1411451	1151533	30	276.07	0.052	1.57	0.10375	0.16	0.31955	0.50	3.04671	4.78	0.06996	0.11	0.02869	0.05
89	Q Pitkin-11 2 East	5	15	1411451	1151533	1411413	1151425	30	114.49	0.022	0.65	0.12689	0.08	0.38075	0.25	3.36555	2.19	0.08601	0.06	0.03409	0.02
90	A Pitkin-12	5	20	1411413	1151425	1411390	1151357	20	71.78	0.014	0.27	0.10375	0.03	0.31955	0.09	3.04671	0.83	0.06996	0.02	0.02869	0.01
91	A Pitkin-13	5	20	1411390	1151357	1411309	1151150	20	222.28	0.042	0.84	0.10375	0.09	0.31955	0.27	3.04671	2.57	0.06996	0.06	0.02869	0.02
92	Q Pitkin-14 2 Broad	5	15	1411309	1151150	1411254	1151017	20	143.92	0.027	0.55	0.12689	0.07	0.38075	0.21	3.36555	1.83	0.08601	0.05	0.03409	0.02
93	A Union Spur NB-1	5	30	1410726	1149275	1410794	1149464	431	200.86	0.038	16.40	0.07560	1.24	0.25170	4.13	2.47910	40.65	0.04825	0.79	0.02085	0.34
94	C Union Spur NB-2	5	30	1410794	1149464	1410889	1149706	431	259.98	0.049	21.22	0.07560	1.60	0.25170	5.34	2.47910	52.61	0.04825	1.02	0.02085	0.44
95	A Union Spur NB-3	5	30	1410889	1149706	1410903	1149751	431	47.13	0.009	3.85	0.07560	0.29	0.25170	0.97	2.47910	9.54	0.04825	0.19	0.02085	0.08
96	A Union Spur NB-4	5	30	1410903	1149751	1410905	1149789	431	38.05	0.007	3.11	0.07560	0.23	0.25170	0.78	2.47910	7.70	0.04825	0.15	0.02085	0.06
97	Q Union Spur NB-5	5	25	1410905	1149789	1410896	1149823	431	35.17	0.007	2.87	0.08632	0.25	0.27796	0.80	2.58054	7.41	0.05983	0.17	0.02460	0.07
98	Q Union Spur NB-6	5	25	1410896	1149823	1410877	1149856	431	38.08	0.007	3.11	0.08632	0.27	0.27796	0.86	2.58054	8.02	0.05983	0.19	0.02460	0.08
99	A Union Spur SB-1	5	25	1410864	1149852	1410890	1149803	159	55.47	0.011	1.67	0.08632	0.14	0.27796	0.46	2.58054	4.31	0.05983	0.10	0.02460	0.04
100	A Union Spur SB-2	5	25	1410890	1149803	1410892	1149754	159	49.04	0.009	1.48	0.08632	0.13	0.27796	0.41	2.58054	3.81	0.05983	0.09	0.02460	0.04
101	C Union Spur SB-3	5	30	1410892	1149754	1410878	1149709	159	47.13	0.009	1.42	0.07560	0.11	0.25170	0.36	2.47910	3.52	0.04825	0.07	0.02085	0.03
102	C Union Spur SB-4	5	30	1410878	1149709	1410784	1149468	159	258.68	0.049	7.79	0.07560	0.59	0.25170	1.96	2.47910	19.31	0.04825	0.38	0.02085	0.16
103	Q Union Spur SB-5	5	25	1410784	1149468	1410743	1149361	159	114.59	0.022	3.45	0.08632	0.30	0.27796	0.96	2.58054	8.90	0.05983	0.21	0.02460	0.08
104	A Union Spur SB-6	5	30	1410743	1149361	1410711	1149280	159	87.09	0.016	2.62	0.07560	0.20	0.25170	0.66	2.47910	6.50	0.04825	0.13	0.02085	0.05
105	C Clinton NB 2	5	45	1409574	1149436	1409518	1149816	1869	384.10	0.073	135.96	0.04941	6.72	0.23200	31.54	2.03332	276.46	0.02664	3.62	0.01393	1.89
106	C Old Howell-1	5	20	1410239	1149662	1409965	1149639	10	274.96	0.052	0.52	0.10375	0.05	0.31955	0.17	3.04671	1.59	0.06996	0.04	0.02869	0.01
107	C Monroe N-6	5	30	1410413	1149572	1410316	1149647	618	122.61	0.023	14.35	0.07560	1.09	0.25170	3.61	2.47910	35.58	0.04825	0.69	0.02085	0.30
108	Q Monroe N-7 2 Howell	5	25	1410316	1149647	1410255	1149695	618	77.62	0.015	9.09	0.08632	0.78	0.27796	2.53	2.58054	23.44	0.05983	0.54	0.02460	0.22
109	A Monroe N-8	5	30	1410255	1149695	1410138	1149785	455	147.61	0.028	12.72	0.07560	0.96	0.25170	3.20	2.47910	31.53	0.04825	0.61	0.02085	0.27
110	A Chestnut N-1	5	30	1410138	1149785	1410098	1149829	455	59.46	0.011	5.12	0.07560	0.39	0.25170	1.29	2.47910	12.70	0.04825	0.25	0.02085	0.11
111	A Chestnut N-2	5	30	1410098	1149829	1410051	1149906	455	90.21	0.017	7.77	0.07560	0.59	0.25170	1.96	2.47910	19.27	0.04825	0.38	0.02085	0.16
112	A Chestnut N-3	5	30	1410051	1149906	1410021	1150013	455	111.13	0.021	9.58	0.07560	0.72	0.25170	2.41	2.47910	23.74	0.04825	0.46	0.02085	0.20

Link No.	Link Description	MOVES Source	Speed (mph)	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)	PM Peak (veh/hr)	Length (m)	Length (mi)	VMT (veh*mi/hr)	VOC EFs (g/mi)	VOC EBs (g/hr)	NOx EFs (g/mi)	NOx EBs (g/hr)	CO EFs (g/mi)	CO EBs (g/hr)	PM-10 EFs (g/mi)	PM-10 EBs (g/hr)	PM-2.5 EFs (g/mi)	PM-2.5 EBs (g/hr)
113	C Chestnut S-1	5	30	1409991	1150018	1410002	1149970	567	49.24	0.009	5.29	0.07560	0.40	0.25170	1.33	2.47910	13.11	0.04825	0.26	0.02085	0.11
114	C Chestnut S-2	5	30	1410002	1149970	1410018	1149921	567	51.55	0.010	5.54	0.07560	0.42	0.25170	1.39	2.47910	13.72	0.04825	0.27	0.02085	0.12
115	C Chestnut S-3	5	30	1410018	1149921	1410052	1149856	567	73.36	0.014	7.88	0.07560	0.60	0.25170	1.98	2.47910	19.53	0.04825	0.38	0.02085	0.16
116	Q Chestnut S-4 2 Howell	5	25	1410052	1149856	1410112	1149782	567	95.27	0.018	10.23	0.08632	0.88	0.27796	2.84	2.58054	26.40	0.05983	0.61	0.02460	0.25
117	A Monroe S-1	5	30	1410112	1149782	1410414	1149543	646	385.13	0.073	47.12	0.07560	3.56	0.25170	11.86	2.47910	116.82	0.04825	2.27	0.02085	0.98
118	C Chestnut Ramp 1	5	30	1409978	1150016	1409989	1149965	1285	52.17	0.010	12.70	0.07560	0.96	0.25170	3.20	2.47910	31.48	0.04825	0.61	0.02085	0.26
119	C Chestnut Ramp 2	5	30	1409989	1149965	1410006	1149914	1285	53.76	0.010	13.08	0.07560	0.99	0.25170	3.29	2.47910	32.43	0.04825	0.63	0.02085	0.27
120	C Chestnut Ramp 3	5	30	1410006	1149914	1410046	1149845	1285	79.76	0.015	19.41	0.07560	1.47	0.25170	4.89	2.47910	48.12	0.04825	0.94	0.02085	0.40
121	Q Chestnut Ramp-4	5	25	1410046	1149845	1410050	1149786	1285	59.14	0.011	14.39	0.08632	1.24	0.27796	4.00	2.58054	37.14	0.05983	0.86	0.02460	0.35
122	A Chestnut Ramp 5	5	30	1410050	1149786	1410011	1149741	1285	59.55	0.011	14.49	0.07560	1.10	0.25170	3.65	2.47910	35.93	0.04825	0.70	0.02085	0.30
123	A Chestnut Ramp 6	5	30	1410011	1149741	1409934	1149733	1285	77.41	0.015	18.84	0.07560	1.42	0.25170	4.74	2.47910	46.71	0.04825	0.91	0.02085	0.39
124	A Chestnut Ramp 7	5	30	1409934	1149733	1409725	1149714	1285	209.86	0.040	51.07	0.07560	3.86	0.25170	12.86	2.47910	126.62	0.04825	2.46	0.02085	1.06
125	C Chestnut Ramp 8	5	35	1409725	1149714	1409476	1149692	1285	249.97	0.047	60.84	0.06465	3.93	0.23811	14.49	2.28839	139.22	0.03909	2.38	0.01779	1.08
126	A Broad WB-1	5	25	1411364	1150963	1411251	1151010	125	122.38	0.023	2.90	0.08632	0.25	0.27796	0.81	2.58054	7.48	0.05983	0.17	0.02460	0.07
127	A Broad WB-2	5	30	1411251	1151010	1411136	1151062	135	126.21	0.024	3.23	0.07560	0.24	0.25170	0.81	2.47910	8.00	0.04825	0.16	0.02085	0.07
128	C Broad EB-3	5	30	1411128	1151036	1411228	1150998	441	106.98	0.020	8.93	0.07560	0.68	0.25170	2.25	2.47910	22.15	0.04825	0.43	0.02085	0.19
129	Q Broad EB-4 Bridge	5	15	1411228	1150998	1411322	1150960	451	101.39	0.019	8.66	0.12689	1.10	0.38075	3.30	3.36555	29.15	0.08601	0.74	0.03409	0.30
130	A Broad EB-5	5	20	1411322	1150960	1411357	1150946	451	37.70	0.007	3.22	0.10375	0.33	0.31955	1.03	3.04671	9.81	0.06996	0.23	0.02869	0.09
131	A East WB-2	5	20	1411594	1151345	1411534	1151365	448	63.25	0.012	5.37	0.10375	0.56	0.31955	1.71	3.04671	16.35	0.06996	0.38	0.02869	0.15
132	Q East WB-3 Bridge	5	25	1411534	1151365	1411435	1151398	448	104.36	0.020	8.85	0.08632	0.76	0.27796	2.46	2.58054	22.85	0.05983	0.53	0.02460	0.22
133	A East WB-4	5	30	1411435	1151398	1411370	1151419	453	68.31	0.013	5.86	0.07560	0.44	0.25170	1.48	2.47910	14.53	0.04825	0.28	0.02085	0.12
134	A East EB-1	5	25	1411364	1151400	1411426	1151380	571	65.15	0.012	7.05	0.08632	0.61	0.27796	1.96	2.58054	18.18	0.05983	0.42	0.02460	0.17
135	Q East EB-2 Bridge	5	20	1411426	1151380	1411475	1151363	571	51.87	0.010	5.61	0.10375	0.58	0.31955	1.79	3.04671	17.09	0.06996	0.39	0.02869	0.16
136	A East EB-3	5	30	1411475	1151363	1411594	1151322	944	125.87	0.024	22.50	0.07560	1.70	0.25170	5.66	2.47910	55.79	0.04825	1.09	0.02085	0.47
137	Q Charlotte WB-2	5	25	1411870	1151931	1411831	1151948	91	42.54	0.008	0.73	0.08632	0.06	0.27796	0.20	2.58054	1.89	0.05983	0.04	0.02460	0.02
138	A Charlotte WB-3	5	30	1411831	1151948	1411722	1151991	98	117.18	0.022	2.17	0.07560	0.16	0.25170	0.55	2.47910	5.39	0.04825	0.10	0.02085	0.05
139	A Charlotte WB-4	5	30	1411722	1151991	1411582	1152046	98	150.42	0.028	2.79	0.07560	0.21	0.25170	0.70	2.47910	6.92	0.04825	0.13	0.02085	0.06
140	A Charlotte WB-5	5	30	1411582	1152046	1411518	1152072	98	69.08	0.013	1.28	0.07560	0.10	0.25170	0.32	2.47910	3.18	0.04825	0.06	0.02085	0.03
141	A Charlotte EB-1	5	30	1411513	1152061	1411576	1152035	212	68.15	0.013	2.74	0.07560	0.21	0.25170	0.69	2.47910	6.78	0.04825	0.13	0.02085	0.06
142	A Charlotte EB-2	5	30	1411576	1152035	1411646	1152007	212	75.39	0.014	3.03	0.07560	0.23	0.25170	0.76	2.47910	7.50	0.04825	0.15	0.02085	0.06
143	Q Charlotte EB-3	5	25	1411646	1152007	1411717	1151979	212	76.32	0.014	3.06	0.08632	0.26	0.27796	0.85	2.58054	7.91	0.05983	0.18	0.02460	0.08
144	A Charlotte EB-4	5	30	1411717	1151979	1411826	1151935	87	117.55	0.022	1.94	0.07560	0.15	0.25170	0.49	2.47910	4.80	0.04825	0.09	0.02085	0.04
145	A Charlotte EB-5	5	30	1411826	1151935	1411865	1151919	87	42.15	0.008	0.69	0.07560	0.05	0.25170	0.17	2.47910	1.72	0.04825	0.03	0.02085	0.01
146	A University NB-1	5	30	1412065	1152544	1411993	1152583	515	81.88	0.016	7.99	0.07560	0.60	0.25170	2.01	2.47910	19.80	0.04825	0.39	0.02085	0.17
147	A University NB-2	5	30	1411993	1152583	1411963	1152623	515	50.00	0.009	4.88	0.07560	0.37	0.25170	1.23	2.47910	12.09	0.04825	0.24	0.02085	0.10
148	A University NB-3	5	30	1411963	1152623	1411940	1152704	515	84.20	0.016	8.21	0.07560	0.62	0.25170	2.07	2.47910	20.36	0.04825	0.40	0.02085	0.17
149	Q University NB-4 2 Main	5	25	1411940	1152704	1411926	1152747	515	45.22	0.009	4.41	0.08632	0.38	0.27796	1.23	2.58054	11.38	0.05983	0.26	0.02460	0.11
150	A University NB-5	5	30	1411926	1152747	1411903	1152859	849	114.34	0.022	18.38	0.07560	1.39	0.25170	4.63	2.47910	45.58	0.04825	0.89	0.02085	0.38
151	A University NB-6	5	40	1411903	1152859	1411858	1152970	849	119.77	0.023	19.26	0.05590	1.08	0.23344	4.50	2.12703	40.96	0.03214	0.62	0.01558	0.30
152	Q University SB-6 2 Main	5	10	1411823	1152953	1411863	1152849	835	111.43	0.021	17.62	0.17001	3.00	0.47652	8.40	3.75493	66.17	0.11709	2.06	0.04401	0.78
153	A University SB-7	5	30	1411863	1152849	1411883	1152791	566	61.35	0.012	6.58	0.07560	0.50	0.25170	1.66	2.47910	16.30	0.04825	0.32	0.02085	0.14
154	A University SB-8	5	30	1411883	1152791	1411941	1152605	566	194.83	0.037	20.89	0.07560	1.58	0.25170	5.26	2.47910	51.78	0.04825	1.01	0.02085	0.44
155	Q University SB-9 2 Union	5	25	1411941	1152605	1411994	1152548	566	77.83	0.015	8.34	0.08632	0.72	0.27796	2.32	2.58054	21.53	0.05983	0.50	0.02460	0.21
156	A University SB-10	5	30	1411994	1152548	1412057	1152523	693	67.78	0.013	8.90	0.07560	0.67	0.25170	2.24	2.47910	22.05	0.04825	0.43	0.02085	0.19
157	A Main WB-2	5	25	1411954	1152836	1411733	1152767	800	231.52	0.044	35.08	0.08632	3.03	0.27796	9.75	2.58054	90.52	0.05983	2.10	0.02460	0.86
158	Q Main WB-3 2 Pitkin	5	25	1411733	1152767	1411616	1152729	800	123.02	0.023	18.64	0.08632	1.61	0.27796	5.18	2.58054	48.10	0.05983	1.12	0.02460	0.46
159	A Main WB-4	5	30	1411616	1152729	1411526	1152703	467	93.68	0.018	8.29	0.07560	0.63	0.25170	2.09	2.47910	20.54	0.04825	0.40	0.02085	0.17
160	A Main EB-1	5	30	1411543	1152679	1411738	1152734	793	202.61	0.038	30.43	0.07560	2.30	0.25170	7.66	2.47910	75.44	0.04825	1.47	0.02085	0.63
161	Q Main EB-2 2 University	5	25	1411738	1152734	1411852	1152771	793	119.85	0.023	18.00	0.08632	1.55	0.27796	5.00	2.58054	46.45	0.05983	1.08	0.02460	0.44
162	A Main EB-3	5	30	1411852	1152771	1412006	1152821	1036	161.91	0.031	31.77	0.07560	2.40	0.25170	8.00	2.47910	78.76	0.04825	1.53	0.02085	0.66

APPENDIX L

Noise Analysis

NOISE ANALYSIS REPORT

for

P.I.N. 4940.T7
INNER LOOP RECONSTRUCTION PROJECT
SOUTH CLINTON AVENUE TO SCIO STREET
CITY OF ROCHESTER, MONROE COUNTY

December 2013

Prepared For:

STANTEC
61 COMMERCIAL STREET
ROCHESTER NY 14614

For Submission To:

CITY OF ROCHESTER
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And
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EXECUTIVE SUMMARY

Watts Architecture & Engineering (Watts) was retained by Stantec to perform a Noise Analysis for the City of Rochester, on the Inner Loop Transformation Project, City of Rochester, Monroe County, New York (PIN 4940.T7).

The methods used in this analysis are in accordance with the provisions and procedures of the policies stated in the federal noise regulations (23 CFR 772), and NYSDOT's *The Environmental Manual* (TEM). The Inner Loop project is classified as a 23 CFR 772 Noise Type I project which requires a noise analysis to determine whether noise abatement measures need to be considered.

To determine the effect that the Inner Loop project would have on existing noise levels and to determine what impact the noise would have on current land-use activities, nine noise sensitive receiver sites were selected for evaluation within the study area. At each receiver location, existing and future noise levels were obtained using field noise measurements and computer modeling. The results of the computer modeling were compared to FHWA standards for the identification of predicted future noise impacts.

FHWA Noise Activity Criteria (NAC) noise impacts were predicted at five of the nine receiver locations for the Build Alternative and four of the nine receiver locations for the No-Build Alternative. It should be noted that the term NAC noise impact is not intended to be used for the purpose of determining a "significant" noise impact under National Environmental Protection Act (NEPA) or the State Environmental Quality Review Act (SEQRA). A NAC impact is a noise level that approaches or exceeds a certain noise threshold that triggers the consideration of noise abatement measures.

With respect to an overall comparison between the No-Build and Build alternatives, the variation in the results ranged from 0-2 dBA for all receivers and 0-1 dBA for the five impacted receivers. Since 3 dBA is generally considered the minimum decibel difference noticeable to the human ear, the differences in noise levels between the No-Build and Build alternatives for the analyzed areas are essentially negligible and primarily imperceptible to the human ear. Therefore, consideration of the noise level differences between the No-Build and Build alternatives to favor one alternative over another is not recommended.

Due to factors external to the proposed project, future NAC noise impacts are expected at four of the nine receiver locations regardless of whether the proposed project is constructed. Given that the differences in the predicted noise levels between the Build and No-Build alternatives are projected to be imperceptible to the human ear at all five of the impacted receivers, it is not expected that this project will have a significant impact on noise levels throughout the corridor.

When noise impacts are predicted for a project, noise abatement must be considered for each impact; no favor is given to the higher decibel level impacts or different types of noise impacts (e.g. above NAC, substantial, severe) and all noise impacts must be considered equally for consideration of noise abatement. Therefore, noise abatement measures were considered along the project corridor for the areas represented by the five receiver locations that exhibited FHWA noise impacts. When noise abatement measures are being considered, 23 CFR 772 requires that every reasonable effort shall be made to obtain substantial noise reductions. A "substantial" noise reduction is defined as a reduction in the order of ten dBA. However, the abatement must provide a minimum reduction of at least seven dBA at the properties with the greatest reductions. In addition, noise abatement measures must be economically reasonable when compared to the number of residences benefitted. A benefitted residence is any residence where the noise level is reduced by 5 dBA or more by implementation of the noise abatement measure(s).

For the impacted areas, all noise abatement measures listed in 23 CFR Part 772.13(c) were examined and evaluated for reducing the dBA level. In all instances, the noise abatement measures were considered physically infeasible, economically unreasonable, or undesirable to the affected residents. Therefore, no noise abatement measures are recommended for this corridor.

1.0 INTRODUCTION

Watts Architecture & Engineering (Watts) was retained by Stantec to perform a Noise Analysis for the City of Rochester, on the Inner Loop Transformation Project, City of Rochester, Monroe County, New York (PIN 4940.T7). See **Figure 1** for the Project Location Map.

1.1 Scope and Purpose

The procedures followed for this report conform to the policies presented in the NYSDOT *The Environmental Manual* (TEM), Section 4.4.18, "Noise Analysis Policy and Procedures", April 2011 prepared by the NYSDOT Engineering Division - Office of Environment which, in turn, conforms to the Federal noise regulations, Procedures for Abatement of Highway Traffic Noise and Construction Noise, 23 CFR 772 and the Highway Traffic Noise Analysis and Abatement Policy and Guidance dated June 1995. The Inner Loop project is classified as a 23 CFR 772 Noise Type I project, since the project proposes a "Substantial Vertical Alteration" (a project that removes shielding, and therefore exposing the line-of-sight between the receptor and the traffic noise source) of the Inner loop. This type of construction project requires a noise analysis to determine whether noise abatement measures need to be considered.

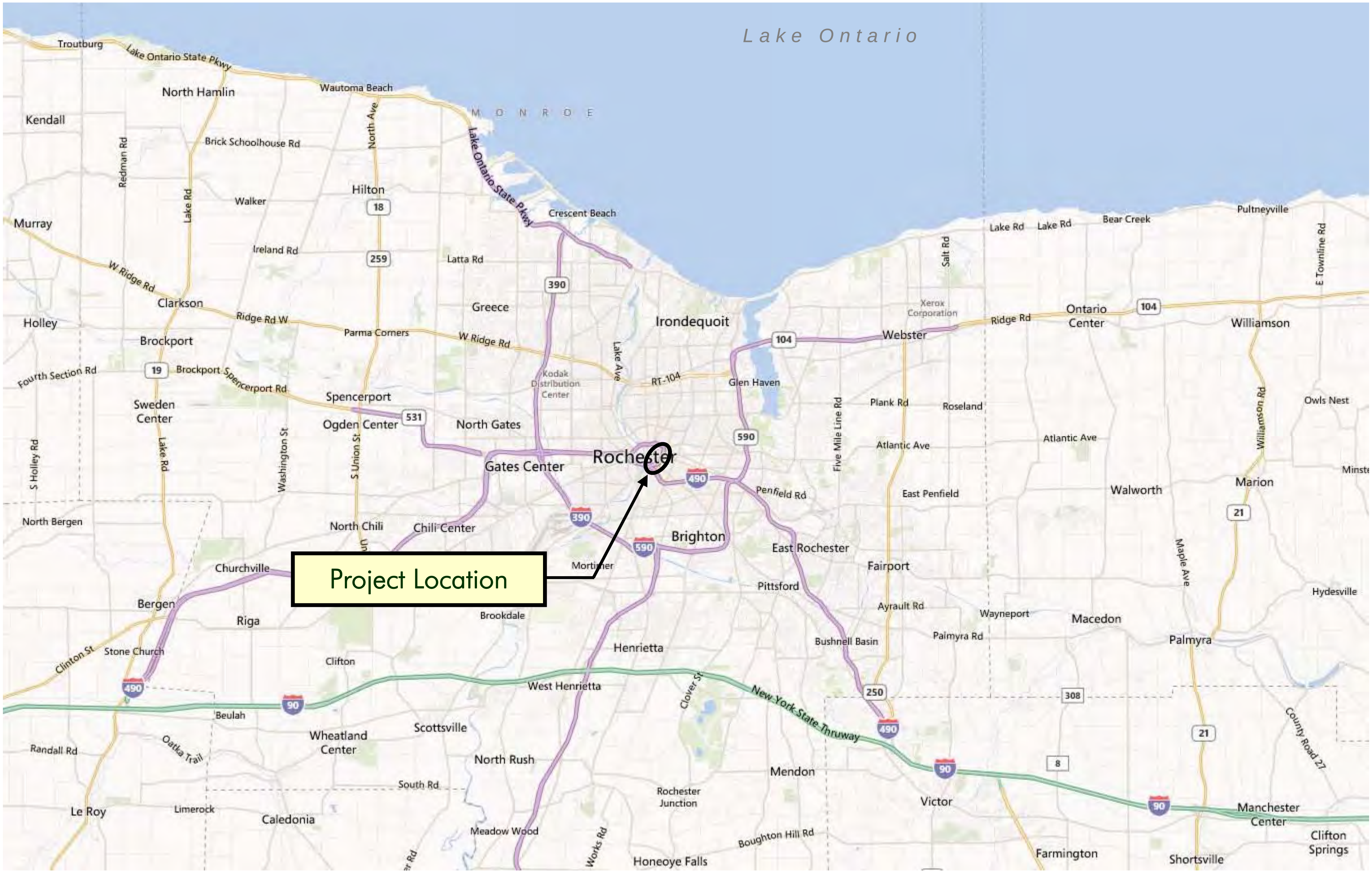
1.2 Project Location

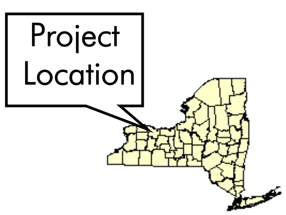
The proposed project is located in the City of Rochester, Monroe County, New York. The project study area limits for the air study are shown on **Figure 2** in **Attachement A.**

1.3 Project Description

The proposed project involves raising the eastern portion of the Inner Loop from Main Street to Monroe Avenue/Chestnut Street, to an at-grade boulevard.

Due to the relatively low traffic volume currently serviced by this section of the Inner Loop, the project is expected to mainly affect the immediate construction area and have a relatively negligible effect on the traffic volumes of the surrounding roadway network.





Source: Microsoft Bing 2013.

Watts AE
95 Perry Street
Buffalo, New York

FIGURE 1 – PROJECT LOCATION MAP

P.I.N. 4940.T7
Inner Loop Reconstruction Project
City of Rochester, Monroe County, New York

Not to Scale	November 2013

2.0 DESIGN ALTERNATIVES

2.1 Null/No-Build Alternative

This alternative would not construct the proposed Build Alternative within the study area. It is assumed that the current street configuration would be maintained under this alternative.

2.2 Build Alternative

The Build Alternative would involve raising this section of the Inner Loop to grade. Additional information on the Build Alternative is available in the project Design Approval Document.

3.0 NOISE CHARACTERISTICS

Three physical characteristics of noise have been identified as being significant to the determination of noise acceptance:

- The Intensity,
- The Frequency, and
- The Time-Varying Nature of the Noise.

Intensity is a measure of the magnitude or energy of the sound and is directly related to pressure level. The human ear is capable of sensing a wide range of pressure levels, and consequently, pressure levels are expressed in terms of a logarithmic scale with units called decibels (dB). As the intensity of a noise increases, it is judged to be more annoying or less acceptable.

Frequency is a measure of the total qualities of sound. People are most sensitive to sounds in the middle to high frequencies, therefore, higher frequencies tend to cause more annoyance. This sensitivity led to the use of the A-weighted sound level, which provides a single number measure that weights different frequencies of the frequency spectrum in a manner similar to the sensitivity of the human ear. Thus, the A-weighted sound level in decibels (dBA) provides a simple measure of intensity and frequency that correlates well with human hearing. Common noise levels are shown in **Table 3-1**.

Environmental noise is rarely constant with time. It is necessary to use a method of measure that will account for this time-varying nature of noise. The equivalent sound pressure level (Leq) is defined as the continuous steady sound level which would have the same total A-weighted sound energy as the real fluctuating sound measured over the same period of time. Leq is typically used for highway noise analysis. This unit of measure, therefore, has been chosen for use in this study.

Table 3-1 Common Noise Levels

Common Outdoor Noise Levels	Noise Levels (dBA)		Common Indoor Noise Levels
	110	110	Rock Band
Jet Flyover at 1000 ft			
	100	100	
Gas Lawnmower at 3 ft			Inside Subway Train
	90	90	Food Blender at 3 ft
Diesel Truck at 50 ft			Garbage Disposal at 3 ft
Noisy Urban (daytime)	80	80	Shouting at 3 ft
Gas Lawnmower at 100 ft	70	70	Vacuum Cleaner at 3 ft
			Normal Speech at 3 ft
Heavy Traffic at 300 ft	60	60	
			Large Business Office
Quiet Urban (daytime)	50	50	Dishwasher Next Room
Quiet Urban (nighttime)	40	40	
Quiet Suburban (nighttime)			Small Theater (background) Library
	30	30	
			Bedroom at Night Concert Hall (background)
Quiet Rural (nighttime)	20	20	
			Broadcast and Recording Studio
	10	10	
			Threshold of Hearing
	0	0	

Source: NYSDOT Document - Field Measurement of Existing Noise Levels: May 1986.

4.0 METHODOLOGY OVERVIEW

The methods used in this analysis are in accordance with the provisions and procedures of the policies stated in the federal noise regulations (23 CFR 772), and the NYSDOT TEM. The following procedure was used to achieve the objectives of this study.

1. Existing developed land uses were determined for the project areas, and Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) corresponding to each land use were assigned in accordance with 23 CFR 772.

2. Appropriate noise measurement sites were chosen for analysis in the project study area. Using a sound meter that meets ANSI Standards for Type 2 meters, existing noise levels were measured in accordance with the NYSDOT's manual, Field Measurement of Existing Noise Levels. Two measurements were taken at each site. The field noise measurements at each receiver consisted of one field measurement during either an AM or a PM peak hour and one field measurement during an off peak hour. The majority of traffic within the study area consists of commuter-type traffic; therefore, peak hours, that were measured, generally ranged from 4-6:00 pm for PM peak hours during the weekday. Traffic volumes, speeds, vehicle classifications, weather conditions, area topography and any particular incidents that may affect the measurement were recorded at each site concurrent with the noise measurements.

3. Using the collected data, computer models reflecting the field conditions were then created for the worst-case measurements taken at each site with respect to either vehicle counts, classifications, or sound levels (if significant variations were identified). The FHWA Traffic Noise Model 2.5 (TNM) computer program was used for this modeling. The TNM noise levels predicted by the models were then compared to the noise levels in the field to validate the ability of the models to predict noise levels at each site. TNM inputs for each receiver site included the field-measured traffic volumes, vehicle distributions, speeds, and roadway geometrics. In accordance with FHWA policies, the TNM-modeled sound levels are considered accurate if they are within plus or minus 3 dBA of the field measured noise levels (ref. FHWA TNM Users Manual). The results of these model validations are described in Section 6.0.

4. Years for analysis included the existing year 2013 (for model validation), 2008 (as the "existing" traffic data model year) and 2035 (ETC+20). The validated or acceptable models for each study site (described in Step 3) were then modified to reflect worst case 2008 and 2035 traffic conditions using the design peak hour volumes, growth rates, and speeds (obtained from the NYSDOT and the Draft Design Report/Environmental Assessment for this project) to predict existing

(2008) and future peak hour traffic-generated noise levels produced by the No-Build and Build Alternatives. During the field measurements in the area of the project, there was a construction project that affected traffic patterns throughout the study area, and further, schools were out for the summer. Consequently, the traffic conditions during the field measurements were not considered representative of normal traffic. However, due to the project schedule, the noise measurements were performed under these non-standard conditions. To mitigate for the collection of noise measurements under non-standard conditions, additional noise analysis predictions were made to represent existing conditions using traffic data from 2008 which was collected during normal traffic conditions. Therefore, future noise level predictions were compared to the 2008 model noise levels to determine if an impact was expected. Since the current traffic conditions are considered non-standard, the vehicle mix was evaluated for conservative adjustments based on review of videos that were recorded along the corridor during standard peak hour conditions in 2011.

5. For the build alternative, the noise levels predicted using the design year (2035) traffic were compared to the FHWA Noise Abatement Criteria (NAC). Receptors at which predicted noise levels approach (within 1 dBA) or exceed the NAC level of 67 dBA were identified as requiring consideration of noise abatement measures. In accordance with the NYSDOT TEM, the same future noise levels were also compared to the "existing" (in this case, 2008) noise levels yielded from the 2008 model to determine the net increase in noise levels. Increases of 6 dBA or more over existing (2008) levels also require consideration of noise abatement measures.

6. For the areas meeting the criteria described in Number 5 above, the full range of noise abatement techniques were considered for acoustic effectiveness, desirability, feasibility, and cost. Abatement measures are recommended for impacted sites when measures are found to be effective, feasible, and reasonable.

5.0 RECEPTOR SITES

Current land-use categories were assigned to the properties located within the study area. A review of local planning documents for the City of Rochester was performed as part of the existing conditions analysis for the EIS process. This existing conditions analysis, in conjunction with a site visit, was used to identify existing activities and developed lands, and to locate undeveloped lands for which development is planned, designed, or programmed. If present, particularly-sensitive noise receivers such as residences, schools, and churches were also identified. In determining noise impacts, primary consideration is given to exterior areas.

To determine the effect that the Inner Loop project would have on existing noise levels and to determine what impact the noise would have on current land-use activities, receptor sites were selected for evaluation within the study area. A total of nine receptor sites were investigated for this noise study. A description of each identified site and its noise category as defined by 23 CFR 772 follows:

- Receiver Location A -- Representative of a park-like green-space at the southwest corner of Howell Street and Broadway (Wadsworth Square Park) that is used by the neighborhood for recreation and relaxation. Receiver is located along the roadway ROW in the grass. - Activity Category C (recreation).

- Receiver Location B -- Representative of residential apartment complexes and a doctor's office located along the southeast side of South Union Street. Receiver is located along the sidewalk between the apartment complexes. - Activity Category B (residential areas).

- Receiver Location C -- Representative of the Strong Museum. Receiver is located in the circle near one of the museum entrances in the grass. - Activity Category C (recreation area).

- Receiver Location D -- Representative of the front yards of numerous residential apartments and houses east of South Union Street. Receiver is located along the Union Street right-of-way (ROW) in front of a representative residence at 72 South Union Street in the grass. - Activity Category B (residential areas).

- Receiver Location E -- Representative of a residential apartment complex ("The Savannah"), located along Savannah Street, and the Manhattan Square Tennis Club (air dome structure to the south). Receiver is located on the sidewalk in front of the structures. - Activity Category B (residential areas and sports).

- **Receiver Location F** -- Representative of the Bethel Christian Fellowship Church at the corner of South Union Street and East Avenue. Receiver is located along the South Union Street ROW in a flower bed adjacent to the structure. - Activity Category C (places of worship).

- **Receiver Location G** -- Representative of two places of worship along North Union Street near Richmond Street ("New Hope" at 62 N. Union St. and "The Word of the Cross" at 76 N. Union St.). Receiver is located in a planter along the N. Union Street ROW at 76 N. Union Street. - Activity Category C (places of worship).

- **Receiver Location H** -- Representative of the World of Inquiry School at 200 University Avenue. The School is undergoing a renovation project that will, among other things, move the location of the exterior playground to the other side of the building. The location of the receiver was chosen based on examination of exterior use areas identified on the proposed School plans and a meeting with the School project's construction manager. The receiver could not be placed within the exact proposed playground location because it was an active construction site at the time of measurement; however, the receiver was placed adjacent to the School property line in parallel with the proposed playground. This new representative location for the Receiver is conservative and makes the most logical sense given the timing and active construction project. - Activity Category C (schools).

- **Receiver Location I** -- Representative of the backyards of numerous residential houses with addresses along Lyndhurst Street. Receiver is located behind a representative house (245 Lyndhurst Street) along the Inner Loop ROW fence. - Activity Category B (residential areas).

The figure in **Attachment A** and the Field Noise Monitoring Logs in **Attachment B** show the location of the sites evaluated within the study area.

The FHWA NAC, based on land use or activity category, are listed in **Table 5-1**. These criteria indicate the noise levels for each activity category at which noise impacts occur and consideration of abatement measures is required.

TABLE 5-1

NOISE ABATEMENT CRITERIA (NAC)
HOURLY A-WEIGHTED SOUND LEVEL - DECIBELS (dBA)

Activity Category	Leq (h) (dBA)	Description of Land Use Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[1]	72 (Exterior)	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F.
F	---	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	---	Undeveloped lands that are not permitted.

Leq (h): Equivalent sound pressure level, see section 3.0 for discussion.
[1] Includes undeveloped lands permitted for this Activity Category.

