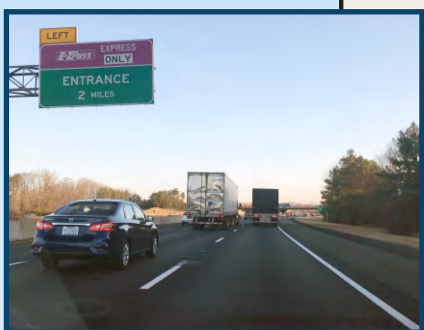
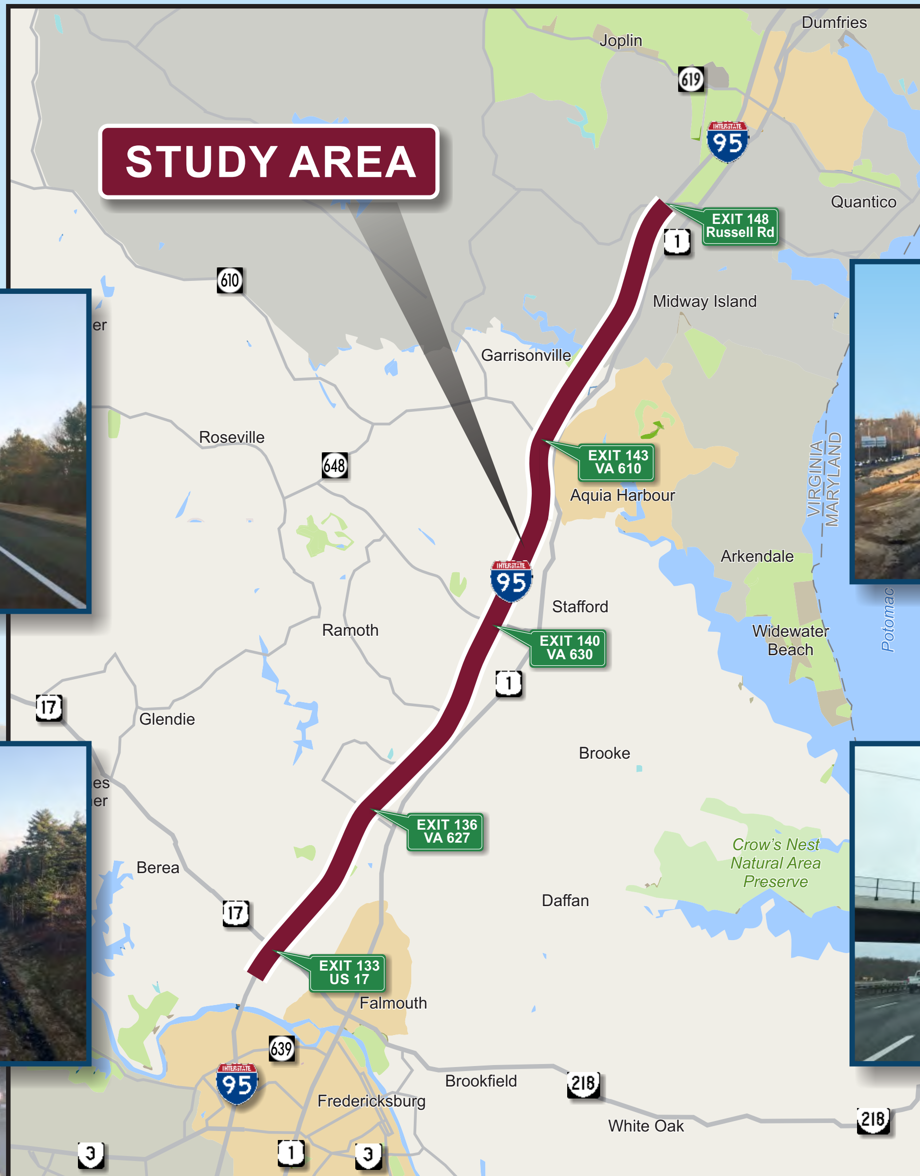
Interstate 95 Express Lanes
Fredericksburg Extension Study

AIR QUALITY TECHNICAL REPORT





VDOT Virginia Department of Transportation
U.S. Department of Transportation Federal Highway Administration

AUGUST 2017

AIR QUALITY ANALYSIS TECHNICAL REPORT

INTERSTATE 95 EXPRESS LANES FREDERICKSBURG EXTENSION

Prepared in support of the Revised Environmental Assessment

VDOT Project #: 0095-969-739

UPC Number: 110527

August 2017

EXECUTIVE SUMMARY

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency, is preparing a Revised Environmental Assessment (Revised EA) for the I-95 HOT Lanes Project, for which a Finding of No Significant Impact (FONSI) was issued by FHWA in 2011. The Revised EA presents improvements identified in a portion of the 2011 FONSI-selected Alternative that was not constructed, from the I-95 / US 17 North Interchange at Warrenton Road (Exit 133) to south of the I-95 / Russell Road interchange (Exit 148). The Revised EA also presents new access points along this portion of the 2011 FONSI-selected Alternative. Two alternatives are under consideration in the Revised EA and will be assessed in this technical report: the Build Alternative and No-Build Alternative. The National Environmental Policy Act (NEPA) requires consideration of whether the proposed action will have an adverse effect on air quality in the study area. Accordingly, quantitative carbon monoxide (CO) and Mobile Source Air Toxics (MSAT) analyses have been prepared. Additionally, qualitative analyses are provided for indirect effects and cumulative impacts. For purposes of efficiency and quality control, all emission and dispersion modeling inputs (and worst-case traffic inputs for the CO analyses) were taken from or were consistent with those specified in the VDOT Resource Document and associated online data repository.[1,2]

Project Status in the Regional Transportation Plan and Program: The project improvements all occur within Stafford County which is designated by the United States Environmental Protection Agency's (USEPA) Green Book as attainment for all National Ambient Air Quality Standards (NAAQS) and is not subject to federal conformity requirements.

The project is included in the Fredericksburg Area Metropolitan Planning Organization (FAMPO) 2040 Long-Range Transportation Plan (LRTP)[3] and was added to the FAMPO fiscal year (FY) 2015-2018 TIP[4] as FAMPO Resolution 17-21[5] for design work, environmental studies, and associated processes. This resolution was adopted by the FAMPO Board on February 27, 2017. In the resolution, the project is referred to as the "Express Lanes from near VA 610 / Garrisonville Road [Exit 143] to Exit 126."

Carbon Monoxide: Analyses for potential impacts for CO were conducted for the freeway and nearby intersections that might be impacted by the project. As the project area is located in a region that is attainment of the NAAQS for CO, only NEPA applies. USEPA project-level ("hot-spot") transportation conformity requirements for CO do not apply.

For the freeways and arterial street intersections, worst-case analyses for CO were conducted.

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[1] The Resource Document was created by VDOT to facilitate and streamline the preparation of project-level air quality analyses. It is intended as a resource for modelers to help ensure that not only regulatory requirements and guidance, as appropriate, are met in all analyses but also high-quality standards for modeling and documentation are consistently achieved. In in comprehensive fashion, it addresses the models, methods, and assumptions (including data and data sources) needed for the preparation of air quality analyses for transportation projects by, or on behalf of, the Department. It includes an associated online data repository to support project-level modeling. It was subjected to inter-agency consultation with FHWA and other agencies before being finalized in 2016.

[2] Copies of referenced VDOT documents (including the VDOT Resource Document and Programmatic Agreements) are available from the Department, on request. Documents may also be obtained via the VDOT website: http://www.virginiadot.org/programs/pr-environmental.asp

[3] See: https://www.fampo.gwregion.org/long-range-transportation-planning/

[4] See: https://www.fampo.gwregion.org/transportation-improvement-program/

[5] See: https://www.fampo.gwregion.org/wp-content/uploads/Resolution-17-21-Amending-the-TIP-to-Include-Fred-Ex.pdf

- For intersections, worst-case locations for each alternative were identified from a list of 15 potential intersections that were ranked from worst to best based on peak volumes and Level of Service (LOS). The top five intersections that were identified as worst-case based on this ranking were then screened for modeling using the 2016 FHWA-VDOT "*Programmatic Agreement (PA) for Project-Level Air Quality Analyses for Carbon Monoxide*" (hereinafter "2016 Agreement"), which references screening criteria (primarily Design-Year average daily traffic [ADT] and intersection skew angle) that were previously established based on worst-case modeling for typical intersections. The worst-case modeling was conducted using USEPA emission (MOVES2014a) and dispersion (CAL3QHC) models. Worst-case assumptions included peak hour traffic volumes, meteorology, and receptor locations on the right-of-way edge, which together, result in worst-case estimates for near-road concentrations. If the peak concentrations estimated using worst-case modeling for the worst-case intersections meet the applicable NAAQS, then all other locations within the project corridor would be expected to meet the NAAQS. For this project, a total of seven common worst-case intersections out of the 15 intersections studied ranked in the top five for either worst-case volumes or LOS for the 2022 and 2042 Build conditions. Of the seven worst-case intersections, four intersections were found to meet the criteria for screening that were referenced in the 2016 Agreement, so it can be safely concluded that they would all meet the NAAQS. The remaining three intersections were not screened based on the 2016 Agreement, and worst-case CO hot-spot modeling for these intersections was conducted. Concentrations estimated using worst-case modeling for these intersections met the applicable NAAQS; therefore, other intersections included in the Study Area also would be expected to meet the NAAQS.
- Five interchanges were studied in detail, and three interchanges were identified as worst-case based on LOS, traffic volumes, public access, and reasonableness. For the three worst-case interchanges, CO concentrations were estimated using worst-case assumptions and USEPA models, as noted above. These assumptions included worst-case grade separation configuration with receptors located in close proximity to the cross-over point (inside the right-of-way) and where the highest modeled concentrations would be observed. The results of the modeling for each of the short-listed (worst-case) interchanges indicated that, despite worst-case assumptions for traffic volumes, roadway configuration, and receptor placement, the modeled worst-case CO concentrations remain well below the CO NAAQS at all receptor locations for each interchange.

Greenhouse Gases: With the recent withdrawal of federal guidance addressing greenhouse gas (GHG) analyses and climate change,[6] the Department protocol (VDOT Resource Document, Section 4.7) for GHG analyses was reviewed for applicability to this project. Based on the Department protocol, a GHG analysis is not warranted for this project as it involves an EA and not an Environmental Impact Statement.

Mobile Source Air Toxics: For MSATs, the Build Alternative was evaluated following the latest FHWA guidance.[7] FHWA guidance specifies MSATs to include acetaldehyde; acrolein; benzene; 1,3 butadiene; diesel particulate matter; ethylbenzene; formaldehyde; naphthalene; and polycyclic organic matter. As the Build Alternative is anticipated to add significant capacity to the existing and/or proposed new roadway networks where Design-Year traffic is projected to be 140,000 to 150,000 annual average daily traffic (AADT) or greater, the Build Alternative is best characterized as one with "High Potential MSAT

[6] See: https://www.federalregister.gov/documents/2017/04/05/2017-06770/withdrawal-of-final-guidance-for-federal-departments-and-agencies-on-consideration-of-greenhouse-gas

[7] FHWA, "*INFORMATION: Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*", October 18, 2016. See: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/

Effects" per FHWA guidance, and therefore a quantitative MSATs analysis was conducted consistent with the guidance. The results of the quantitative MSATs analysis indicate that MSAT emissions are expected to decrease significantly from current conditions to the Opening-Year (2022) and Design-Year (2042) conditions for the Build Alternative, even when considering the increase in vehicle miles traveled (VMT) projected over the same time periods. The Opening-Year (2022) and Design-Year (2042) analysis for the Build Alternative also showed that the project is expected to reduce MSAT emissions when compared to the respective No-Build Alternative, with benzene, ethylbenzene, and polycyclic organic matter (POM) for 2042 showing a very slight increase for the Build Alternative. Although there could also be small increases in MSAT levels in a few localized areas where VMT increases, USEPA vehicle and fuel regulations are expected to result in significantly lower MSAT levels in the future than exist today due to cleaner engine standards coupled with fleet turnover. The quantitative MSAT analysis demonstrates that there would be no long-term adverse impacts associated with the Build Alternative, and that future MSAT emissions across the entire study area are expected to be significantly below today's levels.

Indirect Effects and Cumulative Impacts: A qualitative assessment of the potential for indirect effects and cumulative impacts attributable to this project was conducted. It concluded that the potential effects or impacts are not expected to be significant given available information from pollutant-specific analyses for CO and MSATs. The CO and MSAT quantitative assessments conducted for this project are considered indirect effects analyses because they address air quality impacts attributable to the project that occur at a later time in the future. Those assessments indicate that the potential for indirect effects associated with the project is not expected to be significant. They demonstrate that in the future: (1) air quality impacts from CO would not cause or contribute to violations of the CO NAAQS; and (2) MSAT emissions from the affected network would be significantly lower than they are today. Regarding the potential for cumulative impacts, the USEPA's air quality designations for the region (as attainment of all the NAAQS in Stafford County) reflect, in part, the accumulated mobile source emissions from past and present actions. Therefore, the indirect and cumulative effects of the project are not expected to be significant.

Mitigation: Mitigation measures would be employed to minimize environmental impacts during construction activities to comply with all federal, state, and local regulations.

The Virginia Department of Environmental Quality (VDEQ) provides general comments for projects by jurisdiction. Their comments in part address mitigation. For Stafford and Prince William Counties, VDEQ comments relating to mitigation are[8] "*…all reasonable precautions [that] should be taken to limit the emissions of VOC and NO_x. In addition, the following VDEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions;[9] 9 VAC 5-45, Article 7, Cutback Asphalt restrictions;[10] and 9 VAC 5-50, Article 1, Fugitive Dust precautions."*[11]

Emissions produced during the construction of the Build Alternative would be short-term or temporary in nature. In order to mitigate these emissions, construction activities would be performed in accordance with the VDOT "*Road and Bridge Specifications.*"[12] The specifications require compliance with all applicable local, state, and federal regulations.

[8] Spreadsheet entitled: "DEQ SERP Comments rev8b", March 2017, downloaded from the online data repository for the VDOT Resource Document. See: http://www.virginiadot.org/projects/environmental_air_section.asp

[9] See: http://law.lis.virginia.gov/admincode/title9/agency5/chapter130/

[10] See: http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-45-760

[11] See: http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-50-60

[12] See: http://www.virginiadot.org/business/const/spec-default.asp

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Appendix B MOVES Emission Rates

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LIST OF ACRONYMS

AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
CAA	Clean Air Act
CEQ	Council of Environmental Quality
CLRP	Constrained Long-Range Plan
CNG	Compressed Natural Gas
CO	Carbon Monoxide
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
FAMPO	Fredericksburg Area Metropolitan Planning Organization
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FY	Fiscal Year
GHG	Greenhouse Gas
HAP	Hazardous Air Pollutant
HEI	Health Effects Institute
IRIS	Integrated Risk Information System
LOS	Level of Service
LRTP	Long-range Transportation Plan
MOVES	Motor Vehicle Emissions Simulator
MSATs	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NB	Northbound
NCHRP	National Cooperative Highway Research Program
NCRTPB	National Capital Region Transportation Planning Board
NEPA	National Environmental Policy Act
NO_2	Nitrogen Dioxide
NOVA	Northern Virginia

NO_x	Nitrogen Oxide
O_3	Ozone
PA	Programmatic Agreement
Pb	Lead
PM	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Coarse Particulate Matter
POM	Polycyclic Organic Matter
PPM	Parts per Million
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TIP	Transportation Improvement Program
TPY	Tons Per Year
TSD	Technical Support Document
USEPA	United States Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VDOT	Virginia Department of Transportation
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VPHPL	Vehicles per Hour per Lane

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency, is preparing a Revised Environmental Assessment (Revised EA) for the I-95 HOT Lanes Project, for which a Finding of No Significant Impact (FONSI) was issued by FHWA in 2011. The Revised EA, which is being completed for the Interstate 95 (I-95) Express Lanes Fredericksburg Extension Study (or the "Fredericksburg Extension Study"), presents improvements identified in a portion of the 2011 FONSI-selected Alternative that was not constructed, from the I-95 / US 17 North Interchange at Warrenton Road (Exit 133) to south of the I-95 / Russell Road interchange (Exit 148). The Revised EA also presents new access points along this portion of the 2011 FONSI-selected Alternative.

The purpose of this Technical report is to evaluate whether the proposed action will have an adverse effect on air quality in the study area. Accordingly, quantitative carbon monoxide (CO) and Mobile Source Air Toxics (MSATs) analyses have been prepared. Additionally, qualitative analyses are provided for indirect effects and cumulative impacts. For purposes of efficiency and quality control, all emission and dispersion modeling inputs (and worst-case traffic inputs for the CO analyses) were taken from or consistent with those specified in the VDOT Resource Document and associated online data repository.[13,14] Information in this report, described below, will support discussions presented in the Revised EA.

- Section 1 provides an overview of the study and outlines the methods used to assess air quality impacts from the project alternatives under consideration.
- Section 2 provides an overview of the air quality regulatory programs and standards to which the project is subject.
- Section 3 provides an overview of the existing air quality conditions in the project area.
- Section 4 assesses the potential impacts to air quality associated with the Build and No-Build Alternative including carbon monoxide, MSATs, and indirect effects and cumulative impacts.
- Section 5 presents proposed mitigation measures.

[13] The Resource Document was created by VDOT to facilitate and streamline the preparation of project-level air quality analyses. It is intended as a resource for modelers to help ensure that not only regulatory requirements and guidance, as appropriate, are met in all analyses but also high-quality standards for modeling and documentation are consistently achieved. In a comprehensive fashion, it addresses the models, methods, and assumptions (including data and data sources) needed for the preparation of air quality analyses for transportation projects by, or on behalf of, the Department. It includes an associated online data repository to support project-level modeling. It was subjected to inter-agency consultation with FHWA and other agencies before being finalized in 2016.

[14] Copies of referenced VDOT documents (including the VDOT Resource Document and Programmatic Agreements) are available from the Department on request. Documents may also be obtained via the VDOT website: http://www.virginiadot.org/programs/pr-environmental.asp

1.1.1 Purpose and Need

The purpose of the Fredericksburg Extension Study is to:

- Reduce daily congestion and accommodate travel demands more efficiently. Existing traffic volumes exceed available highway capacity, and the forecasts prepared using the regional travel demand models show continuing traffic growth in the corridor, with much of the Fredericksburg region's workforce continuing to commute north.
- Provide higher reliability of travel times. People place a high value on reaching their destinations in a timely manner, and in recent years, I-95 has become so congested that the existing I-95 facilities cannot provide reliable travel times during the peak periods.
- Expand travel choices by increasing the attractiveness and utility of ridesharing and transit usage while also providing an option for single-occupant vehicles to bypass congested conditions.

1.1.2 Alternatives

The proposed Build Alternative and the No-Build Alternative are under consideration. The Build Alternative is a distinct piece of the 2011 FONSI-selected Alternative. The proposed limits of the Build Alternative and areas identified for access improvements are shown on **Figure 1-1**. Additional information on the alternatives is included in the Alternatives Technical Report (VDOT, 2017a), and will be summarized in the Revised EA (VDOT, 2017b).

No-Build Alternative

Under the No-Build Alternative, the Express Lanes would not be extended beyond the southern terminus of the Southern Extension project, south of VA 610 / Garrisonville Road (Exit 143). There would be no change to existing access points, and I-95 would remain in its present configuration. VDOT would continue maintenance and repairs of the existing roadway, as needed, with no substantial changes to current capacity or management activities. The No-Build Alternative was not identified as the Preferred Alternative in the 2011 EA and subsequent FONSI, but is retained as a baseline for comparison in this technical report.

Build Alternative

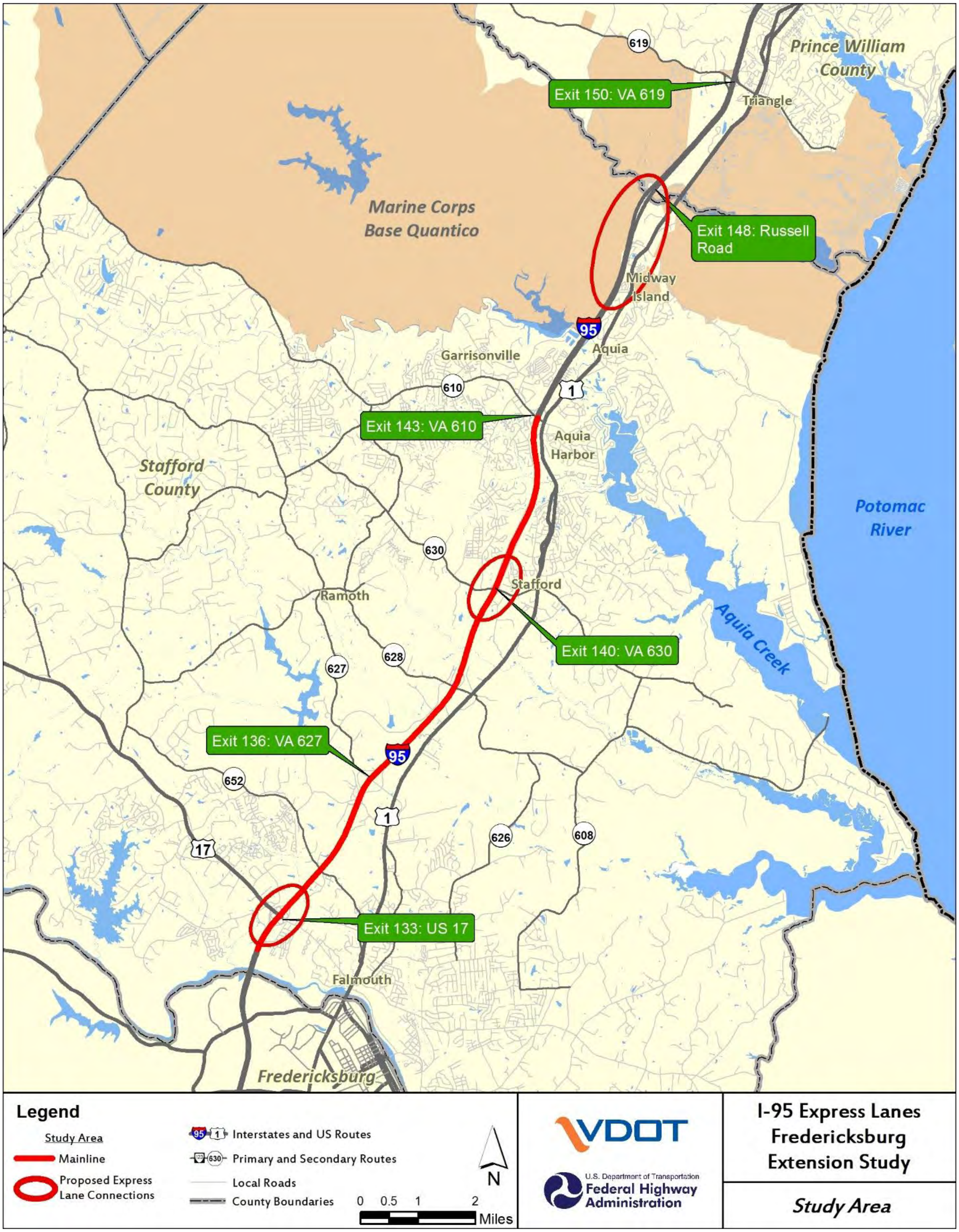
The Build Alternative would extend two Express Lanes in the median of I-95 from south of the I-95 / US 17 North Interchange at Warrenton Road (Exit 133) to south of the I-95 / VA 610 Interchange at Garrisonville Road (Exit 143). It would also provide Express Lane access in the vicinity of the I-95 / US 17 North Interchange (Exit 133), the I-95 / VA 630 Interchange at Courthouse Road (Exit 140), and the I-95 / Russell Road Interchange (Exit 148). The Build Alternative is consistent with the selected alternative identified in the 2011 EA and subsequent FONSI.

1.2 METHODOLOGY

For the purposes of this air quality analysis, the study area corridor is defined as 50 feet on either side of the I-95 right-of-way and proposed Express Lane access point areas, with additional allowances for stormwater management areas.

For purposes of efficiency and quality control, all emission and dispersion modeling inputs (and worst-case traffic inputs for the CO analyses) were taken from or are consistent with those specified in the VDOT Project-Level Air Quality Analysis Resource Document and associated online data repository.

Figure 1-1: Study Area



2. REGULATORY REQUIREMENTS

This section provides an overview of regulations and guidance applicable to the project-level air quality analysis.

2.1 NATIONAL ENVIRONMENTAL POLICY ACT

NEPA applies to all federally-funded projects. Air quality is an environmental concern within the broad purview of NEPA. The requirements of NEPA have been defined in the Council of Environmental Quality's (CEQ) NEPA regulations that apply to all federal agencies and the Federal Highway Administration / Federal Transit Administration (FHWA/FTA) joint NEPA procedures. However, the NEPA statute, the CEQ NEPA regulations (40 CFR 1500), and FHWA's NEPA regulations (23 CFR 771) do not contain specific requirements for air quality analyses. For air quality, FHWA has issued guidance for MSAT and CO analyses.

2.2 MOBILE SOURCE AIR TOXICS

On October 18, 2016, FHWA issued updated interim guidance regarding MSATs in a NEPA analysis to include the USEPA's recent Motor Vehicle Emissions Simulator (MOVES), Version 2014a, emission model along with updated research on air toxic emissions from mobile sources.[15]

The USEPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer drivers from their 1999 National Air Toxics Assessment. The nine compounds identified were: acetaldehyde; acrolein; benzene; 1, 3-butadiene; diesel particulate matter (PM) plus diesel exhaust organic gases; ethylbenzene; formaldehyde; naphthalene; and POM. While FHWA considers these the priority MSATs, the list is subject to change and may be adjusted in consideration of future USEPA rules.

The FHWA guidance of October 18, 2016, presents a tiered approach for assessing MSATs in NEPA documents. The three levels are for projects with: (1) no meaningful MSAT effects; (2) low potential MSAT effects; and (3) high potential MSAT effects, respectively. The FHWA guidance defines the levels of analysis for each type of MSAT effect as:

- No analysis for projects with no potential for meaningful MSAT effects;
- A qualitative analysis for projects with low potential MSAT effects; and
- A quantitative analysis for projects with high potential MSAT effects.

The Build Alternative was evaluated against each threshold criteria in order to determine the type of MSAT analysis required to satisfy NEPA.

2.3 CARBON MONOXIDE

In 1987, FHWA issued a Technical Advisory providing guidance for preparing and processing of environmental impacts for EAs and Environmental Impact Statements (EIS) under NEPA.[16] Section V(G)(8) pertains to air quality, including a summary of the project-related CO analysis. VDOT and FHWA have developed programmatic agreements to streamline the analysis requirements for projects using worst-case modeling results, consistent with the USEPA and FHWA guidance. **Section 2.6** presents a summary

[15] See: https://www.fhwa.dot.gov/Environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm

[16] See: https://www.environment.fhwa.dot.gov/projdev/impTA6640.asp#aq

of the latest Programmatic Agreement (PA), which sets the procedures and thresholds recommended for a CO air quality study for projects in Virginia.

2.4 PARTICULATE MATTER

The project is located in an attainment area for fine particulate matter ($PM_{2.5}$), therefore, transportation conformity requirements pertaining to PM do not apply for this Project.[17]

2.5 USEPA MOVES MODEL

On October 7, 2014, the USEPA published a Federal Register Notice of Availability that specified MOVES2014 for estimating emissions from motor vehicles. With this release, USEPA started a two-year grace period to phase in the requirement of using MOVES2014 for transportation conformity analyses. In July 2014, USEPA issued guidance on the use of MOVES2014 for the State Implementation Plan Development, the Transportation Conformity, and other purposes. This guidance specifies that the same grace period be applied to project-level emissions analyses. At the end of the grace period, i.e., beginning October 7, 2016, project sponsors are required to use MOVES2014a to conduct emissions analysis. In March 2015, USEPA published a new guidance document for completing project-level CO analyses using MOVES2014.[18] Vehicle emission rates for CO and MSAT were estimated for this study using the latest official version of the USEPA MOVES (MOVES2014a) model.[19]

2.6 PROGRAMMATIC AGREEMENTS

Programmatic agreements are legal documents between the United States Department of Transportation and a state Department of Transportation that are designed to help streamline the environmental clearance process for transportation projects. Programmatic agreements can help focus limited resources on assessing larger projects with greater potential for air quality impacts.

On May 16, 2016, FHWA and VDOT implemented a "*Programmatic Agreement for Project-Level Air Quality Analyses for Carbon Monoxide*"[20] (hereinafter "2016 Agreement") that was developed based on a national template that was created in a recently completed National Cooperative Highway Research Program (NCHRP) study (ICF International et al., 2015). The NCHRP template was designed to be applied using state-specific background concentrations and persistence factors, without the need to update the detailed worst-case CO modeling as presented in its Technical Support Document (TSD). The 2016 Agreement uses the number of lanes and other criteria to screen projects involving highway links, unskewed intersections, and interchanges with adjacent unskewed intersections.

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[17] For background, the USEPA issued a final rule (81 FR 58010), effective October 24, 2016, on "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements" that stated, in part: "Additionally, in this document the USEPA is revoking the 1997 primary annual standard for areas designated as attainment for that standard because the USEPA revised the primary annual standard in 2012." (See: https://www.gpo.gov/fdsys/pkg/FR-2016-08-24/pdf/2016-18768.pdf). Accordingly, Prince William County is no longer designated as maintenance for $PM_{2.5}$, and the associated USEPA regulatory requirements for conformity for $PM_{2.5}$ are eliminated for northern Virginia

[18] See: https://nepis.epa.gov/Exe/ZyPdf.cgi?Dockey=P100M2FB.pdf

[19] See: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNCY.txt

[20] See: http://www.virginiadot.org/projects/resources/air/2016_FHWA-VDOT_PA_for_CO_from_NCHRP25-2578_Attachment2_FINAL.pdf

As the new NCHRP template agreement does not include skewed intersections, the 2016 FHWA-VDOT Agreement incorporates, by reference, criteria for skewed intersections from the previously existing 2009 FHWA-VDOT "*Project-Level Carbon Monoxide Air Quality Studies Agreement"* (hereinafter "2009 Agreement"). Under the terms of the 2009 Agreement, project-level air quality (hot-spot) analyses are typically only conducted for CO for projects that exceed specified average daily traffic (ADT) thresholds. Different ADT thresholds are specified for different intersection skew angles. Worst-case ranked intersections and interchanges that cannot be screened using the 2016 Agreement (including the referenced 2009 Agreement criteria) are quantitatively assessed using worst-case modelling assumptions for CO consistent with the VDOT Resource Document.

Projects that meet the criteria specified in the 2016 Agreement (or by reference, the thresholds from the 2009 Agreement) do not require project-specific modelling for CO. For those projects, the air quality analysis can simply reference the 2016 Agreement, as appropriate, and the worst-case modelling for CO on which its thresholds/criteria are based.

2.7 CLEAN AIR ACT

2.7.1 National Ambient Air Quality Standards (NAAQS)

Pursuant to the Federal Clean Air Act (CAA) of 1970, the USEPA established NAAQS for major pollutants known as "criteria pollutants." Currently, the USEPA regulates six criteria pollutants: O_3, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM, and lead (Pb). PM is divided into two particle size categories: particles with a diameter less than 10 micrometers (PM_{10}) and those with a diameter of less than 2.5 micrometers ($PM_{2.5}$). **Table 2-1** shows the primary and secondary NAAQS for the criteria pollutants. The NAAQS are two-tiered: the first tier (primary) is intended to protect public health; the second tier (secondary) is intended to protect public welfare and prevent degradation of the environment.

Section 176(c) of the CAA requires federal agencies to ensure that all of their actions conform to applicable implementation plans for achieving and maintaining the NAAQS. Federal actions must not cause or contribute to any new violation of any standard, increase the frequency or severity of any existing violation, or delay timely attainment of any standard in nonattainment and maintenance areas.

The NAAQS apply to the concentration of a pollutant in outdoor ambient air. If the air quality in a geographic area is equal to, or is better than the national standard, the USEPA will designate the region as an attainment area. Areas where air quality does not meet the national standards are designated as non-attainment areas. Once the air quality in a non-attainment area improves to the point where it meets the standards and the additional redesignation requirements in the CAA (Section 107(d)(3)(E)), the USEPA may redesignate the area as an attainment/maintenance area, which are typically referred to as "maintenance areas."

The CAA requires the USEPA to designate the status of all areas as being in or out of compliance with the NAAQS. The CAA further defines non-attainment areas for ozone based on the severity of the violation as marginal, moderate, serious, severe, and extreme.

Table 2-1: National Ambient Air Quality Standards[21]

Pollutant (links to historical tables of NAAQS review)		Primary / Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35ppm	
Lead (Pb)		Primary and Secondary	Rolling 3-month average	0.15 $\mu g/m^3$ (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and Secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_2)		Primary and Secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	Primary	1 year	12.0 $\mu g/m^3$	Annual mean, averaged over 3 years
		Secondary	1 year	15.0 $\mu g/m^3$	Annual mean, averaged over 3 years
		Primary and Secondary	24 hours	35 $\mu g/m^3$	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24 hours	150 $\mu g/m^3$	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

NOTES:

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu g/m^3$ as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of cleaner comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or parts of its State Implementation Plan to demonstrate attainment of the required NAAQS.

[21] See: https://www.epa.gov/criteria-air-pollutants/naaqs-table (accessed August 15, 2017).

2.8 DESCRIPTION OF PROJECT LEVEL POLLUTANTS

CO is a toxic colorless and odorless gas that results from the incomplete combustion of gasoline and other fossil fuels. Because CO disperses quickly, the concentrations can vary greatly over relatively short distances. Relatively high concentrations of CO may occur near congested intersections, along heavily used roadways conveying slow-moving traffic, and in areas where atmospheric dispersion is inhibited by urban "street canyon" conditions.

Particulate Matter is a broad class of air pollutants that exists as liquid droplets or solids, with a wide range of size and chemical composition. It is emitted by a variety of sources, both natural and man-made. Major man-made sources of PM include the combustion of fossil fuels in vehicles, power plants and homes, construction activities, agricultural activities, and wood-burning fireplaces. Smaller particulates less than or equal to 10 and 2.5 microns in size (PM_{10} and $PM_{2.5}$, respectively) are of particular health concern because they can get deeper into the lungs and affect respiratory and heart function.

2.9 TRANSPORTATION CONFORMITY

The USEPA promulgated the transportation conformity rule (40 CFR Parts 51 and 93) pursuant to requirements of the CAA. The rule **only** applies in USEPA-designated non-attainment or maintenance areas (40 CFR 93.102(b)). As noted in the next section (**Section 3.1**), Stafford County is in attainment of all NAAQS. Therefore, *project-level* transportation conformity rule requirements for CO and $PM_{2.5}$ *specifically* do not apply for this region. In addition, regional transportation conformity requirements do not apply as Stafford County is in attainment of the ozone standard.

2.10 CLIMATE CHANGE AND GREENHOUSE GAS IMPACTS

With the recent withdrawal of federal guidance addressing greenhouse gas analyses and climate change,[22] The Department protocol (VDOT Resource Document, Section 4.7) for greenhouse gas (GHG) analyses was reviewed for applicability to this project. Based on the Department protocol that limits GHG analyses to projects involving an Environmental Impact Statement (EIS), a GHG analysis is not warranted for this project as it involves an EA and not an EIS. Therefore, a GHG analysis was not conducted for this project.

3. EXISTING CONDITIONS

3.1 AIR QUALITY ATTAINMENT STATUS OF THE PROJECT AREA

The USEPA Green Book,[23] which lists non-attainment, maintenance, and attainment areas was reviewed to determine the designations for Stafford County in which the project is located. The USEPA Green Book shows that Stafford County is designated as attainment for all NAAQS.

3.2 CLIMATE AND METEOROLOGY

The climate of the area in which the project is located consists of four distinct seasons. Winters are mild with limited snowfall and summers are hot and humid. According to the National Weather Service data, the average annual temperature for the Fredericksburg, Virginia area is 56.6 degrees Fahrenheit. The area typically receives slightly over 41.03 inches of rainfall annually and up to 14.5 inches of snow.[24]

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[22] See: https://www.federalregister.gov/documents/2017/04/05/2017-06770/withdrawal-of-final-guidance-for-federal-departments-and-agencies-on-consideration-of-greenhouse-gas

[23] USEPA Green Book: https://www3.epa.gov/airquality/greenbook/faq.html

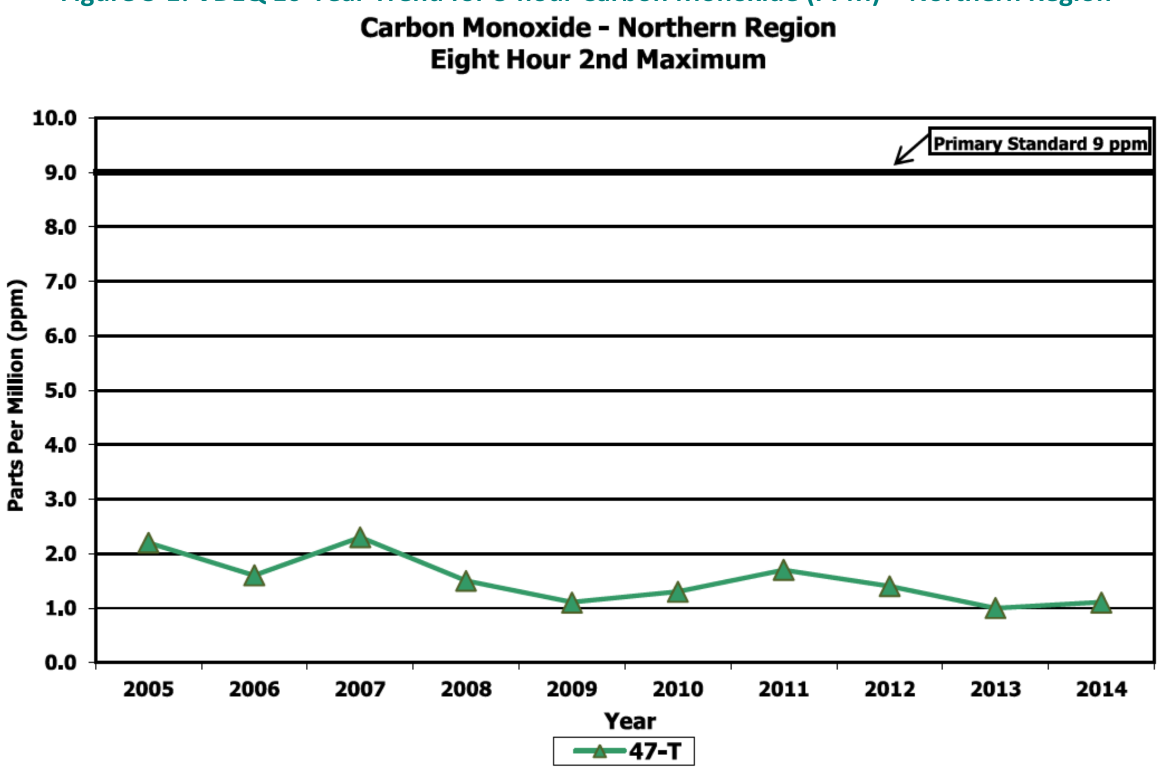
[24] See: http://w2.weather.gov/climate/xmacis.php?wfo=akq (accessed on August 14, 2017)

3.3 AMBIENT AIR QUALITY DATA AND TRENDS

The VDEQ's annual air quality monitoring report[25] shows that measured pollutant concentrations from all stations representative of the study area are below the NAAQS. Virginia experienced a moderate ozone season in 2015. There were three days in the Richmond area and ten days in Northern Virginia that exceeded the 0.070 ppm ozone standard. For the three-year period from 2013 through 2015, all areas of the Commonwealth, including Northern Virginia, were in compliance with the 0.070 ppm NAAQS for ozone. For 2015, there were no exceedances of the 35 micrograms per cubic meter ($\mu g/m^3$) 24-hour standard for $PM_{2.5}$ (particulate matter less than 2.5 microns). The 2013 – 2015 design values for all sites in the Commonwealth for both the 24-hour and annual standard for $PM_{2.5}$ are below the NAAQS.[26]

As presented in **Figure 3-1** through **Figure 3-4**, VDEQ's ten-year monitoring data indicates that criteria pollutants concentrations have been decreasing. The reduction in CO, SO_2, NOx, and ozone emissions is due to a variety of control measures that have been implemented over the last two decades, including motor vehicle engine controls and reductions in evaporative emissions from gasoline stations and consumer products, as well as reductions from power plants, businesses, and residential combustion sources.

Figure 3-1: VDEQ 10-Year Trend for 8-hour Carbon Monoxide (PPM) – Northern Region

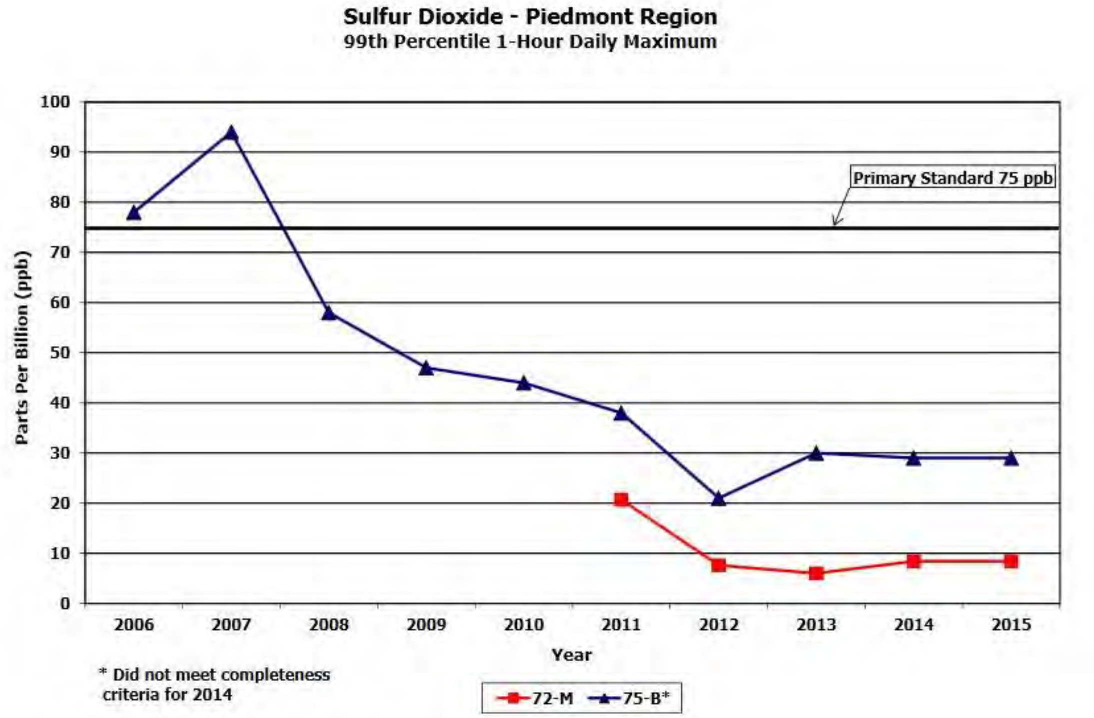


Source: VDEQ Virginia Ambient Air Monitoring 2015 Data Report.

[25]See: http://www.deq.virginia.gov/Portals/0/DEQ/Air/AirMonitoring/Annual_Report_2015.pdf

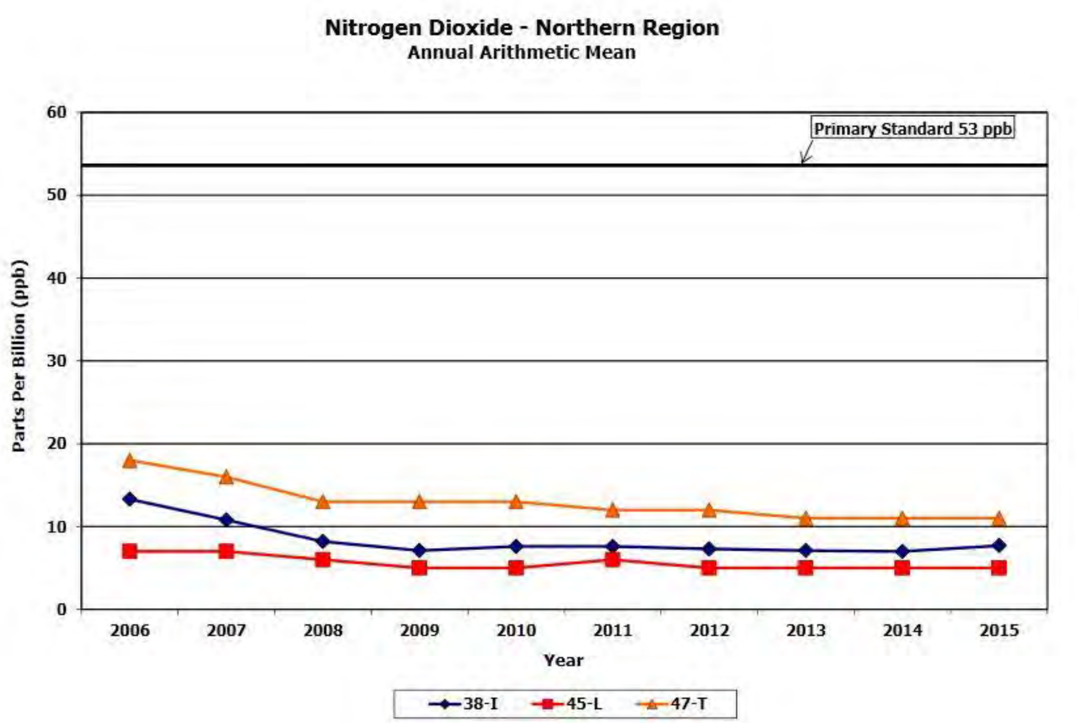
[26] See: http://www.deq.virginia.gov/Portals/0/DEQ/Air/AirMonitoring/Annual_Report_2015.pdf

Figure 3-2: VDEQ 10-Year Trend for 1-hour Sulfur Dioxide (PPM) – Piedmont Region**



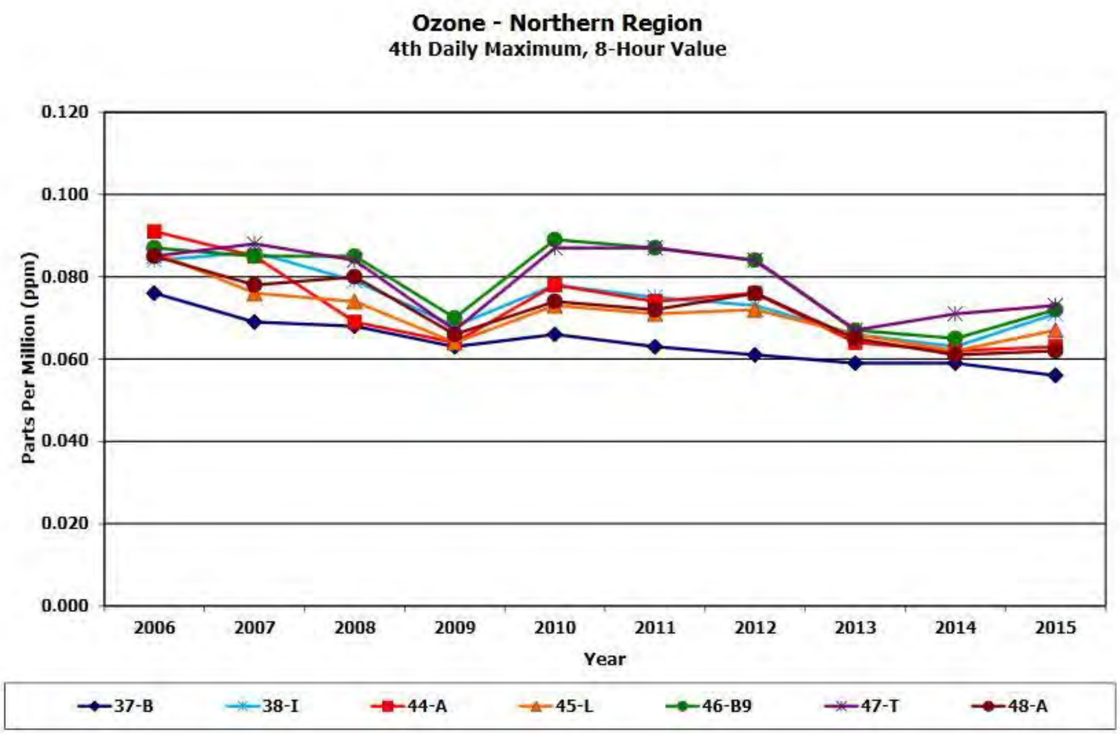
***Northern Virginia 10-Year plot data unavailable. Piedmont values used to demonstrate 10-year trend as it was the closest, most representative monitor location to northern Virginia.*
Source: VDEQ Virginia Ambient Air Monitoring 2015 Data Report.

Figure 3-3: VDEQ 10-Year Trend for Annual Nitrogen Dioxide (PPM) – Northern Region



Source: VDEQ Virginia Ambient Air Monitoring 2015 Data Report

Figure 3-4: VDEQ 10-Year Trend for 8-hour Ozone (PPM) – Northern Region



Source: VDEQ Virginia Ambient Air Monitoring 2015 Data Report.

4. PROJECT ASSESSMENT

The methodologies and assumptions applied for the analysis are consistent with FHWA and USEPA guidance as well as the VDOT *Project Level Air Quality Analysis Resource Document,*[27] including its associated on-line data repository.

Traffic forecasts for the Study Alternatives were developed for the Existing (2016), Opening-Year Build and No-Build (2022), and Design-Year Build and No-Build (2042) conditions. Traffic forecasts were performed for the Build Alternative along with the No-Build Alternative.

4.1 CARBON MONOXIDE (CO) ANALYSIS

4.1.1 Methodology

The CO analysis included a review of both intersections and interchanges in the project area to identify the worst-case locations for assessment. The USEPA's detailed guidance[28] for CO analyses was applied (though not required as the project area is in attainment for CO and therefore not subject to conformity requirements for CO) to identify the worst-case intersections to consider for the analysis based on forecasts of peak volumes and intersection LOS. Short-listed intersections were then screened using the previously-referenced 2016 Agreement. The 2016 Agreement establishes the type of projects and conditions that would not require project-specific modeling or a quantitative air quality analysis for

[27] VDOT Project–Level Air Quality Analysis Resource Document, April 2016.

[28] U.S. Environmental Protection Agency, *Guideline for Modeling Carbon Monoxide from Roadway Intersections*, USEPA-454/R-92-005, Office of Air Quality Planning and Standards, November, 1992.

compliance with the NAAQS. These project types require qualitative statements that reference the Agreement and its technical support document (TSD).

The 2016 Agreement incorporates by reference the criteria specified in the previously existing 2009 Agreement for skewed intersections. Under the terms of the 2009 Agreement, project-level air quality (hot-spot) analyses are typically only conducted for CO projects that exceed specified ADT and LOS thresholds or for any project for which an EIS is being prepared. The thresholds in the 2009 Agreement were originally established based on worst-case modeling for typical arterial intersections, with different thresholds applying for different intersection skew angles. The projected traffic volumes and intersection skew angles applied for the CO hot-spot analysis (i.e., for comparison to the applicable thresholds) are tabulated in **Appendix A**. Similarly, the existing and proposed interchanges were also screened using the 2016 Agreement which includes criteria based on worst-case modeling assuming a conservative approach for typical interchanges with an adjacent intersection. The roadway grade, interchange lanes, departure lanes, vehicle speeds, and distances from the intersection for the existing and proposed interchange are presented in **Section 4.1.2**.

For locations for which project-specific modeling was determined to be required, a worst-case modeling approach was applied following FHWA guidance and using modeling inputs specified or referenced in the VDOT Resource Document. The microscale analyses were conducted using the latest version of the USEPA emission model (MOVES2014a) and dispersion model (CAL3QHC) to estimate worst-case CO concentrations at individual receptor (i.e., receiver) locations. Peak CO concentrations modeled for each location were then added to the appropriate CO background concentrations (as specified in the VDOT Resource Document) to determine the worst-case CO impacts at each location. These values were then compared to the 1-hour and 8-hour CO NAAQS to show compliance.

4.1.2 Intersections/Interchanges Studied

<u>Intersections</u>

An analysis of the LOS and peak hourly volumes were evaluated for the Build Alternative to confirm the worst-case intersection locations for consideration under the 2016 Agreement. The intersections were ranked by worst-case peak AM or PM volumes and LOS for the Build Alternative years 2022 and 2042. Traffic volumes used in the ranking of the signalized intersections are included in **Appendix A**. The intersection locations studied for the Alternatives are shown in **Figure 4-1** and referenced in the tables within the Appendix. The five highest ranked intersections by LOS and the higher of the AM or PM peak hourly-ranked volumes were summarized for the Build Alternative. **Table 4-1** through **Table 4-4** show the intersection rankings by LOS and peak AM or PM volumes for the Build Alternative for 2022 and 2042 conditions, respectively, compared to the 2016 Agreement and referenced ADT thresholds. The 2016 Agreement, and by reference, the criteria for skewed intersections from the 2009 Agreement, were then applied to screen the intersections for the Build Alternative, including skewed and non-skewed intersections.

As shown in **Table 4-1** through **Table 4-4**, there were a total of seven common worst-case intersections out of the 15 intersections studied ranked in the top five for either worst-case volumes and/or LOS for the 2022 and 2042 Build conditions. These seven common intersections were:

1. *Centerport Parkway and US 1;*
2. *Courthouse Road and US 1;*
3. *Russell Road and I-95 SB Ramps;*
4. *US 17 and Short Street;*
5. *US 17 and S Gateway Drive;*

6. *SR 610 and US 1; and*
7. *US 1 and I-95 Northbound (NB) Entrance Ramp.*

Of the seven common worst-case intersections, four intersections meet the criteria included in the 2016 Agreement for project types for non-skewed (i.e., 90-degree intersections), as well as by reference, the 2009 Agreement ADT thresholds for skewed intersections. These four intersections are:

1. *Centerport Parkway and US 1;*
2. *Courthouse Road and US 1;*
3. *Russell Road and I-95 SB Ramps; and*
4. *US 17 and Short Street (2022 only).*

Therefore, project-specific CO hot-spot modeling is not needed for any of these four intersections, as they can be cleared based on the Agreement and the worst-case CO hot-spot modeling for intersections on which it was based.

Intersection US 17 and Short Street

Although meeting the 2016 Agreement criteria for the 2022 condition, the intersection of US 17 and Short Street is slightly above the 2016 Agreement criteria for the 2042 condition. This intersection has a skew angle of 85 degrees and an estimated worst-case 2042 Build ADT of 66,000, which is greater than the 59,000 ADT threshold in the 2009 Agreement (referenced in the 2016 Agreement) for skewed intersections greater than 60 degrees. However, based on a weight-of-evidence approach, it may still be cleared for CO under the terms of the 2016 Agreement.

- The intersection is only slightly skewed (85 degrees versus 90 degrees unskewed) and would meet all the requirements under the 2016 Agreement for unskewed intersections; therefore, the modeled ambient concentrations would differ only slightly from those for an unskewed intersection that would be cleared with the 2016 Programmatic Agreement.
- The 2016 Programmatic Agreement used emission factors in the worst-case modeling for an Opening-Year of 2015. Based on the project's Opening-Year of 2022, the emission factors for this project would be much lower for CO compared to 2015 given the continued fleet turnover to new vehicles which are designed to meet more stringent emission standards set by the USEPA.
- The 2009 Programmatic Agreement used emission factors in the worst-case modeling for an Opening-Year of 2009. Based on this project's Opening-Year of 2022, the emission factors for this project would be much lower for CO compared to 2009 given the continued fleet turnover to new vehicles which are designed to meet more stringent emission standards set by the USEPA.
- The 880 vehicle per hour per lane (vphpl) value is less than the worst-case modeling value of 1,037 used in the 2009 Programmatic Agreement for skewed intersections and, for comparison to the criteria in the 2009 Agreement would correspond to an effective ADT of only 56,008 (which is less than the 59,000 ADT threshold in the 2009 Agreement).

Given the weight of evidence, this intersection was screened out, and therefore a hot-spot analysis is not warranted.

Intersections Requiring Modeling

The remaining three intersections at US 17 and S Gateway Drive, SR 610 and US 1, and US 1 and the I-95 NB Entrance Ramp, were not cleared based on the 2016 Agreement; therefore, CO hot-spot modeling for these intersections was conducted.

Interchanges

The five interchanges within the study area were ranked by worst-case volumes for the mainline traveling through each interchange. The interchange locations studied for each Alternative are shown in **Figure 4-2**. The five interchanges for the No-Build and Build Alternative were further analyzed to include skew angles, average speeds, and LOS along the mainline for evaluation, and justification for any additional interchanges for modeling beyond just worst-case traffic volumes. **Table 4-5** and **Table 4-6** present the five interchanges by volume for the Build Alternative for the 2022 and 2042 condition. A review of the worst-case interchanges show that the top three interchanges for the Build Alternative clearly have the highest traffic volumes along with the worst-case LOS.

Of the five interchanges evaluated, the same three common interchanges were the highest ranked, based on ADT, in both the 2022 and 2042 Build conditions. These interchanges were:

1. *I-95 and US 17 (Warrenton Road) - Exit 133;*
2. *I-95 and SR 610 (Garrisonville Road) - Exit 143; and*
3. *I-95 and Russell Road - Exit 148.*

CO hot-spot modeling for these interchanges was conducted.

The traffic analysis, as summarized above, demonstrates that the three interchanges and three intersections selected for evaluation in the CO hot-spot analysis have the highest traffic volumes, lowest speeds, and worst-case LOS within the study area for each Alternative. Therefore, they are representative of the locations where peak CO concentrations would be expected to occur throughout the corridor.

It is assumed that if these interchanges/intersections show peak ground level CO concentrations below the CO NAAQS, then all other locations in the study area would also be below the CO NAAQS.

For the signalized intersections and highway interchanges, a worst-case analysis approach was taken using MOVES2014a and CAL3QHC (invoked via the latest version of the FHWA CAL3i interface software) to develop conservative estimates for CO concentrations. This approach is designed to overestimate the project impacts on CO emissions and produce worst-case results from the air quality dispersion modeling. CAL3i provides a user-friendly interface for the USEPA's CAL3QHC model that serves to facilitate and streamline the modeling process, particularly for worst-case analyses. Details on the assumptions used for the worst-case modeling analyses are provided later in this report.

Figure 4-1: Study Area Intersections

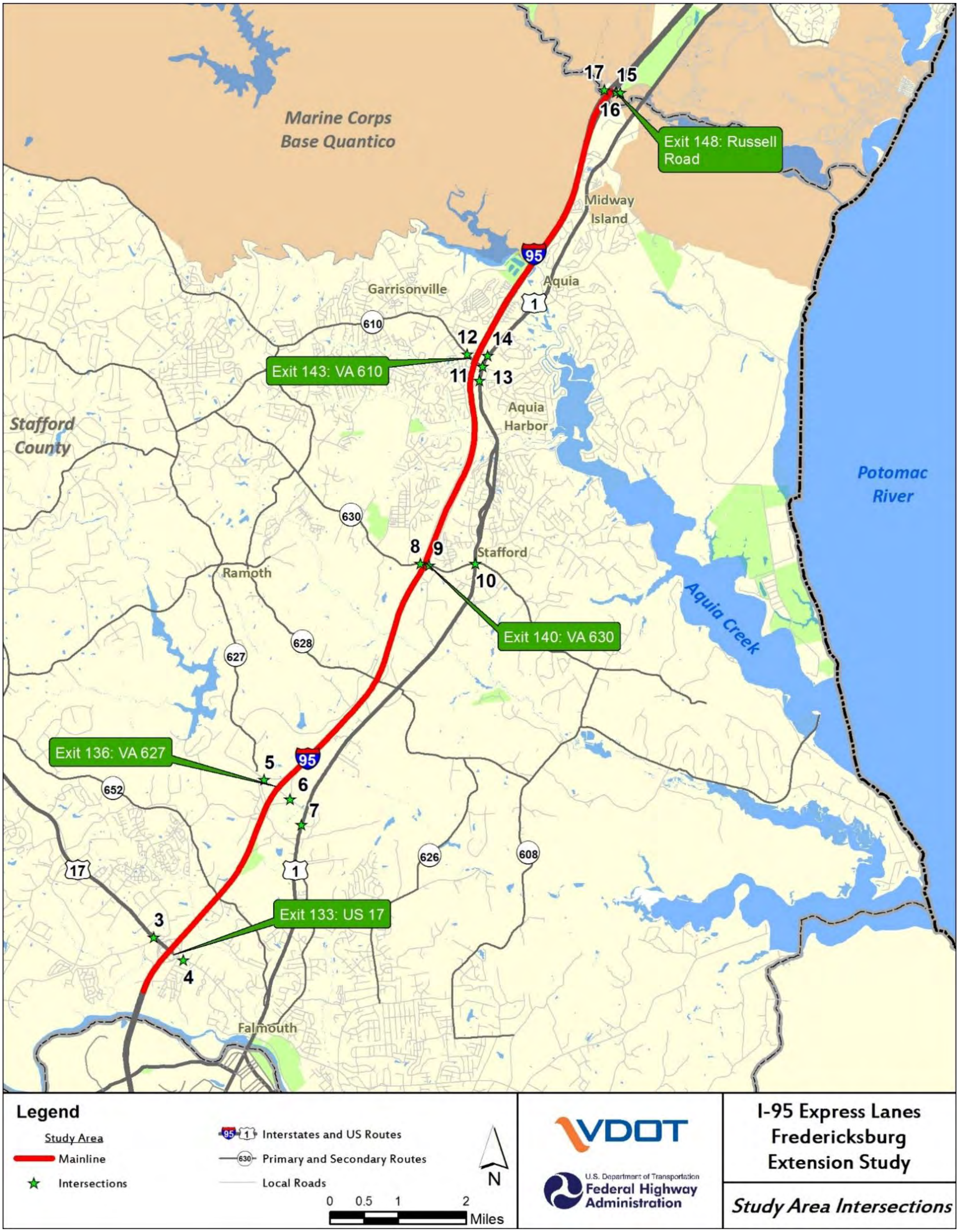


Table 4-1a: Worse-Case Volume Ranking 2022

			Intersection Data							2022 Build			
Rank	Map ID	Intersection Name	Skew Angle	Approach Lanes	Departure Lanes	Largest Mainline Grade (%)	Largest Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	2022 Build Vehicle per Hour per Lane (vphpl)	ADT	Peak AM/PM Volume	LOS	Delay(s)
1	***3***	***US 17 and S Gateway Drive***	90	5	4	1.5	2.5	25	720	82,677	6,480	D	41.4
2	***13***	***SR 610 and US 1***	70	5	2	4	5.5	25	769	86,500	6,920	F	153.1
3	***14***	***US 1 and I-95 NB Entrance Ramp***	90	3	2	5.5	0.5	45	1278	66,969	5,110	E	64.2
4	***4***	***US 17 and Short Street***	85	3	2	0.5	1.5	25	757	56,775	4,542	F	112.9
5	***7***	***Centerport Parkway and US 1***	90	4	3	5	2	45	468	50,323	3,279	D	38.4

Table 4-1b: Worse-Case Volume Ranking 2022

			2016 Programmatic Agreement[1,2]					2009 Programmatic Agreement[1]			
Rank	Map ID	Intersection Name	Skewed Intersection (Yes/No)	Grade - Mainline 2% or Less and Cross Street at 0%	Approach Speed Greater than 15 mph (Yes/No)	Maximum Lanes at the Intersection < 6 (Yes/No)	Screen Out with 2016 PA?	Vehicles per Hour per Lane < 1037?	ADT Less than 59,000 (Skew Angle > 60 deg.)?	ADT Less than 49,000 (45 ≤ Skew Angle < 60 deg.)?	Screen Out with 2009 PA?
1	***3***	***US 17 and S Gateway Drive***	No	No	Yes	Yes	No	Yes	No	No	No
2	***13***	***SR 610 and US 1***	Yes	N/A	N/A	N/A	N/A	Yes	No	No	No
3	***14***	***US 1 and I-95 NB Entrance Ramp***	No	No	Yes	Yes	No	No	No	No	No
4	***4***	***US 17 and Short Street***	Yes	N/A	N/A	N/A	N/A	Yes	**Yes**	No	**Yes**
5	***7***	***Centerport Parkway and US 1***	No	No	Yes	Yes	No	Yes	**Yes**	No	**Yes**

1. 2016 VDOT Programmatic Agreement with FHWA which references screening criteria (primarily Design-Year average daily traffic and intersection skew angle) that were previously established in the 2009 PA based on worst-case modeling of 1037 vehicles per lane.
2. The 2016 PA also contains Intersection screening criteria of for 90 degree intersections, 6 approach lanes, 4 lanes on each departure, and a roadway grade of 2 percent (mainline) and 0 percent (cross-street), and vehicle speeds greater than 15 mph.
3. Worst of either AM or PM peak volumes was chosen.
4. N/A denotes 2016 PA not applicable to skewed intersections.
5. Concentrations derived from Table 2 of the 2016 PA Agreement for urban environment, approach speeds of 35 mph.
6. The VDOT statewide NOVA value at Arlington of 1.6 ppm for 1-hour and 1.4 ppm for 8-hour was used for urban areas.
7. The VDOT NOVA Arlington County persistence factor of 0.78 was applied to the 1-hour CO concentrations to derive the 8-hour values.

