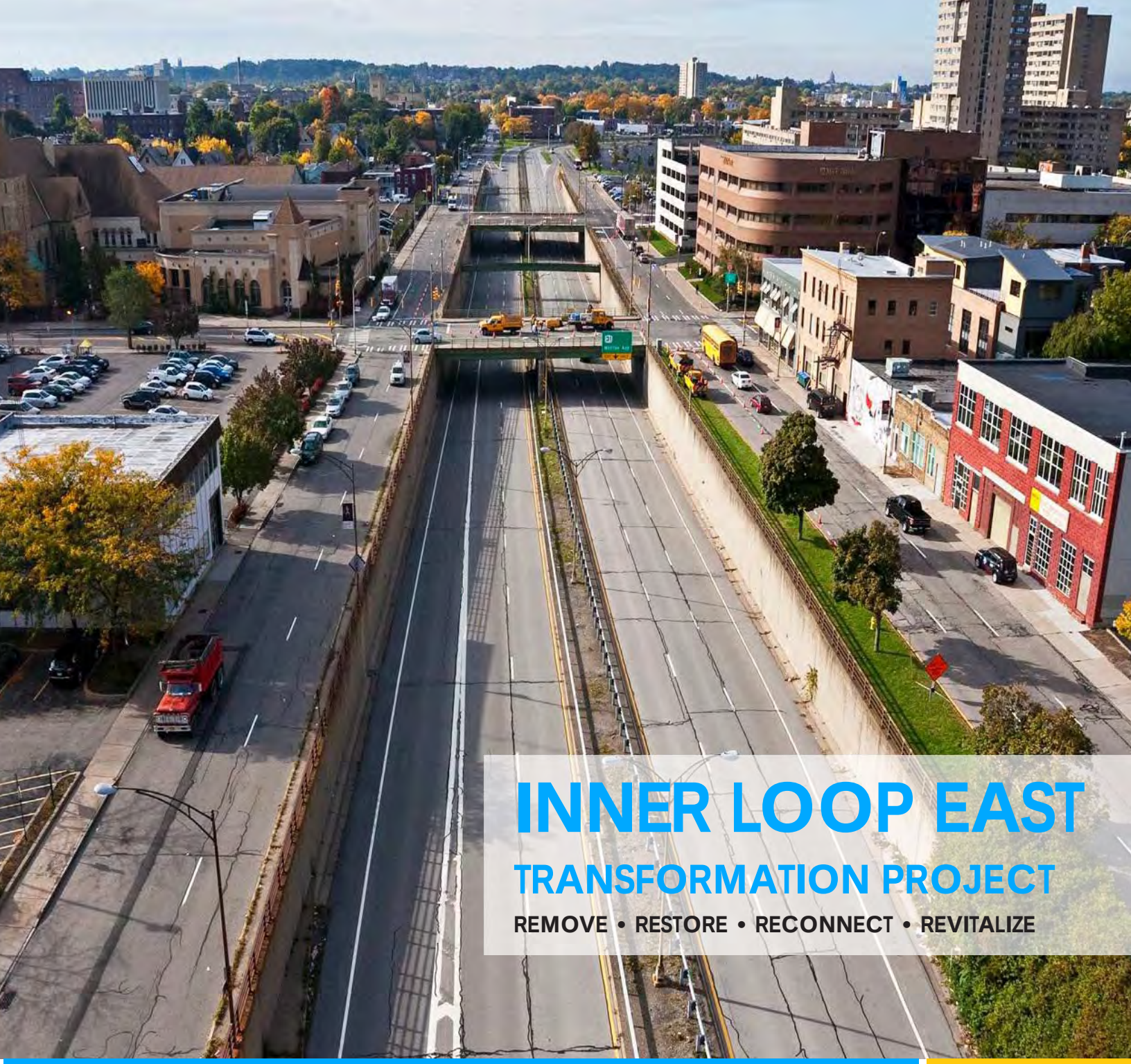

# INNER LOOP EAST

## TRANSFORMATION PROJECT

REMOVE • RESTORE • RECONNECT • REVITALIZE

# FINAL DESIGN REPORT – Volume 3

**PIN 4940.T7**

**MARCH 2014**

Inner Loop East: From Barrier to Beautiful

**City of Rochester, Department of Environmental Services**

**New York State Department of Transportation**

**Federal Highway Administration**

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

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
8. 302-304 University 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 six 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.

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:<br><br>1. Bicyclists<br>2. Visitors/Tourists<br>3. Local Traffic<br>4. Commuter Traffic<br><br>High ⇧ Low | Arranged in order of viewer sensitivity:<br><br>1. Pedestrians<br>2. Residents<br>3. Commercial<br><br>High ⇧ 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

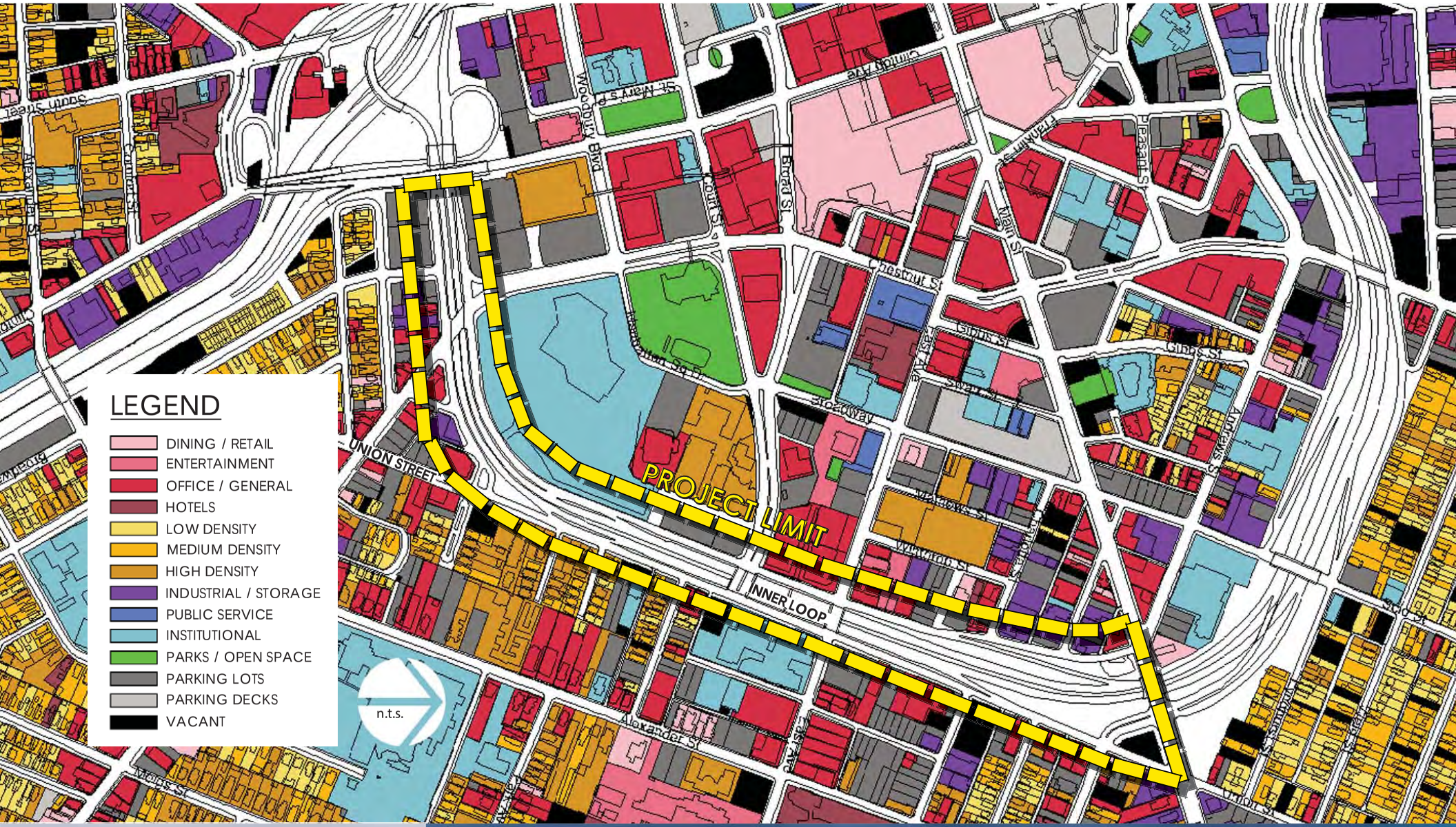
The raising of the Inner Loop and the corresponding reduction in pavement will allow the motorist to experience the views from the travel way due to the imposed reduction of speed. The proposed roadway configuration will create a visual quality of intactness and unity by providing motorists, pedestrians, 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

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# VISUAL IMPACT ASSESSMENT

## VIEWSHED MAP

FIGURE 2

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# VISUAL IMPACT ASSESSMENT

## DESIGN ALTERNATIVE

FIGURE 3

VIEW NORTH LOOKING AT N. UNION STREET OFF-RAMP

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

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# VISUAL IMPACT ASSESSMENT

## EXISTING CONDITIONS

ATTACHMENT A

VIEW WEST FROM S. UNION STREET

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

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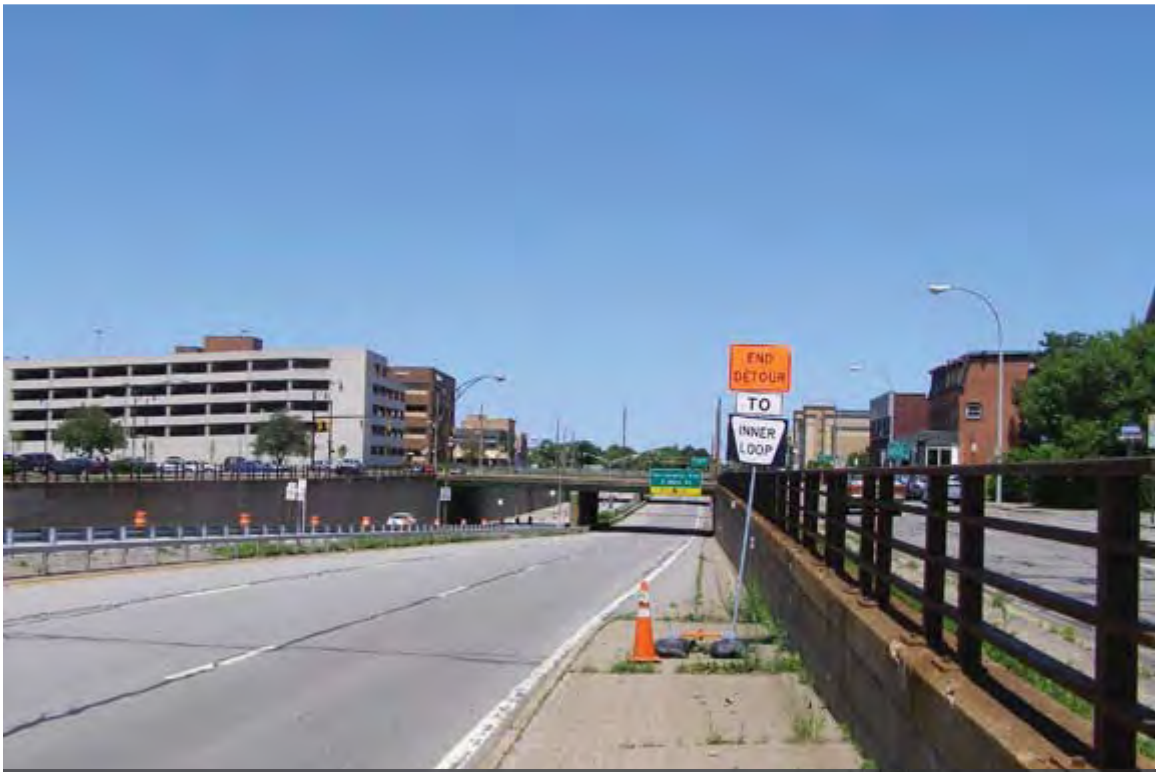
# VISUAL IMPACT ASSESSMENT