6.0 MODEL VALIDATION

NYSDOT guidelines require the validation of the TNM noise model by using field measurements of noise, traffic volumes, speeds, and vehicle types. The site-specific volumes, vehicle types, speeds, and geometry are entered into the TNM model to determine the model-predicted noise level, for comparison to the field-measured noise levels. In accordance with FHWA policies, the TNM-modeled sound levels are considered accurate if they are within plus or minus 3 dBA of the field measured noise levels (ref. FHWA TNM Users Manual).

6.1 Field Measurements

Existing noise-level measurements were conducted in August 2013 at the nine receiver sites. The receiver locations are shown on **Figure 1** and on the Field Noise Monitoring Logs in **Attachment B**.

The weather was clear with temperatures ranging from 69 to 76 degrees F. Wind was less than 21 kph (13 mph) and humidity was between 37 and 77 percent.

Noise levels at each receiver were measured using a Casella CEL-633C1 Sound Level Meter. To accurately measure the sound level representative of each site, two measurements of at least 15-25 minutes were taken at each site. Measurements were taken throughout the day and during the weekday PM peak hours to help identify the worst case peak hour for the corridor. Noise levels recorded by the sound level meter included the equivalent noise level (Leq). The noise monitoring logs can be found in **Attachment B**. The 2012 field-measured noise levels are shown on **Table 6-1**.

6.2 TNM Model Validation

TNM existing conditions noise models (reflecting site-specific conditions, geometry, traffic volumes, vehicle distributions, and speeds recorded during the field noise measurements) were developed for each site. The TNM predicted noise levels were then compared to the field-measured noise levels described in Section 6.1. At all sites, the TNM existing conditions model outputs agreed with the field measured noise levels. This indicates that the TNM model is considered acceptable and may be used for the prediction of future noise levels.

Table 6-1
Field and Model Validation Noise Levels (Leq)
P.I.N. 4940.T7 - Inner Loop Reconstruction Project

Measurement Site	Major Source(s) of Noise	Start Time	Date	**Field Measured 2013 (dBA)**	Field Verification Model* 2013 (dBA)
Receiver A: Park/green-space at southwest corner of Howell St. and Broadway. - Activity Category C (recreation area).	Inner Loop Clinton Chestnut	1:04 pm 4:00 pm	8/6/13 8/8/13	**56** **56**	---- 57
Receiver B: Apartment complexes and a doctor's office at SE side of S. Union St. - Activity Category B (residential areas).	S. Union Monroe	11:37 am 4:00 pm	8/6/13 8/15/13	**63** **65**	---- 66
Receiver C: Strong Museum. - Activity Category C (recreation area).	Inner Loop Pitkin	6:29 pm 5:22 pm	8/6/13 8/15/13	**56** **60**	---- 60
Receiver D: Front yards of residential apartments and houses east of S. Union St. - Activity Category B (residential areas).	Inner Loop S. Union	12:06 pm 4:41 pm	8/6/13 8/15/13	**65** **66**	---- 65
Receiver E: Apartment complex and Tennis Club. - Activity Category B (residential/sports).	Inner Loop Broad	6:04 pm 5:01 pm	8/6/13 8/15/13	**55** **56**	---- 55
Receiver F: Bethel Christian Fellowship Church. - Activity Category C (places-of-worship).	Inner Loop S. Union	1:44 pm 4:32 pm	8/6/13 8/6/13	**63** **63**	---- 64
Receiver G: "New Hope" and "The Word of the Cross". - Activity Category C (places-of-worship).	Inner Loop N. Union	2:20 pm 5:02 pm	8/6/13 8/6/13	**64** **64**	---- 64
Receiver H: World of Inquiry School at 200 University Avenue. - Activity Category C (schools).	Inner Loop E. Main	7:06 pm 4:10 pm	8/6/13 8/6/13	**59** **60**	---- 62
Receiver I: Backyards of residential houses with along Lyndhurst Street. - Activity Category B (residential areas).	Inner Loop University Ramps	3:08 pm 5:29 pm	8/6/13 8/6/13	**61** **59**	---- 62

---- These measurements were not modeled.
* Model Validation sound levels are considered accurate if they are within ±3 dBA of field sound levels (see Section 4.0).

7.0 PREDICTION OF EXISTING AND FUTURE NOISE LEVELS

Once the models have been validated for each receiver site, these models may be used with *design* traffic volumes and characteristics (i.e. with traffic volumes consistent with those presented in the project's Draft Design Report).

7.1 Model Inputs

As stated earlier, the FHWA model accounts for such factors as:

- Traffic Volumes and Classifications;
- Vehicle Operations Speeds;
- Roadway Alignment and Grade; and
- Physical Features.

Each of these factors are discussed below.

7.1.1 Traffic Volumes and Classifications

Existing (in this case, 2008) and Future (2035) peak hour traffic volumes for area roadways were obtained from Stantec. Additional information on traffic volumes can be found in the design approval document for this project.

Traffic volumes and vehicle classifications were recorded during the 2013 field noise measurements. Vehicle classification counts coincided with the five TNM default vehicle classifications (automobiles, medium trucks, heavy trucks, buses, and motorcycles).

The 2008 and 2035 peak-hour traffic data were then mathematically broken down into the five vehicle classification using percentages that were identified during the field noise measurements and incorporated into the TNM peak hour noise models. TNM model inputs and outputs are presented in **Attachment B**.

7.1.2 Vehicle Operating Speeds

The vehicle operating speeds used for the 2035 null model are generally the worst-case free flow speeds either obtained from the design approval document or taken from speed observations or measurements recorded during the field noise monitoring events. For the no-build scenario, the 85th percentile speeds identified in the design approval document were used in most areas. For the build scenarios, the speeds were lowered to accommodate for the traffic calming measures that have been incorporated into the design.

7.1.3 Roadway Alignment and Grade

The alignments and grades of the Inner Loop and other local roadways for the No-Build and Build Alternatives were used in preparing the noise prediction models.

7.1.4 Physical Features

Existing and proposed physical features such as structures, embankment slopes, earth cut sections and earth berms can act as noise barriers. Physical features were identified during the field measurements for potential inclusion in the noise prediction models, as appropriate.

7.2 Model Results and Impact Assessment

A traffic noise impact can be expected from a project if one or both of the following occurs:

1. The projected highway noise levels approach or exceed the FHWA NAC as specified in **Table 5-1** ("Approach" is defined as within 1 dBA of the NAC.)
2. The projected highway noise exceeds existing noise levels by 6 dBA or more as specified by NYSDOT ("substantial increase").

The models predict noise impacts at five locations:

- **Site A:** The impact at Site A was predicted under the no-build conditions as well as the build conditions for 2035.
- **Site B:** The impact at Site B was predicted under the 2008 existing conditions, 2035 no-build conditions and the 2035 build conditions.
- **Site D:** The impact at Site D was predicted under the no-build conditions as well as the build conditions for 2035.
- **Site F:** The impact at Site F was predicted under the no-build conditions as well as the build conditions for 2035.
- **Site G:** The impact at Site G was predicted under the build condition; however, it was not predicted under the no-build condition.

Table 7-1, at the end of this section, summarizes the noise impacts expected from the project.

7.2.1 Null/No Build Alternative

The predicted design year (2035) noise levels for four (Sites A, B, D and F) of the nine receivers meets the FHWA NAC for characterization as an impact under the No-Build Alternative. The impact at Receiver B for the 2035 no-build case was also predicted as a noise impact under the 2008 model at approximately the same decibel level.

7.2.2 Build Alternative

Noise impacts were predicted at five (Sites A, B, D, F and G) of the nine receiver locations for the build alternative.

<u>2008 Model vs. 2035 Build Alternative Model Comparison</u>:

The predicted noise impact at Site B for the 2035 build alternative case was also predicted as a noise impact under the 2008 model. While the 2035 build alternative model showed impacts at Receivers A, D, F, and G, impacts were not predicted for these receivers under the 2008 model.

<u>2035 No-Build Model vs. 2035 Build Alternative Model Comparison</u>:

The differences in noise levels between the 2035 No-Build Alternative model outputs and the 2035 build alternative model outputs can be attributed to changes in traffic volumes, roadway geometrics, and traffic speeds.

- Traffic volume changes are due to the changes in traffic patterns associated with the roadway geometry improvements for the build conditions,
- Changes in roadway geometrics reflect the changes proposed by the new roadway design, and
- Changes in speed are reflected by the traffic calming measures proposed under the build alternatives.

Four of the five noise impacts under the Build Alternative are also predicted to occur under the No-Build Alternative. Therefore, the impacts at Receivers A, B, D, and F are expected to occur due to normal traffic growth even without this project; however, the noise impact at Receiver G is predicted to occur as a result of the proposed design.

The location of Receiver Site G was intended to represent the worst case location for two churches between Parker and Haags Alleys. Given the bend in the proposed roadway, the roadway would be located further from

"Word of the Cross" church than the "New Hope" church. Therefore, if no impact was predicted at Receiver G, it would follow that neither church would have a predicted impact; however, since a noise impact was predicted at Receiver G, the converse could not be confirmed without further study. Receiver G is located directly in front of the "New Hope" church, and the predicted 2035 noise level of 66 dBA is so close to the threshold at 66 dBA that a separate virtual "Test Receiver" was placed within the computer model at the front door of the "Word of the Cross" church. The predicted 2035 Build Alternative noise level at the Test Receiver is 64 dBA; hence, no impact is predicted for the "Word of the Cross" church. Consequently, the impact at Receiver G represents an impact for the "New Hope" church only.

The impact predicted at Receiver G under the build condition has a predicted noise level that is only 1 dBA higher than the noise level predicted under the no-build condition. The Build Alternative is mathematically louder than the No-Build Alternative; however, as indicated above, a human receptor would not likely perceive the 1 dBA difference in the noise levels between the two alternatives. Therefore, consideration of the noise level difference at Receiver G to favor the No-Build alternative over the Build Alternative is not recommended.

7.2.3 Summary Discussion of Impact Assessment

Noise impacts above the FHWA NAC were predicted at Receivers A, B, D, and F for the Build and No-Build alternatives. In addition, a noise impact was predicted at Receiver G under the 2035 Build condition only. Therefore, construction of the build alternative is predicted to cause a new noise impact for the "New Hope" church at Receiver G; however, it should be noted that even though there is a numerical noise impact at the "New Hope" church, the difference between the Build and No-Build alternatives noise levels are minor and are not expected to be perceptible to the human ear.

With respect to an overall comparison between the No-Build and Build alternatives, the variation in the results ranged from 0-2 dBA (maximum of 2 dBA at Receiver E) per receiver. As indicated above, 3 dBA is generally considered the minimum decibel difference noticeable to the human ear; therefore, the differences in noise levels between the No-Build and Build alternatives for the analyzed areas are essentially negligible and primarily imperceptible to the human ear. Therefore, consideration of the noise level differences between the No-Build and Build alternatives to favor one alternative over another is not recommended.

When noise impacts are predicted for a project, noise abatement must be considered for each impact; no favor is given to the higher decibel level impacts or different types of noise impacts (e.g. above NAC, substantial, severe) and all noise impacts must be considered equally for consideration of noise abatement. Therefore, noise abatement measures were considered along the project corridor for the receptor areas (Receivers A, B, D, F, and G) that exhibited FHWA noise impacts. See Section 8.0 for the results of the noise abatement investigation.

Table 7-1
Noise Impact Summary - Model Results
P.I.N. 4940.T7 - Inner Loop Reconstruction Project

			Noise Level (Leq)				
			2008 Model (dBA)	Design Year (2035)			
Receiver Location	FHWA Category	NAC (dBA)		Null (dBA)	Impact	Build Alt. (dBA)	Impact
Receiver A: Park/green-space at southwest corner of Howell St. & Broadway. - Activity Category C (recreation area).	C	67 (Exterior)	65	**66**	**Yes**	**66**	**Yes**
Receiver B: Apartment complexes and a doctor's office at SE side of S. Union St. - Activity Category B (residential areas).	B	67 (Exterior)	**66**	**66**	**Yes**	**67**	**Yes**
Receiver C: Strong Museum. - Activity Category C (recreation area).	C	67 (Exterior)	61	62	No	61	No
Receiver D: Front yards of residential apartments and houses east of S. Union St. - Activity Category B (residential areas).	B	67 (Exterior)	65	**66**	**Yes**	**66**	**Yes**
Receiver E: Apartments and Tennis Club. - Activity Category B (residential/sports).	B	67 (Exterior)	56	58	No	56	No
Receiver F: Bethel Christian Fellowship Church. - Activity Category C (places-of-worship).	C	67 (Exterior)	64	**66**	**Yes**	**67**	**Yes**
Receiver G: "New Hope" and "The Word of the Cross". - Activity Category C (places-of-worship).	C	67 (Exterior)	64	65	No	**66**	**Yes**
Receiver H: World of Inquiry School at 200 University Avenue. - Activity Category C (schools).	C	67 (Exterior)	63	64	No	63	No
Receiver I: Backyards of residential houses with along Lyndhurst Street. - Activity Category B (residential areas).	B	67 (Exterior)	63	64	No	63	No

Notes: NAC = Noise Abatement Criteria - An impact occurs when the projected highway noise levels approach or exceed the FHWA NAC as specified in Table 5-1 of this report ("Approach" is defined as within 1 dBA of the NAC). Predicted impacts are shown in bold.

8.0 NOISE ABATEMENT

Noise abatement measures were considered for those sites that are expected to have traffic noise "approaching" or exceeding the FHWA NAC or expected to have a "substantial increase" in traffic noise. Therefore, noise abatement measures were considered for the area represented by Receivers A, B, D, F, and G for this project. When noise abatement measures are being considered, 23 CFR 772 requires that every reasonable effort shall be made to obtain substantial noise reductions. A "substantial" noise reduction is defined as a reduction in the order of ten dBA. However, the abatement must provide a minimum reduction of at least seven dBA at the properties with the greatest reductions. In addition, noise abatement measures must be economically reasonable when compared to the number of residences benefitted. A benefitted residence is any residence where the noise level is reduced by 5 dBA or more by implementation of the noise abatement measure(s).

There are four main noise abatement measures that are considered when an impact has been identified:

1. Traffic management measures such as traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
2. Alteration of horizontal and vertical alignments.
3. Construction of noise barriers.
4. Acquisition of real property to serve as a buffer zone.

8.1 Traffic Management

One method of noise abatement is through traffic management, which includes specific lane designations, prohibition or time restriction of certain vehicle types, and modified speed limits. Lane designations would not be effective or practical since many of the existing and proposed roadways are local with driveway and sidestreet access that must be maintained at all times for neighborhood residents, as well as for school busses and delivery trucks. In addition, the Union/Howell Street corridor is generally one or two lanes in each direction.

Prohibition or time restriction of heavy vehicles in the area of the five impacted receiver sites is not considered feasible because the Union/Howell Street corridor is an important transportation route for both commercial and residential traffic where many of the vehicles are delivery trucks and school busses which cannot be re-routed.

It is anticipated that reduction of traffic speeds in the area of the five impacted receiver sites has the potential to have a substantial reduction on traffic noise.

Generally a 20+ mph reduction in speed is necessary for a noticeable decrease in noise levels. A minor reduction in speed may reduce noise levels; however, it would not yield the required "substantial noise reduction" of 7-10 dBA for justification of a noise abatement measure. Therefore, a significant reduction in speeds would have to take place to yield a substantial noise reduction. Two standard methods of speed reduction were considered in the area of the five impacted receiver sites: (1) speed limit reduction and (2) traffic calming measures to reduce actual speed.

> **Consideration of speed limit reduction:** Speed limits can be reduced; however, posting a lower speed limit in this area would not likely result in an actual speed reduction overall and would likely present a traffic safety hazard. The proposed design is expected to have roadway speeds Union/Howell Street corridor ranging from 30-40 mph. It is anticipated that a lower posted speed limit (e.g. ranging from 10-20 mph) would not produce a uniform reduction in vehicle speeds (i.e. some vehicles would slow down and some would not). It is expected that this greater range of vehicle speeds would cause an increase in the accident rate over time and, regardless, would not reduce noise to an extent that would meet the NYSDOT noise reduction goals for residences in this area. Therefore, "speed limit" reduction is not practical for this corridor.

> **Consideration of traffic calming measures to reduce actual speed:** One of the core intents of this project is to reduce the speed of traffic using the Inner Loop corridor. Under the build alternative design, suitable traffic calming measures are planned along the corridor which are anticipated to slow traffic speeds to approximately 30-40 mph. The traffic calming measures currently proposed for the corridor may offer some minor noise reductions along the corridor; however, reasonable traffic calming options would not be able to provide the required speed reductions necessary to meet the NYSDOT noise reduction design goal for traffic noise. Therefore design/implementation of further traffic calming measures for the purposes of noise abatement is not practical for this corridor.

Due to the ineffectiveness and impracticality of these methods, traffic management is not a practical method for noise abatement for this project.

8.2 Alteration of Horizontal and Vertical Alignments

Highway design modification, such as locating the highway farther from receptors or altering profile grades, is another method of noise abatement. Potential changes in horizontal or vertical alignment were evaluated to determine if these measures would be feasible or reasonable for this project.

Evaluation of vertical alignment changes:

Reduction of noise levels through modification of the vertical profile of the Build Alternative would be due to the reduction of the line-of-sight between the vehicular noise sources (tire noise and exhaust pipes) and the receptors. Most automobiles and light trucks have exhaust pipes located at approximately 1-2 feet (0.3 to 0.6 meters) above the roadway surface, however, it should be noted that many trucks/busses have exhaust pipes that outlet at approximately 9.8 feet (3 meters) above the roadway surface and many of the receptors are located above or below the current elevation of the roadway (both requiring lower or higher roadway profiles to reduce line-of-site relationships). Options for changes in vertical alignment include the following:

1. Lowering the roadway - Depending on the elevation of the receptors and location with respect to the roadway, the roadway would have to be lowered approximately 3.3-6.6 feet (1-2 meters), in the area of the five impacted receiver sites to *begin* to reduce noise levels; however, reduction of noise levels to an extent that would justify implementation of a mitigation measure would likely require a more extreme change in the vertical alignment. The purpose of this project is to raise the roadway and create more of a neighborhood atmosphere. Since this mitigation method would directly contradict the intention of the project, lowering the roadway is not a viable method of mitigation for these noise impacts.

2. Raising the roadway - The roadway would have to be raised over 6.6-9.8 feet (2-3 meters) to *begin* to reduce noise levels to adjacent residences, however, reduction of noise levels to an extent that would justify implementation of a mitigation measure would likely require a more extreme change in the vertical alignment. Engineering obstacles for raising the roadway elevation include unacceptable driveway and yard pitches and the addition of undesirable visual and aesthetic concerns.

In general, construction of vertical alignment changes are not feasible in the areas of the impacted receivers, mainly because this mitigation method would directly contradict the intention of the project. Therefore, a vertical alignment change is not a practical method for noise abatement on this project.

Evaluation of horizontal alignment changes:

As part of the project's design, the many parallel roadways along the corridor (Inner Loop, Union, Pitkin, and Howell) will be consolidated into one roadway with a shifted alignment chosen to maximize the area for potential future development. This roadway shift will influence noise levels through relocation of the noise source and through the resultant traffic calming speed reductions. The resulting reduction in speed will lower some of the noise levels; however, consolidation of the roadways will also move traffic closer to, or farther from, some of the receptors.

The TNM noise modeling predicts that the effects of this roadway design and shift will mathematically lower the noise levels at some of the represented receptors and raise the noise levels at others. However, as indicated above, the predicted differences in noise levels between the No-Build and the Build Alternatives will generally not be perceptible at the five impacted receiver locations.

Generally, a large shift of 100 feet or more is expected to be required to yield noise reductions large enough to justify implementation of horizontal alignment change as a mitigation measure. The proposed Union/Howell Street corridor is centered between receivers on both sides of the roadway, and the alignment of the roadway has been chosen based on the best use of the roadway/open space per the project objectives. Therefore, further horizontal alignment change is not a practical method for noise abatement along the project corridor.

8.3 Construction of Noise Barriers

The most effective method of noise abatement is a noise barrier which can be constructed of wood, steel, concrete, or earthen berm. For a barrier to provide effective noise reduction it must be continuous and designed to a high enough elevation to shield the receptor from the noise source.

Noise barriers were considered as a means of providing noise abatement in the area of the five impacted receiver sites. In order for noise barriers to be constructed in the study area, openings for driveways would need to be provided for the residences along the corridor. However, noise barriers must be continuous in order to be effective as a noise abatement measure. Therefore, construction of noise barriers along this corridor is not a viable noise abatement measure for this project.

In addition and as indicated above, the purpose of this project is to raise the roadway and create more of a neighborhood atmosphere. Since constructing noise barriers would directly contradict the intention of the project, noise barriers would not be an acceptable method of mitigation for these noise impacts.

8.4 Acquisition of Real Property to Serve as a Buffer Zone

This abatement measure allows for acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to pre-empt development that would be adversely impacted by traffic noise. Since the area of the five impacted receiver sites are located adjacent to the proposed project corridor, there is no room for a buffer zone and this would be ineffective as an abatement measure for the impacted receptors.

8.5 Summary Discussion of Noise Abatement

For the impacted areas, all noise abatement measures listed in 23 CFR Part 772.13(c) were examined and evaluated for reducing or eliminating the noise impacts (see sections 8.1 through 8.4). In all instances, the noise abatement measures were considered physically infeasible, economically unreasonable, or undesirable to the affected residents. Therefore, no noise abatement measures are recommended for this corridor.

9.0 CONSTRUCTION NOISE

Construction noise differs from traffic noise in the following ways:

- Construction noise only lasts for the duration of the construction contract.
- Construction activities are usually limited to the daylight hours when most human activity takes place.
- Construction activities are generally short term.
- Construction noise is intermittent and depends on the type of operation.

This project will include the construction activities of excavation, sub-base preparation, bridge construction, and other miscellaneous work.

Certain mitigation measures can be incorporated into the contract documents to reduce construction noise in the project area. The following mitigation strategies are likely to be used for a project of this type:

A. Source Control

1. Use of exhaust systems in good working order, engine enclosures and intake silencers.
2. Regular equipment maintenance.
3. Use of new equipment subject to new product noise emission standards.

B. Site Control

1. Placement of stationary equipment as far away from sensitive receptors as possible.
2. Strategic choice of staging sites and C&D disposal sites.

C. Time and Activity Constraints

1. Coordinate work operations to coincide with time periods when people would least likely be affected.
2. Limit work hours.

D. Community Awareness

1. Public notification of construction operations.
2. Methods to handle complaints.

10.0 REFERENCES

1. NYSDOT, The Environmental Manual (TEM), prepared by the NYSDOT Engineering Division - Office of Environment, April 2011. Section 4.4.18 - Noise Analysis Policy and Procedures.

2. City of Rochester/NYSDOT. Draft Design Report for PIN 4940.T7, Inner Loop East Reconstruction Project, South Clinton Avenue to East Main Street, City of Rochester, Monroe County, New York: June 2013; Prepared by Stantec Consulting Services Inc.

3. Field Measurement of Existing Noise Levels, prepared by Noise Measurement Unit, Materials Bureau, NYSDOT, May 1986.

4. FHWA Traffic Noise Model (TNM) 2.5: User's Guide, Federal Highway Administration, April 2004.

5. FHWA Traffic Noise Model (TNM) 1.0: Technical Manual, Federal Highway Administration, February 1998 (including updates to 2.5).

6. Federal-Aid Policy Guide, Subchapter H, Part 772 of Title 23 of the Code of Federal Regulations, Federal Highway Administration, Washington, D.C., December 9, 1991, Transmittal 1.

ATTACHMENT A

Noise Receiver Locations

NOTES:
1) ORTHOPHOTOGRAPH BASEMAP IS FROM THE NEW YORK STATE GIS GATEWAY AND IS DATED 2012.

FIGURE 2	
TRAFFIC NOISE STUDY RECEIVERS	
P.I.N. 4940.T7 - INNER LOOP EAST RECONSTRUCTION PROJECT ROCHESTER, NEW YORK	
SCALE: 1:3600 (11"x17" plot)	NOVEMBER 2013

CHECKED BY
DRAFTED BY
ESTIMATED BY
CHECKED BY
DESIGNED BY
JOB MANAGER
DESIGN SUPERVISOR

FILE NAME = H:Y2198 Rochester I-490 Inner Loop/CADD/Environmental/Inner Loop Noise Receiver Locs v04.dgn
DATE/TIME = 11/15/2013
USER = jkellogg

ATTACHMENT B

Field Noise Monitoring Logs

PM Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/8/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York

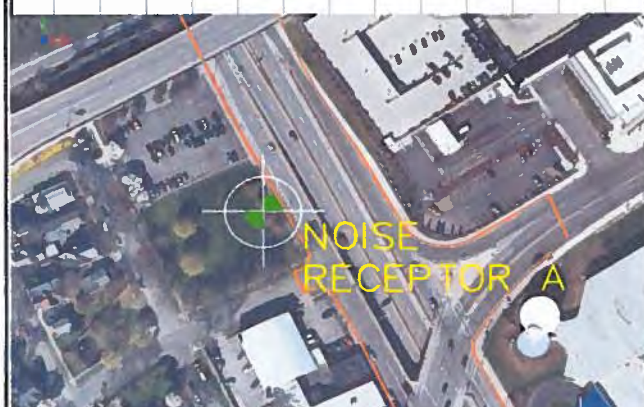
JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, PC, MG

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~10 DIRECTION: WSW
TEMPERATURE: 74°F
HUMIDITY: 77%

RUN TIME	NOISE LEVEL dBA	COMMENTS
3:10	64	Skateboarders
4:58	high 60s	Plane overhead
		Cicadas here
		Airwrench from
		gas sta
		intermittent
23:53		Horn Honk
24:39		thunder

LOCATION DIAGRAM



Notes:

RECEPTOR I.D. A

9:50 was 55.0 but plane popped it up

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	55.2	57.2	56.7	56.5	56.4
Start Time 4:00p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Nora - 0362 - Broadway ✓
Pat - 0803 - Monroe ✓
Mike - 0363 - Clinton ✓

Off-Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13

PROJECT NAME: Inner Loop Reconstruction

LOCATION: Rochester, New York

JOB NO: 12198

PIN NO: 4940.T7

PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1

S/N: 2511397

WEIGHTING: A

CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

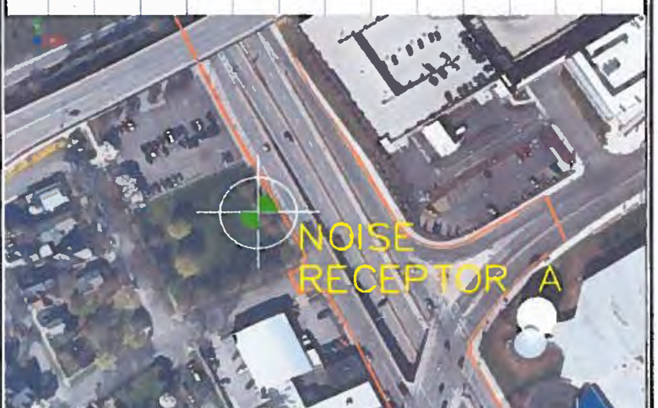
WIND: 7 DIRECTION: SW

TEMPERATURE: 73°F

HUMIDITY: 41%

RUN TIME	NOISE LEVEL dBA	COMMENTS
2:31	61	SkateBoard
first 5min	62	Some machinery below Bridge intermittent

LOCATION DIAGRAM



Notes:

RECEPTOR I.D. A

Clinton Bridge has sides + can not see tires + cars.

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	56.3	56.6	56.3	55.9	55.6
Start Time 1:04 PM	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave-0363 - Clinton ✓
Pat 0803 - Monroe ✓
Nora-0362 - Broadway ✓

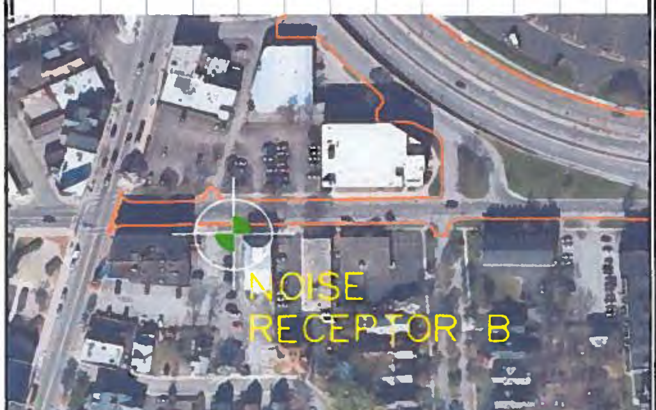
Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/15/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: NK, JK, PC, DH

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* ____ dBA
WIND: 4-10 mph gusty DIRECTION: W
TEMPERATURE: 71
HUMIDITY: 47%

RUN TIME	NOISE LEVEL dBA	COMMENTS
Entire	~55-56	HVAC out of Bldg
2:00		Bus Stop
332	~66	Stereo in Car
		Misc Horns
		+ Car Startings
		throughout.
1446	~64	Air plane

LOCATION DIAGRAM



Notes:

RECEPTOR I.D. B

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	64.4	64.3	64.8	64.8	
Start Time 4:00 p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Pat 0364 - Monroe EB ✓
Dave 0363 - Monroe WB ✓
Nora 0362 - Union ✓

Off Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: NK, JK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: Calm
DIRECTION: —
TEMPERATURE: 69°F
HUMIDITY: 59%

RUN TIME	NOISE LEVEL dBA	COMMENTS
Entire	~55-56	HVAC on top of Bldg.
3:29	68	Car start in lot

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. B

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	60.7	62.8	62.6		
Start Time	Minimum Recording Time			Extended Time	
1137a	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				
Requirements					

Pat - D10803 Monroe EB ✓
Dave - D10363 " WB ✓
Nora - 0362 Union

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/15/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York

JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

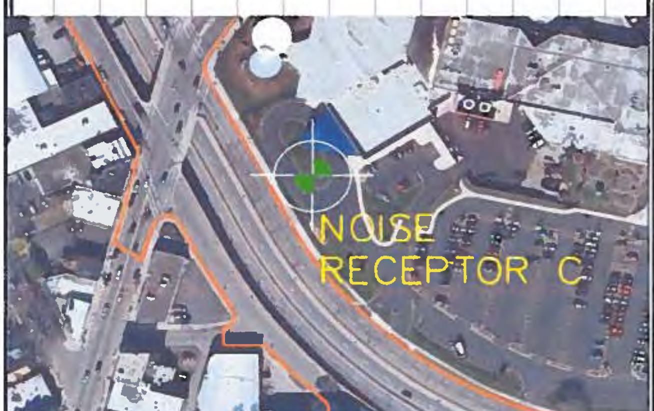
INSTRUMENT: Casella CEL 633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* ____ dBA

WIND: 8 mph gusty DIRECTION: W
TEMPERATURE: 71°F
HUMIDITY: 42%

RUN TIME	NOISE LEVEL dBA	COMMENTS
6:30	~55	Idle of Bus
		in parking lot
		for 3 minutes
		Pitkin has small
		queue backup
		sometimes
10:30	~73.5	Airplane overhead
		skateboarders
		intermittent

Raised average → 71.6 DBA

LOCATION DIAGRAM



many cars in parking lot leaving
1 Bus
1 Fedex truck

Notes:

RECEPTOR I.D. C

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	58.4	58.4	59.9	59.9	
Start Time 5:22 pm	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Nora 0362 Chestnut Bridge ✓
Dave 0363 Inner Loop (NO Cars) ✓
Pat 0364 Pitkin Howell ✓

Off Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

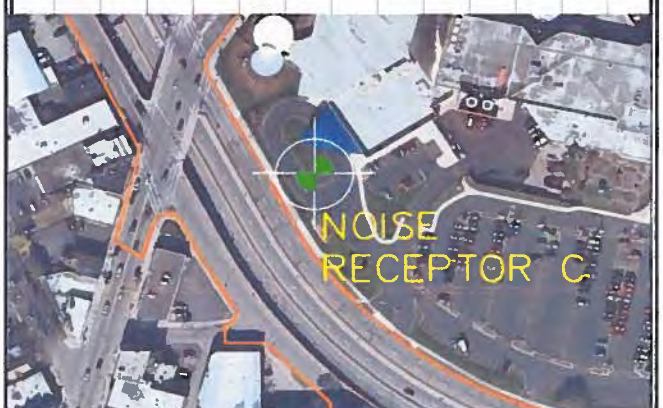
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~7 mph DIRECTION: SSW
TEMPERATURE: 73°F
HUMIDITY: 61%

RUN TIME	NOISE LEVEL dBA	COMMENTS
1:40	58	Plane overhead
7:25	60	" "
1320-2230	~47	Radio playing
22:50	~58	Plane overhead

LOCATION DIAGRAM



Notes:

RECEPTOR I.D. C

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	58.1	57.5	56.6	55.9	56.4
Start Time 6:29 P	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Nora 0362 Chestnut Bridge ✓
Dave 0363 Inner Loop (No cars - Construction - No access) ✓
Pat 0803 Pitkin + Howell ✓

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/15/13

PROJECT NAME: Inner Loop Reconstruction

LOCATION: Rochester, New York

JOB NO: 12198

PIN NO: 4940.T7

PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella

S/N: 2511397

WEIGHTING: A

CALIBRATION: *Before:* 114 dBA *After:* ____ dBA

WIND: ~13 mph gusty DIRECTION: W

TEMPERATURE: 71°F

HUMIDITY: 42%

RUN TIME	NOISE LEVEL dBA	COMMENTS
2:29	~64	Talking walking

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. D

majority of Union going to Ramp

Battery trouble Redo

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	66.5	66.3	66.2		
Start Time 4:41 P	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363 Pitkin
Nora 0362 Union
Pat 0364 Canfield
JK Hand Buena

Off Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13

PROJECT NAME: Inner Loop Reconstruction

LOCATION: Rochester, New York

JOB NO: 12198

PIN NO: 4940.T7

PERSONNEL: JK, WK, DH, PC

INSTRUMENT: Casella CEL-633C1

S/N: 2511397

WEIGHTING:

CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: 6 mph DIRECTION: SW

TEMPERATURE: 71°F

HUMIDITY: 41%

RUN TIME	NOISE LEVEL dBA	COMMENTS
throughout	~54	Many Birds
First 5 min intermittent	60	Roofing air hammer 1/2 Block away
3:44	74	Loud talking walkers
17:19	71	Buss idle + stop + go 60 sec

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. D

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	64.1	63.0	63.7	64.0	64.5
Start Time 1206 p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363 Pitkin ✓
Worm 0362 Union ✓
Pat 0803 Canfield ✓
JK 0364 Buena ✓

80% of cars heading to inner Loop Rev up to get on Ramp.

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/15/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL 633C1
S/N: 2511392
WEIGHTING:
CALIBRATION: *Before:* 114 dBA *After:* ____ dBA

WIND: ~10 DIRECTION: W
TEMPERATURE: 71°F
HUMIDITY: 43%

RUN TIME	NOISE LEVEL dBA	COMMENTS
4:00		Loud talker walked by

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. E

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	55.6	56.2	56.1		
Start Time 5:01pm	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Nora 0362 - Savannah
Pat 0364 - Pitkin union
Dave 0363 - Broad

Field Survey Sheets v01.xlsx

Off Peak

Watts Architecture & Engineering, P.C.

NOISE SURVEY

DATE: 8/6/13 PROJECT NAME: Inner Loop Reconstruction

LOCATION: Rochester, New York

JOB NO: 12198

PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL 633C1

S/N: 2511397

WEIGHTING: A

CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~5 mph DIRECTION: SSW

TEMPERATURE: 72°F

HUMIDITY: 59%

RUN TIME	NOISE LEVEL dBA	COMMENTS
3:38	263	Beeping alarm
intermittent		Singing +
		loud Talking
		+kids playing.

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. E

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	54.5	55.2	55.2		
Start Time 6:04p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Nora 0362 - Savannah ✓
Pat 0803 - Pitkin/union ✓
Dave 0363 - Broad ✓

PM Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York

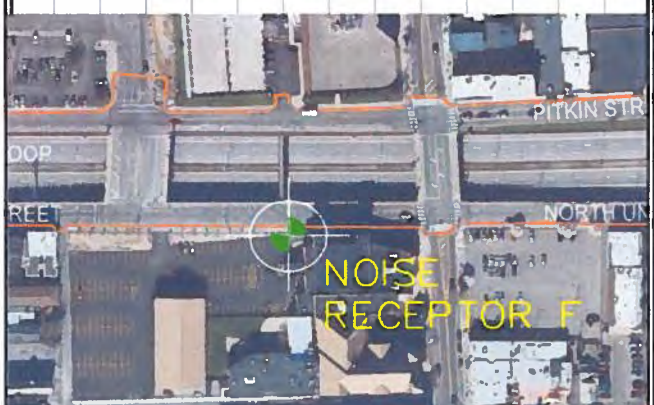
JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: 2 mph DIRECTION:
TEMPERATURE: 75°F
HUMIDITY: 51%

RUN TIME	NOISE LEVEL dBA	COMMENTS

LOCATION DIAGRAM



Notes:

RECEPTOR I.D. F

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	63.8	63.3	63.6	63.4	63.4
Start Time 432p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Nora 0362 East
Pat 0803 Union & Pitkin
JKK 0364 Broad (-1 HT)
Dave 0363 I.L.