Table 4-2a: Worse-Case LOS Ranking 2022

			Intersection Data							2022 Build			
Rank	Map ID	Intersection Name	Skew Angle	Approach Lanes	Departure Lanes	Largest Mainline Grade (%)	Largest Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	2022 Build Vehicle per Hour per Lane (vphpl)	ADT	Peak AM/PM Volume	LOS	Delay(s)
1	***13***	***SR 610 and US 1***	70	5	2	4	5.5	25	769	86,500	6,920	F	153.1
2	***4***	***US 17 and Short Street***	85	3	2	0.5	1.5	25	757	56,775	4,542	F	112.9
3	***17***	***Russell Rd and I-95 SB Ramps***	90	3	2	1	4.5	35	613	38,313	3,065	F	84.3
4	***14***	***US 1 and I-95 NB Entrance Ramp***	90	3	2	5.5	0.5	45	1278	66,969	5,110	E	64.2
5	***10***	***Courthouse Rd and US 1***	85	5	2	3	5	35	356	46,262	3,207	E	59.0

Table 4-2b: Worse-Case LOS Ranking 2022

			2016 Programmatic Agreement								2009 Programmatic Agreement			
Rank	Map ID	Intersection Name	Skewed Intersection (Yes/No)	Grade - Mainline 2% or Less and Cross Street at 0%	Approach Speed Greater than 15 mph (Yes/No)	Maximum Lanes at the Intersection < 6 (Yes/No)	Screen Out with 2016 PA?	Worst-Case 1-hour Concentration (ppm)[5]	Worst-Case 1-hour Concentration (ppm)[6]	Worst-Case 8-hour Concentration (ppm)[7]	Vehicles per Hour per Lane < 1037?	ADT Less than 59,000 (Skew Angle > 60 deg.)?	ADT Less than 49,000 (45 ≤ Skew Angle < 60 deg.)?	Screen Out with 2009 PA?
1	***13***	***SR 610 and US 1***	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	No	No	No
2	***4***	***US 17 and Short Street***	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	**Yes**	No	**Yes**
3	***17***	***Russell Rd and I-95 SB Ramps***	No	No	Yes	Yes	No	N/A	N/A	N/A	Yes	**Yes**	No	**Yes**
4	***14***	***US 1 and I-95 NB Entrance Ramp***	No	No	Yes	Yes	No	N/A	N/A	N/A	No	No	No	No
5	***10***	***Courthouse Rd and US 1***	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	**Yes**	No	**Yes**

1. 2016 VDOT Programmatic Agreement with FHWA which references screening criteria (primarily Design-Year average daily traffic and intersection skew angle) that were previously established in the 2009 PA based on worst-case modeling of 1037 vehicles per lane.
2. The 2016 PA also contains Intersection screening criteria of for 90 degree intersections, 6 approach lanes, 4 lanes on each departure, and a roadway grade of 2 percent (mainline) and 0 percent (cross-street), and vehicle speeds greater than 15 mph.
3. Worst of either AM or PM peak volumes was chosen.
4. N/A denotes 2016 PA not applicable to skewed intersections.
5. Concentrations derived from Table 2 of the 2016 PA Agreement for urban environment, approach speeds of 35 mph.
6. The VDOT statewide NOVA value at Arlington of 1.6 ppm for 1-hour and 1.4 ppm for 8-hour was used for urban areas.
7. The VDOT NOVA Arlington County persistence factor of 0.78 was applied to the 1-hour CO concentrations to derive the 8-hour values.

Table 4-3a: Worse-Case Volume Ranking 2042

			Intersection Data							2042 Build			
Rank	Map ID	Intersection Name	Skew Angle	Approach Lanes	Departure Lanes	Largest Mainline Grade (%)	Largest Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	2022 Build Vehicle per Hour per Lane (vphpl)	ADT	Peak AM/PM Volume	LOS	Delay(s)
1	***3***	***US 17 and S Gateway Drive***	90	5	4	1.5	2.5	25	837	96,123	7,533	E	59.4
2	***13***	***SR 610 and US 1***	70	5	2	4	5.5	25	894	100,550	8,044	F	206.2
3	***14***	***US 1 and I-95 NB Entrance Ramp***	90	3	2	5.5	0.5	45	1485	77,862	5,940	F	106.1
4	***4***	***US 17 and Short Street***	85	3	2	0.5	1.5	25	880	66,000	5,280	F	157.2
5	***7***	***Centerport Parkway and US 1***	90	4	3	5	2	45	544	58,508	3,811	D	48.0

Table 4-3b: Worse-Case Volume Ranking 2042

			2016 Programmatic Agreement[1,2]					2009 Programmatic Agreement[1]			
Rank	Map ID	Intersection Name	Skewed Intersection (Yes/No)	Grade - Mainline 2% or Less and Cross Street at 0%	Approach Speed Greater than 15 mph (Yes/No)	Maximum Lanes at the Intersection < 6 (Yes/No)	Screen Out with 2016 PA?	Vehicles per Hour per Lane < 1037?	ADT Less than 59,000 (Skew Angle > 60 deg.)?	ADT Less than 49,000 (45 ≤ Skew Angle < 60 deg.)?	Screen Out with 2009 PA?
1	***3***	***US 17 and S Gateway Drive***	No	No	Yes	Yes	No	Yes	No	No	No
2	***13***	***SR 610 and US 1***	Yes	N/A	N/A	N/A	N/A	Yes	No	No	No
3	***14***	***US 1 and I-95 NB Entrance Ramp***	No	No	Yes	Yes	No	No	No	No	No
4	***4***	***US 17 and Short Street***	Yes	N/A	N/A	N/A	N/A	Yes	No	No	No
5	***7***	***Centerport Parkway and US 1***	No	No	Yes	Yes	No	Yes	**Yes**	No	**Yes**

1. 2016 VDOT Programmatic Agreement with FHWA which references screening criteria (primarily Design-Year average daily traffic and intersection skew angle) that were previously established in the 2009 PA based on worst-case modeling of 1037 vehicles per lane.
2. The 2016 PA also contains Intersection screening criteria of for 90 degree intersections, 6 approach lanes, 4 lanes on each departure, and a roadway grade of 2 percent (mainline) and 0 percent (cross-street), and vehicle speeds greater than 15 mph.
3. Worst of either AM or PM peak volumes was chosen.
4. N/A denotes 2016 PA not applicable to skewed intersections.
5. Concentrations derived from Table 2 of the 2016 PA Agreement for urban environment, approach speeds of 35 mph.
6. The VDOT statewide NOVA value at Arlington of 1.6 ppm for 1-hour and 1.4 ppm for 8-hour was used for urban areas.
7. The VDOT NOVA Arlington County persistence factor of 0.78 was applied to the 1-hour CO concentrations to derive the 8-hour values.

Table 4-4a: Worse-Case LOS Ranking 2042

			Intersection Data							2042 Build			
Rank	Map ID	Intersection Name	Skew Angle	Approach Lanes	Departure Lanes	Largest Mainline Grade (%)	Largest Cross Street Grade (5)	Lowest Posted Speed Limit (mph)	2022 Build Vehicle per Hour per Lane (vphpl)	ADT	Peak AM/PM Volume	LOS	Delay(s)
1	***13***	***SR 610 and US 1***	70	5	2	4	5.5	25	894	100,550	8,044	F	206.2
2	***4***	***US 17 and Short Street***	85	5	2	0.5	1.5	25	880	66,000	5,280	F	157.2
3	***17***	***Russell Rd and I-95 SB Ramps***	90	3	2	1	4.5	35	713	44,538	3,563	F	123.0
4	***14***	***US 1 and I-95 NB Entrance Ramp***	90	3	2	5.5	0.5	45	1485	77,862	5,940	F	106.1
5	***10***	***Courthouse Rd and US 1***	85	4	2	3	5	35	414	53,769	3,728	E	71.8

Table 4-4b: Worse-Case LOS Ranking 2042

			2016 Programmatic Agreement[1,2]								2009 Programmatic Agreement[1]			
Rank	Map ID	Intersection Name	Skewed Intersection (Yes/No)	Grade - Mainline 2% or Less or Cross Street at 0%	Approach Speed Greater than 15 mph (Yes/No)	Maximum Lanes at the Intersection < 6 (Yes/No)	Screen Out with 2016 PA?	Worst-Case 1-hour Concentration (ppm)[5]	Worst-Case 1-hour Concentration (ppm)[6]	Worst-Case 8-hour Concentration (ppm)[7]	Vehicles per Hour per Lane Less than 1037?	ADT Less than 59,000 (Skew Angle > 60 deg.)?	ADT Less than 49,000 (45 ≤ Skew Angle < 60 deg.)?	Screen Out with 2009 PA?
1	***13***	***SR 610 and US 1***	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	No	No	No
2	***4***	***US 17 and Short Street***	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	No	No	No
3	***17***	***Russell Rd and I-95 SB Ramps***	No	No	Yes	Yes	No	N/A	N/A	N/A	Yes	**Yes**	No	**Yes**
4	***14***	***US 1 and I-95 NB Entrance Ramp***	No	No	Yes	Yes	No	N/A	N/A	N/A	No	No	No	No
5	***10***	***Courthouse Rd and US 1***	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	**Yes**	No	**Yes**

1. 2016 VDOT Programmatic Agreement with FHWA which references screening criteria (primarily Design-Year average daily traffic and intersection skew angle) that were previously established in the 2009 PA based on worst-case modeling of 1037 vehicles per lane.
2. The 2016 PA also contains Intersection screening criteria of for 90 degree intersections, 6 approach lanes, 4 lanes on each departure, and a roadway grade of 2 percent (mainline) and 0 percent (cross-street), and vehicle speeds greater than 15 mph.
3. Worst of either AM or PM peak volumes was chosen.
4. N/A denotes 2016 PA not applicable to skewed intersections.
5. Concentrations derived from Table 2 of the 2016 PA Agreement for urban environment, approach speeds of 35 mph.
6. The VDOT statewide NOVA value at Arlington of 1.6 ppm for 1-hour and 1.4 ppm for 8-hour was used for urban areas.
7. The VDOT NOVA Arlington County persistence factor of 0.78 was applied to the 1-hour CO concentrations to derive the 8-hour values.

Figure 4-2: Study Area Interchanges

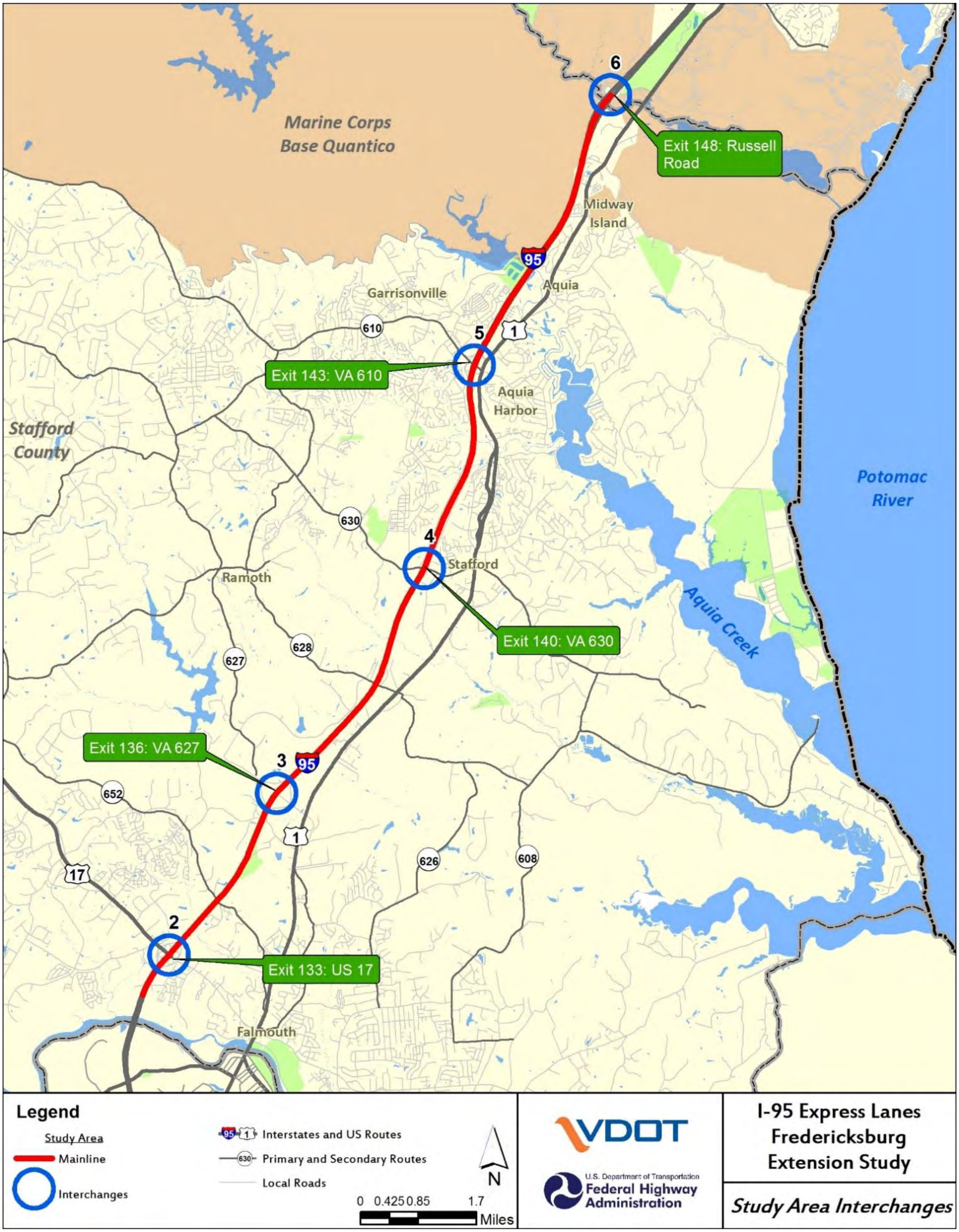


Table 4-5: 2022 Build Alternative Interchange Rankings

							2016 Programmatic Agreement[1]													
Rank	Map ID	Interchange Name	Screen Out with 2016 PA?	LOS	Avg Speed	2022 Build ADT	Interchange Lanes	Grade (%)	Interchange grade at 0 %	Adjacent Inter-sections	Distance from Inter-section (feet)	Unskewed Inter-section (90 degrees)	Skew Angle (Deg)	Inter-section Grade %	Worst-Case Approach Inter-section Lanes	Worst-Case Departure Intersection Lanes	Approach Speed (mph)	Worst-Case 1-hour Concen-tration (ppm)	Worst-Case 1-hour Concen-tration (ppm)	Worst-Case 8-hour Concen-tration (ppm)
1	2	I-95 and US 17 (Warrenton Rd)	No	E	59	194,500	9+(3)	0.5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	5	I-95 and SR 610 (Garrisonville Rd)	No	E	54	190,900	8+(2)	1	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	6	I-95 and Russell Rd	No	D	62	185,900	8+(2)	5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	4	I-95 and Courthouse Rd	No	F	53	165,600	8+(2)	1.5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	3	I-95 and Centerport Pkwy	No	E	60	158,100	8+(2)	3.5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1. 2016 VDOT Programmatic Agreement with FHWA which references screening criteria for Interchanges and Adjacent Intersections.

Table 4-6: 2042 Build Alternative Interchange Rankings

							2016 Programmatic Agreement[1]													
Rank	Map ID	Interchange Name	Screen Out with 2016 PA?	LOS	Avg Speed	2042 Build ADT	Interchange Lanes	Grade (%)	Interchange grade at 0 %	Adjacent Inter-sections	Distance from Inter-section (feet)	Unskewed Inter-section (90 degrees)	Skew Angle (Deg)	Inter-section Grade %	Worst-Case Approach Intersection Lanes	Worst-Case Departure Intersection Lanes	Approach Speed (mph)	Worst-Case 1-hour Concen-tration (ppm)[2]	Worst-Case 1-hour Concen-tration (ppm)	Worst-Case 8-hour Concen-tration (ppm)
1	2	I-95 and US 17 (Warrenton Rd)	No	F	53	225,900	9+(3)	0.5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	5	I-95 and SR 610 (Garrisonville Rd)	No	F	18	221,700	8+(2)	1	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	6	I-95 and Russell Rd	No	F	13	215,900	8+(2)	5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	4	I-95 and Courthouse Rd	No	F	32	192,400	8+(2)	1.5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	3	I-95 and Centerport Pkwy	No	D	49	183,600	8+(2)	3.5	**No**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1. 2016 VDOT Programmatic Agreement with FHWA which references screening criteria for Interchanges and Adjacent Intersections.

4.1.3 MOVES Emissions Estimation

Vehicle emission rates for CO were estimated using the latest version of the USEPA model MOVES2014a. The methodologies and assumptions used for the MOVES modeling were consistent with FHWA guidance as previously referenced, as well as USEPA guidance[29] and the VDOT Resource Document. All modeling inputs were from, or were otherwise consistent with, the VDOT Resource Document, specifically:

- Vehicle and fuels data required for input into the MOVES model provided by VDOT (on-line data repository) was applied for 2016, 2022, and 2042 conditions, consistent with the latest planning assumptions for the study corridor.
- Fuel data, vehicle population data, and age distribution data provided by VDOT (on-line data repository) were applied to populate the MOVES project data manager database for the areas where the worst-case interchanges/intersections are located (i.e., Stafford and Prince William Counties).
- Source-type hour fractions for each link were derived using the link-source-type-hour calculation tool provided with the VDOT Resource Document (available in the on-line data repository). Project-specific data for cars and truck volumes were applied along with the most recent VDOT DVMT 1236 report (2014) and source-type population data for each source type.
- MOVES link files were developed for each worst-case interchange/intersection studied for each analysis year. The link file includes road type, peak-hour volumes, link lengths, roadway speed, and roadway grade.
- The roadway grades for the interchanges/intersections were derived from plans where available, or from profile data based on the United States Geological Survey elevation data from Geographic Information System files or Google Earth data.
- Worst-case meteorological data consistent with the VDOT Resource Document for the study corridor for the areas where the worst-case interchanges/intersections are located were also assumed in the project data manager database.

A summary of the MOVES inputs is presented in **Table 4-7**.

[29] USEPA, "Using MOVES2014 in Project Level Carbon Monoxide Analyses", March 2015.

Table 4-7: Summary of MOVES Inputs

Parameter	Assumption
Scale Menu	"Project" Domain Calculation Type "Inventory"
Evaluation Month	January
Time Span	Year = (2016, 2022, 2042), AM Hour = 7AM to 8AM Days = Weekdays
Geographic Bounds	Virginia, Prince William County, Stafford County
Vehicles Equipment	All Vehicle Types for diesel and gasoline and Compressed Natural Gas (CNG) transit buses for Stafford County. Prince William County source types provided in VDOT Resource Document data repository.
Link Files	Roadway Specific
Roadway Grade/Link Speeds	Plans where available, USGS elevation and/or Google Earth
Fuel and I/M Inputs	MOVES fuel defaults, No I/M (worst-case assumption for PWC)
Vehicle Population and Age Distribution	Provided by VDOT[2]
Pollutants and Process Panel	CO Running and CO Crankcase
Output Panel	Grams and Miles Selected as Units, Population and Distance traveled

Notes:
1.) Data provided in the VDOT Project-Level Air Quality Analysis Resource Document, On-line repository.
2.) Data for MOVES runs collected based on the location of the worst-case interchanges which are located in Prince William and Stafford Counties. The MOVES Project database was populated for each interchange using specific values relative to their locations.

4.1.4 Emission Factors

Mobile source emission factors are calculated based on the actual peak-hour congested speeds at which vehicles travel through the interchanges/intersections. The MOVES runs were used to generate CO emission rates for input into the CAL3QHC dispersion model for the Base (2016), Opening (2022), and Design (2042) Years. For estimating CO emission rates for the interchange/intersection analysis, the following assumptions were made:

- An average vehicle speed of 65 mph was assumed for each I-95 mainline link;
- Unrestricted roadway and ramp speeds ranged from 35 mph to 55 mph based on the traffic study results;
- The modeling assumed restricted and unrestricted roadway links in an urban area type;
- Zero median width;
- At-grade intersections and interchanges assuming no vertical separation;
- Receptor locations on the edge of the right-of-way assuming USEPA guidance.

Emissions rates were developed in MOVES for posted speed limits and road grades ranging from -6 (downhill) to +6 percent (uphill) at 1 percent intervals for the intersections/interchanges studied in Stafford and Prince William Counties and are provided in a table in **Appendix B**. The higher of the downhill or uphill MOVES emission rate was chosen as input to CAL3QHC dispersion modeling, as worst-case. This is a conservative assumption as the uphill grade MOVES emission rates are consistently higher than the downhill rates and therefore produce the highest worst-case concentrations. A roadway grade of up to +6 percent was the largest identified in the study area and located at the US 1 and SR 610 intersection as well as the US 1 and I-95 northbound entrance ramp intersection. This is considered worst-case and the +6 percent road-grade emission factor was used for all intersection approach and departure links in CAL3QHC as it yields the highest emission rate for all uphill/downhill grades in MOVES for each of the posted vehicle speed limits. **Table 4-8** summarizes the MOVES emission rates used the CAL3HQC dispersion modeling for the three intersections modeled assuming the worst-case roadway grade of +6 percent. A sample MOVES input and output file is provided in **Appendix C**. A complete set of MOVES input/output files can be made available upon request.

Table 4-8: Intersection Emission Factors, Speeds, and Road Grades

Inter-section	Intersection Leg	Vehicle Speed (mph)	Roadway Grade (%)	2016 (g/mile)	2016 (g/hr)	2022 (g/mile)	2022 (g/hr)	2042 (g/mile)	2042 (g/hr)
US 17 and S Gateway Dr	North Approach/ Depart	45	6/6	10.71	18.41	7.48	7.96	2.81	1.31
	South Approach/ Depart	45	6/6	10.71	18.41	7.48	7.96	2.81	1.31
	East Approach/ Depart	25	6/6	9.89	17.75	7.04	7.13	2.53	1.08
	West Approach/ Depart	35	6/6	10.06	17.75	7.10	7.13	2.64	1.08
SR 610 and US 1	North Approach/ Depart	35	6/6	9.93	18.08	7.00	7.59	2.57	1.25
	South Approach/ Depart	35	6/6	9.93	18.08	7.00	7.59	2.57	1.25
	East Approach/ Depart	35	6/6	10.05	17.93	7.08	7.23	2.62	1.06
	West Approach/ Depart	35	6/6	10.05	17.93	7.08	7.23	2.62	1.06
US 1 and I-95 NB Entrance Ramp	North Approach/ Depart	35	6/6	9.93	18.08	7.00	7.59	2.57	1.25
	South Approach/ Depart	35	6/6	9.93	18.08	7.00	7.59	2.57	1.25
	West Depart	55	6/6	11.98	N/A	8.35	N/A	3.24	N/A

Similarly, the higher of the downhill or uphill MOVES emission rate was chosen as input to the CAL3QHC dispersion modeling as worst case for the interchange modeling. The highest roadway grade and actual posted vehicle speed for each approach and departure leg was chosen for each interchange. For example, the highest approach and departure leg roadway grade of +4 percent and +1 percent, respectively, were assumed for the I-95 and US 17 and the I-95 and SR 610 interchange; while a 1 percent and either a +5 percent or +2 percent departure leg roadway grade, respectively, was assumed for I-95 and Russell Road interchange. This is still worst-case since the emission rates with higher road grades were used along with the higher of the uphill/downhill emission rates. Error! Not a valid bookmark self-reference. summarizes the emission factors generated by MOVES for each year, as well as vehicle speeds and roadway grades used for the three interchanges modeled. A sample MOVES input and output file is provided in **Appendix C**. A complete set of MOVES input/output files can be made available upon request.

Table 4-9: Interchange Emission Factors, Speeds, and Road Grades

Interchange	Interchange Leg	Vehicle Speed (mph)	Roadway Grade (%)	2016 (g/mile)	2022 (g/mile)	2042 (g/mile)
I-95 and US 17 (Exit 133)	North Approach/Depart	65/65	4/1	8.67/4.14	6.01/2.87	2.27/1.02
	South Approach/Depart	65/65	4/1	8.67/4.14	6.01/2.87	2.27/1.02
	East Approach/Depart	55/45	4/1	7.72/3.92	5.40/2.65	2.05/0.87
	West Approach/Depart	55/45	4/1	7.72/3.92	5.40/2.65	2.05/0.87
I-95 and SR 610 (Exit 143)	North Approach/Depart	65/65	4/1	8.67/4.14	6.01/2.87	2.27/1.02
	South Approach/Depart	65/65	4/1	8.67/4.14	6.01/2.87	2.27/1.02
	East Approach/Depart	55/35	4/1	7.95/4.22	5.57/2.83	2.15/0.90
	West Approach/Depart	55/35	4/1	7.95/4.22	5.57/2.83	2.15/0.90
I-95 and Russell Rd (Exit 148)	North Approach/Depart	65/65	1/5	4.01/10.67	2.99/8.03	1.06/2.98
	South Approach/Depart	65/65	1/5	4.01/10.67	2.99/8.03	1.06/2.98
	East Approach/Depart	55/35	1/2	3.73/4.93	2.72/3.55	0.94/1.17
	West Approach/Depart	55/35	1/2	4.93/3.73	3.55/2.72	1.17/0.94

4.1.5 Dispersion Modeling Scenarios

A worst-case modeling approach was taken for the analysis. The worst-case assumptions applied together serve to overestimate the project CO emissions and concentrations. Worst-case traffic volumes (set at the theoretical per lane maximum for LOS E) were assumed for the CO analyses at the intersections and interchanges along with worst-case MOVES emission rates (i.e., higher of the uphill or downhill grades).

As the same worst-case volumes were applied for 2016, 2022 and 2042, and CO emission factors decline over time due to improved fuel quality and continued fleet turnover to vehicles constructed to more stringent exhaust emission standards for CO, the worst-case analysis for 2016 would have higher concentrations than those for 2022 and 2042. That is, as 2016 would have the same worst-case traffic but higher emission factors (as shown above in **Table 4-8** and

Similarly, the higher of the downhill or uphill MOVES emission rate was chosen as input to the CAL3QHC dispersion modeling as worst case for the interchange modeling. The highest roadway grade and actual posted vehicle speed for each approach and departure leg was chosen for each interchange. For example, the highest approach and departure leg roadway grade of +4 percent and +1 percent, respectively, were assumed for the I-95 and US 17 and the I-95 and SR 610 interchange; while a 1 percent and either a +5 percent or +2 percent departure leg roadway grade, respectively, was assumed for I-95 and Russell Road interchange. This is still worst-case since the emission rates with higher road grades were used along with the higher of the uphill/downhill emission rates. Error! Not a valid bookmark self-reference. summarizes the emission factors generated by MOVES for each year, as well as vehicle speeds and roadway grades used for the three interchanges modeled. A sample MOVES input and output file is provided in **Appendix C**. A complete set of MOVES input/output files can be made available upon request.

Table 4-9), it would have higher worst-case emissions than would later years. The screening analysis for 2016 therefore effectively covers both the 2022 and 2042 Build scenarios; however, all three years were modeled for comparison.

4.1.6 Traffic Volumes for Intersection and Interchange Scenarios

As part of the approach for worst-case screening modeling, default worst-case volumes were applied as specified in the VDOT Resource Document. The default worst-case volume for arterials is 1,230 vphpl and 2,400 vphpl for freeway links.[30] The worst-case volumes are intended to reflect over-capacity operating conditions which were taken as LOS E. As shown in **Table 4-10**, the mainline arterial worst-case 2042 Build Alternative AM and PM peak volume was estimated at 3,992 vehicles per hour (which translates to 799 vphpl for the 5-lane roadway) compared to the worst-case default value of 6,150 vehicles per hour (assuming worst-case default value of 1,230 vphpl). As shown in **Table 4-11**, the mainline freeway worst-case 2042 Build Alternative AM and PM peak volume was estimated at 11,400 vehicles per hour (which translates to 1,629 vphpl for the 7-lane roadway) compared to the worst-case default value of 16,800 vehicles per hour (assuming worst-case default value of 2,400 vphpl). Also as part of the worst-case modeling the HOT lane volumes were account for in both the north and south direction during the modeling. This is a conservative approach as the lanes would only operate northbound in the AM hours and southbound in PM hours.

Typically, the assumed worst-case traffic volumes tend to be significantly higher than the Design (and Opening) Year modeled volumes. **Table 4-10** and **Table 4-11** below summarize the refined Build and No-Build traffic estimates developed by the project team along the three intersections and three interchanges respectively. It shows the per lane volume to be substantially lower in both the Opening-Year and Design-Year scenarios compared to the worst-case default values. In addition, ramp lanes tend to accommodate fewer vehicles per hour, but this conservative approach assumes full utilization at a capacity of a mainline travel lane (2,400 vphpl).

4.1.7 CAL3QHC

The latest version of the CAL3QHC model (04244)[31] was used to predict worst-case 1-hour CO concentrations from free-flow and queue links using the latest version of the FHWA CAL3i.[32] CAL3i is a software package that incorporates the USEPA CAL3QHC dispersion model and various worst-case default parameters per the USEPA guidance. CAL3i is an update to CAL3interface.[33,34] The peak 1-hour concentrations from CAL3QHC were scaled by a persistence factor of 0.78[35] (as specified in the VDOT Resource Document) to estimate 8-hour concentrations. Travel speeds were estimated based on field observations and the traffic analysis. A summary of inputs used in the CAL3i interface model is shown in **Table 4-12.**

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[30] VDOT Project-Level Air Quality Resource Document, Appendix G1.

[31] "User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections", USEPA-454/R-92-006 (Revised), USEPA, September 1995.

[32] CAL3i can be obtained by contacting FHWA Resource Center: https://www.fhwa.dot.gov/resourcecenter/teams/airquality/

[33] See CAL3Interface – A Graphical User Interface for the CALINE3 and CAL3QHC Highway Air Quality Models", Michael Claggett, Ph.D., FHWA Resource Center, 2006.

[34] See Update of FHWA's CAL3Interface – A Graphical User Interface for the CALINE3 and CAL3QHC Highway Air Quality

[35] Consistent with the NOVA persistence factor derived from Appendix G1 of the VDOT Resource Document and was used for estimating 8-hour concentrations from 1-hour concentrations.

Worst-case modeled concentrations from CAL3QHC were added to appropriate background CO concentrations for comparison to the NAAQS. The default background CO levels specified in the VDOT Resource Document were 1.6 ppm (one-hour CO concentration) and 1.4 ppm (8-hour concentration), which were the values observed at the monitor with the Arlington County monitor in northern Virginia (NOVA). The persistence factor for NOVA was also selected (**Table 4-12**).

Table 4-10: Comparison of Forecasted Traffic Volumes and Assumed Worse Case Volumes for Intersection Screening Modeling

Intersection	Direction	2022		2042		Worst-Case Vol.[1]	Percent Difference (Worst Case vs. 2022 Build)	Percent Difference (Worst Case vs. 2042 Build)	Speeds	Lanes
		No Build	Build	No Build	Build					
US 17 and S Gateway Dr	North	2,390	3,434	3,267	3,992	6,150	56.7	42.6	45	5
	South	2,221	2,175	2,992	2,528	6,150	95.5	83.5	45	5
	East	396	409	513	476	3,690	160.1	154.3	35	3
	West	583	462	571	537	4,920	165.7	158.4	25	4
	Total	**5,590**	**6,480**	**7,343**	**7,533**	**20,910**	**105.4**	**94.1**		
SR610 and US 1	North	1,486	1,983	2,239	2,305	6,150	102.5	90.9	35	5
	South	2,565	3,122	3,995	3,630	4,920	44.7	30.2	35	4
	East	1,927	1,278	2,042	1,486	4,920	117.5	107.2	35	4
	West	434	537	570	624	4,920	160.6	155.0	35	4
	Total	**6,412**	**6,920**	**8,846**	**8,045**	**20,910**	**109.4**	**88.9**		
US1 and I95 NB Entrance Ramp	North	2,623	1,942	2,292	2,258	3,690	62.1	48.2	35	3
	South	1,526	3,168	4,038	3,682	3,690	15.2	0.22	35	3
	West	700	400	700	400	1,230	101.8	101.8	55	1
	Total	**4,849**	**5,510**	**7,030**	**6,340**	**8,610**	**43.9**	**30.4**		

Notes: 1.) Default values based on number of lanes time 1,230 vehicles per hour per lane.

Table 4-11: Comparison of Forecasted Traffic Volumes and Assumed Worse Case Volumes for Interchange Screening Modeling

Interchange	Direction	2022		2042		Worst-Case Vol.[1]	Percent Difference (Worst Case – 2022 Build)	Percent Difference (Worst Case – 2042 Build)	Speeds	Lanes
		No Build	Build	No Build	Build					
I95 and US17 (Exit 133)	North	5,100	6,100	6,200	7,100	12,000	65.2	51.3	65	5
	South	5,100	9,000	7,000	11,400	16,800	60.5	38.3	65	4+(3)[2]
	East	2,120	2,065	2,870	2,400	9,600	129.2	120.0	45	4
	West	2,300	2,550	2,710	2,960	9,600	116.1	105.7	45	4
	Total	**14,620**	**19,715**	**18,780**	**23,860**	**48,000**	**83.5**	**67.2**		
I95 and SR 610 (Exit 143)	North	5,200	6,500	7,900	7,600	9,600	38.5	23.3	65	4
	South	6,600	9,200	9,900	10,700	14,400	44.1	29.5	65	4+(2)
	East	2,940	3,130	3,395	3,635	12,000	117.3	107.0	35	5
	West	2,220	1,840	2,810	2,140	7,200	118.6	108.4	35	3
	Total	**16,960**	**20,670**	**24,005**	**24,075**	**43,200**	**70.5**	**56.9**		
I95 and Russel Road (Exit 148)	North	5,200	6,600	7,300	7,600	9,600	37.1	23.3	65	4
	South	6,700	7,400	9,100	9,300	14,400	64.2	43.1	65	4+(2)
	East	815	420	740	485	7,200	177.9	175.0	35	3
	West	1,220	1,450	1,575	1,685	7,200	132.9	124.1	35	3
	Total	**13,935**	**15,870**	**18,715**	**19,070**	**38,400**	**83.0**	**67.3**		

Notes: 1.) Default values based on number of lanes times 2,400 vehicles per hour per lane.
2.) Lanes in parenthesis indicated the number of HOT lanes added in the Build condition. Added to southbound lane in each interchange for consistency.

Table 4-12: Summary of CAL3QHC Inputs

Description		Value
Surface Roughness Coefficient		175 Centimeters
CO Background Concentrations (Arlington)		1.6 ppm 1-hour, 1.4 ppm 8-hour (Arlington)[36]
Persistence Factor		0.78 (Arlington County)
Wind Speed		1.0 meter per second
Stability Class		Urban D
Mixing Height		1,000 meters
Wind Direction		5 degree increments (1 thru 72)
Receptor Height		5.9 feet
Signalized Intersection	Signal Type	1 (pre-timed)
	Arrival Rate	3 (average)
	Avg Cycle Length (sec)	120
	Avg Red Time (sec)	68
	Clearance Lost Time (sec)	2

Note: CAL3QHC inputs were derived from the VDOT Project-Level Air Quality Analysis Resource Document, Appendix G1 and G2.

A worst-case analysis approach is used for the signalized intersections. Worst-case meteorological conditions and assumptions, detailed in the VDOT Resource Document, are used for modeling. Travel speeds are estimated based on field observations, traffic data, and queue links. Posted speeds may be applied as the default, consistent with the VDOT Resource Document. A worst-case vphpl value of 1,230 for arterial roadways, per the VDOT Resource Document, is used. Worst-case signal timing data found in the VDOT Project Level Air Quality Resource Document is used unless project specific data is available. Worst-case MOVES emission rates of the higher of the uphill or downhill roadway grades were used. The combination of these worst-case parameters result in a conservative high modeled estimate for ambient concentrations than would be expected to occur.

In keeping with the worst-case analysis approach, each interchange is modeled as a grade separation. This approach effectively concentrates the travel lanes, traffic, and emissions in one location (i.e., at the center of the grade separation), rather than being widely distributed or dispersed across the actual freeway ramps. A worst-case vphpl value of 2,400 for mainline freeway roadways, per the VDOT Resource Document, used. Additionally, default receptor locations, which are summarized below, are close to the roadway edge and are well inside the footprint or right-of-way for the actual interchange, resulting in higher modeled estimates for ambient concentrations of CO than would occur for the actual interchange. The combination of the default worst-case configuration (grade separation for an interchange) and receptor locations (near the roadway edge instead of being located much further away at the actual right-of-way edge) result in much more conservatively high modeled estimates for ambient concentrations than would be expected to occur in practice.

[36] The 1-hour CO background concentration for the NOVA Region of Arlington County of 1.6 ppm, and 8-hour CO background concentration of 1.4 ppm consistent with the fleet characterization data. This is conservative as Arlington is the higher of the three locations in the NOVA Region.

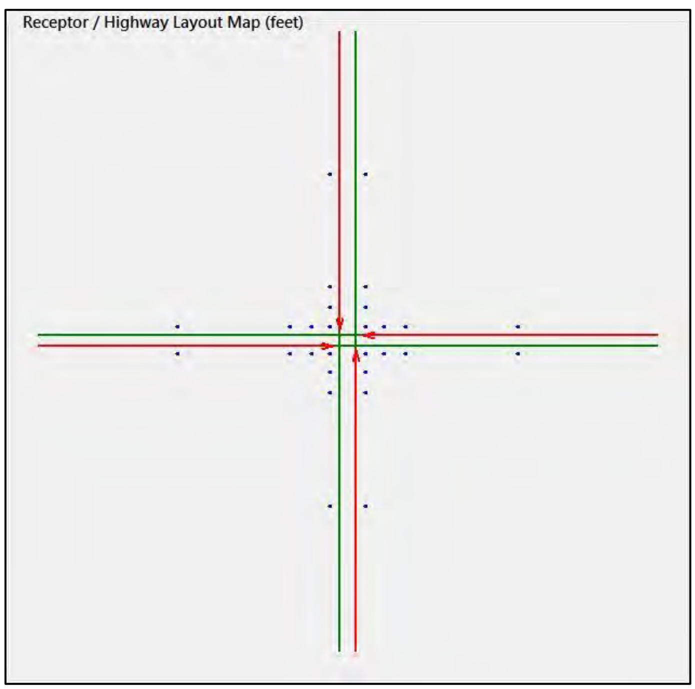
CAL3QHC input and output files are provided in **Appendix D**.

4.1.8 Receptors

Typically, receptor locations are placed in the vicinity of each intersection and interchange at worst-case locations such as sidewalks, property lines, and parking lots where the public generally has access. For worst-case analyses, however, receptors may be placed on the right of way edge or even closer. More specifically, for freeways, receptors are placed twenty feet from the roadway edge. For arterial streets (including intersections), the receptors are placed ten feet from the roadway edge (i.e., at the nearest possible location for the model, which assumes a ten-foot mixing zone next to the roadway).

Receptor locations for each worst-case intersection and interchange were generated in CAL3i consistent with the USEPA modeling guidelines[37] where the receptors were located a minimum of 3 meters (approximately 10 feet) from the edge of the roadway and positioned at a height of 1.8 meters above the ground (5.9 feet). **Figure 4-3** through **Figure 4-5** shows the receptor locations at the three intersections and **Figure 4-6** through **Figure 4-8** shows the receptor locations at the three interchanges, as displayed in the CAL3i interface. The modeled conditions are conservative, since the theoretical worst-case traffic volumes (along with other simplified assumptions) were applied. Taken together, these conditions serve to overestimate impacts and yield conservative results. If the peak CO concentrations at the worst-case areas selected in the analysis are below the NAAQS for CO, it is assumed that all other locations in the corridor would also remain below the thresholds.

Figure 4-3: CAL3i Generated CAL3QHC Receptor Locations – US 17 and S Gateway Drive



[37] "Guidelines for Modeling Carbon Monoxide from Roadway Intersections", USEPA-454/R-92-005, USEPA, 1992.

Figure 4-4: CAL3i Generated CAL3QHC Receptor Locations – US1 and SR 610 (Garrisonville Road)

Figure 4-5: CAL3i Generated CAL3QHC Receptor Locations – US1 and I-95 Northbound Entrance Ramp

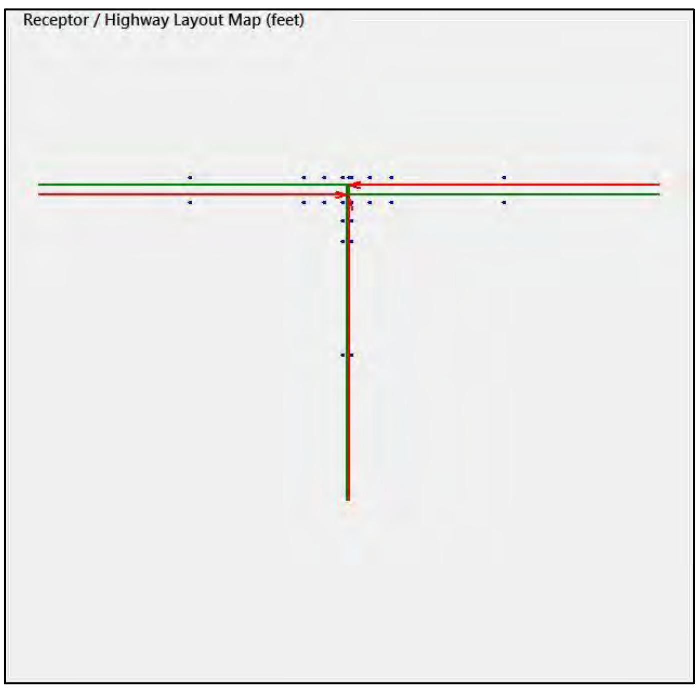


Figure 4-6: CAL3i Generated CAL3QHC Receptor Locations – I95 and US 17 (Exit 133)

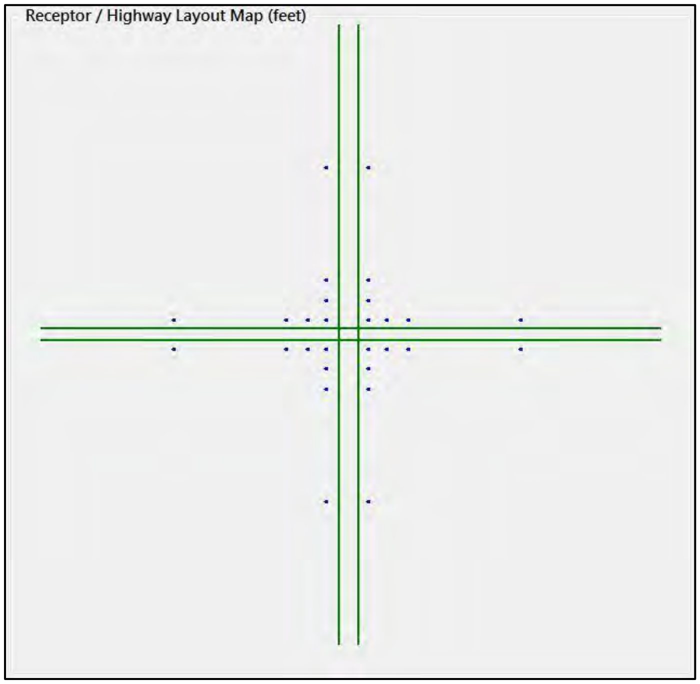


Figure 4-7: CAL3i Generated CAL3QHC Receptor Locations – I95 and SR 610 (Exit 143)

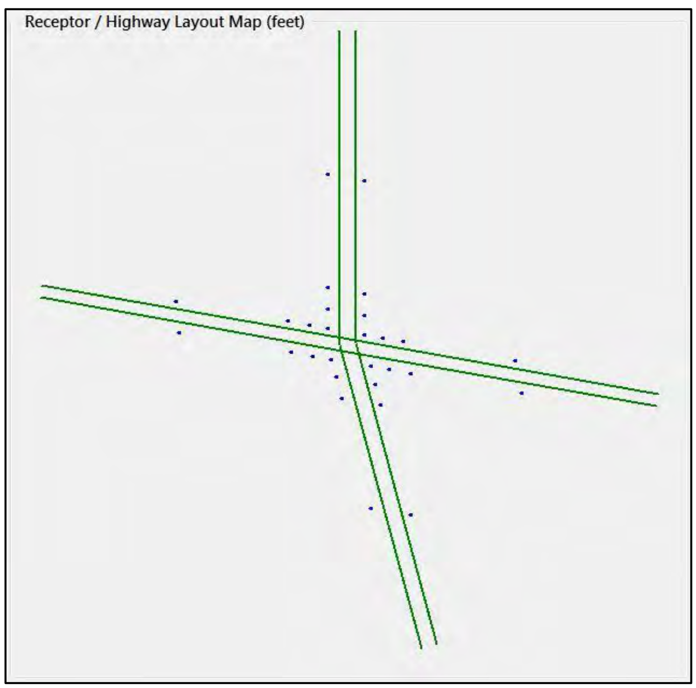
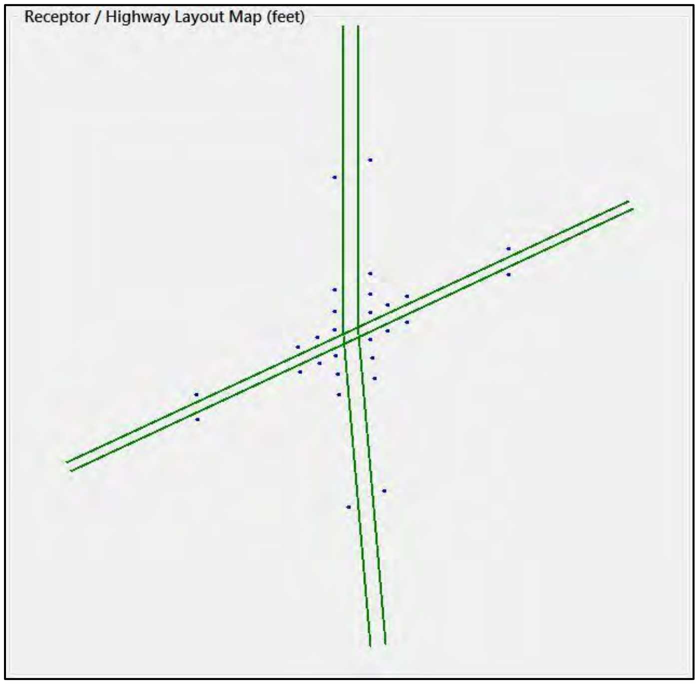


Figure 4-8: CAL3i Generated CAL3QHC Receptor Locations – I95 and Russel Road (Exit 148)



4.1.9 CAL3QHC Modeling Results

The results of the 1-hour and 8-hour CO hot-spot analysis for the worst-case intersection and interchange locations are presented in **Table 4-13** and **Table 4-14** for the Base, Opening, and Design-Year Build and No-Build conditions. The table includes the overall worst-case modeled concentrations for the AM and PM peak periods, and includes the modeled receptor number in parenthesis. The concentrations also include the appropriate 1-hour and 8-hour background concentrations of 1.6 ppm and 1.4 ppm,[38] respectively, for comparison to the CO NAAQS.

The highest 1-hour predicted concentrations for the intersection Base, Opening, and Design-Year Build conditions were 9.0 ppm, 6.9 ppm, and 3.5 ppm, respectively (**Table 4-13**). The maximum 1-hour concentration for the Base and Opening-Year Build conditions was predicted to occur at the SR 610 and US 1 intersection. The maximum 1-hour concentration for the Design-Year Build condition was predicted to occur at the US 17 and South Gateway Drive intersection. However, all predicted peak 1-hour CO concentrations are well below the 1-hour CO NAAQS of 35 ppm. A table of peak CO concentrations at all receptors at each of the worst-case intersections for each scenario are included in **Appendix E.**

The peak 1-hour values generated by CAL3QHC were scaled by a persistence factor of 0.78 to generate peak 8-hour CO concentrations, and these values were then added to the appropriate background concentration for comparison to the CO NAAQS. The highest 8-hour concentrations for the Base, Opening, and Design-Year Build conditions were 7.2 ppm, 5.5 ppm, and 2.9 ppm, respectively. Similar to the peak 1-hour concentrations, the maximum 8-hour concentration for the Base, and Opening-Year Build conditions was predicted to occur at the SR 610 and US 1 intersection. The maximum 1-hour concentration for the Design-Year Build condition was predicted to occur at the US 17 and South Gateway Drive

[38] Project Level Air Quality Analysis Resource Document, April 2016, Appendix H2.

intersection. However, all predicted peak 8-hour CO concentrations are also below the 8-hour CO NAAQS standard of 9 ppm.

Table 4-13: CAL3QHC CO Modeling Results for the Worst-Case Intersections

Intersection	Averaging Period	2016	2022		2042		NAAQS (ppm)
		Existing	No-Build	Build	No-Build	Build	
		Peak (ppm)	Peak (ppm)	Peak (ppm)	Peak (ppm)	Peak (ppm)	
US 17 and S. Gateway Drive	1-Hr	8.8 (13)	3.2 (1)	6.7 (1)	2.3 (1)	**3.5 (1)**	35
	8-Hr	7.0 (13)	2.6 (1)	5.4 (1)	1.9 (1)	**2.9 (1)**	9
SR 610 and US 1	1-Hr	**9.0 (9)**	3.4 (13)	**6.9 (9)**	2.4 (5)	3.4 (9)	35
	8-Hr	**7.2 (9)**	2.8 (13)	**5.5 (9)**	2.0 (5)	2.8 (9)	9
US 1 and I-95 NB Entrance Ramp	1-Hr	5.5 (4)	3.2 (14)	4.2 (4)	2.4 (1)	2.6 (4)	35
	8-Hr	4.4 (4)	2.6 (14)	3.4 (4)	2.0 (1)	2.2 (4)	9

Notes:

1. *Bold concentrations indicated maximum 1-hour and 8-hour concentrations for each condition.*
2. *Numbers in parenthesis represent maximum concentration receptor number. The locations of the receptors with the highest concentrations are provided in* ***Appendix E.***

The highest 1-hour predicted concentrations for the interchange Base, Opening, and Design-Year Build conditions were 10.7 ppm, 8.4 ppm, and 4.1 ppm, respectively (**Table 4-14**). The maximum 1-hour concentration for the Base and Opening-Year Build conditions was predicted to occur at the I-95 and Russell Road (Exit 148) interchange. The maximum 1-hour concentration for the Design-Year Build condition was predicted to occur at the I-95 and SR 610 (Exit 143) interchange. However, all predicted peak 1-hour CO concentrations are well below the 1-hour CO NAAQS of 35 ppm. A table of peak CO concentrations at all receptors at each of the worst-case intersections for each scenario are included in **Appendix E**.

The peak 1-hour values generated by CAL3QHC were scaled by a persistence factor of 0.78 to generate peak 8-hour CO concentrations, and these values were then added to the appropriate background concentration for comparison to the CO NAAQS. The highest 8-hour concentrations for the Base, Opening, and Design-Year Build conditions were 8.5 ppm, 6.7 ppm, and 3.4 ppm, respectively. Similar to the peak 1-hour concentrations, the maximum 8-hour concentration for the Base, and Opening-Year Build conditions was predicted to occur at the I-95 and Russell Road (Exit 148) interchange. The maximum 1-hour concentration for the Design-Year Build condition was predicted to occur at the I-95 and SR 610 (Exit 143) interchange. However, all predicted peak 8-hour CO concentrations are also below the 8-hour CO NAAQS standard of 9 ppm.

Table 4-14: CAL3QHC CO Modeling Results for the Worst-Case Interchanges

Interchange	Averaging Period	2016	2022		2042		NAAQS (ppm)
		Existing	No-Build	Build	No-Build	Build	
		Peak (ppm)	Peak (ppm)	Peak (ppm)	Peak (ppm)	Peak (ppm)	
I-95 and US 17 (Exit 133)	1-Hr	9.6 (1)	3.8 (5)	7.9 (13)	2.7 (5)	3.9 (13)	35
	8-Hr	7.6 (1)	3.1 (5)	6.3 (13)	2.3 (5)	3.2 (13)	9
I-95 and SR 610 (Exit 143)	1-Hr	9.7 (5)	4.2 (6)	8.1 (13)	3.0 (6)	**4.1 (13)**	35
	8-Hr	7.7 (5)	3.4 (6)	6.5 (13)	2.5 (6)	**3.4 (13)**	9

Interchange	Averaging Period	2016	2022		2042		NAAQS (ppm)
		Existing	No-Build	Build	No-Build	Build	
		Peak (ppm)	Peak (ppm)	Peak (ppm)	Peak (ppm)	Peak (ppm)	
I-95 and Russell Rd (Exit 148)	1-Hr	**10.7 (13)**	4.9 (15)	**8.4 (13)**	3.2 (13)	4.0 (9)	35
	8-Hr	**8.5 (13)**	4.0 (15)	**6.7 (13)**	2.6 (13)	3.3 (9)	9

Notes:

1.) *Bold concentrations indicated maximum 1-hour and 8-hour concentrations for each condition.*

2.) *Numbers in parenthesis represent maximum concentration receptor number. The locations of the receptors with the highest concentrations are provided in **Appendix E.***

These results demonstrate that the worst-case intersections and interchanges for each Existing, Build and No-Build Alternative using very conservative assumptions would not cause or contribute to a violation of the CO NAAQS within the study area, and thereby satisfies all NEPA and CAA requirements pertaining to CO.

4.2 MOBILE SOURCE AIR TOXICS ANALYSIS

4.2.1 Methodology

On October 18, 2016, FHWA issued updated interim guidance[39] regarding MSATs in a NEPA analysis. The guidance recommended including the USEPA's recent MOVES2014a emission model along with updated research on air toxic emissions from mobile sources, including the addition of two compounds identified as significant contributors from mobile sources: Acetaldehyde and Ethylbenzene. The guidance includes three categories and criteria for analyzing MSATs in NEPA documents:

1. No meaningful MSAT effects;
2. Low potential MSAT effects; and
3. High potential MSAT effects.

A qualitative analysis is required for projects which meet the low potential MSAT effects criteria, while a quantitative analysis is required for projects meeting the high potential MSAT effects criteria.

Projects with low potential MSAT effects are described as:

- Those that serve to improve operations of highway, transit, and freight without adding substantial new capacity or without creating a facility that is likely to significantly increase emissions. This category covers a broad range of project types, including minor widening projects and new interchanges, such as those that replace a signalized intersection on a surface street or where Design-Year traffic is not projected to meet the 140,000 to 150,000 AADT criteria.

Projects with high potential MSAT effects must:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location;
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the Design-Year; and
- Proposed to be located in proximity to populated areas.

[39] See: https://www.fhwa.dot.gov/Environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm

In accordance with the MSAT guidance, the study area is best characterized as a project with "higher potential MSAT effects" since projected Design-Year traffic is expected to reach the 140,000 to 150,000 AADT criteria. Specifically, the Design-Year Build Alternative is expected to have ADT volumes in excess of the aforementioned threshold. North of Exit 143 on I-95 (including the HOT Lanes for both the AM and PM hour) is projected to have a combined ADT volume of 197,600. A table summarizing the ADT throughout the project corridor for each alternative is presented in **Appendix A**.

The results demonstrate that the predicted ADT volumes would be greater than the 140,000 to 150,000 AADT MSAT criteria. As a result, a quantitative assessment of MSAT emissions projections was conducted for the affected network consistent with FHWA guidance.

4.2.2 MSAT Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendment of 1990, whereby Congress mandated that the USEPA regulate 188 air toxics, also known as hazardous air pollutants (HAPs). The USEPA assessed this expansive list in its rule on the Control of HAPs from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of the USEPA's Integrated Risk Information System (IRIS) 2011 National Air Toxics Assessment.[40] In addition, the USEPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers, or contributors, and that are non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA, 2011). These compounds are: 1,3-butadiene; acetaldehyde; acrolein; benzene; diesel particulate matter (diesel PM); ethylbenzene; formaldehyde; naphthalene; and polycyclic organic matter. While FHWA considers these the priority MSATs, the list is subject to change and may be adjusted in consideration of future USEPA rules.

4.2.3 Motor Vehicles Emissions Simulator (MOVES)

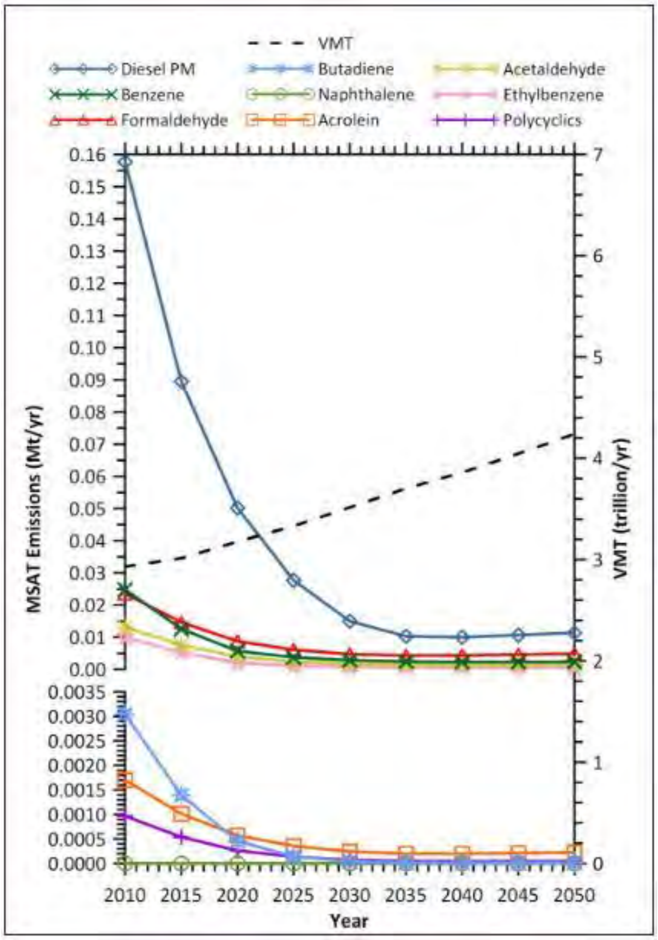
According to the USEPA, MOVES2014 is a major revision to MOVES2010 and improves upon it in many respects. MOVES2014 includes new data, new emissions standards, and new functional improvements and features. It incorporates substantial new data for emissions, fleet, and activity developed since the release of MOVES2010. These new emissions data are for light- and heavy-duty vehicles, exhaust and evaporative emissions, and fuel effects. MOVES2014 also adds updated vehicle sales, population, age distribution, and vehicle miles traveled (VMT) data. MOVES2014 incorporates the effects of three new federal emissions standard rules not included in MOVES2010. These new standards are all expected to impact MSAT emissions and include Tier 3 emissions and fuel standards starting in 2017 (79 FR 60344), heavy-duty GHG regulations that phase-in during model years 2014-2018 (79 FR 60344), and the second phase of light-duty GHG regulations that phase-in during model years 2017-2025 (79 FR 60344). Since the release of MOVES2014, the USEPA released MOVES2014a in November 2015. In the MOVES2014a *Questions and Answers Guide,*[41] the USEPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014.

[40] See: https://www.epa.gov/national-air-toxics-assessment/2011-nata-assessment-results

[41] See: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNR0.txt

Using the USEPA's MOVES2014a model, as shown in **Figure 4-4**, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecasted, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Figure 4-9: National MSAT Emission Trends 2010 – 2050 for Vehicles Operating on Roadways



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

Source: USEPA MOVES2014a model runs conducted by FHWA, September 2016.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on the calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b and also reflects the latest federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

4.2.4 MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, USEPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

4.2.5 Project-Quantitative MSAT Analysis

A quantitative MSAT analysis was conducted consistent with the latest guidance developed by FHWA. These include the Interim Guidance Update mentioned earlier, and the FHWA guidance for addressing a quantitative MSAT analysis using MOVES titled "Quick-start Guide for Using MOVES for a NEPA Analysis" along with training material developed by FHWA that provided detailed direction on the preparation of quantitative MSAT analyses as available from the VDOT On-line Data Repository.

- The affected network for the MSAT analysis was identified using the Metropolitan Washington Council of Governments (MWCOG) Forecast Model for each Alternative and analysis year. The affected network extends well beyond the study area as it captures changes in MSAT emissions due to changes in traffic volumes when comparing the No-Build to the Build Alternative condition.
- The latest MWCOG Travel Demand Model consists of modeling years 2015, 2020, and 2040; therefore, to remain consistent with the CO analysis study years, 2022 and 2042-year data sets were developed for use in the MSAT analysis. The 2015 COG model data was used for the 2016 Existing-Year as little growth was seen between these two years.
- The 2042 and 2022 volumes for each link were developed from 2040 and 2020 model output volumes, respectively. The growth rate used to project 2042 daily volumes from 2040 daily volumes was based on the calculated annual linear growth rate from 2016 to 2040. The growth rate of 0.75 percent was applied to all study area roadways. The Opening-Year (2022) volumes were developed using straight-line linear interpolation between 2016 and 2040.
- The 2022 and 2042 vehicle speeds were estimated using the volume-delay functions contained in the MWCOG model, using the 2020 and 2040 volumes and recomputed volume/capacity (v/c) ratios for each link.
- The affected networks for each Alternative and analysis year were developed using FHWA criteria, namely daily volume change and travel time change for congested and uncongested links, for which reliable forecast data were available.
- Based on traffic projections for the Base, Opening-Year and Design-Year, the segments directly associated with the Study Corridor and those roadways in the affected network where the AADT is expected to change +/- 5 percent or more in AADT on congested highway links of level of service (LOS) D or worse, changes of ± 10% or more in AADT on uncongested highway links of LOS D or

worse and where there travel time is expected to change by +/- 10 percent for the Build Alternatives compared to the No-Build Alternatives were identified. The full affected network which includes the links affected by both volume and travel time changes (shown in red) is presented in **Figure 4-10** and **Figure 4-11** for the 2022 and 2042 conditions. Consistent with FHWA guidance, spurious results in the form of roadway links that would not be expected to be affected by the project (but otherwise met the change criteria) were treated as an artifact of the model and removed by the traffic analysis team. They reviewed the affected network and found it to be consistent with their overall understanding of the larger travel impacts of the Study Corridor.

- To streamline the analysis, and consistent with FHWA guidance, Base and Opening-Year No-Build networks are based on the Design-Year (2042) No-Build network.
- The USEPA MOVES2014a model was utilized in order to obtain estimates for emissions for acrolein; benzene; 1, 3-butadiene; diesel PM; formaldehyde; naphthalene; POM; acetaldehyde; and ethylbenzene.

The MOVES2014a Runspec and inputs were consistent with FHWA recommendations for conducting a quantitative MSAT analysis, including evaluating four months to represent the different seasons, averaging the resulting emissions for a typical day and multiplying by 365 to obtain average annual emissions for each pollutant. The majority of the Project Area and Affected Network lies within Stafford County, with a small portion of the northern extent in Prince William County. For this analysis, MOVES model data was used for Stafford County since it is representative of the majority of the Affected Network.