## EXISTING CONDITIONS

ATTACHMENT A

VIEW OF INNER LOOP CORRIDOR FROM MONROE AVENUE BRIDGE




VIEW NORTH LOOKING AT BROAD STREET BRIDGE

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# VISUAL IMPACT ASSESSMENT

## EXISTING CONDITIONS

ATTACHMENT A

VIEW NORTH LOOKING AT EAST MAIN STREET

VIEW SOUTH LOOKING AT EAST AVENUE AND BROAD STREET BRIDGES

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# VISUAL IMPACT ASSESSMENT

## EXISTING CONDITIONS

ATTACHMENT A

EXISTING

PROPOSED

Stantec

# VISUAL IMPACT ASSESSMENT

## PHOTOSIMULATION

ATTACHMENT B

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# 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:
STANTEC INC.
61 COMMERCIAL STREET
ROCHESTER, NEW YORK 14614

FOR SUBMISSION TO:
CITY OF ROCHESTER
30 CHURCH STREET
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WATTS
ARCHITECTURE &
ENGINEERING

# PRELIMINARY SCREENING REPORT

FOR THE

HAZARDOUS WASTE/CONTAMINATED MATERIALS ASSESSMENT

OF THE

INNER LOOP RECONSTRUCTION PROJECT
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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

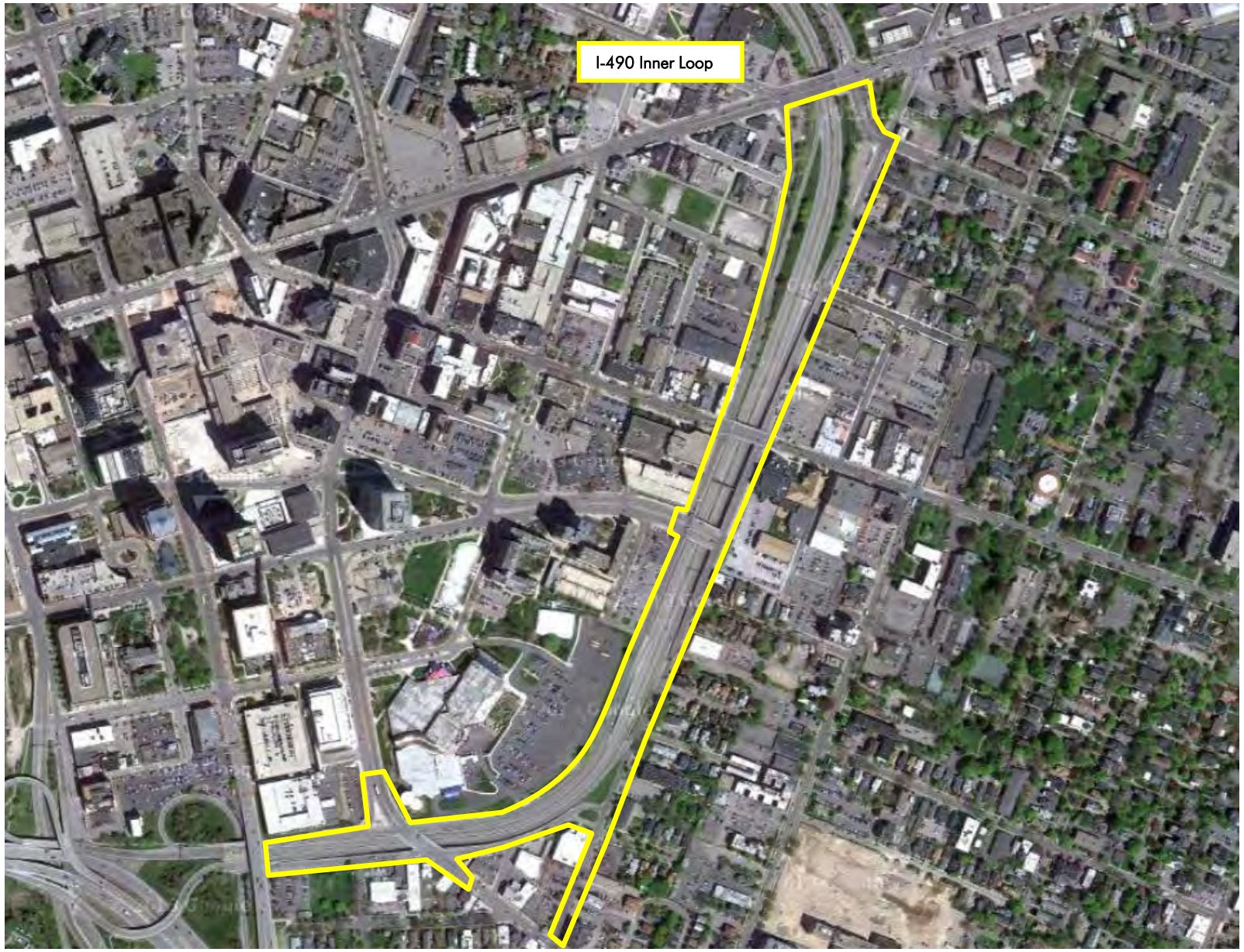
Watts Architecture & Engineering (Watts) was retained by Stantec, Inc. (Stantec) to perform a preliminary screening for the Hazardous Waste/Contaminated Materials (HW/CM) Assessment of the Inner Loop Reconstruction Project, City of Rochester, Monroe County, New York (PIN 4940T7). This report was prepared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