Off Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York

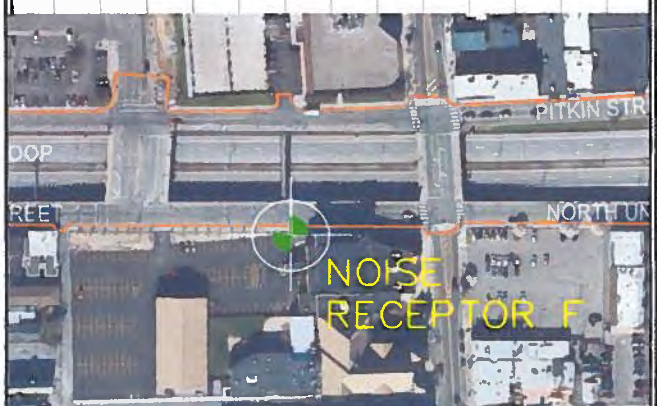
JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~6 mph DIRECTION: SSW
TEMPERATURE: 73°F
HUMIDITY: 41%

RUN TIME	NOISE LEVEL dBA	COMMENTS
8:36	63	Plane
9:31		Union Queue
10:48	90's	Bus Stop + Squeak Brakes

LOCATION DIAGRAM



Can not see I.L. traffic

Notes:

RECEPTOR I.D. F

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	61.4	62.6	63.8	63.3	63.1
Start Time 1:44p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Nola 0362 East
JKK 0364 Broad
Dave 0363 I.L.
Pat 0803 Union + pitkin

PM Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13 PROJECT NAME: Inner Loop Reconstruction

LOCATION: Rochester, New York

JOB NO: 12198

PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1

S/N: 2511397

WEIGHTING: A

CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: 9mph DIRECTION: SSW

TEMPERATURE: 75°F

HUMIDITY: 54%

RUN TIME	NOISE LEVEL dBA	COMMENTS

LOCATION DIAGRAM

~20% from Ramp

Notes:

RECEPTOR I.D. G

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	65.4	64.3	64.1	64.1	
Start Time 5:02p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363 IL ✓
Pat 0803 Union Pitkin ✓
Nora 0362 Richmond ✓
JK 0364 Haags ✓

Off Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

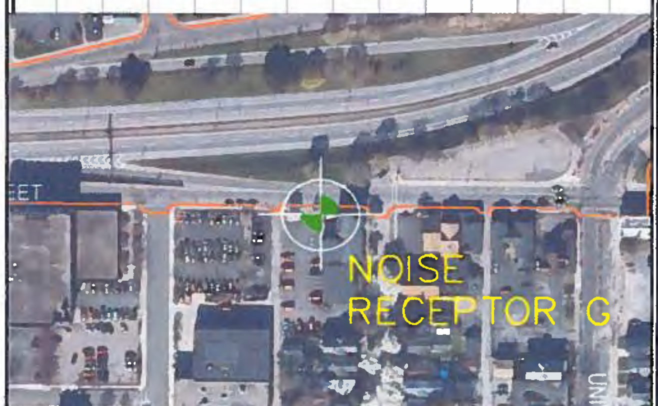
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL 633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~6 mph DIRECTION: SSW
TEMPERATURE: 75°F
HUMIDITY: 37%

RUN TIME	NOISE LEVEL dBA	COMMENTS
1:24–2330	~61–59	Construction intermittent pounding jackhammer 1 block away can hear when no cars present Pretty consistent (from school)
~11 min	~90	Loud motorcycle
1633–2250	~55–58	Loud Talkers

LOCATION DIAGRAM



1/2 of Union cars coming off of Ramp

Notes:

RECEPTOR I.D. G

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	62.7	63.4	64.7	64.2	64.0
Start Time 2:20P	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363
Pat 0803
Nora 0362
JK 0364

IL
Union + Pitkin
Richmond
Haags

PM Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~10 mph
DIRECTION: SSW
TEMPERATURE: 76°F
HUMIDITY: 49%

RUN TIME	NOISE LEVEL dBA	COMMENTS
misc		Many chirping birds.

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. H

Construction Proj will move playground to New Location Receiver Location is closest to New Playground Location. (went over Constr plans w/ C.M.)

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	60.0	59.9	59.8		
Start Time 4:10p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363
Pat 0803
Nola 0362

#L ✓
Ramps ✓
main ✓

Field Survey Sheets v01.xlsx

Off-Peak

Watts Architecture & Engineering, P.C.

NOISE SURVEY

DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~3 mph DIRECTION: SSW
TEMPERATURE: 73°F
HUMIDITY: 64%

RUN TIME	NOISE LEVEL dBA	COMMENTS
misc		Many Chirping Birds
4:08	~59	Train horn

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. H

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	58.3	58.5	58.6	58.6	
Start Time 7:06p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363 I.L.
Pat 0803 Ramps
Nora 0362 main

Field Survey Sheets v01.xlsx

PM Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~8 mph
DIRECTION: SSW
TEMPERATURE: 72°F
HUMIDITY: 57%

RUN TIME	NOISE LEVEL dBA	COMMENTS

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. I

Some backup on IL off Ramp to Main st periodic to sign

Also Note 3' barrier along off Ramp

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	59.3	59.5	59.4	59.4	
Start Time 5:29p	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363 IL ✓
Pat 0803 main st Br ✓
Nora 0364 Far Ramp ✓
" 0362 Near Ramp ✓

Off Peak

Watts Architecture & Engineering, P.C.
NOISE SURVEY

DATE: 8/6/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York

JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

INSTRUMENT: Casella CEL-633C1
S/N: 2511397
WEIGHTING: A
CALIBRATION: *Before:* 114 dBA *After:* 114 dBA

WIND: ~7 mph DIRECTION: SSW
TEMPERATURE: 76°F
HUMIDITY: 39%

RUN TIME	NOISE LEVEL dBA	COMMENTS
misc		some constr
		back beeps
		from school
		site constr

LOCATION DIAGRAM

Notes:

RECEPTOR I.D. 1

Time Interval	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.
LEQ Reading	62.8	62.3	61.8	61.5	61.3
Start Time 3:08 PM	Minimum Recording Time			Extended Time	
Requirements	Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, or until two consecutive recordings are the same during the minimum 15 minutes.				

Dave 0363 IL
pat 0803 main St Br
Nora 0364 For Ramp

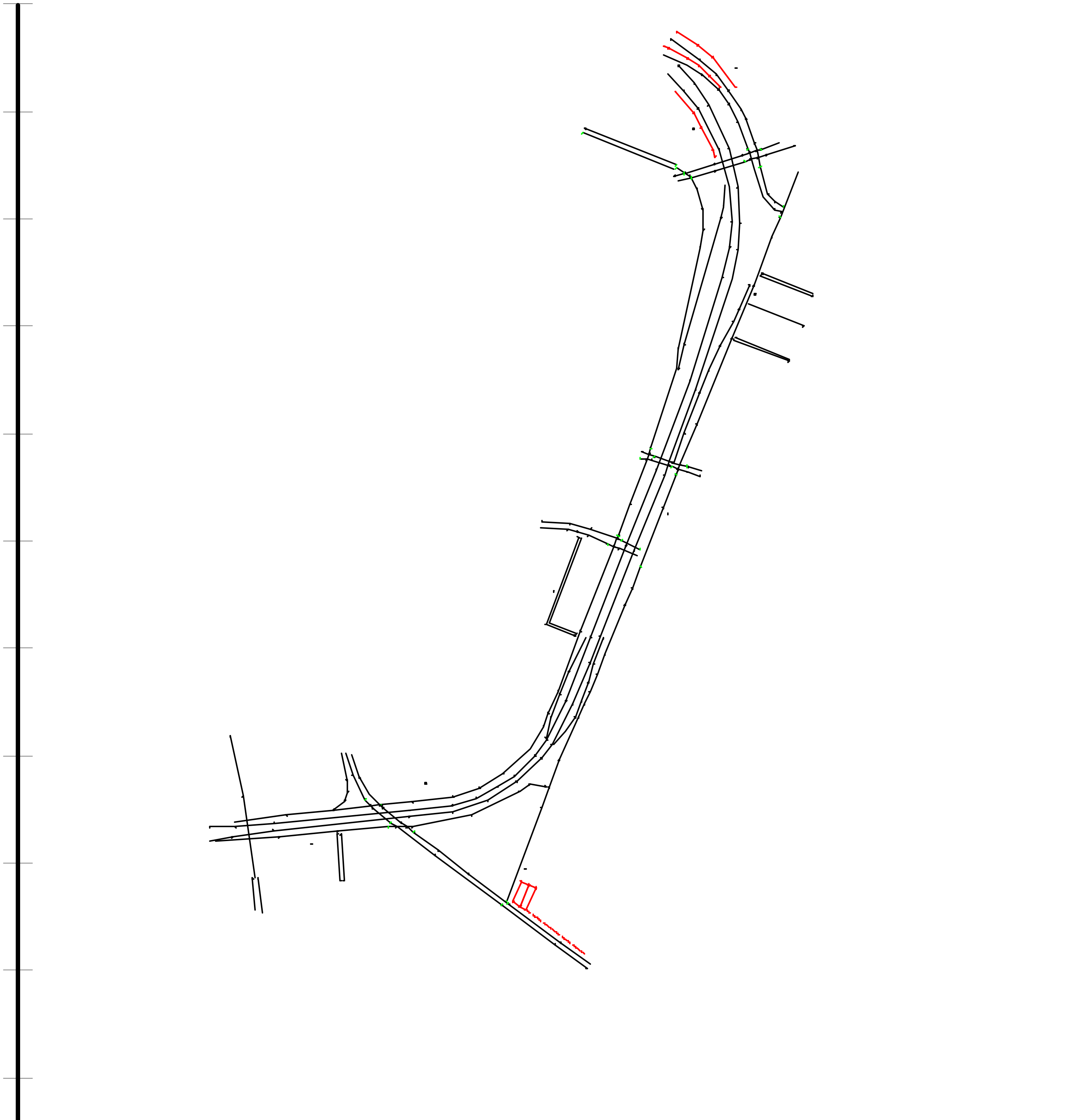
Field Survey Sheets v01.xlsx

" 0362 Near Ramp

ATTACHMENT C

TNM Input and Output Files

2013 Field Conditions Model



2013 Field Verification Inner Loop Noise	Sheet 1 of 1 / 15 Nov 2013
	Watts
Plan View	Project/Contract No. PIN 4940.T7
Run name: 2013FieldVer01	TNM Version 2.5, Feb 2004
Scale: 500 feet	Analysis By: JKK

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Watts — **15 November 2013**
JKK — **TNM 2.5**
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2013 Field Verification Inner Loop Noise
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver A	11	1	56.4	56.5	66	0.1	10	----	56.5	0.0	8	-8.0
Receiver B	12	1	64.8	65.9	66	1.1	10	----	65.9	0.0	8	-8.0
Receiver C	13	1	59.9	60.0	66	0.1	10	----	60.0	0.0	8	-8.0
Receiver D	14	1	66.2	65.1	66	-1.1	10	----	65.1	0.0	8	-8.0
Receiver E	15	1	56.1	55.1	66	-1.0	10	----	55.1	0.0	8	-8.0
Receiver F	16	1	63.4	64.3	66	0.9	10	----	64.3	0.0	8	-8.0
Receiver G	17	1	64.1	64.2	66	0.1	10	----	64.2	0.0	8	-8.0
Receiver H	18	1	59.8	62.1	66	2.3	10	----	62.1	0.0	8	-8.0
Receiver I	19	1	59.4	61.8	66	2.4	10	----	61.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Watts 15 November 2013
JKK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2013 Field Verification Inner Loop Noise

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Inner Loop EB	24.0	point1	1	1,409,365.1	1,149,604.8	0.00				Average	
		point2	2	1,409,469.0	1,149,625.9	0.00				Average	
		point3	3	1,409,663.0	1,149,656.2	0.00				Average	
		point4	4	1,410,294.2	1,149,719.9	-20.00				Average	
		point5	5	1,410,498.0	1,149,742.2	-10.00				Average	
		point6	6	1,410,661.0	1,149,797.6	-5.00				Average	
		point7	7	1,410,795.1	1,149,884.0	-3.00				Average	
		point8	8	1,410,909.6	1,149,994.0	0.00				Average	
		point9	9	1,410,958.1	1,150,058.4	0.00				Average	
		point10	10	1,411,056.6	1,150,247.4	0.00				Average	
		point11	11	1,411,135.4	1,150,438.2	0.00				Average	
		point12	12	1,411,182.4	1,150,562.9	-3.00				Average	
		point13	13	1,411,341.5	1,150,960.4	-20.00				Average	
		point14	14	1,411,482.5	1,151,314.4	-20.00				Average	
		point273	273	1,411,506.4	1,151,379.4	-18.00				Average	
		point15	15	1,411,628.8	1,151,712.6	-3.00				Average	
		point16	16	1,411,797.8	1,152,227.5	-5.00				Average	
		point17	17	1,411,824.2	1,152,364.0	-10.00				Average	
		point18	18	1,411,834.1	1,152,485.2	-15.00				Average	
		point19	19	1,411,822.8	1,152,655.0	-20.00				Average	
		point20	20	1,411,780.2	1,152,835.1	-20.00				Average	
		point21	21	1,411,684.9	1,153,037.0	-20.00				Average	
		point22	22	1,411,618.1	1,153,138.5	-20.00				Average	
		point23	23	1,411,546.9	1,153,221.9	-20.00					
Inner Loop WB	24.0	point24	24	1,411,498.4	1,153,176.4	-5.00				Average	

		point25	25	1,411,574.1	1,153,098.4	-10.00				Average	
		point26	26	1,411,639.4	1,153,015.8	-10.00				Average	
		point27	27	1,411,737.1	1,152,827.8	-20.00				Average	
		point28	28	1,411,784.1	1,152,652.4	-20.00				Average	
		point29	29	1,411,796.2	1,152,488.2	-15.00				Average	
		point30	30	1,411,785.6	1,152,369.2	-10.00				Average	
		point31	31	1,411,752.2	1,152,228.6	-5.00				Average	
		point32	32	1,411,597.6	1,151,746.4	-3.00				Average	
		point33	33	1,411,440.8	1,151,334.6	-20.00				Average	
		point34	34	1,411,301.4	1,150,977.6	-20.00				Average	
		point35	35	1,411,136.1	1,150,553.6	-3.00				Average	
		point36	36	1,411,020.2	1,150,256.1	0.00				Average	
		point37	37	1,410,932.4	1,150,075.2	0.00				Average	
		point38	38	1,410,877.8	1,150,001.0	0.00				Average	
		point39	39	1,410,782.4	1,149,909.2	-3.00				Average	
		point40	40	1,410,701.2	1,149,856.2	-4.00				Average	
		point41	41	1,410,602.0	1,149,804.6	-6.00				Average	
		point42	42	1,410,489.0	1,149,772.8	-10.00				Average	
		point43	43	1,410,289.0	1,149,749.0	-20.00				Average	
		point233	233	1,409,659.6	1,149,689.2	0.00				Average	
		point44	44	1,409,478.1	1,149,672.0	0.00				Average	
		point45	45	1,409,359.8	1,149,672.0	0.00					
Howell	24.0	point46	46	1,409,387.1	1,149,606.0	0.00				Average	
		point47	47	1,409,688.0	1,149,625.0	0.00				Average	
		point48	48	1,409,963.1	1,149,651.5	0.00				Average	
		point49	49	1,410,198.0	1,149,672.8	0.00					
Union	24.0	point55	55	1,410,744.4	1,149,327.0	0.00	Signal	0.00	60	Average	
		point56	56	1,410,909.6	1,149,765.4	0.00				Average	
		point57	57	1,410,941.5	1,149,859.4	0.00				Average	
		point58	58	1,410,990.6	1,149,987.5	0.00				Average	
		point59	59	1,411,083.9	1,150,183.9	0.00				Average	
		point298	298	1,411,109.2	1,150,244.5	0.00				Average	
		point60	60	1,411,134.6	1,150,305.1	0.00				Average	
		point61	61	1,411,168.1	1,150,386.0	0.00				Average	
		point62	62	1,411,204.6	1,150,479.2	0.00				Average	
		point63	63	1,411,296.2	1,150,709.8	0.00				Average	
		point64	64	1,411,330.4	1,150,787.1	0.00				Average	
		point65	65	1,411,369.9	1,150,883.4	0.00					
University NB	24.0	point75	75	1,412,034.9	1,152,560.5	0.00	Signal	0.00	40	Average	

		point76	76	1,411,993.0	1,152,583.1	0.00				Average	
		point77	77	1,411,963.8	1,152,623.2	0.00				Average	
		point78	78	1,411,925.9	1,152,747.1	0.00					
University SB	24.0	point86	86	1,411,477.6	1,153,270.6	-7.00				Average	Y
		point87	87	1,411,589.1	1,153,219.1	-5.00				Average	
		point88	88	1,411,658.9	1,153,175.1	-3.00				Average	
		point89	89	1,411,733.9	1,153,103.9	0.00				Average	
		point90	90	1,411,781.6	1,153,036.4	0.00				Average	
		point91	91	1,411,824.9	1,152,951.5	0.00				Average	
		point92	92	1,411,870.4	1,152,827.1	0.00					
Main EB	36.0	point97	97	1,411,544.4	1,152,678.9	0.00				Average	
		point260	260	1,411,605.2	1,152,696.0	0.00					
Main WB	36.0	point101	101	1,412,018.1	1,152,857.0	0.00				Average	
		point102	102	1,411,928.9	1,152,828.2	0.00					
Richmond WB	12.0	point106	106	1,412,175.0	1,152,156.9	0.00				Average	
		point107	107	1,411,936.2	1,152,252.4	0.00					
Richmond EB	12.0	point108	108	1,411,929.5	1,152,241.8	0.00	Onramp	10.00	100	Average	
		point109	109	1,412,172.8	1,152,144.8	0.00					
Charlotte WB	12.0	point110	110	1,412,062.1	1,151,851.6	0.00				Average	
		point111	111	1,411,811.1	1,151,954.8	0.00					
Charlotte EB	12.0	point112	112	1,411,805.1	1,151,941.9	0.00	Onramp	10.00	100	Average	
		point113	113	1,412,059.9	1,151,840.2	0.00					
East WB	24.0	point114	114	1,411,654.1	1,151,328.5	0.00				Average	
		point115	115	1,411,586.6	1,151,352.0	0.00					
Broad WB	36.0	point124	124	1,411,367.4	1,150,965.6	0.00	Signal	0.00	80	Average	Y
		point125	125	1,411,283.2	1,151,005.9	0.00					
Broad EB	36.0	point129	129	1,410,906.5	1,151,068.0	0.00				Average	
		point130	130	1,411,032.2	1,151,057.4	0.00				Average	
		point131	131	1,411,080.9	1,151,046.8	0.00				Average	
		point132	132	1,411,129.4	1,151,028.6	0.00				Average	
		point133	133	1,411,218.0	1,150,988.4	0.00					
Savannah NB	12.0	point135	135	1,411,070.2	1,150,573.0	0.00	Onramp	10.00	100	Average	
		point136	136	1,410,942.9	1,150,623.8	0.00				Average	
		point137	137	1,411,096.8	1,151,021.0	0.00					
Savannah SB	12.0	point138	138	1,411,081.6	1,151,021.0	0.00	Onramp	10.00	100	Average	
		point139	139	1,410,928.5	1,150,613.1	0.00				Average	
		point140	140	1,411,064.1	1,150,560.9	0.00					
Broadway NB	12.0	point141	141	1,409,987.6	1,149,421.6	0.00	Onramp	10.00	100	Average	
		point142	142	1,409,974.8	1,149,639.1	0.00					

Broadway SB	12.0	point143	143	1,409,958.0	1,149,637.6	0.00	Onramp	10.00	100	Average	
		point144	144	1,409,970.9	1,149,420.1	0.00					
Clinton Ramp	24.0	point145	145	1,409,608.5	1,149,271.5	20.00				Average	
		point146	146	1,409,586.6	1,149,435.2	20.00					
Clinton NB 1	24.0	point147	147	1,409,575.2	1,149,285.9	20.00				Average	
		point148	148	1,409,562.4	1,149,433.0	20.00					
Clinton NB 2	48.0	point149	149	1,409,575.2	1,149,436.0	20.00				Average	Y
		point150	150	1,409,518.0	1,149,815.6	20.00				Average	
		point151	151	1,409,457.0	1,150,098.6	20.00					
Chestnut Ramp	24.0	point152	152	1,409,975.0	1,150,015.6	0.00				Average	
		point153	153	1,410,001.6	1,149,888.2	0.00				Average	
		point154	154	1,410,006.1	1,149,831.4	0.00				Average	
		point155	155	1,409,992.5	1,149,792.0	0.00				Average	
		point156	156	1,409,938.6	1,149,750.2	0.00					
IL/Union Ramp	12.0	point157	157	1,410,965.6	1,150,054.4	0.00				Average	
		point158	158	1,411,022.5	1,150,120.2	0.00				Average	
		point159	159	1,411,065.6	1,150,186.2	0.00				Average	
		point160	160	1,411,096.8	1,150,259.0	0.00				Average	
		point161	161	1,411,127.1	1,150,347.0	0.00				Average	
		point162	162	1,411,152.1	1,150,433.4	0.00				Average	
		point163	163	1,411,197.6	1,150,554.6	0.00					
IL/Pitkin Ramp	12.0	point164	164	1,411,117.2	1,150,552.4	0.00				Average	
		point165	165	1,411,036.1	1,150,394.0	0.00				Average	
		point166	166	1,410,993.6	1,150,287.9	0.00				Average	
		point167	167	1,410,950.5	1,150,177.9	0.00				Average	
		point168	168	1,410,928.5	1,150,084.6	0.00					
Pitkin	24.0	point169	169	1,411,535.2	1,152,739.9	0.00	Signal	0.00	50	Average	
		point257	257	1,411,575.9	1,152,717.5	0.00				Average	
		point170	170	1,411,601.2	1,152,703.5	0.00				Average	
		point258	258	1,411,605.2	1,152,696.0	0.00				Average	
		point171	171	1,411,634.5	1,152,639.8	0.00				Average	
		point172	172	1,411,659.6	1,152,545.8	0.00				Average	
		point173	173	1,411,661.9	1,152,451.0	0.00				Average	
		point174	174	1,411,645.9	1,152,368.4	0.00				Average	
		point175	175	1,411,544.4	1,151,898.0	0.00				Average	
		point176	176	1,411,537.5	1,151,806.1	0.00				Average	
		point177	177	1,411,418.4	1,151,433.5	0.00					
IL Ramp to Pitkin	12.0	point193	193	1,411,762.9	1,152,658.4	-20.00				Average	
		point194	194	1,411,756.0	1,152,562.1	-15.00				Average	

		point195	195	1,411,744.6	1,152,504.5	-13.00				Average	
		point196	196	1,411,573.1	1,151,916.9	0.00				Average	
		point197	197	1,411,545.9	1,151,805.5	0.00					
Monroe-Chestnut NB	12.0	point198	198	1,411,136.8	1,149,032.6	0.00				Average	
		point199	199	1,410,995.0	1,149,135.8	0.00				Average	
		point200	200	1,410,752.4	1,149,316.1	0.00					
Chestnut-Monroe SB	24.0	point208	208	1,409,994.6	1,150,018.2	0.00				Average	
		point209	209	1,410,028.0	1,149,911.4	0.00				Average	
		point210	210	1,410,088.6	1,149,797.6	0.00					
E University Ave EB	24.0	point229	229	1,411,100.0	1,152,904.0	0.00	Signal	0.00	50	Average	
		point230	230	1,411,527.0	1,152,734.0	0.00					
E University Ave WB	24.0	point231	231	1,411,535.0	1,152,755.0	0.00	Signal	0.00	50	Average	
		point232	232	1,411,109.0	1,152,924.0	0.00					
IL Ramp to Union-2-2	12.0	point272	272	1,411,523.0	1,151,369.1	-20.00				Average	
		point218	218	1,411,575.2	1,151,507.8	-10.00				Average	
		point219	219	1,411,647.2	1,151,698.8	-3.00				Average	
		point220	220	1,411,689.9	1,151,802.8	0.00				Average	
		point221	221	1,411,739.9	1,151,916.5	0.00				Average	
		point222	222	1,411,800.6	1,152,030.2	0.00				Average	
		point223	223	1,411,829.4	1,152,087.0	0.00				Average	
		point224	224	1,411,879.4	1,152,199.2	0.00					
Howell-2	24.0	point274	274	1,410,198.0	1,149,672.8	0.00	Signal	0.00	60	Average	
		point236	236	1,410,232.5	1,149,672.2	0.00				Average	
		point234	234	1,410,283.4	1,149,672.2	0.00				Average	
		point50	50	1,410,307.2	1,149,672.0	0.00				Average	
		point51	51	1,410,585.4	1,149,727.4	0.00				Average	
		point52	52	1,410,805.0	1,149,840.1	0.00				Average	
		point53	53	1,410,854.2	1,149,873.5	0.00				Average	
		point54	54	1,410,930.1	1,149,861.4	0.00					
Union-2	24.0	point275	275	1,411,369.9	1,150,883.4	0.00	Signal	0.00	40	Average	
		point66	66	1,411,473.6	1,151,161.6	0.00				Average	
		point67	67	1,411,536.6	1,151,315.6	0.00					
Union-2-2	24.0	point276	276	1,411,536.6	1,151,315.6	0.00	Signal	0.00	50	Average	
		point256	256	1,411,546.0	1,151,339.1	0.00				Average	
		point255	255	1,411,553.8	1,151,360.5	0.00				Average	
		point68	68	1,411,630.6	1,151,549.9	0.00				Average	
		point69	69	1,411,794.5	1,151,951.8	0.00				Average	
		point70	70	1,411,899.1	1,152,194.8	0.00				Average	
		point71	71	1,411,921.1	1,152,255.4	0.00				Average	

		point72	72	1,411,982.5	1,152,422.1	0.00				Average	
		point73	73	1,412,020.4	1,152,514.5	0.00					
Union-2-2-2	24.0	point277	277	1,412,020.4	1,152,514.5	0.00	Signal	0.00	60	Average	
		point74	74	1,412,104.5	1,152,725.1	0.00					
University NB-2	24.0	point278	278	1,411,925.9	1,152,747.1	0.00	Signal	0.00	50	Average	
		point265	265	1,411,916.5	1,152,791.4	0.00				Average	
		point266	266	1,411,910.0	1,152,822.2	0.00				Average	
		point79	79	1,411,902.1	1,152,859.8	0.00				Average	
		point80	80	1,411,858.1	1,152,971.9	0.00				Average	
		point81	81	1,411,836.2	1,153,015.9	0.00				Average	
		point82	82	1,411,779.4	1,153,103.9	0.00				Average	
		point83	83	1,411,718.8	1,153,176.6	-3.00				Average	
		point84	84	1,411,642.9	1,153,250.1	-10.00				Average	
		point85	85	1,411,508.0	1,153,343.4	-20.00					
University SB-2	24.0	point279	279	1,411,870.4	1,152,827.1	0.00	Signal	0.00	50	Average	
		point268	268	1,411,875.6	1,152,811.1	0.00				Average	
		point267	267	1,411,885.1	1,152,781.4	0.00				Average	
		point93	93	1,411,900.6	1,152,733.5	0.00				Average	
		point94	94	1,411,941.2	1,152,604.8	0.00				Average	
		point95	95	1,411,994.1	1,152,547.6	0.00				Average	
		point96	96	1,412,025.8	1,152,535.4	0.00					
Main EB-2	36.0	point280	280	1,411,605.2	1,152,696.0	0.00	Signal	0.00	50	Average	
		point98	98	1,411,722.0	1,152,729.1	0.00				Average	Y
		point99	99	1,411,855.6	1,152,772.1	0.00					
Main EB-2-2	36.0	point281	281	1,411,855.6	1,152,772.1	0.00	Signal	0.00	50	Average	
		point262	262	1,411,885.1	1,152,781.4	0.00				Average	
		point261	261	1,411,916.5	1,152,791.4	0.00				Average	
		point226	226	1,411,958.5	1,152,804.8	0.00				Average	
		point100	100	1,412,090.1	1,152,847.1	0.00					
Main WB-2	36.0	point282	282	1,411,928.9	1,152,828.2	0.00	Signal	0.00	50	Average	
		point263	263	1,411,910.0	1,152,822.2	0.00				Average	
		point264	264	1,411,875.6	1,152,811.1	0.00				Average	
		point103	103	1,411,841.0	1,152,800.2	0.00				Average	Y
		point225	225	1,411,710.5	1,152,759.0	0.00				Average	
		point104	104	1,411,575.9	1,152,717.5	0.00				Average	
		point259	259	1,411,570.9	1,152,716.0	0.00					
Main WB-2-2	36.0	point283	283	1,411,570.9	1,152,716.0	0.00	Signal	0.00	50	Average	
		point105	105	1,411,525.4	1,152,703.1	0.00					
East WB-2	24.0	point284	284	1,411,586.6	1,151,352.0	0.00	Signal	0.00	50	Average	

		point253	253	1,411,553.8	1,151,360.5	0.00				Average	
		point116	116	1,411,522.5	1,151,368.5	0.00				Average	
		point249	249	1,411,513.1	1,151,371.6	0.00				Average	Y
		point117	117	1,411,433.5	1,151,398.2	0.00					
East WB-2-2	24.0	point285	285	1,411,433.5	1,151,398.2	0.00	Signal	0.00	50	Average	
		point245	245	1,411,408.6	1,151,408.2	0.00				Average	
		point118	118	1,411,374.4	1,151,421.8	0.00					
Broad WB-2	36.0	point287	287	1,411,283.2	1,151,005.9	0.00	Signal	0.00	50	Average	
		point244	244	1,411,260.6	1,151,014.6	0.00				Average	
		point126	126	1,411,135.4	1,151,061.9	0.00				Average	
		point127	127	1,411,037.6	1,151,083.1	0.00				Average	
		point128	128	1,410,908.0	1,151,096.0	0.00					
Broad EB-2	36.0	point288	288	1,411,218.0	1,150,988.4	0.00	Signal	0.00	50	Average	
		point243	243	1,411,246.6	1,150,976.9	0.00				Average	
		point227	227	1,411,270.2	1,150,967.5	0.00				Average	Y
		point134	134	1,411,356.8	1,150,933.8	0.00					
Pitkin-2	24.0	point289	289	1,411,418.4	1,151,433.5	0.00	Signal	0.00	50	Average	
		point248	248	1,411,408.6	1,151,408.2	0.00				Average	
		point247	247	1,411,399.9	1,151,383.8	0.00				Average	
		point178	178	1,411,322.9	1,151,172.0	0.00				Average	
		point179	179	1,411,266.0	1,151,027.9	0.00					
Pitkin-2-2	24.0	point290	290	1,411,266.0	1,151,027.9	0.00	Signal	0.00	50	Average	
		point242	242	1,411,260.6	1,151,014.6	0.00				Average	
		point241	241	1,411,246.6	1,150,976.9	0.00				Average	
		point180	180	1,411,089.4	1,150,580.9	0.00				Average	
		point181	181	1,410,984.4	1,150,303.0	0.00				Average	
		point182	182	1,410,940.4	1,150,199.9	0.00				Average	
		point183	183	1,410,916.9	1,150,137.8	0.00				Average	
		point184	184	1,410,854.0	1,150,033.9	0.00				Average	
		point185	185	1,410,729.1	1,149,917.4	0.00				Average	
		point186	186	1,410,616.2	1,149,853.0	0.00				Average	
		point187	187	1,410,494.1	1,149,812.9	0.00				Average	
		point188	188	1,410,306.1	1,149,788.5	0.00				Average	
		point189	189	1,410,161.4	1,149,774.9	0.00					
Pitkin-2-2-2	24.0	point291	291	1,410,161.4	1,149,774.9	0.00	Signal	0.00	50	Average	
		point240	240	1,410,151.0	1,149,773.9	0.00				Average	
		point239	239	1,410,113.0	1,149,769.2	0.00				Average	
		point190	190	1,409,937.8	1,149,748.4	0.00				Average	
		point191	191	1,409,717.5	1,149,727.1	0.00				Average	

		point192	192	1,409,476.6	1,149,693.9	0.00					
Monroe-Chestnut NB-2-2-2	24.0	point294	294	1,410,167.5	1,149,761.1	0.00	Signal	0.00	50	Average	
		point237	237	1,410,151.0	1,149,773.9	0.00				Average	
		point205	205	1,410,104.5	1,149,827.1	0.00				Average	
		point206	206	1,410,057.5	1,149,905.2	0.00				Average	
		point207	207	1,410,022.6	1,150,011.4	0.00					
Chestnut-Monroe SB-2	24.0	point295	295	1,410,088.6	1,149,797.6	0.00	Signal	0.00	50	Average	
		point238	238	1,410,113.0	1,149,769.2	0.00				Average	
		point211	211	1,410,123.2	1,149,755.8	0.00				Average	Y
		point212	212	1,410,206.2	1,149,691.5	0.00					
Chestnut-Monroe SB-2-2	12.0	point296	296	1,410,206.2	1,149,691.5	0.00	Signal	0.00	50	Average	
		point235	235	1,410,232.5	1,149,672.2	0.00				Average	
		point213	213	1,410,414.9	1,149,541.8	0.00				Average	
		point214	214	1,410,725.8	1,149,308.2	0.00					
Chestnut-Monroe SB-2-2-2	12.0	point297	297	1,410,725.8	1,149,308.2	0.00	Signal	0.00	50	Average	
		point215	215	1,410,974.0	1,149,122.5	0.00				Average	
		point216	216	1,411,119.5	1,149,011.8	0.00					
Haags EB/WB	12.0	point299	299	1,411,872.0	1,152,106.0	0.00				Average	
		point300	300	1,412,129.0	1,152,004.0	0.00					
East EB	24.0	point119	119	1,411,366.0	1,151,388.4	0.00	Signal	0.00	50	Average	
		point246	246	1,411,399.9	1,151,383.8	0.00				Average	
		point120	120	1,411,425.1	1,151,380.8	0.00				Average	Y
		point250	250	1,411,509.6	1,151,352.2	0.00				Average	
		point121	121	1,411,515.8	1,151,350.2	0.00					
East EB-2	24.0	point301	301	1,411,515.8	1,151,350.2	0.00	Signal	0.00	50	Average	
		point286	286	1,411,546.0	1,151,339.1	0.00				Average	
		point122	122	1,411,591.9	1,151,322.4	0.00				Average	
		point123	123	1,411,650.2	1,151,306.5	0.00					
Monroe-Chestnut NB-2	12.0	point292	292	1,410,752.4	1,149,316.1	0.00	Signal	0.00	50	Average	
		point201	201	1,410,564.6	1,149,457.2	0.00				Average	
		point302	302	1,410,425.9	1,149,562.6	0.00				Average	
		point303	303	1,410,312.8	1,149,649.9	0.00					
Monroe-Chestnut NB-2-2	24.0	point304	304	1,410,312.8	1,149,649.9	0.00	Signal	0.00	50	Average	
		point293	293	1,410,283.4	1,149,672.2	0.00				Average	
		point228	228	1,410,251.6	1,149,696.4	0.00				Average	Y
		point204	204	1,410,167.5	1,149,761.1	0.00					