- MSAT runs were developed for the Base-Year, the Opening-Year Build and No-Build conditions, and the Design-Year Build and No-Build conditions. A total of three scenarios were evaluated consisting of one Base-Year run for the Existing conditions, one Build and No-Build scenario for the 2022 Opening-Year and one Build and No-Build scenario for the 2042 Design-Year.
- Age Distribution - Same for all runs, provided by VDOT Resource Document on-line database.
- Meteorology - Annual meteorological data provided by VDOT Resource Document on-line database for Stafford County.
- I/M, Fuel Supply and Formulation - Same for all runs, provided by VDOT Resource Document on-line database. No I/M for PWC is a worst-case assumption.
- Annual VMT - The annual VMT was calculated from the regional traffic demand model output for the No-Build and Build Alternatives, for all links in the affected network where traffic volumes change by ± 5 percent or more in AADT on congested highway links of LOS D or worse, changes of ± 10% or more in AADT on uncongested highway links of LOS D or worse, and where travel time changes by ± 10 percent as a result of the Build Alternative within the Study Corridor. The total VMT was apportioned into the six main MOVES source types for passenger cars, other 2-axle/4-axle vehicles, single unit trucks, buses, combination trucks and motorcycles. The 2014 VDOT 1236[42] report, which contains VMT by road type and source type for all Virginia jurisdictions, was used to apportion the VMT to each of the appropriate MOVES source types. In doing so, the analysis is project specific for each Alternative and condition.

[42] See: http://www.virginiadot.org/info/2014_traffic_data_daily_vehicle_miles_traveled.asp

Figure 4-10: 2022 MSAT Affected Network for the Build Alternative

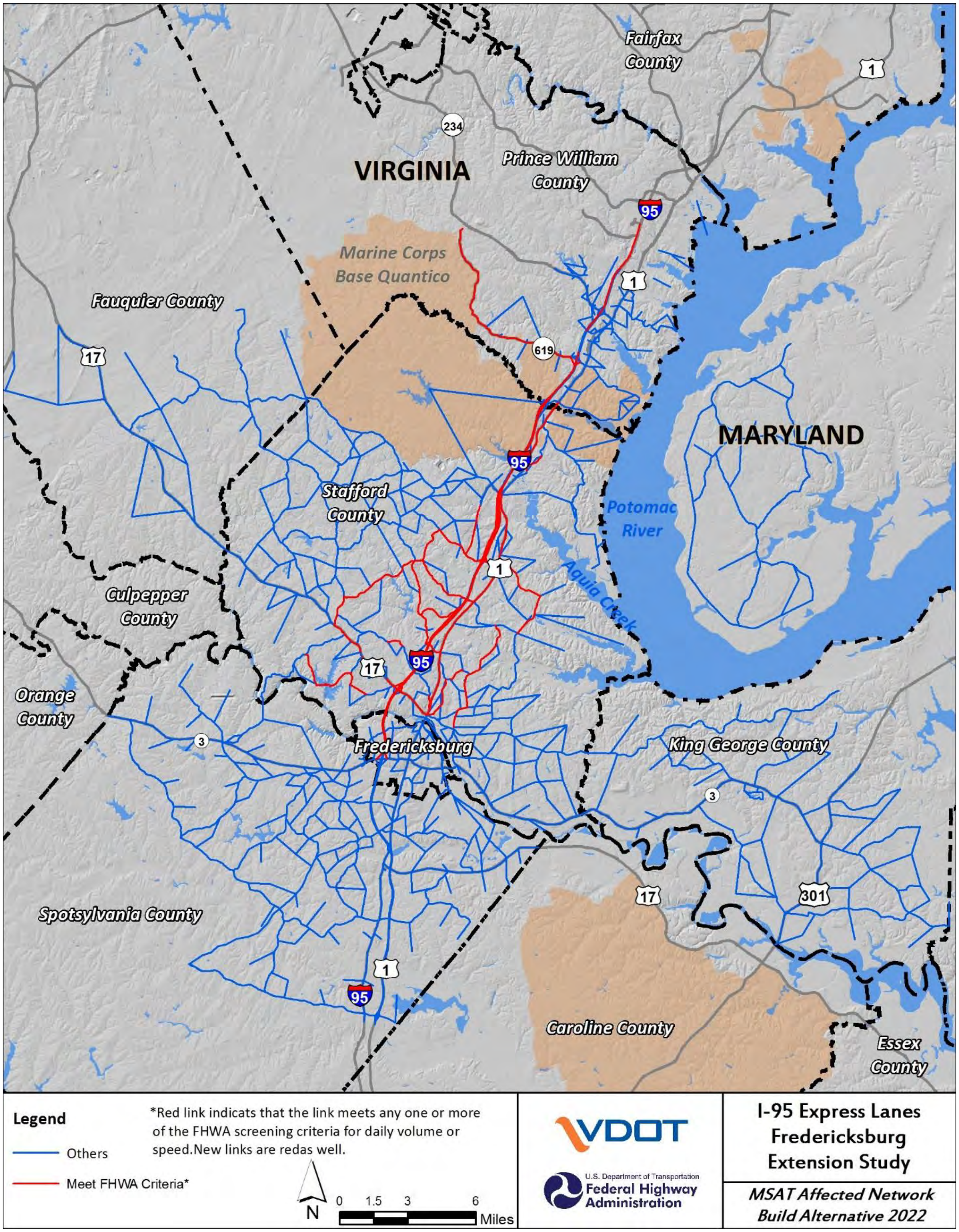
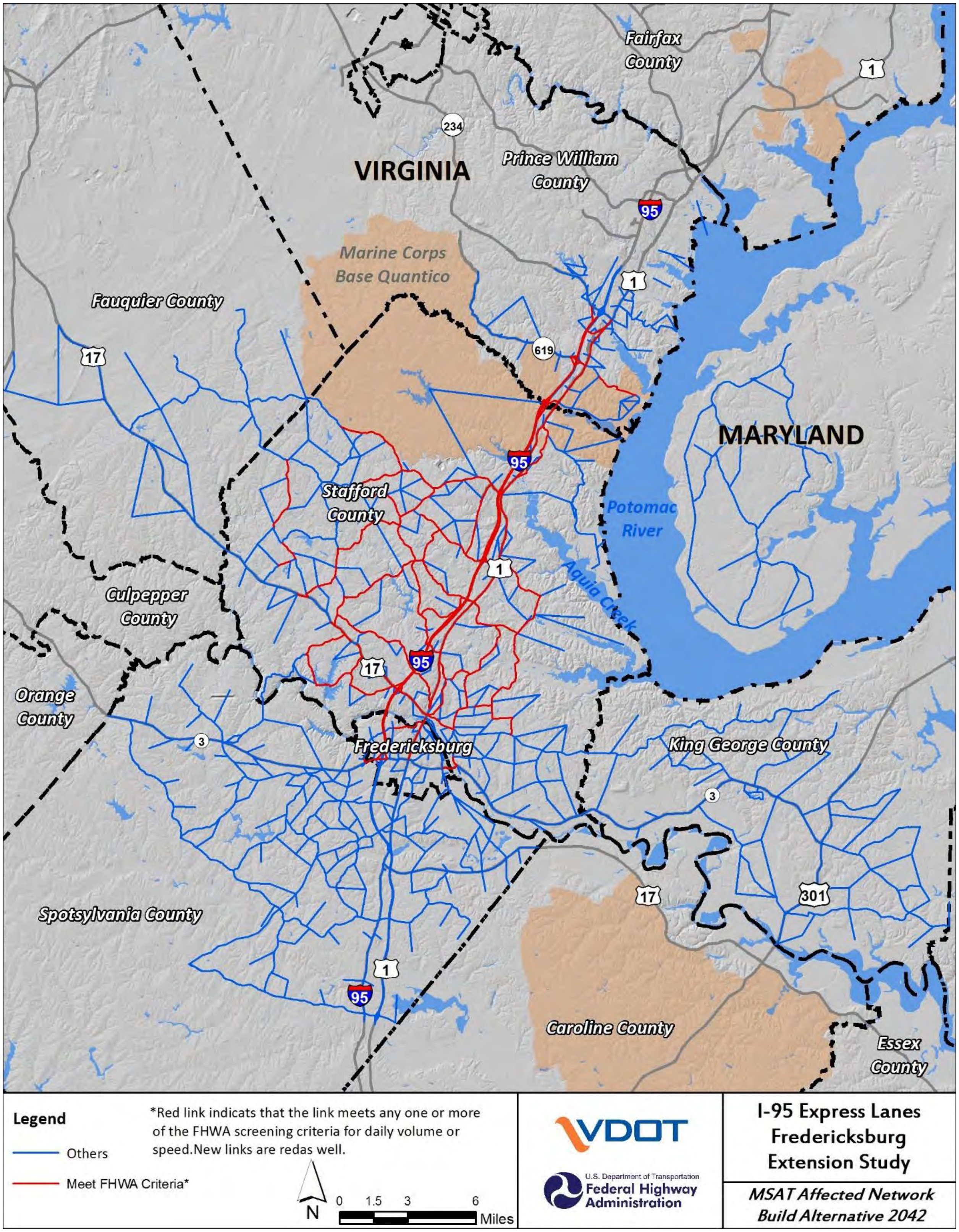


Figure 4-11: 2042 MSAT Affected Network for the Build Alternative



- Day, Month, Hour VMT Fractions – These inputs are the same for all runs, based on the fractions supplied in the VDOT repository for Stafford County.
- Average Speed Distribution - Vehicle speed fraction was estimated from congested vehicle speeds contained in the regional traffic demand model output for each link included in the affected network and were apportioned using the MOVES AvgSpeedBin Table of bins (i.e., 1 through 16) for each road type consistent with the FHWA guidance training examples as described in the VDOT Resource Document. This approach provides project specific results for each Alternative and condition.
- Road Type Distribution - Project specific results are generated for each Alternative and condition based on the functional class of the roadways. Interstates were assigned to MOVES road type category 4 while other roads were assigned to MOVES road type category 5. The distributions of VMT by source type from the VDOT 1236 Report on each of these two road types along with the total VMT by road type from the TDM output files were used to develop evaluation year and Alternative specific road type distributions consistent with the FHWA guidance training examples as described in the VDOT Resource Document.
- Pollutant summary - Emissions from each of the MOVES runs for the Existing, Build and No- Build Opening-Year and Build and No-Build Design-Year were summarized for the following pollutants:
    1. acrolein;
    2. benzene;
    3. 1,3 butadiene;
    4. diesel particulate matter;
    5. formaldehyde;
    6. naphthalene; and
    7. polycyclic organic matter
    8. acetaldehyde
    9. ethylbenzene
- The analysis reflects only running exhaust and crankcase running exhaust, while diesel PM exhaust is for diesel vehicles only. The polycyclic organic matter (POM) was summarized consistent with the pollutants listed in the FHWA guidance for POM.

The results of the quantitative MSAT analysis are presented in

Table 4-15, while changes in emissions compared to the 2022 and 2042 No-Build condition and between the Build and Base-Year condition are provided in **Table 4-16**. A graphical representation of the projected annual MSAT emissions for the Base-Year, 2022, and 2042 No-Build and Build Alternative by pollutant are presented in **Figure 4-12** to **Figure 4-20.** These tables and figures show that generally, all of the MSAT emissions are expected to decrease slightly for the Build Alternative scenario conditions when compared to the No-Build condition for 2022 and 2042 with the exception of benzene, ethylbenzene, and POM for 2042 only showing a very slight increase for the Build Alternative. In addition, all MSAT pollutant emissions are expected to significantly decline in the Opening and Design-Years when compared to existing conditions. These reductions occur despite projected increase in VMT from 2016 to the 2022 and 2042 Build scenarios. The increased emissions associated with the Build Alternative are generally consistent with the increased VMT associated with the Build-Alternative.

Table 4-15: Projected Annual MSAT Emissions in Tons Per Year (TPY) on "Affected Network"

		Annual Vehicle Miles Traveled (Millions of AVMT)	Acrolein (TPY)	Benzene (TPY)	1,3 Butadiene (TPY)	Diesel PM (TPY)	Formaldehyde (TPY)	Naphthalene (TPY)	Polycyclic Organic Matter (TPY)	Acetaldehyde (TPY)	Ethylbenzene (TPY)
2016 Base Year	Existing	992.2	0.243	2.74	0.289	23.2	3.62	0.41	0.178	1.77	1.22
2022 Opening Year	Build Alternative	1,193.5	0.115	1.96	0.087	7.95	2.03	0.213	0.089	0.88	0.78
	No-Build	1,169.0	0.123	1.86	0.091	8.90	2.16	0.223	0.091	0.931	0.75
2042 Design Year	Build Alternative	2,255.2	0.098	1.12	0.006	4.93	2.13	0.178	0.051	0.737	0.42
	No-Build	2,199.2	0.104	1.07	0.007	5.29	2.27	0.187	0.049	0.781	0.39

Table 4-16: Projected Annual MSAT Change in Emissions on "Affected Network"

		Change in Annual Vehicle Millions of Miles Traveled (AVMT)	Acrolein (TPY)	Benzene (TPY)	1,3 Butadiene (TPY)	Diesel PM (TPY)	Formaldehyde (TPY)	Naphthalene (TPY)	Polycyclic Organic Matter (TPY)	Acetaldehyde (TPY)	Ethylbenzene (TPY)
2022 Opening Year	Difference (Build Alt -No-Build)	24.50	-0.01	0.10	-0.004	-0.95	-0.13	-0.01	-0.002	-0.05	0.03
	Difference (Build Alt -Existing)	201.3	-0.128	-0.78	-0.20	-15.25	-1.59	-0.20	-0.09	-0.89	-0.44
2042 Design Year	Difference (Build Alt - No- Build)	56.00	-0.01	0.05	-0.001	-0.360	-0.14	-0.01	0.002	-0.04	0.02
	Difference (Build Alt- Existing)	1263	-0.145	-1.62	-0.28	-18.27	-1.49	-0.23	-0.127	-1.03	-0.81

Figure 4-12: Acrolein MSAT Results for Existing, Opening, and Design-Year Conditions

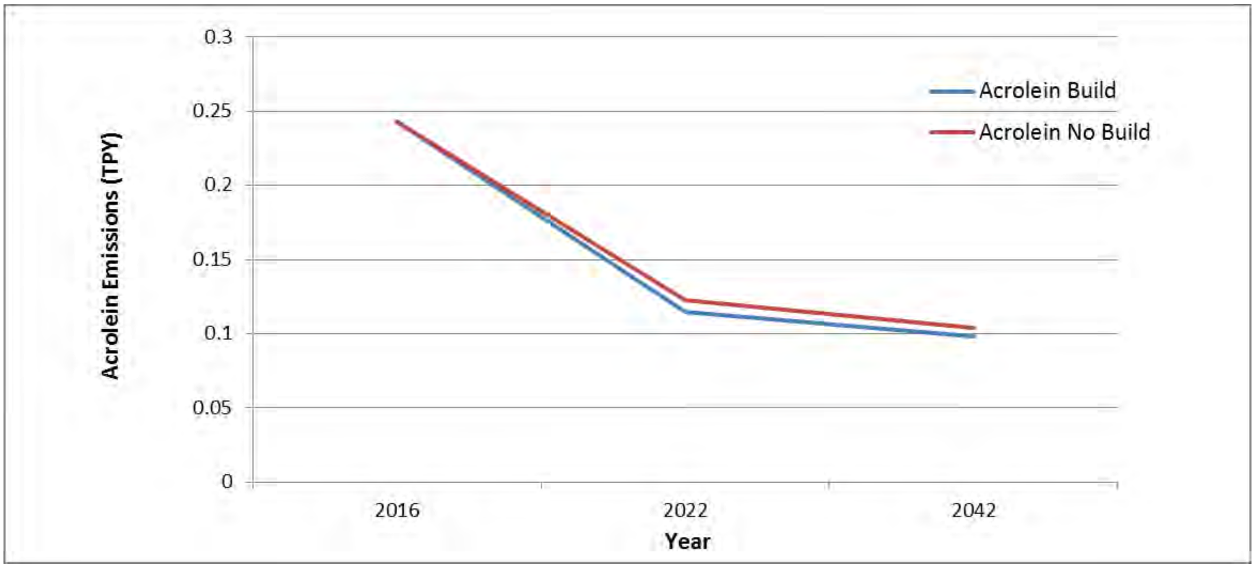


Figure 4-13: Benzene MSAT Results for Existing, Opening, and Design-Year Conditions

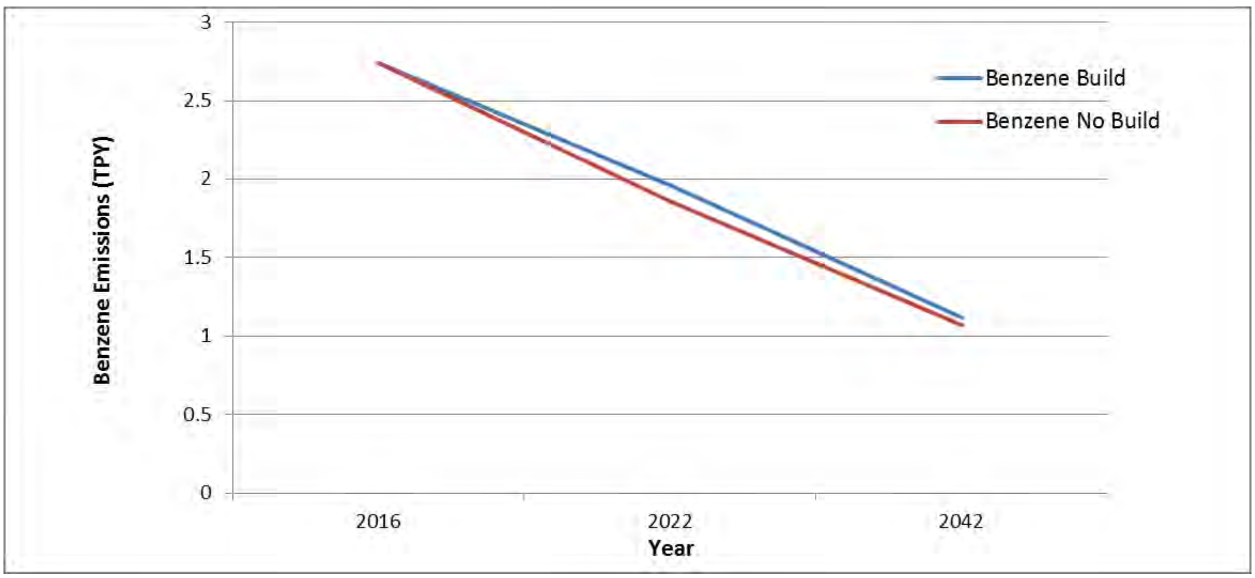


Figure 4-14: 1,3 Butadiene MSAT Results for Existing, Opening, and Design-Year Conditions

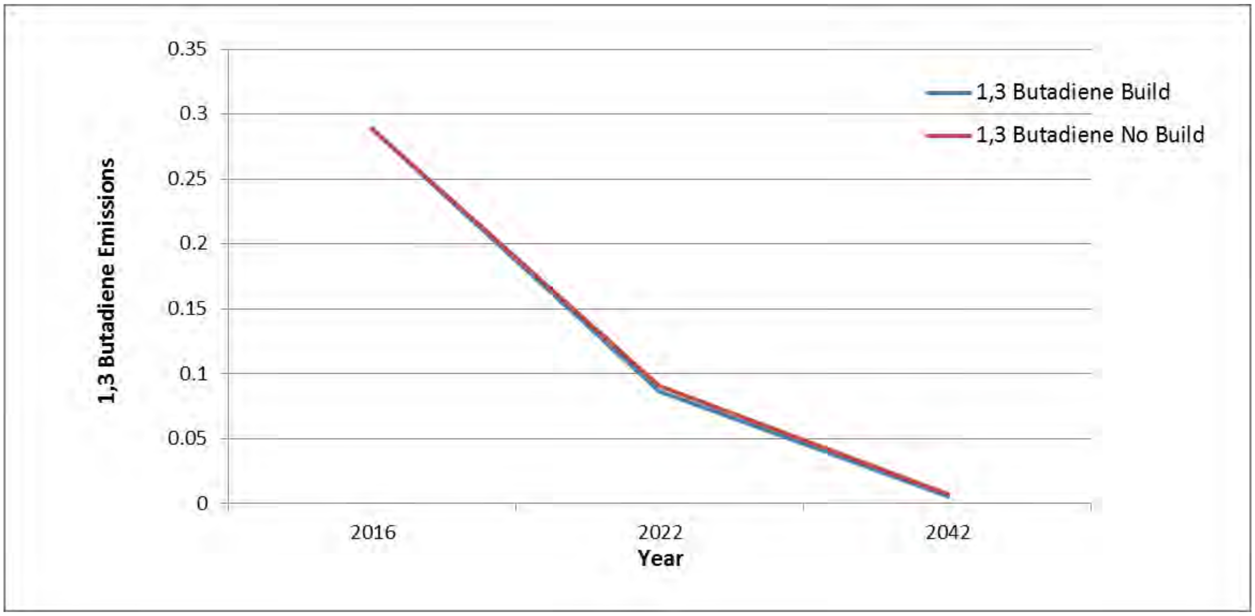


Figure 4-15: Diesel PM MSAT Results for Existing, Opening, and Design-Year Conditions

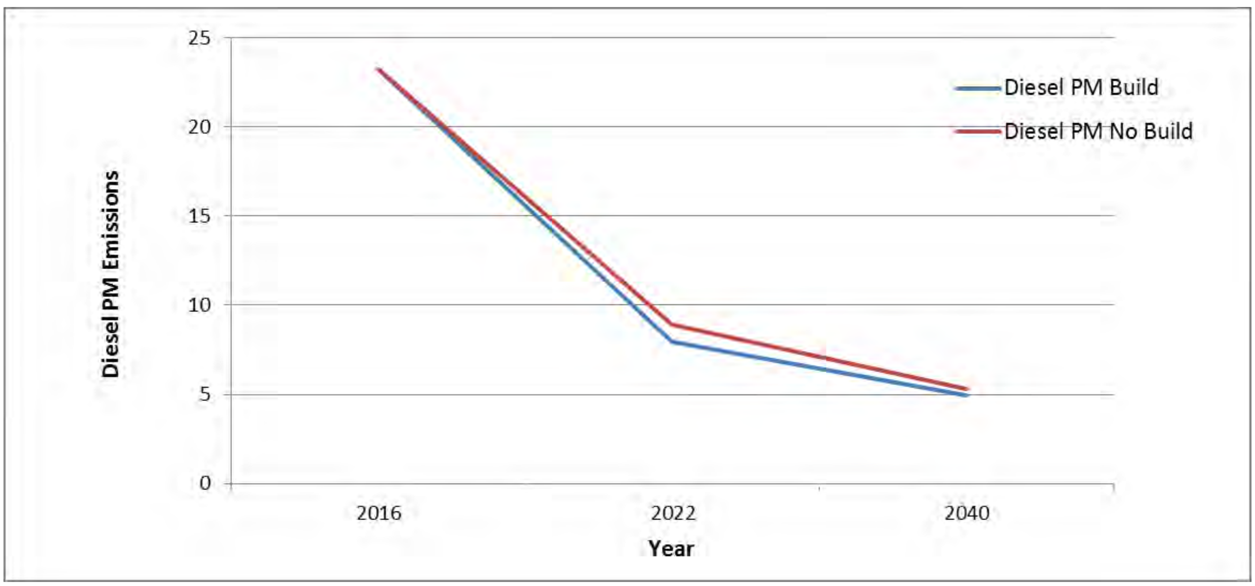


Figure 4-16: Formaldehyde MSAT Results for Existing, Opening, and Design-Year Conditions

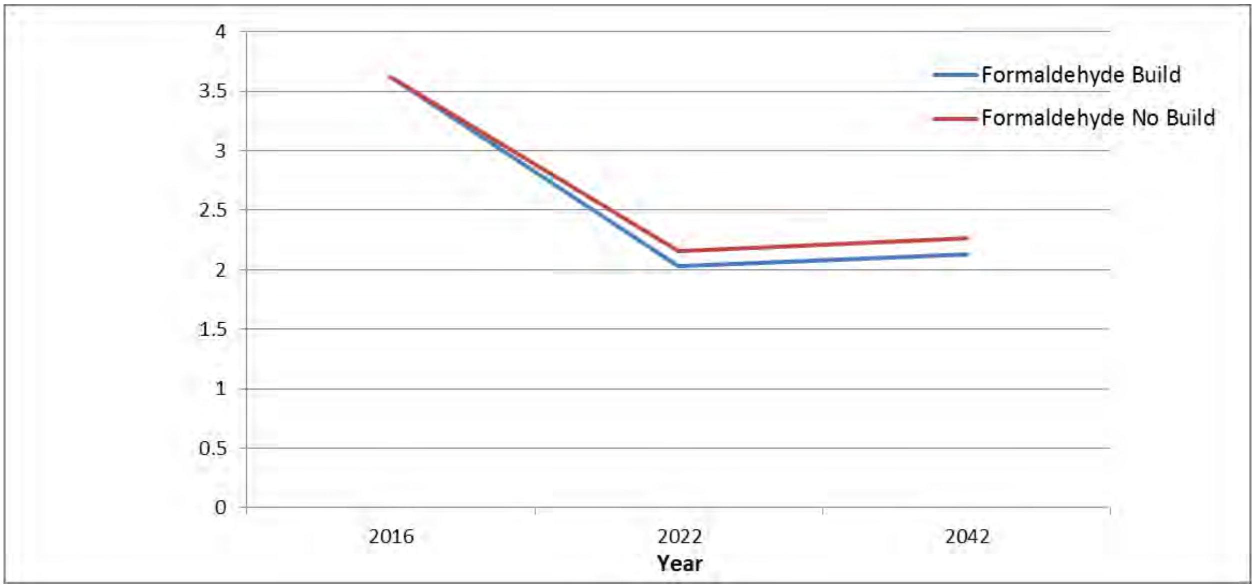


Figure 4-17: Naphthalene MSAT Results for Existing, Opening, and Design-Year Conditions

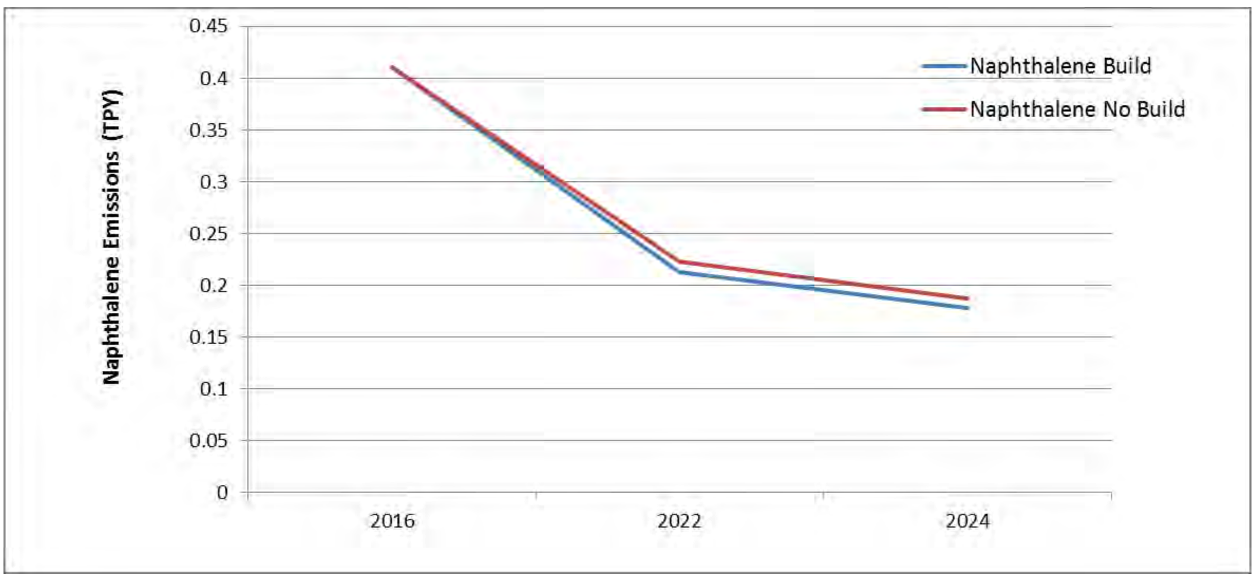


Figure 4-18: POM MSAT Results for Existing, Opening, and Design-Year Conditions

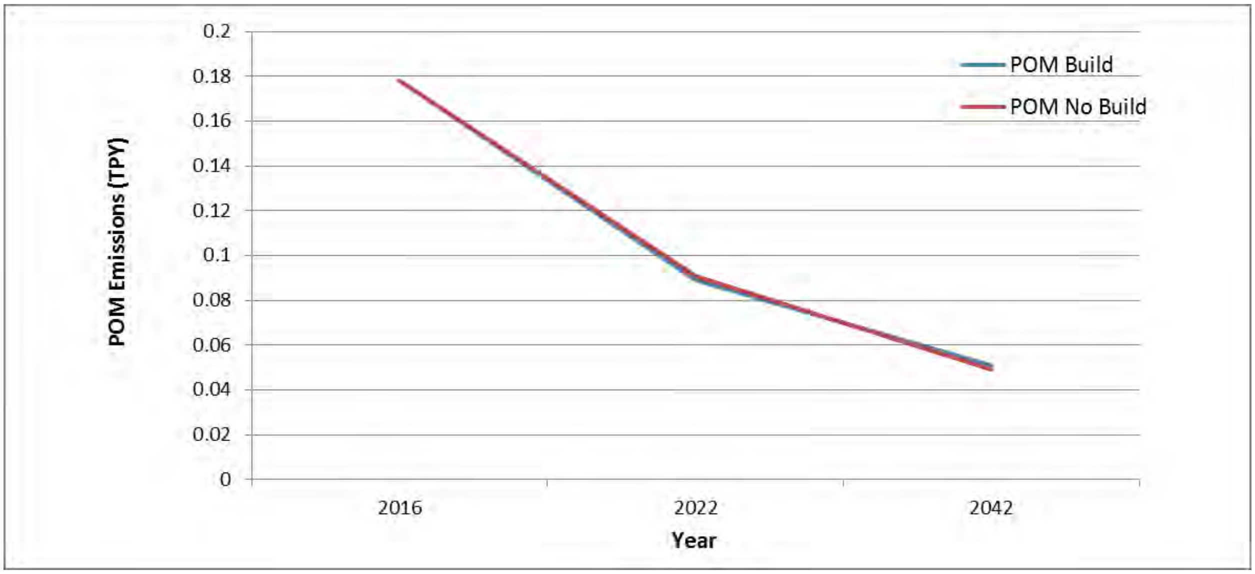


Figure 4-19: Acetaldehyde MSAT Results for Existing, Opening, and Design-Year Conditions

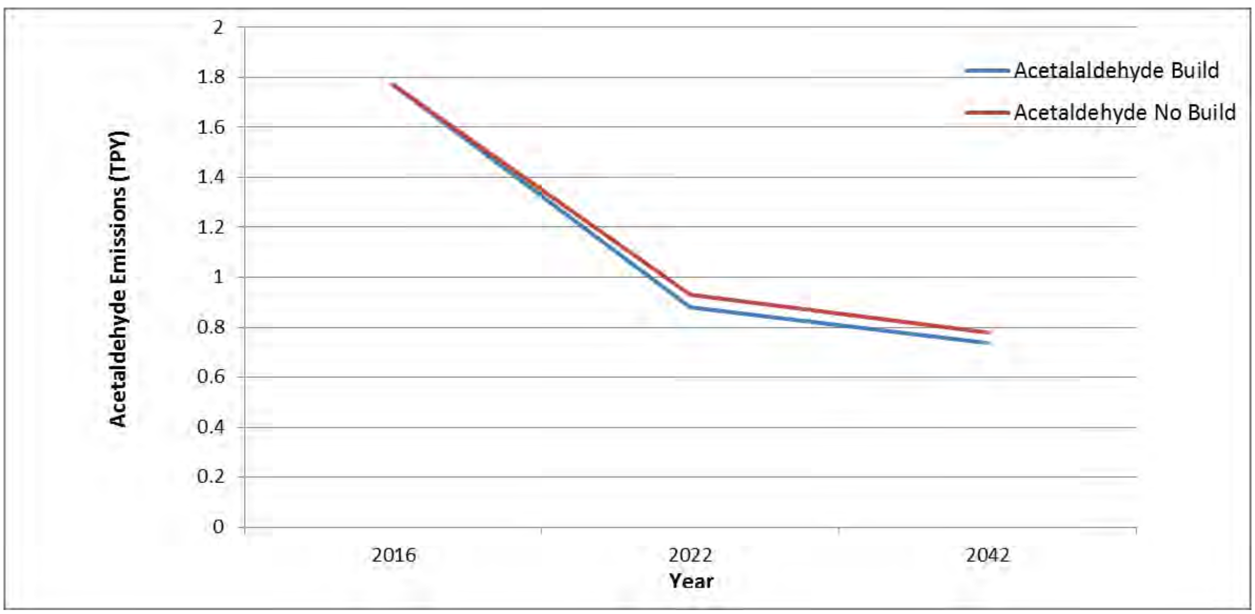
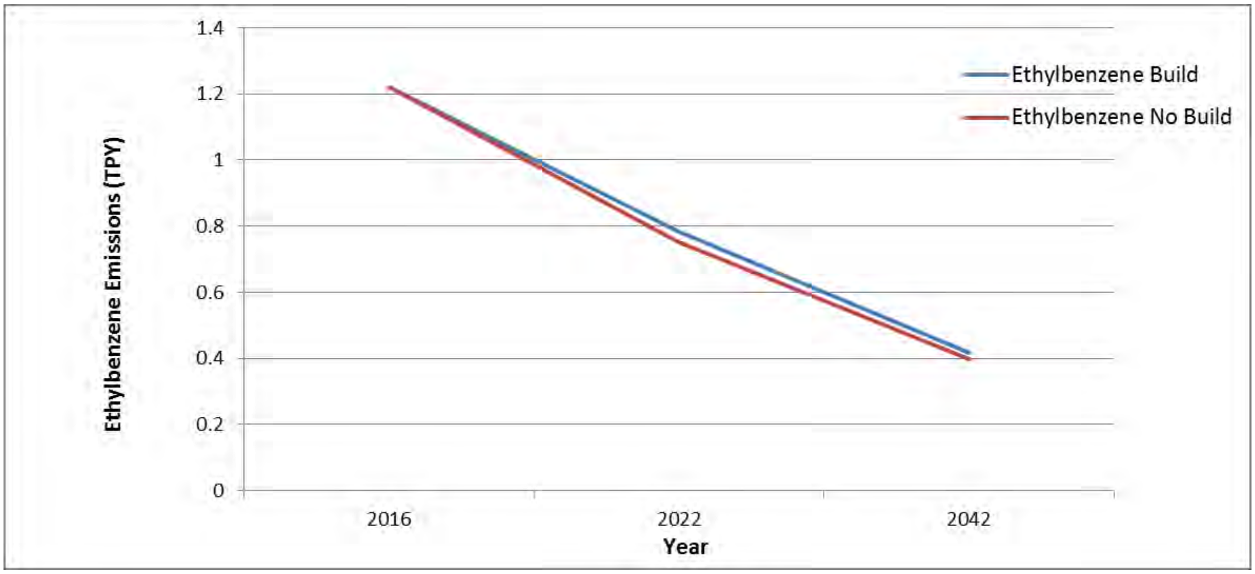


Figure 4-20: Ethylbenzene MSAT Results for Existing, Opening, and Design-Year Conditions



In general:

- For each MSAT and the Build and No-Build Alternative, the long-term trend in emissions is downward. The downward trend in emissions is a result of technological improvements, i.e., more stringent vehicle emission and fuel quality standards coupled with ongoing fleet turnover, and is achieved despite increased VMT in this period.
- For each MSAT and the Build and No-Build Alternative, the forecast emissions for Build and No-Build are nearly coincidental, i.e., the differences in emissions between Build and No-Build are very small especially compared to the long-term downward trend in emissions for each MSAT.

More specifically:

- Most MSAT emissions for the Build Alternative are expected to slightly decrease between 0.002 tpy and 0.95 tpy in the Opening-Year (2022), and between 0.001 tpy and 0.36 tpy during the Design-Year 2042 when compared to the No-Build condition. Diesel PM generally had the highest decrease in the Build MSAT emissions compared to the No-Build, while 1,3 butadiene, naphthalene, and acrolein generally had the smallest decreases.
- Emissions of benzene and ethylbenzene are expected to slightly increase in the Opening and Design-Year compared to the No-Build condition. Benzene is predicted to increase 0.1 tpy in 2022 and 0.05 tpy in 2042, while ethylbenzene is predicted to increase 0.03 tpy in 2022 and 0.02 tpy in 2042 compared to the No-Build condition. POM is also expected to increase very slightly (0.002 tpy) in 2042 for the Build Alternative compared to the No-Build.
- Of more significance is the Build Alternative conditions are expected to result in significant reductions in all MSATs compared to the Base-Year in both the Opening and Design-Years as shown in **Figure 4-12** to **Figure 4-20**.
- MSAT emissions for the Opening-Year Build Alternative conditions are expected to decrease between 0.09 tpy and 15.3 tpy compared to the Base-Year conditions, and MSAT emission for the Design-Year Build Alternative conditions are expected to decrease between 0.13 tpy and 18.3 tpy compared to the Base conditions. Diesel PM generally had the highest decrease in MSAT

emissions compared to the Existing conditions while POM generally had the lowest decrease in emissions.

In all, the magnitude of the MSAT emissions is small in the Opening and Design-Years and significantly lower than in the Base-Year. Due to the small magnitude of projected MSAT emissions, the increase observed in 2022 and 2042 for benzene and ethylbenzene and POM for 2042 only from the No-Build to the Build scenario are not considered significant, especially when considering that emissions from all MSATs are expected to be significantly lower in future years than in the Base-Year.

Overall, the results of the MSAT analysis are consistent with national MSAT emission trends predicted by FHWA. No meaningful increases in MSATs have been identified and are not expected to cause an adverse effect on human health as a result of the Build Alternative in future years.

4.2.6 Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

As per FHWA guidance, there is not enough complete or available information to credibly predict project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The USEPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. USEPA is the lead authority for administering the CAA and its amendments, and has specific statutory obligations with respect to hazardous air pollutants and MSAT. The USEPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. The USEPA maintains the IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (USEPA, http://www.epa.gov/iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's updated interim guidance on MSAT analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings, cancer in animals, and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then final determination of health impacts, with each step in the process building on the model predictions obtained in the previous step. All methodologies are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime assessments (i.e., 70 years), particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways to: (1) determine the portion of time that people are actually exposed at a specific location; and (2) establish the extent attributable to a proposed action especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI.[43] As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular, for diesel PM. The USEPA and the HEI have not established a basis for quantitative risk assessment of diesel PM in ambient settings.[44,45]

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the USEPA as provided by the CAA to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires the USEPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, where the goal is to maximize the number of people with risks of less than one in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than one in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the US Court of Appeals for the District of Columbia Circuit upheld the USEPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits. These assessments, such as reducing traffic congestion, accident rates, and fatalities, in addition to improved access for emergency response, may be better suited using a quantitative analysis.

4.2.7 MSAT Conclusions

What is known about MSATs is still evolving. Information is currently incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with each of the project Alternatives. Under the Build Alternative, there may be slightly higher MSAT emissions in the Design-Year relative to the No-Build Alternative due to increased VMT. There could also be increases in MSAT levels in a few localized areas where VMT increases. However, the USEPA's vehicle and fuel regulations are expected to result in significantly lower MSAT levels in the future than exist today due to cleaner engine standards coupled with fleet turnover. The magnitude of the USEPA-projected reductions

[43] See: http://pubs.healtheffects.org/view.php?id=282

[44] See: http://www.epa.gov/risk/basicinformation.htm#g

[45] See: http://pubs.healtheffects.org/getfile.php?u=395

is so great that, even after accounting for VMT growth, MSAT emissions in the study area would be significantly lower in the future than they are today, regardless of the preferred alternative chosen.

4.3 INDIRECT EFFECTS AND CUMULATIVE IMPACTS

Effects of the project that would occur at a later date or are fairly distant from the project are referred to as indirect effects. Cumulative impacts are those effects that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts are inclusive of the indirect effects. As summarized below, the potential for indirect effects or cumulative impacts to air quality that may be attributable to this project is not expected to be significant.

The CO and MSAT quantitative assessments can be considered indirect effects analyses because they look at air quality impacts attributable to the project that occur at a later time in the future. Those assessments indicate the potential for indirect effects associated with the project is not expected to be significant. They demonstrate that in the future: (1) air quality impacts from CO will not cause or contribute to violations of the CO NAAQS; and (2) MSAT emissions from the affected network will be significantly lower than they are today. Regarding the potential for cumulative impacts, the USEPA's air quality designations for the region (as attainment of all the NAAQS in Stafford County) reflect, in part, the accumulated mobile source emissions from past and present actions. Therefore, the indirect and cumulative effects of the project are not expected to be significant.

For additional information regarding Indirect and Cumulative Effects, please refer to the *I-95 Express Lanes Fredericksburg Extension Study Indirect and Cumulative Effects Technical Report*.

5. MITIGATION

The VDEQ provides general comments for projects by jurisdiction. Their comments in part address mitigation. For Stafford and Prince William Counties, VDEQ comments relating to mitigation are[46] "*…all reasonable precautions should be taken to limit the emissions of VOC and NOx. In addition, the following VDEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions;[47] 9 VAC 5-45, Article 7, Cutback Asphalt restrictions;[48] and 9 VAC 5-50, Article 1, Fugitive Dust precautions.*"[49]

The temporary air quality impacts from construction activities are not expected to be significant. Construction activities will be performed in accordance with VDOT's current *Road and Bridge Specifications.*[50] The specifications require compliance with all applicable local, state, and federal regulations.

[46] Spreadsheet entitled: "DEQ SERP Comments rev8b", March 2017, downloaded from the online data repository for the VDOT Resource Document. See: http://www.virginiadot.org/projects/environmental_air_section.asp

[47] See: http://law.lis.virginia.gov/admincode/title9/agency5/chapter130/

[48] See: http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-45-760

[49] See: http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-50-60

[50] See: http://www.virginiadot.org/business/const/spec-default.asp

6. CONCLUSION

The project improvements all occur within Stafford County which is designated by the USEPA's Green Book as attainment for all NAAQS and is not subject to federal conformity requirements. The project is included in the FAMPO 2040 LRTP and was added to the FAMPO FY 2015-2018 TIP as FAMPO Resolution 17-21, for design work, environmental studies, and associated processes. This resolution was adopted by the FAMPO Board on February 27, 2017.

For the purposes of NEPA, quantitative analyses were conducted for CO and MSATs. Qualitative analyses were developed for indirect effects and cumulative impacts, as well as construction-related emissions.

Analyses for potential impacts for CO were conducted for the freeway and nearby intersections that might be impacted by the project. As the project is located in a region that is attainment of the NAAQS for CO, only NEPA applies. The USEPA's project-level ("hot-spot") transportation conformity requirements for CO do not apply.

For the freeways and arterial street intersections, worst-case analyses for CO were conducted.

- For intersections, worst-case locations for each alternative were identified from a list of 15 potential intersections that were ranked from worst to best based on peak volumes and LOS. The top five intersections that were identified as worst-case based on this ranking were then screened for modeling using the 2016 FHWA-VDOT "*Programmatic Agreement (PA) for Project-Level Air Quality Analyses for Carbon Monoxide*" "2016 Agreement"), which references screening criteria (primarily Design-Year ADT and intersection skew angle) that were previously established based on worst-case modeling for typical intersections. The worst-case modeling was conducted using USEPA emission (MOVES2014a) and dispersion (CAL3QHC) models. Worst-case assumptions included peak hour traffic volumes, meteorology, and receptor locations on the right-of-way edge, which together, result in worst-case estimates for near-road concentrations. If the peak concentrations estimated using worst-case modeling for the worst-case intersections meet the applicable NAAQS, then all other locations within the project corridor would be expected to meet the NAAQS. For this project, a total of seven common worst-case intersections out of the 15 intersections studied ranked in the top five for either worst-case volumes or LOS for the 2022 and 2042 Build conditions. Of the seven worst-case intersections, four intersections were found to meet the criteria for screening that were referenced in the 2016 Agreement, so it can be safely concluded that they would all meet the NAAQS. The remaining three intersections were not screened based on the 2016 Agreement, and worst-case CO hot-spot modeling for these intersections was conducted. Concentrations estimated using worst-case modeling for these intersections met the applicable NAAQS; therefore, other intersections included in the Study Area also would be expected to meet the NAAQS.
- Five interchanges were studied in detail, and three interchanges were identified as worst-case based on LOS, traffic volumes, public access, and reasonableness. For the three worst-case interchanges, CO concentrations were estimated using worst-case assumptions and USEPA models, as noted above. These assumptions included worst-case grade separation configuration with receptors located in close proximity to the cross-over point (inside the right-of-way) and where the highest modeled concentrations would be observed. The results of the modeling for each of the short-listed (worst-case) interchanges indicated that, despite worst-case assumptions for traffic volumes, roadway configuration and receptor placement, the modeled worst-case CO concentrations remain well below the CO NAAQS at all receptor locations for each interchange.

For MSATs, the Build Alternative was evaluated following the latest FHWA guidance.[51] FHWA guidance specifies MSATs to include acetaldehyde; acrolein; benzene; 1,3 butadiene; diesel particulate matter; ethylbenzene; formaldehyde; naphthalene; and POM. As the Build Alternative is anticipated to add significant capacity to the existing and/or proposed new roadway networks where Design-Year traffic is projected to be 140,000 to 150,000 AADT or greater, the Build Alternative is best characterized as one with "High Potential MSAT Effects" per FHWA guidance, and therefore a quantitative MSATs analysis was conducted consistent with the guidance. The results of the quantitative MSATs analysis indicate that MSAT emissions are expected to decrease significantly from current conditions to the Opening-Year (2022) and Design-Year (2042) conditions for the Build Alternative, even when considering the increase in VMT projected over the same time periods. The Opening-Year (2022) and Design-Year (2042) analysis for the Build Alternative also showed that the Project is expected to reduce MSAT emissions when compared to the respective No-Build Alternative with benzene, ethylbenzene, and POM for 2042, only showing a very slight increase for the Build Alternative. Although there could also be small increases in MSAT levels in a few localized areas where VMT increases, USEPA's vehicle and fuel regulations are expected to result in significantly lower MSAT levels in the future than exist today due to cleaner engine standards coupled with fleet turnover. The quantitative MSAT analysis demonstrates that there would be no long-term adverse impacts associated with the Build Alternative, and that future MSAT emissions across the entire study area are expected to be significantly below today's levels.

For indirect and cumulative impacts, the quantitative assessments conducted for the project-specific CO and MSAT impacts were considered analyses of indirect effects. These analyses demonstrated that in the future, (1) air quality impacts from CO will not cause or contribute to violations of the CO NAAQS; and (2) MSAT emissions from the affected network will be significantly lower than they are today. Regarding the potential for cumulative impacts, the USEPA's air quality designations for the region (as attainment of all the NAAQS in Stafford County) reflect, in part, the accumulated mobile source emissions from past and present actions. Therefore, the indirect and cumulative effects of the project are not expected to be significant.

Construction activities will be performed in accordance with VDOT's *Road and Bridge Specifications*, as well as any applicable VDEQ regulations. These specifications require compliance with all applicable federal, state, and local regulations.

[51] FHWA, "*INFORMATION: Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*", October 18, 2016. See: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/

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Appendix A: Traffic Analysis

Map ID	Intersection Name	INTID	Skew Angle	Approach / Departure Lanes	Mainline Grade (%) / Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	Existing 2016 Traffic Data									
							ADT	Peak AM Vol	AM ADT	LOS AM	Delay (s)	Peak PM Vol	PM ADT	LOS PM	Delay (s)
3	US 17 and S Gateway Dr	1333	90	5/4	1.5 / 2.5	25	73,415	4,772	73,415	E	79.5	5,201	65,013	F	168.6
4	US 17 and Short St	1338	85	3/2	0.5 / 1.5	25	41,825	2,568	39,508	B	15.3	3,346	41,825	C	27.4
5	Centerport Pkwy and I-95 SB Ramps	1363	80	2/1	1.0 / 5.5	35	15,763	996	15,323	B	10.7	1,261	15,763	C	29.0
6	Centerport Pkwy and I-95 NB Ramps	1366	80	2/1	2.5 / 5.0	35	21,523	1,399	21,523	E	62.0	1,089	13,613	A	9.6
7	Centerport Pkwy and US 1	1368	90	4/3	5.0 / 2.0	45	45,508	2,958	45,508	F	174.3	2,769	34,613	C	34.3
8	Courthouse Rd and I-95 SB Ramps	1403	80	3/2	1.0 / 4.0	40	30,800	2,002	30,800	B	11.8	2,277	28,463	B	19.2
9	Courthouse Rd and I-95 NB Ramps	1406	70	3/2	5.5 / -2.0	35	31,415	2,042	31,415	C	21.4	2,060	25,750	C	23.7
10	Courthouse Rd and US 1	1408	85	5/2	3.0 / 5.0	35	42,600	2,769	42,600	F	575.6	2,910	36,375	F	875.7
11	US 1 and I-95 NB Exit Ramp	1432	90	4/3	3.0 / 3.0	25	41,800	2,005	30,846	B	18.9	3,344	41,800	B	13.7
12	SR 610 and I-95 SB Ramps	1431	50	3/3	3.0 / -6.0	35	28,863	892	13,723	A	3.4	2,309	28,863	A	8.5
13	SR 610 and US 1	1438	70	5/2	4.0 / 5.5	25	71,508	4,648	71,508	E	70.0	5,682	71,025	F	85.6
14	US 1 and I-95 NB Entrance Ramp	1434	90	3/2	5.5 / 0.5	45	60,138	3,909	60,138	B	13.7	3,256	40,700	A	NA
15	Russell Rd and I-95 NB Exit Ramp	1486	45	2/2	2.5 / -1.0	35	26,631	1,731	26,631	C	26.8	1,810	22,625	A	6.1
16	Russell Rd and I-95 NB Entrance Ramp	1488	85	4/2	4.5 / 5.0	35	26,523	1,724	26,523	A	1.9	2,045	25,563	B	13.7
17	Russell Rd and I-95 SB Ramps	1483	90	3/2	1.0 / 4.5	35	32,646	2,122	32,646	D	36.9	1,884	23,550	B	17.2

Map ID	Intersection Name	INTID	Skew Angle	Approach / Departure Lanes	Mainline Grade (%) / Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	2022 Build Vehicle Per Hour Per Lane (vphpl)	2022 Build Traffic Data									
								ADT	Effective ADT	Peak AM Vol	AM ADT	LOS AM	Delay (s)	Peak PM Vol	PM ADT	LOS PM	Delay (s)
3	US 17 and S Gateway Dr	1333	90	5/4	1.5 / 2.5	25	720	82,677	57,403	5,374	82,677	C	32.9	6,480	81,000	D	41.4
4	US 17 and Short St	1338	85	3/2	0.5 / 1.5	25	757	56,775	41,445	3,400	52,308	B	16.6	4,542	56,775	F	112.9
5	Centerport Pkwy and I-95 SB Ramps	1363	80	2/1	1.0 / 5.5	35	510	19,125	9,406	775	11,923	B	10.2	1,530	19,125	C	29.9
6	Centerport Pkwy and I-95 NB Ramps	1366	80	2/1	2.5 / 5.0	35	684	31,569	20,823	2,052	31,569	B	18.2	1,710	21,375	B	17.2
7	Centerport Pkwy and US 1	1368	90	4/3	5.0 / 2.0	45	468	50,323	22,732	3,271	50,323	D	38.6	3,279	40,988	D	38.4
8	Courthouse Rd and I-95 SB Ramps	1403	80	3/2	1.0 / 4.0	40	309	31,692	9,444	2,060	31,692	B	18.5	2,163	27,038	B	11.6
9	Courthouse Rd and I-95 NB Ramps	1406	70	3/2	5.5 / -2.0	35	352	37,908	12,867	2,464	37,908	A	8.8	2,248	28,100	B	11.5
10	Courthouse Rd and US 1	1408	85	5/2	3.0 / 5.0	35	356	46,262	15,896	3,007	46,262	D	47.1	3,207	40,088	E	59.0
11	US 1 and I-95 NB Exit Ramp	1432	90	4/3	3.0 / 3.0	25	671	50,325	32,563	2,619	40,292	C	29.1	4,026	50,325	B	19.1
12	SR 610 and I-95 SB Ramps	1431	50	3/3	3.0 / -6.0	35	710	62,113	42,518	3,141	48,323	A	1.2	4,969	62,113	A	4.9
13	SR 610 and US 1	1438	70	5/2	4.0 / 5.5	25	769	86,500	64,136	5,035	77,462	F	87.0	6,920	86,500	F	153.1
14	US 1 and I-95 NB Entrance Ramp	1434	90	3/2	5.5 / 0.5	45	1278	66,969	82,501	4,353	66,969	A	5.4	5,110	63,875	E	64.2
15	Russell Rd and I-95 NB Exit Ramp	1486	45	2/2	2.5 / -1.0	35	480	36,892	17,062	2,398	36,892	C	24.8	2,274	28,425	B	19.9
16	Russell Rd and I-95 NB Entrance Ramp	1488	85	4/2	4.5 / 5.0	35	613	35,585	21,035	2,313	35,585	B	12.6	2,452	30,650	B	10.3
17	Russell Rd and I-95 SB Ramps	1483	90	3/2	1.0 / 4.5	35	613	38,313	22,648	1,505	23,154	C	22.4	3,065	38,313	F	84.3

Map ID	Intersection Name	INTID	Skew Angle	Approach / Departure Lanes	Mainline Grade (%) / Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	2022 No Build Traffic Data								
							ADT	Peak AM Vol	AM ADT	LOS AM	Delay (s)	Peak PM Vol	PM ADT	LOS PM	Delay (s)
3	US 17 and S Gateway Dr	1333	90	5/4	1.5 / 2.5	25	77,400	5,031	77,400	F	148.1	5,591	69,888	F	232.3
4	US 17 and Short St	1338	85	3/2	0.5 / 1.5	25	47,513	2,838	43,662	B	15.1	3,801	47,513	C	27.4
5	Centerport Pkwy and I-95 SB Ramps	1363	80	2/1	1.0 / 5.5	35	18,138	1,016	15,631	B	10.6	1,451	18,138	C	30.7
6	Centerport Pkwy and I-95 NB Ramps	1366	80	2/1	2.5 / 5.0	35	31,600	2,054	31,600	D	36.1	1,504	18,800	B	13.9
7	Centerport Pkwy and US 1	1368	90	4/3	5.0 / 2.0	45	50,000	3,250	50,000	E	62.7	3,068	38,350	C	34.2
8	Courthouse Rd and I-95 SB Ramps	1403	80	3/2	1.0 / 4.0	40	32,138	2,030	31,231	B	18.4	2,571	32,138	B	19.5
9	Courthouse Rd and I-95 NB Ramps	1406	70	3/2	5.5 / -2.0	35	35,969	2,338	35,969	B	11.8	2,337	29,213	C	29.8
10	Courthouse Rd and US 1	1408	85	5/2	3.0 / 5.0	35	47,185	3,067	47,185	D	47.7	3,470	43,375	D	49.1
11	US 1 and I-95 NB Exit Ramp	1432	90	4/3	3.0 / 3.0	25	47,038	2,242	34,492	C	29.6	3,763	47,038	C	23.0
12	SR 610 and I-95 SB Ramps	1431	50	3/3	3.0 / -6.0	35	66,613	3,528	54,277	A	1.4	5,329	66,613	A	3.1
13	SR 610 and US 1	1438	70	5/2	4.0 / 5.5	25	80,150	4,916	75,631	F	93.3	6,412	80,150	F	107.0
14	US 1 and I-95 NB Entrance Ramp	1434	90	3/2	5.5 / 0.5	45	63,831	4,149	63,831	B	10.8	3,965	49,563	B	15.3
15	Russell Rd and I-95 NB Exit Ramp	1486	45	2/2	2.5 / -1.0	35	29,446	1,914	29,446	C	29.9	1,961	24,513	B	13.7
16	Russell Rd and I-95 NB Entrance Ramp	1488	85	4/2	4.5 / 5.0	35	29,154	1,895	29,154	A	1.5	2,180	27,250	B	11.5
17	Russell Rd and I-95 SB Ramps	1483	90	3/2	1.0 / 4.5	35	31,385	2,040	31,385	B	18.2	2,010	25,125	C	30.4

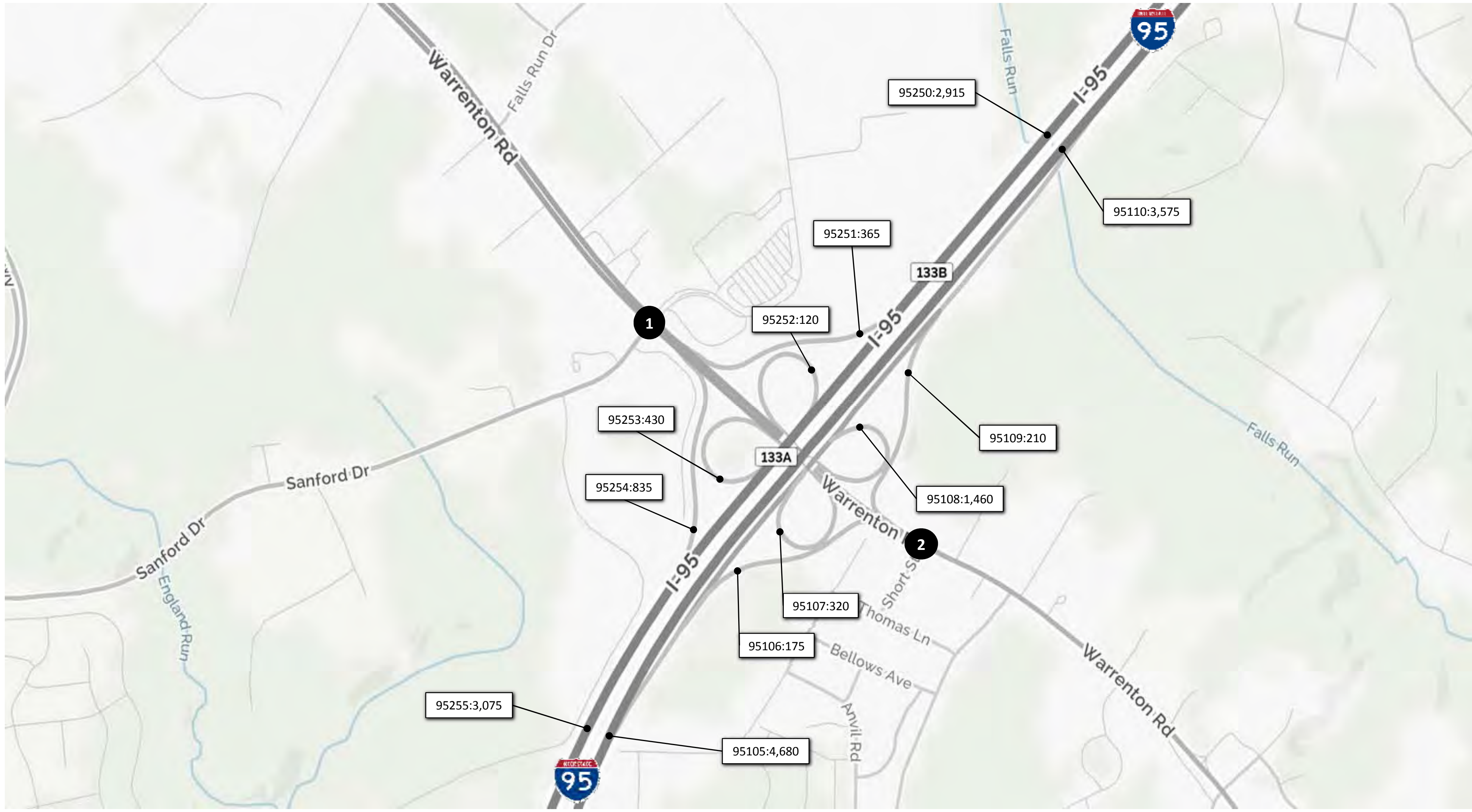
Map ID	Intersection Name	INTID	Skew Angle	Approach / Departure Lanes	Mainline Grade (%) / Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	2042 Build Vehicle Per Hour Per Lane (vphpl)	2042 Build Traffic Data									
								ADT	Effective ADT	Peak AM Vol	AM ADT	LOS AM	Delay (s)	Peak PM Vol	PM ADT	LOS PM	Delay (s)
3	US 17 and S Gateway Dr	1333	90	5/4	1.5 / 2.5	25	837	96,123	77,584	6,248	96,123	D	41.7	7,533	94,163	E	59.4
4	US 17 and Short St	1338	85	3/2	0.5 / 1.5	25	880	66,000	56,008	3,953	60,815	C	23.0	5,280	66,000	F	157.2
5	Centerport Pkwy and I-95 SB Ramps	1363	80	2/1	1.0 / 5.5	35	593	22,225	12,702	901	13,862	B	11.3	1,778	22,225	D	39.3
6	Centerport Pkwy and I-95 NB Ramps	1366	80	2/1	2.5 / 5.0	35	795	36,692	28,130	2,385	36,692	C	24.0	1,987	24,838	C	24.9
7	Centerport Pkwy and US 1	1368	90	4/3	5.0 / 2.0	45	544	58,508	30,717	3,803	58,508	E	62.6	3,811	47,638	D	48.0
8	Courthouse Rd and I-95 SB Ramps	1403	80	3/2	1.0 / 4.0	40	359	36,846	12,761	2,395	36,846	B	17.6	2,514	31,425	B	13.5
9	Courthouse Rd and I-95 NB Ramps	1406	70	3/2	5.5 / -2.0	35	409	44,077	17,396	2,865	44,077	A	9.2	2,613	32,663	B	12.8
10	Courthouse Rd and US 1	1408	85	5/2	3.0 / 5.0	35	414	53,769	21,478	3,495	53,769	D	49.6	3,728	46,600	E	71.8
11	US 1 and I-95 NB Exit Ramp	1432	90	4/3	3.0 / 3.0	25	780	58,500	44,002	3,045	46,846	E	58.7	4,680	58,500	C	23.6
12	SR 610 and I-95 SB Ramps	1431	50	3/3	3.0 / -6.0	35	825	72,213	57,470	3,652	56,185	A	1.3	5,777	72,213	C	21.1
13	SR 610 and US 1	1438	70	5/2	4.0 / 5.5	25	894	100,550	86,663	5,853	90,046	F	127.1	8,044	100,550	F	206.2
14	US 1 and I-95 NB Entrance Ramp	1434	90	3/2	5.5 / 0.5	45	1485	77,862	111,499	5,061	77,862	B	10.4	5,940	74,250	F	106.1
15	Russell Rd and I-95 NB Exit Ramp	1486	45	2/2	2.5 / -1.0	35	558	42,892	23,063	2,788	42,892	C	25.8	2,644	33,050	B	16.2
16	Russell Rd and I-95 NB Entrance Ramp	1488	85	4/2	4.5 / 5.0	35	713	41,508	28,529	2,698	41,508	C	23.5	2,851	35,638	B	12.2
17	Russell Rd and I-95 SB Ramps	1483	90	3/2	1.0 / 4.5	35	713	44,538	30,605	1,749	26,908	B	18.4	3,563	44,538	F	123.0