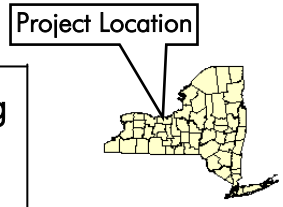



Figure 1 – Project Location Map

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

Not to Scale | July 2013

Watts Architecture & Engineering
95 Perry Street
Buffalo, New York

# 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.

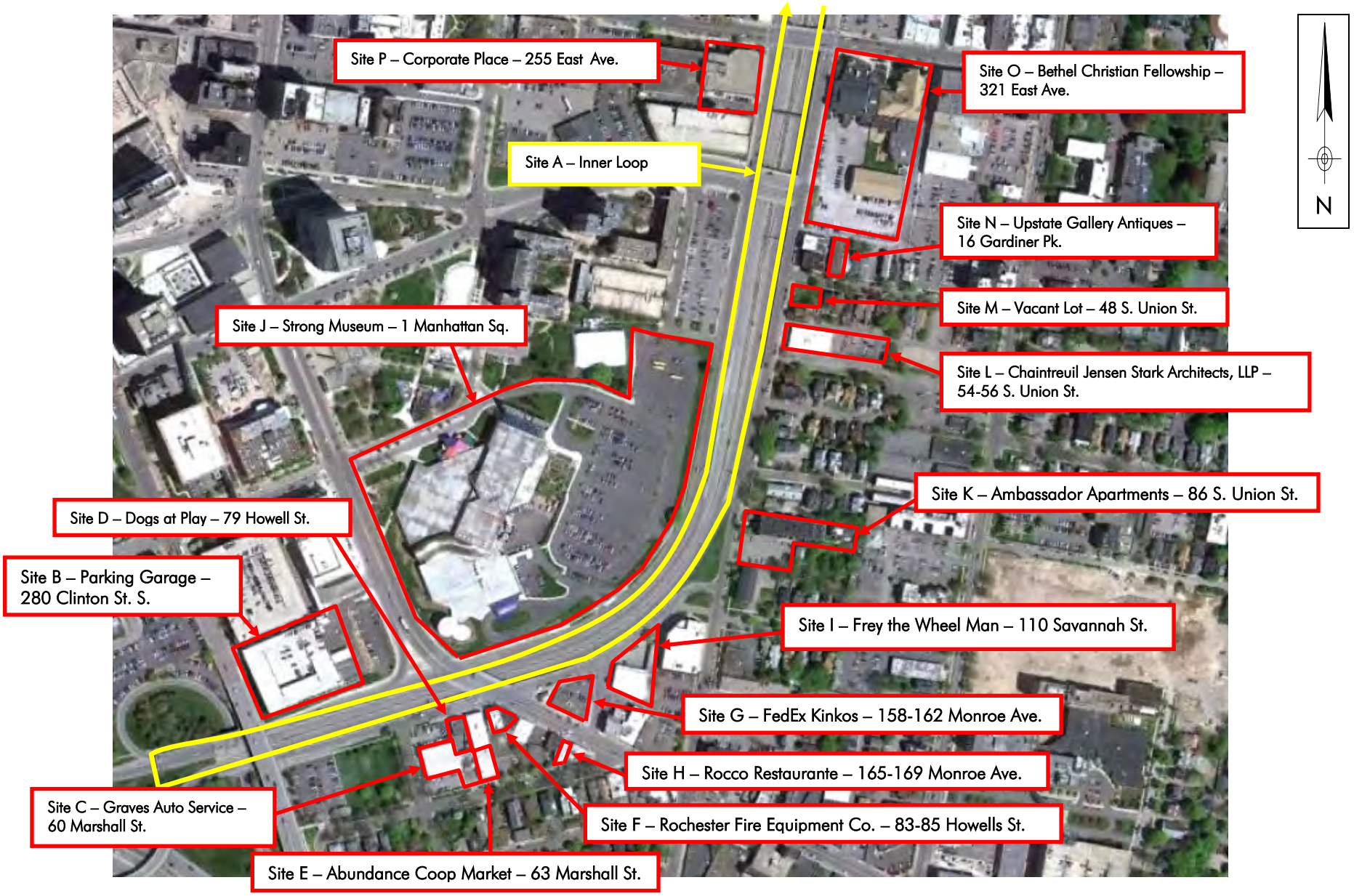
Sanborn Maps

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

Project Location

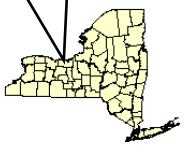
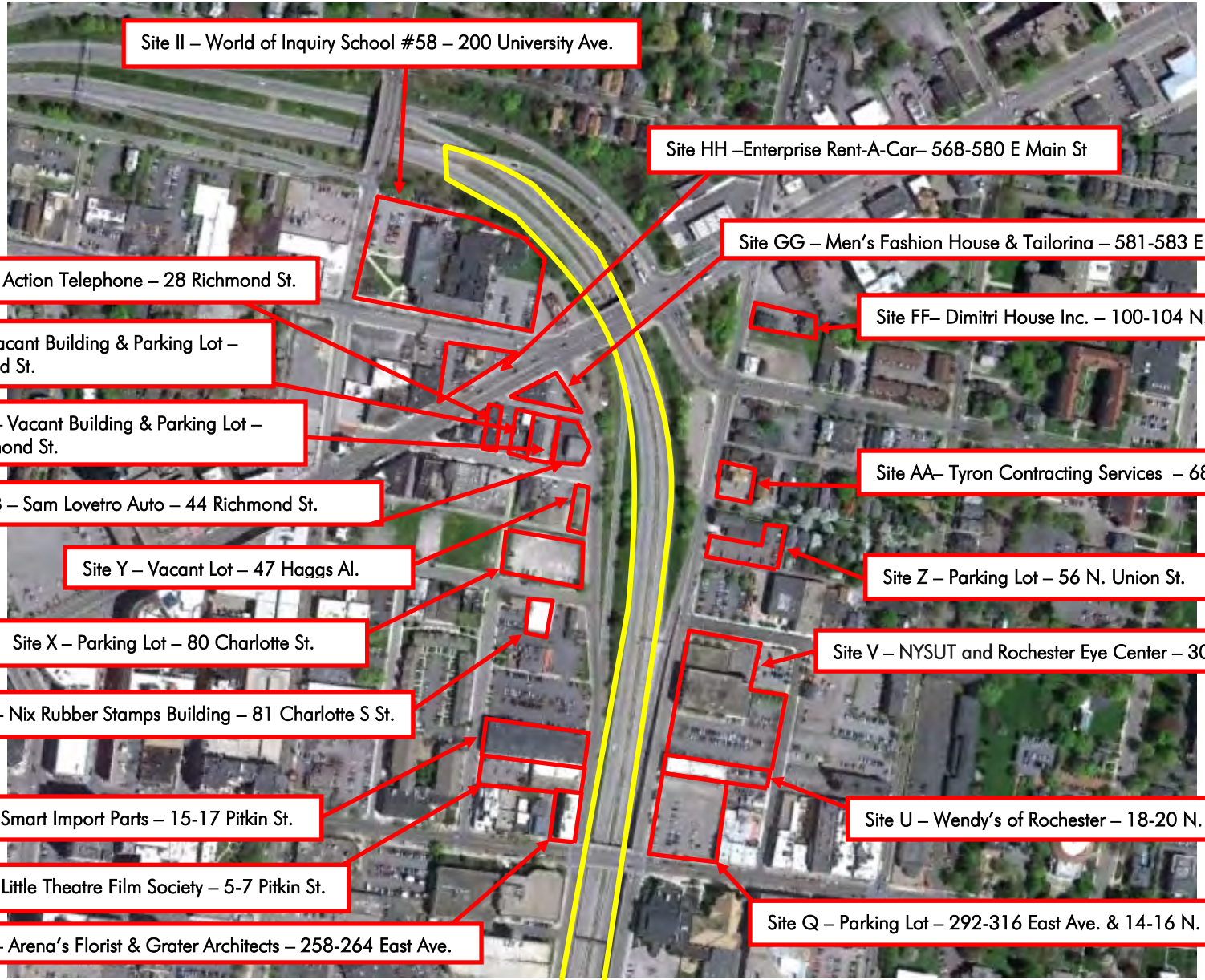


Figure 2 – Sites of Potential Environmental Concern

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

Not to Scale | July 2013

Watts Architecture & Engineering
95 Perry Street
Buffalo, New York




Source: Google Maps - 2013

Figure 3 – Sites of Potential Environmental Concern

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

Not to Scale | July 2013

Watts Architecture & Engineering
95 Perry Street
Buffalo, New York

| 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.

NYSDEC Spill Report Database
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.

Historic Auto Database
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.

Hazardous Waste Manifest
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.

City of Rochester Records
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.

Monroe County Department of Health Records
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.

NYSDEC Petroleum Bulk Storage Database
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.

NYSDEC Spill Report Database
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.

Hazardous Waste Manifest
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.

City of Rochester Records
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.

Monroe County Department of Health Records
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

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## ATTACHMENTS

Attachment A Project Location and Study Area Maps
Attachment B Mesoscale Analysis Summary of Emission Factors
Attachment C Mesoscale Analysis Calculation Tables/Spreadsheets

## 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 not 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 | Concentration | | State | Federal |
| | | | (ID Number) | Average | Maximum | | |
| Carbon Monoxide | (ppm) | Annual A.M. | Rochester 2 | 0.2 | --- | NC | NC |
| | | 8-Hr. Average | (2701-22) | --- | 0.9 | 9 | 9 |
| | | 1-Hr. Average | | --- | 1.3 | 35 | 35 |
| Ozone | (ppm) | Annual A.M. | Rochester 2 | 0.028 | --- | NC | NC |
| | | 1-Hr. Average | (2701-22) | --- | 0.104 | NC | NC |
| | | 8-Hr. 4th Average (3-year) | | 0.071 | 0.075<br>0.072 0.066<br>(2010) (2011) | 0.075 | 0.075 |
| Inhalable Particulates (PM 2.5) | ($ug/m^3$) | 3 yr Annual A.M. | Rochester 2 | 8.7 | --- | 15 | 15 |
| | | 98% 3yr Average (24-hour) | (2701-22) | 23 | --- | 35 | 35 |
| Inhalable Particulates (PM 10) | ($ug/m^3$) | Annual A.M. | Rochester 2 | 13 | --- | NC | NC |
| | | 24-Hr. Average | (2701-22) | --- | 27 | 150 | 150 |
| Sulfur Dioxide | (ppb) | Annual A.M. | Rochester 2 | 0.99 | --- | 30 | 30 |
| | | 24-Hr. Average | (2701-22) | --- | 8.0 | 140 | 140 |
| | | 3-Hr. Average | | --- | 16.2 | 500 | 500 |
| | | 1-Hr. Avg. of 3 yrs | | 23 | --- | 75 | 75 |
| Nitrogen Dioxide | (ppb) | Annual A.M. | Buffalo | 10.46 | --- | 53 | 53 |
| | | 1-Hr. Avg. of 3 yrs | (1401-18) | 56 | --- | 75 | 75 |
| Lead | ($ug/m^3$) | Annual G.M. | Rochester 2 | 0.002 | --- | 0.15 | 0.15 |
| | | 3 Month Average (lead-PM10 Sampler) | (2701-22) | 0.003 | | 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. |
|---|---|---|---|---|---|---|---|---|---|---|
| | ETC | ETC+10 | ETC+20 | ETC | % *Change* | ETC+10 | % *Change* | ETC+20 | % *Change* | Impact Thresholds Met* |
| **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 Standard Specifications - Construction and Materials (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).

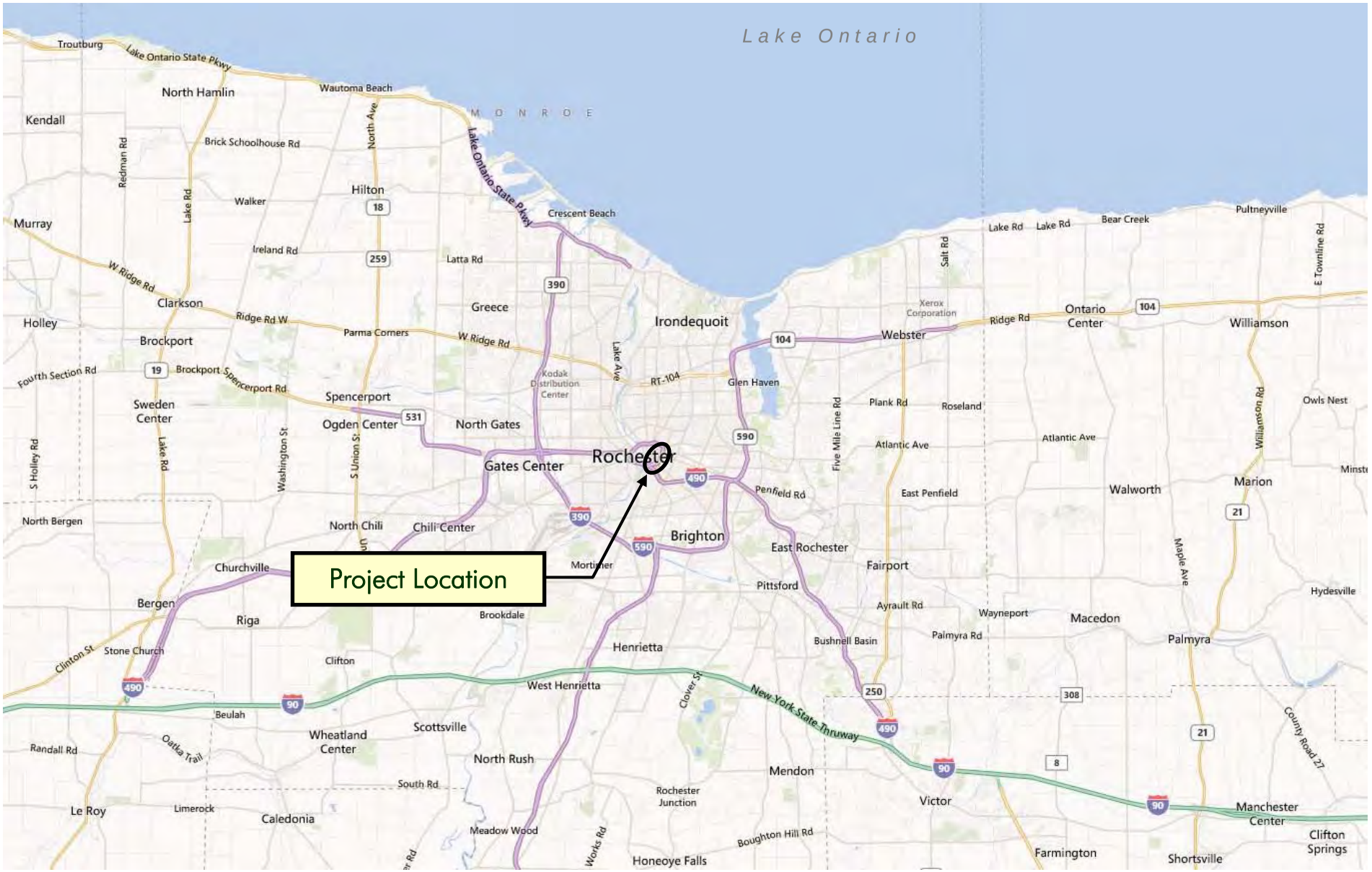
2. NYSDEC. 2011 Annual New York State Air Quality Report, Ambient Air Monitoring System.