Watts				15 November 2013								
JKK				TNM 2.5								
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	PIN 4940.T7											
RUN:	2013 Field Verification Inner Loop Noise											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Inner Loop EB	point1	1	0	0	0	0	0	0	0	0	0	0
	point2	2	0	0	0	0	0	0	0	0	0	0
	point3	3	0	0	0	0	0	0	0	0	0	0
	point4	4	0	0	0	0	0	0	0	0	0	0
	point5	5	0	0	0	0	0	0	0	0	0	0
	point6	6	0	0	0	0	0	0	0	0	0	0
	point7	7	0	0	0	0	0	0	0	0	0	0
	point8	8	0	0	0	0	0	0	0	0	0	0
	point9	9	0	0	0	0	0	0	0	0	0	0
	point10	10	0	0	0	0	0	0	0	0	0	0
	point11	11	0	0	0	0	0	0	0	0	0	0
	point12	12	617	50	2	50	2	50	2	50	2	50
	point13	13	617	50	2	50	2	50	2	50	2	50
	point14	14	617	50	2	50	2	50	2	50	5	50
	point273	273	418	50	0	0	0	0	2	50	5	50
	point15	15	418	50	0	0	0	0	2	50	5	50
	point16	16	418	50	0	0	0	0	2	50	5	50
	point17	17	418	50	0	0	0	0	2	50	5	50
	point18	18	418	50	0	0	0	0	2	50	5	50
	point19	19	496	50	12	50	0	0	0	0	4	50
	point20	20	496	50	12	50	0	0	0	0	4	50
	point21	21	333	50	3	50	0	0	3	50	0	0
	point22	22	333	50	3	50	0	0	3	50	0	0

	point23	23										
Inner Loop WB	point24	24	198	50	0	0	0	0	0	0	0	0
	point25	25	198	50	0	0	0	0	0	0	0	0
	point26	26	208	50	0	0	0	0	0	0	0	0
	point27	27	208	50	0	0	0	0	0	0	0	0
	point28	28	94	50	2	50	0	0	0	0	0	0
	point29	29	94	50	2	50	0	0	0	0	0	0
	point30	30	94	50	2	50	0	0	0	0	0	0
	point31	31	94	50	2	50	0	0	0	0	0	0
	point32	32	48	50	0	0	0	0	0	0	0	0
	point33	33	48	50	0	0	0	0	0	0	0	0
	point34	34	48	50	0	0	0	0	0	0	0	0
	point35	35	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0
	point37	37	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0
	point39	39	0	0	0	0	0	0	0	0	0	0
	point40	40	0	0	0	0	0	0	0	0	0	0
	point41	41	0	0	0	0	0	0	0	0	0	0
	point42	42	0	0	0	0	0	0	0	0	0	0
	point43	43	0	0	0	0	0	0	0	0	0	0
	point233	233	0	0	0	0	0	0	0	0	0	0
	point44	44	0	0	0	0	0	0	0	0	0	0
	point45	45										
Howell	point46	46	0	0	0	0	0	0	0	0	0	0
	point47	47	0	0	0	0	0	0	0	0	0	0
	point48	48	0	0	0	0	0	0	0	0	0	0
	point49	49										
Union	point55	55	393	25	3	25	9	25	0	0	6	25
	point56	56	393	30	3	30	9	30	0	0	6	30
	point57	57	744	30	16	30	0	0	0	0	0	0
	point58	58	744	35	16	35	0	0	0	0	0	0
	point59	59	744	35	16	35	0	0	0	0	0	0
	point298	298	365	35	8	35	0	0	0	0	0	0
	point60	60	365	35	8	35	0	0	0	0	0	0
	point61	61	365	35	8	35	0	0	0	0	0	0

	point62	62	504	35	0	0	4	35	0	0	4	35
	point63	63	504	30	0	0	4	30	0	0	4	30
	point64	64	504	25	0	0	4	25	0	0	4	25
	point65	65										
University NB	point75	75	621	30	8	30	0	0	0	0	4	30
	point76	76	621	30	8	30	0	0	0	0	4	30
	point77	77	621	25	8	25	0	0	0	0	4	25
	point78	78										
University SB	point86	86	636	45	3	45	6	45	6	45	9	45
	point87	87	636	40	3	40	6	40	6	40	9	40
	point88	88	636	35	3	35	6	35	6	35	9	35
	point89	89	636	25	3	25	6	25	6	25	9	25
	point90	90	548	15	12	15	4	15	16	15	0	0
	point91	91	548	10	12	10	4	10	16	10	0	0
	point92	92										
Main EB	point97	97	500	25	0	0	0	0	20	25	4	25
	point260	260										
Main WB	point101	101	417	25	0	0	3	25	6	25	0	0
	point102	102										
Richmond WB	point106	106	12	15	0	0	3	15	0	0	0	0
	point107	107										
Richmond EB	point108	108	0	0	0	0	0	0	0	0	0	0
	point109	109										
Charlotte WB	point110	110	30	10	0	0	0	0	0	0	0	0
	point111	111										
Charlotte EB	point112	112	6	15	3	15	0	0	0	0	0	0
	point113	113										
East WB	point114	114	216	20	2	20	0	0	0	0	2	20
	point115	115										
Broad WB	point124	124	56	15	4	15	0	0	16	15	0	0
	point125	125										
Broad EB	point129	129	276	30	0	0	0	0	4	30	0	0
	point130	130	276	30	0	0	0	0	4	30	0	0
	point131	131	276	25	0	0	0	0	4	25	0	0
	point132	132	276	20	0	0	0	0	4	20	0	0
	point133	133										

Savannah NB	point135	135	4	25	0	0	0	0	0	0	0	0
	point136	136	4	25	0	0	0	0	0	0	0	0
	point137	137										
Savannah SB	point138	138	4	25	0	0	0	0	0	0	0	0
	point139	139	4	25	0	0	0	0	0	0	0	0
	point140	140										
Broadway NB	point141	141	29	15	0	0	0	0	0	0	0	0
	point142	142										
Broadway SB	point143	143	0	0	0	0	0	0	0	0	0	0
	point144	144										
Clinton Ramp	point145	145	416	45	6	45	2	45	8	45	2	45
	point146	146										
Clinton NB 1	point147	147	791	45	11	45	5	45	14	45	3	45
	point148	148										
Clinton NB 2	point149	149	1207	45	17	45	7	45	22	45	5	45
	point150	150	1207	35	17	35	7	35	22	35	5	35
	point151	151										
Chestnut Ramp	point152	152	0	0	0	0	0	0	0	0	0	0
	point153	153	0	0	0	0	0	0	0	0	0	0
	point154	154	0	0	0	0	0	0	0	0	0	0
	point155	155	0	0	0	0	0	0	0	0	0	0
	point156	156										
IL/Union Ramp	point157	157	0	0	0	0	0	0	0	0	0	0
	point158	158	0	0	0	0	0	0	0	0	0	0
	point159	159	0	0	0	0	0	0	0	0	0	0
	point160	160	379	35	8	35	0	0	0	0	0	0
	point161	161	379	35	8	35	0	0	0	0	0	0
	point162	162	379	35	8	35	0	0	0	0	0	0
	point163	163										
IL/Pitkin Ramp	point164	164	20	35	0	0	0	0	0	0	0	0
	point165	165	20	35	0	0	0	0	0	0	0	0
	point166	166	0	0	0	0	0	0	0	0	0	0
	point167	167	0	0	0	0	0	0	0	0	0	0
	point168	168										
Pitkin	point169	169	165	35	0	0	0	0	0	0	0	0
	point257	257	165	35	0	0	0	0	0	0	0	0

	point170	170	165	35	0	0	0	0	0	0	0	0
	point258	258	165	35	0	0	0	0	0	0	0	0
	point171	171	165	40	0	0	0	0	0	0	0	0
	point172	172	165	40	0	0	0	0	0	0	0	0
	point173	173	165	40	0	0	0	0	0	0	0	0
	point174	174	165	40	0	0	0	0	0	0	0	0
	point175	175	165	35	0	0	0	0	0	0	0	0
	point176	176	149	35	2	35	0	0	19	35	0	0
	point177	177										
IL Ramp to Pitkin	point193	193	65	45	0	0	0	0	0	0	0	0
	point194	194	65	45	0	0	0	0	0	0	0	0
	point195	195	65	40	0	0	0	0	0	0	0	0
	point196	196	65	35	0	0	0	0	0	0	0	0
	point197	197										
Monroe-Chestnut NB	point198	198	264	35	0	0	0	0	0	0	3	35
	point199	199	264	30	0	0	0	0	0	0	3	30
	point200	200										
Chestnut-Monroe SB	point208	208	672	35	6	35	0	0	15	35	0	0
	point209	209	672	25	6	25	0	0	15	25	0	0
	point210	210										
E University Ave EB	point229	229	229	30	0	0	0	0	0	0	0	0
	point230	230										
E University Ave WB	point231	231	178	30	0	0	0	0	0	0	0	0
	point232	232										
IL Ramp to Union-2-2	point272	272	95	35	1	35	0	0	0	0	1	35
	point218	218	95	35	1	35	0	0	0	0	1	35
	point219	219	95	35	1	35	0	0	0	0	1	35
	point220	220	95	35	1	35	0	0	0	0	1	35
	point221	221	95	35	1	35	0	0	0	0	1	35
	point222	222	95	35	1	35	0	0	0	0	1	35
	point223	223	95	35	1	35	0	0	0	0	1	35
	point224	224										
Howell-2	point274	274	0	0	0	0	0	0	0	0	0	0
	point236	236	0	0	0	0	0	0	0	0	0	0
	point234	234	0	0	0	0	0	0	0	0	0	0
	point50	50	240	35	6	35	0	0	9	35	0	0

	point51	51	240	30	6	30	0	0	9	30	0	0
	point52	52	240	15	6	15	0	0	9	15	0	0
	point53	53	240	10	6	10	0	0	9	10	0	0
	point54	54										
Union-2	point275	275	360	35	7	35	0	0	5	35	0	0
	point66	66	360	25	7	25	0	0	5	25	0	0
	point67	67										
Union-2-2	point276	276	360	35	7	35	0	0	5	35	0	0
	point256	256	360	35	7	35	0	0	5	35	0	0
	point255	255	360	35	7	35	0	0	5	35	0	0
	point68	68	360	35	7	35	0	0	5	35	0	0
	point69	69	379	30	5	30	0	0	0	0	2	30
	point70	70	474	30	6	30	0	0	0	0	3	30
	point71	71	474	30	6	30	0	0	0	0	3	30
	point72	72	474	25	6	25	0	0	0	0	3	25
	point73	73										
Union-2-2-2	point277	277	474	30	6	30	0	0	0	0	3	30
	point74	74										
University NB-2	point278	278	621	30	8	30	0	0	0	0	4	30
	point265	265	936	30	48	30	8	30	4	30	4	30
	point266	266	936	30	48	30	8	30	4	30	4	30
	point79	79	936	40	48	40	8	40	4	40	4	40
	point80	80	936	40	48	40	8	40	4	40	4	40
	point81	81	714	40	15	40	0	0	0	0	6	40
	point82	82	714	40	15	40	0	0	0	0	6	40
	point83	83	714	45	15	45	0	0	0	0	6	45
	point84	84	714	45	15	45	0	0	0	0	6	45
	point85	85										
University SB-2	point279	279	548	30	12	30	4	30	16	30	0	0
	point268	268	507	30	6	30	0	0	0	0	3	30
	point267	267	507	30	6	30	0	0	0	0	3	30
	point93	93	507	30	6	30	0	0	0	0	3	30
	point94	94	507	25	6	25	0	0	0	0	3	25
	point95	95	507	25	6	25	0	0	0	0	3	25
	point96	96										
Main EB-2	point280	280	500	25	0	0	0	0	20	25	4	25

	point98	98	500	25	0	0	0	0	20	25	4	25
	point99	99										
Main EB-2-2	point281	281	537	30	12	30	0	0	15	30	6	30
	point262	262	537	30	12	30	0	0	15	30	6	30
	point261	261	537	30	12	30	0	0	15	30	6	30
	point226	226	537	30	12	30	0	0	15	30	6	30
	point100	100										
Main WB-2	point282	282	417	25	0	0	3	25	6	25	0	0
	point263	263	417	25	0	0	3	25	6	25	0	0
	point264	264	417	25	0	0	3	25	6	25	0	0
	point103	103	348	25	4	25	0	0	20	25	0	0
	point225	225	348	25	4	25	0	0	20	25	0	0
	point104	104	348	25	4	25	0	0	20	25	0	0
	point259	259										
Main WB-2-2	point283	283	348	30	4	30	0	0	20	30	0	0
	point105	105										
East WB-2	point284	284	216	20	2	20	0	0	0	0	2	20
	point253	253	216	20	2	20	0	0	0	0	2	20
	point116	116	216	20	2	20	0	0	0	0	2	20
	point249	249	216	20	2	20	0	0	0	0	2	20
	point117	117										
East WB-2-2	point285	285	216	20	2	20	0	0	0	0	2	20
	point245	245	216	20	2	20	0	0	0	0	2	20
	point118	118										
Broad WB-2	point287	287	56	30	4	30	0	0	16	30	0	0
	point244	244	56	30	4	30	0	0	16	30	0	0
	point126	126	56	30	4	30	0	0	16	30	0	0
	point127	127	56	30	4	30	0	0	16	30	0	0
	point128	128										
Broad EB-2	point288	288	276	15	0	0	0	0	4	15	0	0
	point243	243	276	15	0	0	0	0	4	15	0	0
	point227	227	276	10	0	0	0	0	4	10	0	0
	point134	134										
Pitkin-2	point289	289	149	25	2	25	0	0	19	25	0	0
	point248	248	149	30	2	30	0	0	19	30	0	0
	point247	247	149	35	2	35	0	0	19	35	0	0

	point178	178	149	25	2	25	0	0	19	25	0	0
	point179	179										
Pitkin-2-2	point290	290	180	35	0	0	0	0	0	0	4	35
	point242	242	180	35	0	0	0	0	0	0	4	35
	point241	241	180	40	0	0	0	0	0	0	4	40
	point180	180	180	35	0	0	0	0	0	0	4	35
	point181	181	196	35	0	0	0	0	0	0	0	0
	point182	182	270	35	6	35	0	0	9	35	0	0
	point183	183	270	35	6	35	0	0	9	35	0	0
	point184	184	270	35	6	35	0	0	9	35	0	0
	point185	185	270	35	6	35	0	0	9	35	0	0
	point186	186	270	35	6	35	0	0	9	35	0	0
	point187	187	270	35	6	35	0	0	9	35	0	0
	point188	188	270	25	6	25	0	0	9	25	0	0
	point189	189										
Pitkin-2-2-2	point291	291	0	0	0	0	0	0	0	0	0	0
	point240	240	0	0	0	0	0	0	0	0	0	0
	point239	239	0	0	0	0	0	0	0	0	0	0
	point190	190	0	0	0	0	0	0	0	0	0	0
	point191	191	0	0	0	0	0	0	0	0	0	0
	point192	192										
Monroe-Chestnut NB-2-2-2	point294	294	228	35	0	0	0	0	6	35	0	0
	point237	237	228	35	0	0	0	0	6	35	0	0
	point205	205	228	35	0	0	0	0	6	35	0	0
	point206	206	228	35	0	0	0	0	6	35	0	0
	point207	207										
Chestnut-Monroe SB-2	point295	295	672	25	6	25	0	0	15	25	0	0
	point238	238	672	25	6	25	0	0	15	25	0	0
	point211	211	672	25	6	25	0	0	15	25	0	0
	point212	212										
Chestnut-Monroe SB-2-2	point296	296	672	30	6	30	0	0	15	30	0	0
	point235	235	672	35	6	35	0	0	15	35	0	0
	point213	213	504	30	3	30	3	30	3	30	6	30
	point214	214										
Chestnut-Monroe SB-2-2-2	point297	297	504	30	3	30	3	30	3	30	6	30
	point215	215	504	35	3	35	3	35	3	35	6	35

	point216	216											
Haags EB/WB	point299	299	36	10	0	0	0	0	0	0	0	0
	point300	300										
East EB	point119	119	449	20	0	0	0	0	2	20	5	20
	point246	246	449	20	0	0	0	0	2	20	5	20
	point120	120	449	20	0	0	0	0	2	20	5	20
	point250	250	449	20	0	0	0	0	2	20	5	20
	point121	121										
East EB-2	point301	301	449	20	0	0	0	0	2	20	5	20
	point286	286	449	20	0	0	0	0	2	20	5	20
	point122	122	449	20	0	0	0	0	2	20	5	20
	point123	123										
Monroe-Chestnut NB-2	point292	292	264	30	0	0	0	0	0	0	3	30
	point201	201	264	35	0	0	0	0	0	0	3	35
	point302	302	228	25	0	0	0	0	6	25	0	0
	point303	303										
Monroe-Chestnut NB-2-2	point304	304	228	25	0	0	0	0	6	25	0	0
	point293	293	228	25	0	0	0	0	6	25	0	0
	point228	228	228	25	0	0	0	0	6	25	0	0
	point204	204										

Watts						**15 November 2013**						
JKK						**TNM 2.5**						
INPUT: RECEIVERS												
PROJECT/CONTRACT:	**PIN 4940.T7**											
RUN:	**2013 Field Verification Inner Loop Noise**											
Receiver												
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**					**Active**
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**			**NR**	**in**
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**		**Goal**	**Calc.**
			ft	ft	ft	ft	dBA	dBA	dB		dB	
Receiver A	11	1	1,409,838.0	1,149,594.0	1.00	4.92	56.40	66	10.0		8.0	Y
Receiver B	12	1	1,410,833.0	1,149,476.0	0.00	4.92	64.80	66	10.0		8.0	Y
Receiver C	13	1	1,410,370.0	1,149,874.0	1.00	4.92	59.90	66	10.0		8.0	Y
Receiver D	14	1	1,411,136.0	1,150,240.0	1.00	4.92	66.20	66	10.0		8.0	Y
Receiver E	15	1	1,410,966.0	1,150,771.0	0.00	4.92	56.10	66	10.0		8.0	Y
Receiver F	16	1	1,411,497.0	1,151,129.0	1.00	4.92	63.40	66	10.0		8.0	Y
Receiver G	17	1	1,411,904.0	1,152,155.0	0.00	4.92	64.10	66	10.0		8.0	Y
Receiver H	18	1	1,411,615.0	1,152,922.0	0.00	4.92	59.80	66	10.0		8.0	Y
Receiver I	19	1	1,411,816.0	1,153,208.0	0.00	4.92	59.40	66	10.0		8.0	Y

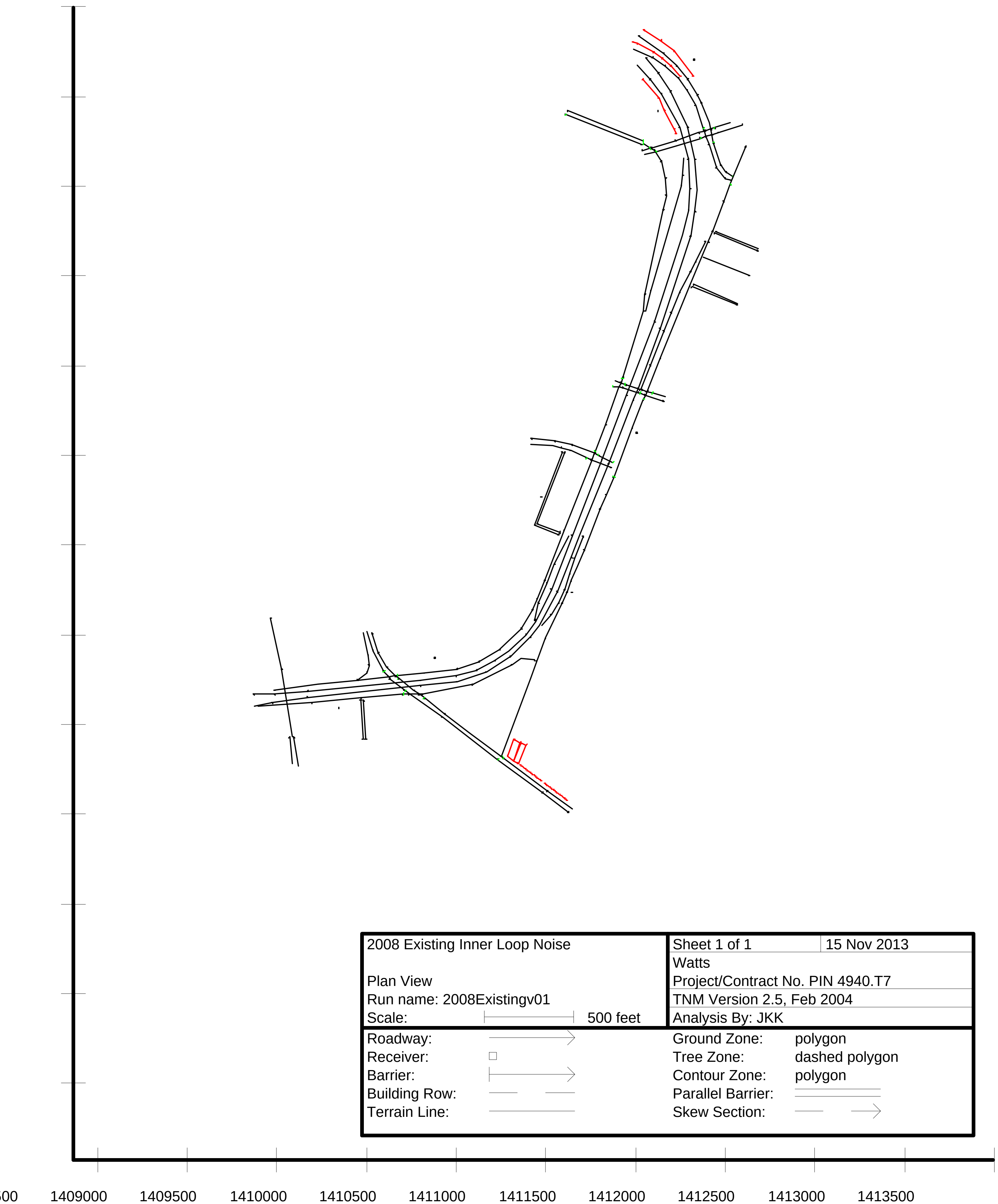
Watts **15 November 2013**
JKK **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **PIN 4940.T7**
RUN: **2013 Field Verification Inner Loop Noise**

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Incre-ment	Perturbs #Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier2	W	0.00	99.99	0.00				0.00	point1	1	1,411,532.1	1,153,099.0	0.00	0.00	0.00	0	0		
									point2	2	1,411,620.0	1,152,996.4	0.00	0.00	0.00	0	0		
									point3	3	1,411,653.1	1,152,926.9	0.00	0.00	0.00	0	0		
									point4	4	1,411,707.6	1,152,821.8	0.00	0.00	0.00	0	0		
									point5	5	1,411,718.1	1,152,793.8	0.00	0.00					
Barrier3	W	0.00	99.99	0.00				0.00	point6	6	1,411,740.9	1,153,118.5	0.00	4.00	0.00	0	0		
									point36	36	1,411,688.8	1,153,173.9	0.00	4.00	0.00	0	0		
									point7	7	1,411,639.0	1,153,217.2	0.00	4.00	0.00	0	0		
									point8	8	1,411,588.0	1,153,252.5	0.00	4.00	0.00	0	0		
									point9	9	1,411,498.6	1,153,300.6	0.00	4.00	0.00	0	0		
									point10	10	1,411,476.1	1,153,311.1	0.00	4.00					
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,411,812.5	1,153,117.4	0.00	0.00	0.00	0	0		
									point12	12	1,411,705.1	1,153,257.0	0.00	0.00	0.00	0	0		
									point13	13	1,411,633.0	1,153,317.1	0.00	0.00	0.00	0	0		
									point14	14	1,411,536.1	1,153,375.6	0.00	0.00					
Apartment Bldg	W	0.00	99.99	0.00				0.00	point15	15	1,410,849.0	1,149,404.0	0.00	50.00	0.00	0	0		
									point16	16	1,410,812.0	1,149,419.0	0.00	50.00	0.00	0	0		
									point17	17	1,410,776.0	1,149,325.0	0.00	50.00	0.00	0	0		
									point18	18	1,410,809.0	1,149,302.0	0.00	50.00	0.00	0	0		
									point19	19	1,410,849.0	1,149,402.5	0.00	50.00					
Low Building	W	0.00	99.99	0.00				0.00	point20	20	1,410,882.9	1,149,390.1	0.00	12.00	0.00	0	0		
									point21	21	1,410,849.9	1,149,403.1	0.00	12.00	0.00	0	0		
									point22	22	1,410,809.8	1,149,302.0	0.00	12.00	0.00	0	0		
									point23	23	1,410,836.4	1,149,285.0	0.00	12.00	0.00	0	0		
									point24	24	1,410,881.4	1,149,389.1	0.00	12.00					

Watts					15 November 2013	
JKK					TNM 2.5	
INPUT: BUILDING ROWS						
PROJECT/CONTRACT:	PIN 4940.T7					
RUN:	2013 Field Verification Inner Lc					
Building Row			Points			
Name	Average	Building	No.	Coordinates (ground)		
	Height	Percent		X	Y	Z
	ft	%		ft	ft	ft
Monroe Bldgs	30.00	60	3	1,410,839.4	1,149,284.6	0.00
			4	1,411,110.6	1,149,080.5	0.00

2008 “Existing” Conditions Model


2008 Existing Inner Loop Noise
Plan View
Run name: 2008Existingv01
Scale:
500 feet
Sheet 1 of 1
15 Nov 2013
Watts
Project/Contract No. PIN 4940.T7
TNM Version 2.5, Feb 2004
Analysis By: JKK
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
00
1409000
1409500
1410000
1410500
1411000
1411500
1412000
1412500
1413000
1413500

Watts			15 November 2013	
JKK			TNM 2.5	
			Calculated with TNM 2.5	
RESULTS: SOUND LEVELS				
PROJECT/CONTRACT:	PIN 4940.T7			
RUN:	2008 Existing Inner Loop Noise			
BARRIER DESIGN:	INPUT HEIGHTS			Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.
ATMOSPHERICS:	68 deg F, 50% RH			

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver A	11	1	56.4	65.3	66	8.9	10	----	65.3	0.0	8	-8.0
Receiver B	12	1	64.8	65.7	66	0.9	10	----	65.7	0.0	8	-8.0
Receiver C	13	1	59.9	60.9	66	1.0	10	----	60.9	0.0	8	-8.0
Receiver D	14	1	66.2	65.2	66	-1.0	10	----	65.2	0.0	8	-8.0
Receiver E	15	1	56.1	56.2	66	0.1	10	----	56.2	0.0	8	-8.0
Receiver F	16	1	63.4	64.4	66	1.0	10	----	64.4	0.0	8	-8.0
Receiver G	17	1	64.1	64.1	66	0.0	10	----	64.1	0.0	8	-8.0
Receiver H	18	1	59.8	62.8	66	3.0	10	----	62.8	0.0	8	-8.0
Receiver I	19	1	59.4	62.9	66	3.5	10	----	62.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Watts 15 November 2013
JKK TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2008 Existing Inner Loop Noise

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Inner Loop EB	24.0	point1	1	1,409,365.1	1,149,604.8	0.00				Average	
		point2	2	1,409,469.0	1,149,625.9	0.00				Average	
		point3	3	1,409,663.0	1,149,656.2	0.00				Average	
		point4	4	1,410,294.2	1,149,719.9	-20.00				Average	
		point5	5	1,410,498.0	1,149,742.2	-10.00				Average	
		point6	6	1,410,661.0	1,149,797.6	-5.00				Average	
		point7	7	1,410,795.1	1,149,884.0	-3.00				Average	
		point8	8	1,410,909.6	1,149,994.0	0.00				Average	
		point9	9	1,410,958.1	1,150,058.4	0.00				Average	
		point10	10	1,411,056.6	1,150,247.4	0.00				Average	
		point11	11	1,411,135.4	1,150,438.2	0.00				Average	
		point12	12	1,411,182.4	1,150,562.9	-3.00				Average	
		point13	13	1,411,341.5	1,150,960.4	-20.00				Average	
		point14	14	1,411,482.5	1,151,314.4	-20.00				Average	
		point273	273	1,411,506.4	1,151,379.4	-18.00				Average	
		point15	15	1,411,628.8	1,151,712.6	-3.00				Average	
		point16	16	1,411,797.8	1,152,227.5	-5.00				Average	
		point17	17	1,411,824.2	1,152,364.0	-10.00				Average	
		point18	18	1,411,834.1	1,152,485.2	-15.00				Average	
		point19	19	1,411,822.8	1,152,655.0	-20.00				Average	
		point20	20	1,411,780.2	1,152,835.1	-20.00				Average	
		point21	21	1,411,684.9	1,153,037.0	-20.00				Average	
		point22	22	1,411,618.1	1,153,138.5	-20.00				Average	
		point23	23	1,411,546.9	1,153,221.9	-20.00					
Inner Loop WB	24.0	point24	24	1,411,498.4	1,153,176.4	-5.00				Average	

		point25	25	1,411,574.1	1,153,098.4	-10.00				Average	
		point26	26	1,411,639.4	1,153,015.8	-10.00				Average	
		point27	27	1,411,737.1	1,152,827.8	-20.00				Average	
		point28	28	1,411,784.1	1,152,652.4	-20.00				Average	
		point29	29	1,411,796.2	1,152,488.2	-15.00				Average	
		point30	30	1,411,785.6	1,152,369.2	-10.00				Average	
		point31	31	1,411,752.2	1,152,228.6	-5.00				Average	
		point32	32	1,411,597.6	1,151,746.4	-3.00				Average	
		point33	33	1,411,440.8	1,151,334.6	-20.00				Average	
		point34	34	1,411,301.4	1,150,977.6	-20.00				Average	
		point35	35	1,411,136.1	1,150,553.6	-3.00				Average	
		point36	36	1,411,020.2	1,150,256.1	0.00				Average	
		point37	37	1,410,932.4	1,150,075.2	0.00				Average	
		point38	38	1,410,877.8	1,150,001.0	0.00				Average	
		point39	39	1,410,782.4	1,149,909.2	-3.00				Average	
		point40	40	1,410,701.2	1,149,856.2	-4.00				Average	
		point41	41	1,410,602.0	1,149,804.6	-6.00				Average	
		point42	42	1,410,489.0	1,149,772.8	-10.00				Average	
		point43	43	1,410,289.0	1,149,749.0	-20.00				Average	
		point233	233	1,409,659.6	1,149,689.2	0.00				Average	
		point44	44	1,409,478.1	1,149,672.0	0.00				Average	
		point45	45	1,409,359.8	1,149,672.0	0.00					
Howell	24.0	point46	46	1,409,387.1	1,149,606.0	0.00				Average	
		point47	47	1,409,688.0	1,149,625.0	0.00				Average	
		point48	48	1,409,963.1	1,149,651.5	0.00				Average	
		point49	49	1,410,198.0	1,149,672.8	0.00					
Union	24.0	point55	55	1,410,744.4	1,149,327.0	0.00	Signal	0.00	60	Average	
		point56	56	1,410,909.6	1,149,765.4	0.00				Average	
		point57	57	1,410,941.5	1,149,859.4	0.00				Average	
		point58	58	1,410,990.6	1,149,987.5	0.00				Average	
		point59	59	1,411,083.9	1,150,183.9	0.00				Average	
		point298	298	1,411,109.2	1,150,244.5	0.00				Average	
		point60	60	1,411,134.6	1,150,305.1	0.00				Average	
		point61	61	1,411,168.1	1,150,386.0	0.00				Average	
		point62	62	1,411,204.6	1,150,479.2	0.00				Average	
		point63	63	1,411,296.2	1,150,709.8	0.00				Average	
		point64	64	1,411,330.4	1,150,787.1	0.00				Average	
		point65	65	1,411,369.9	1,150,883.4	0.00					
University NB	24.0	point75	75	1,412,034.9	1,152,560.5	0.00	Signal	0.00	40	Average	

		point76	76	1,411,993.0	1,152,583.1	0.00				Average	
		point77	77	1,411,963.8	1,152,623.2	0.00				Average	
		point78	78	1,411,925.9	1,152,747.1	0.00					
University SB	24.0	point86	86	1,411,477.6	1,153,270.6	-7.00				Average	Y
		point87	87	1,411,589.1	1,153,219.1	-5.00				Average	
		point88	88	1,411,658.9	1,153,175.1	-3.00				Average	
		point89	89	1,411,733.9	1,153,103.9	0.00				Average	
		point90	90	1,411,781.6	1,153,036.4	0.00				Average	
		point91	91	1,411,824.9	1,152,951.5	0.00				Average	
		point92	92	1,411,870.4	1,152,827.1	0.00					
Main EB	36.0	point97	97	1,411,544.4	1,152,678.9	0.00				Average	
		point260	260	1,411,605.2	1,152,696.0	0.00					
Main WB	36.0	point101	101	1,412,018.1	1,152,857.0	0.00				Average	
		point102	102	1,411,928.9	1,152,828.2	0.00					
Richmond WB	12.0	point106	106	1,412,175.0	1,152,156.9	0.00				Average	
		point107	107	1,411,936.2	1,152,252.4	0.00					
Richmond EB	12.0	point108	108	1,411,929.5	1,152,241.8	0.00	Onramp	10.00	100	Average	
		point109	109	1,412,172.8	1,152,144.8	0.00					
Charlotte WB	12.0	point110	110	1,412,062.1	1,151,851.6	0.00				Average	
		point111	111	1,411,811.1	1,151,954.8	0.00					
Charlotte EB	12.0	point112	112	1,411,805.1	1,151,941.9	0.00	Onramp	10.00	100	Average	
		point113	113	1,412,059.9	1,151,840.2	0.00					
East WB	24.0	point114	114	1,411,654.1	1,151,328.5	0.00				Average	
		point115	115	1,411,586.6	1,151,352.0	0.00					
Broad WB	36.0	point124	124	1,411,367.4	1,150,965.6	0.00	Signal	0.00	80	Average	Y
		point125	125	1,411,283.2	1,151,005.9	0.00					
Broad EB	36.0	point129	129	1,410,906.5	1,151,068.0	0.00				Average	
		point130	130	1,411,032.2	1,151,057.4	0.00				Average	
		point131	131	1,411,080.9	1,151,046.8	0.00				Average	
		point132	132	1,411,129.4	1,151,028.6	0.00				Average	
		point133	133	1,411,218.0	1,150,988.4	0.00					
Savannah NB	12.0	point135	135	1,411,070.2	1,150,573.0	0.00	Onramp	10.00	100	Average	
		point136	136	1,410,942.9	1,150,623.8	0.00				Average	
		point137	137	1,411,096.8	1,151,021.0	0.00					
Savannah SB	12.0	point138	138	1,411,081.6	1,151,021.0	0.00	Onramp	10.00	100	Average	
		point139	139	1,410,928.5	1,150,613.1	0.00				Average	
		point140	140	1,411,064.1	1,150,560.9	0.00					
Broadway NB	12.0	point141	141	1,409,987.6	1,149,421.6	0.00	Onramp	10.00	100	Average	
		point142	142	1,409,974.8	1,149,639.1	0.00					