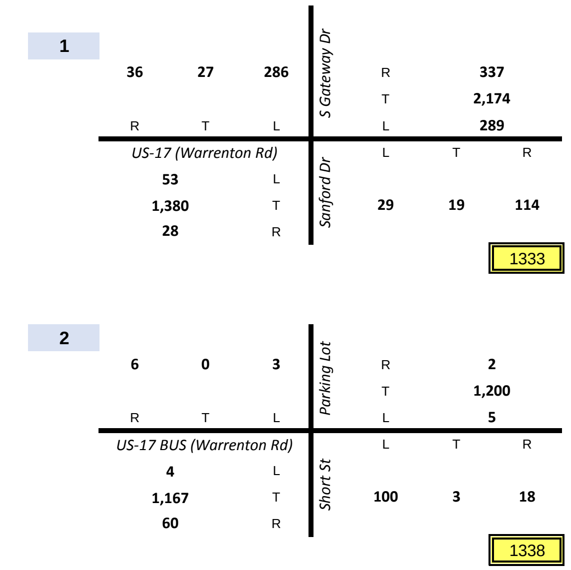
Map ID	Intersection Name	INTID	Skew Angle	Approach / Departure Lanes	Mainline Grade (%) / Cross Street Grade (%)	Lowest Posted Speed Limit (mph)	2042 No Build Traffic Data								
							ADT	Peak AM Vol	AM ADT	LOS AM	Delay (s)	Peak PM Vol	PM ADT	LOS PM	Delay (s)
3	US 17 and S Gateway Dr	1333	90	5/4	1.5 / 2.5	25	91,800	5,896	90,708	F	198.5	7,344	91,800	F	347.0
4	US 17 and Short St	1338	85	3/2	0.5 / 1.5	25	66,475	3,740	57,538	C	22.9	5,318	66,475	F	96.0
5	Centerport Pkwy and I-95 SB Ramps	1363	80	2/1	1.0 / 5.5	35	25,163	1,068	16,431	B	10.2	2,013	25,163	D	45.0
6	Centerport Pkwy and I-95 NB Ramps	1366	80	2/1	2.5 / 5.0	35	43,492	2,827	43,492	E	56.0	2,011	25,138	C	26.1
7	Centerport Pkwy and US 1	1368	90	4/3	5.0 / 2.0	45	64,969	4,223	64,969	F	102.2	4,063	50,788	D	53.9
8	Courthouse Rd and I-95 SB Ramps	1403	80	3/2	1.0 / 4.0	40	44,388	2,123	32,662	B	16.5	3,551	44,388	C	30.3
9	Courthouse Rd and I-95 NB Ramps	1406	70	3/2	5.5 / -2.0	35	51,138	3,324	51,138	D	51.1	3,262	40,775	B	17.9
10	Courthouse Rd and US 1	1408	85	5/2	3.0 / 5.0	35	66,725	4,061	62,477	E	64.5	5,338	66,725	F	117.4
11	US 1 and I-95 NB Exit Ramp	1432	90	4/3	3.0 / 3.0	25	64,500	3,033	46,662	C	32.7	5,160	64,500	C	30.9
12	SR 610 and I-95 SB Ramps	1431	50	3/3	3.0 / -6.0	35	79,800	4,245	65,308	A	3.1	6,384	79,800	B	10.2
13	SR 610 and US 1	1438	70	5/2	4.0 / 5.5	25	110,563	5,807	89,338	F	131.7	8,845	110,563	F	258.9
14	US 1 and I-95 NB Entrance Ramp	1434	90	3/2	5.5 / 0.5	45	79,113	4,950	76,154	B	15.7	6,329	79,113	F	160.9
15	Russell Rd and I-95 NB Exit Ramp	1486	45	2/2	2.5 / -1.0	35	38,815	2,523	38,815	C	27.7	2,465	30,813	C	21.4
16	Russell Rd and I-95 NB Entrance Ramp	1488	85	4/2	4.5 / 5.0	35	37,892	2,463	37,892	A	0.8	2,630	32,875	B	11.8
17	Russell Rd and I-95 SB Ramps	1483	90	3/2	1.0 / 4.5	35	30,388	1,766	27,169	C	23.1	2,431	30,388	C	31.9

Existing, Opening, and Design-Year Projected ADT

Segment Name*	Existing 2016	2022 No-Build	2022 Build	2042 No-Build	2042 Build
I-95 NB, South of Exit 136; I-95 SB, North of Exit 133; HOT NB, North of Exit 133; HOT SB, North of Exit 133	124,400	132,200	153,000	157,800	177,700
I-95 NB, South of Exit 140; I-95 SB, North of Exit 136; HOT NB, North of Exit 133; HOT SB, North of Exit 133	124,200	131,200	146,300	154,400	170,000
I-95 NB, South of Exit 143; I-95 SB, North of Exit 140; HOT NB, North of Exit 140; HOT SB, North of Exit 140	121,900	130,300	151,000	158,000	175,500
I-95 NB, North of Exit 143; I-95 SB, North of Exit 143; HOT NB, North of Exit 143; HOT SB, North of Exit 143	138,200	147,000	170,000	176,600	197,600
I-95 NB, South of Exit 148; I-95 SB, South of Exit 148; HOT NB, South of Exit 148; HOT SB, North of Exit 143	138,300	147,200	167,400	176,600	194,500

**Segment names include the HOT lanes segments where applicable. In the No-Build scenario, the HOT lanes extend down to Exit 143.*





Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

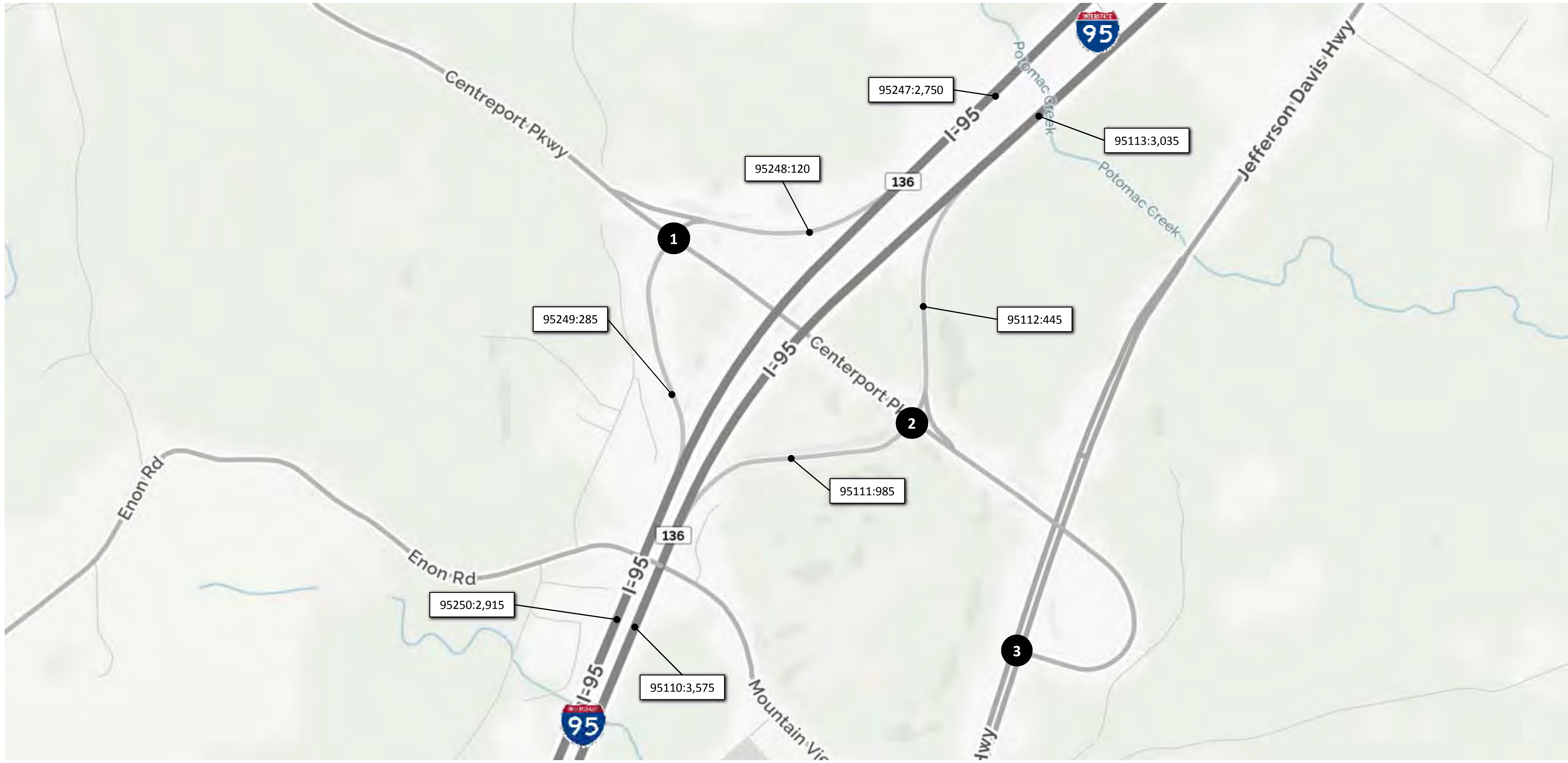
U.S. Department of Transportation Federal Highway Administration

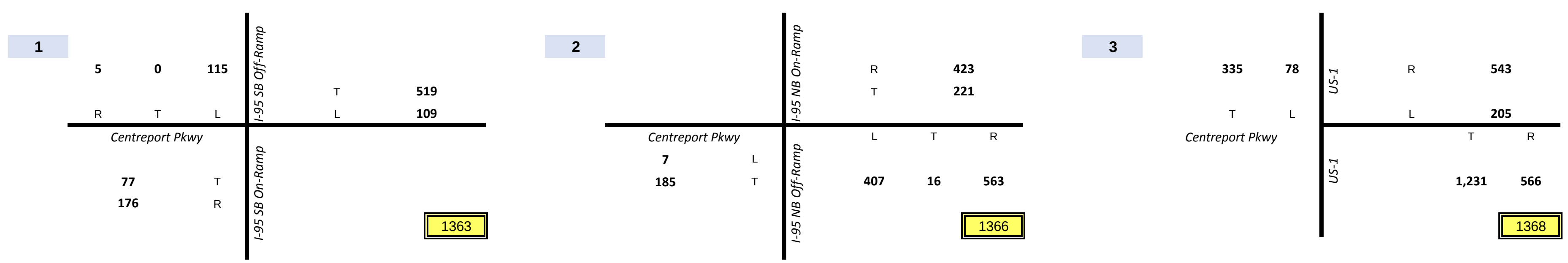
EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

2016 Existing Weekday 7-8 AM Volumes I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

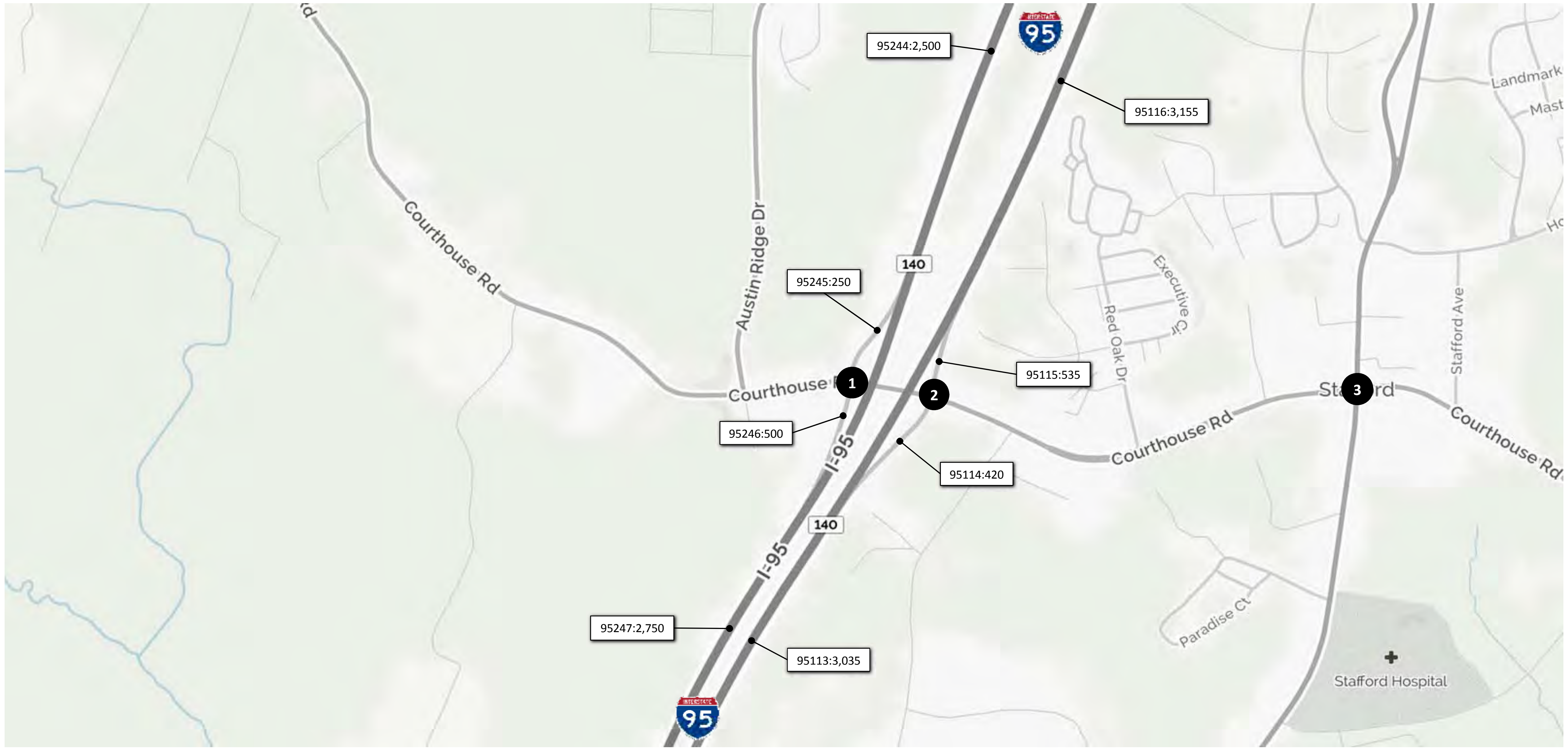
U.S. Department of Transportation Federal Highway Administration

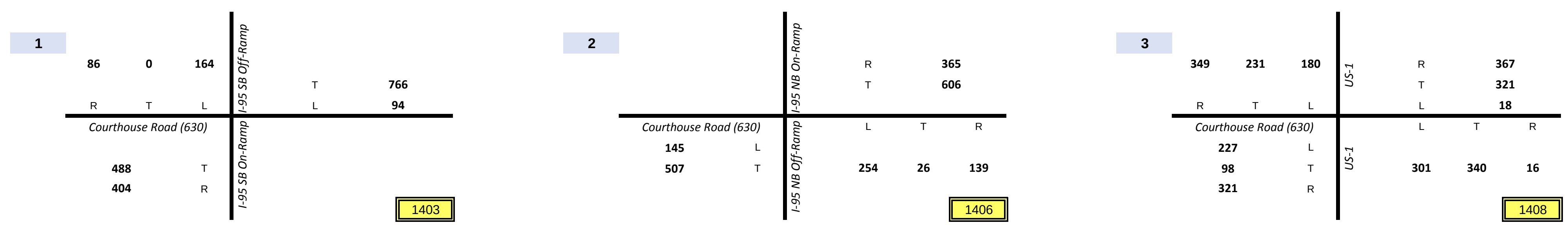
EXIT 136 - CENTREPORT PARKWAY

2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1





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x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

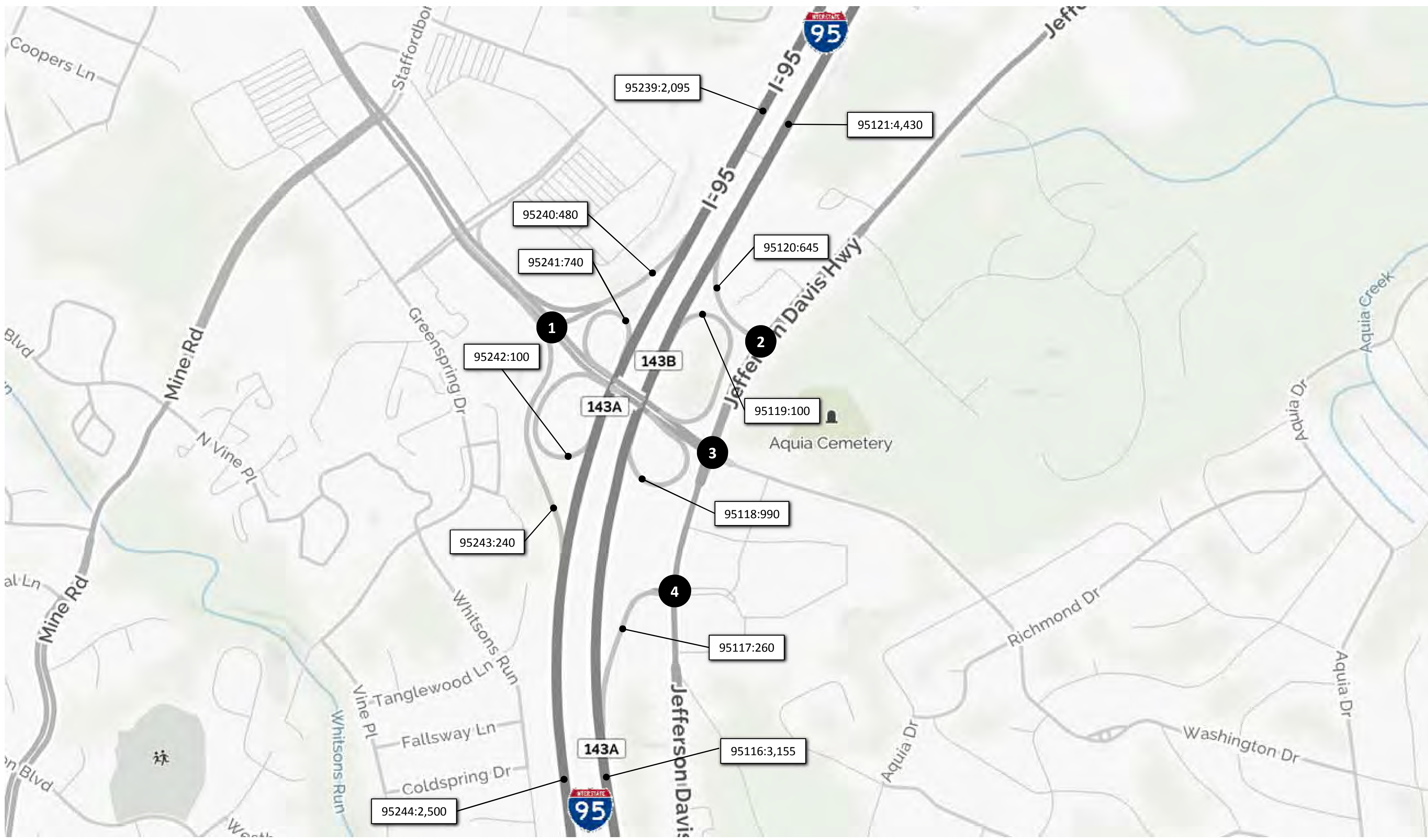
2016 Existing

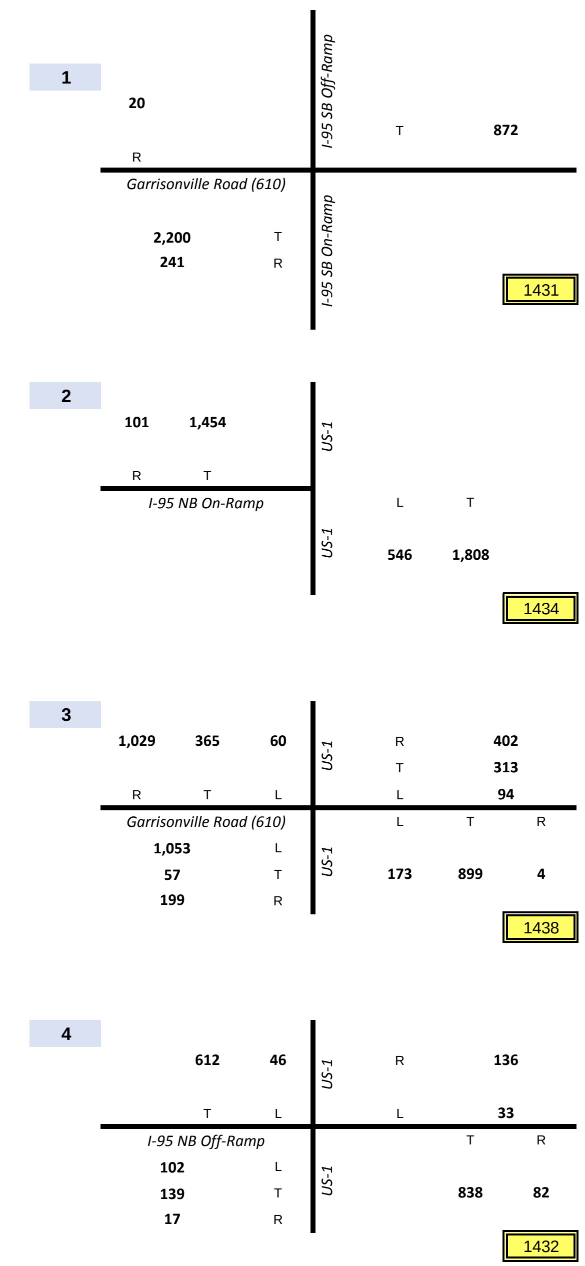
Weekday 7-8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1





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x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2016 Existing Weekday 7-8 AM Volumes I-95 Corridor

April 2017

Figure G.1-1

Legend

x,xxx Weekday 7-8 AM Volume

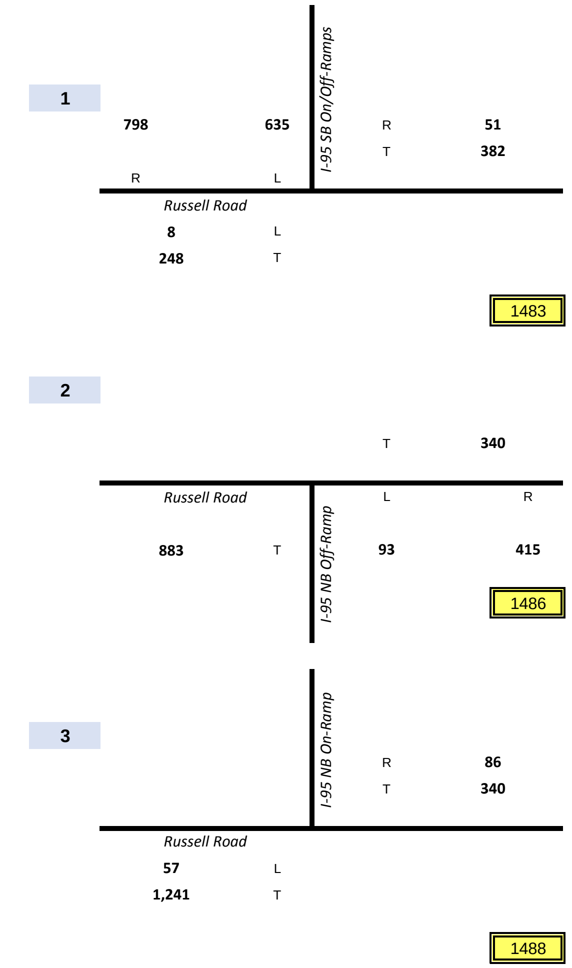
NOT TO SCALE

SOUTHERN START/END I-95 EXPRESS LANES

2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1



Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

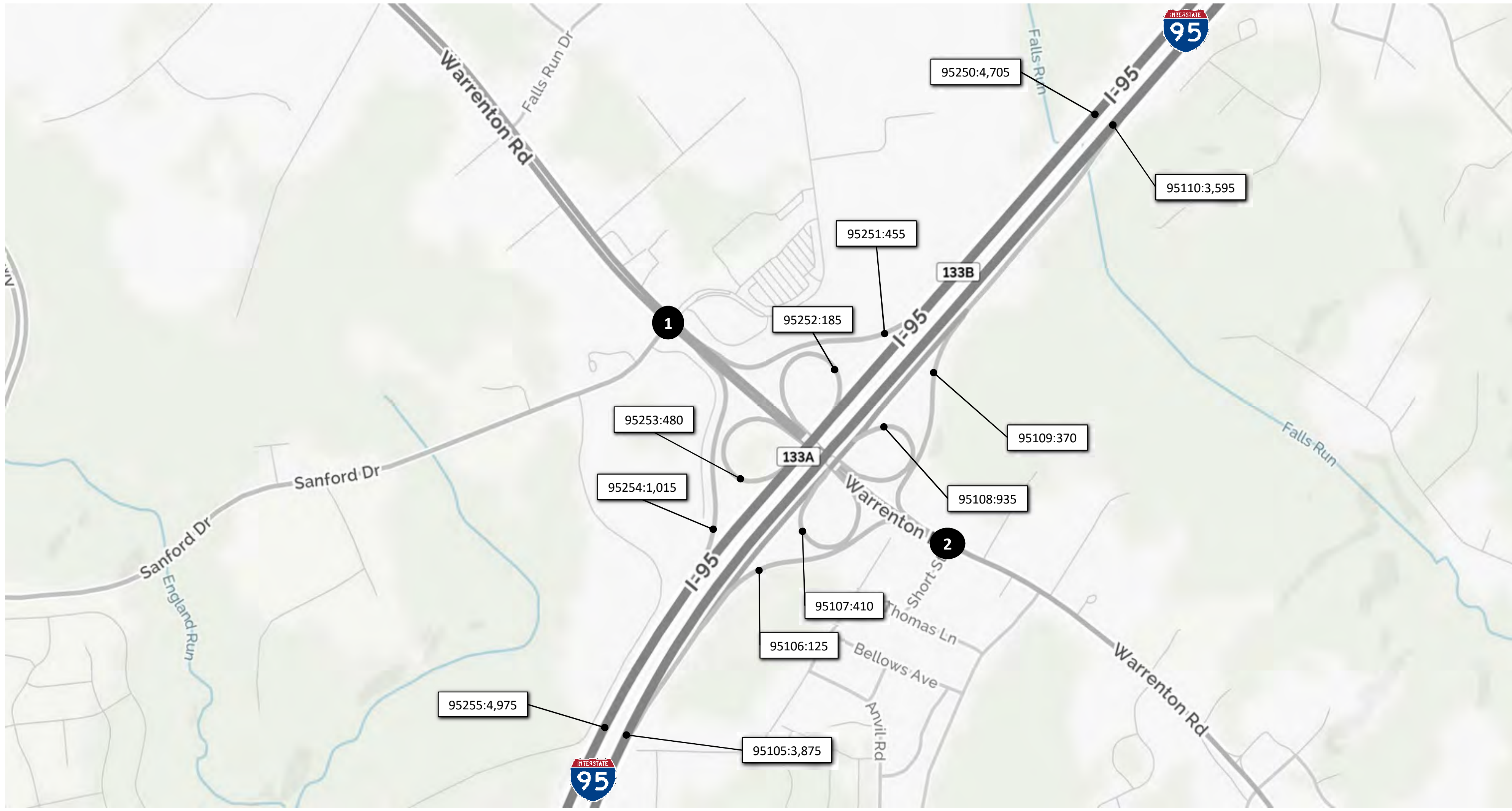
U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1



1 — US-17 (Warrenton Rd) / S Gateway Dr / Sanford Dr

Approach	L	T	R
S Gateway Dr (southbound)	471	16	100
US-17 (Warrenton Rd) westbound	60	1,709	358
US-17 (Warrenton Rd) eastbound	82	1,895	13
Sanford Dr (northbound)	30	14	317

1333

2 — US-17 BUS (Warrenton Rd) / Parking Lot / Short St

Approach	L	T	R
Parking Lot (southbound)	6	0	6
US-17 BUS (Warrenton Rd) westbound	21	1,197	2
US-17 BUS (Warrenton Rd) eastbound	7	1,884	115
Short St (northbound)	89	1	18

1338

Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

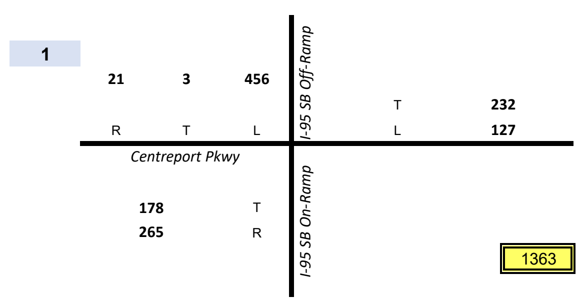
U.S. Department of Transportation Federal Highway Administration

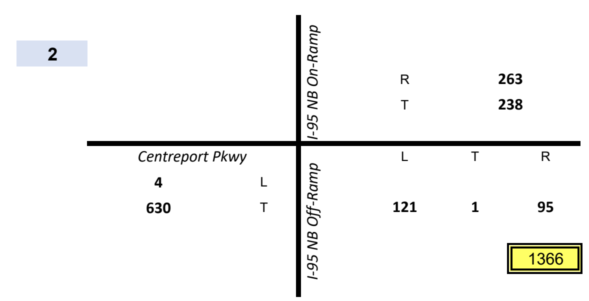
EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

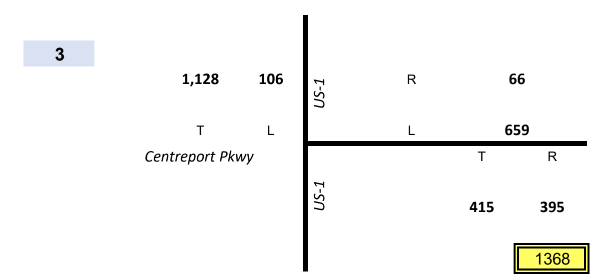
2016 Existing Weekday 5-6 PM Volumes I-95 Corridor

April 2017

Figure G.1-1







Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

April 2017

Figure G.1-1

Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

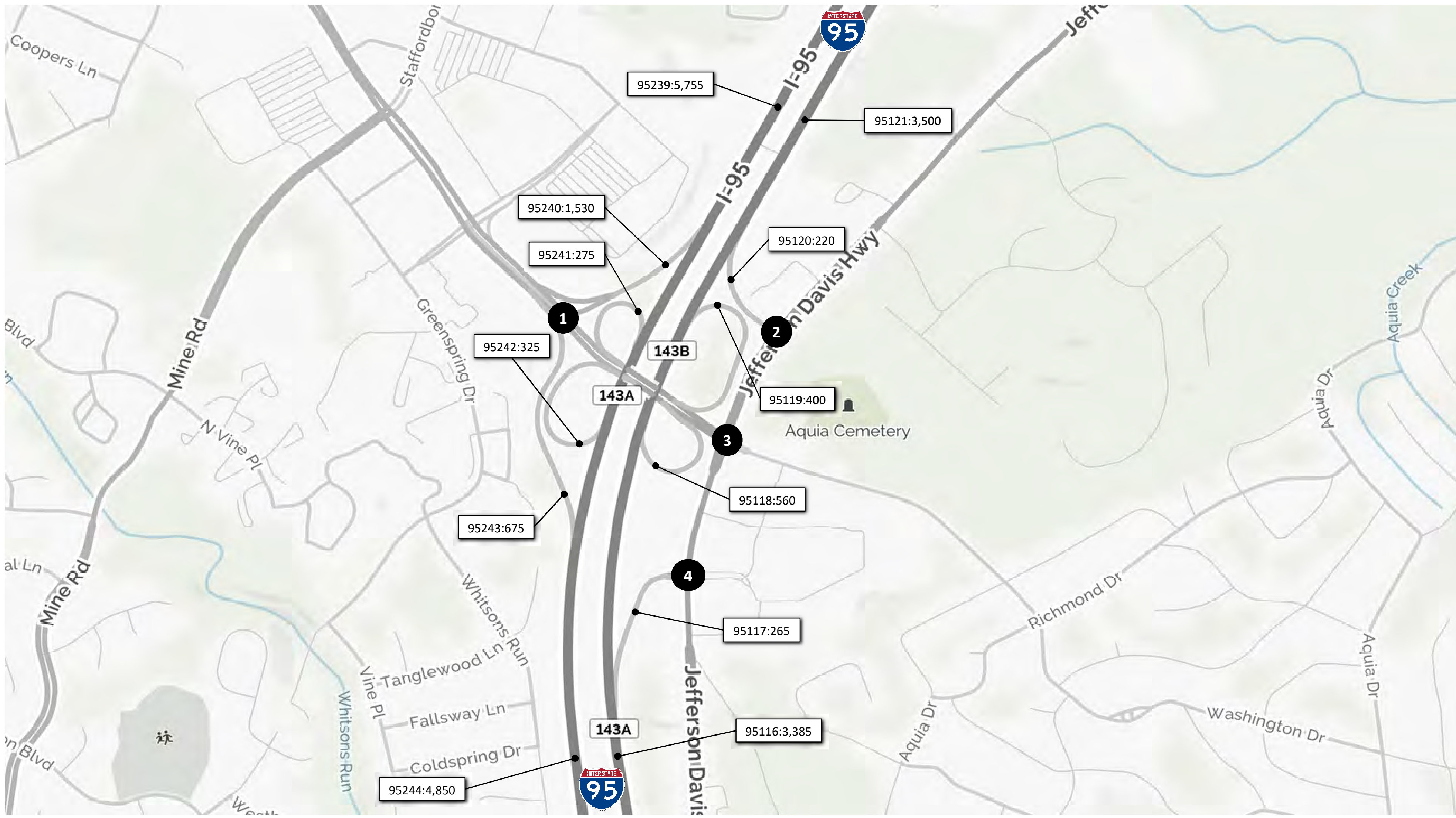
2016 Existing

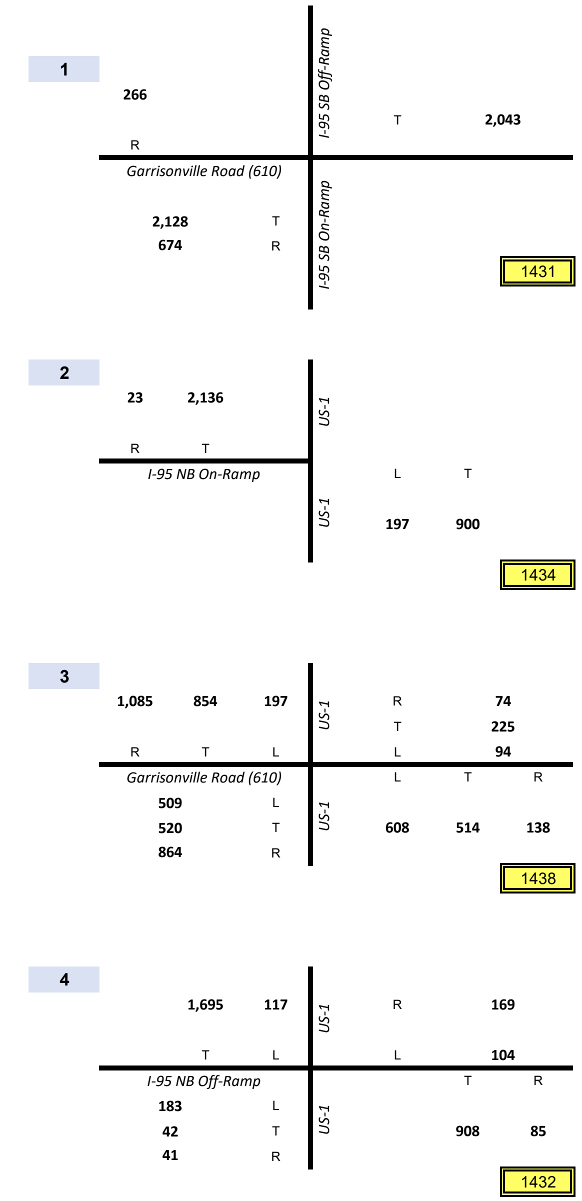
Weekday 5-6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2016 Existing

Weekday 5-6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1

Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

SOUTHERN START/END I-95 EXPRESS LANES

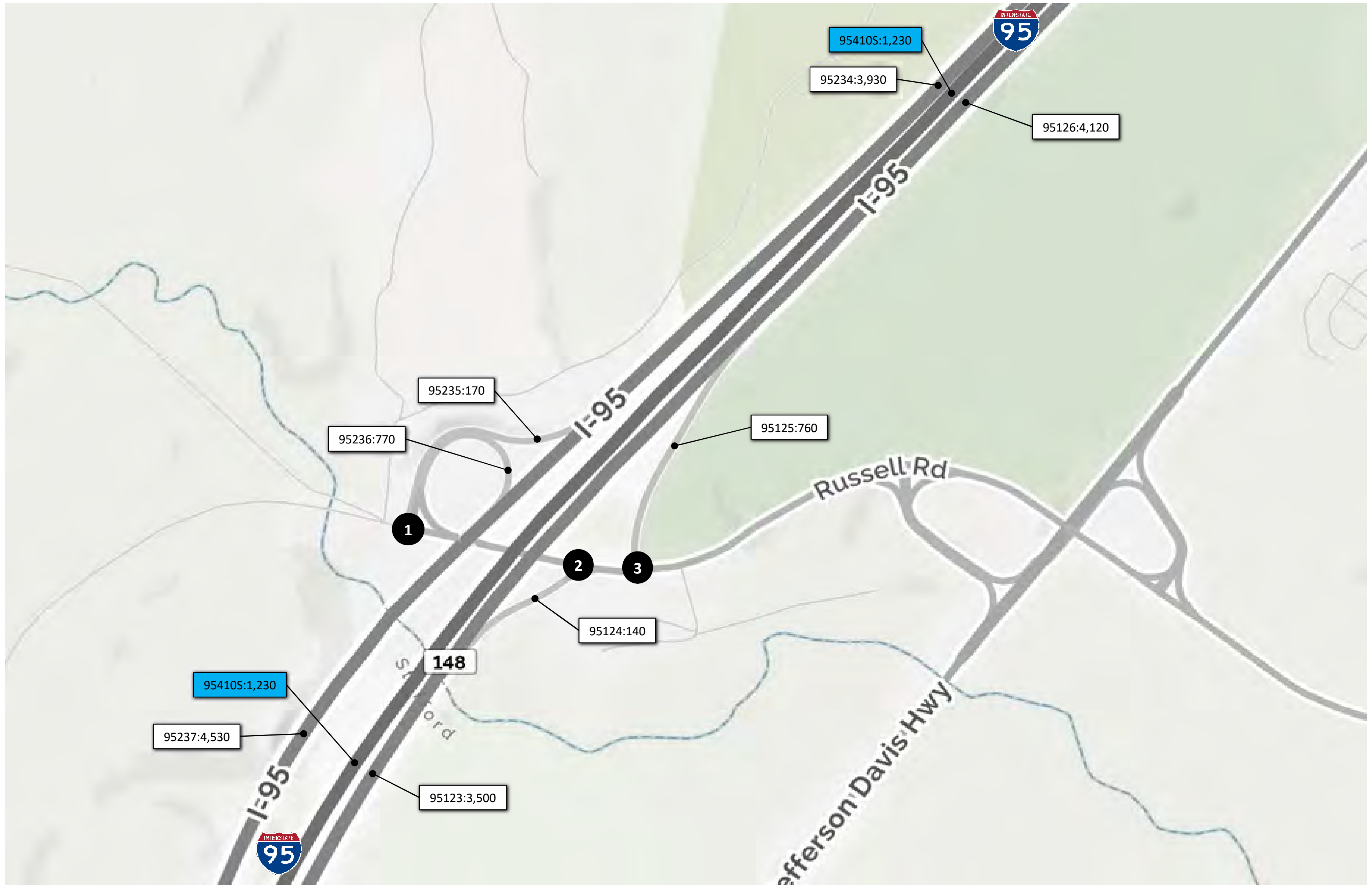
2016 Existing

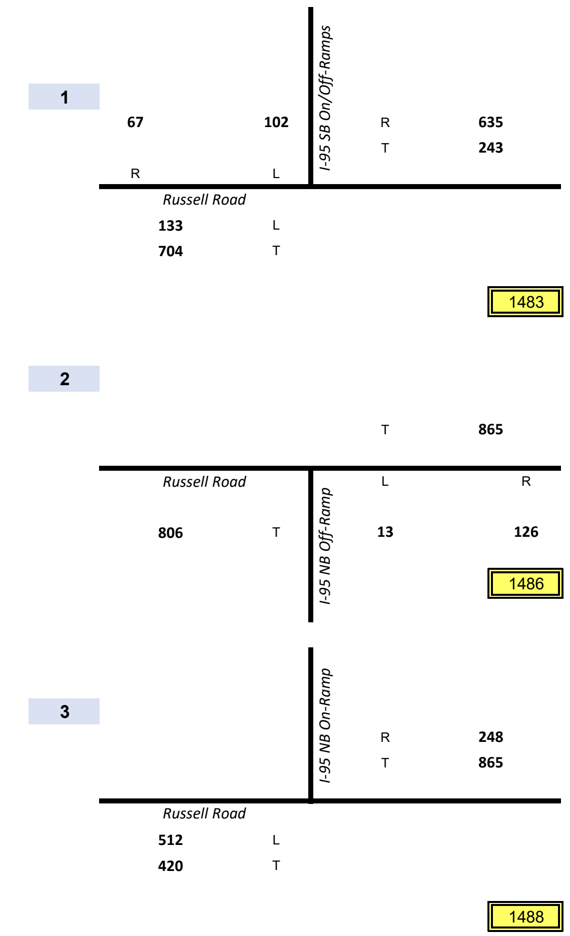
Weekday 5-6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

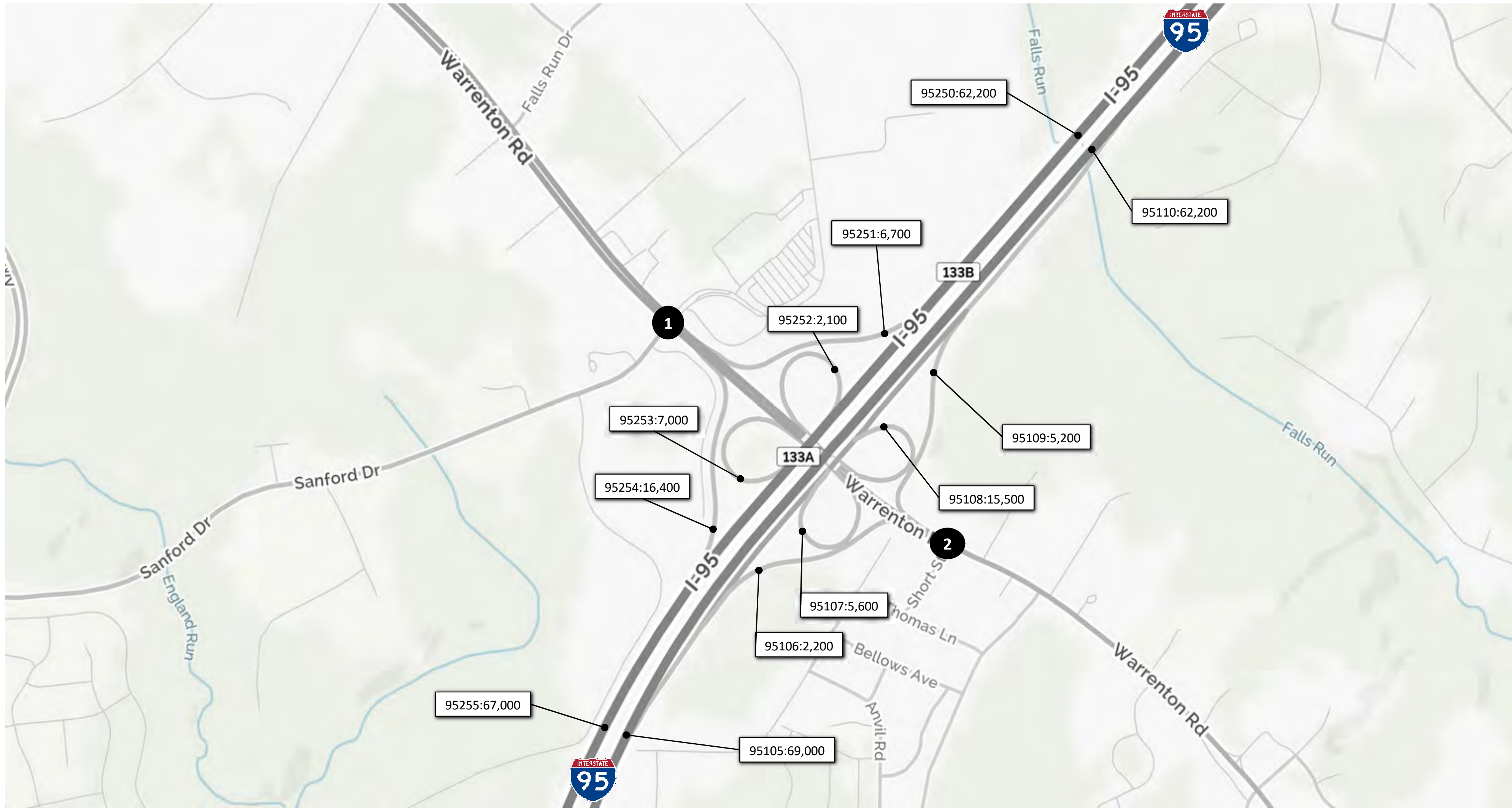
U.S. Department of Transportation Federal Highway Administration

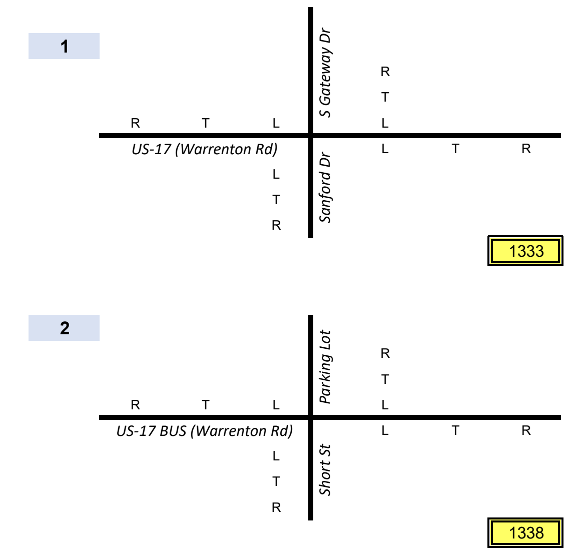
EXIT 148 - RUSSELL ROAD

2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

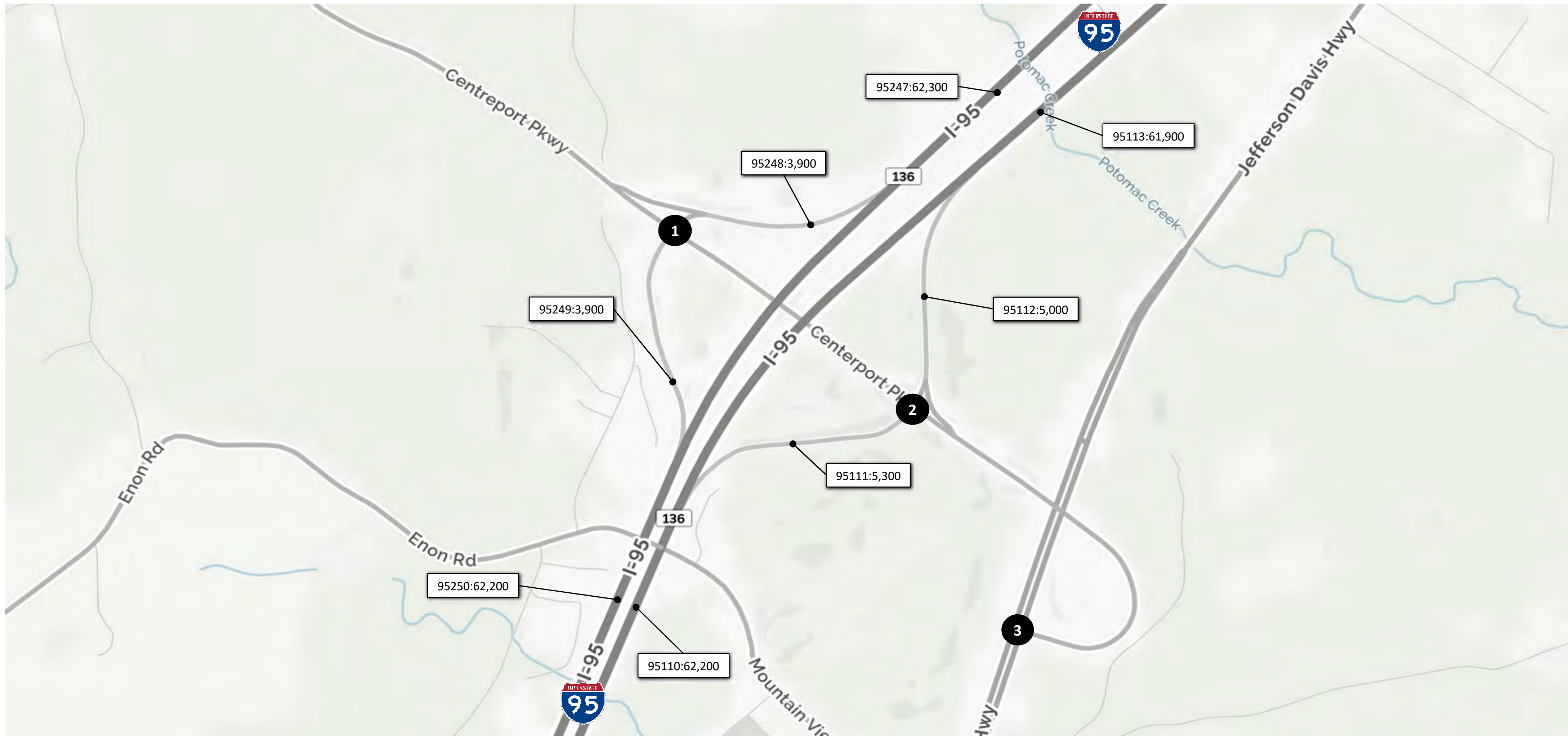
U.S. Department of Transportation Federal Highway Administration

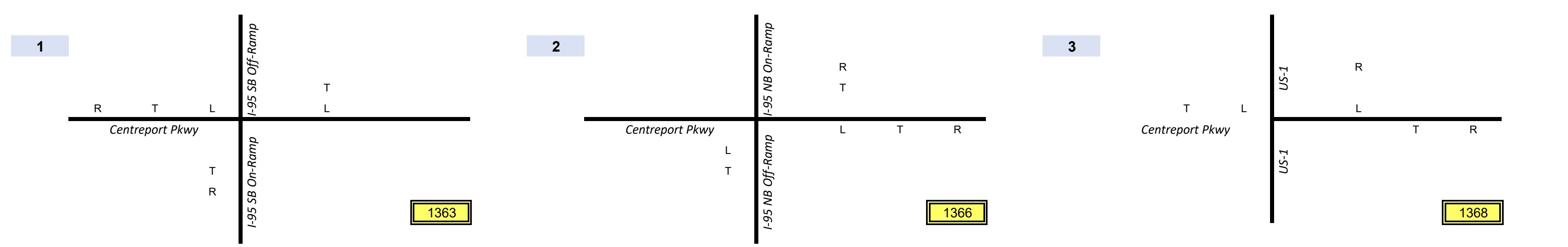
EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

2016 Existing Weekday Daily Volumes I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2016 Existing Weekday Daily Volumes I-95 Corridor

April 2017

Figure G.1-1

Legend

xx,xxx Weekday Daily Volume

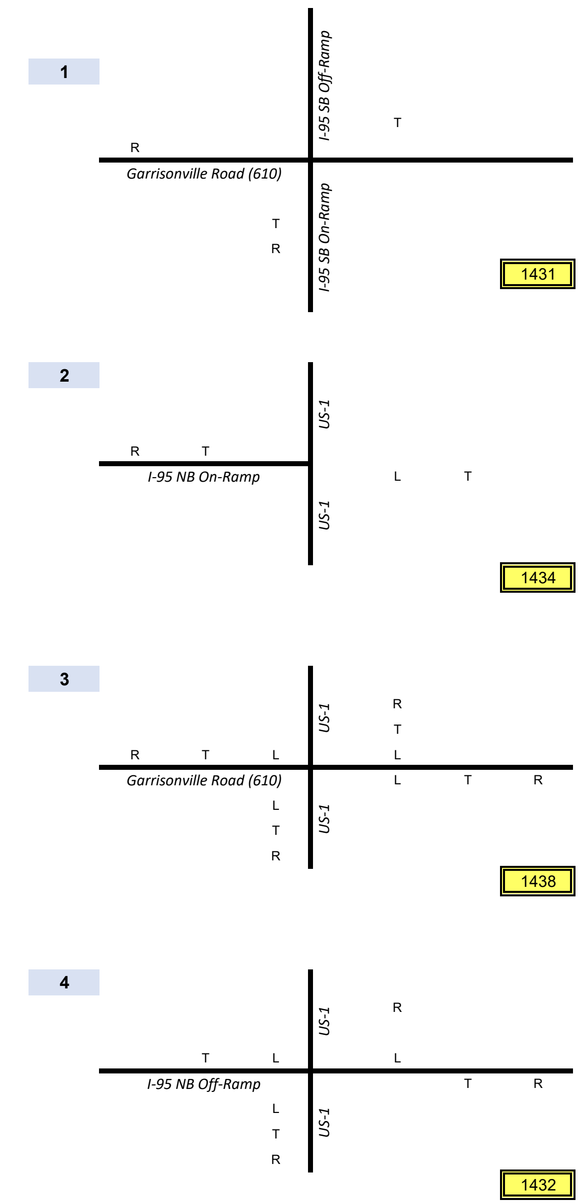
NOT TO SCALE

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

2016 Existing Weekday Daily Volumes I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

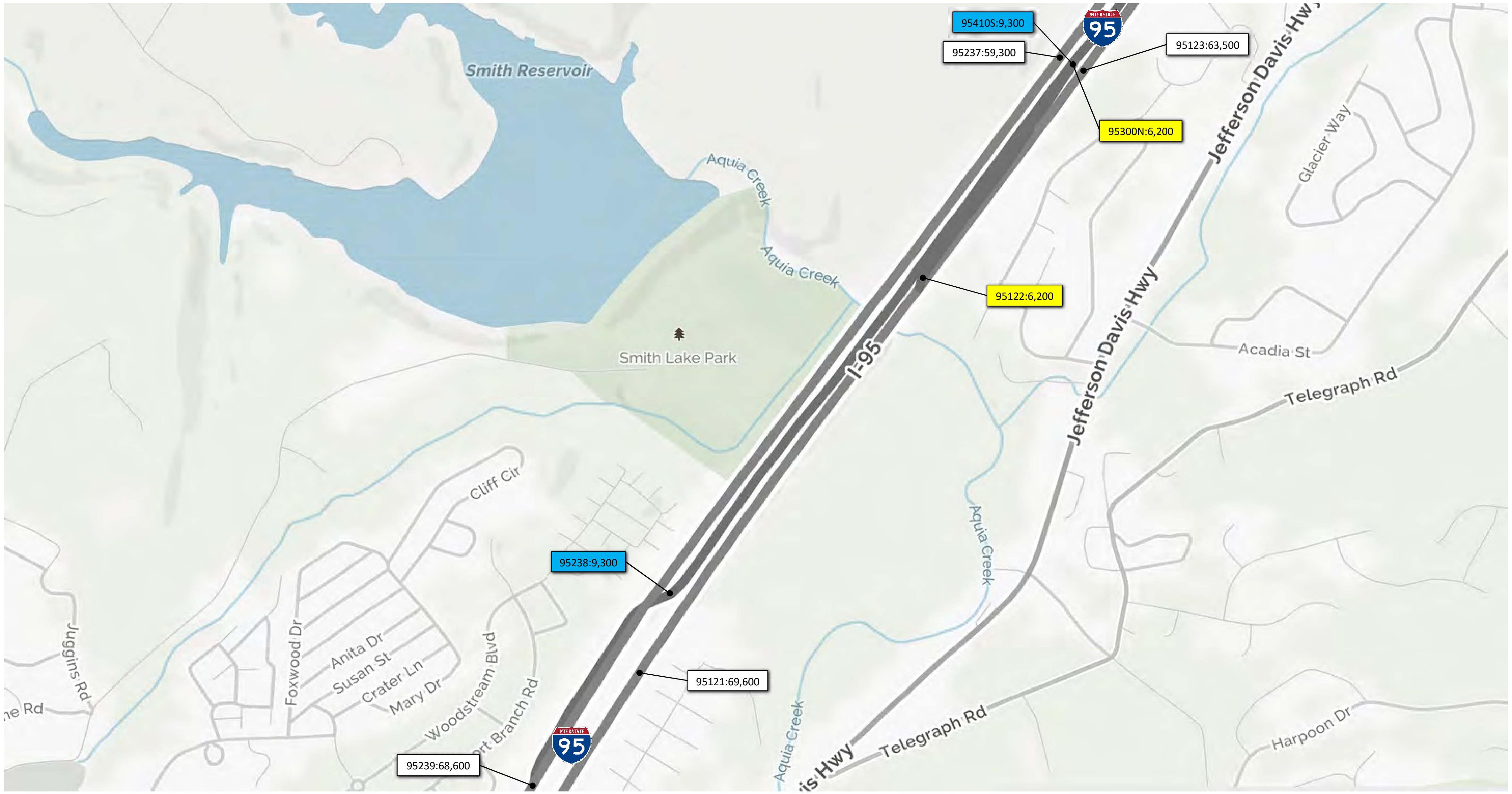
2016 Existing

Weekday Daily Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

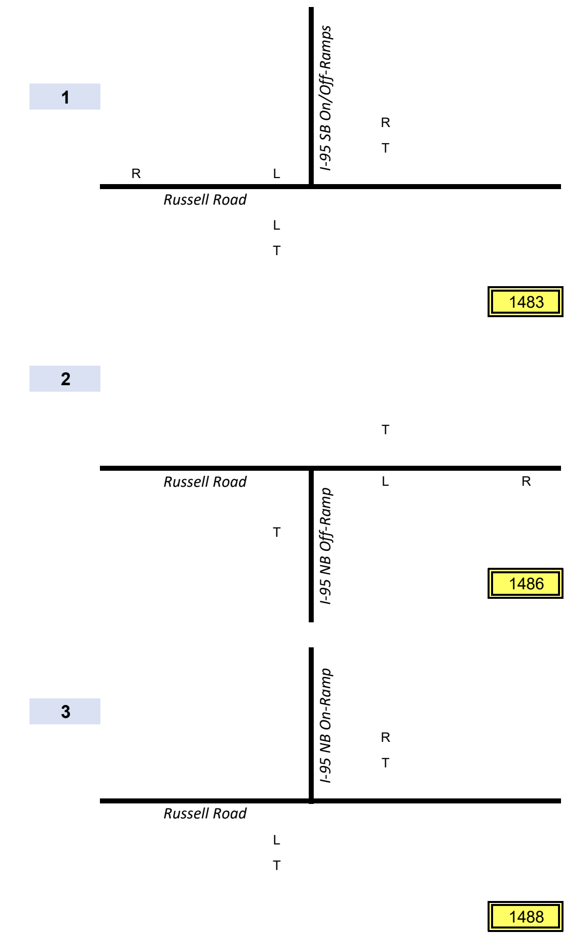
U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

2016 Existing Weekday Daily Volumes I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

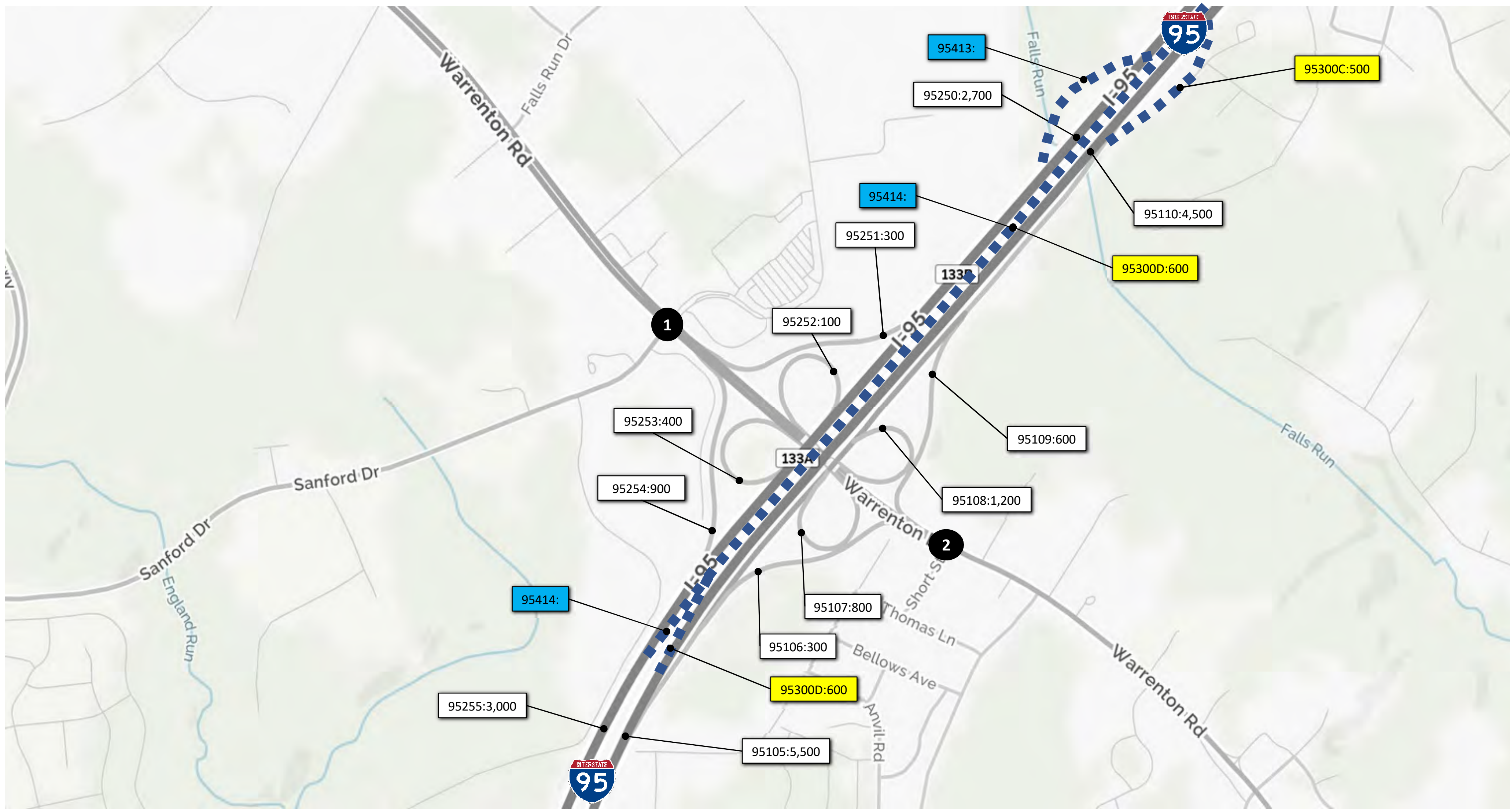
NOT TO SCALE

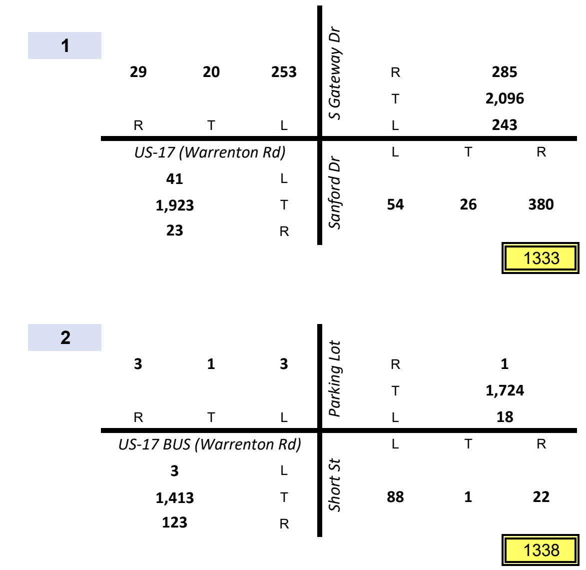
EXIT 148 - RUSSELL ROAD

2016 Existing Weekday Daily Volumes I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

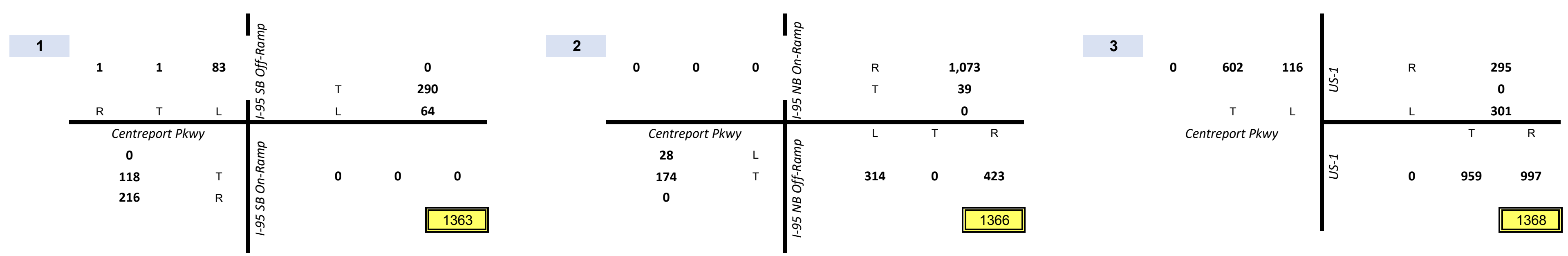
2022 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