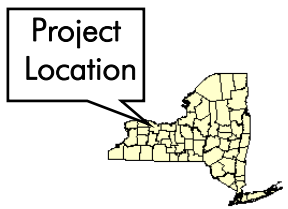
3. NYSDOT. Standard Specifications - Construction and Materials, Section 107-11.

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



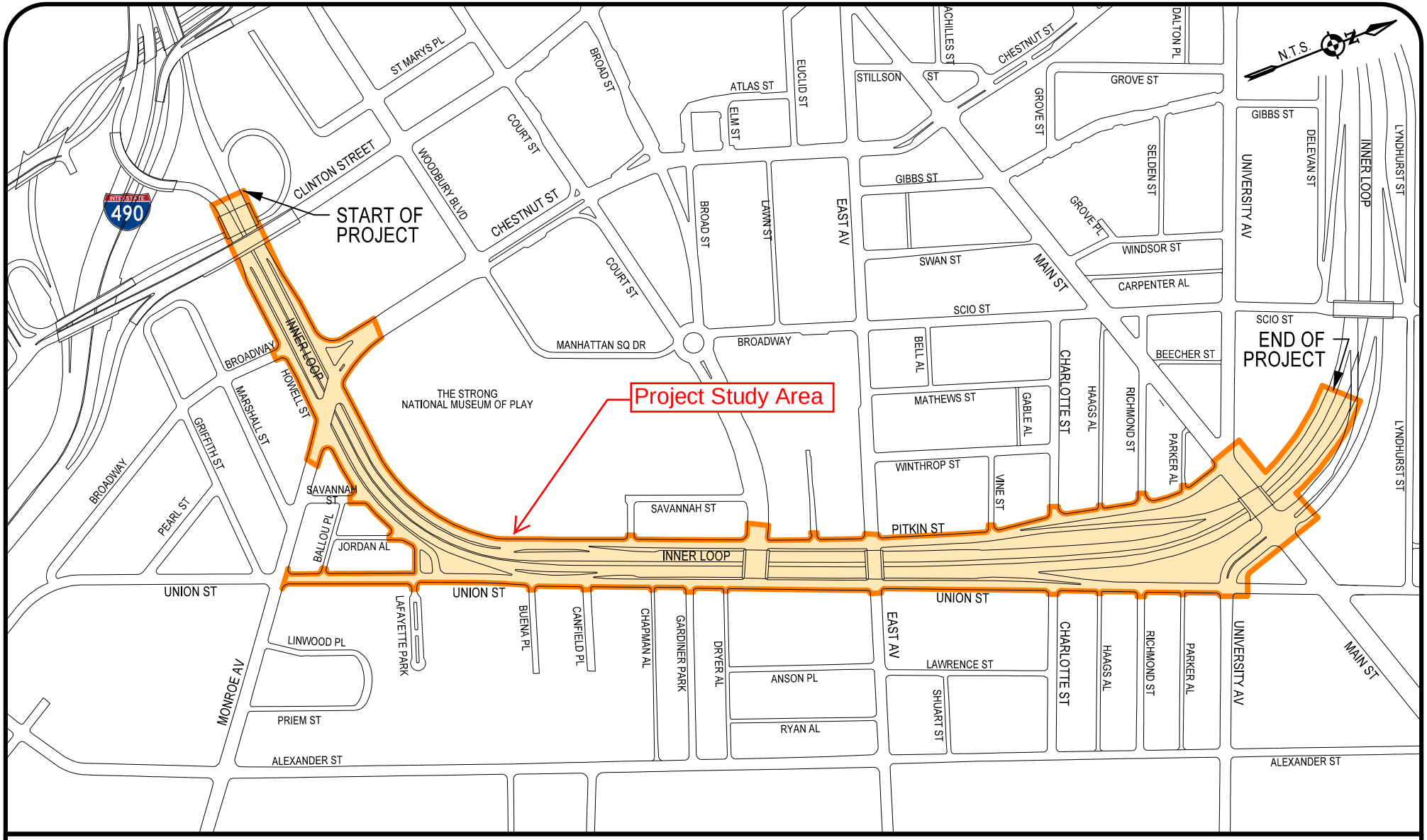

Source: Microsoft Bing 2013.

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
61 Commercial Street
Rochester, NY 14614
(585) 475-1440

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 | Link Description | MOVES | Speed | X1 | Y1 | X2 | Y2 | PM Peak | Length | Length | VMT | VOC | | NOx | | CO | | PM-10 | | PM-2.5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | | Source | (5 mph incr) | (ft) | (ft) | (ft) | (ft) | (veh/hr) | (ft) | (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 | 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 | | 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) |
| 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 | 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 | 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 | | 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) |
| 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 | | 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 | 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 | | 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) |
| 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 | | 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 | 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**

| | |
|---|---|
| **ETC Year =** | 2015 |
| **% Project Growth RATE =** | 0.50 |

Link Input Data

| | | |
|---|---|---|
| **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 | Link Description | MOVES | Speed | X1 | Y1 | X2 | Y2 | PM Peak | Length | Length | VMT | VOC | | NOx | | CO | | PM-10 | | PM-2.5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | | Source | (5 mph incr) | (ft) | (ft) | (ft) | (ft) | (veh/hr) | (ft) | (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 | 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 | | 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) |
| 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 | | 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 | 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 | | 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) |
| 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 | | 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 | 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 | | 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) |
| 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 | | 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) |
| 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 | | 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 | 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
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ROCHESTER NY 14614

For Submission To:

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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.

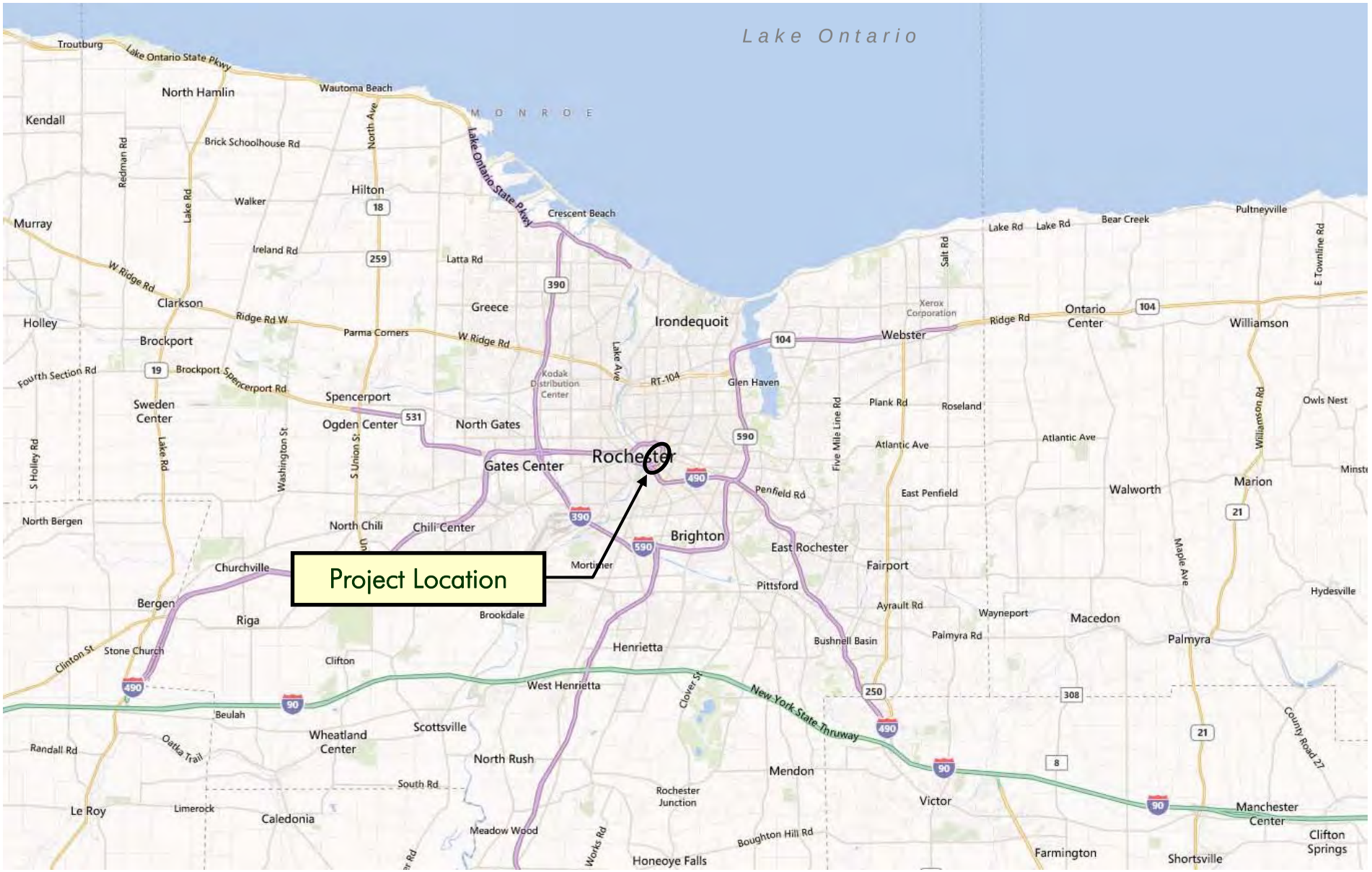
## 1.2 Project Location

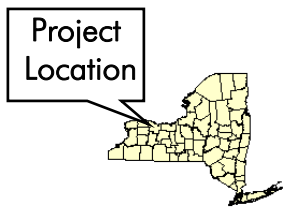
The proposed project is located in the City of Rochester, Monroe County, New York. The project study area limits for the air study are shown on **Figure 2** in **Attachement A.**