Broadway SB	12.0	point143	143	1,409,958.0	1,149,637.6	0.00	Onramp	10.00	100	Average	
		point144	144	1,409,970.9	1,149,420.1	0.00					
Clinton Ramp	24.0	point145	145	1,409,608.5	1,149,271.5	20.00				Average	
		point146	146	1,409,586.6	1,149,435.2	20.00					
Clinton NB 1	24.0	point147	147	1,409,575.2	1,149,285.9	20.00				Average	
		point148	148	1,409,562.4	1,149,433.0	20.00					
Clinton NB 2	48.0	point149	149	1,409,575.2	1,149,436.0	20.00				Average	Y
		point150	150	1,409,518.0	1,149,815.6	20.00				Average	
		point151	151	1,409,457.0	1,150,098.6	20.00					
Chestnut Ramp	24.0	point152	152	1,409,975.0	1,150,015.6	0.00				Average	
		point153	153	1,410,001.6	1,149,888.2	0.00				Average	
		point154	154	1,410,006.1	1,149,831.4	0.00				Average	
		point155	155	1,409,992.5	1,149,792.0	0.00				Average	
		point156	156	1,409,938.6	1,149,750.2	0.00					
IL/Union Ramp	12.0	point157	157	1,410,965.6	1,150,054.4	0.00				Average	
		point158	158	1,411,022.5	1,150,120.2	0.00				Average	
		point159	159	1,411,065.6	1,150,186.2	0.00				Average	
		point160	160	1,411,096.8	1,150,259.0	0.00				Average	
		point161	161	1,411,127.1	1,150,347.0	0.00				Average	
		point162	162	1,411,152.1	1,150,433.4	0.00				Average	
		point163	163	1,411,197.6	1,150,554.6	0.00					
IL/Pitkin Ramp	12.0	point164	164	1,411,117.2	1,150,552.4	0.00				Average	
		point165	165	1,411,036.1	1,150,394.0	0.00				Average	
		point166	166	1,410,993.6	1,150,287.9	0.00				Average	
		point167	167	1,410,950.5	1,150,177.9	0.00				Average	
		point168	168	1,410,928.5	1,150,084.6	0.00					
Pitkin	24.0	point169	169	1,411,535.2	1,152,739.9	0.00	Signal	0.00	50	Average	
		point257	257	1,411,575.9	1,152,717.5	0.00				Average	
		point170	170	1,411,601.2	1,152,703.5	0.00				Average	
		point258	258	1,411,605.2	1,152,696.0	0.00				Average	
		point171	171	1,411,634.5	1,152,639.8	0.00				Average	
		point172	172	1,411,659.6	1,152,545.8	0.00				Average	
		point173	173	1,411,661.9	1,152,451.0	0.00				Average	
		point174	174	1,411,645.9	1,152,368.4	0.00				Average	
		point175	175	1,411,544.4	1,151,898.0	0.00				Average	
		point176	176	1,411,537.5	1,151,806.1	0.00				Average	
		point177	177	1,411,418.4	1,151,433.5	0.00					
IL Ramp to Pitkin	12.0	point193	193	1,411,762.9	1,152,658.4	-20.00				Average	
		point194	194	1,411,756.0	1,152,562.1	-15.00				Average	

		point195	195	1,411,744.6	1,152,504.5	-13.00				Average	
		point196	196	1,411,573.1	1,151,916.9	0.00				Average	
		point197	197	1,411,545.9	1,151,805.5	0.00					
Monroe-Chestnut NB	12.0	point198	198	1,411,136.8	1,149,032.6	0.00				Average	
		point199	199	1,410,995.0	1,149,135.8	0.00				Average	
		point200	200	1,410,752.4	1,149,316.1	0.00					
Chestnut-Monroe SB	24.0	point208	208	1,409,994.6	1,150,018.2	0.00				Average	
		point209	209	1,410,028.0	1,149,911.4	0.00				Average	
		point210	210	1,410,088.6	1,149,797.6	0.00					
E University Ave EB	24.0	point229	229	1,411,100.0	1,152,904.0	0.00	Signal	0.00	50	Average	
		point230	230	1,411,527.0	1,152,734.0	0.00					
E University Ave WB	24.0	point231	231	1,411,535.0	1,152,755.0	0.00	Signal	0.00	50	Average	
		point232	232	1,411,109.0	1,152,924.0	0.00					
IL Ramp to Union-2-2	12.0	point272	272	1,411,523.0	1,151,369.1	-20.00				Average	
		point218	218	1,411,575.2	1,151,507.8	-10.00				Average	
		point219	219	1,411,647.2	1,151,698.8	-3.00				Average	
		point220	220	1,411,689.9	1,151,802.8	0.00				Average	
		point221	221	1,411,739.9	1,151,916.5	0.00				Average	
		point222	222	1,411,800.6	1,152,030.2	0.00				Average	
		point223	223	1,411,829.4	1,152,087.0	0.00				Average	
		point224	224	1,411,879.4	1,152,199.2	0.00					
Howell-2	24.0	point274	274	1,410,198.0	1,149,672.8	0.00	Signal	0.00	60	Average	
		point236	236	1,410,232.5	1,149,672.2	0.00				Average	
		point234	234	1,410,283.4	1,149,672.2	0.00				Average	
		point50	50	1,410,307.2	1,149,672.0	0.00				Average	
		point51	51	1,410,585.4	1,149,727.4	0.00				Average	
		point52	52	1,410,805.0	1,149,840.1	0.00				Average	
		point53	53	1,410,854.2	1,149,873.5	0.00				Average	
		point54	54	1,410,930.1	1,149,861.4	0.00					
Union-2	24.0	point275	275	1,411,369.9	1,150,883.4	0.00	Signal	0.00	40	Average	
		point66	66	1,411,473.6	1,151,161.6	0.00				Average	
		point67	67	1,411,536.6	1,151,315.6	0.00					
Union-2-2	24.0	point276	276	1,411,536.6	1,151,315.6	0.00	Signal	0.00	50	Average	
		point256	256	1,411,546.0	1,151,339.1	0.00				Average	
		point255	255	1,411,553.8	1,151,360.5	0.00				Average	
		point68	68	1,411,630.6	1,151,549.9	0.00				Average	
		point69	69	1,411,794.5	1,151,951.8	0.00				Average	
		point70	70	1,411,899.1	1,152,194.8	0.00				Average	
		point71	71	1,411,921.1	1,152,255.4	0.00				Average	

		point72	72	1,411,982.5	1,152,422.1	0.00				Average	
		point73	73	1,412,020.4	1,152,514.5	0.00					
Union-2-2-2	24.0	point277	277	1,412,020.4	1,152,514.5	0.00	Signal	0.00	60	Average	
		point74	74	1,412,104.5	1,152,725.1	0.00					
University NB-2	24.0	point278	278	1,411,925.9	1,152,747.1	0.00	Signal	0.00	50	Average	
		point265	265	1,411,916.5	1,152,791.4	0.00				Average	
		point266	266	1,411,910.0	1,152,822.2	0.00				Average	
		point79	79	1,411,902.1	1,152,859.8	0.00				Average	
		point80	80	1,411,858.1	1,152,971.9	0.00				Average	
		point81	81	1,411,836.2	1,153,015.9	0.00				Average	
		point82	82	1,411,779.4	1,153,103.9	0.00				Average	
		point83	83	1,411,718.8	1,153,176.6	-3.00				Average	
		point84	84	1,411,642.9	1,153,250.1	-10.00				Average	
		point85	85	1,411,508.0	1,153,343.4	-20.00					
University SB-2	24.0	point279	279	1,411,870.4	1,152,827.1	0.00	Signal	0.00	50	Average	
		point268	268	1,411,875.6	1,152,811.1	0.00				Average	
		point267	267	1,411,885.1	1,152,781.4	0.00				Average	
		point93	93	1,411,900.6	1,152,733.5	0.00				Average	
		point94	94	1,411,941.2	1,152,604.8	0.00				Average	
		point95	95	1,411,994.1	1,152,547.6	0.00				Average	
		point96	96	1,412,025.8	1,152,535.4	0.00					
Main EB-2	36.0	point280	280	1,411,605.2	1,152,696.0	0.00	Signal	0.00	50	Average	
		point98	98	1,411,722.0	1,152,729.1	0.00				Average	Y
		point99	99	1,411,855.6	1,152,772.1	0.00					
Main EB-2-2	36.0	point281	281	1,411,855.6	1,152,772.1	0.00	Signal	0.00	50	Average	
		point262	262	1,411,885.1	1,152,781.4	0.00				Average	
		point261	261	1,411,916.5	1,152,791.4	0.00				Average	
		point226	226	1,411,958.5	1,152,804.8	0.00				Average	
		point100	100	1,412,090.1	1,152,847.1	0.00					
Main WB-2	36.0	point282	282	1,411,928.9	1,152,828.2	0.00	Signal	0.00	50	Average	
		point263	263	1,411,910.0	1,152,822.2	0.00				Average	
		point264	264	1,411,875.6	1,152,811.1	0.00				Average	
		point103	103	1,411,841.0	1,152,800.2	0.00				Average	Y
		point225	225	1,411,710.5	1,152,759.0	0.00				Average	
		point104	104	1,411,575.9	1,152,717.5	0.00				Average	
		point259	259	1,411,570.9	1,152,716.0	0.00					
Main WB-2-2	36.0	point283	283	1,411,570.9	1,152,716.0	0.00	Signal	0.00	50	Average	
		point105	105	1,411,525.4	1,152,703.1	0.00					
East WB-2	24.0	point284	284	1,411,586.6	1,151,352.0	0.00	Signal	0.00	50	Average	

		point253	253	1,411,553.8	1,151,360.5	0.00				Average	
		point116	116	1,411,522.5	1,151,368.5	0.00				Average	
		point249	249	1,411,513.1	1,151,371.6	0.00				Average	Y
		point117	117	1,411,433.5	1,151,398.2	0.00					
East WB-2-2	24.0	point285	285	1,411,433.5	1,151,398.2	0.00	Signal	0.00	50	Average	
		point245	245	1,411,408.6	1,151,408.2	0.00				Average	
		point118	118	1,411,374.4	1,151,421.8	0.00					
Broad WB-2	36.0	point287	287	1,411,283.2	1,151,005.9	0.00	Signal	0.00	50	Average	
		point244	244	1,411,260.6	1,151,014.6	0.00				Average	
		point126	126	1,411,135.4	1,151,061.9	0.00				Average	
		point127	127	1,411,037.6	1,151,083.1	0.00				Average	
		point128	128	1,410,908.0	1,151,096.0	0.00					
Broad EB-2	36.0	point288	288	1,411,218.0	1,150,988.4	0.00	Signal	0.00	50	Average	
		point243	243	1,411,246.6	1,150,976.9	0.00				Average	
		point227	227	1,411,270.2	1,150,967.5	0.00				Average	Y
		point134	134	1,411,356.8	1,150,933.8	0.00					
Pitkin-2	24.0	point289	289	1,411,418.4	1,151,433.5	0.00	Signal	0.00	50	Average	
		point248	248	1,411,408.6	1,151,408.2	0.00				Average	
		point247	247	1,411,399.9	1,151,383.8	0.00				Average	
		point178	178	1,411,322.9	1,151,172.0	0.00				Average	
		point179	179	1,411,266.0	1,151,027.9	0.00					
Pitkin-2-2	24.0	point290	290	1,411,266.0	1,151,027.9	0.00	Signal	0.00	50	Average	
		point242	242	1,411,260.6	1,151,014.6	0.00				Average	
		point241	241	1,411,246.6	1,150,976.9	0.00				Average	
		point180	180	1,411,089.4	1,150,580.9	0.00				Average	
		point181	181	1,410,984.4	1,150,303.0	0.00				Average	
		point182	182	1,410,940.4	1,150,199.9	0.00				Average	
		point183	183	1,410,916.9	1,150,137.8	0.00				Average	
		point184	184	1,410,854.0	1,150,033.9	0.00				Average	
		point185	185	1,410,729.1	1,149,917.4	0.00				Average	
		point186	186	1,410,616.2	1,149,853.0	0.00				Average	
		point187	187	1,410,494.1	1,149,812.9	0.00				Average	
		point188	188	1,410,306.1	1,149,788.5	0.00				Average	
		point189	189	1,410,161.4	1,149,774.9	0.00					
Pitkin-2-2-2	24.0	point291	291	1,410,161.4	1,149,774.9	0.00	Signal	0.00	50	Average	
		point240	240	1,410,151.0	1,149,773.9	0.00				Average	
		point239	239	1,410,113.0	1,149,769.2	0.00				Average	
		point190	190	1,409,937.8	1,149,748.4	0.00				Average	
		point191	191	1,409,717.5	1,149,727.1	0.00				Average	

			point192	192	1,409,476.6	1,149,693.9	0.00					
Monroe-Chestnut NB-2	12.0		point292	292	1,410,752.4	1,149,316.1	0.00	Signal	0.00	50	Average	
			point201	201	1,410,564.6	1,149,457.2	0.00				Average	
			point202	202	1,410,425.9	1,149,562.6	0.00				Average	
			point302	302	1,410,312.8	1,149,649.9	0.00					
Monroe-Chestnut NB-2-2-2	24.0		point294	294	1,410,167.5	1,149,761.1	0.00	Signal	0.00	50	Average	
			point237	237	1,410,151.0	1,149,773.9	0.00				Average	
			point205	205	1,410,104.5	1,149,827.1	0.00				Average	
			point206	206	1,410,057.5	1,149,905.2	0.00				Average	
			point207	207	1,410,022.6	1,150,011.4	0.00					
Chestnut-Monroe SB-2	24.0		point295	295	1,410,088.6	1,149,797.6	0.00	Signal	0.00	50	Average	
			point238	238	1,410,113.0	1,149,769.2	0.00				Average	
			point211	211	1,410,123.2	1,149,755.8	0.00				Average	Y
			point212	212	1,410,206.2	1,149,691.5	0.00					
Chestnut-Monroe SB-2-2	12.0		point296	296	1,410,206.2	1,149,691.5	0.00	Signal	0.00	50	Average	
			point235	235	1,410,232.5	1,149,672.2	0.00				Average	
			point213	213	1,410,414.9	1,149,541.8	0.00				Average	
			point214	214	1,410,725.8	1,149,308.2	0.00					
Chestnut-Monroe SB-2-2-2	12.0		point297	297	1,410,725.8	1,149,308.2	0.00	Signal	0.00	50	Average	
			point215	215	1,410,974.0	1,149,122.5	0.00				Average	
			point216	216	1,411,119.5	1,149,011.8	0.00					
Haags EB/WB	12.0		point299	299	1,411,872.0	1,152,106.0	0.00				Average	
			point300	300	1,412,129.0	1,152,004.0	0.00					
East EB	24.0		point119	119	1,411,366.0	1,151,388.4	0.00	Signal	0.00	50	Average	
			point246	246	1,411,399.9	1,151,383.8	0.00				Average	
			point120	120	1,411,425.1	1,151,380.8	0.00				Average	Y
			point250	250	1,411,509.6	1,151,352.2	0.00				Average	
			point121	121	1,411,515.8	1,151,350.2	0.00					
East EB-2	24.0		point301	301	1,411,515.8	1,151,350.2	0.00	Signal	0.00	50	Average	
			point286	286	1,411,546.0	1,151,339.1	0.00				Average	
			point122	122	1,411,591.9	1,151,322.4	0.00				Average	
			point123	123	1,411,650.2	1,151,306.5	0.00					
Monroe-Chestnut NB-2-2	12.0		point303	303	1,410,312.8	1,149,649.9	0.00	Signal	0.00	50	Average	
			point293	293	1,410,283.4	1,149,672.2	0.00				Average	
			point228	228	1,410,251.6	1,149,696.4	0.00				Average	Y
			point204	204	1,410,167.5	1,149,761.1	0.00					

Watts 15 November 2013
JKK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2008 Existing Inner Loop Noise

Roadway	Points												
Name	Name	No.	Segment										
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Inner Loop EB	point1	1	222	50	0	0	0	0	1	50	3	50
	point2	2	222	50	0	0	0	0	1	50	3	50
	point3	3	222	50	0	0	0	0	1	50	3	50
	point4	4	222	50	0	0	0	0	1	50	3	50
	point5	5	222	50	0	0	0	0	1	50	3	50
	point6	6	222	50	0	0	0	0	1	50	3	50
	point7	7	222	50	0	0	0	0	1	50	3	50
	point8	8	222	50	0	0	0	0	1	50	3	50
	point9	9	200	50	0	0	0	0	1	50	2	50
	point10	10	200	50	0	0	0	0	1	50	2	50
	point11	11	200	50	0	0	0	0	1	50	2	50
	point12	12	413	50	0	0	0	0	2	50	5	50
	point13	13	413	50	0	0	0	0	2	50	5	50
	point14	14	413	50	0	0	0	0	2	50	5	50
	point273	273	220	50	0	0	0	0	1	50	3	50
	point15	15	220	50	0	0	0	0	1	50	3	50
	point16	16	220	50	0	0	0	0	1	50	3	50
	point17	17	220	50	0	0	0	0	1	50	3	50
	point18	18	220	50	0	0	0	0	1	50	3	50
	point19	19	220	50	0	0	0	0	1	50	3	50
	point20	20	220	50	0	0	0	0	1	50	3	50
	point21	21	220	50	0	0	0	0	1	50	3	50
	point22	22	220	50	0	0	0	0	1	50	3	50

	point23	23										
Inner Loop WB	point24	24	366	50	9	50	0	0	0	0	0	0
	point25	25	366	50	9	50	0	0	0	0	0	0
	point26	26	366	50	9	50	0	0	0	0	0	0
	point27	27	366	50	9	50	0	0	0	0	0	0
	point28	28	218	50	6	50	0	0	0	0	0	0
	point29	29	218	50	6	50	0	0	0	0	0	0
	point30	30	218	50	6	50	0	0	0	0	0	0
	point31	31	218	50	6	50	0	0	0	0	0	0
	point32	32	218	50	6	50	0	0	0	0	0	0
	point33	33	218	50	6	50	0	0	0	0	0	0
	point34	34	218	50	6	50	0	0	0	0	0	0
	point35	35	175	50	4	50	0	0	0	0	0	0
	point36	36	175	50	4	50	0	0	0	0	0	0
	point37	37	457	50	12	50	0	0	0	0	0	0
	point38	38	457	50	12	50	0	0	0	0	0	0
	point39	39	457	50	12	50	0	0	0	0	0	0
	point40	40	457	50	12	50	0	0	0	0	0	0
	point41	41	457	50	12	50	0	0	0	0	0	0
	point42	42	457	50	12	50	0	0	0	0	0	0
	point43	43	457	50	12	50	0	0	0	0	0	0
	point233	233	457	50	12	50	0	0	0	0	0	0
	point44	44	1682	50	43	50	0	0	0	0	0	0
	point45	45										
Howell	point46	46	131	35	3	35	0	0	5	35	0	0
	point47	47	131	35	3	35	0	0	5	35	0	0
	point48	48	131	30	3	30	0	0	5	30	0	0
	point49	49										
Union	point55	55	348	25	3	25	8	25	0	0	5	25
	point56	56	348	30	3	30	8	30	0	0	5	30
	point57	57	426	30	9	30	0	0	0	0	0	0
	point58	58	426	35	9	35	0	0	0	0	0	0
	point59	59	426	35	9	35	0	0	0	0	0	0
	point298	298	215	35	5	35	0	0	0	0	0	0
	point60	60	215	35	5	35	0	0	0	0	0	0
	point61	61	215	35	5	35	0	0	0	0	0	0

	point62	62	215	35	5	35	0	0	0	0	0	0
	point63	63	215	30	5	30	0	0	0	0	0	0
	point64	64	215	25	5	25	0	0	0	0	0	0
	point65	65										
University NB	point75	75	621	30	8	30	0	0	0	0	4	30
	point76	76	621	30	8	30	0	0	0	0	4	30
	point77	77	621	25	8	25	0	0	0	0	4	25
	point78	78										
University SB	point86	86	679	45	15	45	5	45	20	45	0	0
	point87	87	679	40	15	40	5	40	20	40	0	0
	point88	88	679	35	15	35	5	35	20	35	0	0
	point89	89	679	25	15	25	5	25	20	25	0	0
	point90	90	679	15	15	15	5	15	20	15	0	0
	point91	91	679	10	15	10	5	10	20	10	0	0
	point92	92										
Main EB	point97	97	471	25	10	25	0	0	13	25	6	25
	point260	260										
Main WB	point101	101	902	25	0	0	6	25	13	25	0	0
	point102	102										
Richmond WB	point106	106	12	15	0	0	3	15	0	0	0	0
	point107	107										
Richmond EB	point108	108	0	0	0	0	0	0	0	0	0	0
	point109	109										
Charlotte WB	point110	110	30	10	0	0	0	0	0	0	0	0
	point111	111										
Charlotte EB	point112	112	6	15	3	15	0	0	0	0	0	0
	point113	113										
East WB	point114	114	338	20	4	20	0	0	0	0	4	20
	point115	115										
Broad WB	point124	124	52	15	4	15	0	0	15	15	0	0
	point125	125										
Broad EB	point129	129	294	30	0	0	0	0	4	30	0	0
	point130	130	294	30	0	0	0	0	4	30	0	0
	point131	131	294	25	0	0	0	0	4	25	0	0
	point132	132	294	20	0	0	0	0	4	20	0	0
	point133	133										

Savannah NB	point135	135	4	25	0	0	0	0	0	0	0	0
	point136	136	4	25	0	0	0	0	0	0	0	0
	point137	137										
Savannah SB	point138	138	4	25	0	0	0	0	0	0	0	0
	point139	139	4	25	0	0	0	0	0	0	0	0
	point140	140										
Broadway NB	point141	141	29	15	0	0	0	0	0	0	0	0
	point142	142										
Broadway SB	point143	143	0	0	0	0	0	0	0	0	0	0
	point144	144										
Clinton Ramp	point145	145	547	45	7	45	4	45	10	45	2	45
	point146	146										
Clinton NB 1	point147	147	1040	45	14	45	7	45	18	45	5	45
	point148	148										
Clinton NB 2	point149	149	1588	45	22	45	9	45	28	45	6	45
	point150	150	1588	35	22	35	9	35	28	35	6	35
	point151	151										
Chestnut Ramp	point152	152	903	30	8	30	0	0	20	30	0	0
	point153	153	903	30	8	30	0	0	20	30	0	0
	point154	154	903	25	8	25	0	0	20	25	0	0
	point155	155	903	30	8	30	0	0	20	30	0	0
	point156	156										
IL/Union Ramp	point157	157	26	35	1	35	0	0	0	0	0	0
	point158	158	26	35	1	35	0	0	0	0	0	0
	point159	159	26	35	1	35	0	0	0	0	0	0
	point160	160	203	35	4	35	0	0	0	0	0	0
	point161	161	203	35	4	35	0	0	0	0	0	0
	point162	162	203	35	4	35	0	0	0	0	0	0
	point163	163										
IL/Pitkin Ramp	point164	164	45	35	0	0	0	0	0	0	0	0
	point165	165	45	35	0	0	0	0	0	0	0	0
	point166	166	283	35	0	0	0	0	0	0	0	0
	point167	167	283	35	0	0	0	0	0	0	0	0
	point168	168										
Pitkin	point169	169	126	35	0	0	0	0	0	0	0	0
	point257	257	126	35	0	0	0	0	0	0	0	0

	point170	170	165	35	0	0	0	0	0	0	0	0
	point258	258	126	35	0	0	0	0	0	0	0	0
	point171	171	126	40	0	0	0	0	0	0	0	0
	point172	172	126	40	0	0	0	0	0	0	0	0
	point173	173	126	40	0	0	0	0	0	0	0	0
	point174	174	126	40	0	0	0	0	0	0	0	0
	point175	175	126	35	0	0	0	0	0	0	0	0
	point176	176	290	35	5	35	0	0	37	35	0	0
	point177	177										
IL Ramp to Pitkin	point193	193	148	45	2	45	0	0	0	0	1	45
	point194	194	148	45	2	45	0	0	0	0	1	45
	point195	195	148	40	2	40	0	0	0	0	1	40
	point196	196	148	35	2	35	0	0	0	0	1	35
	point197	197										
Monroe-Chestnut NB	point198	198	608	35	0	0	0	0	0	0	7	35
	point199	199	595	30	0	0	0	0	0	0	7	30
	point200	200										
Chestnut-Monroe SB	point208	208	410	35	1	35	1	35	3	35	0	0
	point209	209	410	25	1	25	1	25	3	25	0	0
	point210	210										
E University Ave EB	point229	229	229	30	0	0	0	0	0	0	0	0
	point230	230										
E University Ave WB	point231	231	178	30	0	0	0	0	0	0	0	0
	point232	232										
IL Ramp to Union-2-2	point272	272	202	35	3	35	0	0	0	0	1	35
	point218	218	202	35	3	35	0	0	0	0	1	35
	point219	219	202	35	3	35	0	0	0	0	1	35
	point220	220	202	35	3	35	0	0	0	0	1	35
	point221	221	202	35	3	35	0	0	0	0	1	35
	point222	222	202	35	3	35	0	0	0	0	1	35
	point223	223	202	35	3	35	0	0	0	0	1	35
	point224	224										
Howell-2	point274	274	131	20	3	20	0	0	5	20	0	0
	point236	236	66	25	2	25	0	0	2	25	0	0
	point234	234	66	25	2	25	0	0	2	25	0	0
	point50	50	66	35	2	35	0	0	2	35	0	0

	point51	51	66	30	2	30	0	0	2	30	0	0
	point52	52	66	15	2	15	0	0	2	15	0	0
	point53	53	66	10	2	10	0	0	2	10	0	0
	point54	54										
Union-2	point275	275	329	35	7	35	0	0	4	35	0	0
	point66	66	329	25	7	25	0	0	4	25	0	0
	point67	67										
Union-2-2	point276	276	329	35	7	35	0	0	4	35	0	0
	point256	256	311	35	4	35	0	0	0	0	2	35
	point255	255	311	35	4	35	0	0	0	0	2	35
	point68	68	311	35	4	35	0	0	0	0	2	35
	point69	69	311	30	4	30	0	0	0	0	2	30
	point70	70	513	30	6	30	0	0	0	0	3	30
	point71	71	513	30	6	30	0	0	0	0	3	30
	point72	72	513	25	6	25	0	0	0	0	3	25
	point73	73										
Union-2-2-2	point277	277	273	30	3	30	0	0	0	0	2	30
	point74	74										
University NB-2	point278	278	621	30	8	30	0	0	0	0	4	30
	point265	265	811	30	42	30	7	30	3	30	3	30
	point266	266	811	30	42	30	7	30	3	30	3	30
	point79	79	811	40	42	40	7	40	3	40	3	40
	point80	80	811	40	42	40	7	40	3	40	3	40
	point81	81	811	40	42	40	7	40	3	40	3	40
	point82	82	811	40	42	40	7	40	3	40	3	40
	point83	83	811	45	42	45	7	45	3	45	3	45
	point84	84	811	45	42	45	7	45	3	45	3	45
	point85	85										
University SB-2	point279	279	679	30	15	30	5	30	20	30	0	0
	point268	268	507	30	6	30	0	0	0	0	3	30
	point267	267	507	30	6	30	0	0	0	0	3	30
	point93	93	507	30	6	30	0	0	0	0	3	30
	point94	94	507	25	6	25	0	0	0	0	3	25
	point95	95	507	25	6	25	0	0	0	0	3	25
	point96	96										
Main EB-2	point280	280	675	25	15	25	0	0	19	25	8	25

	point98	98	675	25	15	25	0	0	19	25	8	25
	point99	99										
Main EB-2-2	point281	281	675	30	15	30	0	0	19	30	8	30
	point262	262	849	30	19	30	0	0	24	30	10	30
	point261	261	849	30	19	30	0	0	24	30	10	30
	point226	226	849	30	19	30	0	0	24	30	10	30
	point100	100										
Main WB-2	point282	282	902	25	0	0	6	25	13	25	0	0
	point263	263	673	25	0	0	5	25	10	25	0	0
	point264	264	673	25	0	0	5	25	10	25	0	0
	point103	103	673	25	0	0	5	25	10	25	0	0
	point225	225	673	25	0	0	5	25	10	25	0	0
	point104	104	404	25	0	0	3	25	6	25	0	0
	point259	259										
Main WB-2-2	point283	283	404	30	0	0	3	30	6	30	0	0
	point105	105										
East WB-2	point284	284	338	20	4	20	0	0	0	0	4	20
	point253	253	324	20	4	20	0	0	0	0	4	20
	point116	116	324	20	4	20	0	0	0	0	4	20
	point249	249	324	20	4	20	0	0	0	0	4	20
	point117	117										
East WB-2-2	point285	285	324	20	4	20	0	0	0	0	4	20
	point245	245	278	20	3	20	0	0	0	0	3	20
	point118	118										
Broad WB-2	point287	287	52	30	4	30	0	0	15	30	0	0
	point244	244	49	30	4	30	0	0	14	30	0	0
	point126	126	49	30	4	30	0	0	14	30	0	0
	point127	127	49	30	4	30	0	0	14	30	0	0
	point128	128										
Broad EB-2	point288	288	294	15	0	0	0	0	4	15	0	0
	point243	243	172	15	0	0	0	0	2	15	0	0
	point227	227	172	10	0	0	0	0	2	10	0	0
	point134	134										
Pitkin-2	point289	289	290	25	5	25	0	0	37	25	0	0
	point248	248	217	30	4	30	0	0	28	30	0	0
	point247	247	217	35	4	35	0	0	28	35	0	0

	point178	178	217	25	4	25	0	0	28	25	0	0
	point179	179										
Pitkin-2-2	point290	290	217	35	4	35	0	0	28	35	0	0
	point242	242	369	35	0	0	0	0	0	0	8	35
	point241	241	369	40	0	0	0	0	0	0	8	40
	point180	180	397	35	0	0	0	0	0	0	0	0
	point181	181	159	35	0	0	0	0	0	0	0	0
	point182	182	159	35	0	0	0	0	0	0	0	0
	point183	183	159	35	0	0	0	0	0	0	0	0
	point184	184	226	35	5	35	0	0	8	35	0	0
	point185	185	226	35	5	35	0	0	8	35	0	0
	point186	186	226	35	5	35	0	0	8	35	0	0
	point187	187	226	35	5	35	0	0	8	35	0	0
	point188	188	226	25	5	25	0	0	8	25	0	0
	point189	189										
Pitkin-2-2-2	point291	291	226	35	5	35	0	0	8	35	0	0
	point240	240	301	35	7	35	0	0	10	35	0	0
	point239	239	301	35	7	35	0	0	10	35	0	0
	point190	190	1183	35	26	35	0	0	39	35	0	0
	point191	191	1183	35	26	35	0	0	39	35	0	0
	point192	192										
Monroe-Chestnut NB-2	point292	292	466	30	17	30	3	30	13	30	0	0
	point201	201	466	35	17	35	3	35	13	35	0	0
	point202	202	468	25	17	25	3	25	13	25	0	0
	point302	302										
Monroe-Chestnut NB-2-2-2	point294	294	510	35	18	35	4	35	15	35	0	0
	point237	237	313	35	11	35	2	35	9	35	0	0
	point205	205	313	35	11	35	2	35	9	35	0	0
	point206	206	313	35	11	35	2	35	9	35	0	0
	point207	207										
Chestnut-Monroe SB-2	point295	295	410	25	1	25	1	25	3	25	0	0
	point238	238	528	25	2	25	2	25	3	25	0	0
	point211	211	528	25	2	25	2	25	3	25	0	0
	point212	212										
Chestnut-Monroe SB-2-2	point296	296	528	30	2	30	2	30	3	30	0	0
	point235	235	551	35	2	35	2	35	4	35	0	0

	point213	213	546	30	2	30	2	30	4	30	0	0
	point214	214										
Chestnut-Monroe SB-2-2-2	point297	297	548	30	4	30	4	30	4	30	7	30
	point215	215	652	35	4	35	4	35	4	35	8	35
	point216	216										
Haags EB/WB	point299	299	36	10	0	0	0	0	0	0	0	0
	point300	300										
East EB	point119	119	414	20	0	0	0	0	2	20	4	20
	point246	246	561	20	0	0	0	0	3	20	6	20
	point120	120	561	20	0	0	0	0	3	20	6	20
	point250	250	561	20	0	0	0	0	3	20	6	20
	point121	121										
East EB-2	point301	301	561	20	0	0	0	0	3	20	6	20
	point286	286	696	20	0	0	0	0	4	20	7	20
	point122	122	696	20	0	0	0	0	4	20	7	20
	point123	123										
Monroe-Chestnut NB-2-2	point303	303	468	25	17	25	3	25	13	25	0	0
	point293	293	510	25	18	25	4	25	15	25	0	0
	point228	228	510	25	18	25	4	25	15	25	0	0
	point204	204										

Watts		15 November 2013
JKK		TNM 2.5
INPUT: RECEIVERS		
PROJECT/CONTRACT:	PIN 4940.T7	
RUN:	2008 Existing Inner Loop Noise	

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver A	11	1	1,409,838.0	1,149,594.0	1.00	4.92	56.40	66	10.0	8.0	Y
Receiver B	12	1	1,410,833.0	1,149,476.0	0.00	4.92	64.80	66	10.0	8.0	Y
Receiver C	13	1	1,410,370.0	1,149,874.0	1.00	4.92	59.90	66	10.0	8.0	Y
Receiver D	14	1	1,411,136.0	1,150,240.0	1.00	4.92	66.20	66	10.0	8.0	Y
Receiver E	15	1	1,410,966.0	1,150,771.0	0.00	4.92	56.10	66	10.0	8.0	Y
Receiver F	16	1	1,411,497.0	1,151,129.0	1.00	4.92	63.40	66	10.0	8.0	Y
Receiver G	17	1	1,411,904.0	1,152,155.0	0.00	4.92	64.10	66	10.0	8.0	Y
Receiver H	18	1	1,411,615.0	1,152,922.0	0.00	4.92	59.80	66	10.0	8.0	Y
Receiver I	19	1	1,411,816.0	1,153,208.0	0.00	4.92	59.40	66	10.0	8.0	Y

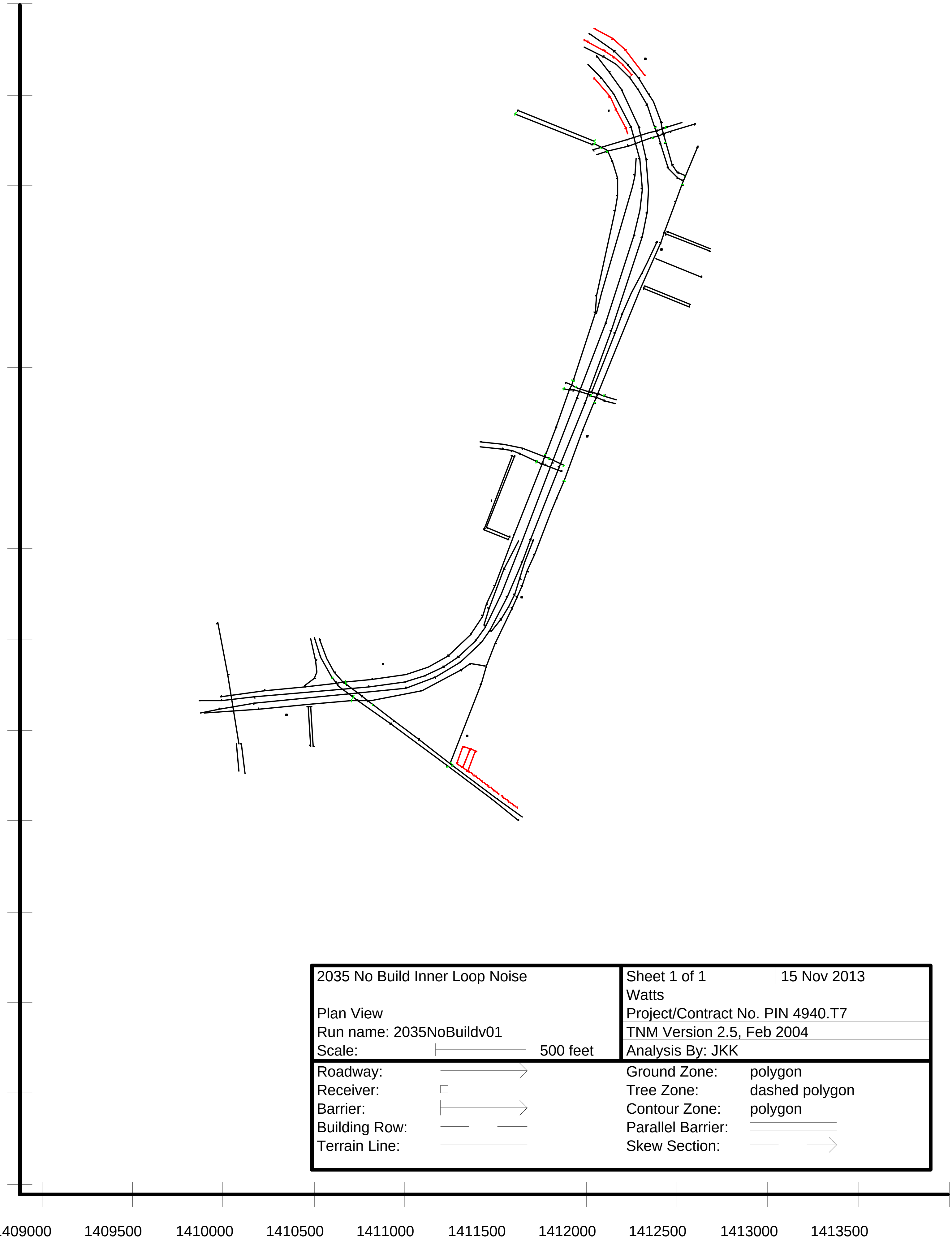
Watts **15 November 2013**
JKK **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **PIN 4940.T7**
RUN: **2008 Existing Inner Loop Noise**

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	If Berm Top Width	If Berm Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Coordinates (bottom) Y	Coordinates (bottom) Z	Height at Point	Segment Seg Ht Increment	Segment Perturbs #Up	Segment Perturbs #Dn	Segment On Struct?	Segment Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier2	W	0.00	99.99	0.00				0.00	point1	1	1,411,532.1	1,153,099.0	0.00	0.00	0.00	0	0		
									point2	2	1,411,620.0	1,152,996.4	0.00	0.00	0.00	0	0		
									point3	3	1,411,653.1	1,152,926.9	0.00	0.00	0.00	0	0		
									point4	4	1,411,707.6	1,152,821.8	0.00	0.00	0.00	0	0		
									point5	5	1,411,718.1	1,152,793.8	0.00	0.00					
Barrier3	W	0.00	99.99	0.00				0.00	point6	6	1,411,740.9	1,153,118.5	0.00	4.00	0.00	0	0		
									point36	36	1,411,688.8	1,153,173.9	0.00	4.00	0.00	0	0		
									point7	7	1,411,639.0	1,153,217.2	0.00	4.00	0.00	0	0		
									point8	8	1,411,588.0	1,153,252.5	0.00	4.00	0.00	0	0		
									point9	9	1,411,498.6	1,153,300.6	0.00	4.00	0.00	0	0		
									point10	10	1,411,476.1	1,153,311.1	0.00	4.00					
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,411,812.5	1,153,117.4	0.00	0.00	0.00	0	0		
									point12	12	1,411,705.1	1,153,257.0	0.00	0.00	0.00	0	0		
									point13	13	1,411,633.0	1,153,317.1	0.00	0.00	0.00	0	0		
									point14	14	1,411,536.1	1,153,375.6	0.00	0.00					
Apartment Bldg	W	0.00	99.99	0.00				0.00	point15	15	1,410,849.0	1,149,404.0	0.00	50.00	0.00	0	0		
									point16	16	1,410,812.0	1,149,419.0	0.00	50.00	0.00	0	0		
									point17	17	1,410,776.0	1,149,325.0	0.00	50.00	0.00	0	0		
									point18	18	1,410,809.0	1,149,302.0	0.00	50.00	0.00	0	0		
									point19	19	1,410,849.0	1,149,402.5	0.00	50.00					
Low Building	W	0.00	99.99	0.00				0.00	point20	20	1,410,882.9	1,149,390.1	0.00	12.00	0.00	0	0		
									point21	21	1,410,849.9	1,149,403.1	0.00	12.00	0.00	0	0		
									point22	22	1,410,809.8	1,149,302.0	0.00	12.00	0.00	0	0		
									point23	23	1,410,836.4	1,149,285.0	0.00	12.00	0.00	0	0		
									point24	24	1,410,881.4	1,149,389.1	0.00	12.00					

Watts					15 November 2013	
JKK					TNM 2.5	
INPUT: BUILDING ROWS						
PROJECT/CONTRACT:	PIN 4940.T7					
RUN:	2008 Existing Inner Loop Noise					
Building Row			Points			
Name	Average	Building	No.	Coordinates (ground)		
	Height	Percent		X	Y	Z
	ft	%		ft	ft	ft
Monroe Bldgs	30.00	60	3	1,410,839.4	1,149,284.6	0.00
			4	1,411,110.6	1,149,080.5	0.00