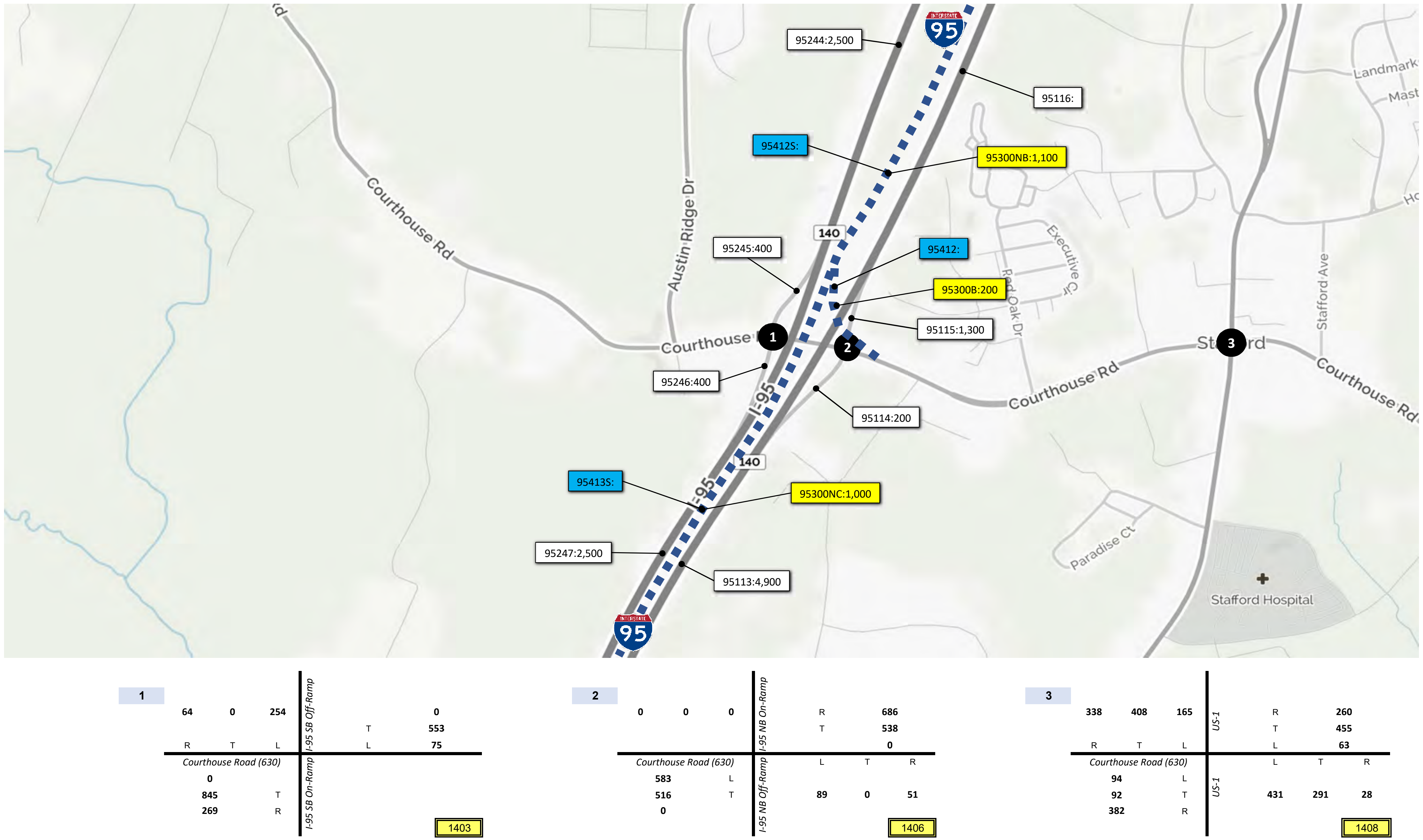
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2022 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

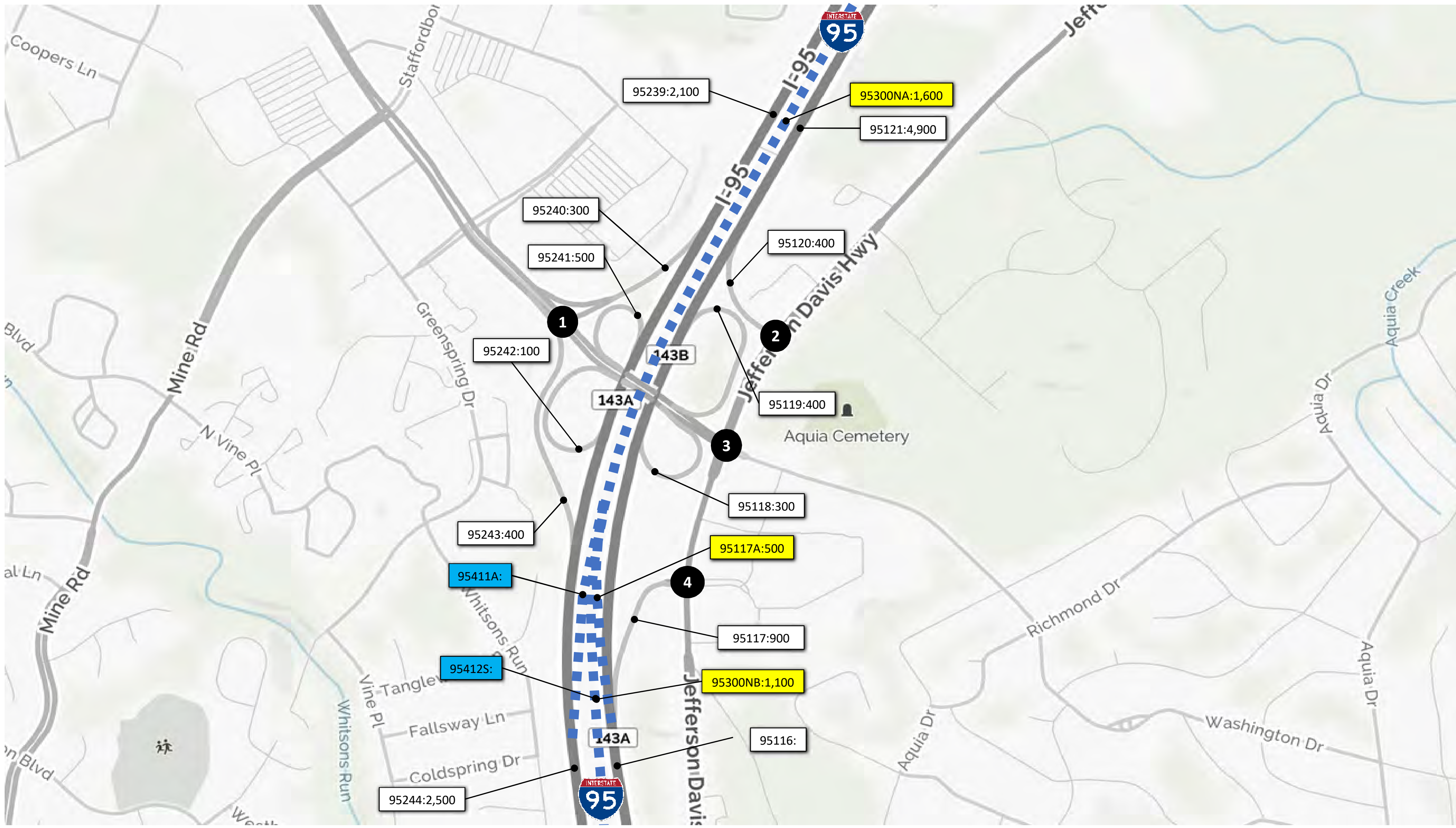
2022 No Build

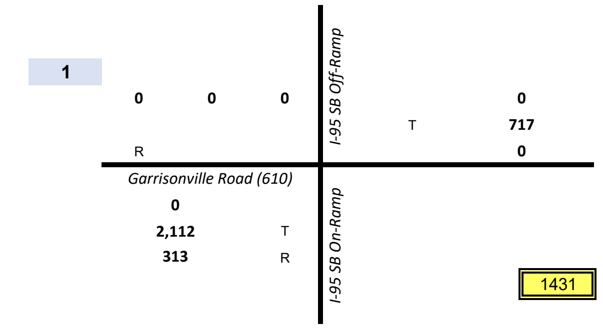
Weekday 7-8 AM Volumes

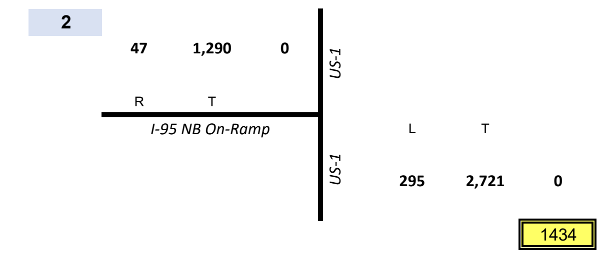
I-95 Corridor

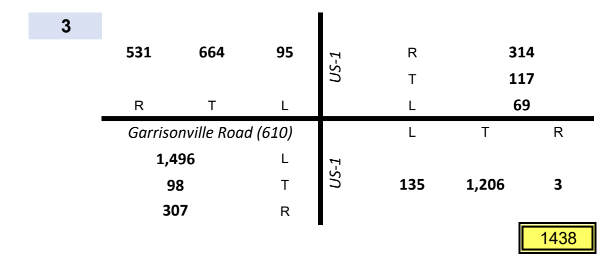
February 2017

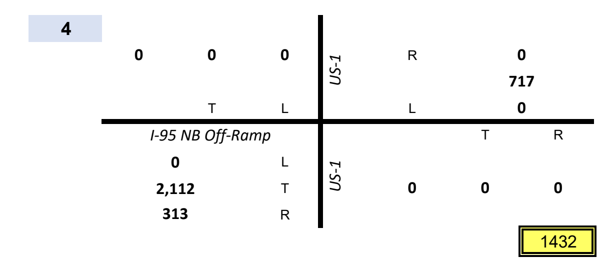
Figure G.1-1











Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

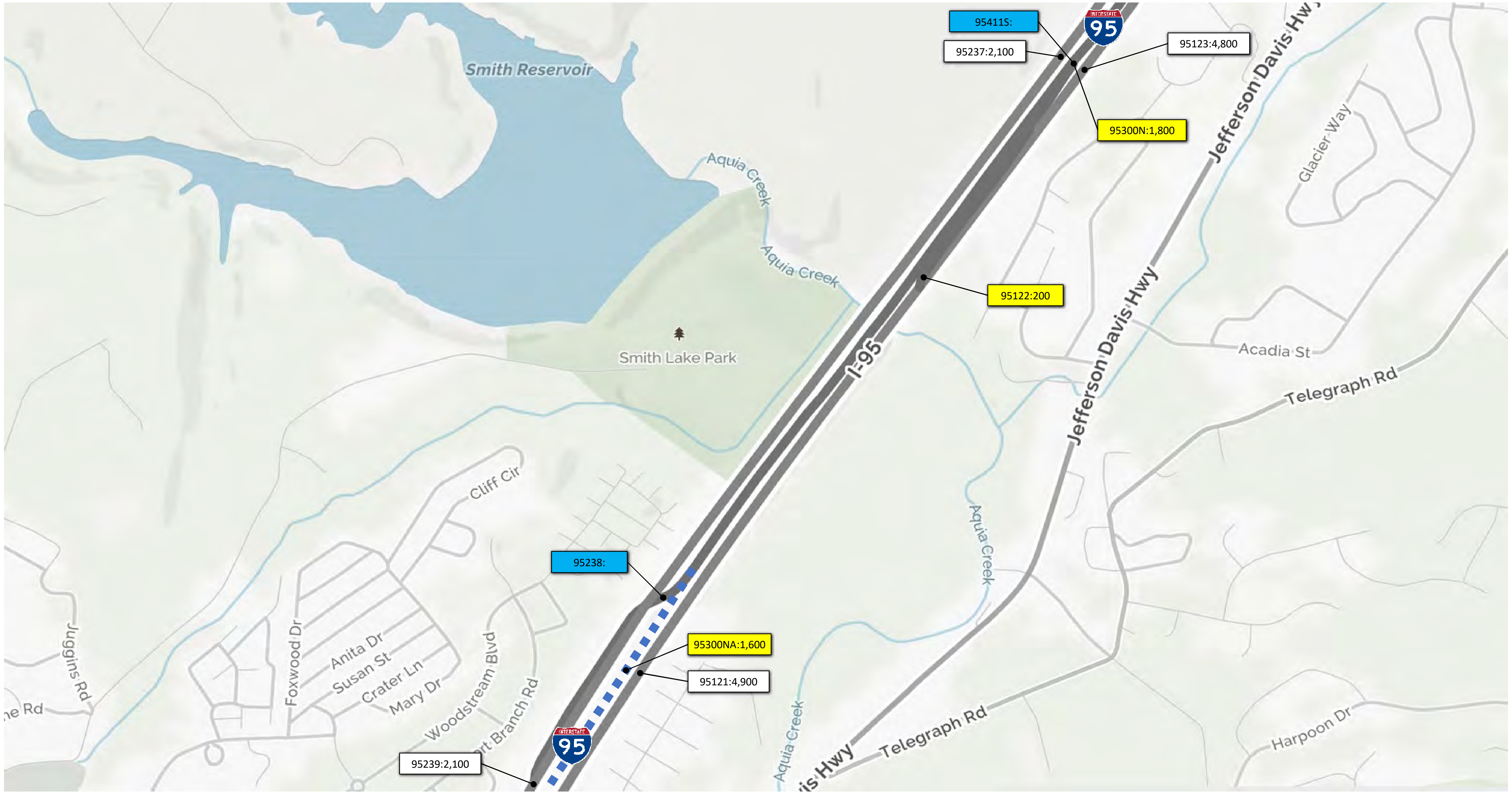
EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2022 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017	Figure G.1-1



Legend

xx,xxx	Weekday Hourly Volume
■ ■ ■ ■ ■	Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

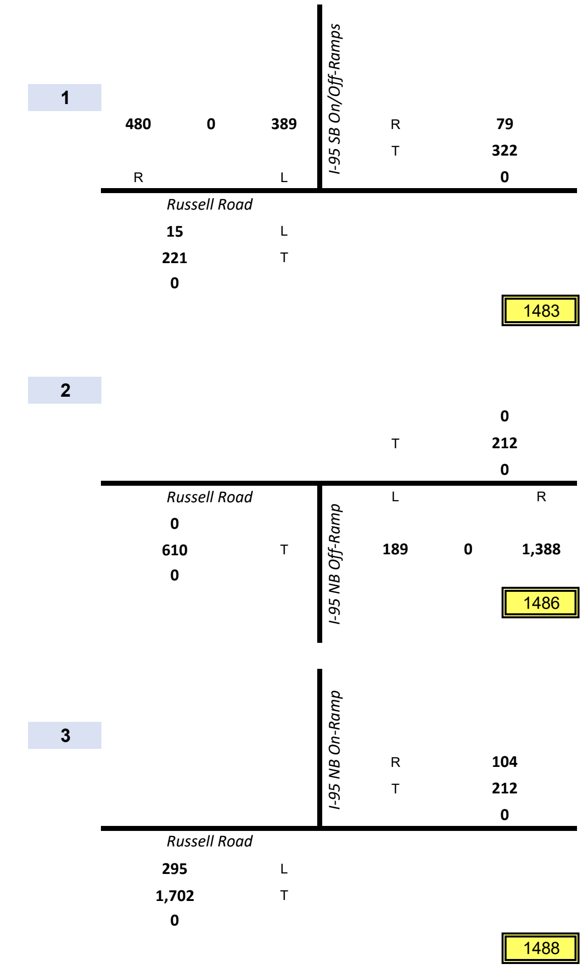
2022 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

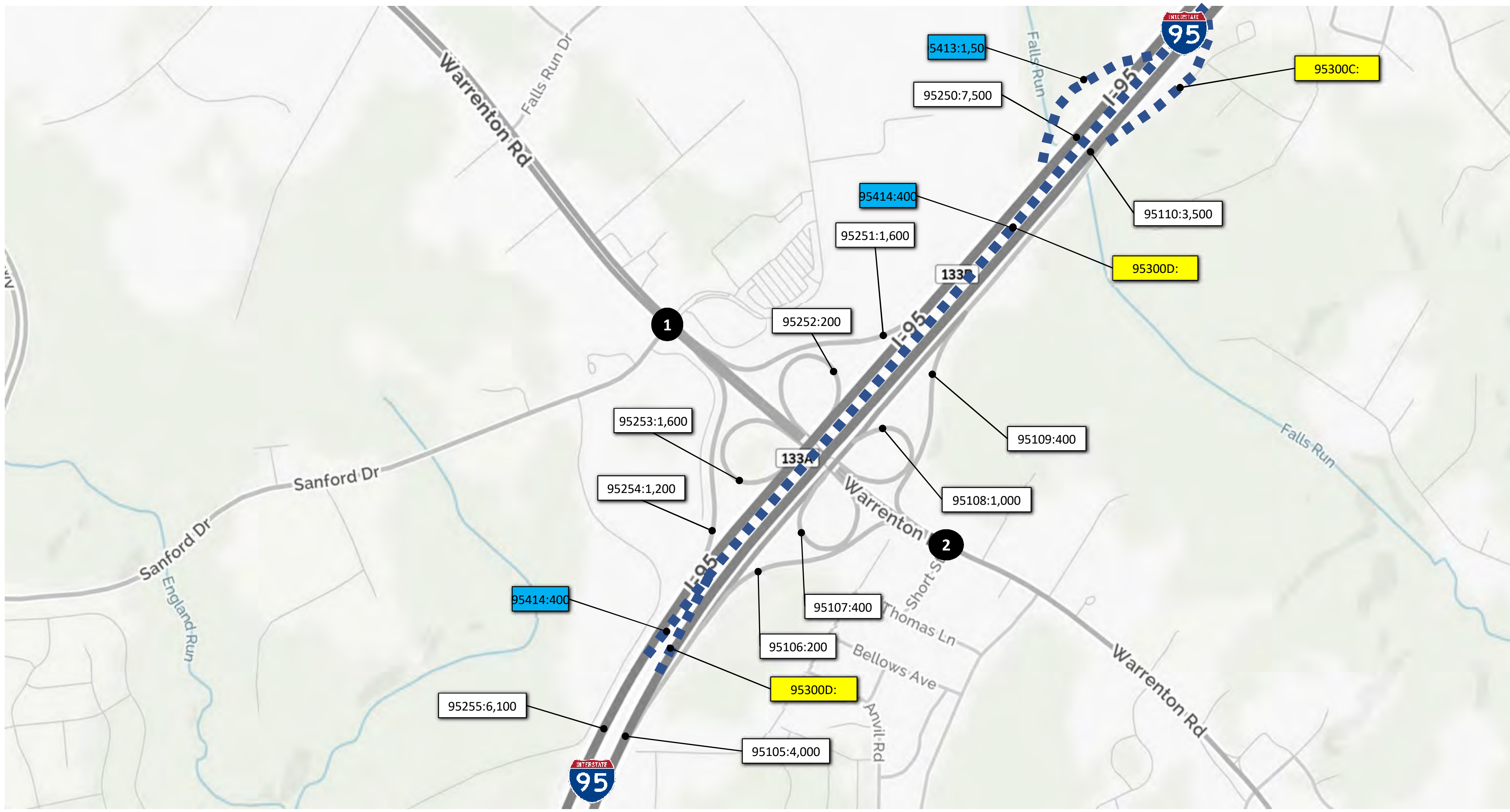
VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2022 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017	Figure G.1-1



1

S Gateway Dr (southbound)	R	T	L
	63	80	319

US-17 (Warrenton Rd) (westbound)	
R	366
T	2,549
L	519

US-17 (Warrenton Rd) (eastbound)	
L	56
T	2,065
R	54

Sanford Dr (northbound)	L	T	R
	38	7	364

1333

2

Parking Lot (southbound)	R	T	L
	6	0	4

US-17 BUS (Warrenton Rd) (westbound)	
R	3
T	1,354
L	20

US-17 BUS (Warrenton Rd) (eastbound)	
L	6
T	2,834
R	154

Short St (northbound)	L	T	R
	126	3	32

1338

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

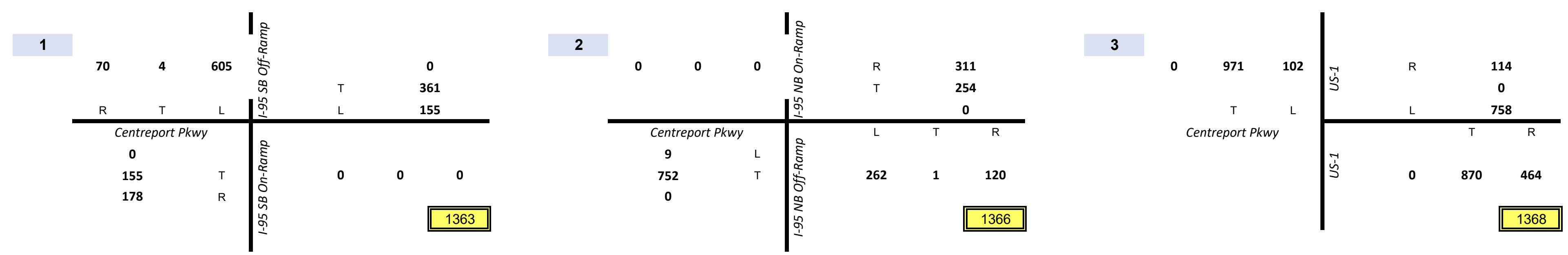
2022 Build

Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

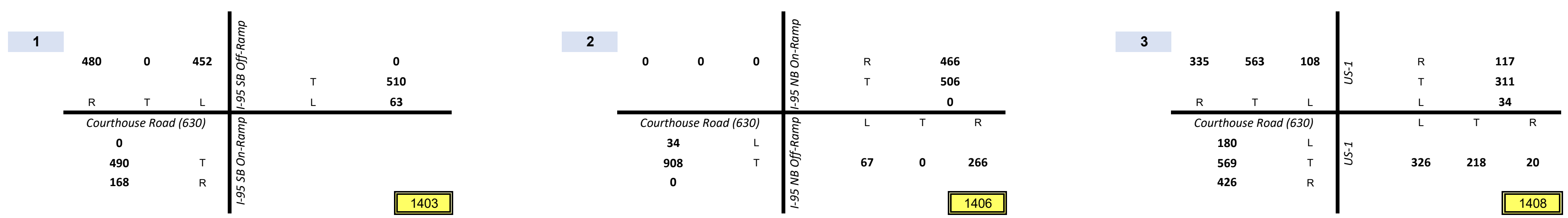
VDOT
Virginia Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2022 Build
Weekday 5-6 PM Volumes
I-95 Corridor

May 2017 | Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

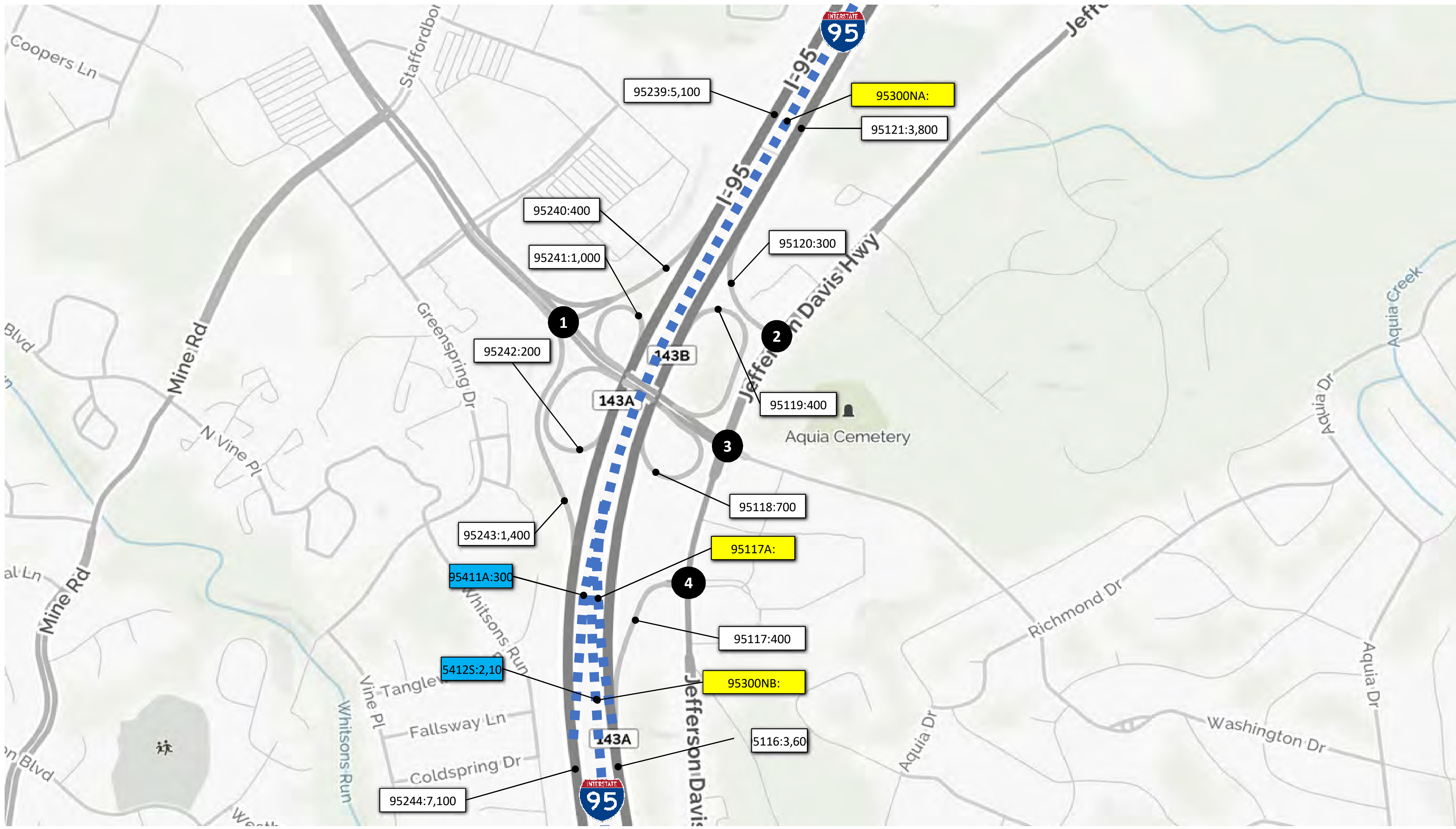
2022 Build

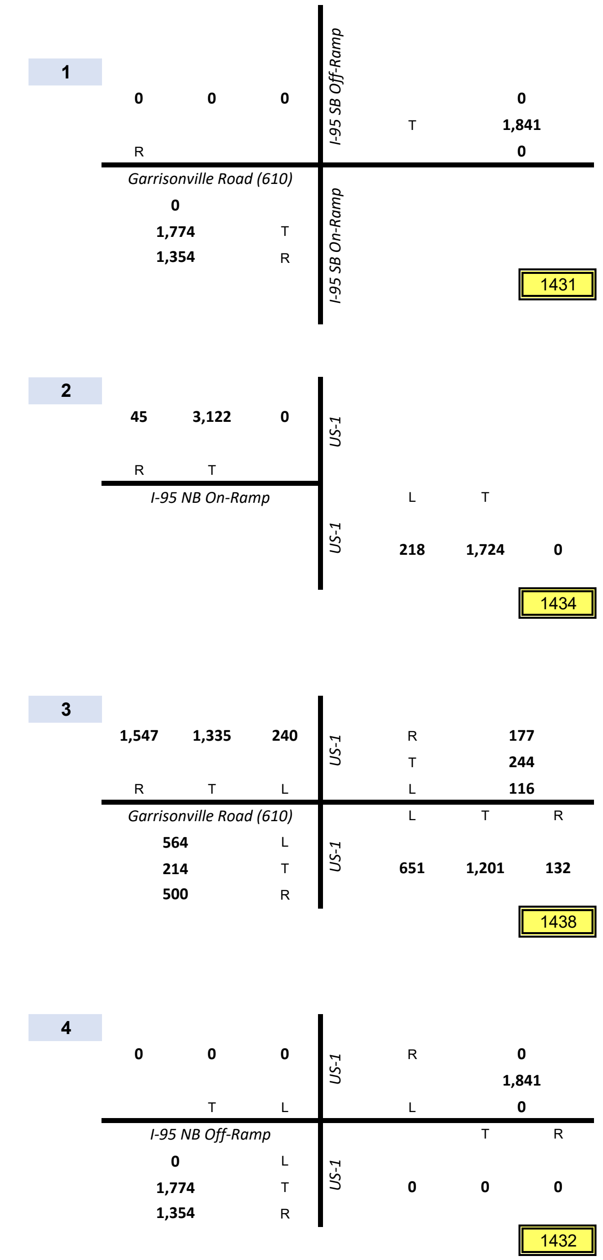
Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

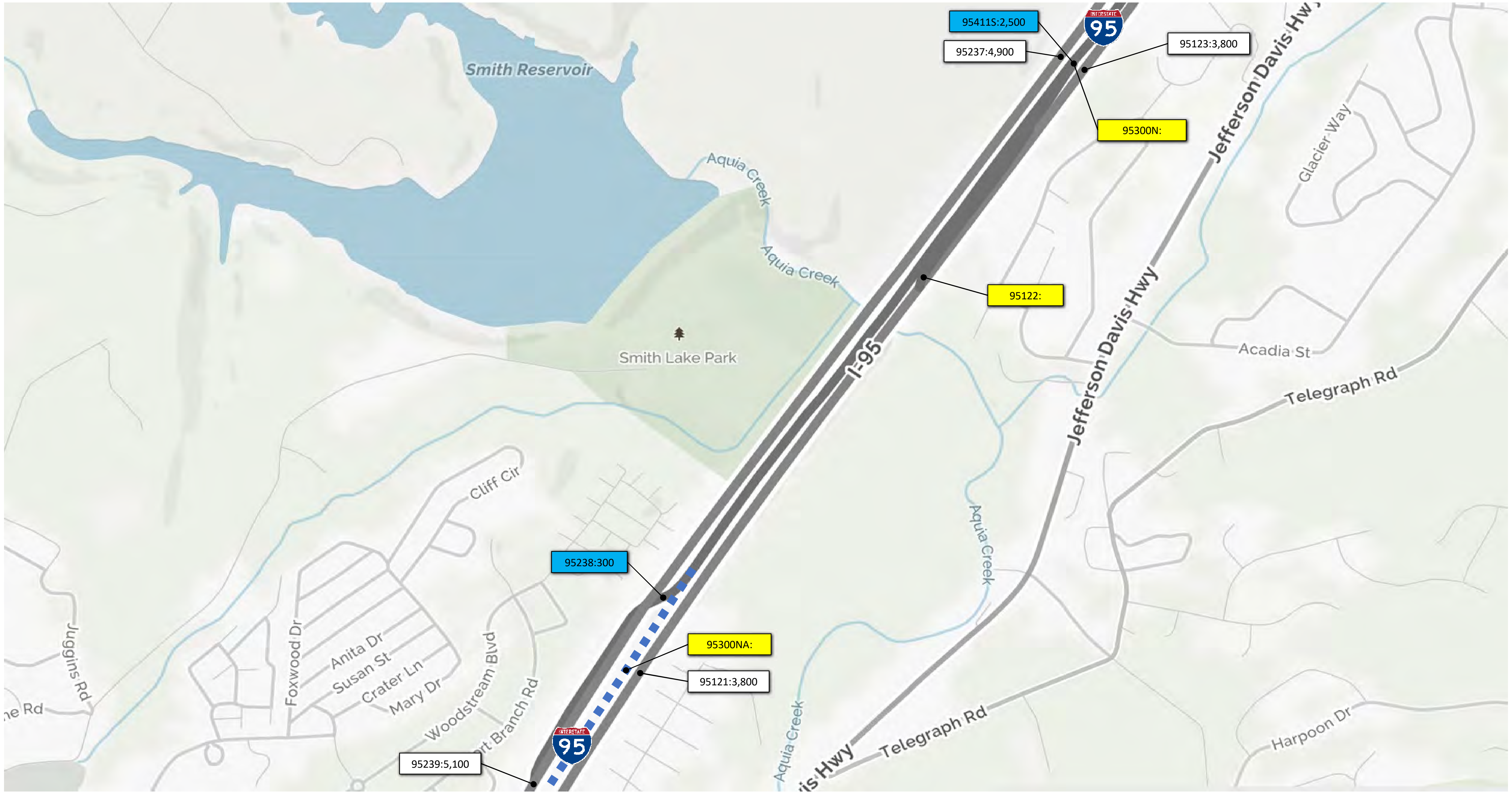
2022 Build

Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

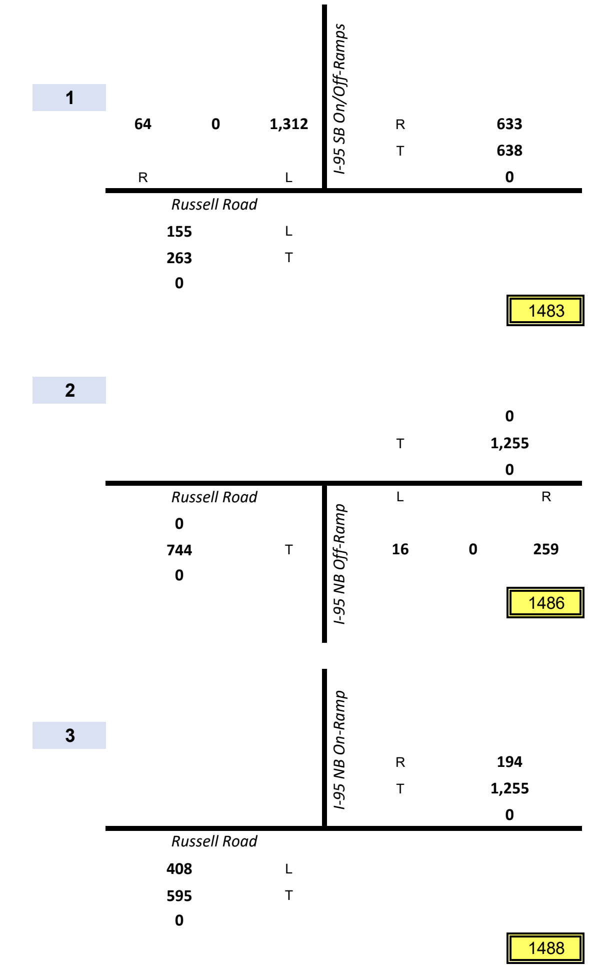
2022 Build

Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

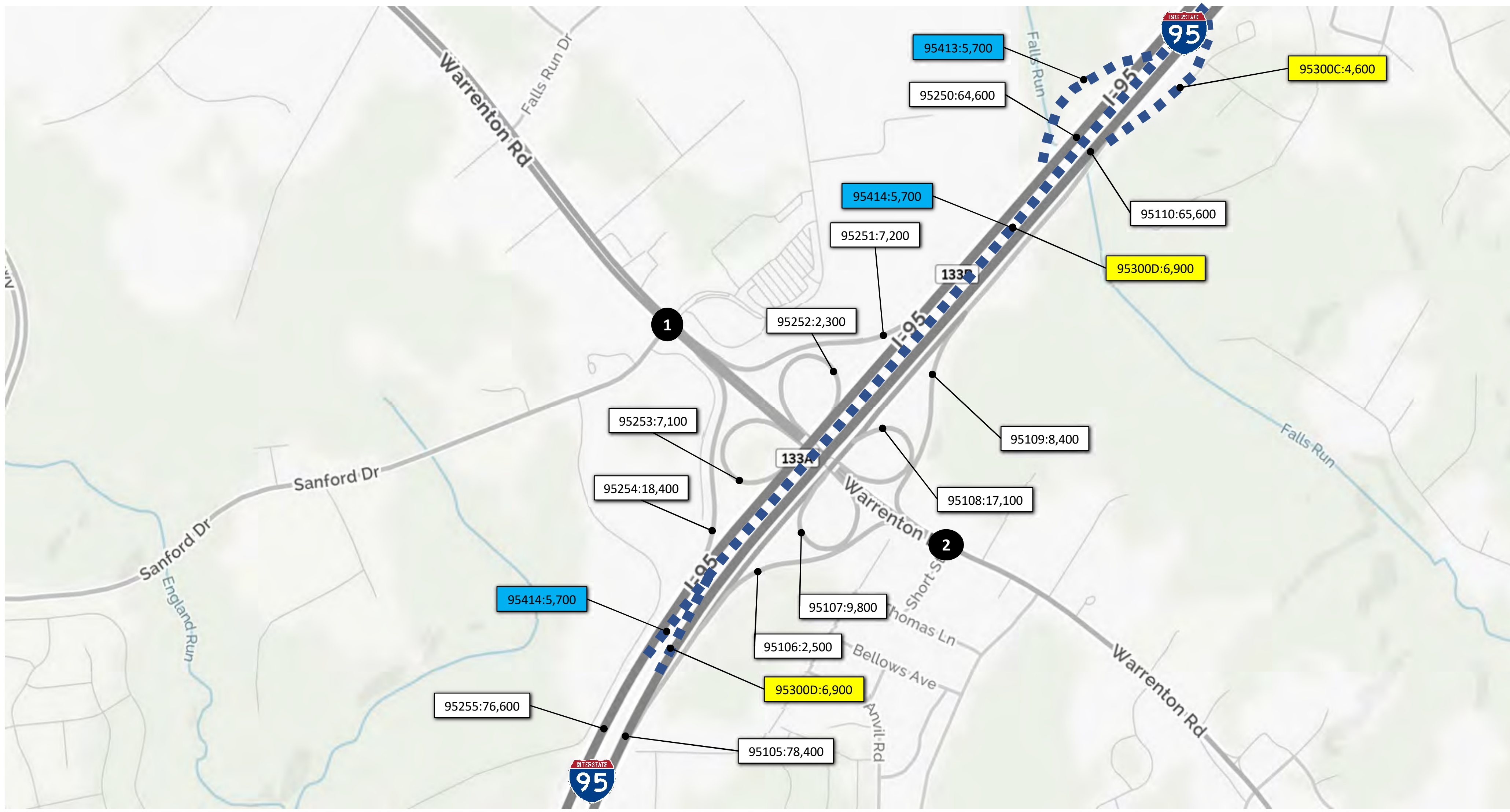
2022 Build

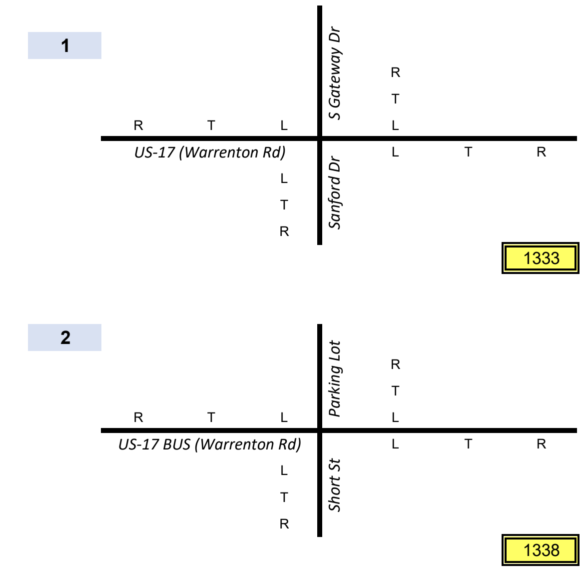
Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

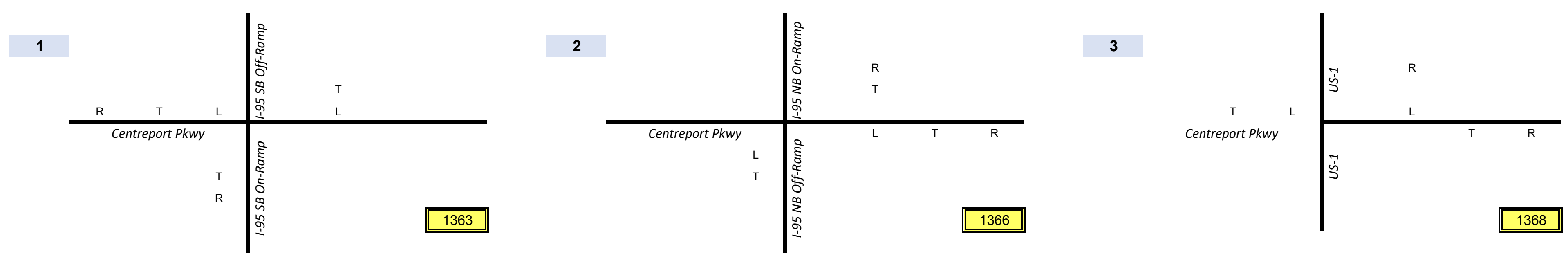
2042 Build

Weekday Daily Volumes

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

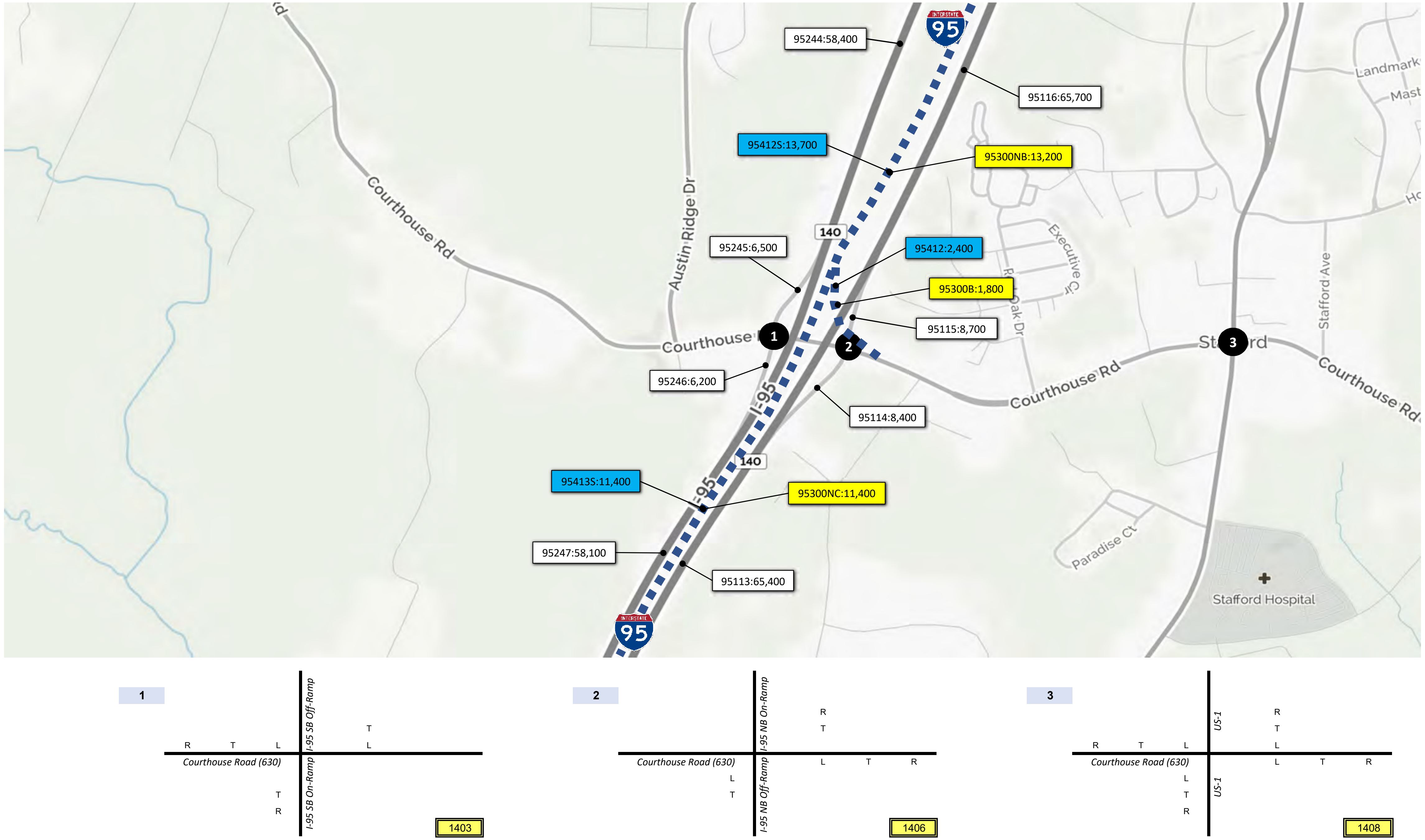
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 Build
Weekday Daily Volumes
I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

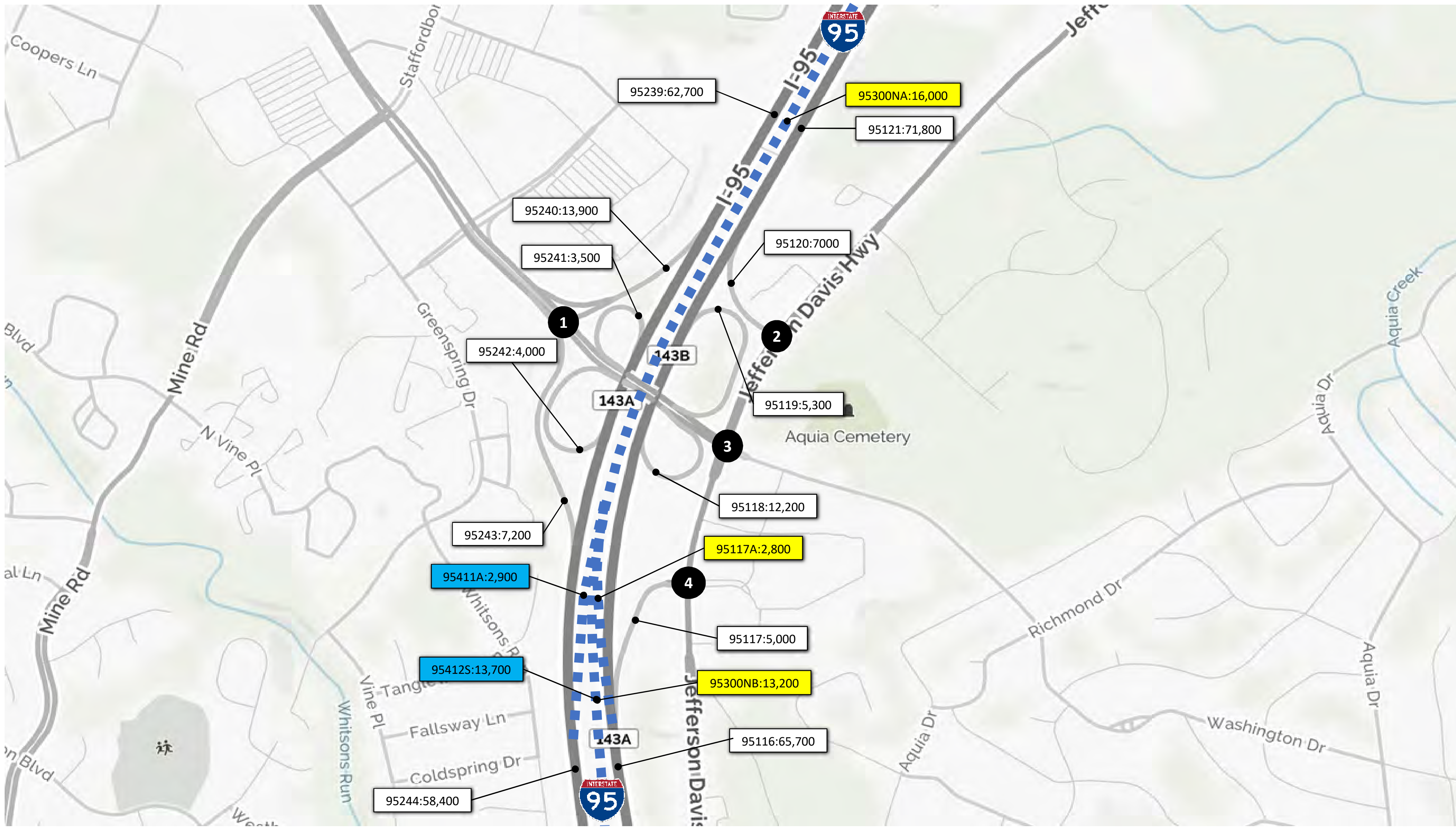
EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

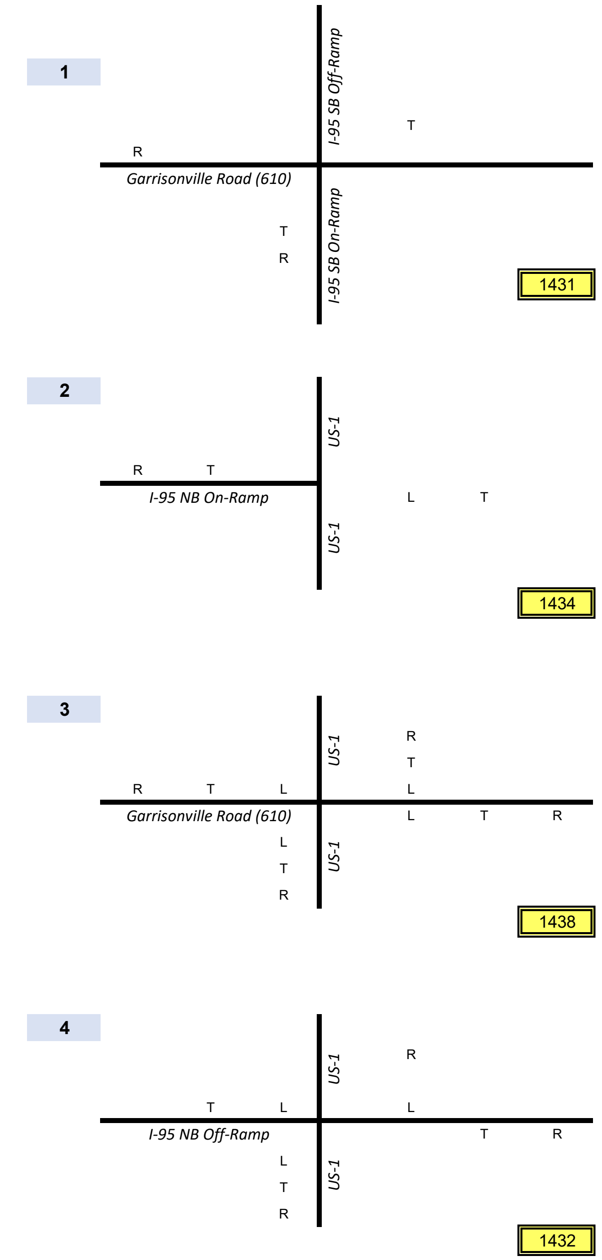
2042 Build

Weekday Daily Volumes

I-95 Corridor

May 2017	Figure G.1-1





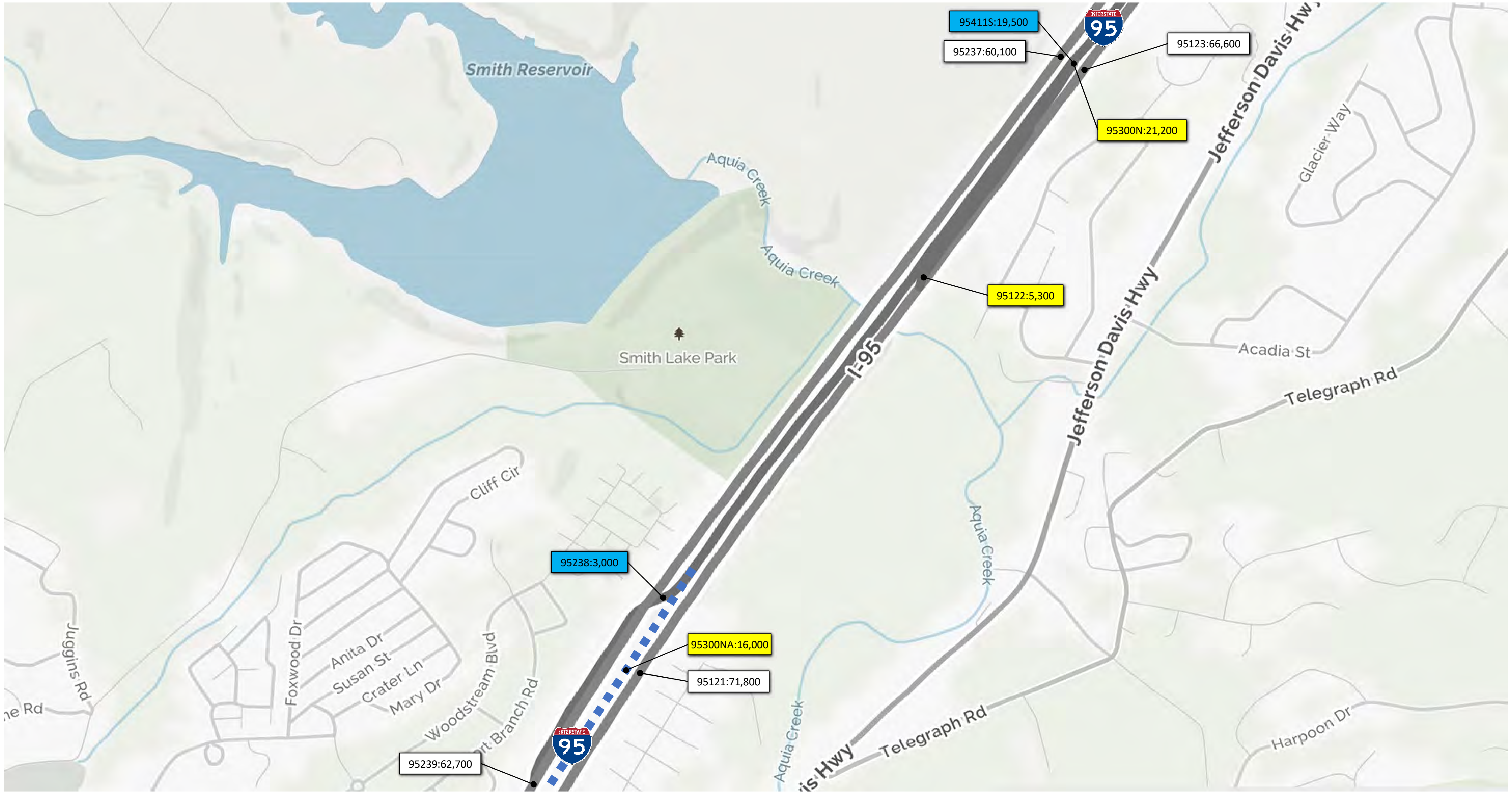
Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)	
2042 Build Weekday Daily Volumes I-95 Corridor	
May 2017	Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

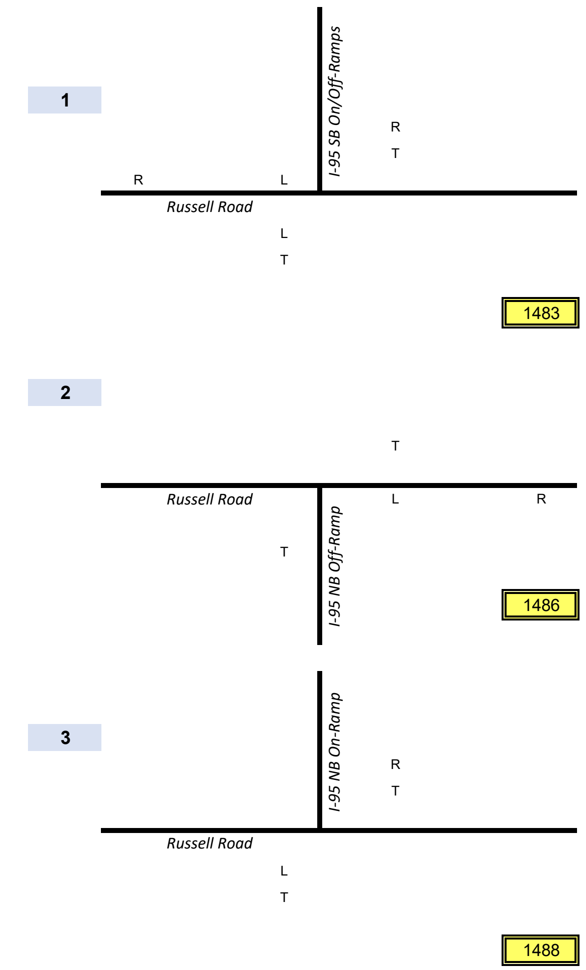
2042 Build

Weekday Daily Volumes

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

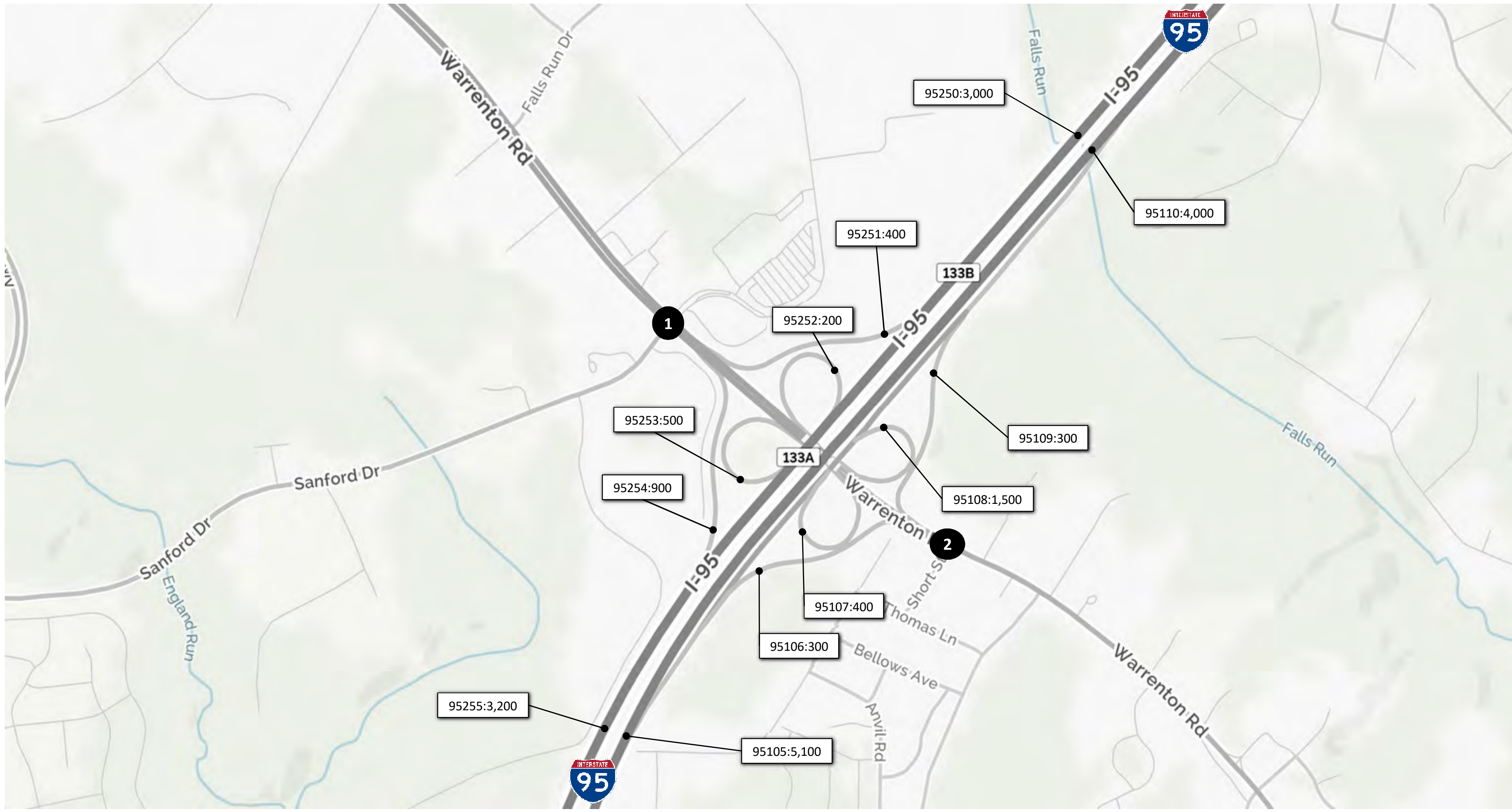
U.S. Department of Transportation Federal Highway Administration

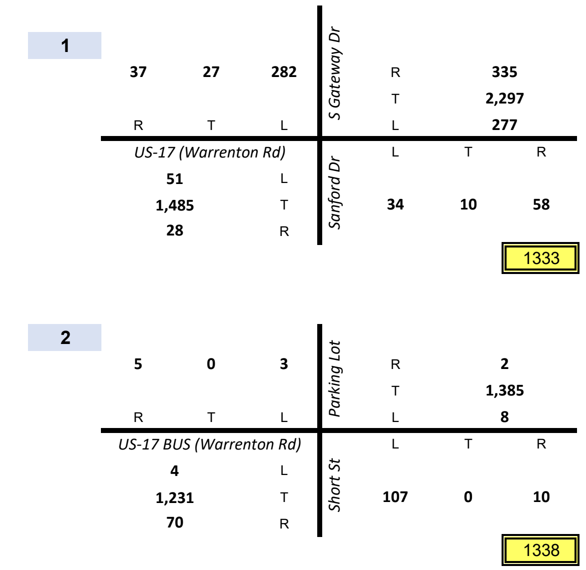
EXIT 148 - RUSSELL ROAD

2042 Build
Weekday Daily Volumes
I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

2022 No Build

Weekday 7 -8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1

1

I-95 SB Off-Ramp: R 4, T 0, L 112

Centreport Pkwy (west approach): 0; T 526; L 101

Centreport Pkwy (east approach): 0; T 91; R 183

I-95 SB On-Ramp: 0, 0, 0

1363

2

I-95 NB On-Ramp: 0, 0, 0

Centreport Pkwy (west approach): R 652; T 179; L 0

Centreport Pkwy (east approach): L 20; T 183; 0

I-95 NB Off-Ramp: L 448, T 5, R 459

1366

3

US-1 (north approach): 0, T 407, L 87

US-1: R 506; 0; L 237

Centreport Pkwy: 0; 0; 0

US-1 (south approach): 0, T 954, R 533

1368

Legend

xx,xxx — Weekday Hourly Volume

NOT TO SCALE

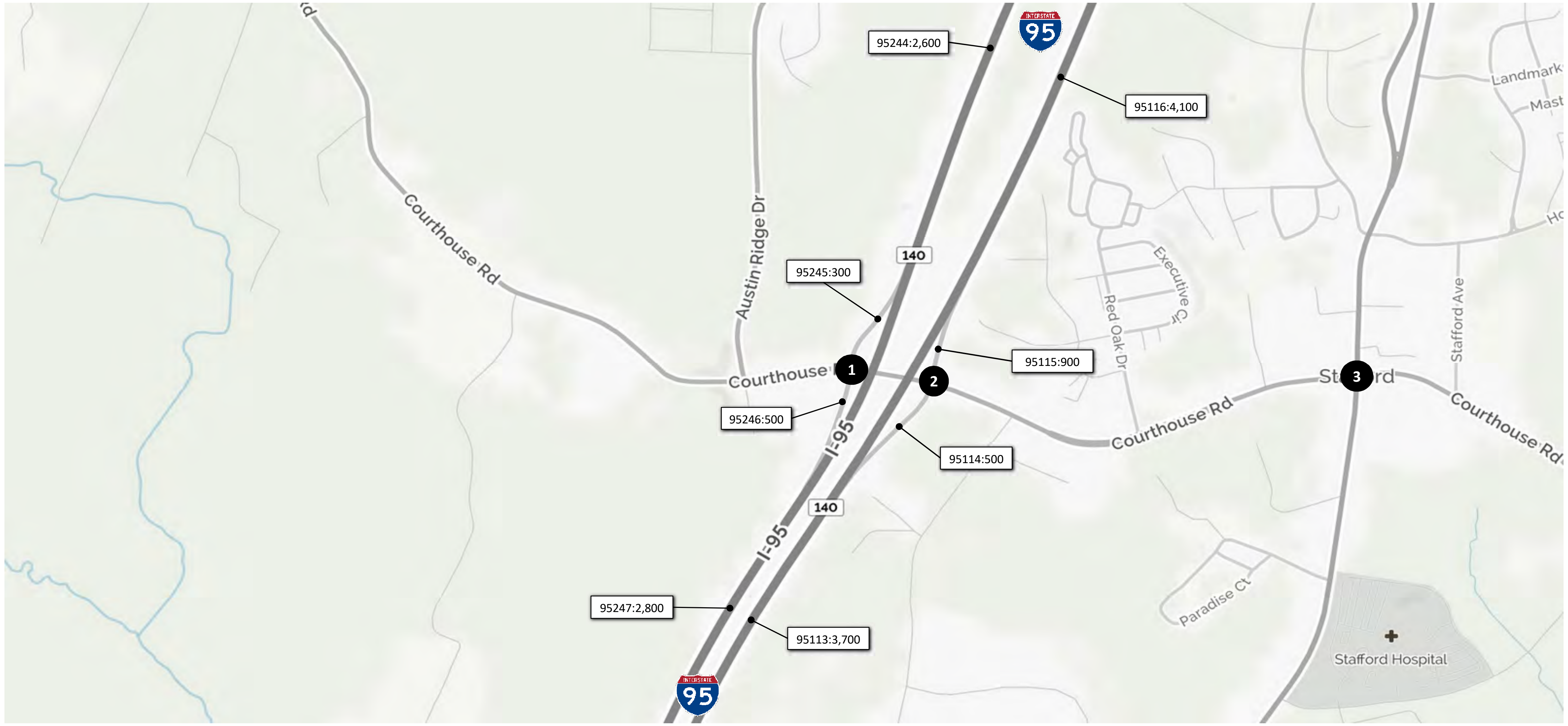
VDOT Virginia Department of Transportation