## 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<br>Clinton<br>Chestnut | 1:04 pm<br>4:00 pm | 8/6/13<br>8/8/13 | 56<br>56 | ----<br>57 |
| **Receiver B:** Apartment complexes and a doctor's office at SE side of S. Union St. - Activity Category B (residential areas). | S. Union<br>Monroe | 11:37 am<br>4:00 pm | 8/6/13<br>8/15/13 | 63<br>65 | ----<br>66 |
| **Receiver C:** Strong Museum. - Activity Category C (recreation area). | Inner Loop<br>Pitkin | 6:29 pm<br>5:22 pm | 8/6/13<br>8/15/13 | 56<br>60 | ----<br>60 |
| **Receiver D:** Front yards of residential apartments and houses east of S. Union St. - Activity Category B (residential areas). | Inner Loop<br>S. Union | 12:06 pm<br>4:41 pm | 8/6/13<br>8/15/13 | 65<br>66 | ----<br>65 |
| **Receiver E:** Apartment complex and Tennis Club. - Activity Category B (residential/sports). | Inner Loop<br>Broad | 6:04 pm<br>5:01 pm | 8/6/13<br>8/15/13 | 55<br>56 | ----<br>55 |
| **Receiver F:** Bethel Christian Fellowship Church. - Activity Category C (places-of-worship). | Inner Loop<br>S. Union | 1:44 pm<br>4:32 pm | 8/6/13<br>8/6/13 | 63<br>63 | ----<br>64 |
| **Receiver G:** "New Hope" and "The Word of the Cross". - Activity Category C (places-of-worship). | Inner Loop<br>N. Union | 2:20 pm<br>5:02 pm | 8/6/13<br>8/6/13 | 64<br>64 | ----<br>64 |
| **Receiver H:** World of Inquiry School at 200 University Avenue. - Activity Category C (schools). | Inner Loop<br>E. Main | 7:06 pm<br>4:10 pm | 8/6/13<br>8/6/13 | 59<br>60 | ----<br>62 |
| **Receiver I:** Backyards of residential houses with along Lyndhurst Street. - Activity Category B (residential areas). | Inner Loop<br>University Ramps | 3:08 pm<br>5:29 pm | 8/6/13<br>8/6/13 | 61<br>59 | ----<br>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 85$^{th}$ 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

| Receiver Location | FHWA Category | NAC (dBA) | Noise Level (Leq) | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2008 Model (dBA) | Design Year (2035) | | | |
| | | | | 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. 4940.77 - INNER LOOP EAST RECONSTRUCTION PROJECT ROCHESTER, NEW YORK | |
| SCALE: 1:3600 (11"x17" plot) | NOVEMBER 2013 |

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

FILE NAME = 14X2308 Rochester I-490 Inner Loop\CADD\Environmental\Inner Loop Noise Receiver Locs v04.dgn
DATE/TIME = 10/15/2013
USER = jkellogg

# ATTACHMENT B

Field Noise Monitoring Logs

PM Peak

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

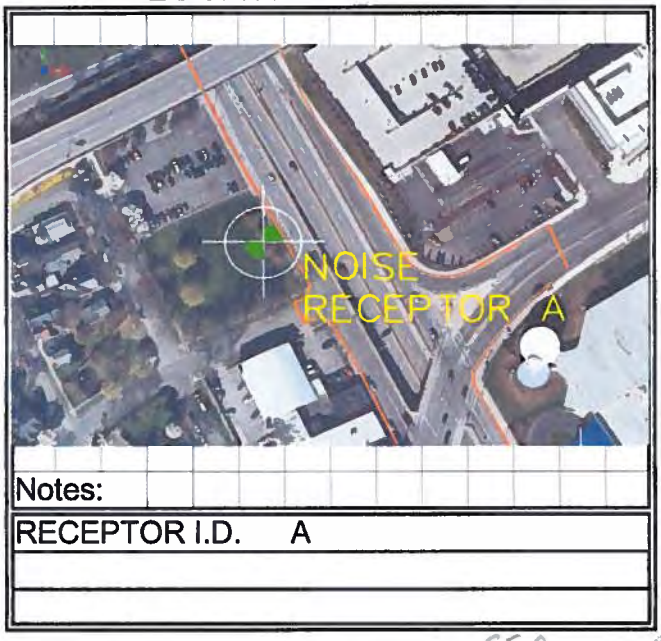
DATE: 8/8/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, PC, MG

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 |
| 9:58 | high 60s | plane overhead |
| | | cicadas here |
| | | Air wrench 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 | Skate Board |
| first 5min | 62 | some machinery below bridge intermitt- |

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. | | | | |

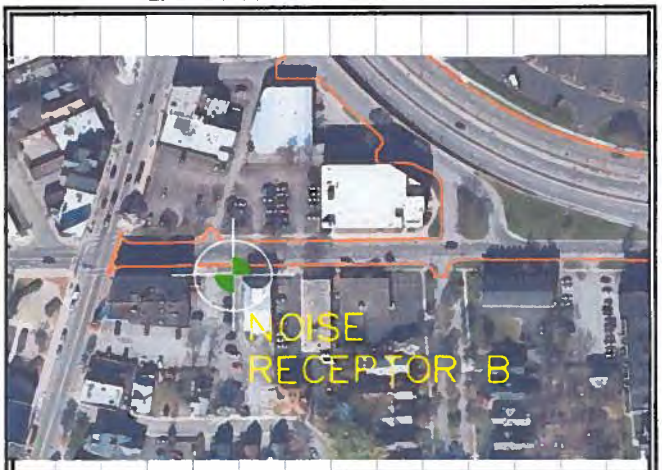
Dave-0363 - Clinton ✓
Pat 0803 - Monroe ✓
Norm-0362 - Broadway ✓

# 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%

LOCATION DIAGRAM




Notes:
RECEPTOR I.D. B

| RUN TIME | NOISE LEVEL dBA | COMMENTS |
|---|---|---|
| Entire | ~55-56 | HVAC on top of bldg |
| 2100 | | Bus Stop |
| 332 | ~66 | Stereo in car |
| | | Misc Horns |
| | | + car starting |
| | | throughout. |
| 1446 | ~64 | Airplane |

| Time Interval | 5 Min. | 10 Min. | 15 Min. | 20 Min. | 25 Min. |
|---|---|---|---|---|---|
| LEQ Reading | 64.4 | 64.3 | 64.8 | 64.8 | |
| Start Time 4:00p | 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. | | | | |

Pat 0364 - Monroe EB ✓
Dave 0363 - Monroe WB ✓
Nora 0362 - Union ✓

Off Peak

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

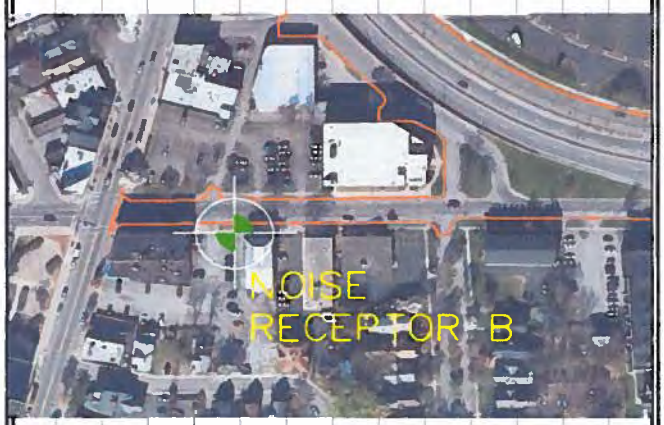
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: NK, JK, DH, PC

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 roof 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 11:37a | 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 - D10803 Monroe EB ✓
Dave - D10363 " WB ✓
Nora - 0362 Union ✓

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

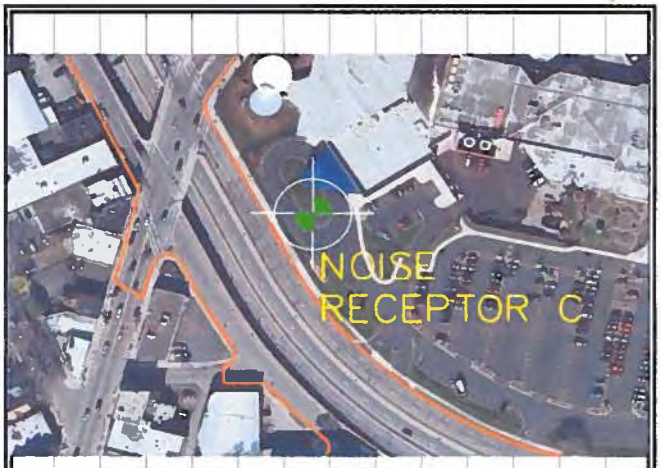
DATE: 8/15/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

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




Notes:
RECEPTOR I.D. C

many cars in parking Lot leaving
1 Bus
1 Fedex truck

| 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

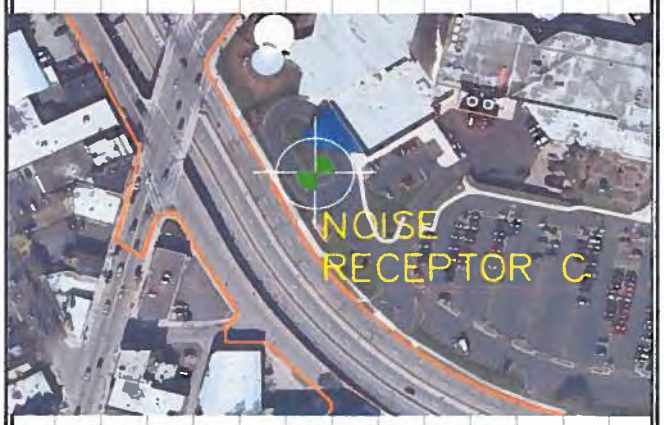
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

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 | " " |
| 1320-2250 | ~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 6:29p | 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. | | | | |

Nora 0362 Chestnut Bridge ✓
Dave 0363 Inner Loop (No cars - Construction - No access)
Pat 0803 Pitkin + Howell ✓

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

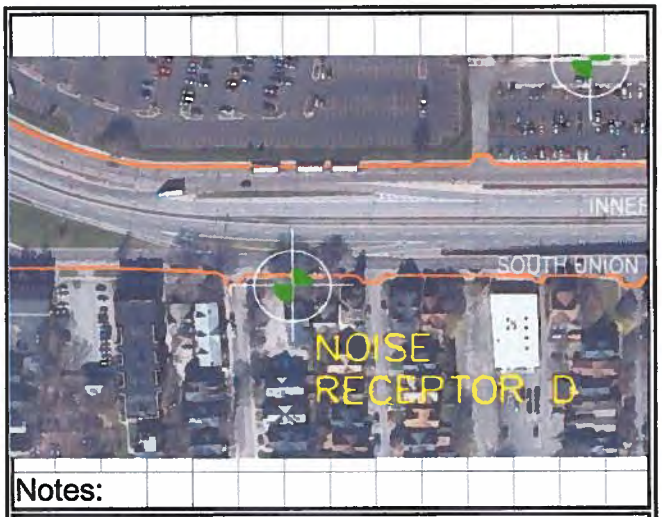
DATE: 8/15/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

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 6362 Union
Pat 0364 Canfield
JK Hand Buena

Off Peak

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

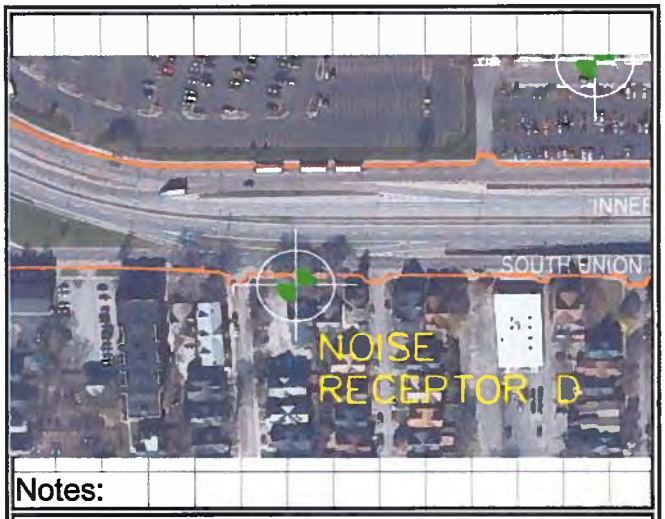
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

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 1206p | 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 0803 Canfield ✓
JK 0364 Buena ✓

80% of cars Leading to Inner Loop Rev up to get on Ramp.