2035 No-Build Alternative Model



2035 No Build Inner Loop Noise	Sheet 1 of 1	15 Nov 2013
	Watts	
Plan View	Project/Contract No. PIN 4940.T7	
Run name: 2035NoBuildv01	TNM Version 2.5, Feb 2004	
Scale: 500 feet	Analysis By: JKK	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Watts — **15 November 2013**
JKK — **TNM 2.5**
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2035 No Build Inner Loop Noise
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver A	11	1	65.3	66.2	66	0.9	10	Snd Lvl	66.2	0.0	8	-8.0
Receiver B	12	1	65.7	66.2	66	0.5	10	Snd Lvl	66.2	0.0	8	-8.0
Receiver C	13	1	60.9	62.0	66	1.1	10	----	62.0	0.0	8	-8.0
Receiver D	14	1	65.2	65.8	66	0.6	10	----	65.8	0.0	8	-8.0
Receiver E	15	1	56.2	57.7	66	1.5	10	----	57.7	0.0	8	-8.0
Receiver F	16	1	64.4	65.6	66	1.2	10	----	65.6	0.0	8	-8.0
Receiver G	17	1	64.1	64.7	66	0.6	10	----	64.7	0.0	8	-8.0
Receiver H	18	1	62.8	63.5	66	0.7	10	----	63.5	0.0	8	-8.0
Receiver I	19	1	62.9	63.5	66	0.6	10	----	63.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Watts 15 November 2013
JKK TNM 2.5

INPUT: ROADWAYS

PROJECT/CONTRACT: PIN 4940.T7

RUN: 2035 No Build Inner Loop Noise

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Inner Loop EB	24.0	point1	1	1,409,365.1	1,149,604.8	0.00				Average	
		point2	2	1,409,469.0	1,149,625.9	0.00				Average	
		point3	3	1,409,663.0	1,149,656.2	0.00				Average	
		point4	4	1,410,294.2	1,149,719.9	-20.00				Average	
		point5	5	1,410,498.0	1,149,742.2	-10.00				Average	
		point6	6	1,410,661.0	1,149,797.6	-5.00				Average	
		point7	7	1,410,795.1	1,149,884.0	-3.00				Average	
		point8	8	1,410,909.6	1,149,994.0	0.00				Average	
		point9	9	1,410,958.1	1,150,058.4	0.00				Average	
		point10	10	1,411,056.6	1,150,247.4	0.00				Average	
		point11	11	1,411,135.4	1,150,438.2	0.00				Average	
		point12	12	1,411,182.4	1,150,562.9	-3.00				Average	
		point13	13	1,411,341.5	1,150,960.4	-20.00				Average	
		point14	14	1,411,482.5	1,151,314.4	-20.00				Average	
		point273	273	1,411,506.4	1,151,379.4	-18.00				Average	
		point15	15	1,411,628.8	1,151,712.6	-3.00				Average	
		point16	16	1,411,797.8	1,152,227.5	-5.00				Average	
		point17	17	1,411,824.2	1,152,364.0	-10.00				Average	
		point18	18	1,411,834.1	1,152,485.2	-15.00				Average	
		point19	19	1,411,822.8	1,152,655.0	-20.00				Average	
		point20	20	1,411,780.2	1,152,835.1	-20.00				Average	
		point21	21	1,411,684.9	1,153,037.0	-20.00				Average	
		point22	22	1,411,618.1	1,153,138.5	-20.00				Average	
		point23	23	1,411,546.9	1,153,221.9	-20.00					
Inner Loop WB	24.0	point24	24	1,411,498.4	1,153,176.4	-5.00				Average	

		point25	25	1,411,574.1	1,153,098.4	-10.00				Average	
		point26	26	1,411,639.4	1,153,015.8	-10.00				Average	
		point27	27	1,411,737.1	1,152,827.8	-20.00				Average	
		point28	28	1,411,784.1	1,152,652.4	-20.00				Average	
		point29	29	1,411,796.2	1,152,488.2	-15.00				Average	
		point30	30	1,411,785.6	1,152,369.2	-10.00				Average	
		point31	31	1,411,752.2	1,152,228.6	-5.00				Average	
		point32	32	1,411,597.6	1,151,746.4	-3.00				Average	
		point33	33	1,411,440.8	1,151,334.6	-20.00				Average	
		point34	34	1,411,301.4	1,150,977.6	-20.00				Average	
		point35	35	1,411,136.1	1,150,553.6	-3.00				Average	
		point36	36	1,411,020.2	1,150,256.1	0.00				Average	
		point37	37	1,410,932.4	1,150,075.2	0.00				Average	
		point38	38	1,410,877.8	1,150,001.0	0.00				Average	
		point39	39	1,410,782.4	1,149,909.2	-3.00				Average	
		point40	40	1,410,701.2	1,149,856.2	-4.00				Average	
		point41	41	1,410,602.0	1,149,804.6	-6.00				Average	
		point42	42	1,410,489.0	1,149,772.8	-10.00				Average	
		point43	43	1,410,289.0	1,149,749.0	-20.00				Average	
		point233	233	1,409,659.6	1,149,689.2	0.00				Average	
		point44	44	1,409,478.1	1,149,672.0	0.00				Average	
		point45	45	1,409,359.8	1,149,672.0	0.00					
Howell	24.0	point46	46	1,409,387.1	1,149,606.0	0.00				Average	
		point47	47	1,409,688.0	1,149,625.0	0.00				Average	
		point48	48	1,409,963.1	1,149,651.5	0.00				Average	
		point49	49	1,410,198.0	1,149,672.8	0.00					
Union	24.0	point55	55	1,410,744.4	1,149,327.0	0.00	Signal	0.00	60	Average	
		point56	56	1,410,909.6	1,149,765.4	0.00				Average	
		point57	57	1,410,941.5	1,149,859.4	0.00				Average	
		point58	58	1,410,990.6	1,149,987.5	0.00				Average	
		point59	59	1,411,083.9	1,150,183.9	0.00				Average	
		point298	298	1,411,109.2	1,150,244.5	0.00				Average	
		point60	60	1,411,134.6	1,150,305.1	0.00				Average	
		point61	61	1,411,168.1	1,150,386.0	0.00				Average	
		point62	62	1,411,204.6	1,150,479.2	0.00				Average	
		point63	63	1,411,296.2	1,150,709.8	0.00				Average	
		point64	64	1,411,330.4	1,150,787.1	0.00				Average	
		point65	65	1,411,369.9	1,150,883.4	0.00					
University NB	24.0	point75	75	1,412,034.9	1,152,560.5	0.00	Signal	0.00	40	Average	

		point76	76	1,411,993.0	1,152,583.1	0.00				Average	
		point77	77	1,411,963.8	1,152,623.2	0.00				Average	
		point78	78	1,411,925.9	1,152,747.1	0.00					
University SB	24.0	point86	86	1,411,477.6	1,153,270.6	-7.00				Average	Y
		point87	87	1,411,589.1	1,153,219.1	-5.00				Average	
		point88	88	1,411,658.9	1,153,175.1	-3.00				Average	
		point89	89	1,411,733.9	1,153,103.9	0.00				Average	
		point90	90	1,411,781.6	1,153,036.4	0.00				Average	
		point91	91	1,411,824.9	1,152,951.5	0.00				Average	
		point92	92	1,411,870.4	1,152,827.1	0.00					
Main EB	36.0	point97	97	1,411,544.4	1,152,678.9	0.00				Average	
		point260	260	1,411,605.2	1,152,696.0	0.00					
Main WB	36.0	point101	101	1,412,018.1	1,152,857.0	0.00				Average	
		point102	102	1,411,928.9	1,152,828.2	0.00					
Richmond WB	12.0	point106	106	1,412,175.0	1,152,156.9	0.00				Average	
		point107	107	1,411,936.2	1,152,252.4	0.00					
Richmond EB	12.0	point108	108	1,411,929.5	1,152,241.8	0.00	Onramp	10.00	100	Average	
		point109	109	1,412,172.8	1,152,144.8	0.00					
Charlotte WB	12.0	point110	110	1,412,062.1	1,151,851.6	0.00				Average	
		point111	111	1,411,811.1	1,151,954.8	0.00					
Charlotte EB	12.0	point112	112	1,411,805.1	1,151,941.9	0.00	Onramp	10.00	100	Average	
		point113	113	1,412,059.9	1,151,840.2	0.00					
East WB	24.0	point114	114	1,411,654.1	1,151,328.5	0.00				Average	
		point115	115	1,411,586.6	1,151,352.0	0.00					
Broad WB	36.0	point124	124	1,411,367.4	1,150,965.6	0.00	Signal	0.00	80	Average	Y
		point125	125	1,411,283.2	1,151,005.9	0.00					
Broad EB	36.0	point129	129	1,410,906.5	1,151,068.0	0.00				Average	
		point130	130	1,411,032.2	1,151,057.4	0.00				Average	
		point131	131	1,411,080.9	1,151,046.8	0.00				Average	
		point132	132	1,411,129.4	1,151,028.6	0.00				Average	
		point133	133	1,411,218.0	1,150,988.4	0.00					
Savannah NB	12.0	point135	135	1,411,070.2	1,150,573.0	0.00	Onramp	10.00	100	Average	
		point136	136	1,410,942.9	1,150,623.8	0.00				Average	
		point137	137	1,411,096.8	1,151,021.0	0.00					
Savannah SB	12.0	point138	138	1,411,081.6	1,151,021.0	0.00	Onramp	10.00	100	Average	
		point139	139	1,410,928.5	1,150,613.1	0.00				Average	
		point140	140	1,411,064.1	1,150,560.9	0.00					
Broadway NB	12.0	point141	141	1,409,987.6	1,149,421.6	0.00	Onramp	10.00	100	Average	
		point142	142	1,409,974.8	1,149,639.1	0.00					

Broadway SB	12.0	point143	143	1,409,958.0	1,149,637.6	0.00	Onramp	10.00	100	Average	
		point144	144	1,409,970.9	1,149,420.1	0.00					
Clinton Ramp	24.0	point145	145	1,409,608.5	1,149,271.5	20.00				Average	
		point146	146	1,409,586.6	1,149,435.2	20.00					
Clinton NB 1	24.0	point147	147	1,409,575.2	1,149,285.9	20.00				Average	
		point148	148	1,409,562.4	1,149,433.0	20.00					
Clinton NB 2	48.0	point149	149	1,409,575.2	1,149,436.0	20.00				Average	Y
		point150	150	1,409,518.0	1,149,815.6	20.00				Average	
		point151	151	1,409,457.0	1,150,098.6	20.00					
Chestnut Ramp	24.0	point152	152	1,409,975.0	1,150,015.6	0.00				Average	
		point153	153	1,410,001.6	1,149,888.2	0.00				Average	
		point154	154	1,410,006.1	1,149,831.4	0.00				Average	
		point155	155	1,409,992.5	1,149,792.0	0.00				Average	
		point156	156	1,409,938.6	1,149,750.2	0.00					
IL/Union Ramp	12.0	point157	157	1,410,965.6	1,150,054.4	0.00				Average	
		point158	158	1,411,022.5	1,150,120.2	0.00				Average	
		point159	159	1,411,065.6	1,150,186.2	0.00				Average	
		point160	160	1,411,096.8	1,150,259.0	0.00				Average	
		point161	161	1,411,127.1	1,150,347.0	0.00				Average	
		point162	162	1,411,152.1	1,150,433.4	0.00				Average	
		point163	163	1,411,197.6	1,150,554.6	0.00					
IL/Pitkin Ramp	12.0	point164	164	1,411,117.2	1,150,552.4	0.00				Average	
		point165	165	1,411,036.1	1,150,394.0	0.00				Average	
		point166	166	1,410,993.6	1,150,287.9	0.00				Average	
		point167	167	1,410,950.5	1,150,177.9	0.00				Average	
		point168	168	1,410,928.5	1,150,084.6	0.00					
Pitkin	24.0	point169	169	1,411,535.2	1,152,739.9	0.00	Signal	0.00	50	Average	
		point257	257	1,411,575.9	1,152,717.5	0.00				Average	
		point170	170	1,411,601.2	1,152,703.5	0.00				Average	
		point258	258	1,411,605.2	1,152,696.0	0.00				Average	
		point171	171	1,411,634.5	1,152,639.8	0.00				Average	
		point172	172	1,411,659.6	1,152,545.8	0.00				Average	
		point173	173	1,411,661.9	1,152,451.0	0.00				Average	
		point174	174	1,411,645.9	1,152,368.4	0.00				Average	
		point175	175	1,411,544.4	1,151,898.0	0.00				Average	
		point176	176	1,411,537.5	1,151,806.1	0.00				Average	
		point177	177	1,411,418.4	1,151,433.5	0.00					
IL Ramp to Pitkin	12.0	point193	193	1,411,762.9	1,152,658.4	-20.00				Average	
		point194	194	1,411,756.0	1,152,562.1	-15.00				Average	

		point195	195	1,411,744.6	1,152,504.5	-13.00				Average	
		point196	196	1,411,573.1	1,151,916.9	0.00				Average	
		point197	197	1,411,545.9	1,151,805.5	0.00					
Monroe-Chestnut NB	12.0	point198	198	1,411,136.8	1,149,032.6	0.00				Average	
		point199	199	1,410,995.0	1,149,135.8	0.00				Average	
		point200	200	1,410,752.4	1,149,316.1	0.00					
Chestnut-Monroe SB	24.0	point208	208	1,409,994.6	1,150,018.2	0.00				Average	
		point209	209	1,410,028.0	1,149,911.4	0.00				Average	
		point210	210	1,410,088.6	1,149,797.6	0.00					
E University Ave EB	24.0	point229	229	1,411,100.0	1,152,904.0	0.00	Signal	0.00	50	Average	
		point230	230	1,411,527.0	1,152,734.0	0.00					
E University Ave WB	24.0	point231	231	1,411,535.0	1,152,755.0	0.00	Signal	0.00	50	Average	
		point232	232	1,411,109.0	1,152,924.0	0.00					
IL Ramp to Union-2-2	12.0	point272	272	1,411,523.0	1,151,369.1	-20.00				Average	
		point218	218	1,411,575.2	1,151,507.8	-10.00				Average	
		point219	219	1,411,647.2	1,151,698.8	-3.00				Average	
		point220	220	1,411,689.9	1,151,802.8	0.00				Average	
		point221	221	1,411,739.9	1,151,916.5	0.00				Average	
		point222	222	1,411,800.6	1,152,030.2	0.00				Average	
		point223	223	1,411,829.4	1,152,087.0	0.00				Average	
		point224	224	1,411,879.4	1,152,199.2	0.00					
Howell-2	24.0	point274	274	1,410,198.0	1,149,672.8	0.00	Signal	0.00	60	Average	
		point236	236	1,410,232.5	1,149,672.2	0.00				Average	
		point234	234	1,410,283.4	1,149,672.2	0.00				Average	
		point50	50	1,410,307.2	1,149,672.0	0.00				Average	
		point51	51	1,410,585.4	1,149,727.4	0.00				Average	
		point52	52	1,410,805.0	1,149,840.1	0.00				Average	
		point53	53	1,410,854.2	1,149,873.5	0.00				Average	
		point54	54	1,410,930.1	1,149,861.4	0.00					
Union-2	24.0	point275	275	1,411,369.9	1,150,883.4	0.00	Signal	0.00	40	Average	
		point66	66	1,411,473.6	1,151,161.6	0.00				Average	
		point67	67	1,411,536.6	1,151,315.6	0.00					
Union-2-2	24.0	point276	276	1,411,536.6	1,151,315.6	0.00	Signal	0.00	50	Average	
		point256	256	1,411,546.0	1,151,339.1	0.00				Average	
		point255	255	1,411,553.8	1,151,360.5	0.00				Average	
		point68	68	1,411,630.6	1,151,549.9	0.00				Average	
		point69	69	1,411,794.5	1,151,951.8	0.00				Average	
		point70	70	1,411,899.1	1,152,194.8	0.00				Average	
		point71	71	1,411,921.1	1,152,255.4	0.00				Average	

		point72	72	1,411,982.5	1,152,422.1	0.00				Average	
		point73	73	1,412,020.4	1,152,514.5	0.00					
Union-2-2-2	24.0	point277	277	1,412,020.4	1,152,514.5	0.00	Signal	0.00	60	Average	
		point74	74	1,412,104.5	1,152,725.1	0.00					
University NB-2	24.0	point278	278	1,411,925.9	1,152,747.1	0.00	Signal	0.00	50	Average	
		point265	265	1,411,916.5	1,152,791.4	0.00				Average	
		point266	266	1,411,910.0	1,152,822.2	0.00				Average	
		point79	79	1,411,902.1	1,152,859.8	0.00				Average	
		point80	80	1,411,858.1	1,152,971.9	0.00				Average	
		point81	81	1,411,836.2	1,153,015.9	0.00				Average	
		point82	82	1,411,779.4	1,153,103.9	0.00				Average	
		point83	83	1,411,718.8	1,153,176.6	-3.00				Average	
		point84	84	1,411,642.9	1,153,250.1	-10.00				Average	
		point85	85	1,411,508.0	1,153,343.4	-20.00					
University SB-2	24.0	point279	279	1,411,870.4	1,152,827.1	0.00	Signal	0.00	50	Average	
		point268	268	1,411,875.6	1,152,811.1	0.00				Average	
		point267	267	1,411,885.1	1,152,781.4	0.00				Average	
		point93	93	1,411,900.6	1,152,733.5	0.00				Average	
		point94	94	1,411,941.2	1,152,604.8	0.00				Average	
		point95	95	1,411,994.1	1,152,547.6	0.00				Average	
		point96	96	1,412,025.8	1,152,535.4	0.00					
Main EB-2	36.0	point280	280	1,411,605.2	1,152,696.0	0.00	Signal	0.00	50	Average	
		point98	98	1,411,722.0	1,152,729.1	0.00				Average	Y
		point99	99	1,411,855.6	1,152,772.1	0.00					
Main EB-2-2	36.0	point281	281	1,411,855.6	1,152,772.1	0.00	Signal	0.00	50	Average	
		point262	262	1,411,885.1	1,152,781.4	0.00				Average	
		point261	261	1,411,916.5	1,152,791.4	0.00				Average	
		point226	226	1,411,958.5	1,152,804.8	0.00				Average	
		point100	100	1,412,090.1	1,152,847.1	0.00					
Main WB-2	36.0	point282	282	1,411,928.9	1,152,828.2	0.00	Signal	0.00	50	Average	
		point263	263	1,411,910.0	1,152,822.2	0.00				Average	
		point264	264	1,411,875.6	1,152,811.1	0.00				Average	
		point103	103	1,411,841.0	1,152,800.2	0.00				Average	Y
		point225	225	1,411,710.5	1,152,759.0	0.00				Average	
		point104	104	1,411,575.9	1,152,717.5	0.00				Average	
		point259	259	1,411,570.9	1,152,716.0	0.00					
Main WB-2-2	36.0	point283	283	1,411,570.9	1,152,716.0	0.00	Signal	0.00	50	Average	
		point105	105	1,411,525.4	1,152,703.1	0.00					
East WB-2	24.0	point284	284	1,411,586.6	1,151,352.0	0.00	Signal	0.00	50	Average	

		point253	253	1,411,553.8	1,151,360.5	0.00				Average	
		point116	116	1,411,522.5	1,151,368.5	0.00				Average	
		point249	249	1,411,513.1	1,151,371.6	0.00				Average	Y
		point117	117	1,411,433.5	1,151,398.2	0.00					
East WB-2-2	24.0	point285	285	1,411,433.5	1,151,398.2	0.00	Signal	0.00	50	Average	
		point245	245	1,411,408.6	1,151,408.2	0.00				Average	
		point118	118	1,411,374.4	1,151,421.8	0.00					
Broad WB-2	36.0	point287	287	1,411,283.2	1,151,005.9	0.00	Signal	0.00	50	Average	
		point244	244	1,411,260.6	1,151,014.6	0.00				Average	
		point126	126	1,411,135.4	1,151,061.9	0.00				Average	
		point127	127	1,411,037.6	1,151,083.1	0.00				Average	
		point128	128	1,410,908.0	1,151,096.0	0.00					
Broad EB-2	36.0	point288	288	1,411,218.0	1,150,988.4	0.00	Signal	0.00	50	Average	
		point243	243	1,411,246.6	1,150,976.9	0.00				Average	
		point227	227	1,411,270.2	1,150,967.5	0.00				Average	Y
		point134	134	1,411,356.8	1,150,933.8	0.00					
Pitkin-2	24.0	point289	289	1,411,418.4	1,151,433.5	0.00	Signal	0.00	50	Average	
		point248	248	1,411,408.6	1,151,408.2	0.00				Average	
		point247	247	1,411,399.9	1,151,383.8	0.00				Average	
		point178	178	1,411,322.9	1,151,172.0	0.00				Average	
		point179	179	1,411,266.0	1,151,027.9	0.00					
Pitkin-2-2	24.0	point290	290	1,411,266.0	1,151,027.9	0.00	Signal	0.00	50	Average	
		point242	242	1,411,260.6	1,151,014.6	0.00				Average	
		point241	241	1,411,246.6	1,150,976.9	0.00				Average	
		point180	180	1,411,089.4	1,150,580.9	0.00				Average	
		point181	181	1,410,984.4	1,150,303.0	0.00				Average	
		point182	182	1,410,940.4	1,150,199.9	0.00				Average	
		point183	183	1,410,916.9	1,150,137.8	0.00				Average	
		point184	184	1,410,854.0	1,150,033.9	0.00				Average	
		point185	185	1,410,729.1	1,149,917.4	0.00				Average	
		point186	186	1,410,616.2	1,149,853.0	0.00				Average	
		point187	187	1,410,494.1	1,149,812.9	0.00				Average	
		point188	188	1,410,306.1	1,149,788.5	0.00				Average	
		point189	189	1,410,161.4	1,149,774.9	0.00					
Pitkin-2-2-2	24.0	point291	291	1,410,161.4	1,149,774.9	0.00	Signal	0.00	50	Average	
		point240	240	1,410,151.0	1,149,773.9	0.00				Average	
		point239	239	1,410,113.0	1,149,769.2	0.00				Average	
		point190	190	1,409,937.8	1,149,748.4	0.00				Average	
		point191	191	1,409,717.5	1,149,727.1	0.00				Average	

		point192	192	1,409,476.6	1,149,693.9	0.00					
Monroe-Chestnut NB-2	12.0	point292	292	1,410,752.4	1,149,316.1	0.00	Signal	0.00	50	Average	
		point201	201	1,410,564.6	1,149,457.2	0.00				Average	
		point202	202	1,410,425.9	1,149,562.6	0.00				Average	
		point302	302	1,410,312.8	1,149,649.9	0.00					
Monroe-Chestnut NB-2-2-2	24.0	point294	294	1,410,167.5	1,149,761.1	0.00	Signal	0.00	50	Average	
		point237	237	1,410,151.0	1,149,773.9	0.00				Average	
		point205	205	1,410,104.5	1,149,827.1	0.00				Average	
		point206	206	1,410,057.5	1,149,905.2	0.00				Average	
		point207	207	1,410,022.6	1,150,011.4	0.00					
Chestnut-Monroe SB-2	24.0	point295	295	1,410,088.6	1,149,797.6	0.00	Signal	0.00	50	Average	
		point238	238	1,410,113.0	1,149,769.2	0.00				Average	
		point211	211	1,410,123.2	1,149,755.8	0.00				Average	Y
		point212	212	1,410,206.2	1,149,691.5	0.00					
Chestnut-Monroe SB-2-2	12.0	point296	296	1,410,206.2	1,149,691.5	0.00	Signal	0.00	50	Average	
		point235	235	1,410,232.5	1,149,672.2	0.00				Average	
		point213	213	1,410,414.9	1,149,541.8	0.00				Average	
		point214	214	1,410,725.8	1,149,308.2	0.00					
Chestnut-Monroe SB-2-2-2	12.0	point297	297	1,410,725.8	1,149,308.2	0.00	Signal	0.00	50	Average	
		point215	215	1,410,974.0	1,149,122.5	0.00				Average	
		point216	216	1,411,119.5	1,149,011.8	0.00					
Haags EB/WB	12.0	point299	299	1,411,872.0	1,152,106.0	0.00				Average	
		point300	300	1,412,129.0	1,152,004.0	0.00					
East EB	24.0	point119	119	1,411,366.0	1,151,388.4	0.00	Signal	0.00	50	Average	
		point246	246	1,411,399.9	1,151,383.8	0.00				Average	
		point120	120	1,411,425.1	1,151,380.8	0.00				Average	Y
		point250	250	1,411,509.6	1,151,352.2	0.00				Average	
		point121	121	1,411,515.8	1,151,350.2	0.00					
East EB-2	24.0	point301	301	1,411,515.8	1,151,350.2	0.00	Signal	0.00	50	Average	
		point286	286	1,411,546.0	1,151,339.1	0.00				Average	
		point122	122	1,411,591.9	1,151,322.4	0.00				Average	
		point123	123	1,411,650.2	1,151,306.5	0.00					
Monroe-Chestnut NB-2-2	24.0	point303	303	1,410,312.8	1,149,649.9	0.00	Signal	0.00	50	Average	
		point293	293	1,410,283.4	1,149,672.2	0.00				Average	
		point228	228	1,410,251.6	1,149,696.4	0.00				Average	Y
		point204	204	1,410,167.5	1,149,761.1	0.00					

Watts 15 November 2013
JKK TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2035 No Build Inner Loop Noise

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Inner Loop EB	point1	1	256	50	0	0	0	0	1	50	3	50
	point2	2	256	50	0	0	0	0	1	50	3	50
	point3	3	256	50	0	0	0	0	1	50	3	50
	point4	4	256	50	0	0	0	0	1	50	3	50
	point5	5	256	50	0	0	0	0	1	50	3	50
	point6	6	256	50	0	0	0	0	1	50	3	50
	point7	7	256	50	0	0	0	0	1	50	3	50
	point8	8	256	50	0	0	0	0	1	50	3	50
	point9	9	225	50	0	0	0	0	1	50	3	50
	point10	10	225	50	0	0	0	0	1	50	3	50
	point11	11	225	50	0	0	0	0	1	50	3	50
	point12	12	478	50	0	0	0	0	3	50	5	50
	point13	13	478	50	0	0	0	0	3	50	5	50
	point14	14	478	50	0	0	0	0	3	50	5	50
	point273	273	249	50	0	0	0	0	1	50	3	50
	point15	15	249	50	0	0	0	0	1	50	3	50
	point16	16	249	50	0	0	0	0	1	50	3	50
	point17	17	249	50	0	0	0	0	1	50	3	50
	point18	18	249	50	0	0	0	0	1	50	3	50
	point19	19	249	50	0	0	0	0	1	50	3	50
	point20	20	249	50	0	0	0	0	1	50	3	50
	point21	21	249	50	0	0	0	0	1	50	3	50
	point22	22	249	50	0	0	0	0	1	50	3	50

	point23	23										
Inner Loop WB	point24	24	413	50	11	50	0	0	0	0	0	0
	point25	25	413	50	11	50	0	0	0	0	0	0
	point26	26	413	50	11	50	0	0	0	0	0	0
	point27	27	413	50	11	50	0	0	0	0	0	0
	point28	28	247	50	6	50	0	0	0	0	0	0
	point29	29	247	50	6	50	0	0	0	0	0	0
	point30	30	247	50	6	50	0	0	0	0	0	0
	point31	31	247	50	6	50	0	0	0	0	0	0
	point32	32	247	50	6	50	0	0	0	0	0	0
	point33	33	247	50	6	50	0	0	0	0	0	0
	point34	34	247	50	6	50	0	0	0	0	0	0
	point35	35	197	50	5	50	0	0	0	0	0	0
	point36	36	197	50	5	50	0	0	0	0	0	0
	point37	37	525	50	13	50	0	0	0	0	0	0
	point38	38	525	50	13	50	0	0	0	0	0	0
	point39	39	525	50	13	50	0	0	0	0	0	0
	point40	40	525	50	13	50	0	0	0	0	0	0
	point41	41	525	50	13	50	0	0	0	0	0	0
	point42	42	525	50	13	50	0	0	0	0	0	0
	point43	43	525	50	13	50	0	0	0	0	0	0
	point233	233	525	50	13	50	0	0	0	0	0	0
	point44	44	2095	50	54	50	0	0	0	0	0	0
	point45	45										
Howell	point46	46	175	35	4	35	0	0	7	35	0	0
	point47	47	175	35	4	35	0	0	7	35	0	0
	point48	48	176	30	4	30	0	0	7	30	0	0
	point49	49										
Union	point55	55	394	25	3	25	9	25	0	0	6	25
	point56	56	394	30	3	30	9	30	0	0	6	30
	point57	57	482	30	10	30	0	0	0	0	0	0
	point58	58	482	35	10	35	0	0	0	0	0	0
	point59	59	482	35	10	35	0	0	0	0	0	0
	point298	298	250	35	5	35	0	0	0	0	0	0
	point60	60	250	35	5	35	0	0	0	0	0	0
	point61	61	250	35	5	35	0	0	0	0	0	0

	point62	62	250	35	5	35	0	0	0	0	0	0
	point63	63	250	30	5	30	0	0	0	0	0	0
	point64	64	250	25	5	25	0	0	0	0	0	0
	point65	65										
University NB	point75	75	719	30	9	30	0	0	0	0	5	30
	point76	76	719	30	9	30	0	0	0	0	5	30
	point77	77	719	25	9	25	0	0	0	0	5	25
	point78	78										
University SB	point86	86	768	45	17	45	6	45	22	45	0	0
	point87	87	768	40	17	40	6	40	22	40	0	0
	point88	88	768	35	17	35	6	35	22	35	0	0
	point89	89	768	25	17	25	6	25	22	25	0	0
	point90	90	768	15	17	15	6	15	22	15	0	0
	point91	91	768	10	17	10	6	10	22	10	0	0
	point92	92										
Main EB	point97	97	515	25	12	25	0	0	14	25	6	25
	point260	260										
Main WB	point101	101	1056	25	0	0	8	25	15	25	0	0
	point102	102										
Richmond WB	point106	106	8	15	0	0	2	15	0	0	0	0
	point107	107										
Richmond EB	point108	108	10	15	0	0	0	0	0	0	0	0
	point109	109										
Charlotte WB	point110	110	65	10	0	0	0	0	0	0	0	0
	point111	111										
Charlotte EB	point112	112	7	15	3	15	0	0	0	0	0	0
	point113	113										
East WB	point114	114	446	20	5	20	0	0	0	0	5	20
	point115	115										
Broad WB	point124	124	61	15	4	15	0	0	17	15	0	0
	point125	125										
Broad EB	point129	129	417	30	0	0	0	0	6	30	0	0
	point130	130	417	30	0	0	0	0	6	30	0	0
	point131	131	417	25	0	0	0	0	6	25	0	0
	point132	132	417	20	0	0	0	0	6	20	0	0
	point133	133										

Savannah NB	point135	135	12	25	0	0	0	0	0	0	0	0
	point136	136	10	25	0	0	0	0	0	0	0	0
	point137	137										
Savannah SB	point138	138	10	25	0	0	0	0	0	0	0	1
	point139	139	11	25	0	0	0	0	0	0	0	0
	point140	140										
Broadway NB	point141	141	10	15	0	0	0	0	0	0	0	0
	point142	142										
Broadway SB	point143	143	10	15	0	0	0	0	0	0	0	0
	point144	144										
Clinton Ramp	point145	145	618	45	8	45	4	45	11	45	3	45
	point146	146										
Clinton NB 1	point147	147	1176	45	16	45	7	45	21	45	5	45
	point148	148										
Clinton NB 2	point149	149	1794	45	25	45	11	45	32	45	7	45
	point150	150	1794	35	25	35	11	35	32	35	7	35
	point151	151										
Chestnut Ramp	point152	152	1214	30	11	30	0	0	27	30	0	0
	point153	153	1214	30	11	30	0	0	27	30	0	0
	point154	154	1214	25	11	25	0	0	27	25	0	0
	point155	155	1214	30	11	30	0	0	27	30	0	0
	point156	156										
IL/Union Ramp	point157	157	30	35	1	35	0	0	0	0	0	0
	point158	158	30	35	1	35	0	0	0	0	0	0
	point159	159	30	35	1	35	0	0	0	0	0	0
	point160	160	252	35	5	35	0	0	0	0	0	0
	point161	161	252	35	5	35	0	0	0	0	0	0
	point162	162	252	35	5	35	0	0	0	0	0	0
	point163	163										
IL/Pitkin Ramp	point164	164	51	35	0	0	0	0	0	0	0	0
	point165	165	51	35	0	0	0	0	0	0	0	0
	point166	166	320	35	0	0	0	0	0	0	0	0
	point167	167	320	35	0	0	0	0	0	0	0	0
	point168	168										
Pitkin	point169	169	158	35	0	0	0	0	0	0	0	0
	point257	257	158	35	0	0	0	0	0	0	0	0

	point170	170	158	35	0	0	0	0	0	0	0	0
	point258	258	158	35	0	0	0	0	0	0	0	0
	point171	171	158	40	0	0	0	0	0	0	0	0
	point172	172	158	40	0	0	0	0	0	0	0	0
	point173	173	158	40	0	0	0	0	0	0	0	0
	point174	174	142	40	0	0	0	0	0	0	0	0
	point175	175	142	35	0	0	0	0	0	0	0	0
	point176	176	334	35	5	35	0	0	43	35	0	0
	point177	177										
IL Ramp to Pitkin	point193	193	168	45	2	45	0	0	0	0	1	45
	point194	194	168	45	2	45	0	0	0	0	1	45
	point195	195	168	40	2	40	0	0	0	0	1	40
	point196	196	168	35	2	35	0	0	0	0	1	35
	point197	197										
Monroe-Chestnut NB	point198	198	687	35	0	0	0	0	0	0	8	35
	point199	199	687	30	0	0	0	0	0	0	8	30
	point200	200										
Chestnut-Monroe SB	point208	208	591	35	2	35	2	35	4	35	0	0
	point209	209	591	25	2	25	2	25	4	25	0	0
	point210	210										
E University Ave EB	point229	229	258	30	0	0	0	0	0	0	0	0
	point230	230										
E University Ave WB	point231	231	217	30	0	0	0	0	0	0	0	0
	point232	232										
IL Ramp to Union-2-2	point272	272	229	35	3	35	0	0	0	0	1	35
	point218	218	229	35	3	35	0	0	0	0	1	35
	point219	219	229	35	3	35	0	0	0	0	1	35
	point220	220	229	35	3	35	0	0	0	0	1	35
	point221	221	229	35	3	35	0	0	0	0	1	35
	point222	222	229	35	3	35	0	0	0	0	1	35
	point223	223	229	35	3	35	0	0	0	0	1	35
	point224	224										
Howell-2	point274	274	176	20	4	20	0	0	7	20	0	0
	point236	236	82	25	2	25	0	0	3	25	0	0
	point234	234	82	25	2	25	0	0	3	25	0	0
	point50	50	82	35	2	35	0	0	3	35	0	0

	point51	51	74	30	2	30	0	0	3	30	0	0
	point52	52	74	15	2	15	0	0	3	15	0	0
	point53	53	74	10	2	10	0	0	3	10	0	0
	point54	54										
Union-2	point275	275	460	35	9	35	0	0	6	35	0	0
	point66	66	460	25	9	25	0	0	6	25	0	0
	point67	67										
Union-2-2	point276	276	460	35	9	35	0	0	6	35	0	0
	point256	256	288	35	4	35	0	0	0	0	2	35
	point255	255	288	35	4	35	0	0	0	0	2	35
	point68	68	288	35	4	35	0	0	0	0	2	35
	point69	69	351	30	4	30	0	0	0	0	2	30
	point70	70	622	30	8	30	0	0	0	0	4	30
	point71	71	622	30	8	30	0	0	0	0	4	30
	point72	72	622	25	8	25	0	0	0	0	4	25
	point73	73										
Union-2-2-2	point277	277	333	30	4	30	0	0	0	0	2	30
	point74	74										
University NB-2	point278	278	719	30	9	30	0	0	0	0	5	30
	point265	265	915	30	47	30	8	30	4	30	4	30
	point266	266	915	30	47	30	8	30	4	30	4	30
	point79	79	915	40	47	40	8	40	4	40	4	40
	point80	80	915	40	47	40	8	40	4	40	4	40
	point81	81	915	40	47	40	8	40	4	40	4	40
	point82	82	915	40	47	40	8	40	4	40	4	40
	point83	83	915	45	47	45	8	45	4	45	4	45
	point84	84	915	45	47	45	8	45	4	45	4	45
	point85	85										
University SB-2	point279	279	768	30	17	30	6	30	22	30	0	0
	point268	268	590	30	7	30	0	0	0	0	4	30
	point267	267	590	30	7	30	0	0	0	0	4	30
	point93	93	590	30	7	30	0	0	0	0	4	30
	point94	94	590	25	7	25	0	0	0	0	4	25
	point95	95	590	25	7	25	0	0	0	0	4	25
	point96	96										
Main EB-2	point280	280	812	25	18	25	0	0	23	25	9	25

	point98	98	812	25	18	25	0	0	23	25	9	25
	point99	99										
Main EB-2-2	point281	281	812	30	18	30	0	0	23	30	9	30
	point262	262	994	30	22	30	0	0	28	30	11	30
	point261	261	994	30	22	30	0	0	28	30	11	30
	point226	226	994	30	22	30	0	0	28	30	11	30
	point100	100										
Main WB-2	point282	282	1056	25	0	0	8	25	15	25	0	0
	point263	263	816	25	0	0	6	25	12	25	0	0
	point264	264	816	25	0	0	6	25	12	25	0	0
	point103	103	816	25	0	0	6	25	12	25	0	0
	point225	225	816	25	0	0	6	25	12	25	0	0
	point104	104	432	30	0	0	3	30	6	30	0	0
	point259	259										
Main WB-2-2	point283	283	505	30	0	0	4	30	7	30	0	0
	point105	105										
East WB-2	point284	284	446	20	5	20	0	0	0	0	5	20
	point253	253	435	20	5	20	0	0	0	0	5	20
	point116	116	435	20	5	20	0	0	0	0	5	20
	point249	249	435	20	5	20	0	0	0	0	5	20
	point117	117										
East WB-2-2	point285	285	435	20	5	20	0	0	0	0	5	20
	point245	245	380	20	4	20	0	0	0	0	4	20
	point118	118										
Broad WB-2	point287	287	61	30	4	30	0	0	17	30	0	0
	point244	244	68	30	5	30	0	0	19	30	0	0
	point126	126	68	30	5	30	0	0	19	30	0	0
	point127	127	68	30	5	30	0	0	19	30	0	0
	point128	128										
Broad EB-2	point288	288	417	15	0	0	0	0	6	15	0	0
	point243	243	279	15	0	0	0	0	4	15	0	0
	point227	227	279	10	0	0	0	0	4	10	0	0
	point134	134										
Pitkin-2	point289	289	334	25	5	25	0	0	43	25	0	0
	point248	248	259	30	4	30	0	0	33	30	0	0
	point247	247	259	35	4	35	0	0	33	35	0	0

	point178	178	259	25	4	25	0	0	33	25	0	0
	point179	179										
Pitkin-2-2	point290	290	259	35	4	35	0	0	33	35	0	0
	point242	242	417	35	0	0	0	0	0	0	9	35
	point241	241	417	40	0	0	0	0	0	0	9	40
	point180	180	449	35	0	0	0	0	0	0	0	0
	point181	181	180	35	0	0	0	0	0	0	0	0
	point182	182	180	35	0	0	0	0	0	0	0	0
	point183	183	180	35	0	0	0	0	0	0	0	0
	point184	184	258	35	6	35	0	0	9	35	0	0
	point185	185	258	35	6	35	0	0	9	35	0	0
	point186	186	258	35	6	35	0	0	9	35	0	0
	point187	187	258	35	6	35	0	0	9	35	0	0
	point188	188	258	25	6	25	0	0	9	25	0	0
	point189	189										
Pitkin-2-2-2	point291	291	258	35	6	35	0	0	9	9	0	0
	point240	240	341	35	8	35	0	0	11	35	0	0
	point239	239	341	35	8	35	0	0	11	35	0	0
	point190	190	1526	35	34	35	0	0	51	35	0	0
	point191	191	1526	35	34	35	0	0	51	35	0	0
	point192	192										
Monroe-Chestnut NB-2	point292	292	558	30	20	30	4	30	16	30	0	0
	point201	201	558	35	20	35	4	35	16	35	0	0
	point202	202	559	25	20	25	4	25	16	25	0	0
	point302	302										
Monroe-Chestnut NB-2-2-2	point294	294	635	35	23	35	5	35	18	35	0	0
	point237	237	413	35	15	35	3	35	12	35	0	0
	point205	205	413	35	15	35	3	35	12	35	0	0
	point206	206	413	35	15	35	3	35	12	35	0	0
	point207	207										
Chestnut-Monroe SB-2	point295	295	591	25	2	25	2	25	4	25	0	0
	point238	238	725	25	2	25	2	25	5	25	0	0
	point211	211	725	25	2	25	2	25	5	25	0	0
	point212	212										
Chestnut-Monroe SB-2-2	point296	296	725	30	2	30	2	30	5	30	0	0
	point235	235	748	35	2	35	2	35	5	35	0	0

	point213	213	737	30	2	30	2	30	5	30	0	0
	point214	214										
Chestnut-Monroe SB-2-2-2	point297	297	736	30	5	30	5	30	5	30	9	30
	point215	215	736	35	5	35	5	35	5	35	9	35
	point216	216										
Haags EB/WB	point299	299	36	10	0	0	0	0	0	0	0	0
	point300	300										
East EB	point119	119	552	20	0	0	0	0	3	20	6	20
	point246	246	717	20	0	0	0	0	4	20	8	20
	point120	120	717	20	0	0	0	0	4	20	8	20
	point250	250	717	20	0	0	0	0	4	20	8	20
	point121	121										
East EB-2	point301	301	717	20	0	0	0	0	4	20	8	20
	point286	286	911	20	0	0	0	0	5	20	10	20
	point122	122	911	20	0	0	0	0	5	20	10	20
	point123	123										
Monroe-Chestnut NB-2-2	point303	303	559	25	20	25	4	25	16	25	0	0
	point293	293	635	25	23	25	5	25	18	25	0	0
	point228	228	635	25	23	25	5	25	18	25	0	0
	point204	204										