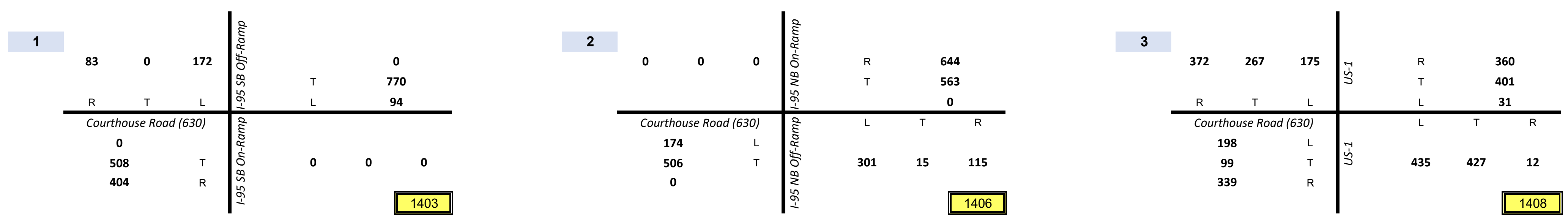
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2022 No Build
Weekday 7 -8 AM Volumes
I-95 Corridor

April 2017 | Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

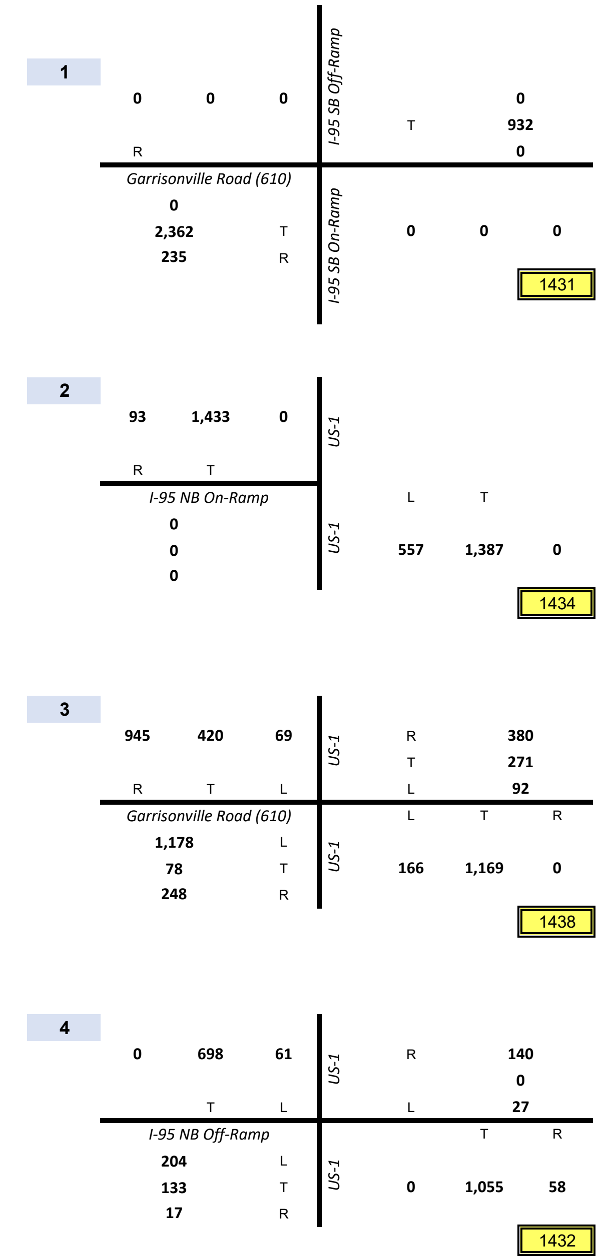
2022 No Build

Weekday 7 -8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2022 No Build

Weekday 7 -8 AM Volumes

I-95 Corridor

April 2017	Figure G.1-1

Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

SOUTHERN START/END I-95 EXPRESS LANES

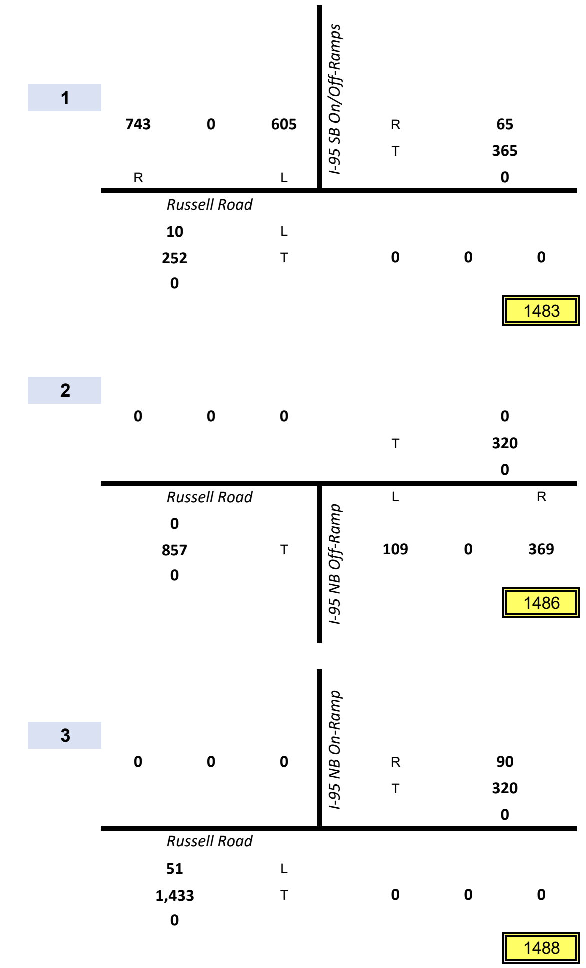
2022 No Build

Weekday 7 -8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

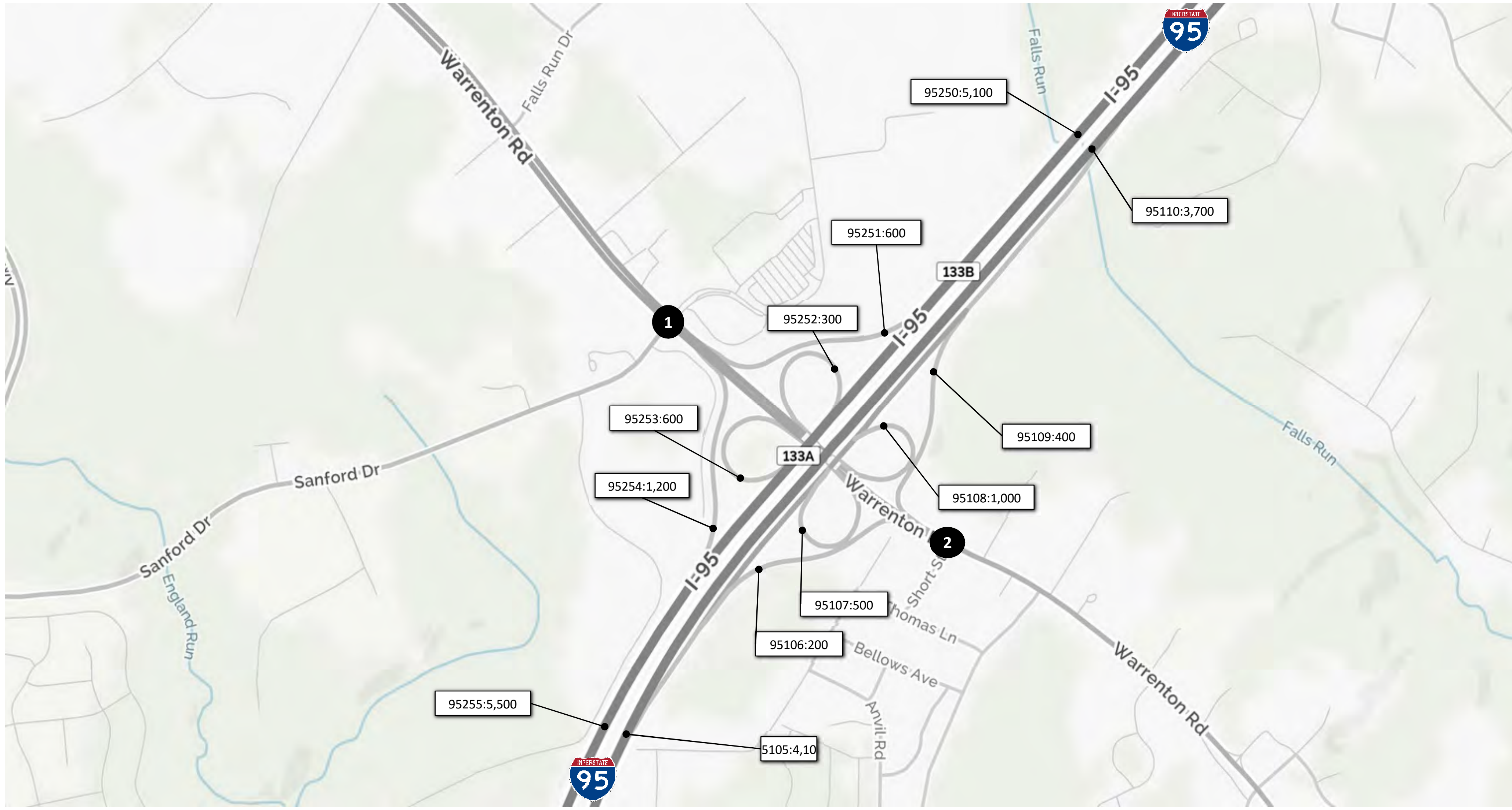
NOT TO SCALE

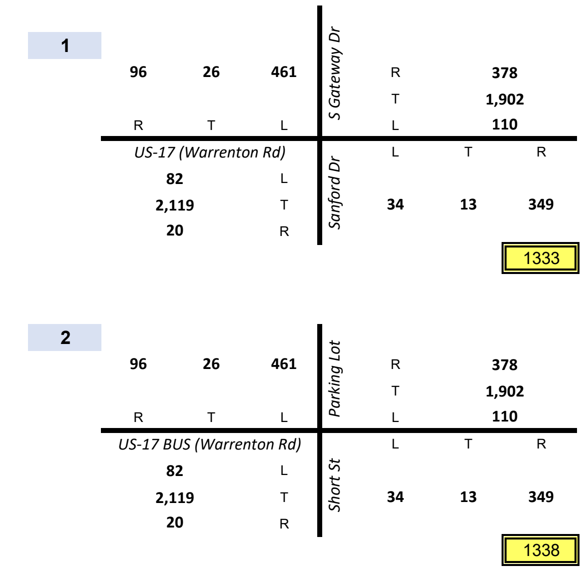
EXIT 148 - RUSSELL ROAD

2022 No Build
Weekday 7 -8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

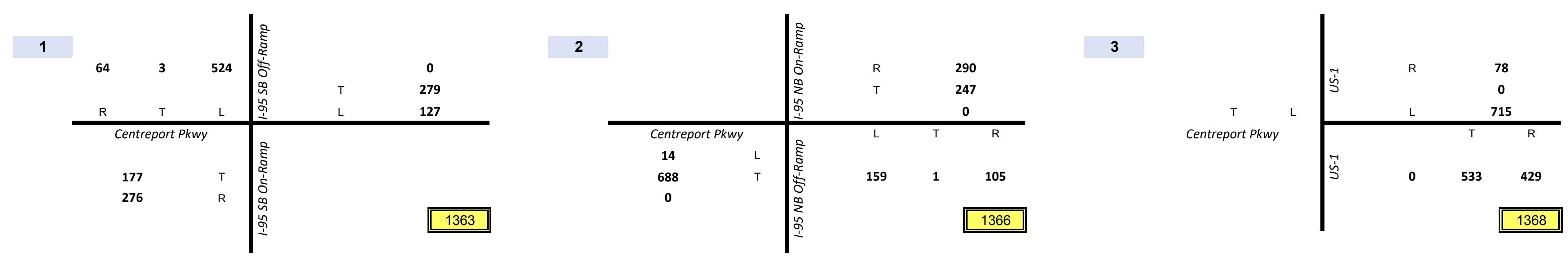
2022 No Build

Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

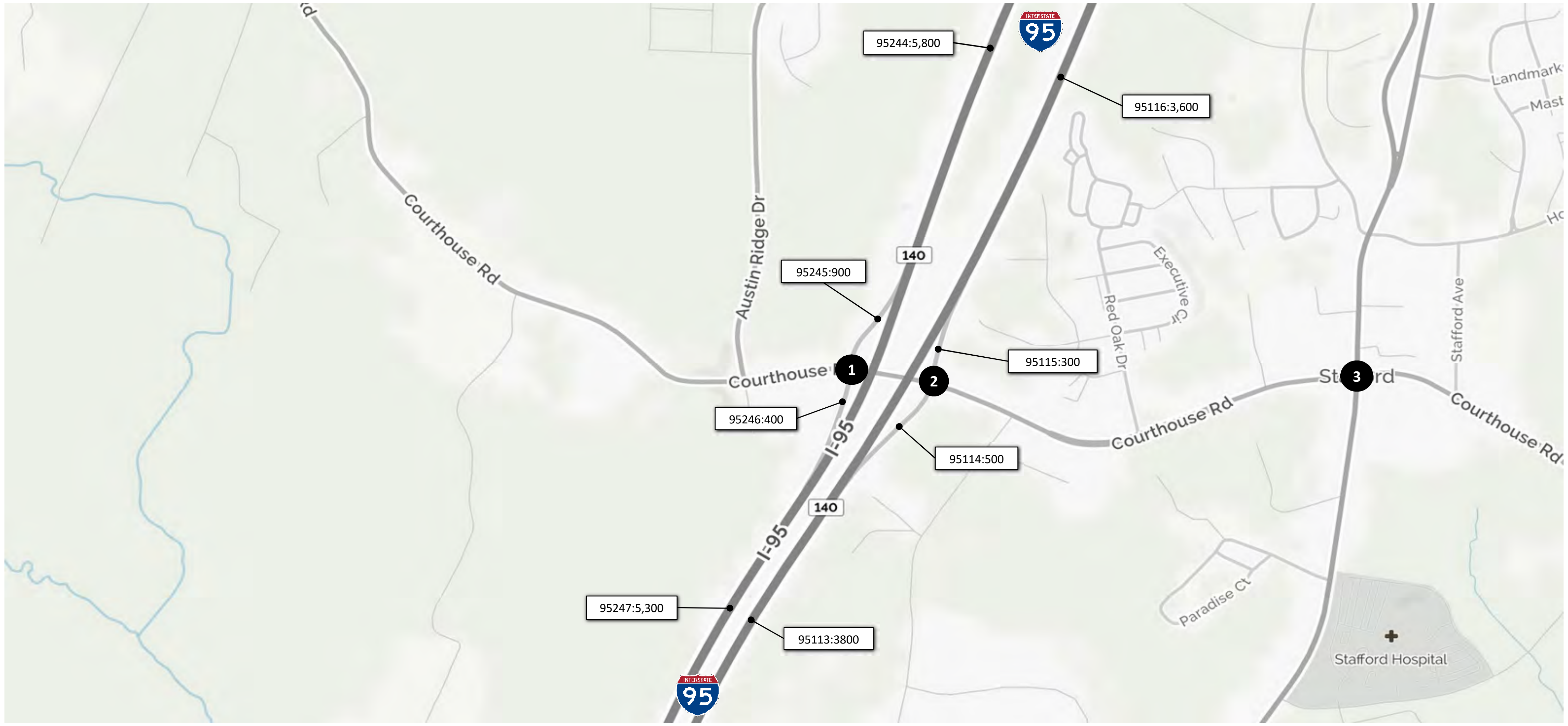
EXIT 136 - CENTREPORT PARKWAY

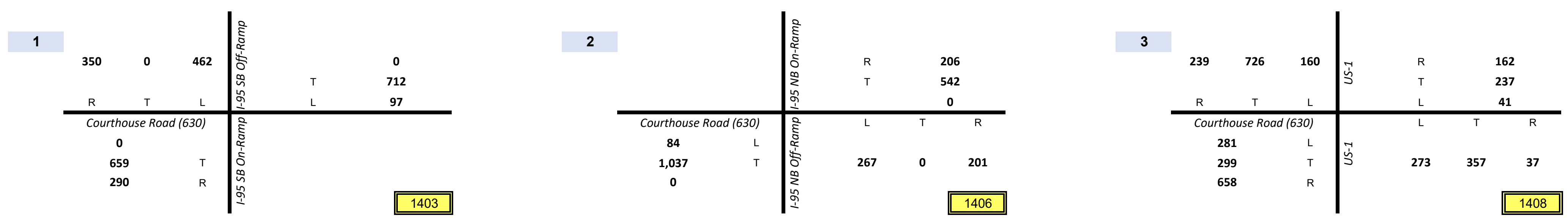
2022 No Build

Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017 | Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

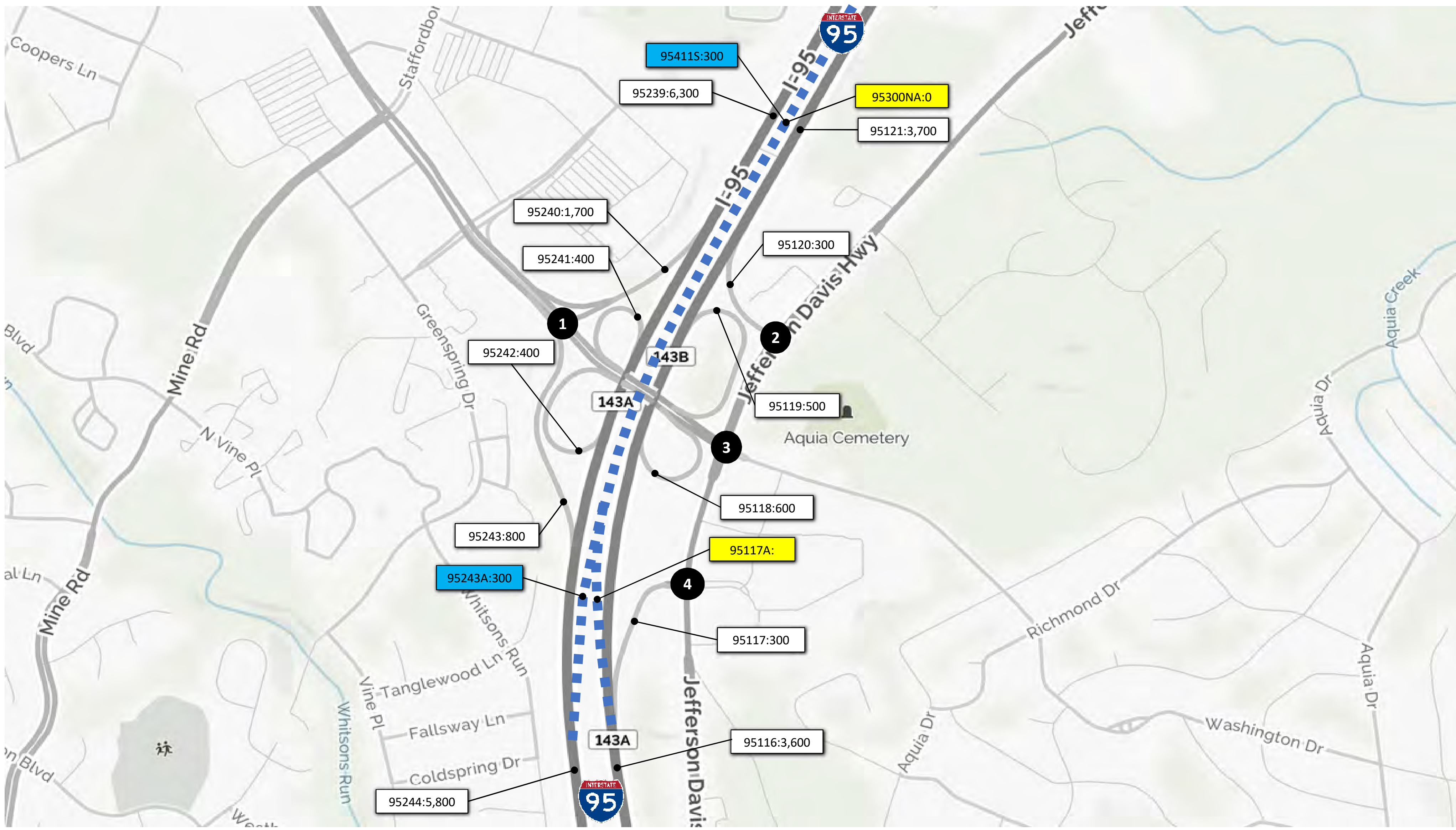
2022 No Build

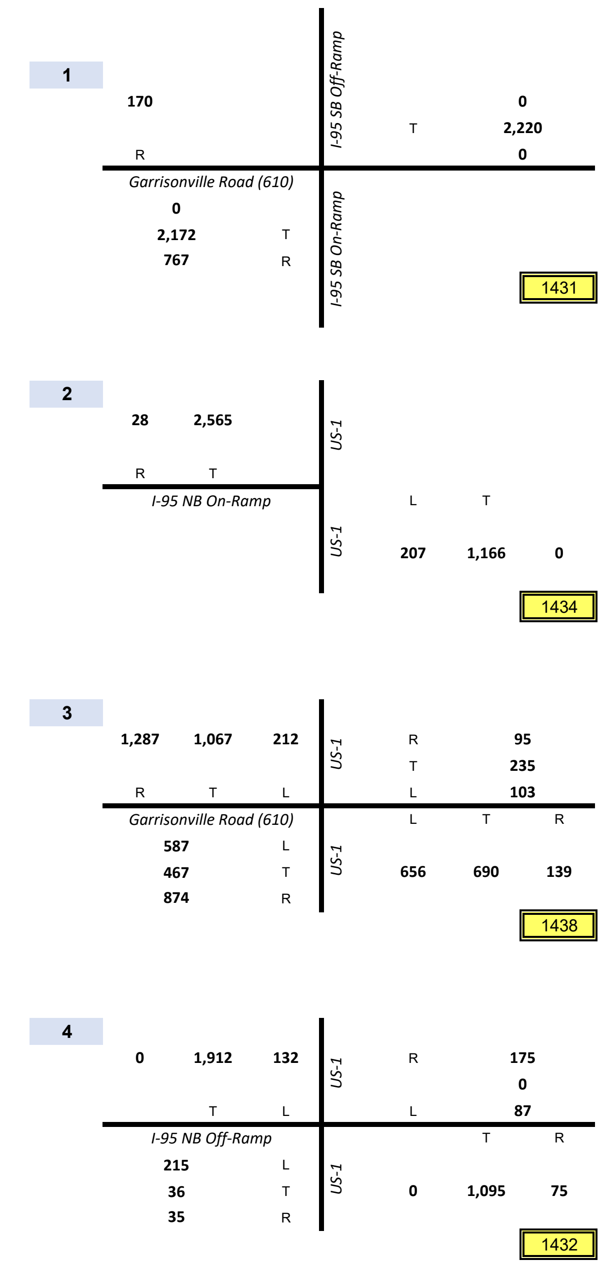
Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

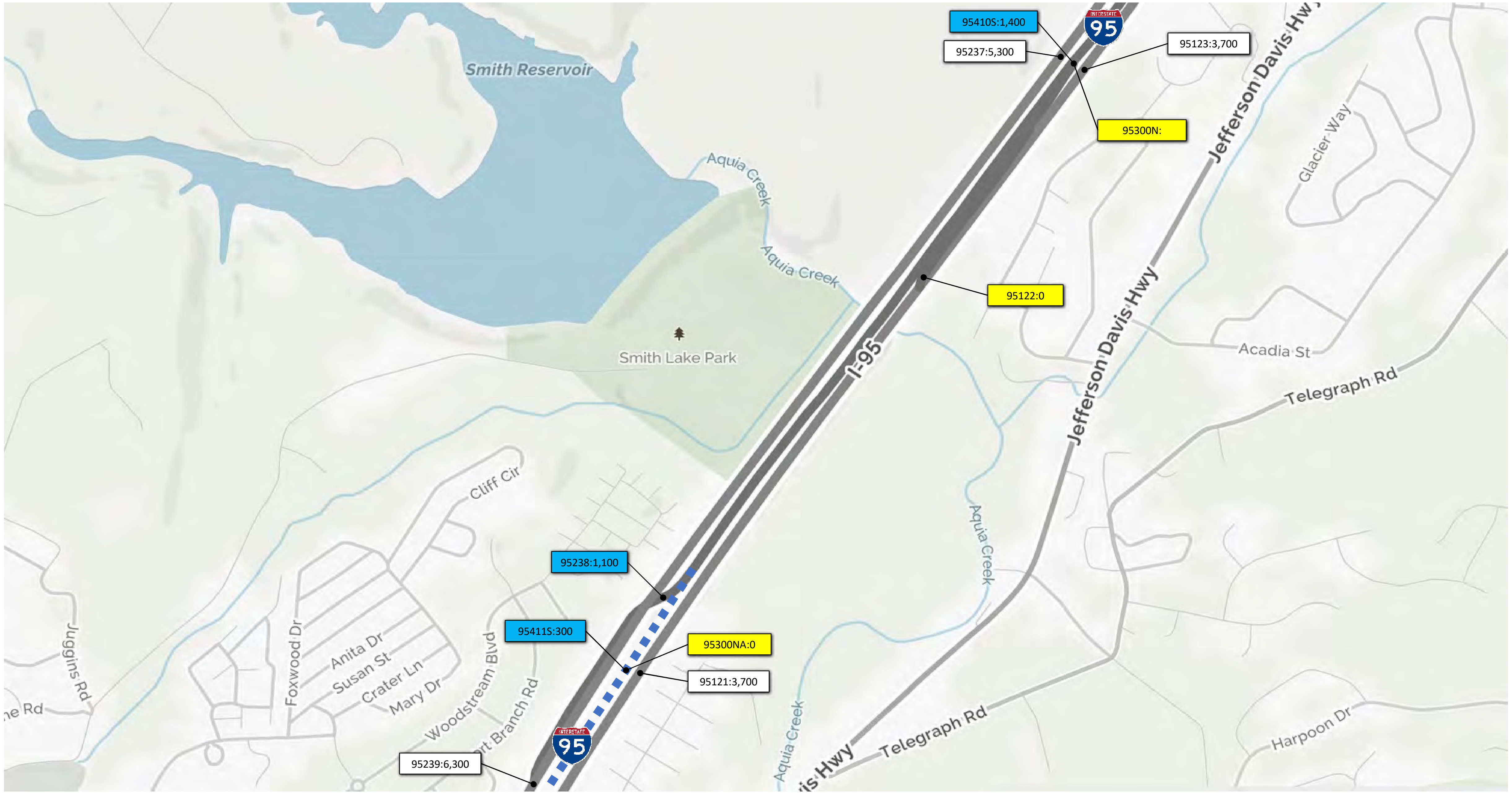
2022 No Build

Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

SOUTHERN START/END I-95 EXPRESS LANES

2022 No Build

Weekday 5 - 6 PM Volumes

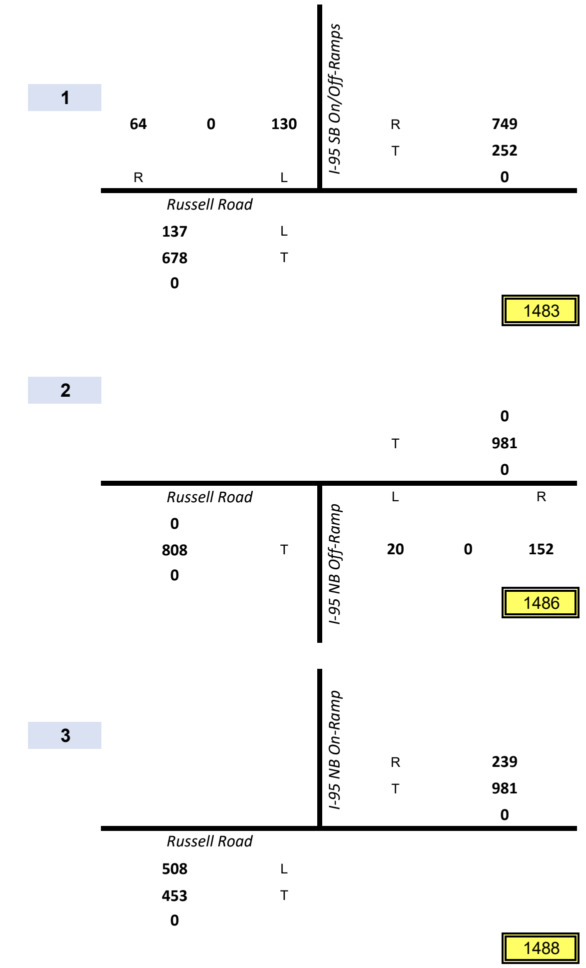
I-95 Corridor

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

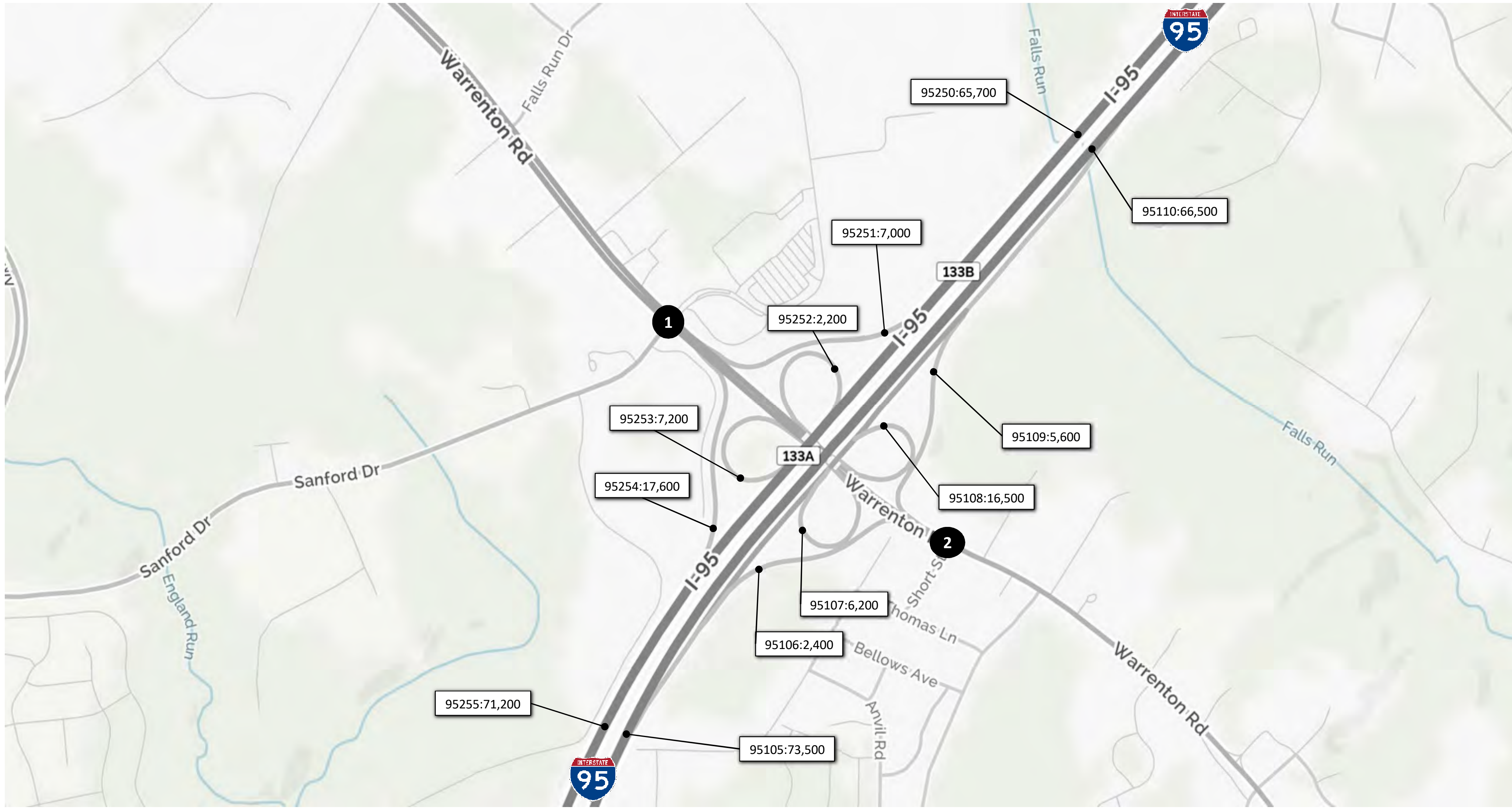
2022 No Build

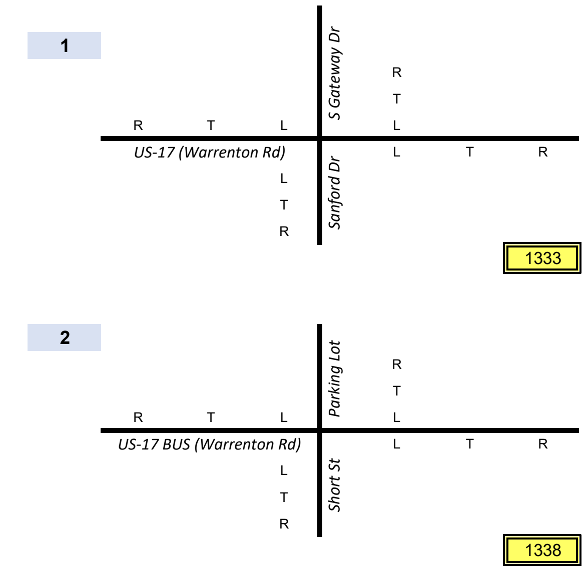
Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

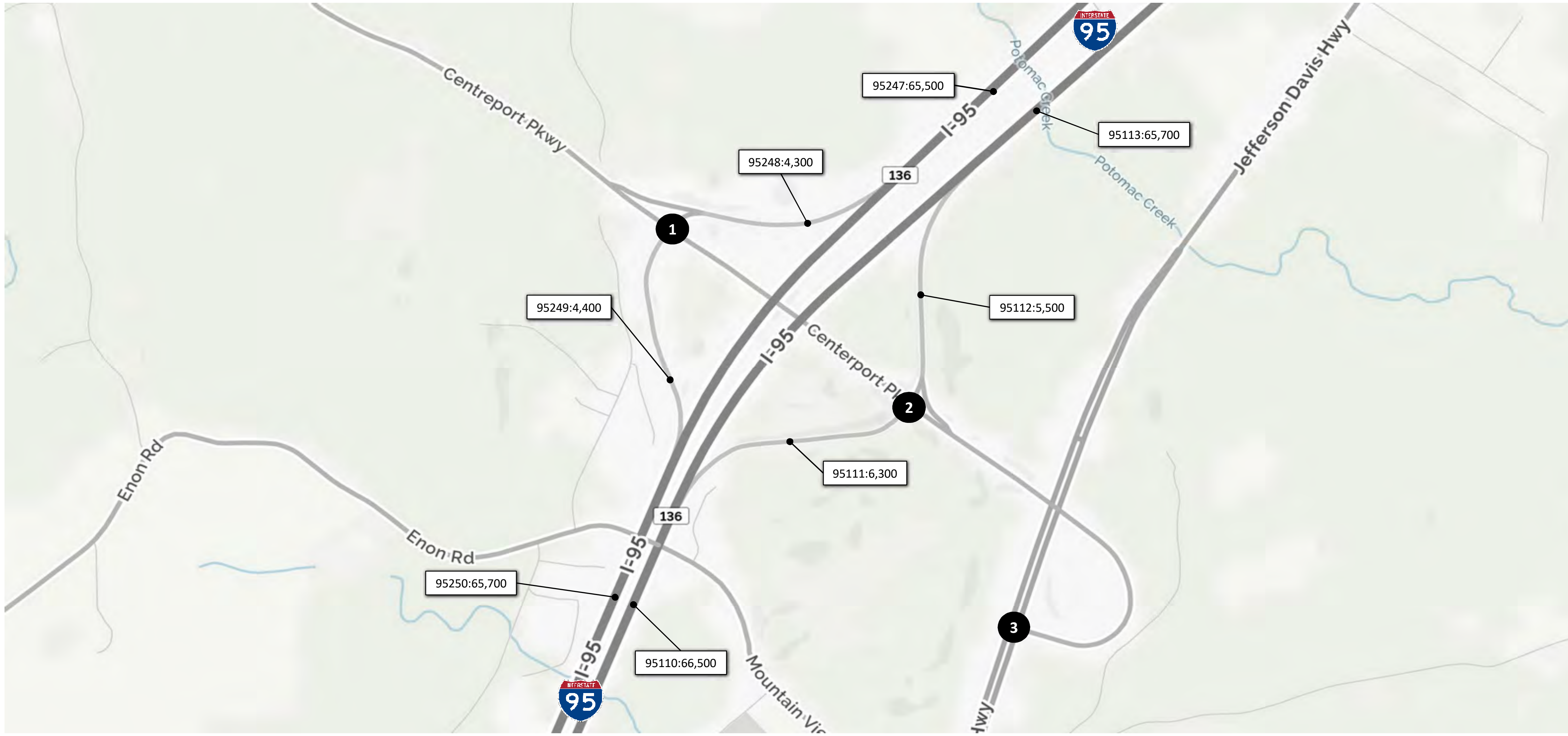
2022 No Build

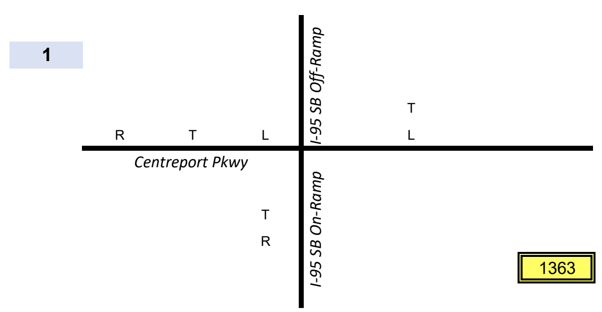
Weekday Daily Volumes

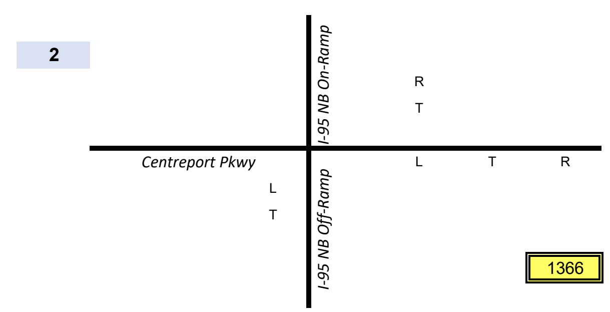
I-95 Corridor

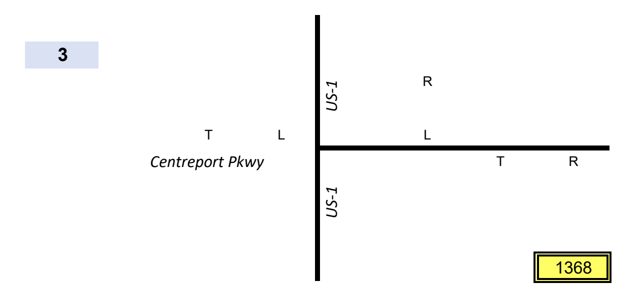
April 2017

Figure G.1-1









Legend

xx,xxx — Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

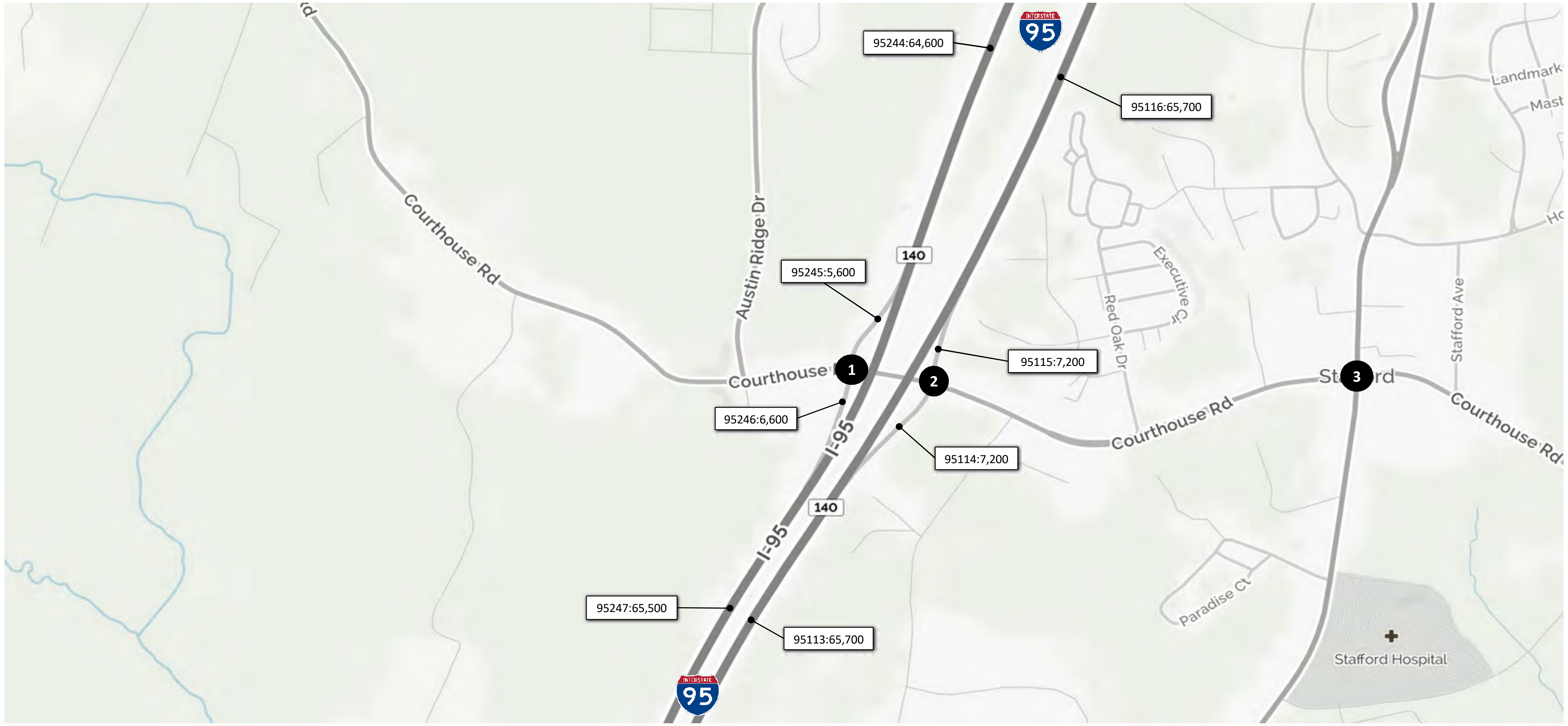
U.S. Department of Transportation Federal Highway Administration

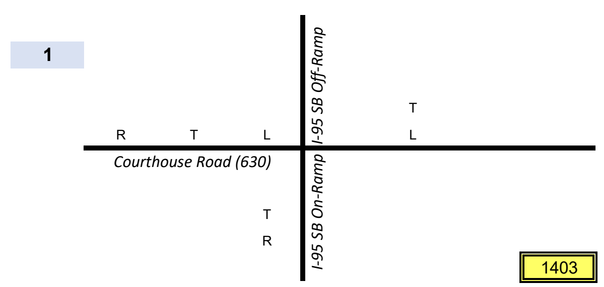
EXIT 136 - CENTREPORT PARKWAY

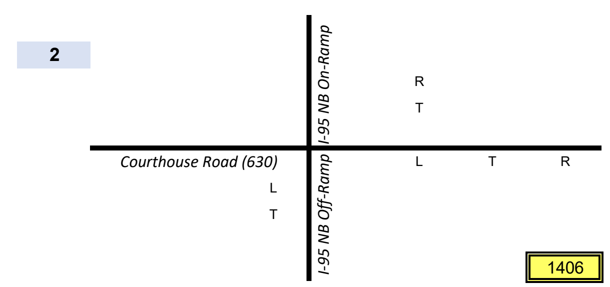
2022 No Build
Weekday Daily Volumes
I-95 Corridor

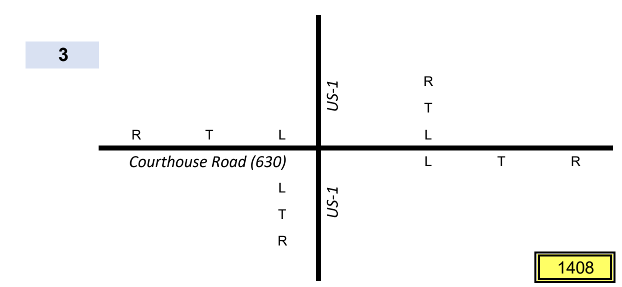
April 2017

Figure G.1-1









Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

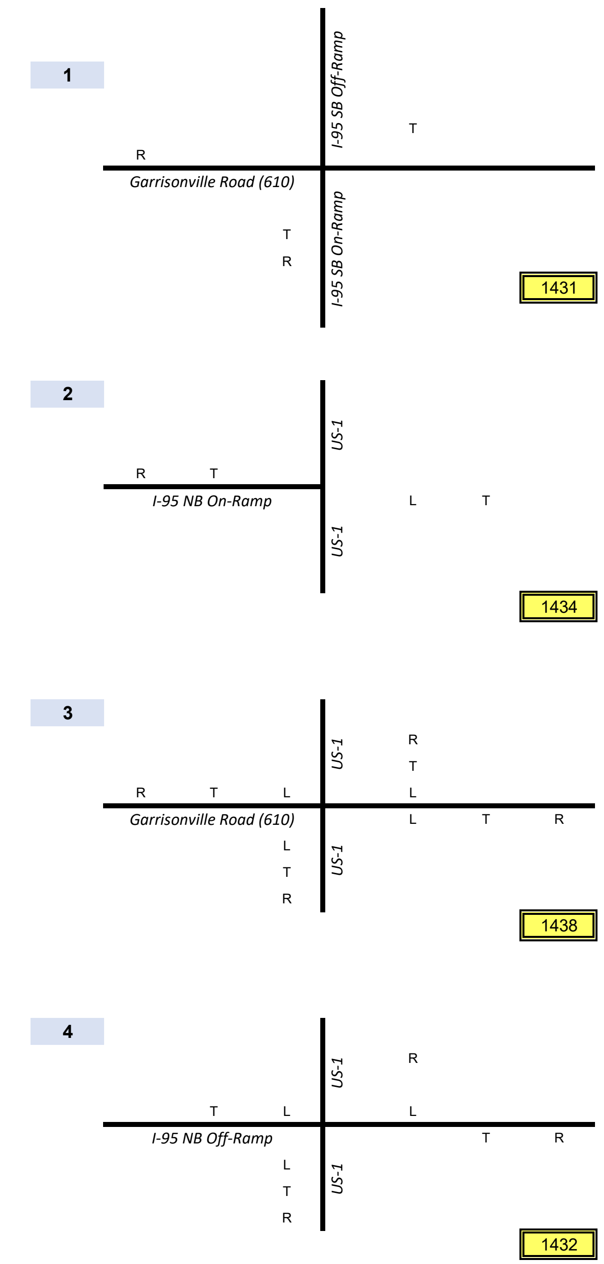
2022 No Build

Weekday Daily Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx	Weekday Daily Volume
■ ■ ■ ■ ■	Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

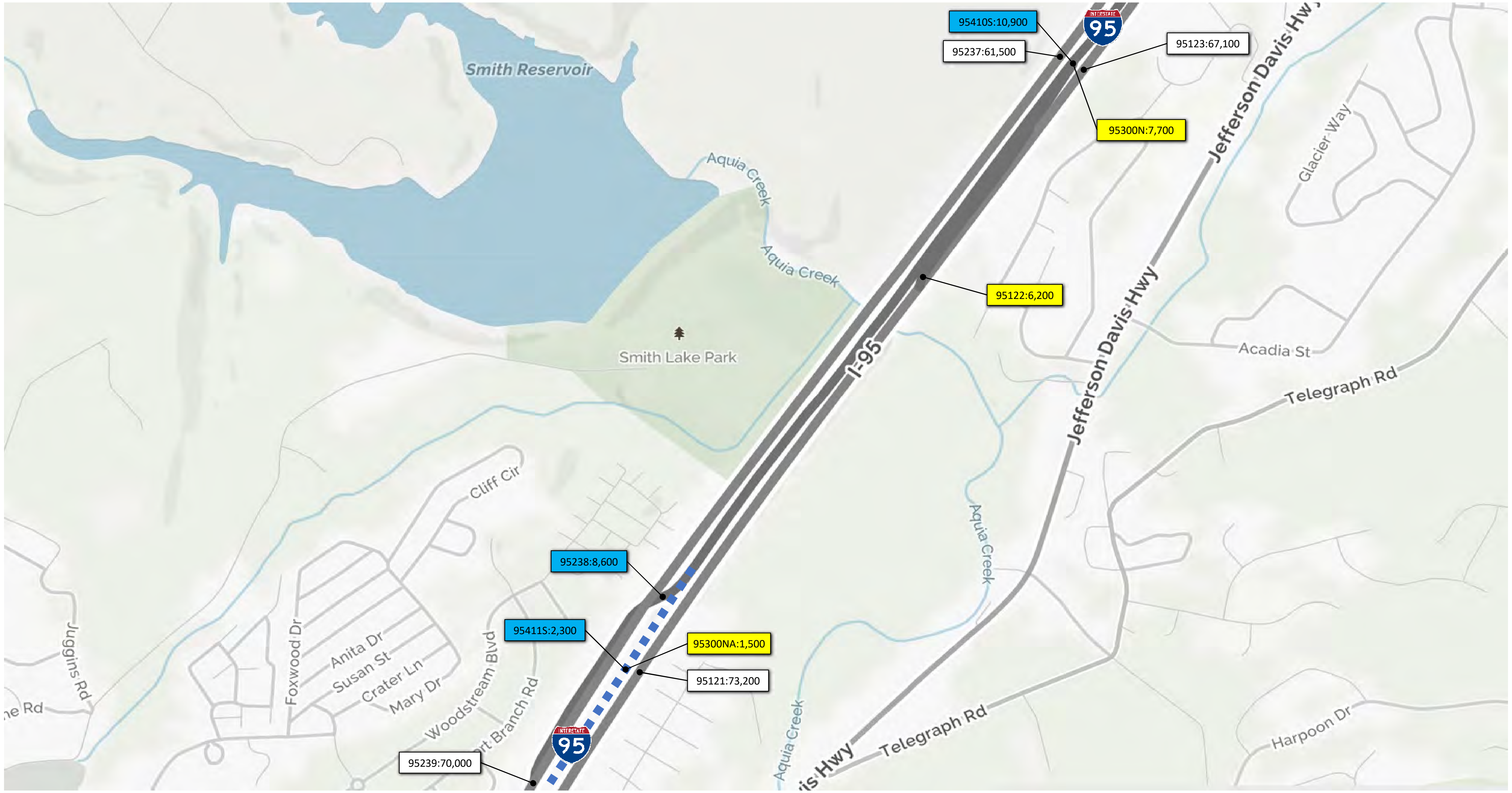
VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2022 No Build
Weekday Daily Volumes
I-95 Corridor

April 2017 | Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

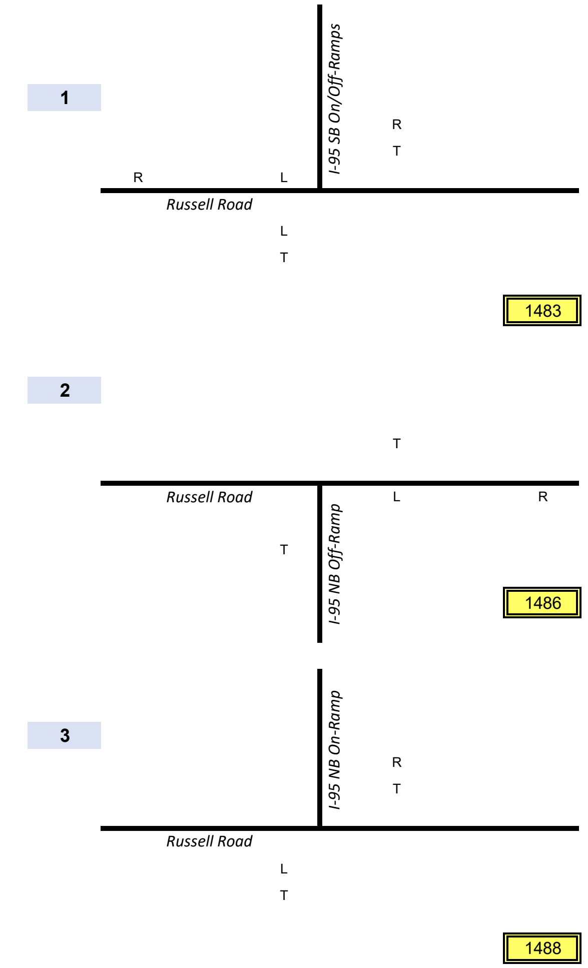
2022 No Build

Weekday Daily Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

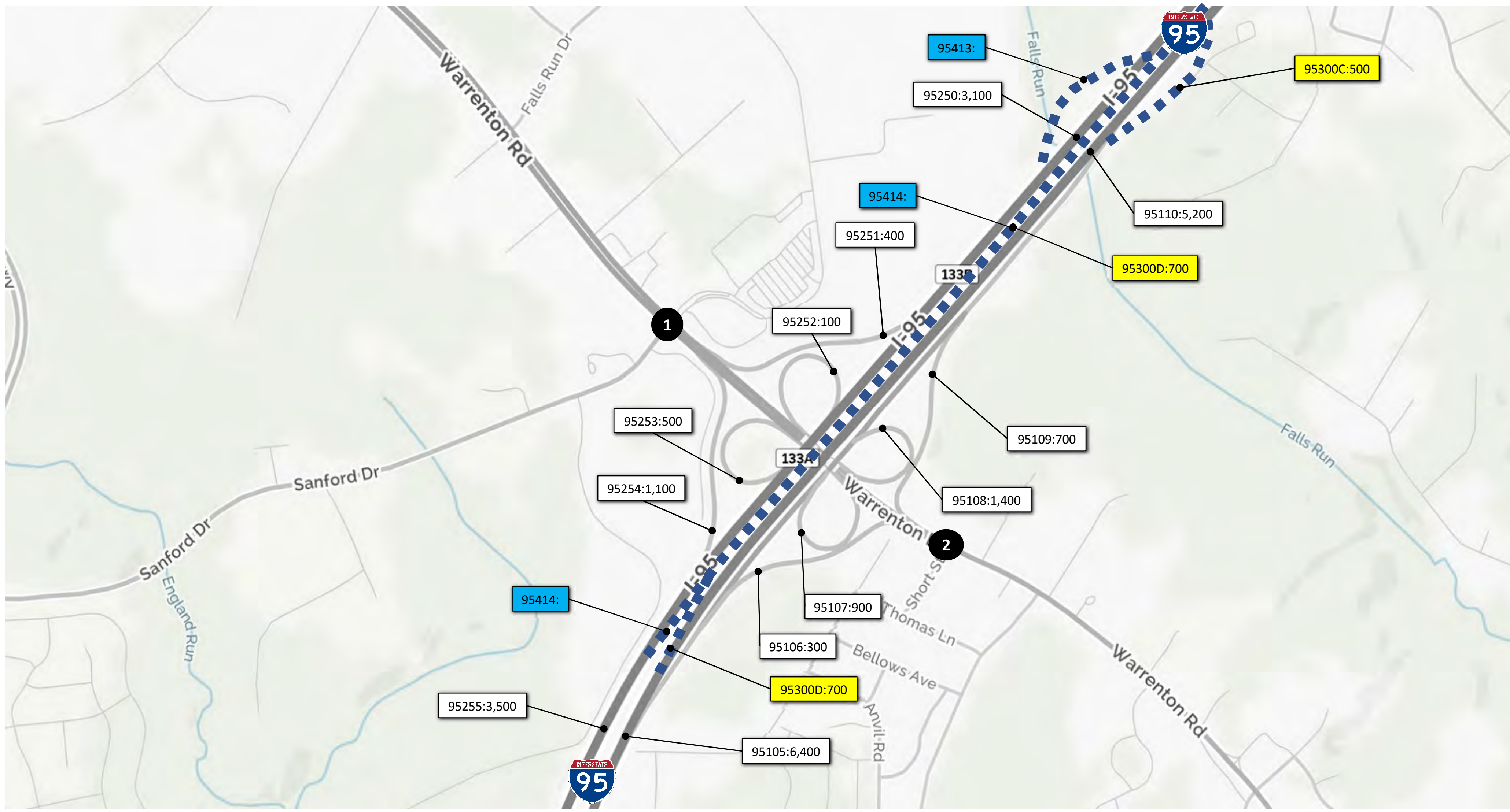
U.S. Department of Transportation Federal Highway Administration

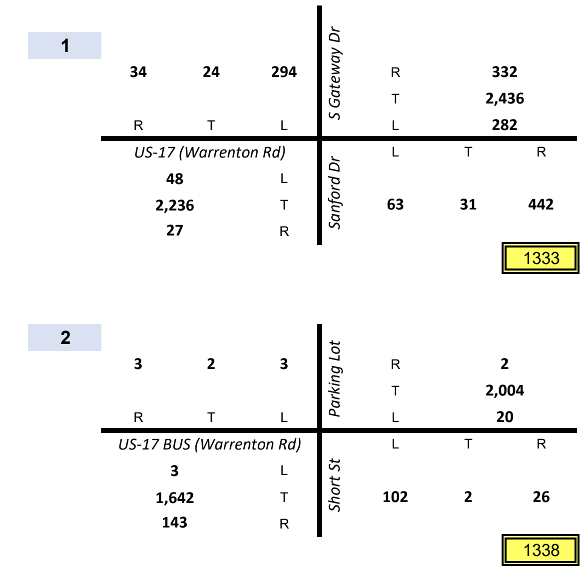
EXIT 148 - RUSSELL ROAD

2022 No Build
Weekday Daily Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

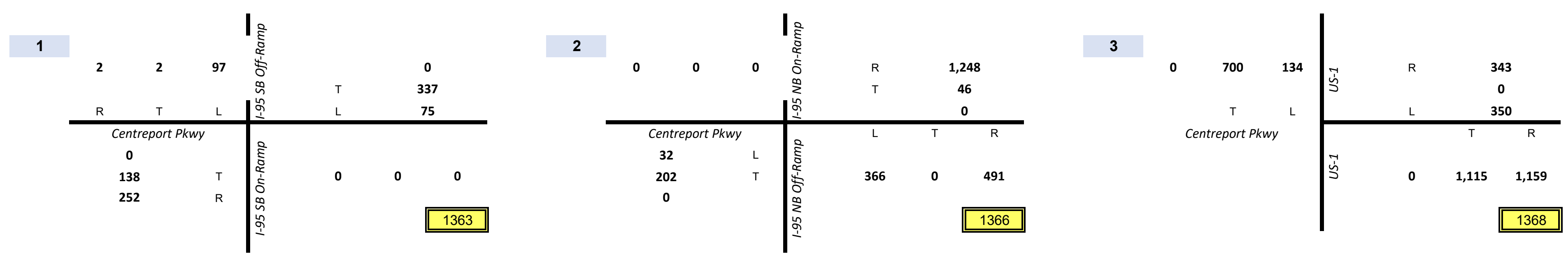
2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

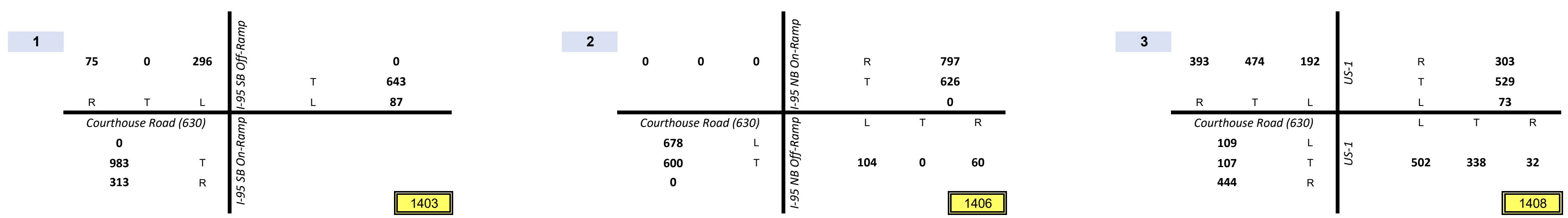
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