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

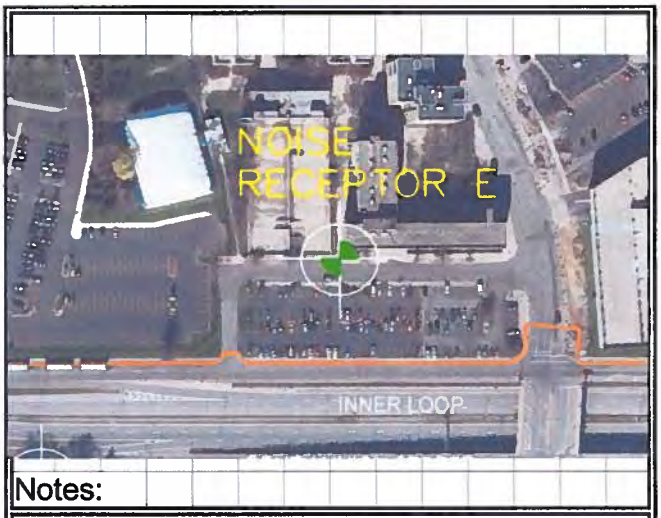
DATE: 8/15/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JE, NE, DH, PC

INSTRUMENT: Casella CEL 633C1
S/N: 2511397
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. | | | | |

Nor @ 0362 - Savanah ✓
Pat 0364 - Pitkin Union ✓
Dave 0363 - Broad ✓

Off Peak

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

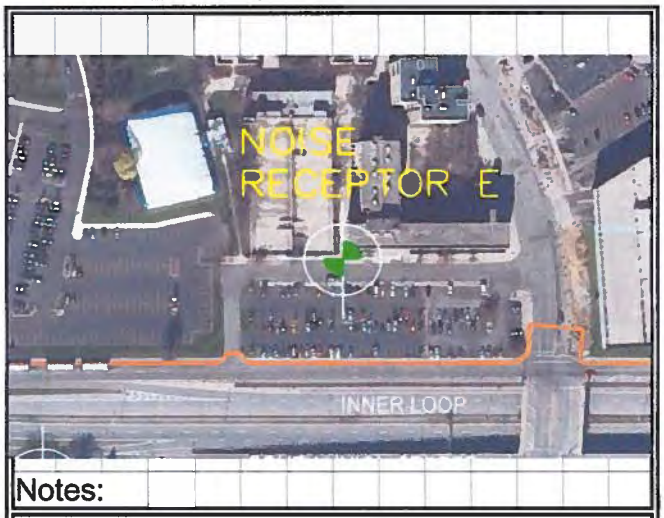
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

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 | 26.3 | Beeping alarm |
| intermittent | | Singing + loud Talking + Kid 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

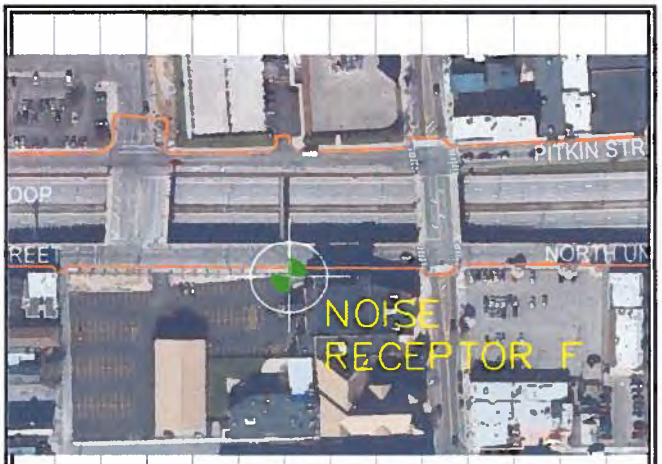
# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

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%

LOCATION DIAGRAM




Notes:
RECEPTOR I.D. F

| RUN TIME | NOISE LEVEL dBA | COMMENTS |
|---|---|---|
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| 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 4:32p | 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

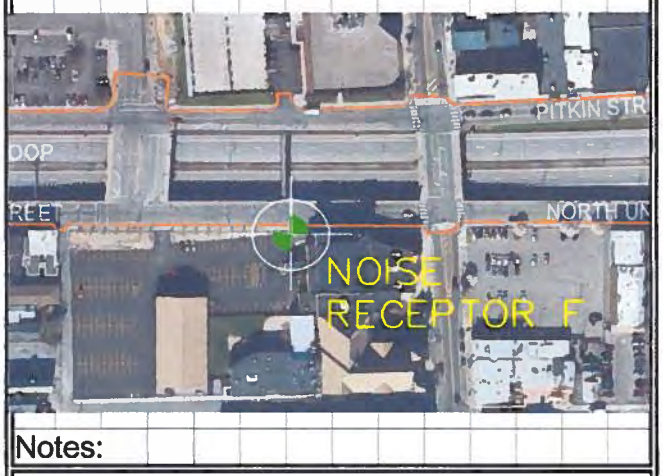
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

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 |
|---|---|---|
| 836 | 63 | Plane |
| 9:31 | | Union Queue |
| 1048 | 90's | Bus Stop + Squeaky Brakes |

LOCATION DIAGRAM




Notes:

RECEPTOR I.D. F

Can not see I.L. traffic

| 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

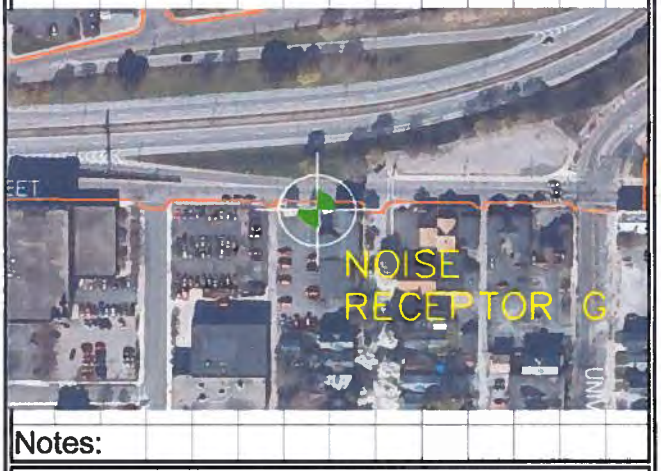
# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

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%

LOCATION DIAGRAM




~200' from Ramp

Notes:

RECEPTOR I.D. G

| RUN TIME | NOISE LEVEL dBA | COMMENTS |
|---|---|---|
| | | |
| | | |
| | | |

Off Peak

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

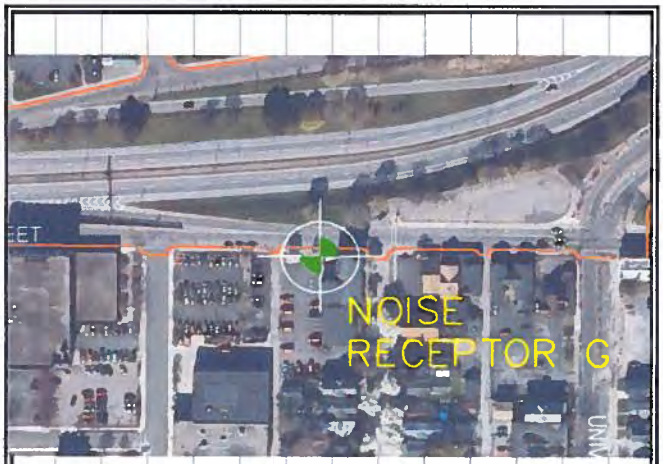
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

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 | ~61-59 | Construction |
| 2370 | | intermittent |
| | | Pounding |
| | | Jackhammer |
| | | 1 block away |
| | | can hear when NO cars present |
| | | Pretty Consistent (from school) |
| ~11min | ~90 | Loud motorcycle |
| | | |
| 1633-2237 | ~55-58 | Loud Talkers |

LOCATION DIAGRAM




Notes:

RECEPTOR I.D. G

1/2 of Union cars coming off of Ramp

| 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 IL ✓
Pat 0803 Union + Pittsford ✓
Nora 062 Richmond ✓
JK 0364 Itaags ✓

PM Peak

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

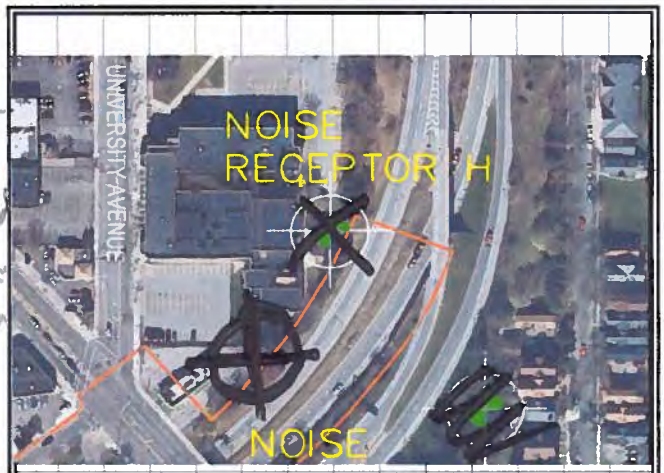
DATE: 8/6/13 PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7 PERSONNEL: JK, NK, DH, PC

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. (Sent over Construction 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 IL ✓
Pat 0803 Ramps ✓
Nora 0362 main ✓

Off-Peak

# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

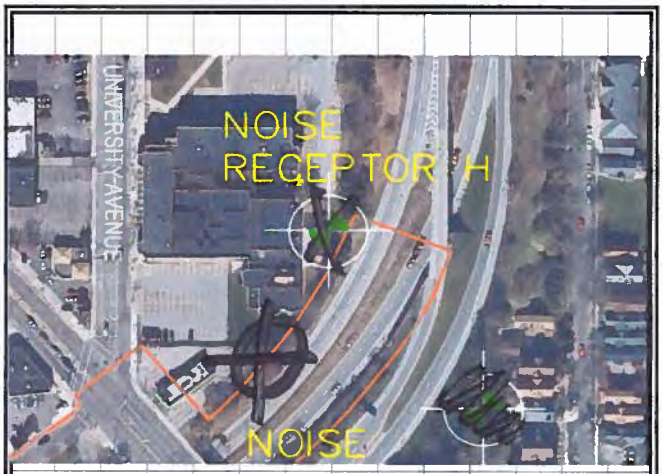
DATE: 8/6/13
PROJECT NAME: Inner Loop Reconstruction
LOCATION: Rochester, New York
JOB NO: 12198
PIN NO: 4940.T7
PERSONNEL: JK, NK, DH, PC