Watts		15 November 2013
JKK		TNM 2.5
INPUT: RECEIVERS		
PROJECT/CONTRACT:	PIN 4940.T7	
RUN:	2035 No Build Inner Loop Noise	

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver A	11	1	1,409,838.0	1,149,594.0	1.00	4.92	65.30	66	10.0	8.0	Y
Receiver B	12	1	1,410,833.0	1,149,476.0	0.00	4.92	65.70	66	10.0	8.0	Y
Receiver C	13	1	1,410,370.0	1,149,874.0	1.00	4.92	60.90	66	10.0	8.0	Y
Receiver D	14	1	1,411,136.0	1,150,240.0	1.00	4.92	65.20	66	10.0	8.0	Y
Receiver E	15	1	1,410,966.0	1,150,771.0	0.00	4.92	56.20	66	10.0	8.0	Y
Receiver F	16	1	1,411,497.0	1,151,129.0	1.00	4.92	64.40	66	10.0	8.0	Y
Receiver G	17	1	1,411,904.0	1,152,155.0	0.00	4.92	64.10	66	10.0	8.0	Y
Receiver H	18	1	1,411,615.0	1,152,922.0	0.00	4.92	62.80	66	10.0	8.0	Y
Receiver I	19	1	1,411,816.0	1,153,208.0	0.00	4.92	62.90	66	10.0	8.0	Y

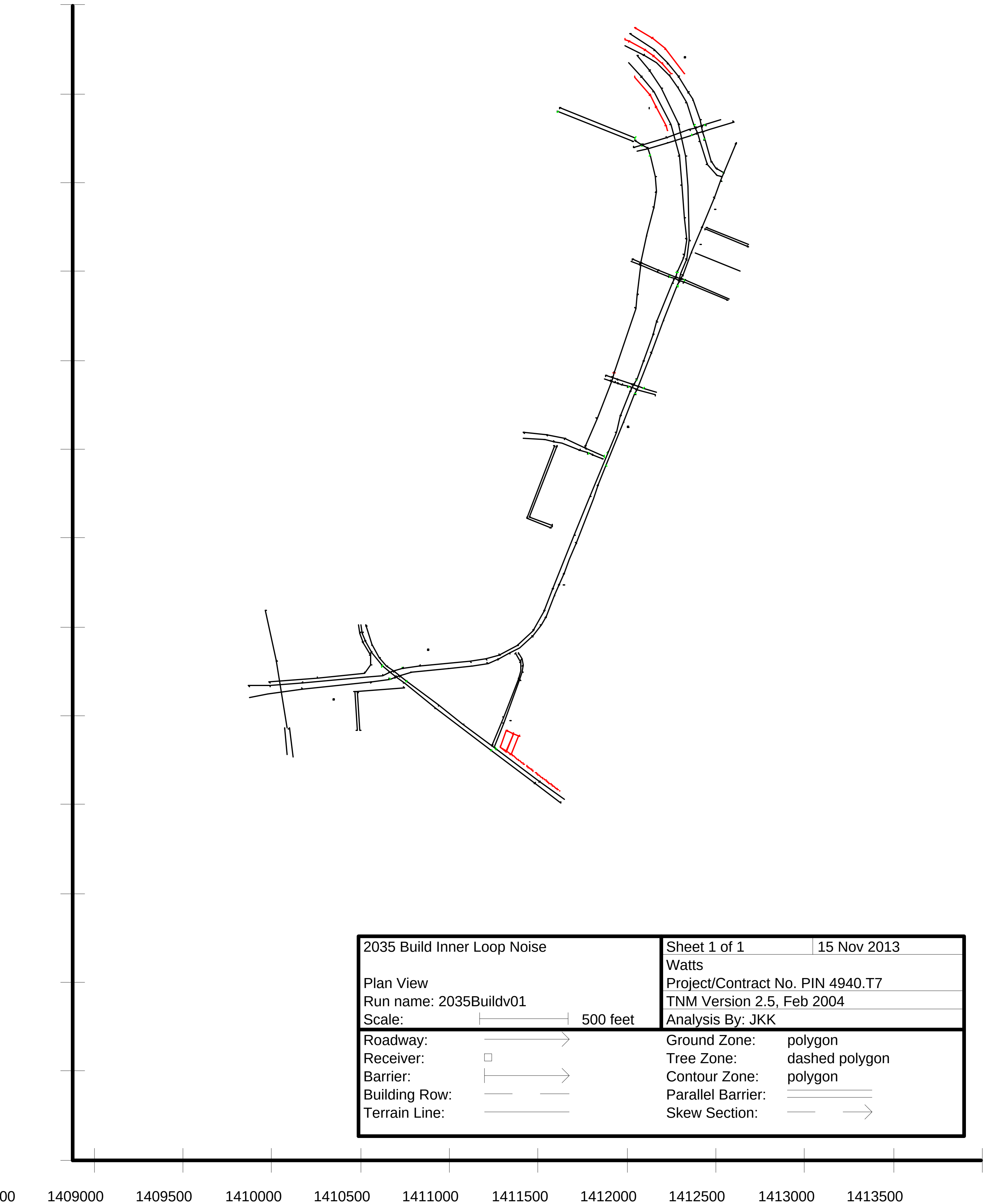
Watts **15 November 2013**
JKK **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **PIN 4940.T7**
RUN: **2035 No Build Inner Loop Noise**

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per Unit Area	$ per Unit Vol.	Top Width	Run:Rise	$ per Unit Length			X	Y	Z	at Point	Seg Ht Incre-ment	Perturbs #Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier2	W	0.00	99.99	0.00				0.00	point1	1	1,411,532.1	1,153,099.0	0.00	0.00	0.00	0	0		
									point2	2	1,411,620.0	1,152,996.4	0.00	0.00	0.00	0	0		
									point3	3	1,411,653.1	1,152,926.9	0.00	0.00	0.00	0	0		
									point4	4	1,411,707.6	1,152,821.8	0.00	0.00	0.00	0	0		
									point5	5	1,411,718.1	1,152,793.8	0.00	0.00					
Barrier3	W	0.00	99.99	0.00				0.00	point6	6	1,411,740.9	1,153,118.5	0.00	4.00	0.00	0	0		
									point36	36	1,411,688.8	1,153,173.9	0.00	4.00	0.00	0	0		
									point7	7	1,411,639.0	1,153,217.2	0.00	4.00	0.00	0	0		
									point8	8	1,411,588.0	1,153,252.5	0.00	4.00	0.00	0	0		
									point9	9	1,411,498.6	1,153,300.6	0.00	4.00	0.00	0	0		
									point10	10	1,411,476.1	1,153,311.1	0.00	4.00					
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,411,812.5	1,153,117.4	0.00	0.00	0.00	0	0		
									point12	12	1,411,705.1	1,153,257.0	0.00	0.00	0.00	0	0		
									point13	13	1,411,633.0	1,153,317.1	0.00	0.00	0.00	0	0		
									point14	14	1,411,536.1	1,153,375.6	0.00	0.00					
Apartment Bldg	W	0.00	99.99	0.00				0.00	point15	15	1,410,849.0	1,149,404.0	0.00	50.00	0.00	0	0		
									point16	16	1,410,812.0	1,149,419.0	0.00	50.00	0.00	0	0		
									point17	17	1,410,776.0	1,149,325.0	0.00	50.00	0.00	0	0		
									point18	18	1,410,809.0	1,149,302.0	0.00	50.00	0.00	0	0		
									point19	19	1,410,849.0	1,149,402.5	0.00	50.00					
Low Building	W	0.00	99.99	0.00				0.00	point20	20	1,410,882.9	1,149,390.1	0.00	12.00	0.00	0	0		
									point21	21	1,410,849.9	1,149,403.1	0.00	12.00	0.00	0	0		
									point22	22	1,410,809.8	1,149,302.0	0.00	12.00	0.00	0	0		
									point23	23	1,410,836.4	1,149,285.0	0.00	12.00	0.00	0	0		
									point24	24	1,410,881.4	1,149,389.1	0.00	12.00					

Watts					15 November 2013	
JKK					TNM 2.5	
INPUT: BUILDING ROWS						
PROJECT/CONTRACT:	PIN 4940.T7					
RUN:	2035 No Build Inner Loop Nois					
Building Row			Points			
Name	Average	Building	No.	Coordinates (ground)		
	Height	Percent		X	Y	Z
	ft	%		ft	ft	ft
Monroe Bldgs	30.00	60	3	1,410,839.4	1,149,284.6	0.00
			4	1,411,110.6	1,149,080.5	0.00

2035 Build Alternative Model



2035 Build Inner Loop Noise	Sheet 1 of 1	15 Nov 2013
	Watts	
Plan View	Project/Contract No. PIN 4940.T7	
Run name: 2035Buildv01	TNM Version 2.5, Feb 2004	
Scale: 500 feet	Analysis By: JKK	

Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:

Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:

Watts		15 November 2013
JKK		TNM 2.5
		Calculated with TNM 2.5
RESULTS: SOUND LEVELS		
PROJECT/CONTRACT:	PIN 4940.T7	
RUN:	2035 Build Inner Loop Noise	
BARRIER DESIGN:	INPUT HEIGHTS	Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.
ATMOSPHERICS:	68 deg F, 50% RH	

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver A	11	1	65.3	65.7	66	0.4	10	----	65.7	0.0	8	-8.0
Receiver B	12	1	65.7	66.8	66	1.1	10	Snd Lvl	66.8	0.0	8	-8.0
Receiver C	13	1	60.9	60.7	66	-0.2	10	----	60.7	0.0	8	-8.0
Receiver D	14	1	65.2	65.9	66	0.7	10	----	65.9	0.0	8	-8.0
Receiver E	15	1	56.2	55.8	66	-0.4	10	----	55.8	0.0	8	-8.0
Receiver F	16	1	64.4	67.3	66	2.9	10	Snd Lvl	67.3	0.0	8	-8.0
Receiver G	17	1	64.1	66.2	66	2.1	10	Snd Lvl	66.2	0.0	8	-8.0
Receiver H	18	1	62.8	62.9	66	0.1	10	----	62.9	0.0	8	-8.0
Receiver I	19	1	62.9	62.8	66	-0.1	10	----	62.8	0.0	8	-8.0
Test Receiver	22	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	10	0.0	0.0	0.0
All Impacted	3	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Watts
JKK

15 November 2013
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2035 Build Inner Loop Noise

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
IL Ramp EB	24.0	point1	1	1,409,365.1	1,149,604.8	0.00				Average	
		point2	2	1,409,469.0	1,149,625.9	0.00				Average	
		point3	3	1,409,663.0	1,149,656.2	0.00				Average	
		point4	4	1,410,052.2	1,149,692.0	0.00				Average	
		point308	308	1,410,156.1	1,149,710.5	0.00					
IL N Ramp WB	24.0	point24	24	1,411,498.4	1,153,176.4	-5.00				Average	
		point25	25	1,411,574.1	1,153,098.4	-10.00				Average	
		point26	26	1,411,639.4	1,153,015.8	-10.00				Average	
		point27	27	1,411,737.1	1,152,827.8	-20.00				Average	
		point28	28	1,411,784.1	1,152,652.4	-20.00				Average	
		point29	29	1,411,796.2	1,152,488.2	-15.00				Average	
		point30	30	1,411,815.0	1,152,303.4	-10.00				Average	
		point31	31	1,411,826.0	1,152,184.8	-10.00				Average	
		point331	331	1,411,809.6	1,152,096.2	-6.50				Average	
		point327	327	1,411,805.4	1,152,076.4	-5.00				Average	
		point378	378	1,411,772.9	1,151,997.4	-1.00					
Union Spur NB	10.0	point55	55	1,410,744.4	1,149,327.0	0.00	Signal	0.00	60	Average	
		point304	304	1,410,793.8	1,149,463.9	0.00				Average	
		point303	303	1,410,888.9	1,149,705.6	0.00				Average	
		point56	56	1,410,902.4	1,149,750.2	0.00				Average	
		point302	302	1,410,905.4	1,149,788.8	0.00				Average	
		point57	57	1,410,896.0	1,149,823.0	0.00				Average	
		point58	58	1,410,877.1	1,149,855.9	0.00					
University NB-1	24.0	point75	75	1,412,034.9	1,152,560.5	0.00	Signal	0.00	40	Average	
		point76	76	1,411,993.0	1,152,583.1	0.00				Average	

		point77	77	1,411,963.8	1,152,623.2	0.00				Average	
		point78	78	1,411,925.9	1,152,747.1	0.00					
University SB-1	24.0	point86	86	1,411,477.6	1,153,270.6	-7.00				Average	Y
		point87	87	1,411,589.1	1,153,219.1	-5.00				Average	
		point88	88	1,411,658.9	1,153,175.1	-3.00				Average	
		point89	89	1,411,733.9	1,153,103.9	0.00				Average	
		point90	90	1,411,781.6	1,153,036.4	0.00				Average	
		point91	91	1,411,824.9	1,152,951.5	0.00				Average	
		point92	92	1,411,870.4	1,152,827.1	0.00					
Main EB-1	36.0	point97	97	1,411,544.4	1,152,678.9	0.00				Average	
		point260	260	1,411,605.2	1,152,696.0	0.00					
Main WB-1	36.0	point101	101	1,412,018.1	1,152,857.0	0.00				Average	
		point102	102	1,411,928.9	1,152,828.2	0.00					
Richmond WB	12.0	point106	106	1,412,175.0	1,152,156.9	0.00				Average	
		point107	107	1,411,936.2	1,152,252.4	0.00					
Richmond EB	12.0	point108	108	1,411,929.5	1,152,241.8	0.00	Onramp	10.00	100	Average	
		point109	109	1,412,172.8	1,152,144.8	0.00					
Charlotte WB-1	12.0	point110	110	1,412,062.1	1,151,851.6	0.00				Average	
		point111	111	1,411,811.6	1,151,955.1	0.00					
East WB	24.0	point114	114	1,411,655.8	1,151,324.2	0.00				Average	
		point115	115	1,411,585.5	1,151,347.5	0.00					
East EB	24.0	point119	119	1,411,364.0	1,151,400.1	0.00				Average	
		point246	246	1,411,400.8	1,151,388.0	0.00				Average	
		point120	120	1,411,424.6	1,151,380.2	0.00				Average	
		point250	250	1,411,441.9	1,151,374.4	0.00				Average	
		point121	121	1,411,465.2	1,151,366.5	0.00				Average	
		point254	254	1,411,499.1	1,151,354.9	0.00					
Broad EB-1	24.0	point129	129	1,410,906.2	1,151,066.9	0.00				Average	
		point130	130	1,411,028.9	1,151,057.9	0.00				Average	
		point131	131	1,411,080.9	1,151,046.6	0.00				Average	
		point132	132	1,411,127.6	1,151,036.5	0.00				Average	
		point315	315	1,411,227.6	1,150,998.5	0.00				Average	
		point133	133	1,411,273.1	1,150,980.0	0.00					
Savannah NB	12.0	point135	135	1,411,070.2	1,150,573.0	0.00	Onramp	10.00	100	Average	
		point136	136	1,410,942.9	1,150,623.8	0.00				Average	
		point137	137	1,411,096.8	1,151,021.0	0.00					
Savannah SB	12.0	point138	138	1,411,081.6	1,151,021.0	0.00	Onramp	10.00	100	Average	
		point139	139	1,410,928.5	1,150,613.1	0.00				Average	
		point140	140	1,411,064.1	1,150,560.9	0.00					

Broadway NB	12.0	point141	141	1,409,987.6	1,149,421.6	0.00	Onramp	10.00	100	Average	
		point142	142	1,409,974.8	1,149,639.1	0.00					
Broadway SB	12.0	point143	143	1,409,958.0	1,149,637.6	0.00	Onramp	10.00	100	Average	
		point144	144	1,409,970.9	1,149,420.1	0.00					
Clinton Ramp	24.0	point145	145	1,409,608.5	1,149,271.5	20.00				Average	
		point146	146	1,409,586.6	1,149,435.2	20.00					
Clinton NB 1	24.0	point147	147	1,409,575.2	1,149,285.9	20.00				Average	
		point148	148	1,409,562.4	1,149,433.0	20.00					
Clinton NB 2	48.0	point149	149	1,409,575.2	1,149,436.0	20.00				Average	Y
		point150	150	1,409,518.0	1,149,815.6	20.00				Average	
		point151	151	1,409,457.0	1,150,098.6	20.00					
Chestnut Ramp	12.0	point152	152	1,409,978.0	1,150,016.0	0.00				Average	
		point311	311	1,409,988.2	1,149,966.5	0.00				Average	
		point153	153	1,410,005.6	1,149,913.8	0.00				Average	
		point154	154	1,410,046.1	1,149,844.9	0.00				Average	
		point312	312	1,410,049.8	1,149,786.2	0.00				Average	
		point155	155	1,410,011.0	1,149,741.0	0.00				Average	
		point310	310	1,409,743.9	1,149,715.4	0.00				Average	
		point156	156	1,409,476.2	1,149,692.2	0.00					
Pitkin NB-1	12.0	point328	328	1,411,565.8	1,152,047.1	0.00	Onramp	10.00	100	Average	
		point369	369	1,411,567.0	1,152,052.1	0.00				Average	
		point330	330	1,411,603.0	1,152,207.4	0.00				Average	
		point174	174	1,411,640.1	1,152,367.6	0.00				Average	
		point173	173	1,411,655.8	1,152,455.0	0.00				Average	
		point172	172	1,411,652.5	1,152,539.6	0.00				Average	
		point171	171	1,411,620.4	1,152,655.8	0.00					
Monroe-Chestnut NB-1	24.0	point198	198	1,411,136.8	1,149,032.6	0.00				Average	
		point199	199	1,410,995.0	1,149,135.8	0.00				Average	
		point200	200	1,410,752.4	1,149,316.1	0.00					
Chestnut-Monroe SB-1	24.0	point208	208	1,409,991.2	1,150,017.8	0.00				Average	
		point313	313	1,410,001.8	1,149,969.5	0.00				Average	
		point209	209	1,410,018.1	1,149,921.0	0.00				Average	
		point314	314	1,410,051.8	1,149,856.6	0.00				Average	
		point210	210	1,410,112.5	1,149,782.6	0.00					
W University Ave EB	24.0	point229	229	1,411,100.0	1,152,904.0	0.00	Signal	0.00	50	Average	
		point230	230	1,411,527.0	1,152,734.0	0.00					
W University Ave WB	24.0	point231	231	1,411,535.0	1,152,755.0	0.00	Signal	0.00	50	Average	
		point232	232	1,411,109.0	1,152,924.0	0.00					
Union NB-3	24.0	point275	275	1,411,371.2	1,150,909.8	0.00	Signal	0.00	40	Average	

		point66	66	1,411,472.9	1,151,161.6	0.00				Average	
		point67	67	1,411,536.6	1,151,315.6	0.00					
Union NB-4	24.0	point276	276	1,411,536.6	1,151,315.6	0.00	Signal	0.00	50	Average	
		point256	256	1,411,544.5	1,151,339.4	0.00				Average	
		point255	255	1,411,552.1	1,151,358.8	0.00				Average	
		point68	68	1,411,627.0	1,151,549.9	0.00				Average	
		point345	345	1,411,698.5	1,151,733.6	0.00				Average	
		point69	69	1,411,773.4	1,151,922.4	0.00					
Union NB-6	12.0	point277	277	1,412,020.4	1,152,514.5	0.00	Signal	0.00	60	Average	
		point74	74	1,412,104.5	1,152,725.1	0.00					
University NB-2	24.0	point278	278	1,411,925.9	1,152,747.1	0.00	Signal	0.00	50	Average	
		point265	265	1,411,916.5	1,152,791.4	0.00				Average	
		point266	266	1,411,910.0	1,152,822.2	0.00				Average	
		point79	79	1,411,902.1	1,152,859.8	0.00				Average	
		point80	80	1,411,858.1	1,152,971.9	0.00				Average	
		point81	81	1,411,836.2	1,153,015.9	0.00				Average	
		point82	82	1,411,779.4	1,153,103.9	0.00				Average	
		point83	83	1,411,718.8	1,153,176.6	-3.00				Average	
		point84	84	1,411,642.9	1,153,250.1	-10.00				Average	
		point85	85	1,411,508.0	1,153,343.4	-20.00					
University SB-2	24.0	point279	279	1,411,870.4	1,152,827.1	0.00	Signal	0.00	50	Average	
		point268	268	1,411,875.6	1,152,811.1	0.00				Average	
		point267	267	1,411,885.1	1,152,781.4	0.00				Average	
		point93	93	1,411,900.6	1,152,733.5	0.00				Average	
		point94	94	1,411,941.2	1,152,604.8	0.00				Average	
		point95	95	1,411,994.1	1,152,547.6	0.00				Average	
		point96	96	1,412,025.8	1,152,535.4	0.00					
Main EB-2	36.0	point280	280	1,411,605.2	1,152,696.0	0.00	Signal	0.00	50	Average	
		point98	98	1,411,722.0	1,152,729.1	0.00				Average	Y
		point99	99	1,411,855.6	1,152,772.1	0.00					
Main EB-3	36.0	point281	281	1,411,855.6	1,152,772.1	0.00	Signal	0.00	50	Average	
		point262	262	1,411,885.1	1,152,781.4	0.00				Average	
		point261	261	1,411,916.5	1,152,791.4	0.00				Average	
		point226	226	1,411,958.5	1,152,804.8	0.00				Average	
		point100	100	1,412,090.1	1,152,847.1	0.00					
Main WB-2	36.0	point282	282	1,411,928.9	1,152,828.2	0.00	Signal	0.00	50	Average	
		point263	263	1,411,910.0	1,152,822.2	0.00				Average	
		point264	264	1,411,875.6	1,152,811.1	0.00				Average	
		point103	103	1,411,841.0	1,152,800.2	0.00				Average	Y

		point225	225	1,411,710.5	1,152,759.0	0.00				Average	
		point104	104	1,411,575.9	1,152,717.5	0.00				Average	
		point259	259	1,411,570.9	1,152,716.0	0.00					
Main WB-3	36.0	point283	283	1,411,570.9	1,152,716.0	0.00	Signal	0.00	50	Average	
		point105	105	1,411,525.4	1,152,703.1	0.00					
East WB-2	24.0	point284	284	1,411,585.5	1,151,347.5	0.00	Signal	0.00	50	Average	
		point253	253	1,411,552.1	1,151,358.8	0.00				Average	
		point116	116	1,411,528.4	1,151,366.6	0.00				Average	
		point249	249	1,411,513.1	1,151,371.6	0.00				Average	
		point117	117	1,411,433.6	1,151,398.5	0.00					
East WB-2-2	24.0	point285	285	1,411,433.6	1,151,398.5	0.00				Average	
		point245	245	1,411,407.4	1,151,407.1	0.00				Average	
		point118	118	1,411,369.6	1,151,419.4	0.00					
East EB-2	24.0	point286	286	1,411,499.1	1,151,354.9	0.00	Signal	0.00	50	Average	
		point348	348	1,411,518.8	1,151,348.2	0.00				Average	
		point122	122	1,411,544.5	1,151,339.4	0.00				Average	
		point123	123	1,411,651.1	1,151,306.8	0.00					
Broad WB	12.0	point287	287	1,411,364.0	1,150,963.0	0.00	Signal	0.00	50	Average	
		point244	244	1,411,257.0	1,151,007.1	0.00					
Broad EB-2	24.0	point288	288	1,411,273.1	1,150,980.0	0.00	Signal	0.00	50	Average	
		point243	243	1,411,298.1	1,150,969.8	0.00				Average	
		point227	227	1,411,338.9	1,150,953.4	0.00				Average	
		point134	134	1,411,356.2	1,150,946.5	0.00					
Pitkin SB-2	12.0	point289	289	1,411,416.5	1,151,434.2	0.00	Stop	0.00	90	Average	
		point248	248	1,411,407.4	1,151,407.1	0.00				Average	
		point247	247	1,411,400.8	1,151,388.0	0.00				Average	
		point178	178	1,411,319.0	1,151,174.5	0.00				Average	
		point179	179	1,411,254.2	1,151,017.4	0.00					
Monroe-Chestnut NB-2	12.0	point292	292	1,410,752.4	1,149,316.1	0.00	Signal	0.00	50	Average	
		point201	201	1,410,564.6	1,149,457.2	0.00				Average	
		point202	202	1,410,425.9	1,149,562.6	0.00				Average	
		point203	203	1,410,246.8	1,149,700.1	0.00					
Monroe-Chestnut NB-3	24.0	point294	294	1,410,246.8	1,149,700.1	0.00	Signal	0.00	50	Average	
		point382	382	1,410,210.6	1,149,728.0	0.00				Average	
		point383	383	1,410,177.0	1,149,753.9	0.00				Average	
		point237	237	1,410,137.5	1,149,784.6	0.00				Average	
		point205	205	1,410,098.0	1,149,829.0	0.00				Average	
		point206	206	1,410,051.5	1,149,905.8	0.00				Average	
		point207	207	1,410,021.5	1,150,013.1	0.00					

Chestnut-Monroe SB-2	12.0	point296	296	1,410,112.5	1,149,782.6	0.00	Signal	0.00	50	Average	
		point385	385	1,410,157.1	1,149,746.8	0.00				Average	
		point384	384	1,410,189.5	1,149,721.2	0.00				Average	
		point235	235	1,410,235.1	1,149,684.4	0.00				Average	
		point213	213	1,410,414.9	1,149,541.8	0.00				Average	
		point214	214	1,410,725.8	1,149,308.2	0.00					
Chestnut-Monroe SB-3	12.0	point297	297	1,410,725.8	1,149,308.2	0.00	Signal	0.00	50	Average	
		point215	215	1,410,974.0	1,149,122.5	0.00				Average	
		point216	216	1,411,119.5	1,149,011.8	0.00					
Haags EB/WB	12.0	point299	299	1,411,872.0	1,152,106.0	0.00				Average	
		point300	300	1,412,129.0	1,152,004.0	0.00					
Union NB-2	12.0	point301	301	1,410,833.5	1,149,857.6	0.00				Average	
		point322	322	1,410,888.8	1,149,887.4	0.00				Average	
		point321	321	1,410,960.9	1,149,954.2	0.00				Average	
		point323	323	1,411,009.5	1,150,017.8	0.00				Average	
		point320	320	1,411,033.1	1,150,059.8	0.00				Average	
		point59	59	1,411,084.5	1,150,183.1	0.00				Average	
		point298	298	1,411,109.2	1,150,244.5	0.00				Average	
		point60	60	1,411,134.6	1,150,305.1	0.00				Average	
		point61	61	1,411,166.6	1,150,386.1	0.00				Average	
		point62	62	1,411,204.2	1,150,479.4	0.00				Average	
		point63	63	1,411,304.1	1,150,725.6	0.00				Average	
		point64	64	1,411,329.0	1,150,805.0	0.00				Average	
		point65	65	1,411,371.2	1,150,909.8	0.00					
Old Howell	12.0	point305	305	1,409,965.5	1,149,639.1	0.00				Average	
		point49	49	1,410,238.9	1,149,661.9	0.00					
Union NB-5	12.0	point324	324	1,411,773.4	1,151,922.4	0.00	Signal	0.00	50	Average	
		point364	364	1,411,787.1	1,151,950.2	0.00				Average	
		point363	363	1,411,793.1	1,151,962.5	0.00				Average	
		point325	325	1,411,804.2	1,151,985.1	0.00				Average	
		point70	70	1,411,856.4	1,152,111.9	0.00				Average	
		point71	71	1,411,915.2	1,152,255.6	0.00				Average	
		point72	72	1,411,982.5	1,152,422.1	0.00				Average	
		point73	73	1,412,020.4	1,152,514.5	0.00					
IL N Ramp EB	24.0	point326	326	1,411,773.4	1,151,922.4	0.00	Signal	0.00	50	Average	
		point366	366	1,411,782.5	1,151,952.2	0.00				Average	
		point365	365	1,411,786.4	1,151,965.1	0.00				Average	
		point332	332	1,411,794.1	1,151,990.5	-1.00				Average	
		point16	16	1,411,825.5	1,152,074.1	-5.00				Average	

		point17	17	1,411,843.2	1,152,181.5	-10.00				Average	
		point18	18	1,411,834.1	1,152,485.2	-15.00				Average	
		point19	19	1,411,822.8	1,152,655.0	-20.00				Average	
		point20	20	1,411,780.2	1,152,835.1	-20.00				Average	
		point21	21	1,411,684.9	1,153,037.0	-20.00				Average	
		point22	22	1,411,618.1	1,153,138.5	-20.00				Average	
		point23	23	1,411,546.9	1,153,221.9	-20.00					
Pitkin SB-1	12.0	point329	329	1,411,565.8	1,152,047.1	0.00	Onramp	10.00	100	Average	
		point370	370	1,411,565.1	1,152,039.8	0.00				Average	
		point175	175	1,411,547.8	1,151,872.0	0.00				Average	
		point176	176	1,411,538.0	1,151,795.8	0.00				Average	
		point177	177	1,411,416.5	1,151,434.2	0.00					
Union Spur SB	10.0	point337	337	1,410,863.6	1,149,852.1	0.00	Onramp	10.00	100	Average	
		point338	338	1,410,890.5	1,149,803.5	0.00				Average	
		point339	339	1,410,891.9	1,149,754.4	0.00				Average	
		point340	340	1,410,877.8	1,149,708.6	0.00				Average	
		point341	341	1,410,794.2	1,149,494.0	0.00				Average	
		point342	342	1,410,731.9	1,149,333.8	0.00					
Charlotte WB-2	12.0	point350	350	1,411,811.6	1,151,955.1	0.00	Signal	0.00	60	Average	
		point351	351	1,411,793.1	1,151,962.5	0.00				Average	
		point352	352	1,411,786.4	1,151,965.1	0.00				Average	
		point353	353	1,411,763.8	1,151,974.1	0.00				Average	
		point371	371	1,411,665.4	1,152,013.0	0.00				Average	
		point354	354	1,411,567.0	1,152,052.1	0.00				Average	
		point355	355	1,411,518.2	1,152,071.2	0.00					
Charlotte EB-1	12.0	point356	356	1,411,513.4	1,152,061.1	0.00				Average	
		point357	357	1,411,565.1	1,152,039.8	0.00				Average	
		point358	358	1,411,665.1	1,151,999.4	0.00				Average	
		point372	372	1,411,730.1	1,151,973.2	0.00					
Union NB-1	12.0	point374	374	1,410,156.1	1,149,710.5	0.00	Signal	0.00	60	Average	
		point390	390	1,410,189.5	1,149,721.2	0.00				Average	
		point389	389	1,410,210.6	1,149,728.0	0.00				Average	
		point309	309	1,410,276.2	1,149,749.1	0.00				Average	
		point5	5	1,410,491.1	1,149,770.4	0.00				Average	
		point6	6	1,410,619.0	1,149,783.9	0.00				Average	
		point318	318	1,410,707.9	1,149,798.0	0.00				Average	
		point317	317	1,410,768.6	1,149,822.6	0.00				Average	
		point7	7	1,410,833.5	1,149,857.6	0.00					
IL Ramp WB-2	24.0	point375	375	1,410,224.5	1,149,770.8	0.00	Signal	0.00	60	Average	

		point387	387	1,410,177.0	1,149,753.9	0.00				Average	
		point388	388	1,410,157.1	1,149,746.8	0.00				Average	
		point306	306	1,410,113.5	1,149,731.2	0.00				Average	
		point43	43	1,410,025.2	1,149,720.8	0.00				Average	
		point233	233	1,409,659.6	1,149,689.2	0.00				Average	
		point44	44	1,409,478.1	1,149,672.0	0.00				Average	
		point45	45	1,409,359.8	1,149,672.0	0.00					
Union SB-3	12.0	point376	376	1,411,380.6	1,150,983.2	0.00	Signal	0.00	40	Average	
		point393	393	1,411,281.4	1,150,735.0	0.00				Average	
		point35	35	1,411,194.4	1,150,517.1	0.00				Average	
		point36	36	1,411,072.6	1,150,213.2	0.00				Average	
		point37	37	1,411,021.8	1,150,092.2	0.00				Average	
		point38	38	1,410,962.4	1,149,983.6	0.00				Average	
		point39	39	1,410,874.0	1,149,898.1	0.00				Average	
		point40	40	1,410,769.0	1,149,844.1	0.00				Average	
		point336	336	1,410,694.6	1,149,820.2	0.00				Average	
		point41	41	1,410,605.4	1,149,806.6	0.00				Average	
		point42	42	1,410,459.9	1,149,796.8	0.00				Average	
		point319	319	1,410,321.6	1,149,783.2	0.00				Average	
		point307	307	1,410,224.5	1,149,770.8	0.00					
Union SB-2	12.0	point377	377	1,411,543.8	1,151,396.2	0.00	Signal	0.00	50	Average	
		point346	346	1,411,528.4	1,151,366.6	0.00				Average	
		point347	347	1,411,518.8	1,151,348.2	0.00				Average	
		point33	33	1,411,507.2	1,151,326.0	0.00				Average	
		point344	344	1,411,454.4	1,151,189.4	0.00				Average	
		point343	343	1,411,427.8	1,151,097.0	0.00				Average	
		point34	34	1,411,380.6	1,150,983.2	0.00					
Union SB-1	12.0	point379	379	1,411,772.9	1,151,997.4	-1.00	Signal	0.00	50	Average	
		point367	367	1,411,763.8	1,151,974.1	0.00				Average	
		point368	368	1,411,758.8	1,151,961.8	0.00				Average	
		point349	349	1,411,747.6	1,151,934.2	0.00				Average	
		point32	32	1,411,659.5	1,151,717.8	0.00				Average	
		point335	335	1,411,637.8	1,151,645.2	0.00					
Pitkin NB-2	12.0	point380	380	1,411,620.4	1,152,655.8	0.00	Signal	0.00	50	Average	
		point258	258	1,411,605.2	1,152,696.0	0.00				Average	
		point170	170	1,411,601.2	1,152,703.5	0.00				Average	
		point257	257	1,411,575.9	1,152,717.5	0.00				Average	
		point169	169	1,411,535.2	1,152,739.9	0.00					
Charlotte EB-2	12.0	point381	381	1,411,730.1	1,151,973.2	0.00	Signal	0.00	60	Average	

		point359	359	1,411,758.8	1,151,961.8	0.00				Average	
		point360	360	1,411,782.5	1,151,952.2	0.00				Average	
		point361	361	1,411,787.1	1,151,950.2	0.00				Average	
		point373	373	1,411,810.4	1,151,940.9	0.00				Average	
		point362	362	1,412,057.9	1,151,840.6	0.00					
Broad WB-2	24.0	point391	391	1,411,257.0	1,151,007.1	0.00				Average	
		point126	126	1,411,136.5	1,151,062.0	0.00				Average	
		point127	127	1,411,037.6	1,151,083.1	0.00				Average	
		point128	128	1,410,908.0	1,151,096.0	0.00					
Union SB-1-2	24.0	point392	392	1,411,637.8	1,151,645.2	0.00				Average	
		point334	334	1,411,584.2	1,151,496.9	0.00				Average	
		point333	333	1,411,543.8	1,151,396.2	0.00					