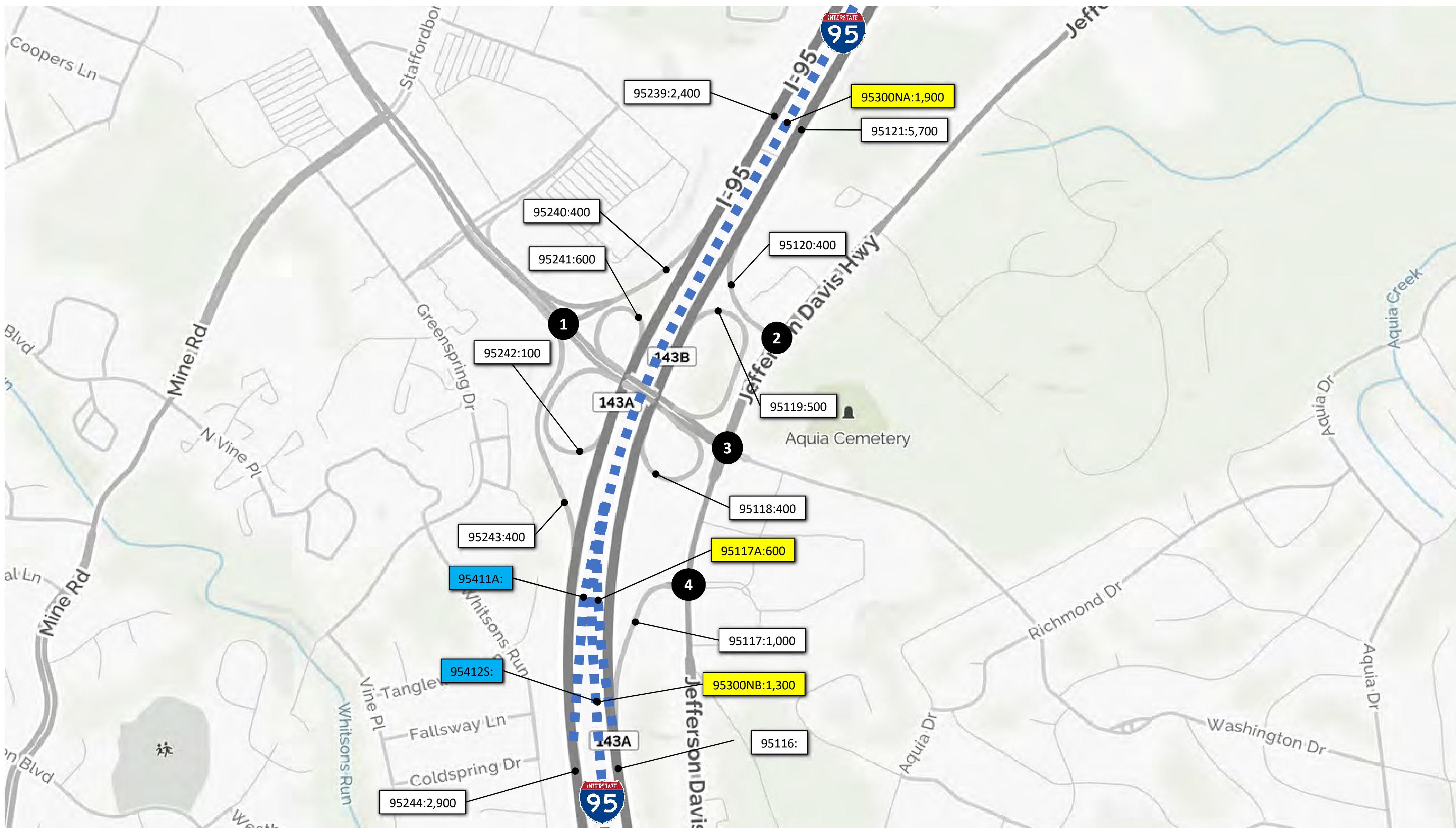
2042 No Build

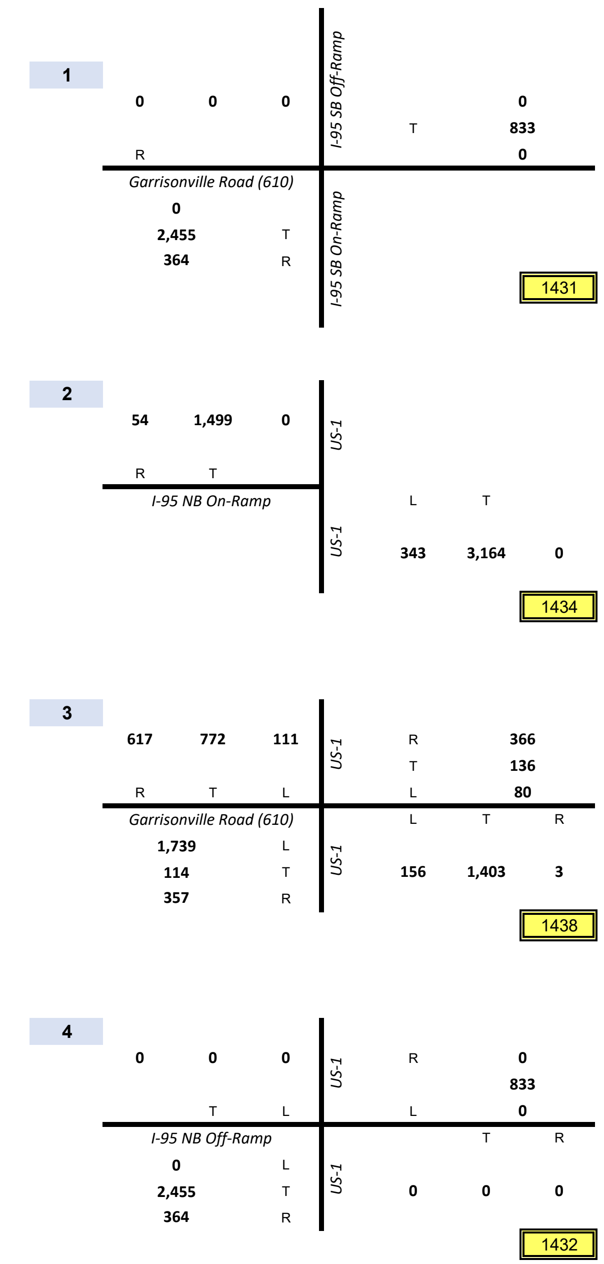
Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

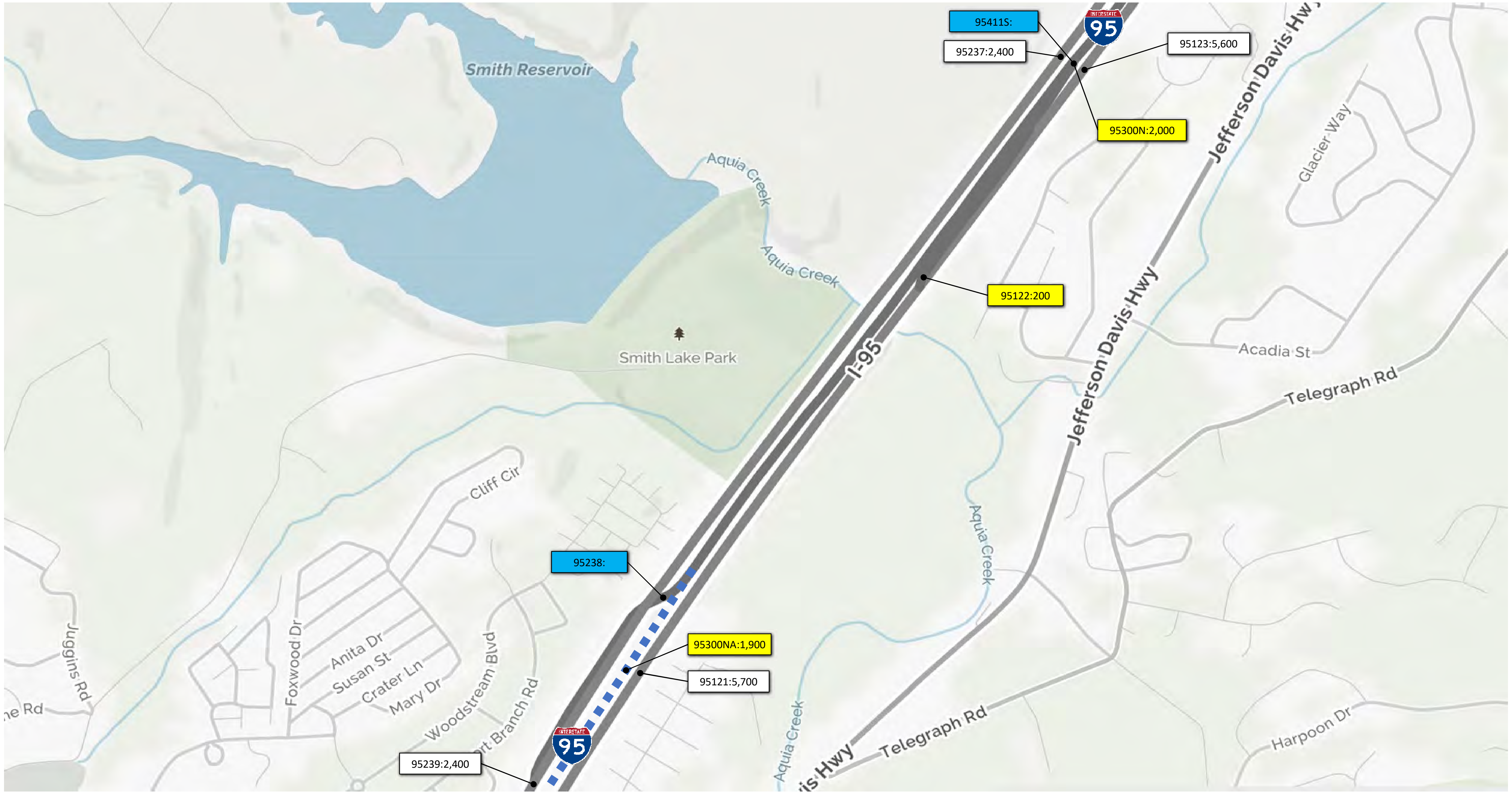
2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

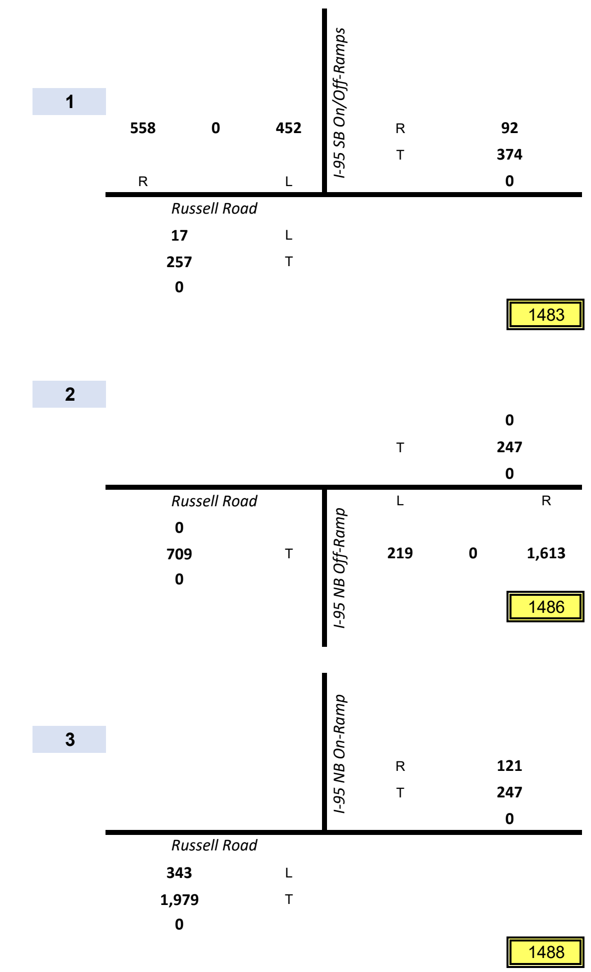
2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

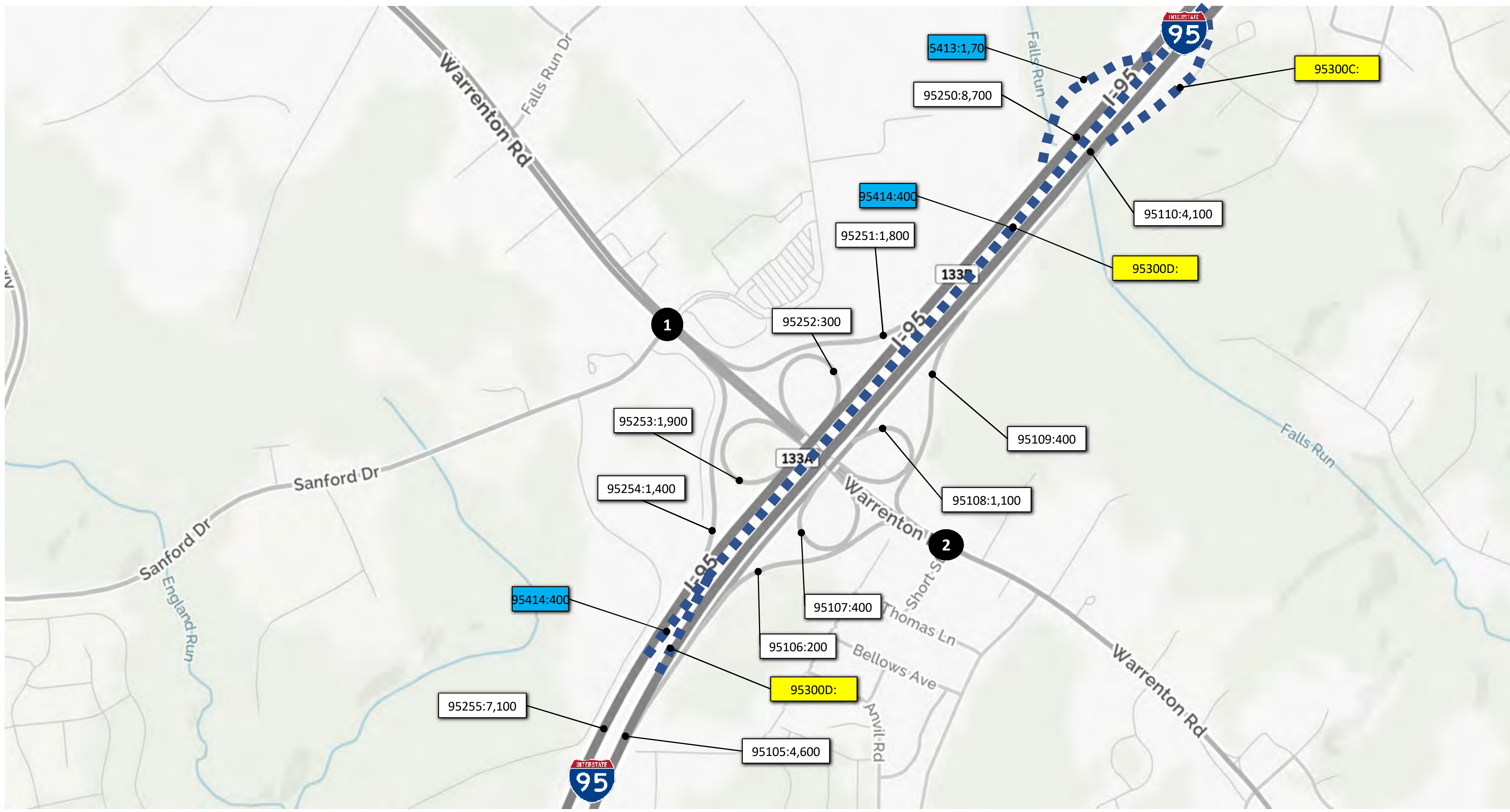
U.S. Department of Transportation Federal Highway Administration

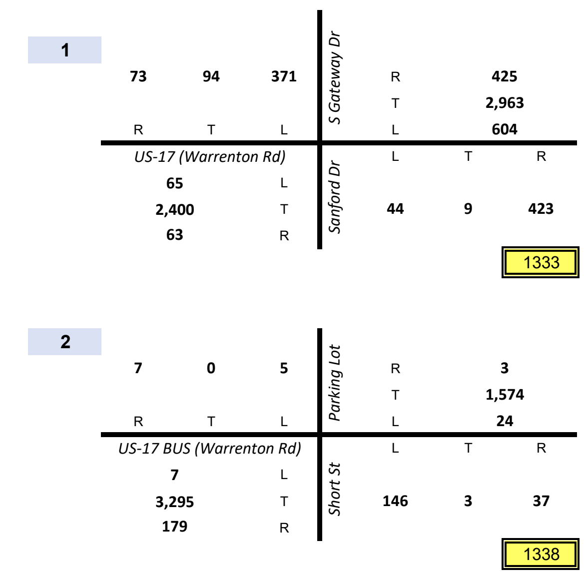
EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

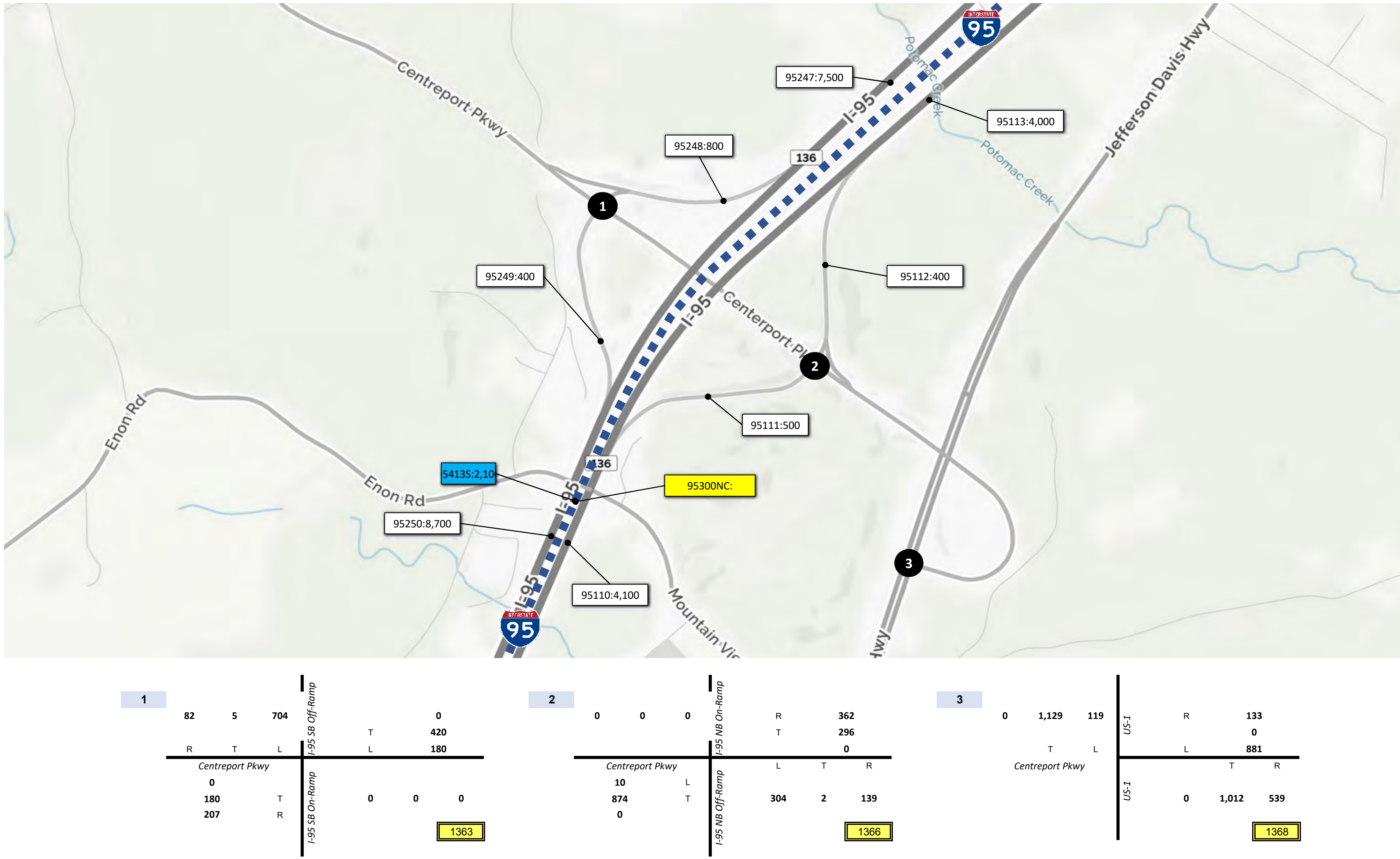
2042 Build

Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

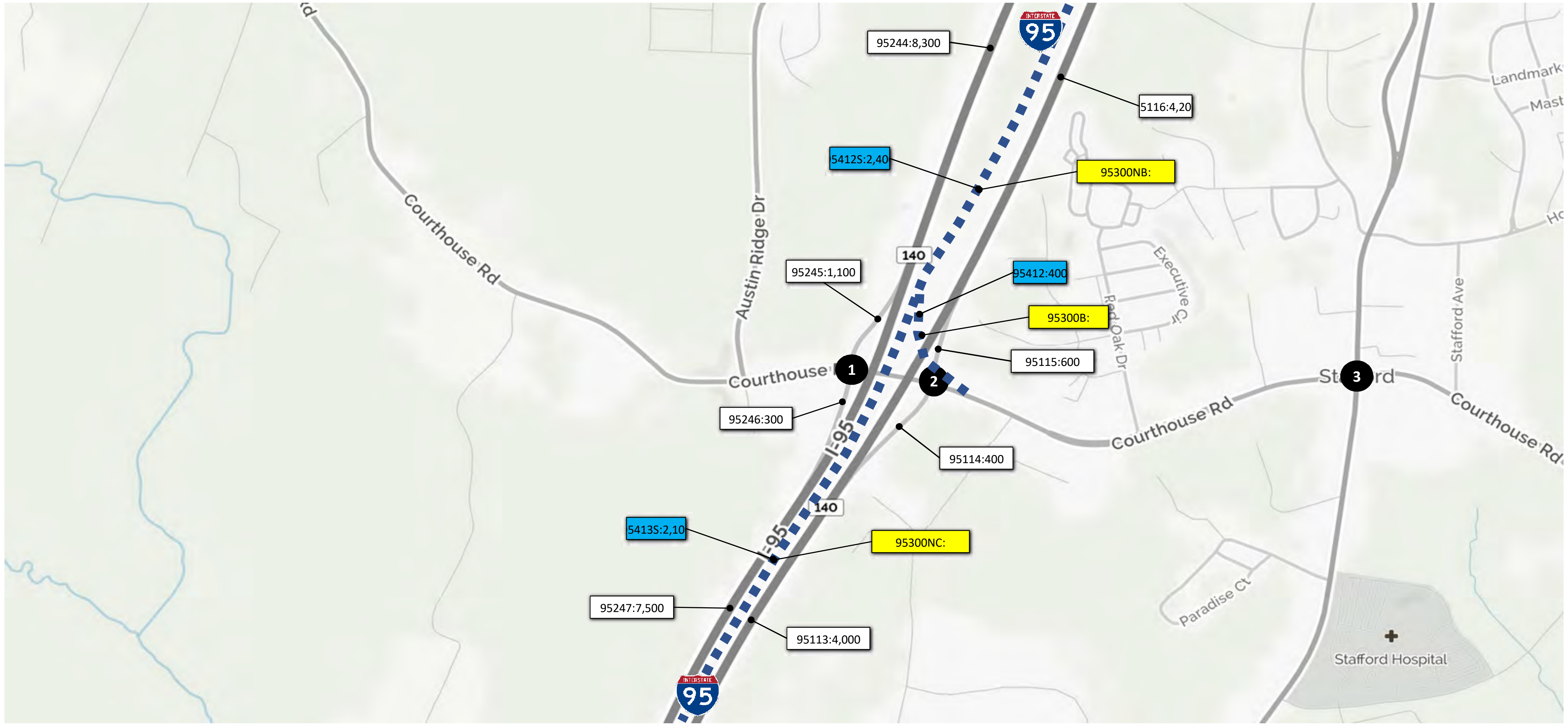
2042 Build

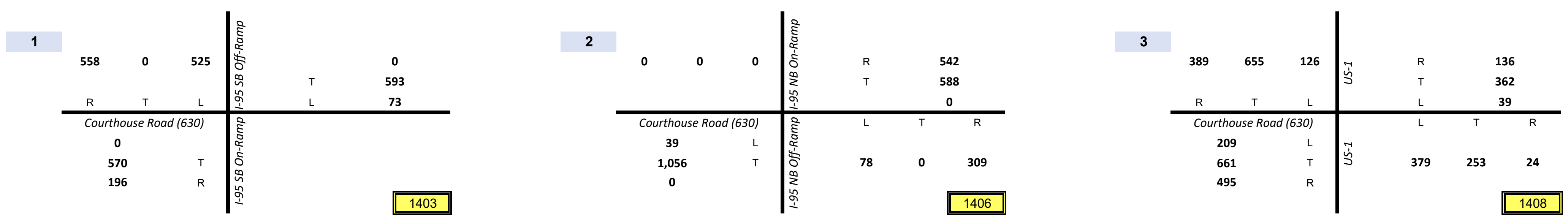
Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

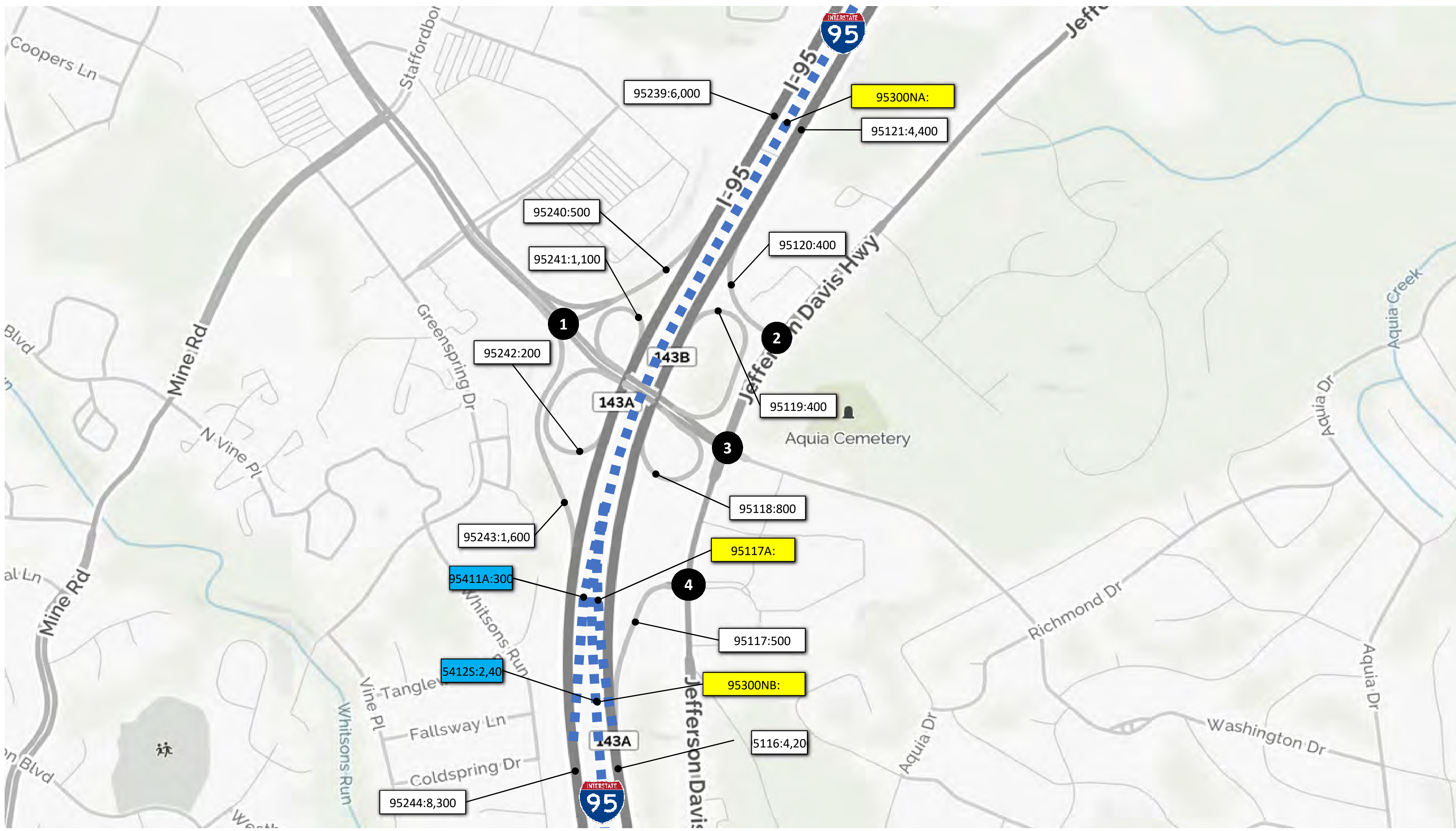
2042 Build

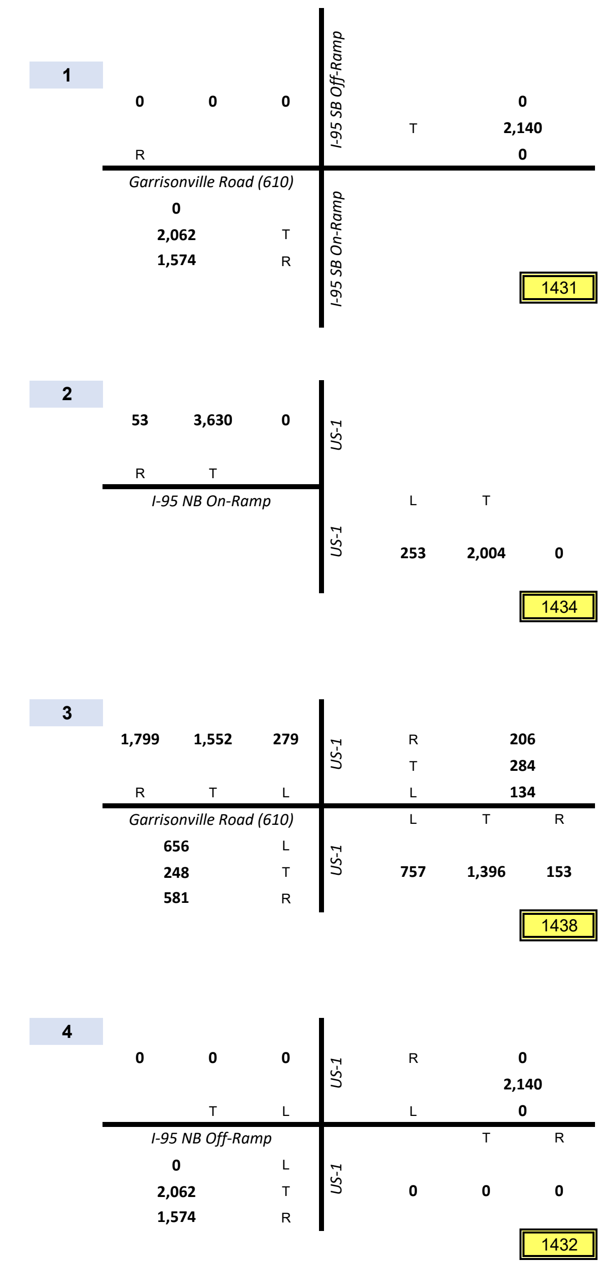
Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx — Weekday Hourly Volume

■ ■ ■ ■ ■ — Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

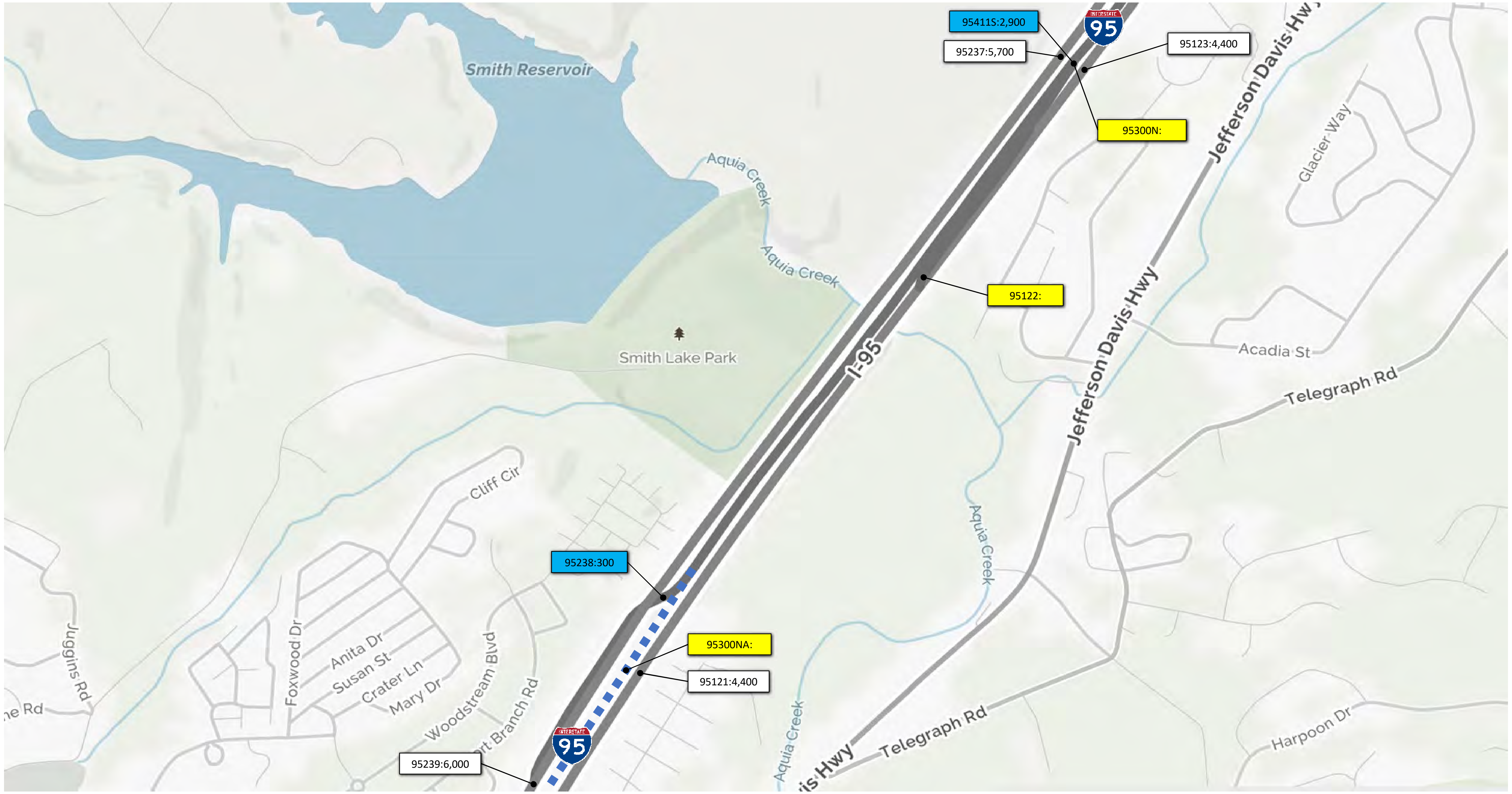
2042 Build

Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx — Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

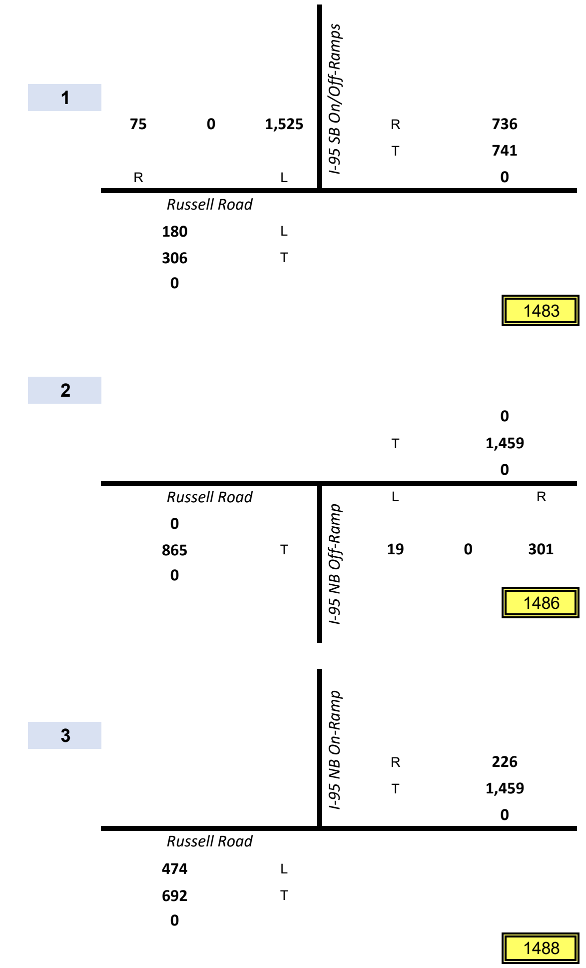
SOUTHERN START/END I-95 EXPRESS LANES

2042 Build

Weekday 5-6 PM Volumes

I-95 Corridor

May 2017	Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

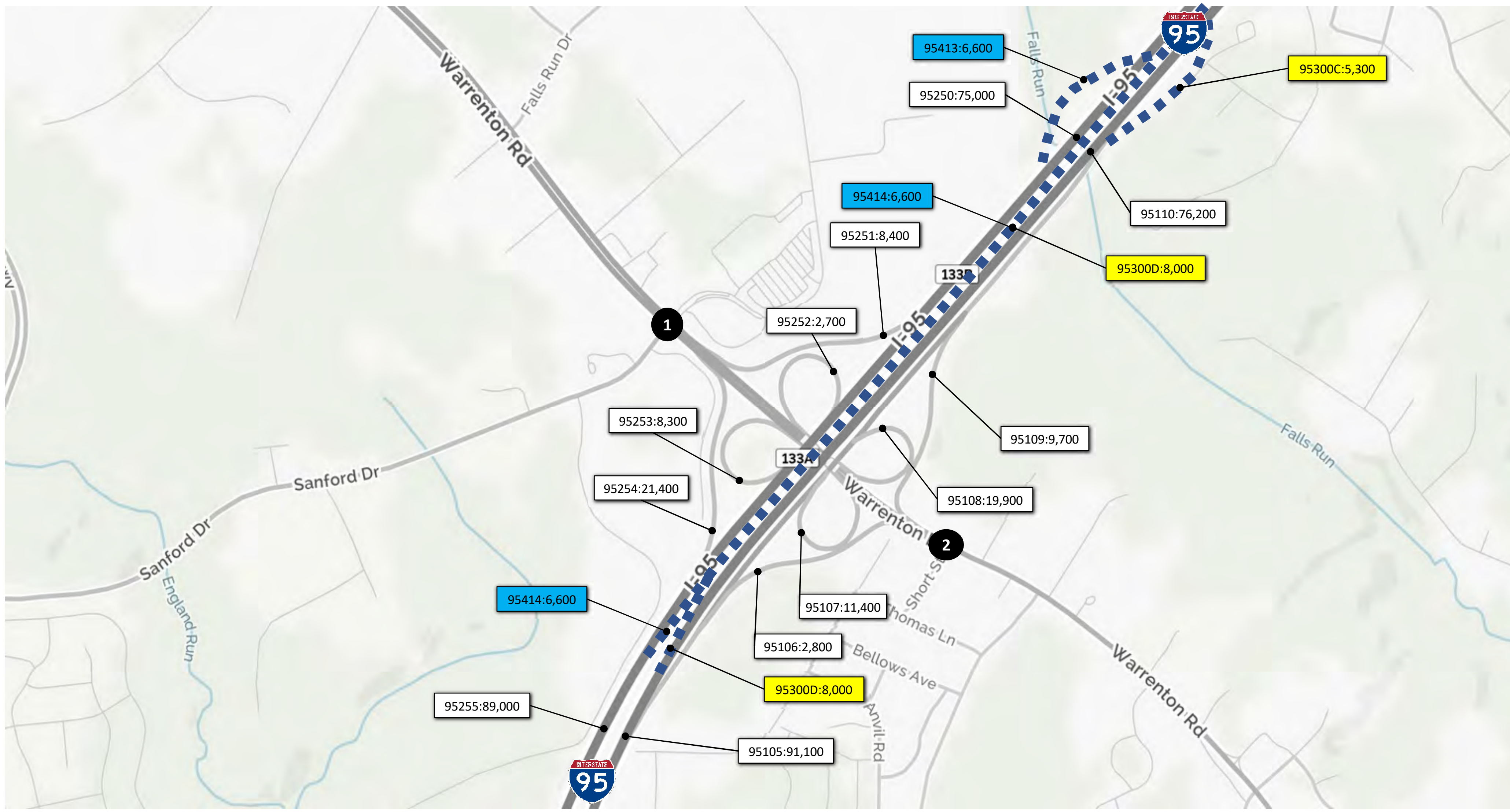
2042 Build

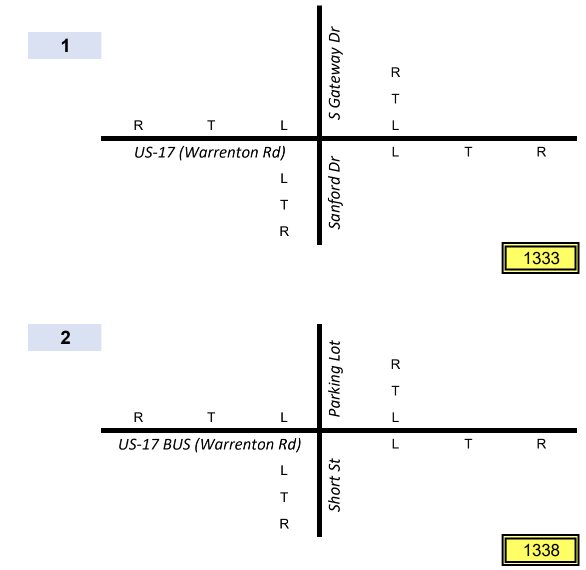
Weekday 5-6 PM Volumes

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

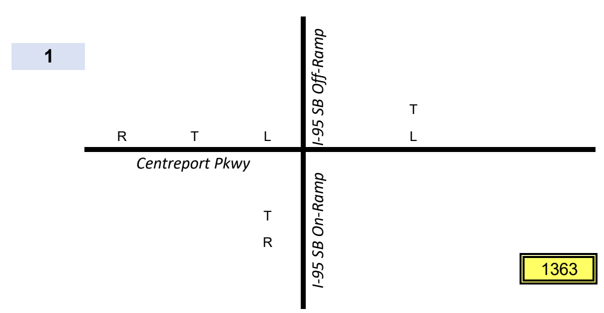
2042 No Build

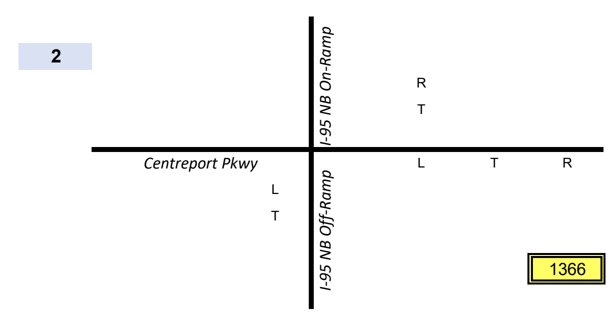
Weekday Daily Volumes

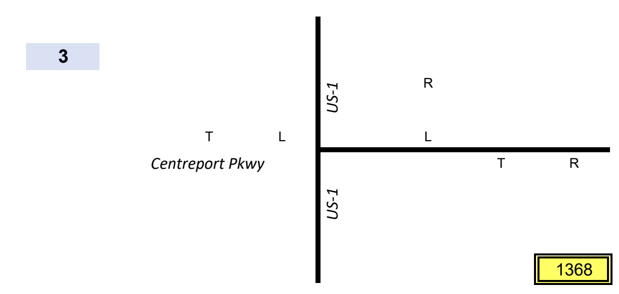
I-95 Corridor

February 2017

Figure G.1-1







Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

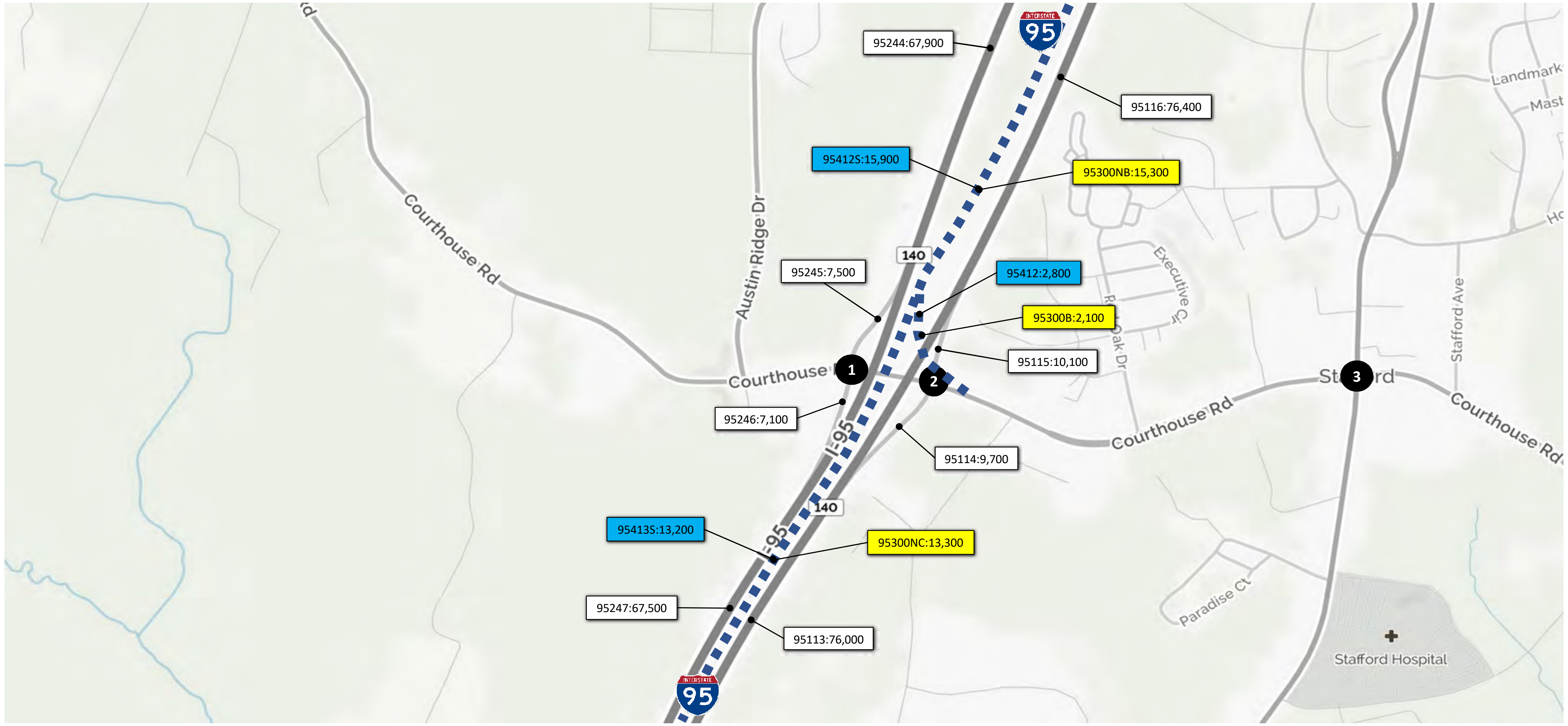
U.S. Department of Transportation Federal Highway Administration

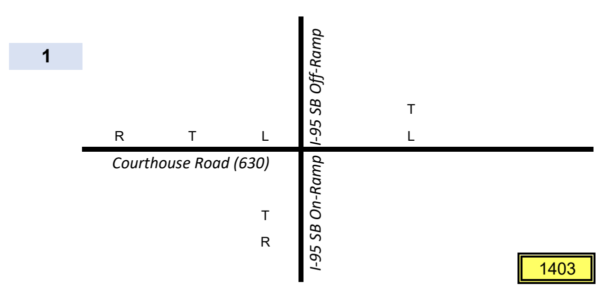
EXIT 136 - CENTREPORT PARKWAY

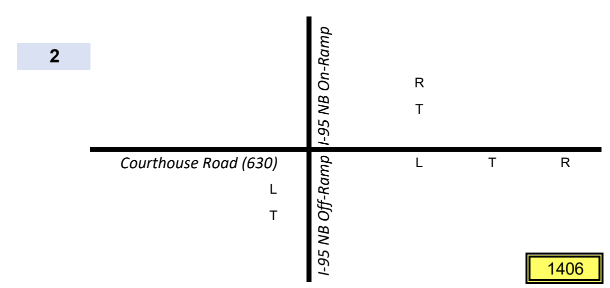
2042 No Build
Weekday Daily Volumes
I-95 Corridor

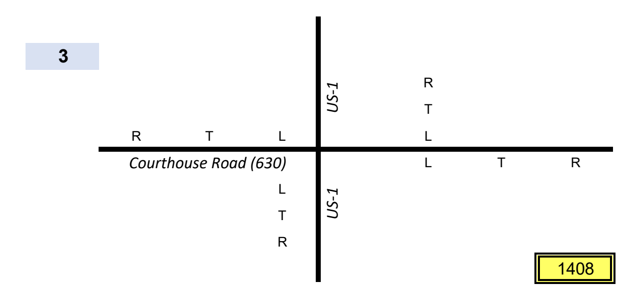
February 2017

Figure G.1-1









Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

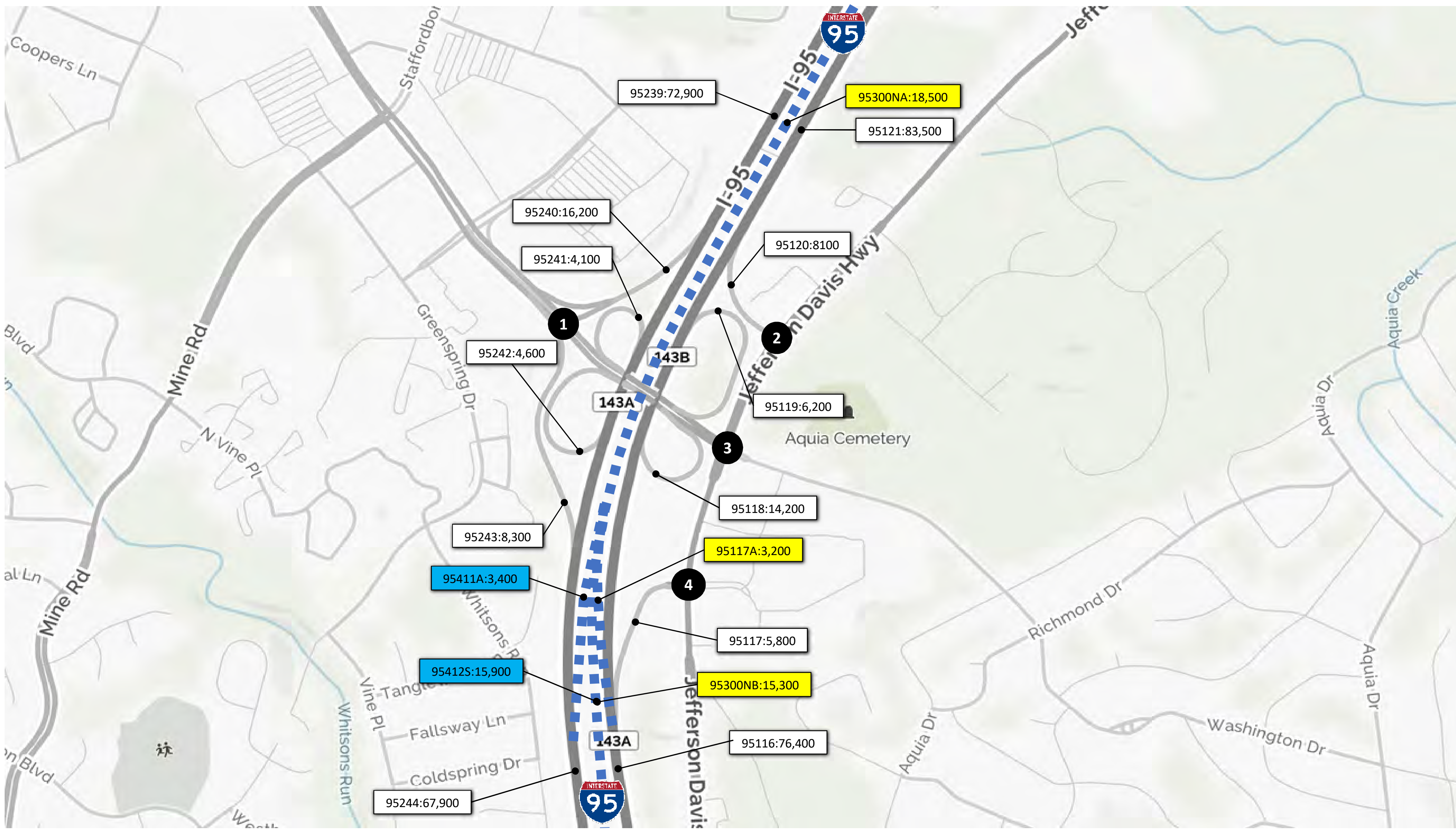
2042 No Build

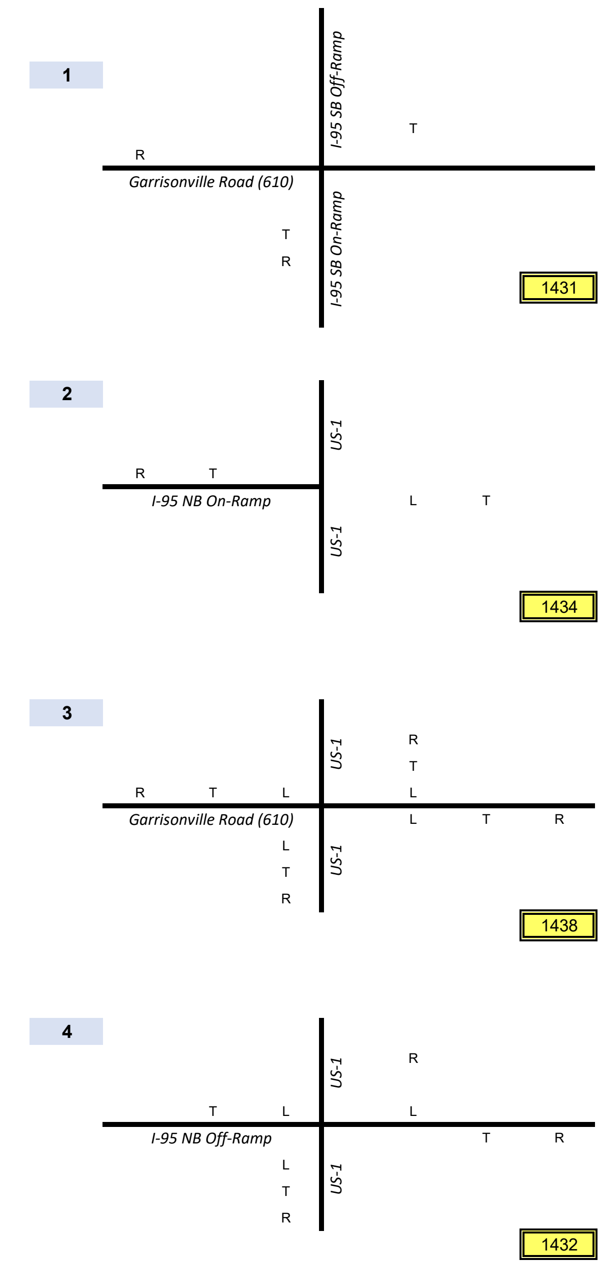
Weekday Daily Volumes

I-95 Corridor

February 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

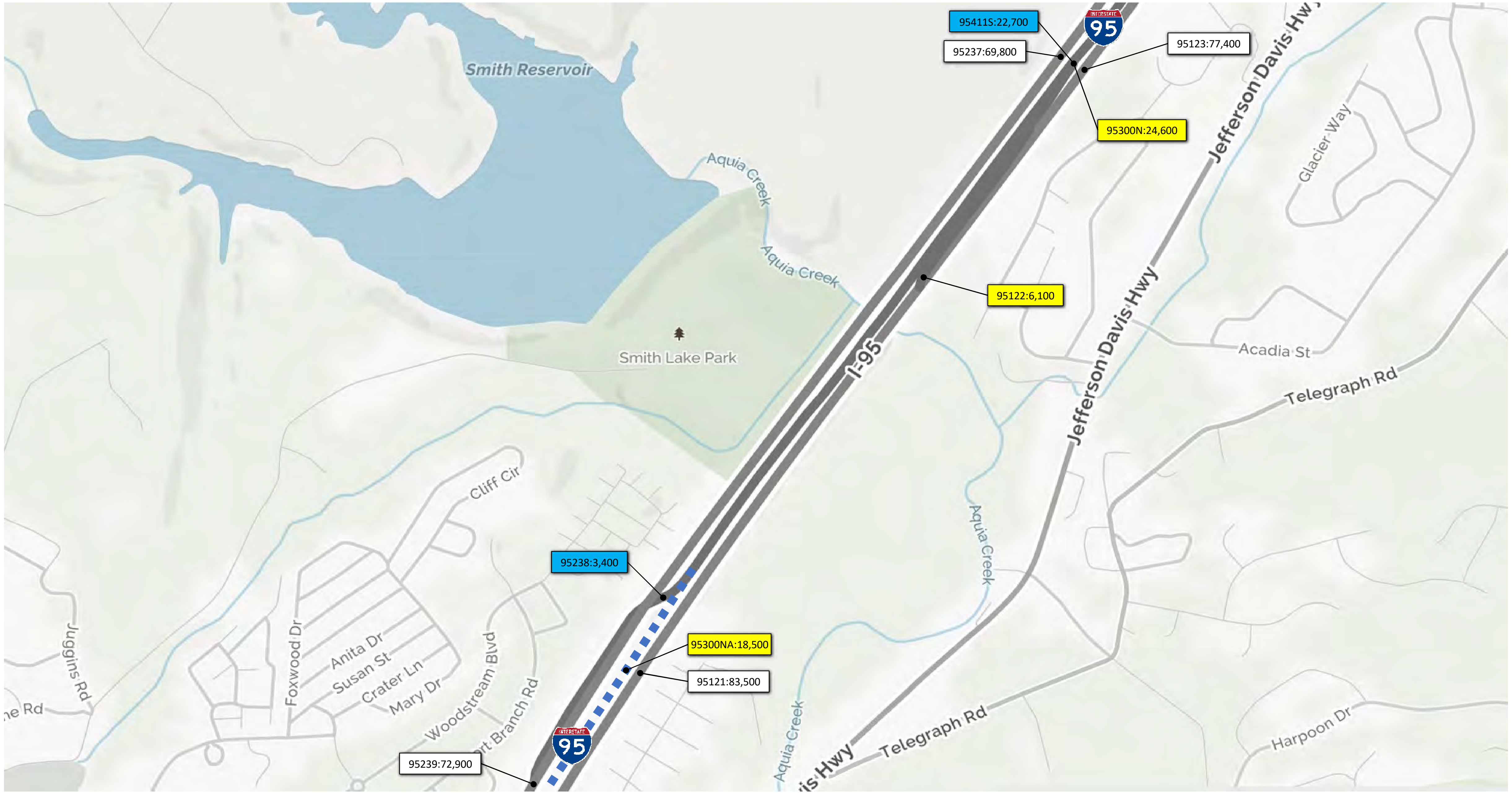
U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2042 No Build Weekday Daily Volumes I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

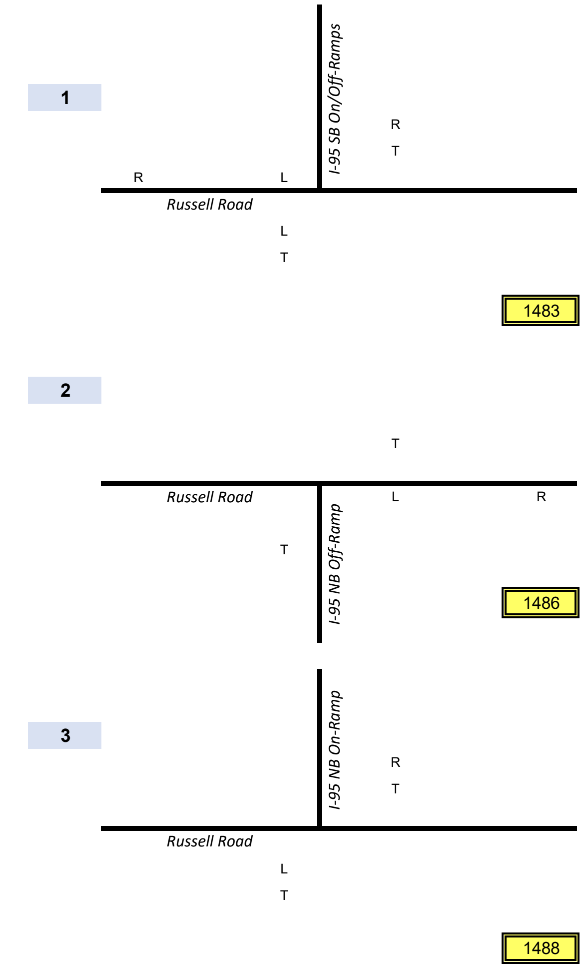
2042 No Build

Weekday Daily Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

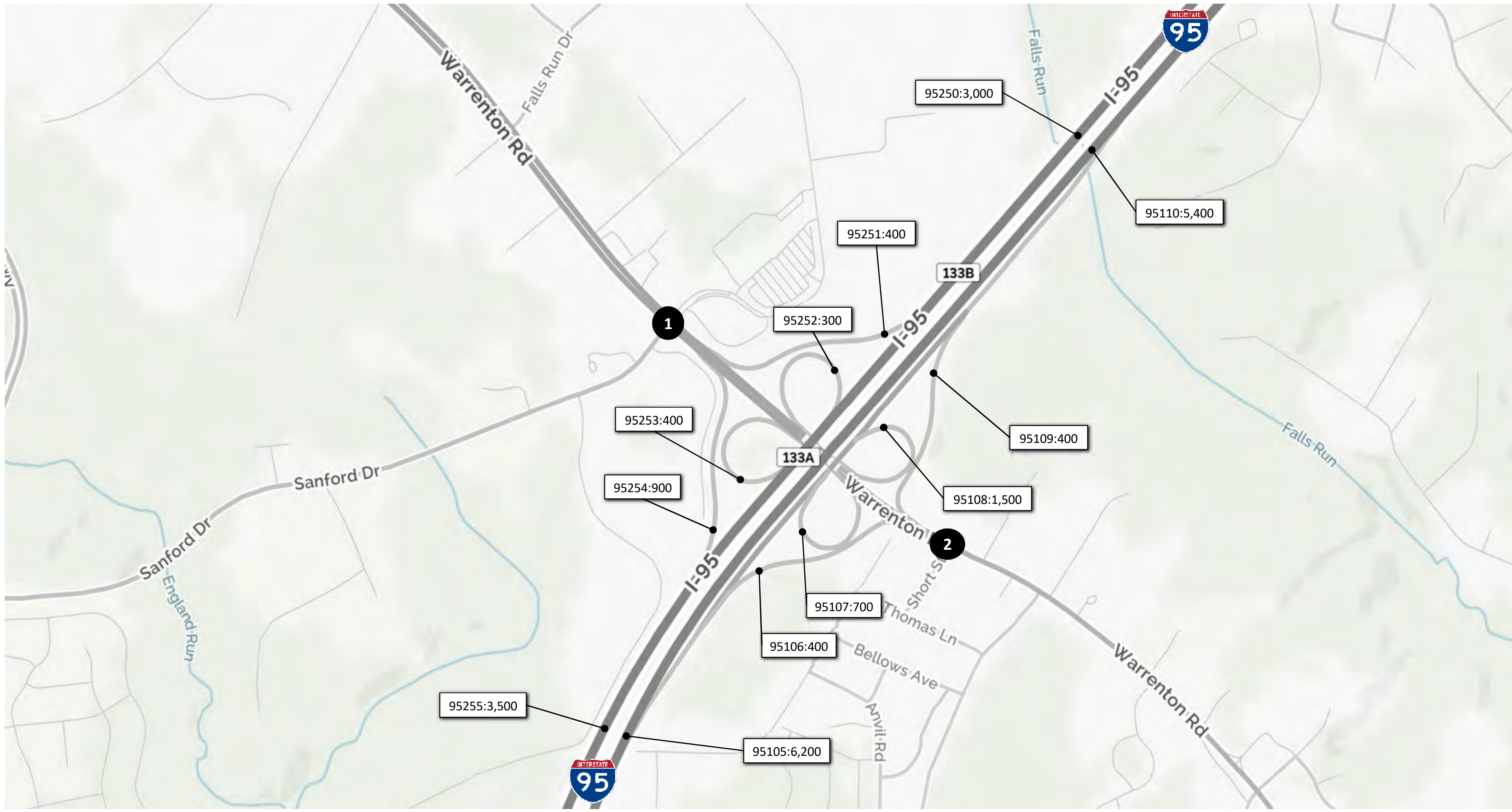
U.S. Department of Transportation Federal Highway Administration