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 ✓

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 |
|---|---|---|
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LOCATION DIAGRAM

Notes:
RECEPTOR I.D. 1

Somebody on IL off 12 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

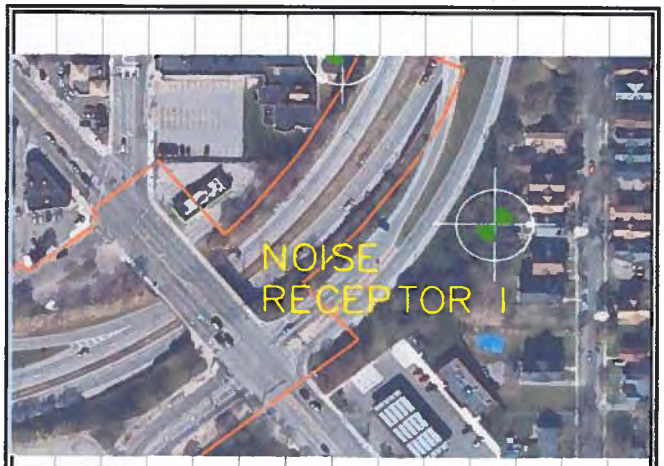
# Watts Architecture & Engineering, P.C.
# NOISE SURVEY

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%

LOCATION DIAGRAM




Notes:
RECEPTOR I.D. 1

| RUN TIME | NOISE LEVEL dBA | COMMENTS |
|---|---|---|
| misc | | some construct |
| | | back up beeps |
| | | from school |
| | | site construct |

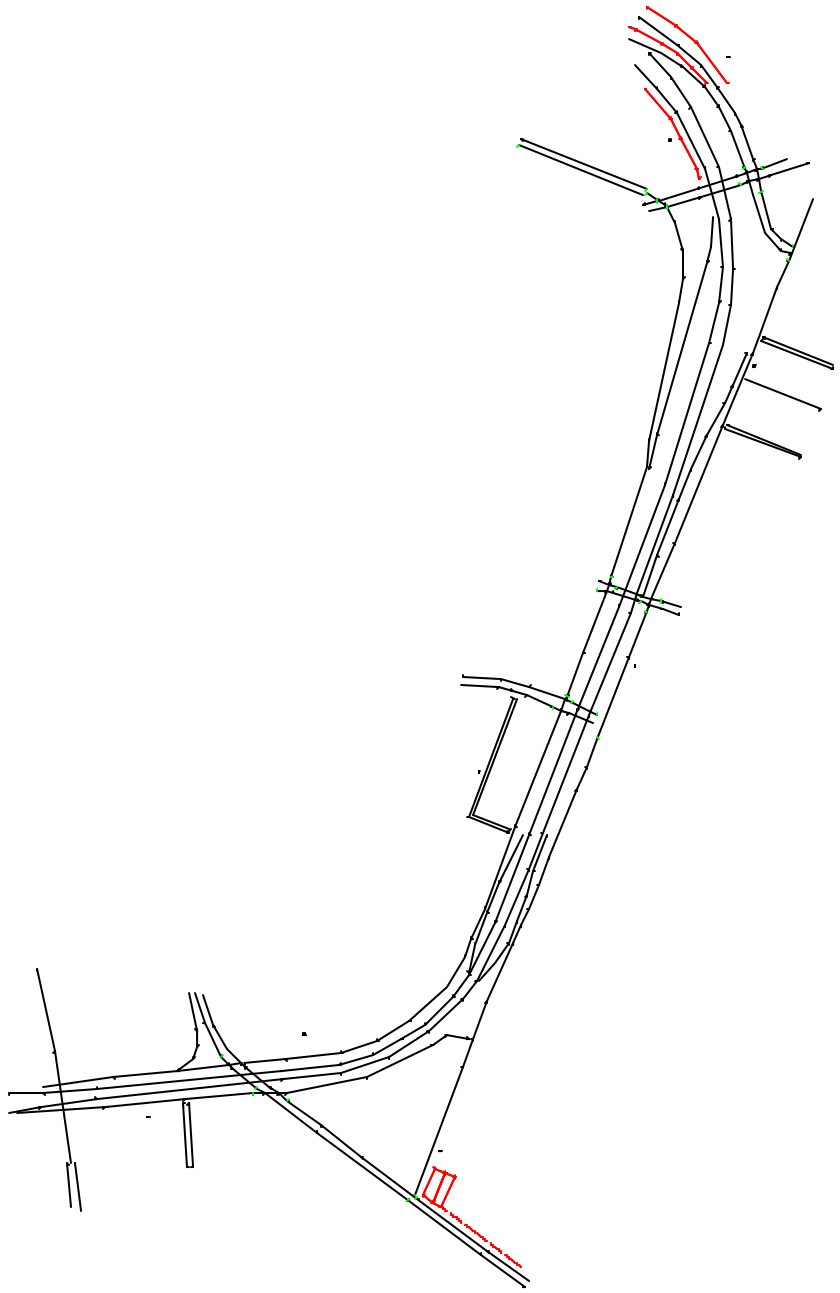
| Time Interval | 5 Min. | 10 Min. | 15 Min. | 20 Min. | 25 Min. |
|---|---|---|---|---|---|
| LEQ Reading | 62.8 | 62.3 | 61.8 | 61.5 | 61.3 |
| Start Time 3:08pm | Minimum Recording Time | | | Extended Time | |
| Requirements | Continue recording LEQ levels at 5 minute intervals, up to 25 minutes, 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 ✓

# 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: | |

1409000 1409500 1410000 1410500 1411000 1411500 1412000 1412500 1413000 1413500

Watts
JKK
15 November 2013
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
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h | | Increase over existing | | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Calculated | Crit'n | Calculated | Crit'n Sub'l Inc | | | Calculated | 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 | 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: 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 | | 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-2-2-2 | 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 | | 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 |
| 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) 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: 2013 Field Verification Inner Loop Noise

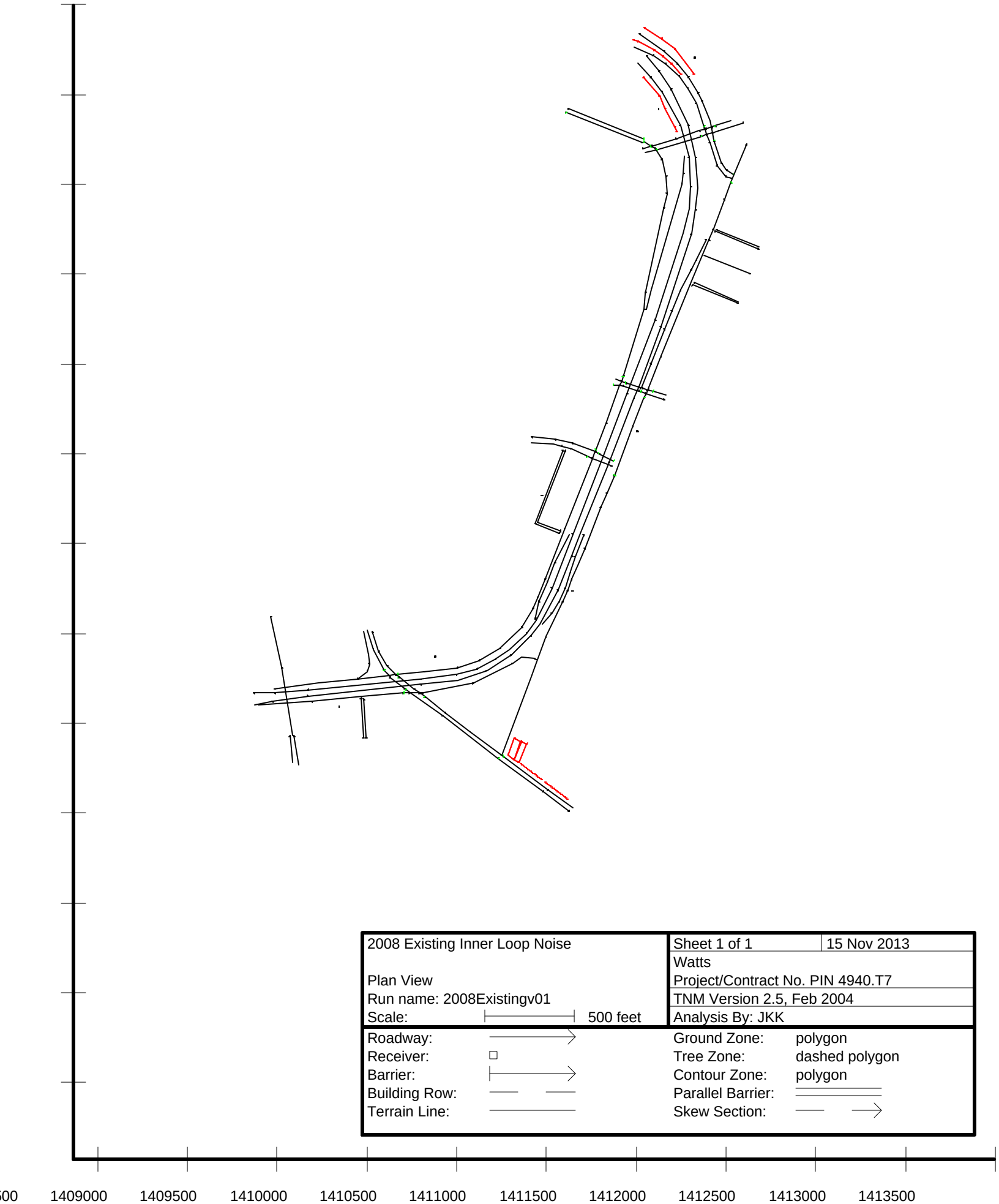
| Barrier | | | | | | | | | Points | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Type | Height | | If Wall | If Berm | | | Add'tnl | Name | No. | Coordinates (bottom) | | | Height | Segment | | | | |
| | | Min | Max | $ per | $ per | Top | Run:Rise | $ per | | | X | Y | Z | at | Seg Ht | Perturbs | | On | Important |
| | | | | Unit | Unit | Width | | Unit | | | | | | Point | Incre- | #Up | #Dn | Struct? | Reflec- |
| | | | | Area | Vol. | | | Length | | | | | | | ment | | | | 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 Height** | **Building Percent** | **No.** | **Coordinates (ground) 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 | Sheet 1 of 1 \| 15 Nov 2013 |
| | Watts |
| Plan View | Project/Contract No. PIN 4940.T7 |
| Run name: 2008Existingv01 | 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
JKK
15 November 2013
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
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h | | Increase over existing | | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Calculated | Crit'n | Calculated | Crit'n Sub'l Inc | | | 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 | | 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 |
| 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 |