Watts **15 November 2013**
JKK **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **PIN 4940.T7**
RUN: **2035 Build Inner Loop Noise**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
IL Ramp EB	point1	1	445	40	4	40	1	40	2	40	2	40
	point2	2	445	40	4	40	1	40	2	40	2	40
	point3	3	445	40	4	40	1	40	2	40	2	40
	point4	4	445	30	4	30	1	30	2	30	2	30
	point308	308										
IL N Ramp WB	point24	24	448	40	4	40	0	0	11	40	0	0
	point25	25	448	40	4	40	0	0	11	40	0	0
	point26	26	448	40	4	40	0	0	11	40	0	0
	point27	27	448	40	4	40	0	0	11	40	0	0
	point28	28	448	40	4	40	0	0	11	40	0	0
	point29	29	448	40	4	40	0	0	11	40	0	0
	point30	30	448	40	4	40	0	0	11	40	0	0
	point31	31	448	30	4	30	0	0	11	30	0	0
	point331	331	448	30	4	30	0	0	11	30	0	0
	point327	327	448	25	4	25	0	0	11	25	0	0
	point378	378										
Union Spur NB	point55	55	412	30	3	30	9	30	0	0	6	30
	point304	304	412	30	3	30	9	30	0	0	6	30
	point303	303	412	30	3	30	9	30	0	0	6	30
	point56	56	412	30	3	30	9	30	0	0	6	30
	point302	302	412	25	3	25	9	25	0	0	6	25
	point57	57	412	25	3	25	9	25	0	0	6	25
	point58	58										

University NB-1	point75	75	505	30	6	30	0	0	0	0	3	30
	point76	76	505	30	6	30	0	0	0	0	3	30
	point77	77	505	25	6	25	0	0	0	0	3	25
	point78	78										
University SB-1	point86	86	789	40	17	40	6	40	23	40	0	0
	point87	87	789	40	17	40	6	40	23	40	0	0
	point88	88	789	35	17	35	6	35	23	35	0	0
	point89	89	789	25	17	25	6	25	23	25	0	0
	point90	90	789	15	17	15	6	15	23	15	0	0
	point91	91	789	10	17	10	6	10	23	10	0	0
	point92	92										
Main EB-1	point97	97	269	25	6	25	0	0	7	25	3	25
	point260	260										
Main WB-1	point101	101	1085	25	0	0	8	25	16	25	0	0
	point102	102										
Richmond WB	point106	106	8	15	0	0	2	15	0	0	0	0
	point107	107										
Richmond EB	point108	108	10	15	0	0	0	0	0	0	0	0
	point109	109										
Charlotte WB-1	point110	110	91	25	0	0	0	0	0	0	0	0
	point111	111										
East WB	point114	114	517	20	6	20	0	0	0	0	6	20
	point115	115										
East EB	point119	119	587	25	0	0	0	0	3	25	6	25
	point246	246	562	20	0	0	0	0	3	20	6	20
	point120	120	562	20	0	0	0	0	3	20	6	20
	point250	250	562	20	0	0	0	0	3	20	6	20
	point121	121	562	20	0	0	0	0	3	20	6	20
	point254	254										
Broad EB-1	point129	129	435	30	0	0	0	0	6	30	0	0
	point130	130	435	30	0	0	0	0	6	30	0	0
	point131	131	435	30	0	0	0	0	6	30	0	0
	point132	132	435	30	0	0	0	0	6	30	0	0
	point315	315	445	15	0	0	0	0	6	15	0	0
	point133	133										
Savannah NB	point135	135	10	25	0	0	0	0	0	0	0	0

	point136	136	10	25	0	0	0	0	0	0	0	0
	point137	137										
Savannah SB	point138	138	10	25	0	0	0	0	0	0	0	0
	point139	139	10	25	0	0	0	0	0	0	0	0
	point140	140										
Broadway NB	point141	141	10	15	0	0	0	0	0	0	0	0
	point142	142										
Broadway SB	point143	143	10	15	0	0	0	0	0	0	0	0
	point144	144										
Clinton Ramp	point145	145	618	45	9	45	4	45	11	45	2	45
	point146	146										
Clinton NB 1	point147	147	1176	45	16	45	7	45	21	45	5	45
	point148	148										
Clinton NB 2	point149	149	1794	45	25	45	11	45	32	45	7	45
	point150	150	1794	45	25	45	11	45	32	45	7	45
	point151	151										
Chestnut Ramp	point152	152	1246	30	11	30	0	0	28	30	0	0
	point311	311	1246	30	11	30	0	0	28	30	0	0
	point153	153	1246	30	11	30	0	0	28	30	0	0
	point154	154	1246	25	11	25	0	0	28	25	0	0
	point312	312	1246	25	11	25	0	0	28	25	0	0
	point155	155	1246	30	11	30	0	0	28	30	0	0
	point310	310	1246	40	11	40	0	0	28	40	0	0
	point156	156										
Pitkin NB-1	point328	328	187	20	0	0	0	0	0	0	0	0
	point369	369	187	20	0	0	0	0	0	0	0	0
	point330	330	187	20	0	0	0	0	0	0	0	0
	point174	174	187	20	0	0	0	0	0	0	0	0
	point173	173	187	20	0	0	0	0	0	0	0	0
	point172	172	187	20	0	0	0	0	0	0	0	0
	point171	171										
Monroe-Chestnut NB-1	point198	198	707	35	0	0	0	0	0	0	8	35
	point199	199	707	30	0	0	0	0	0	0	8	30
	point200	200										
Chestnut-Monroe SB-1	point208	208	560	30	2	30	2	30	4	30	0	0
	point313	313	560	30	2	30	2	30	4	30	0	0

	point209	209	560	30	2	30	2	30	4	30	0	0
	point314	314	560	25	2	25	2	25	4	25	0	0
	point210	210										
W University Ave EB	point229	229	266	30	0	0	0	0	0	0	0	0
	point230	230										
W University Ave WB	point231	231	229	30	0	0	0	0	0	0	0	0
	point232	232										
Union NB-3	point275	5	944	30	8	30	1	30	5	30	4	30
	point66	66	944	25	8	25	1	25	5	25	4	25
	point67	67										
Union NB-4	point276	276	944	25	8	25	1	25	5	25	4	25
	point256	256	853	30	7	30	1	30	5	30	4	30
	point255	255	853	30	7	30	1	30	5	30	4	30
	point68	68	853	30	7	30	1	30	5	30	4	30
	point345	345	853	25	7	25	1	25	5	25	4	25
	point69	69										
Union NB-6	point277	277	342	30	4	30	0	0	0	0	2	30
	point74	74										
University NB-2	point278	278	505	30	6	30	0	0	0	0	3	30
	point265	265	795	30	41	30	7	30	3	30	3	30
	point266	266	795	30	41	30	7	30	3	30	3	30
	point79	79	795	40	41	40	7	40	3	40	3	40
	point80	80	795	40	41	40	7	40	3	40	3	40
	point81	81	795	40	41	40	7	40	3	40	3	40
	point82	82	795	40	41	40	7	40	3	40	3	40
	point83	83	795	40	41	40	7	40	3	40	3	40
	point84	84	795	40	41	40	7	40	3	40	3	40
	point85	85										
University SB-2	point279	279	789	30	17	30	6	30	23	30	0	0
	point268	268	555	30	7	30	0	0	0	0	4	30
	point267	267	555	30	7	30	0	0	0	0	4	30
	point93	93	555	30	7	30	0	0	0	0	4	30
	point94	94	555	25	7	25	0	0	0	0	4	25
	point95	95	555	25	7	25	0	0	0	0	4	25
	point96	96										
Main EB-2	point280	280	747	25	17	25	0	0	21	25	8	25

	point98	98	747	25	17	25	0	0	21	25	8	25
	point99	99										
Main EB-3	point281	281	747	30	17	30	0	0	21	30	8	30
	point262	262	976	30	22	30	0	0	27	30	11	30
	point261	261	976	30	22	30	0	0	27	30	11	30
	point226	226	976	30	22	30	0	0	27	30	11	30
	point100	100										
Main WB-2	point282	282	1085	25	0	0	8	25	16	25	0	0
	point263	263	783	25	0	0	6	25	11	25	0	0
	point264	264	783	25	0	0	6	25	11	25	0	0
	point103	103	783	25	0	0	6	25	11	25	0	0
	point225	225	783	25	0	0	6	25	11	25	0	0
	point104	104	457	30	0	0	3	30	7	30	0	0
	point259	259										
Main WB-3	point283	283	457	30	0	0	3	30	7	30	0	0
	point105	105										
East WB-2	point284	284	517	20	6	20	0	0	0	0	6	20
	point253	253	438	20	5	20	0	0	0	0	5	20
	point116	116	438	20	5	20	0	0	0	0	5	20
	point249	249	438	20	5	20	0	0	0	0	5	20
	point117	117										
East WB-2-2	point285	285	438	20	5	20	0	0	0	0	5	20
	point245	245	443	20	5	20	0	0	0	0	5	20
	point118	118										
East EB-2	point286	286	562	20	0	0	0	0	3	20	6	20
	point348	348	929	20	0	0	0	0	5	20	10	20
	point122	122	929	20	0	0	0	0	5	20	10	20
	point123	123										
Broad WB	point287	287	92	25	7	25	0	0	26	25	0	0
	point244	244										
Broad EB-2	point288	288	445	15	0	0	0	0	6	15	0	0
	point243	243	445	15	0	0	0	0	6	15	0	0
	point227	227	445	15	0	0	0	0	6	15	0	0
	point134	134										
Pitkin SB-2	point289	289	30	20	0	0	0	0	0	0	0	0
	point248	248	20	20	0	0	0	0	0	0	0	0

	point247	247	20	20	0	0	0	0	0	0	0	0
	point178	178	20	20	0	0	0	0	0	0	0	0
	point179	179										
Monroe-Chestnut NB-2	point292	292	577	30	21	30	4	30	16	30	0	0
	point201	201	577	35	21	35	4	35	16	35	0	0
	point202	202	577	25	21	25	4	25	16	25	0	0
	point203	203										
Monroe-Chestnut NB-3	point294	294	577	30	21	30	4	30	16	30	0	0
	point382	382	425	30	15	30	3	30	12	30	0	0
	point383	383	425	30	15	30	3	30	12	30	0	0
	point237	237	425	30	15	30	3	30	12	30	0	0
	point205	205	425	30	15	30	3	30	12	30	0	0
	point206	206	425	30	15	30	3	30	12	30	0	0
	point207	207										
Chestnut-Monroe SB-2	point296	296	560	30	2	30	2	30	4	30	0	0
	point385	385	638	30	2	30	2	30	4	30	0	0
	point384	384	638	30	2	30	2	30	4	30	0	0
	point235	235	638	35	2	35	2	35	4	35	0	0
	point213	213	638	30	2	30	2	30	4	30	0	0
	point214	214										
Chestnut-Monroe SB-3	point297	297	780	30	5	30	5	30	5	30	10	30
	point215	215	780	35	5	35	5	35	5	35	10	35
	point216	216										
Haags EB/WB	point299	299	36	10	0	0	0	0	0	0	0	0
	point300	300										
Union NB-2	point301	301	753	30	7	30	1	30	4	30	3	30
	point322	322	753	30	7	30	1	30	4	30	3	30
	point321	321	753	30	7	30	1	30	4	30	3	30
	point323	323	753	30	7	30	1	30	4	30	3	30
	point320	320	753	30	7	30	1	30	4	30	3	30
	point59	59	753	30	7	30	1	30	4	30	3	30
	point298	298	753	30	7	30	1	30	4	30	3	30
	point60	60	753	30	7	30	1	30	4	30	3	30
	point61	61	753	30	7	30	1	30	4	30	3	30
	point62	62	753	30	7	30	1	30	4	30	3	30
	point63	63	723	30	6	30	1	30	4	30	3	30

	point64	64	723	25	6	25	1	25	4	25	3	25
	point65	65										
Old Howell	point305	305	10	20	0	0	0	0	0	0	0	0
	point49	49										
Union NB-5	point324	324	474	30	6	30	0	0	0	0	3	30
	point364	364	474	30	6	30	0	0	0	0	3	30
	point363	363	474	30	6	30	0	0	0	0	3	30
	point325	325	474	30	6	30	0	0	0	0	3	30
	point70	70	474	30	6	30	0	0	0	0	3	30
	point71	71	474	30	6	30	0	0	0	0	3	30
	point72	72	474	25	6	25	0	0	0	0	3	25
	point73	73										
IL N Ramp EB	point326	326	424	30	4	30	1	30	2	30	2	30
	point366	366	424	30	4	30	1	30	2	30	2	30
	point365	365	424	30	4	30	1	30	2	30	2	30
	point332	332	424	30	4	30	1	30	2	30	2	30
	point16	16	424	40	4	40	1	40	2	40	2	40
	point17	17	424	40	4	40	1	40	2	40	2	40
	point18	18	424	40	4	40	1	40	2	40	2	40
	point19	19	424	40	4	40	1	40	2	40	2	40
	point20	20	424	40	4	40	1	40	2	40	2	40
	point21	21	424	40	4	40	1	40	2	40	2	40
	point22	22	424	40	4	40	1	40	2	40	2	40
	point23	23										
Pitkin SB-1	point329	329	30	20	0	0	0	0	0	0	0	0
	point370	370	30	20	0	0	0	0	0	0	0	0
	point175	175	30	20	0	0	0	0	0	0	0	0
	point176	176	30	15	0	0	0	0	0	0	0	0
	point177	177										
Union Spur SB	point337	337	152	25	1	25	3	25	0	0	2	25
	point338	338	152	25	1	25	3	25	0	0	2	25
	point339	339	152	30	1	30	3	30	0	0	2	30
	point340	340	152	30	1	30	3	30	0	0	2	30
	point341	341	152	25	1	25	3	25	0	0	2	25
	point342	342										
Charlotte WB-2	point350	350	91	30	0	0	0	0	0	0	0	0

	point351	351	98	30	0	0	0	0	0	0	0	0
	point352	352	98	30	0	0	0	0	0	0	0	0
	point353	353	98	30	0	0	0	0	0	0	0	0
	point371	371	98	30	0	0	0	0	0	0	0	0
	point354	354	98	30	0	0	0	0	0	0	0	0
	point355	355										
Charlotte EB-1	point356	356	212	30	0	0	0	0	0	0	0	0
	point357	357	212	30	0	0	0	0	0	0	0	0
	point358	358	212	25	0	0	0	0	0	0	0	0
	point372	372										
Union NB-1	point374	374	445	30	4	30	1	30	2	30	2	30
	point390	390	342	30	3	30	0	0	2	30	2	30
	point389	389	342	30	3	30	0	0	2	30	2	30
	point309	309	342	30	3	30	0	0	2	30	2	30
	point5	5	342	30	3	30	0	0	2	30	2	30
	point6	6	342	30	3	30	0	0	2	30	2	30
	point318	318	342	30	3	30	0	0	2	30	2	30
	point317	317	342	25	3	25	0	0	2	25	2	25
	point7	7										
IL Ramp WB-2	point375	375	566	30	6	30	0	0	14	30	0	0
	point387	387	873	30	8	30	0	0	22	30	0	0
	point388	388	873	30	8	30	0	0	22	30	0	0
	point306	306	873	30	8	30	0	0	22	30	0	0
	point43	43	873	40	8	40	0	0	22	40	0	0
	point233	233	873	40	8	40	0	0	22	40	0	0
	point44	44	2115	40	21	40	0	0	54	40	0	0
	point45	45										
Union SB-3	point376	376	649	30	6	30	0	0	16	30	0	0
	point393	393	708	30	7	30	0	0	18	30	0	0
	point35	35	708	30	7	30	0	0	18	30	0	0
	point36	36	708	30	7	30	0	0	18	30	0	0
	point37	37	708	30	7	30	0	0	18	30	0	0
	point38	38	708	25	7	25	0	0	18	25	0	0
	point39	39	566	30	6	30	0	0	14	30	0	0
	point40	40	566	30	6	30	0	0	14	30	0	0
	point336	336	566	30	6	30	0	0	14	30	0	0

	point41	41	566	30	6	30	0	0	14	30	0	0
	point42	42	566	25	6	25	0	0	14	25	0	0
	point319	319	566	25	6	25	0	0	14	25	0	0
	point307	307										
Union SB-2	point377	377	630	30	6	30	0	0	16	30	0	0
	point346	346	551	30	5	30	0	0	14	30	0	0
	point347	347	551	30	5	30	0	0	14	30	0	0
	point33	33	551	30	5	30	0	0	14	30	0	0
	point344	344	551	30	5	30	0	0	14	30	0	0
	point343	343	551	25	5	25	0	0	14	25	0	0
	point34	34										
Union SB-1	point379	379	448	30	4	30	0	0	11	30	0	0
	point367	367	630	30	6	30	0	0	16	30	0	0
	point368	368	630	30	6	30	0	0	16	30	0	0
	point349	349	630	30	6	30	0	0	16	30	0	0
	point32	32	630	30	6	30	0	0	16	30	0	0
	point335	335										
Pitkin NB-2	point380	380	187	20	0	0	0	0	0	0	0	0
	point258	258	187	20	0	0	0	0	0	0	0	0
	point170	170	187	20	0	0	0	0	0	0	0	0
	point257	257	187	20	0	0	0	0	0	0	0	0
	point169	169										
Charlotte EB-2	point381	381	212	30	0	0	0	0	0	0	0	0
	point359	359	87	30	0	0	0	0	0	0	0	0
	point360	360	87	30	0	0	0	0	0	0	0	0
	point361	361	87	30	0	0	0	0	0	0	0	0
	point373	373	87	30	0	0	0	0	0	0	0	0
	point362	362										
Broad WB-2	point391	391	99	30	7	30	0	0	28	30	0	0
	point126	126	99	30	7	30	0	0	28	30	0	0
	point127	127	99	30	7	30	0	0	28	30	0	0
	point128	128										
Union SB-1-2	point392	392	630	30	6	30	0	0	16	30	0	0
	point334	334	630	25	6	25	0	0	16	25	0	0
	point333	333										

Watts						**15 November 2013**					
JKK						**TNM 2.5**					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	**PIN 4940.T7**										
RUN:	**2035 Build Inner Loop Noise**										
Receiver											
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**		**NR**	**in**
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**	**Goal**	**Calc.**
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver A	11	1	1,409,838.0	1,149,594.0	1.00	4.92	65.30	66	10.0	8.0	Y
Receiver B	12	1	1,410,833.0	1,149,476.0	0.00	4.92	65.70	66	10.0	8.0	Y
Receiver C	13	1	1,410,370.0	1,149,874.0	1.00	4.92	60.90	66	10.0	8.0	Y
Receiver D	14	1	1,411,136.0	1,150,240.0	1.00	4.92	65.20	66	10.0	8.0	Y
Receiver E	15	1	1,410,966.0	1,150,771.0	0.00	4.92	56.20	66	10.0	8.0	Y
Receiver F	16	1	1,411,497.0	1,151,129.0	1.00	4.92	64.40	66	10.0	8.0	Y
Receiver G	17	1	1,411,904.0	1,152,155.0	0.00	4.92	64.10	66	10.0	8.0	Y
Receiver H	18	1	1,411,615.0	1,152,922.0	0.00	4.92	62.80	66	10.0	8.0	Y
Receiver I	19	1	1,411,816.0	1,153,208.0	0.00	4.92	62.90	66	10.0	8.0	Y
Test Receiver	22	1	1,411,985.0	1,152,353.0	0.00	4.92	0.00	66	10.0	8.0	Y

Watts 15 November 2013
JKK TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2035 Build Inner Loop Noise

Barrier Name	Type	Height Min	Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier2	W	0.00	99.99	0.00				0.00	point1	1	1,411,532.1	1,153,099.0	0.00	0.00	0.00	0	0		
									point2	2	1,411,620.0	1,152,996.4	0.00	0.00	0.00	0	0		
									point3	3	1,411,653.1	1,152,926.9	0.00	0.00	0.00	0	0		
									point4	4	1,411,707.6	1,152,821.8	0.00	0.00	0.00	0	0		
									point5	5	1,411,718.1	1,152,793.8	0.00	0.00					
Barrier3	W	0.00	99.99	0.00				0.00	point6	6	1,411,740.9	1,153,118.5	0.00	4.00	0.00	0	0		
									point36	36	1,411,688.8	1,153,173.9	0.00	4.00	0.00	0	0		
									point7	7	1,411,639.0	1,153,217.2	0.00	4.00	0.00	0	0		
									point8	8	1,411,588.0	1,153,252.5	0.00	4.00	0.00	0	0		
									point9	9	1,411,498.6	1,153,300.6	0.00	4.00	0.00	0	0		
									point10	10	1,411,476.1	1,153,311.1	0.00	4.00					
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,411,812.5	1,153,117.4	0.00	0.00	0.00	0	0		
									point12	12	1,411,705.1	1,153,257.0	0.00	0.00	0.00	0	0		
									point13	13	1,411,633.0	1,153,317.1	0.00	0.00	0.00	0	0		
									point14	14	1,411,536.1	1,153,375.6	0.00	0.00					
Apartment Bldg	W	0.00	99.99	0.00				0.00	point15	15	1,410,849.0	1,149,404.0	0.00	50.00	0.00	0	0		
									point16	16	1,410,812.0	1,149,419.0	0.00	50.00	0.00	0	0		
									point17	17	1,410,776.0	1,149,325.0	0.00	50.00	0.00	0	0		
									point18	18	1,410,809.0	1,149,302.0	0.00	50.00	0.00	0	0		
									point19	19	1,410,849.0	1,149,402.5	0.00	50.00					
Low Building	W	0.00	99.99	0.00				0.00	point20	20	1,410,882.9	1,149,390.1	0.00	12.00	0.00	0	0		
									point21	21	1,410,849.9	1,149,403.1	0.00	12.00	0.00	0	0		
									point22	22	1,410,809.8	1,149,302.0	0.00	12.00	0.00	0	0		
									point23	23	1,410,836.4	1,149,285.0	0.00	12.00	0.00	0	0		
									point24	24	1,410,881.4	1,149,389.1	0.00	12.00					

Watts					**15 November 2013**	
JKK					**TNM 2.5**	
INPUT: BUILDING ROWS						
PROJECT/CONTRACT:	**PIN 4940.T7**					
RUN:	**2035 Build Inner Loop Noise**					
Building Row			**Points**			
Name	**Average**	**Building**	**No.**	**Coordinates (ground)**		
	Height	**Percent**		**X**	**Y**	**Z**
	ft	%		ft	ft	ft
Monroe Bldgs	30.00	60	3	1,410,839.4	1,149,284.6	0.00
			4	1,411,110.6	1,149,080.5	0.00

APPENDIX M

Smart Growth Screening Tool

Smart Growth Screening Tool

PIN 4940.T7

Prepared By:City of Rochester

Smart Growth Screening Tool (STEP 1)

NYSDOT & Local Sponsors – Fill out the Smart Growth Screening Tool until the directions indicate to **STOP** for the project type under consideration. For all other projects, complete answering the questions. For any questions, refer to Smart Growth Guidance document.

Title of Proposed Project: Inner Loop Transformation

Location of Project: Rochester, New York

Brief Description: Project includes elimination of a high-speed urban expressway and creation of an at-grade city-scale boulevard-style city street to improve safety and provide other social and economic benefits

A. Infrastructure:

Addresses SG Law criterion a. –
(To advance projects for the use, maintenance or improvement of existing infrastructure)

1. Does this project use, maintain, or improve existing infrastructure?

Yes ☒ **No** ☐ **N/A** ☐

Explain: (use this space to expand on your answers above – the form has no limitations on the length of your narrative)

Existing Inner Loop corridor to be transformed to a boulevard-style city street

Maintenance Projects Only

a. Continue with screening tool for the four (4) types of maintenance projects listed below, as defined in **NYSDOT PDM Exhibit 7-1 and described in 7-4:** https://www.dot.ny.gov/divisions/engineering/design/dqab/pdm

- Shoulder rehabilitation and/or repair;

- Upgrade sign(s) and/or traffic signals;
- Park & ride lot rehabilitation;
- 1R projects that include single course surfacing (inlay or overlay), per Chapter 7 of the NYSDOT Highway Design Manual.

b. For all other maintenance projects, **STOP here.** Attach this document to the programmatic Smart Growth Impact Statement and signed Attestation for Maintenance projects.

For all other projects (other than maintenance), continue with screening tool.

B. Sustainability:

NYSDOT defines Sustainability as follows: A sustainable society manages resources in a way that fulfills the community/social, economic and environmental needs of the present without compromising the needs and opportunities of future generations. A transportation system that supports a sustainable society is one that:

- Allows individual and societal transportation needs to be met in a manner consistent with human and ecosystem health and with equity within and between generations.
- Is safe, affordable, and accessible, operates efficiently, offers choice of transport mode, and supports a vibrant economy.
- Protects and preserves the environment by limiting transportation emissions and wastes, minimizes the consumption of resources and enhances the existing environment as practicable.

For more information on the Department's Sustainability strategy, refer to Appendix 1 of the Smart Growth Guidance and the NYSDOT web site, www.dot.ny.gov/programs/greenlites/sustainability

(Addresses SG Law criterion j : to promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain and implement.)

1. Will this project promote sustainability by strengthening existing communities?

   Yes ☒ **No** ☐ **N/A** ☐

2. Will the project reduce greenhouse gas emissions?

   Yes ☐ **No** ☒ **N/A** ☐

   Explain: (use this space to expand on your answers above)

Removing the Inner Loop barrier will promote the reconnection of neighborhood communities and the Center City commercial areas. The conversion of a free-flowing high-speed expressway to a low speed city street with traffic flow regulated by traffic signals will generate a minor increase in green house gases

C. Smart Growth Location:

Plans and investments should preserve our communities by promoting its distinct identity through a local vision created by its citizens.

(Addresses SG Law criteria b and c: to advance projects located in municipal centers; to advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan.)

1. Is this project located in a developed area?

   Yes ☒ **No** ☐ **N/A** ☐

2. Is the project located in a municipal center?

   Yes ☒ **No** ☐ **N/A** ☐

3. Will this project foster downtown revitalization?

   Yes ☒ **No** ☐ **N/A** ☐

4. Is this project located in an area designated for concentrated infill development in a municipally approved comprehensive land use plan, waterfront revitalization plan, or Brownfield Opportunity Area plan?

   Yes ☒ **No** ☐ **N/A** ☐

Explain: (use this space to expand on your answers above)

Vacant lands created by the removal of the existing Inner Loop expressway will provide opportunities to for future commercial, residential or institional development.

D. Mixed Use Compact Development:

Future planning and development should assure the availability of a range of choices in housing and affordability, employment, education transportation and other essential services to encourage a jobs/housing balance and vibrant community-based workforce.

(Addresses SG Law criteria e and i: to foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income groups; to ensure predictability in building and land use codes.)

1. Will this project foster mixed land uses?

   Yes ☒ **No** ☐ **N/A** ☐

2. Will the project foster brownfield redevelopment?

   Yes ☐ **No** ☐ **N/A** ☒

3. Will this project foster enhancement of beauty in public spaces?

   Yes ☒ **No** ☐ **N/A** ☐

4. Will the project foster a diversity of housing in proximity to places of employment and/or recreation?

   Yes ☒ **No** ☐ **N/A** ☐

5. Will the project foster a diversity of housing in proximity to places of commercial development and/or compact development?

   Yes ☒ **No** ☐ **N/A** ☐

6. Will this project foster integration of all income groups and/or age groups?

   Yes ☒ **No** ☐ **N/A** ☐

7. Will the project ensure predictability in land use codes?

   Yes ☒ **No** ☐ **N/A** ☐

8. Will the project ensure predictability in building codes?

   Yes ☒ **No** ☐ **N/A** ☐

Explain: (use this space to expand on your answers above)

Vacant lands that will be created by this project will be available for all potential kinds of future development; private and public, commercial, residential and/or institutional

E. Transportation and Access:

NYSDOT recognizes that Smart Growth encourages communities to offer a wide range of transportation options, from walking and biking to transit and automobiles, which increase people's access to jobs, goods, services, and recreation.

(Addresses SG Law criterion f: to provide mobility through transportation choices including improved public transportation and reduced automobile dependency.)

1. Will this project provide public transit?

   Yes ☐ No ☐ N/A ☒

2. Will this project enable reduced automobile dependency?

   Yes ☒ No ☐ N/A ☐

3. Will this project improve bicycle and pedestrian facilities (such as shoulder widening to provide for on-road bike lanes, lane striping, crosswalks, new or expanded sidewalks or new/improved pedestrian signals)?

   Yes ☒ No ☐ N/A ☐

   (Note: Question 3 is an expansion on question 2. The recently passed Complete Streets legislation requires that consideration be given to complete street design features in the planning, design, construction, reconstruction and rehabilitation, but not including resurfacing, maintenance, or pavement recycling of such projects.)

   Explain: (use this space to expand on your answers above)

   Elimination of full access control urban expressway with free access urban city street that includes all new pedestrian facilities meeting ADA standards and separate cycle track will improve mobility and safety for pedestrians and bicyclists.

F. Coordinated, Community-Based Planning:

Past experience has shown that early and continuing input in the transportation planning process leads to better decisions and more effective use of limited resources. For information on community based planning efforts, the MPO may be a good resource if the project is located within the MPO planning area.

(Addresses SG Law criteria g and h: to coordinate between state and local government and inter-municipal and regional planning; to participate in community based planning and collaboration.)

1. Has there been participation in community-based planning and collaboration on the project?

   Yes ☒ No ☐ N/A ☐

2. Is the project consistent with local plans?

   Yes ☒ No ☐ N/A ☐

3. Is the project consistent with county, regional, and state plans?

   Yes ☒ No ☐ N/A ☐

4. Has there been coordination between inter-municipal/regional planning and state planning on the project?

   Yes ☒ No ☐ N/A ☐

Explain: (use this space to expand on your answers above)

This project is consistent with the goals and objectives outlined in the City's Vision 2000 Plan, 2003 Center City Master Plan and the Renaissance 2010 Comprehensive Plan, as well as the Genesee Transportation Council Long Range Transportation

G. Stewardship of Natural and Cultural Resources:

Clean water, clean air and natural open land are essential elements of public health and quality of life for New York State residents, visitors, and future generations. Restoring and protecting natural assets, and open space, promoting energy efficiency, and green building, should be incorporated into all land use and infrastructure planning decisions.

(Addresses SG Law criterion d :To protect, preserve and enhance the State's resources, including agricultural land, forests surface and ground water, air quality, recreation and open space, scenic areas and significant historic and archeological resources.)

1. Will the project protect, preserve, and/or enhance agricultural land and/or forests?

   Yes ☐ No ☐ N/A ☒

2. Will the project protect, preserve, and/or enhance surface water and/or groundwater?

   Yes ☒ No ☐ N/A ☐

3. Will the project protect, preserve, and/or enhance air quality?

   Yes ☒ No ☐ N/A ☐

4. Will the project protect, preserve, and/or enhance recreation and/or open space?

Yes ☒ No ☐ N/A ☐

5. Will the project protect, preserve, and/or enhance scenic areas?

Yes ☐ No ☐ N/A ☒

6. Will the project protect, preserve, and/or enhance historic and/or archeological resources?

Yes ☒ No ☐ N/A ☐

Explain: (use this space to expand on your answers above)

Through environmental studies, the project has confirmed that the above concerns have been adequatley investigated

Smart Growth Impact Statement (STEP 2)

NYSDOT: Complete a Smart Growth Impact Statement (SGIS) below using the information from the Screening Tool.

Local Sponsors: The local sponsors are **not** responsible for completing a Smart Growth Impact Statement. Proceed to **Step 3**.

Smart Growth Impact Statement

PIN: 4940.T7

Project Name: Inner Loop East Transformation Project

Pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act. This project has been determined to meet the relevant criteria, to the extent practicable, described in ECL Sec. 6-0107. Specifically, the project:

- The project is an improvement to an existing infrastructure. It is located in a municipal center and in an area designated for concentrated infill development consistent with an approved comprehensive land use plan.
- Environmental impacts are expected to be negligible, and resource preservation and/or protection of such features as air quality, surface and groundwater and historic and archeological resources are included.
- The project will also foster mix land uses on the lands freed-up by the removal of the Inner Loop expressway and will improve mobility for all users including motorists, pedestrians, bicyclists and transit operations

This publically supported infrastructure project complies with the state policy of maximizing the social, economic and environmental benefits from public infrastructure development. The project will not contribute to the unnecessary costs of sprawl development, including environmental degradation, disinvestment in urban and suburban communities, or loss of open space induced by sprawl.

Review & Attestation Instructions (STEP 3)

Local Sponsors: Once the Smart Growth Screening Tool is completed, the next step is to submit the project certification statement **(Section A)** to Responsible Local Official for signature. After signing the document, the completed Screening Tool and Certification statement should be sent to NYSDOT for review as noted below.

NYSDOT: For state-let projects, the Screening Tool and SGIS is forwarded to Regional Director/ RPPM/Main Office Program Director or designee for review, and upon approval, the attestation is signed **(Section B.2).** For locally administered projects, the sponsor's submission and certification statement is reviewed by NYSDOT staff, the appropriate box **(Section B.1)** is checked, and the attestation is signed (Section B.2).

A. CERTIFICATION (LOCAL PROJECT)

I HEREBY CERTIFY*, to the best of my knowledge, all of the above to be true and correct.*

Preparer of this document:

[signature] — 1/9/14
Signature — Date

PRINCIPAL — James R. Hofmann Jr.
Title — Printed Name

Responsible Local Official (for local projects):

[signature] — 1/9/14
Signature — Date

CITY ENGINEER — JAMES R. McIntosh
Title — Printed Name

B. ATTESTATION (NYSDOT)

1. ***I HEREBY:***

☒ *Concur with the above certification, thereby attesting that this project is in compliance with the State Smart Growth Public Infrastructure Policy Act*

☐ *Concur with the above certification, with the following conditions (information requests, confirming studies, project modifications, etc.):*

(Attach additional sheets as needed)

☐ do not concur with the above certification, thereby deeming this project ineligible to be a recipient of State funding or a subrecipient of Federal funding in accordance with the State Smart Growth Public Infrastructure Policy Act.

2. ***NOW THEREFORE,*** pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act, to the extent practicable, as described in the attached Smart Growth Impact Statement.

NYSDOT Commissioner, Regional Director, MO Program Director,
Regional Planning & Programming Manager (or official designee):

[signature] 1/9/14

Signature Date

REGIONAL LOCAL PROJECT LIAISON RICHARD J. PAPAS, JR.

Title Printed Name