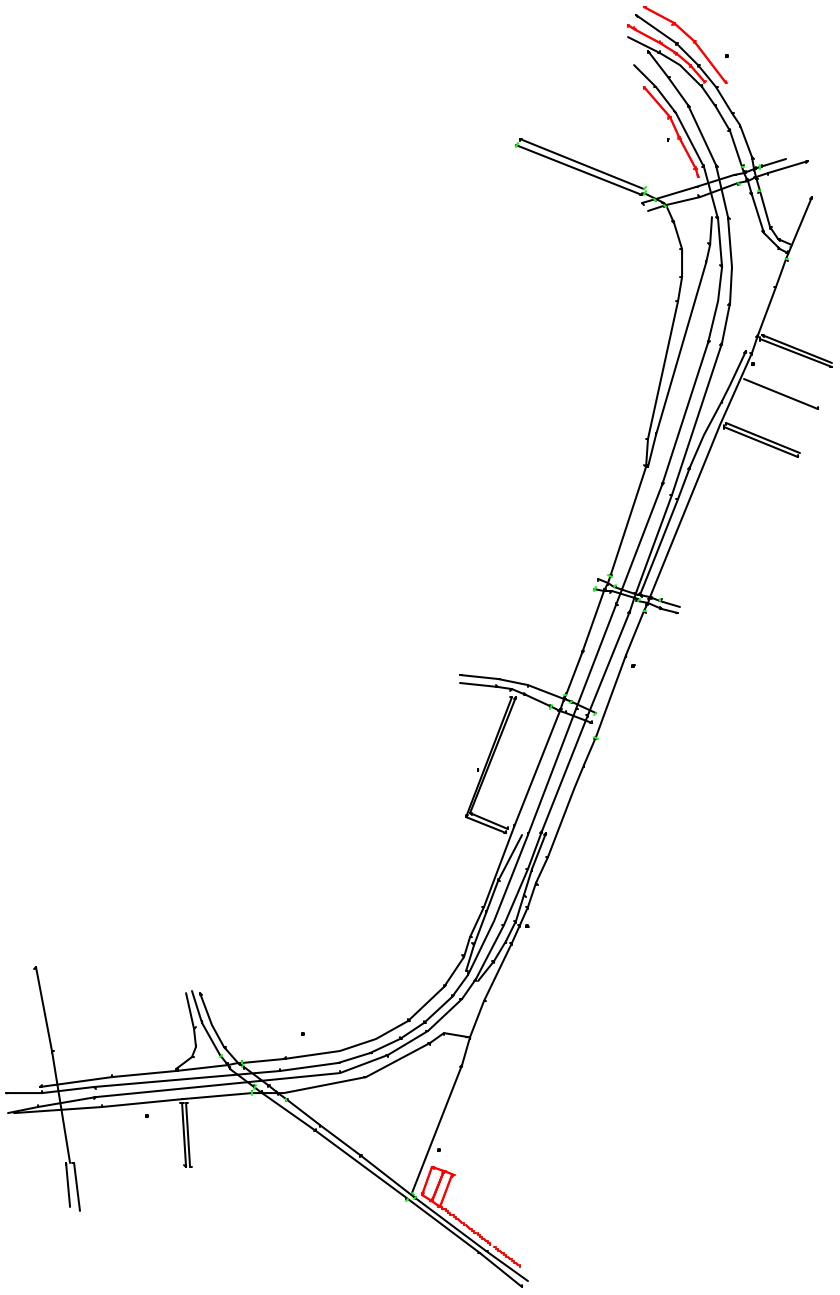
Watts 15 November 2013
JKK TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2008 Existing Inner Loop Noise

| Barrier | | | | | | | | | Points | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Type | Height | | If Wall | If Berm | | | Add'tnl | Name | No. | Coordinates (bottom) | | | Height | Segment | | | | |
| | | Min | Max | $ per | $ per | Top | Run:Rise | $ per | | | X | Y | Z | at | Seg Ht | Perturbs | | On | Important |
| | | | | Unit | Unit | Width | | Unit | | | | | | Point | Incre- | #Up | #Dn | Struct? | Reflec- |
| | | | | Area | Vol. | | | Length | | | | | | | ment | | | | 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:** | **2008 Existing Inner Loop Noise** | | | | | |
| **Building Row** | | | **Points** | | | |
| **Name** | **Average Height** | **Building Percent** | **No.** | **Coordinates (ground) 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: | |

00 1409000 1409500 1410000 1410500 1411000 1411500 1412000 1412500 1413000 1413500

Watts
JKK
15 November 2013
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
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h | | Increase over existing | | With Barrier Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Calculated | Crit'n | Calculated | Crit'n Sub'l Inc | | | | | |
| | | | 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 | Average pavement type shall be used unless |
| PROJECT/CONTRACT: | PIN 4940.T7 a State highway agency substantiates the use |
| RUN: | 2035 No Build Inner Loop Noise 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 | | 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 |
| 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 | 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 | 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 |

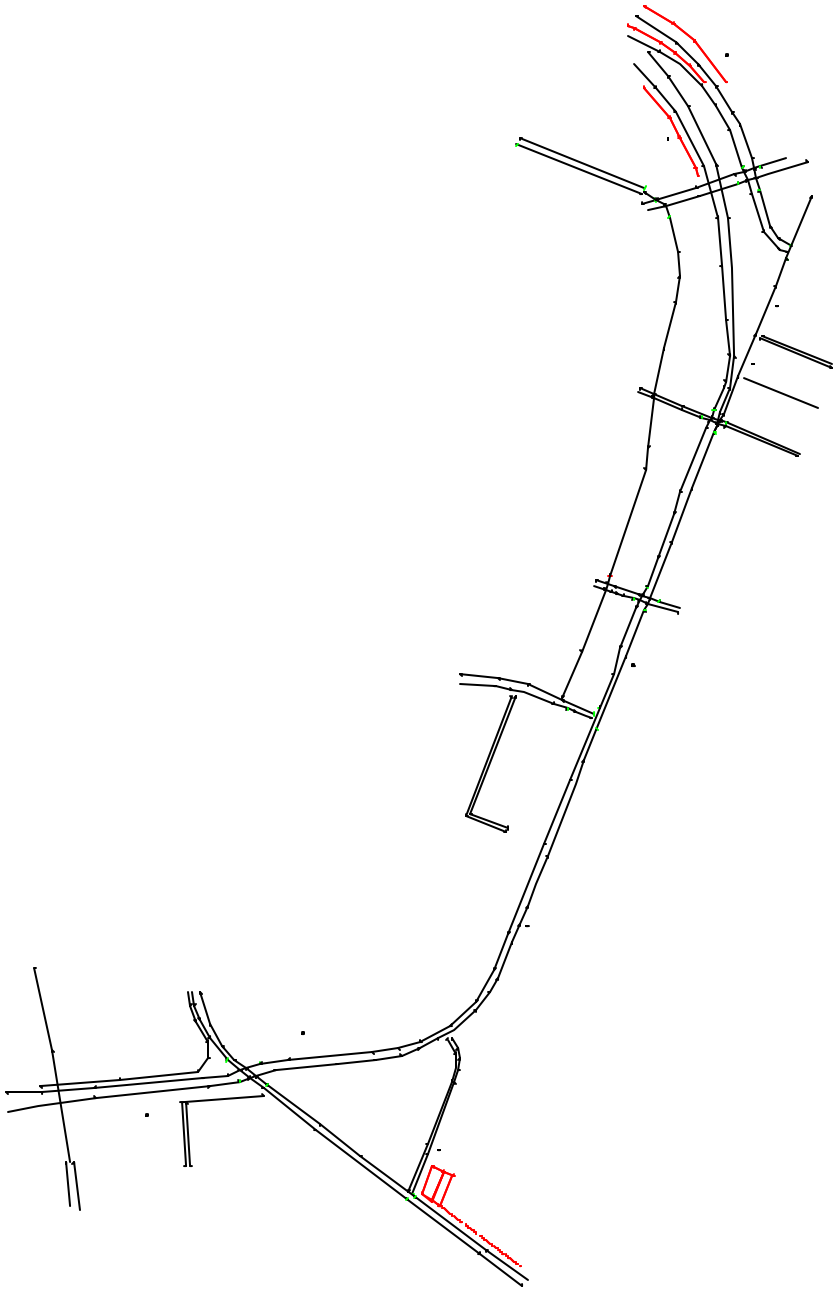
Watts 15 November 2013
JKK TNM 2.5

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 | $ per | Top | Run:Rise | $ per | | | X | Y | Z | at | Seg Ht | Perturbs | | On | Important |
| | | | | Unit | Unit | Width | | Unit | | | | | | Point | Incre- | #Up | #Dn | Struct? | Reflec- |
| | | | | Area | Vol. | | | Length | | | | | | | ment | | | | 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 Height** | **Building Percent** | **No.** | **Coordinates (ground) 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: | | Ground Zone: | polygon |
| Receiver: | | Tree Zone: | dashed polygon |
| Barrier: | | Contour Zone: | polygon |
| Building Row: | | Parallel Barrier: | |
| Terrain Line: | | Skew Section: | |

00 1409000 1409500 1410000 1410500 1411000 1411500 1412000 1412500 1413000 1413500

Watts
JKK
15 November 2013
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
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Increase over existing Crit'n Sub'l Inc | With Barrier Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction 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 | Noise Reduction Avg | Noise Reduction 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 15 November 2013
JKK 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 | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | | | | | | | | |

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INPUT: RECEIVERS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2035 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 | 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 | 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 |

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INPUT: BARRIERS
PROJECT/CONTRACT: PIN 4940.T7
RUN: 2035 Build Inner Loop Noise

| Barrier | | | | | | | | | Points | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Type | Height | | If Wall | If Berm | | | Add'tnl | Name | No. | Coordinates (bottom) | | | Height | Segment | | | | |
| | | Min | Max | $ per | $ per | Top | Run:Rise | $ per | | | X | Y | Z | at | Seg Ht Perturbs | | | On | Important |
| | | | | Unit | Unit | Width | | Unit | | | | | | Point | Incre- | #Up | #Dn | Struct? | Reflec- |
| | | | | Area | Vol. | | | Length | | | | | | | ment | | | | 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 Build Inner Loop Noise

| Building Row Name | Average Height | Building Percent | Points No. | Coordinates (ground) 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:

J R. Hof — Signature

1/9/14 — Date

PRINCIPAL — Title

James R. Hofmann Jr. — Printed Name

Responsible Local Official (for local projects):

J R McIntosh — Signature

1/9/14 — Date

CITY ENGINEER — Title

James R. McIntosh — 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
Date

REGIONAL LOCAL PROJECT LIAISON
Title

RICHARD J. PAPAJ, JR.
Printed Name