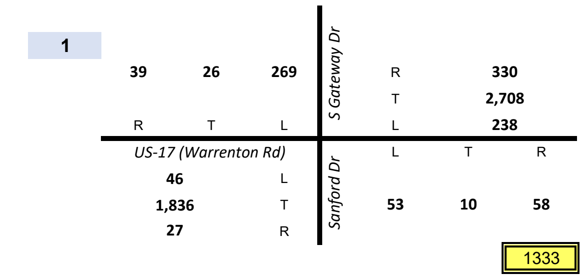
EXIT 148 - RUSSELL ROAD

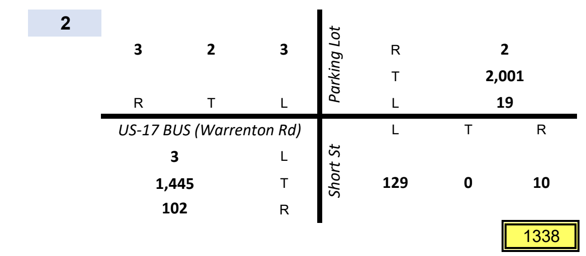
2042 No Build
Weekday Daily Volumes
I-95 Corridor

February 2017

Figure G.1-1







Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT
Virginia Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

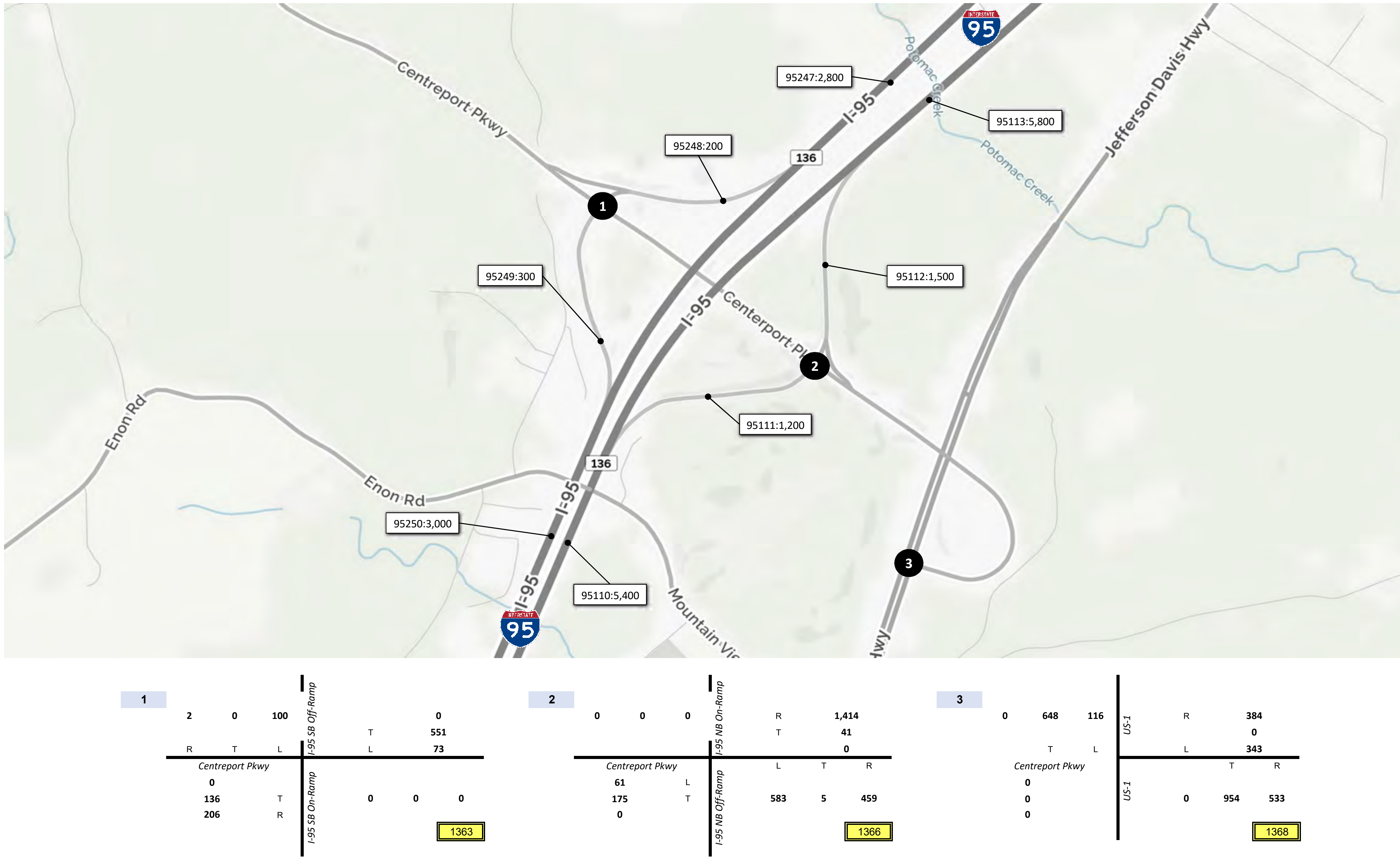
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

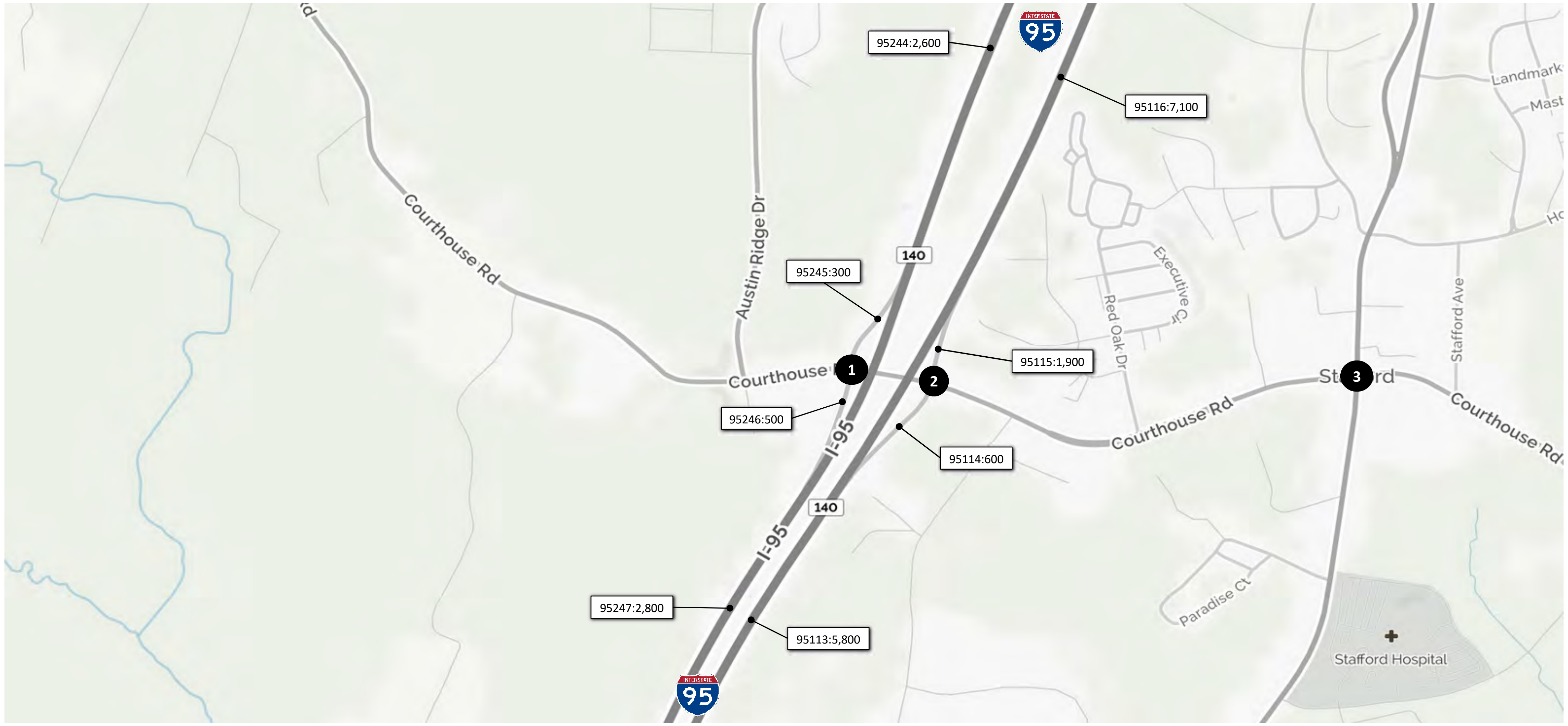
2042 No Build

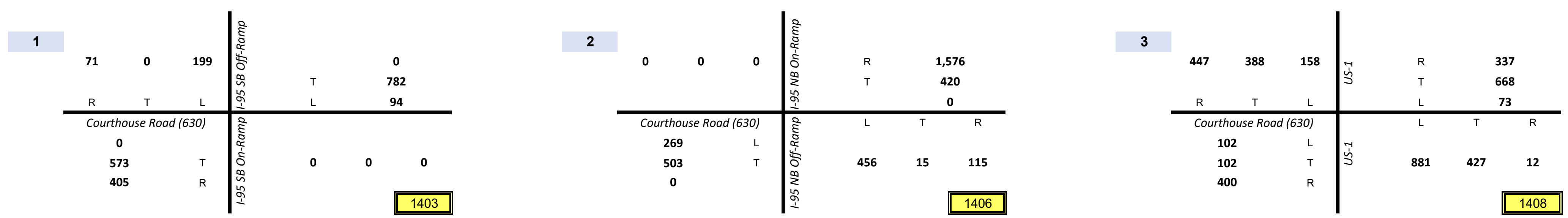
Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

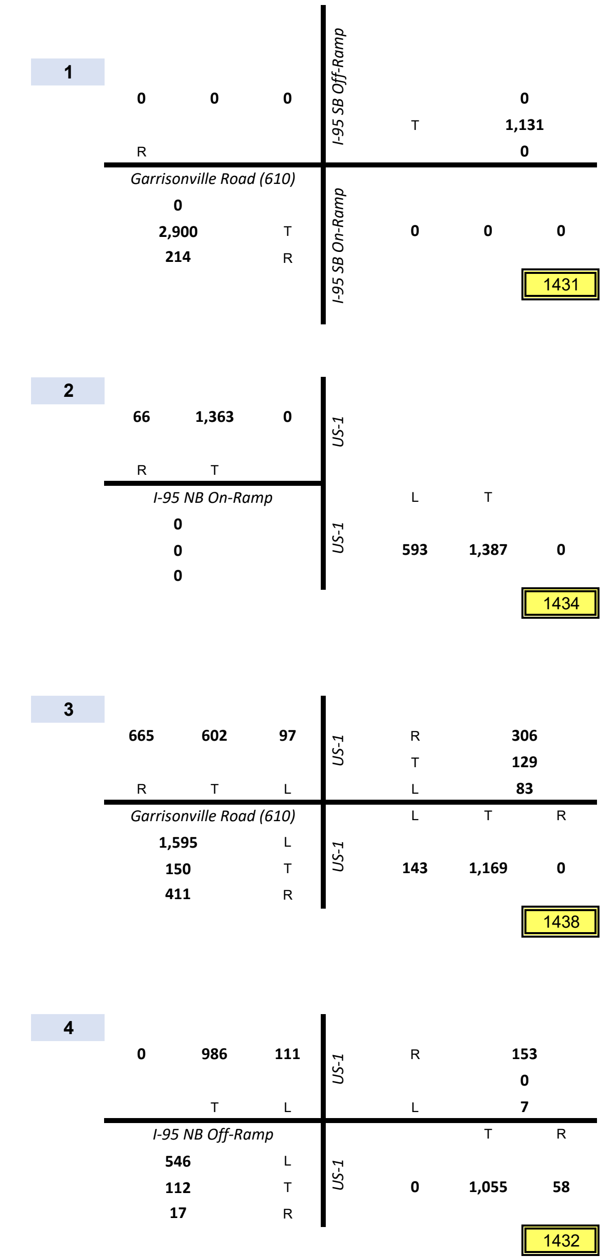
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017 | Figure G.1-1

Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

SOUTHERN START/END I-
95 EXPRESS LANES

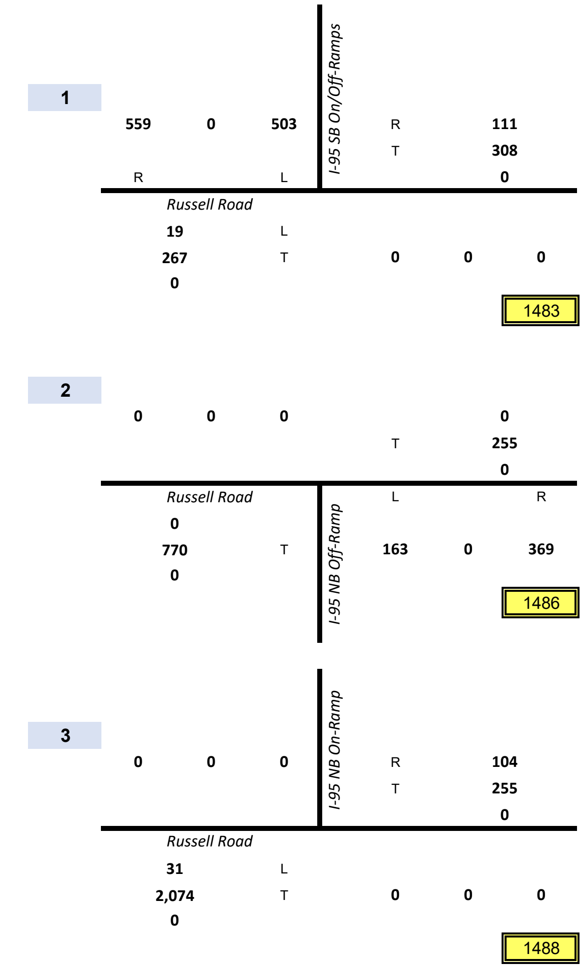
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

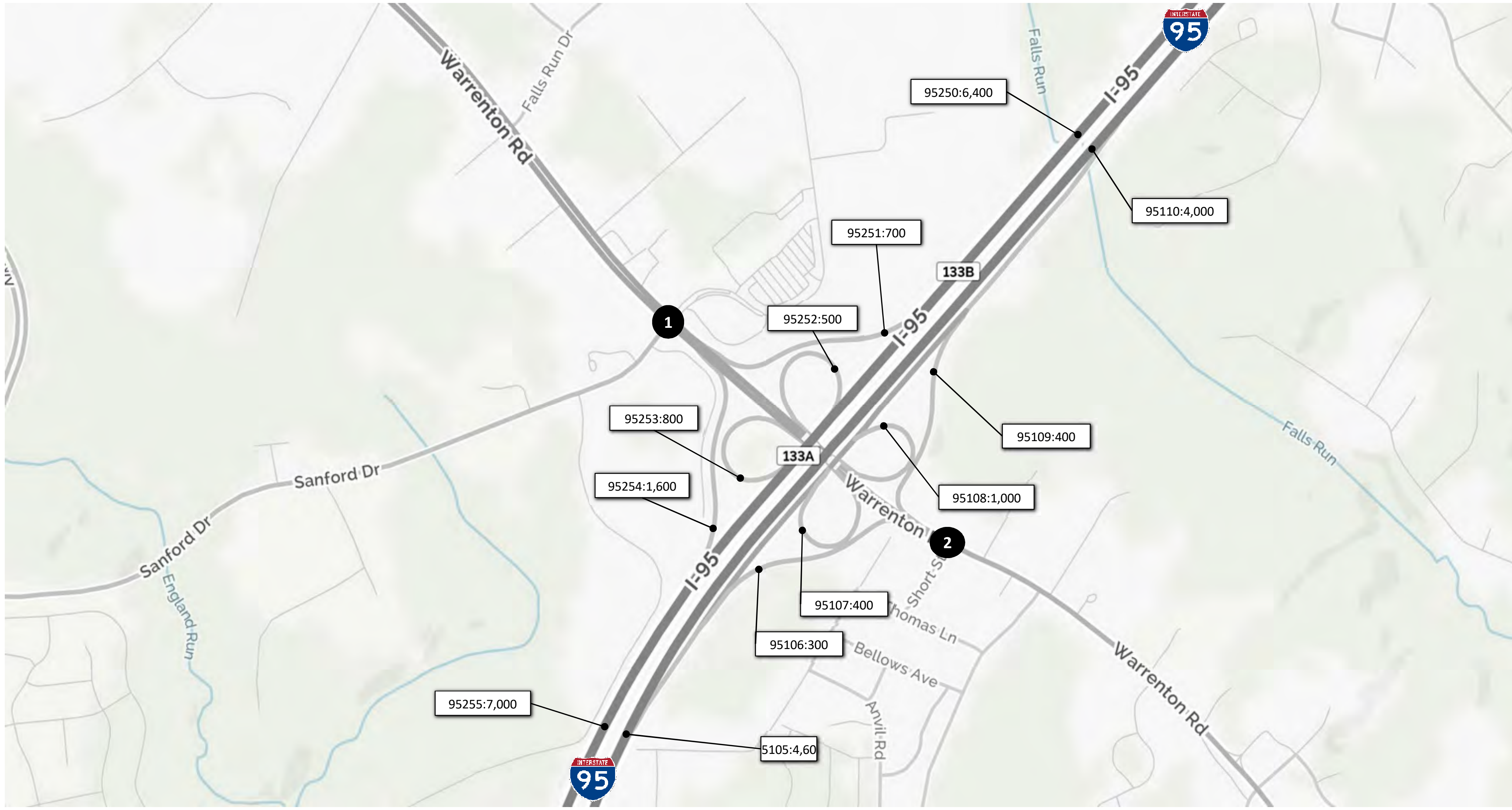
VDOT
Virginia Department of Transportation

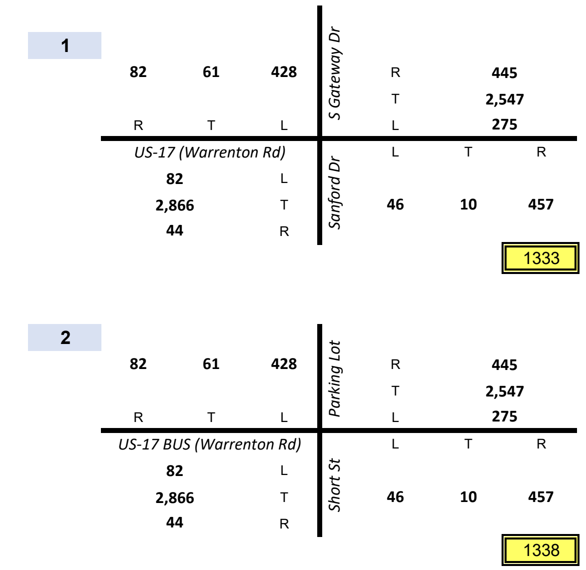
U.S. Department of Transportation
Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 7- 8 AM Volumes
I-95 Corridor

April 2017 | Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

2042 No Build

Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1

1

I-95 SB Off-Ramp

207	3	751
R	T	L

0	
437	T
128	L

Centreport Pkwy

175	T
311	R

I-95 SB On-Ramp

1363

2

I-95 NB On-Ramp

R	381
T	279
	0

Centreport Pkwy

46	L
881	T
0	

L	T	R
286	0	139

I-95 NB Off-Ramp

1366

3

US-1

R	117
	0
L	903

T L

Centreport Pkwy

	T	R
0	928	541

US-1

1368

Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

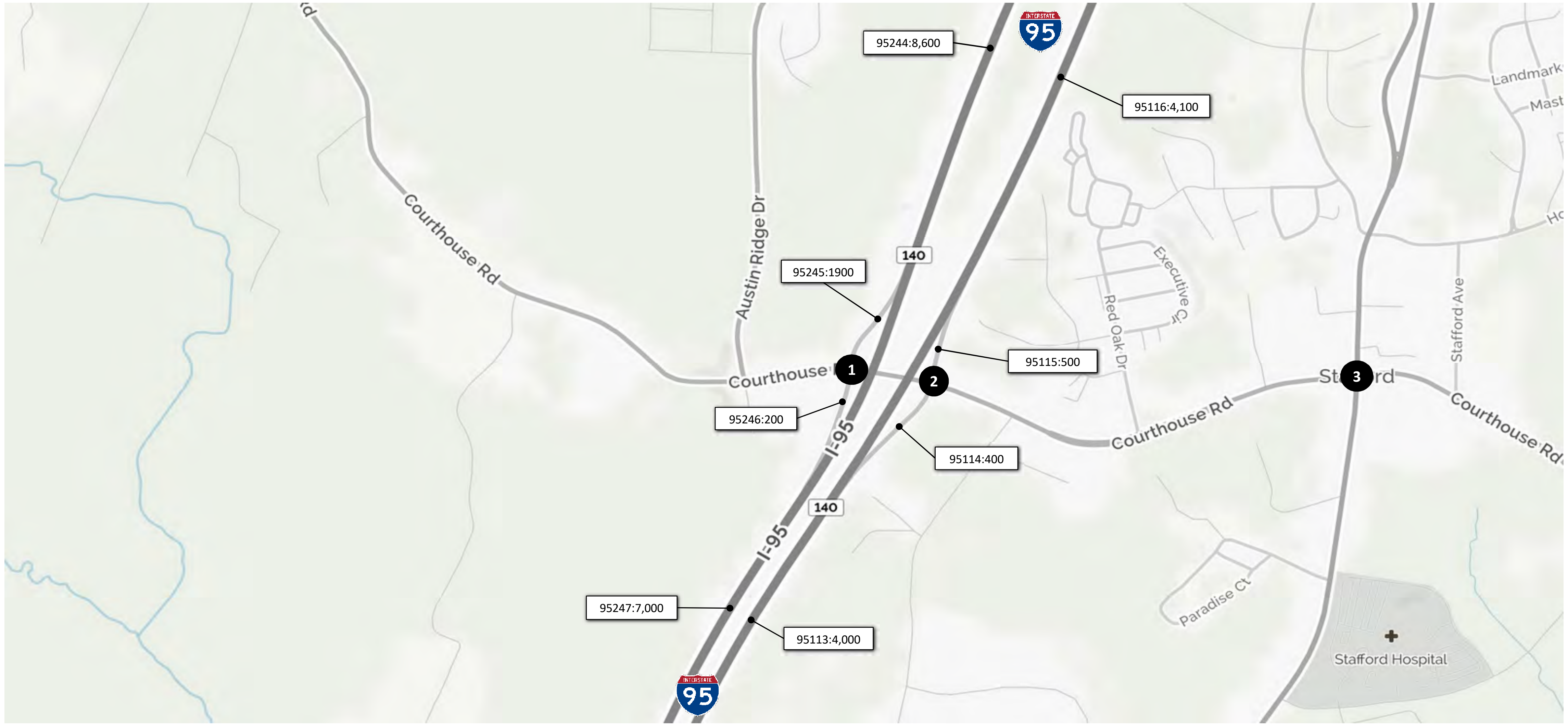
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

April 2017

Figure G.1-1



1

I-95 SB Off-Ramp / I-95 SB On-Ramp — Courthouse Road (630)

852 (R)	0 (T)	989 (L)

	0
T	632
L	44

0	
882	T
151	R

1403

2

I-95 NB On-Ramp / I-95 NB Off-Ramp — Courthouse Road (630)

R	406
T	653
	0

20	L
1,851	T
0	

L	T	R
24	0	308

1406

3

US-1 — Courthouse Road (630)

233 (R)	741 (T)	233 (L)

R	291
T	349
L	73

476	L
677	T
1,006	R

L	T	R
478	687	95

1408

Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

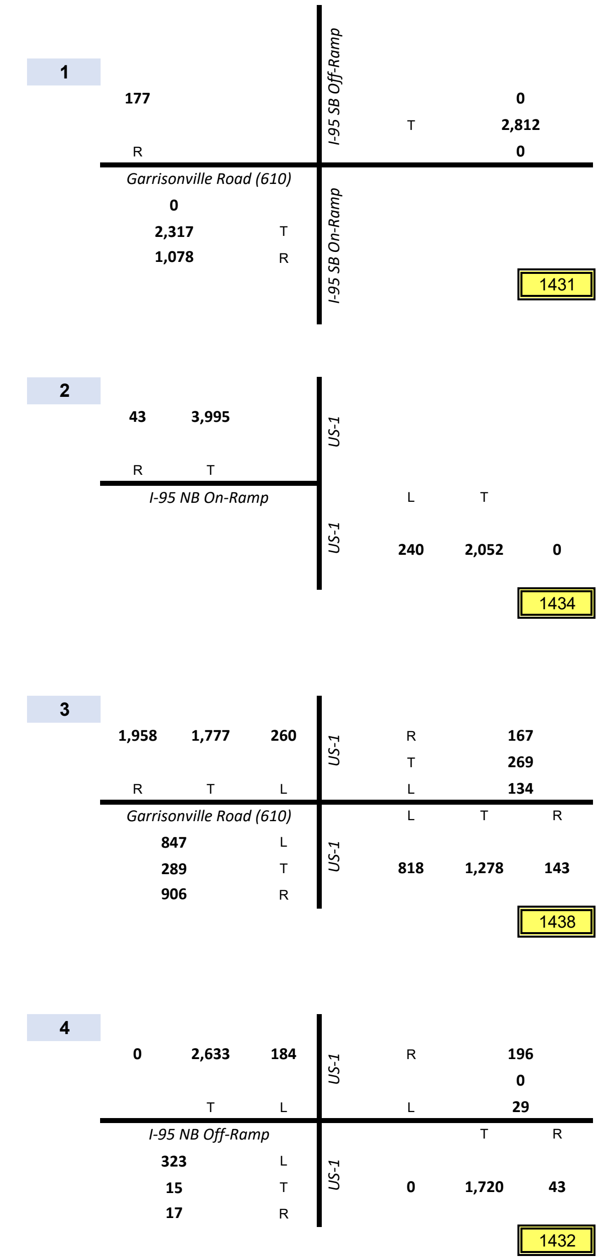
2042 No Build

Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume
Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

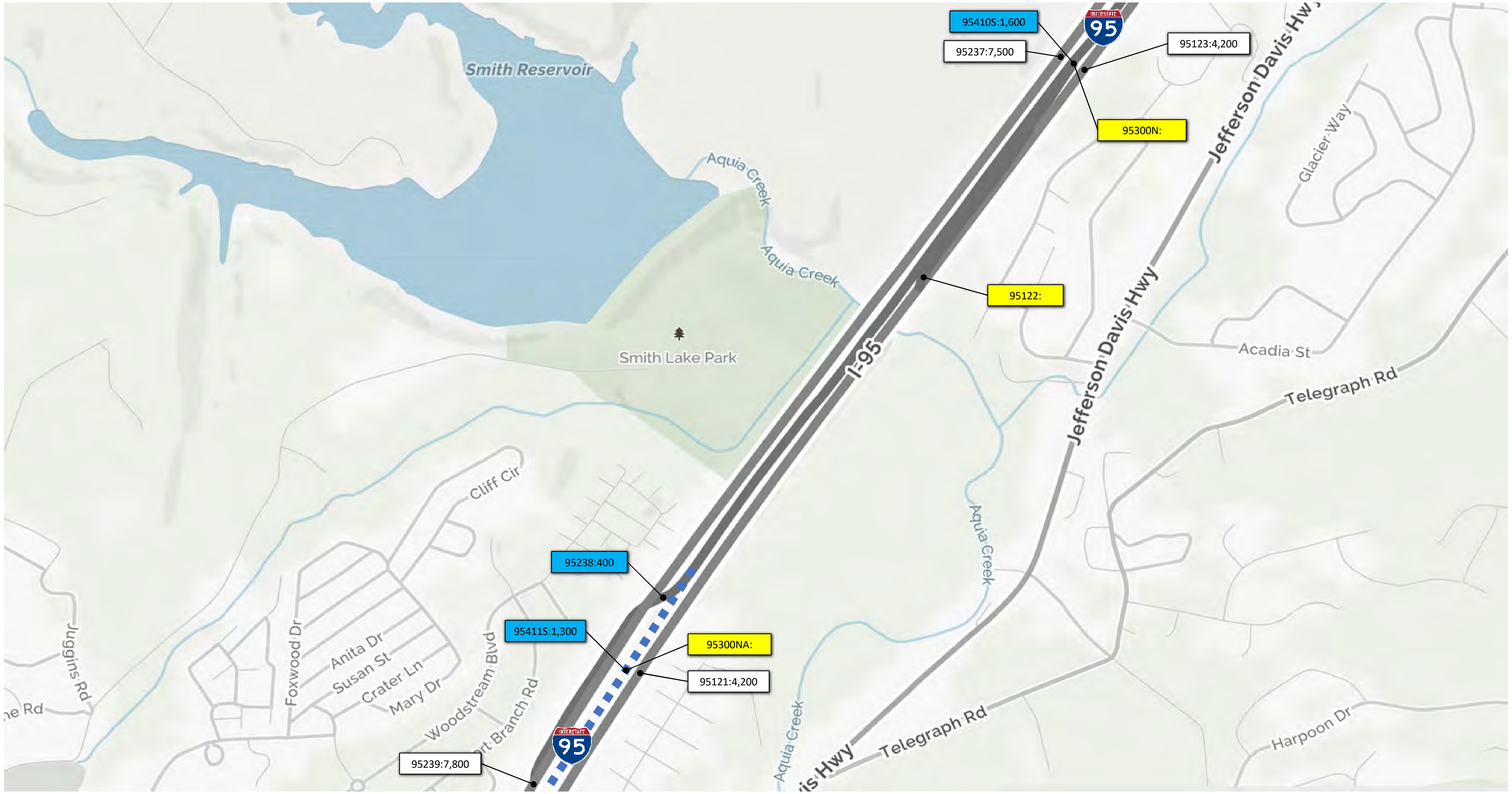
EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2042 No Build

Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017 | Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

SOUTHERN START/END I-95 EXPRESS LANES

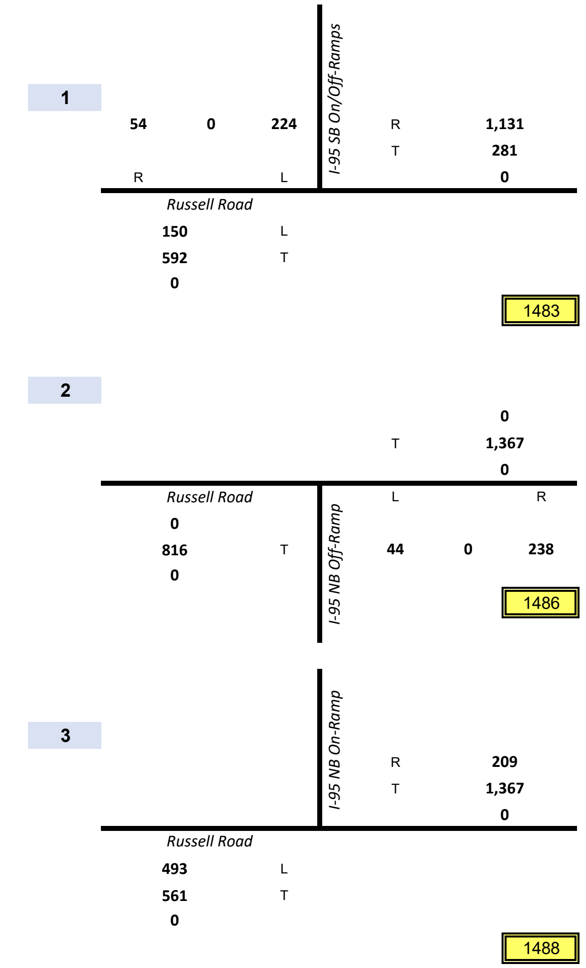
2042 No Build

Weekday 5 - 6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

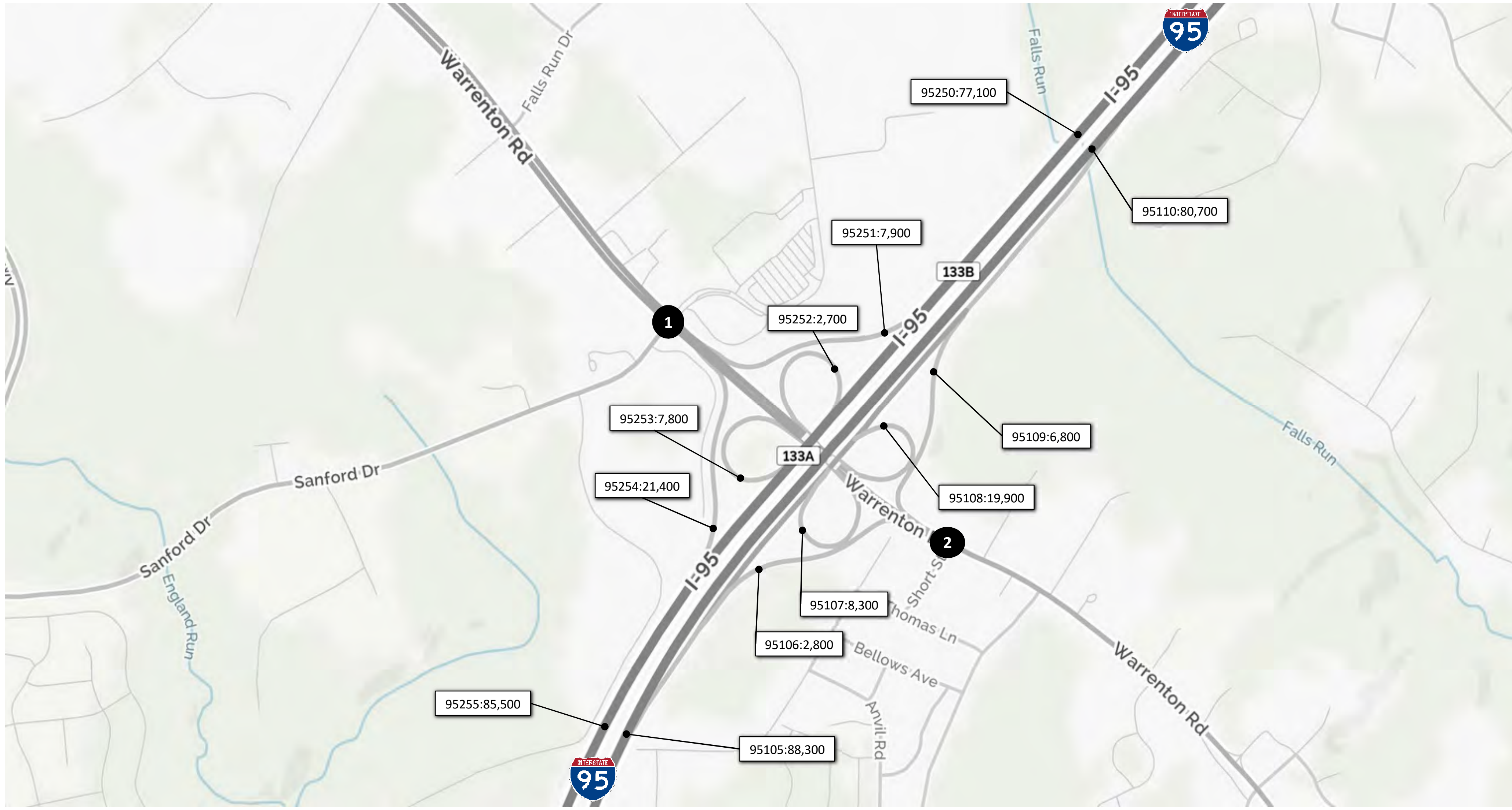
VDOT Virginia Department of Transportation

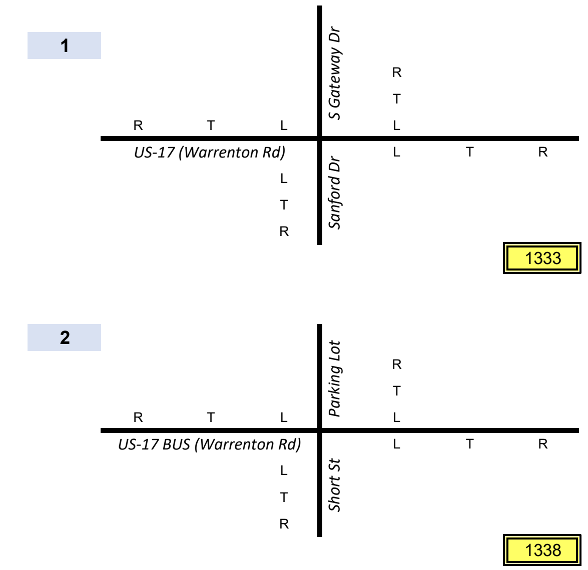
U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

April 2017 | Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

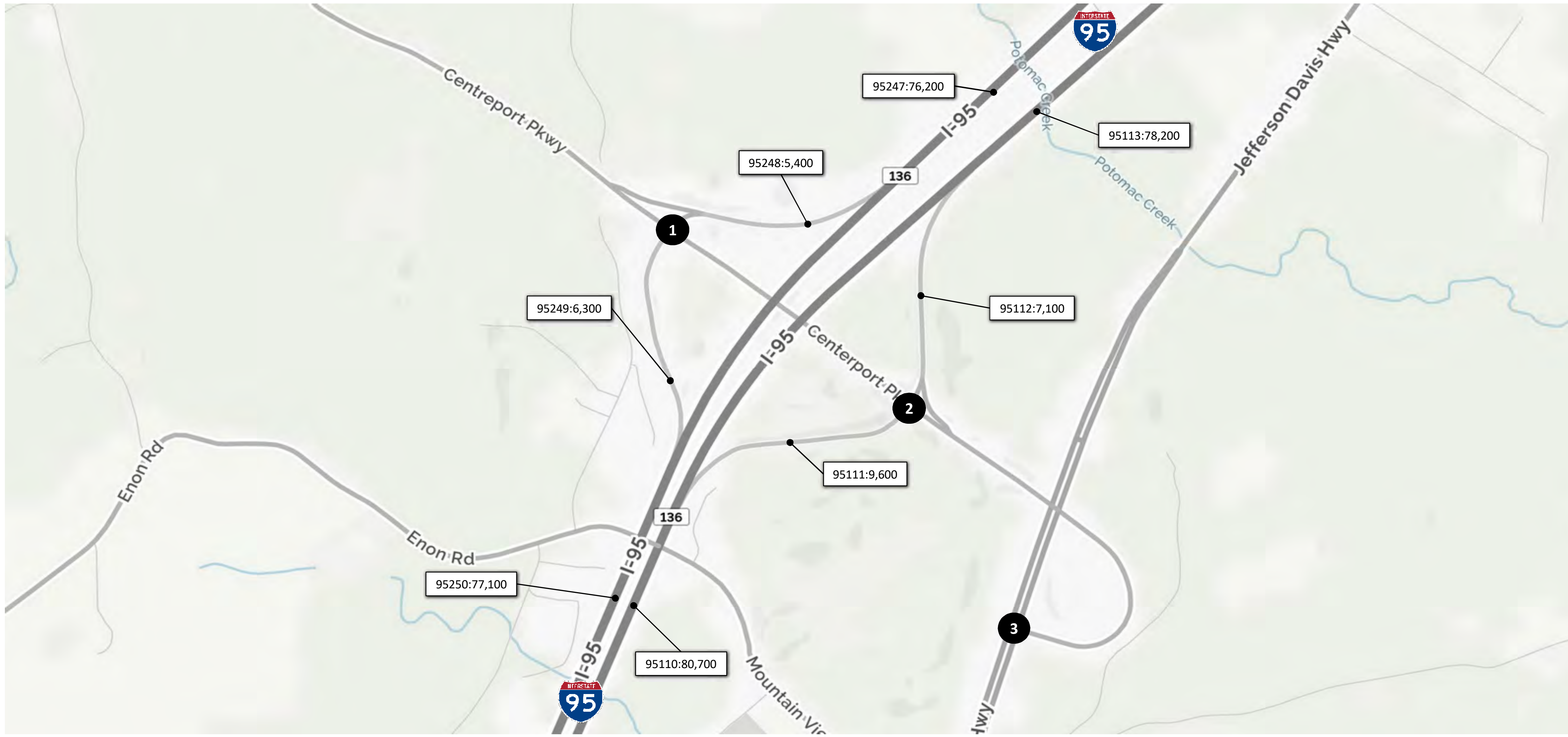
2042 No Build

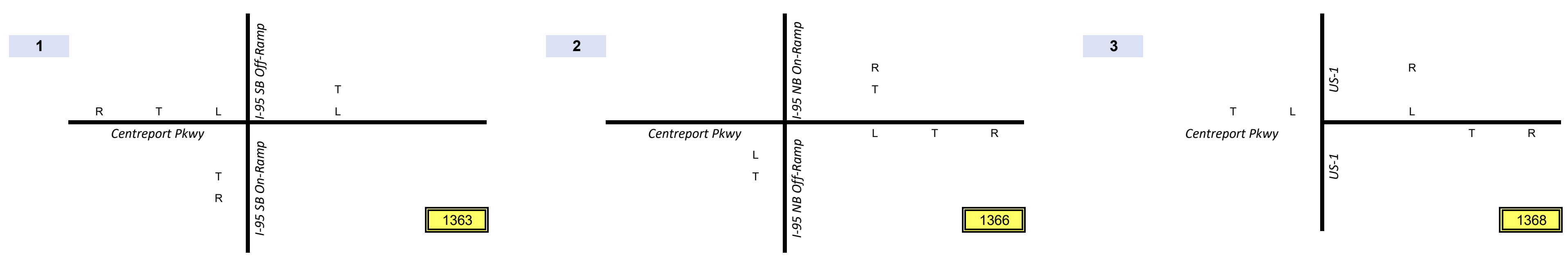
Weekday Daily Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

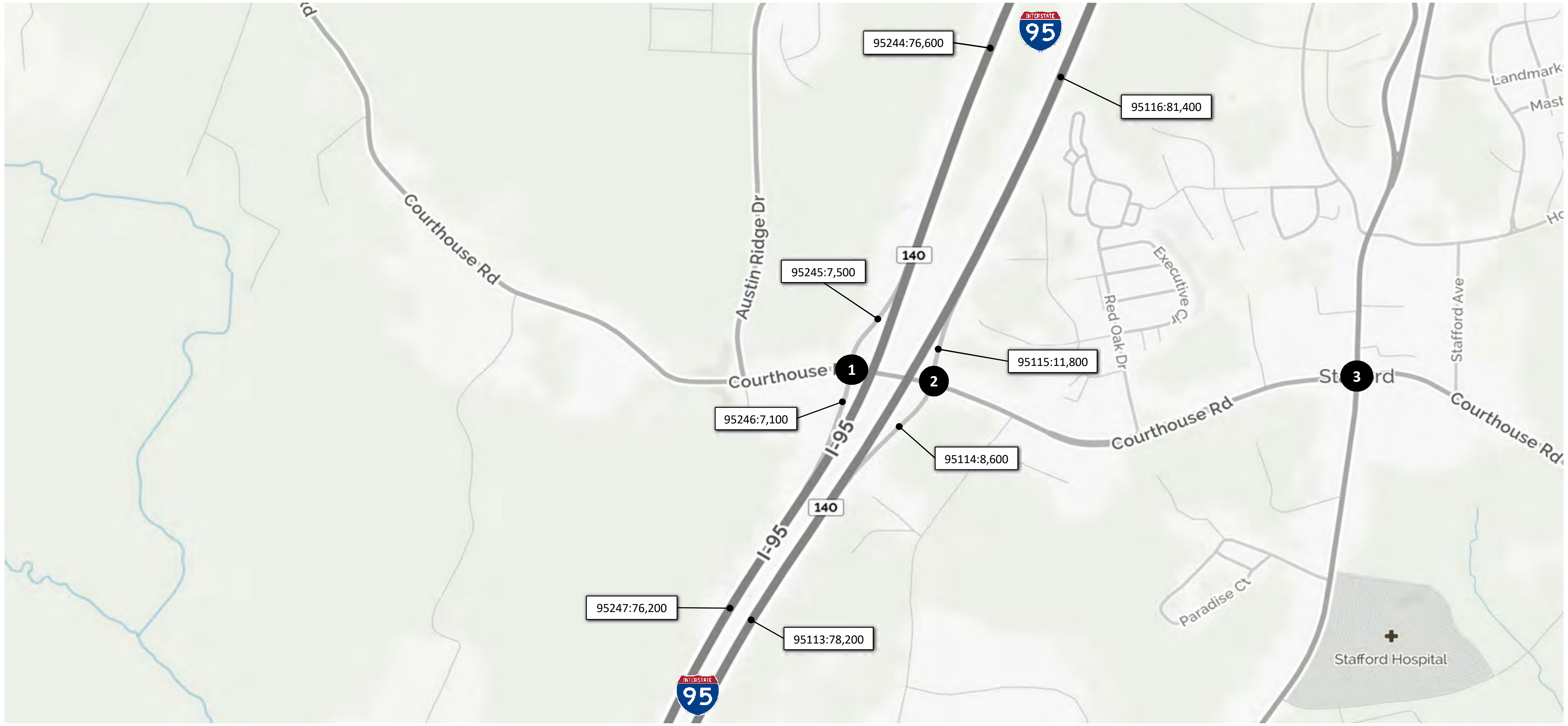
U.S. Department of Transportation Federal Highway Administration

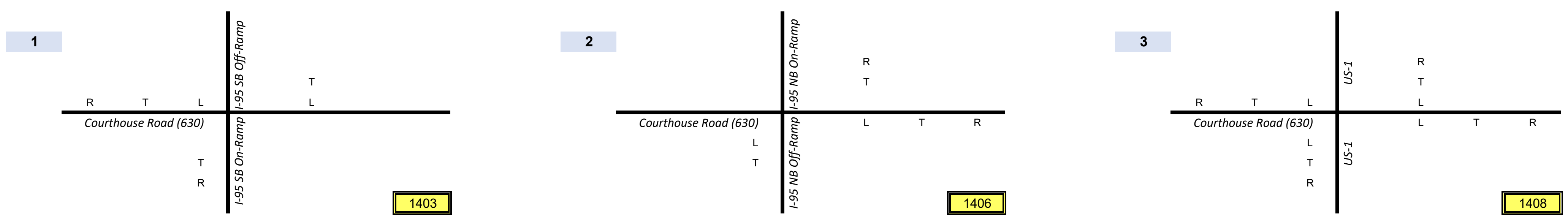
EXIT 136 - CENTREPORT PARKWAY

2042 No Build
Weekday Daily Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

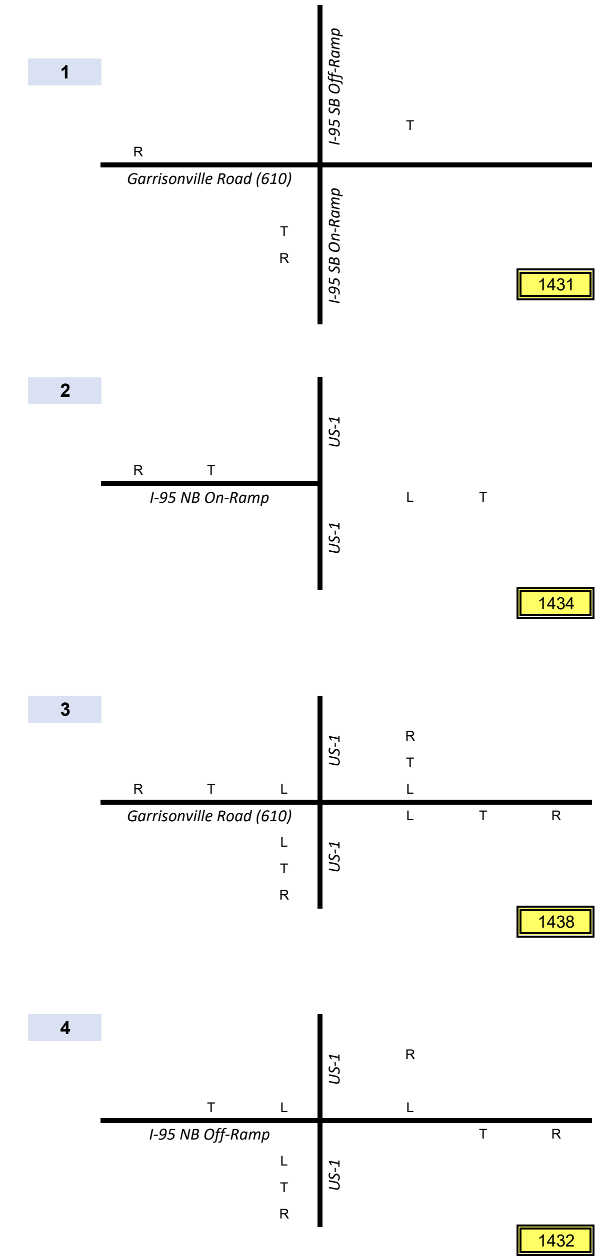
2042 No Build

Weekday Daily Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

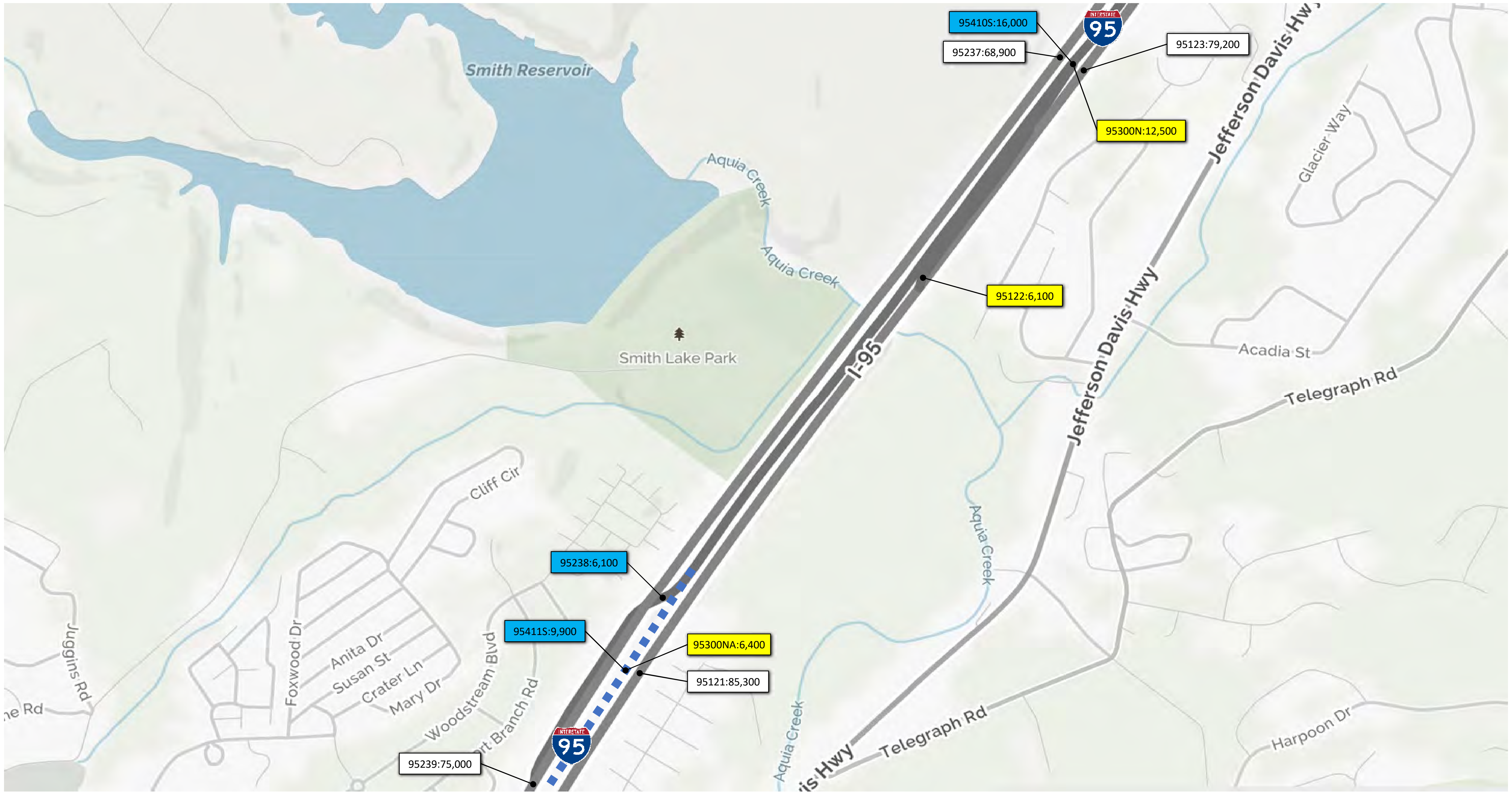
2042 No Build

Weekday Daily Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

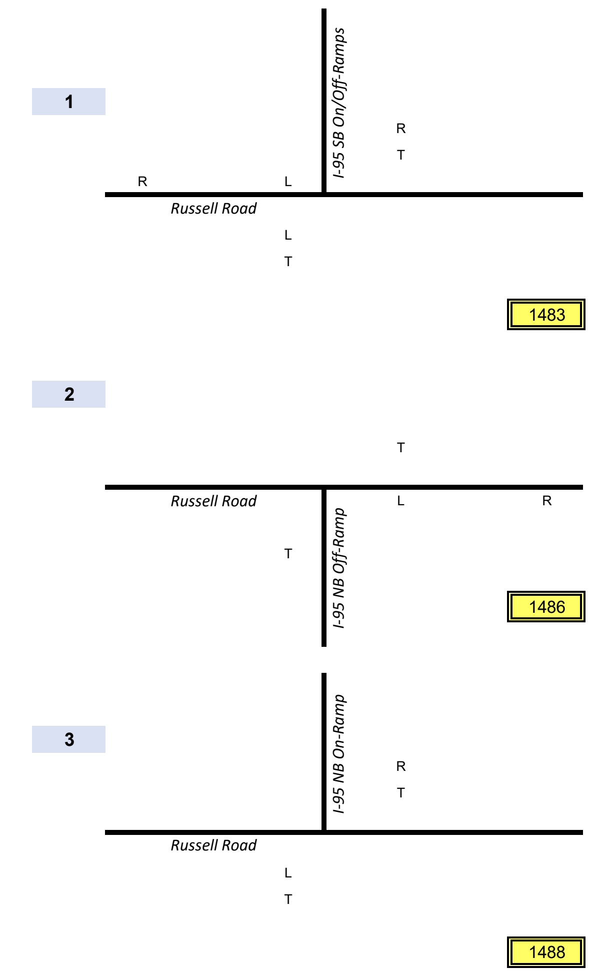
2042 No Build

Weekday Daily Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

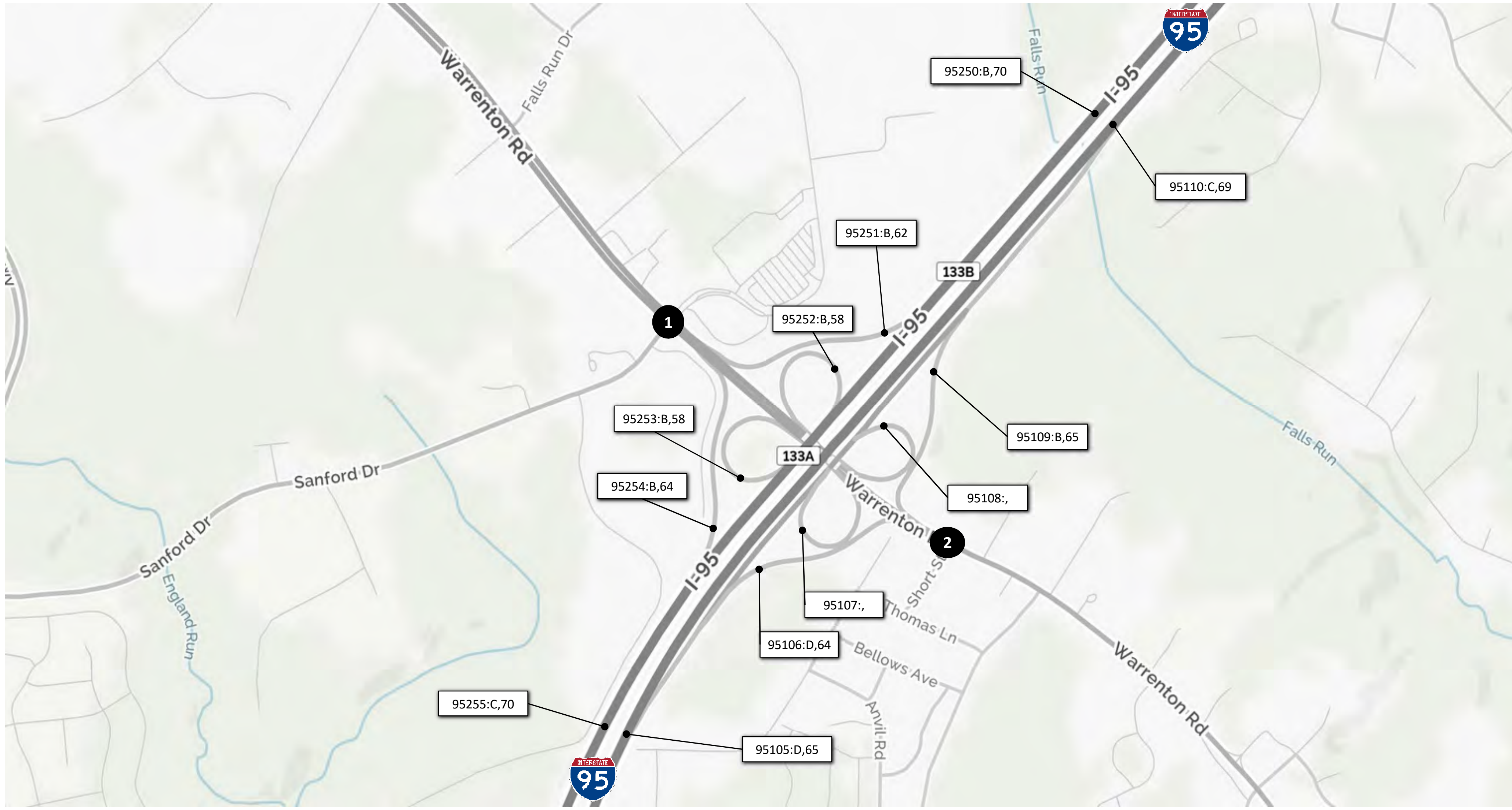
NOT TO SCALE

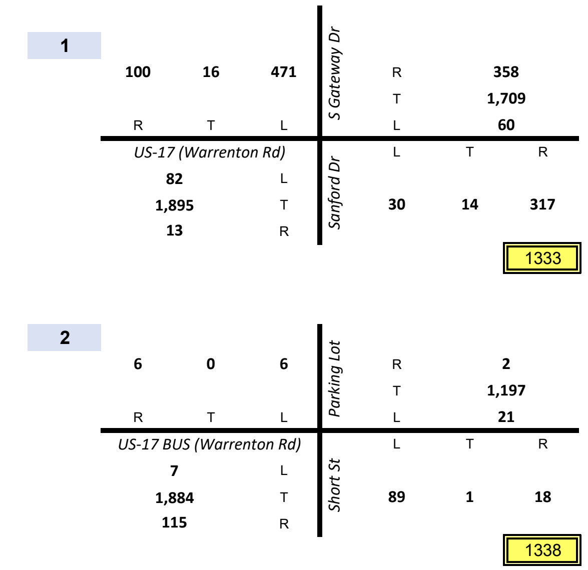
EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday Daily Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

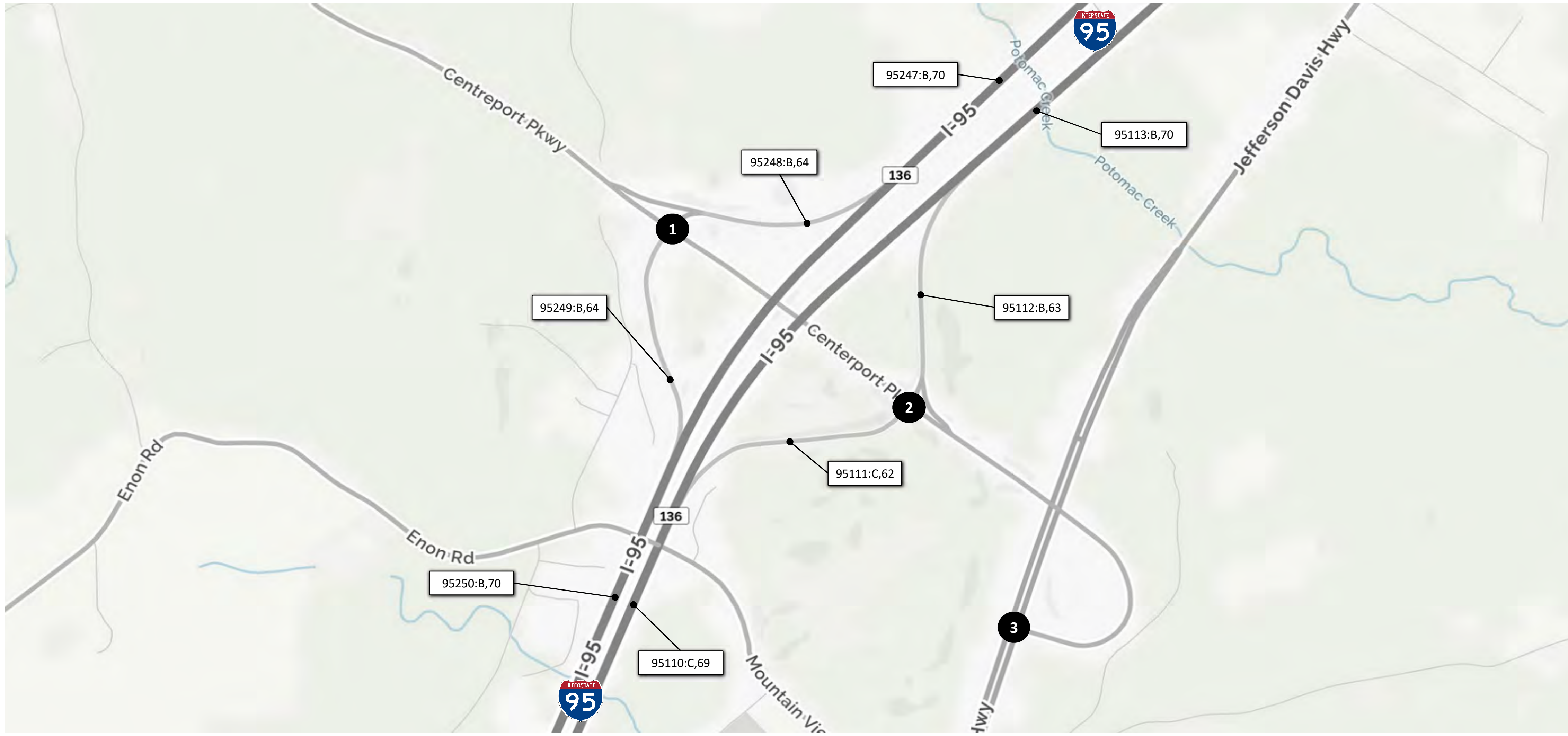
U.S. Department of Transportation Federal Highway Administration

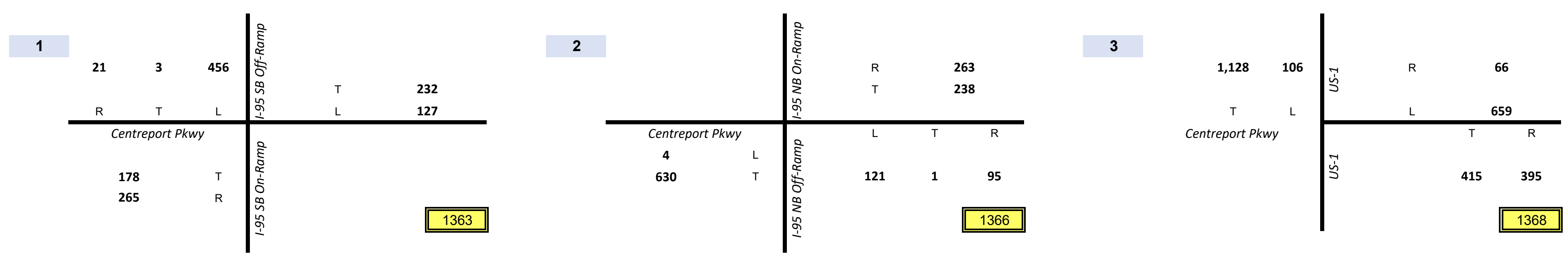
EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

2016 Existing Weekday 7-8 AM Volumes I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

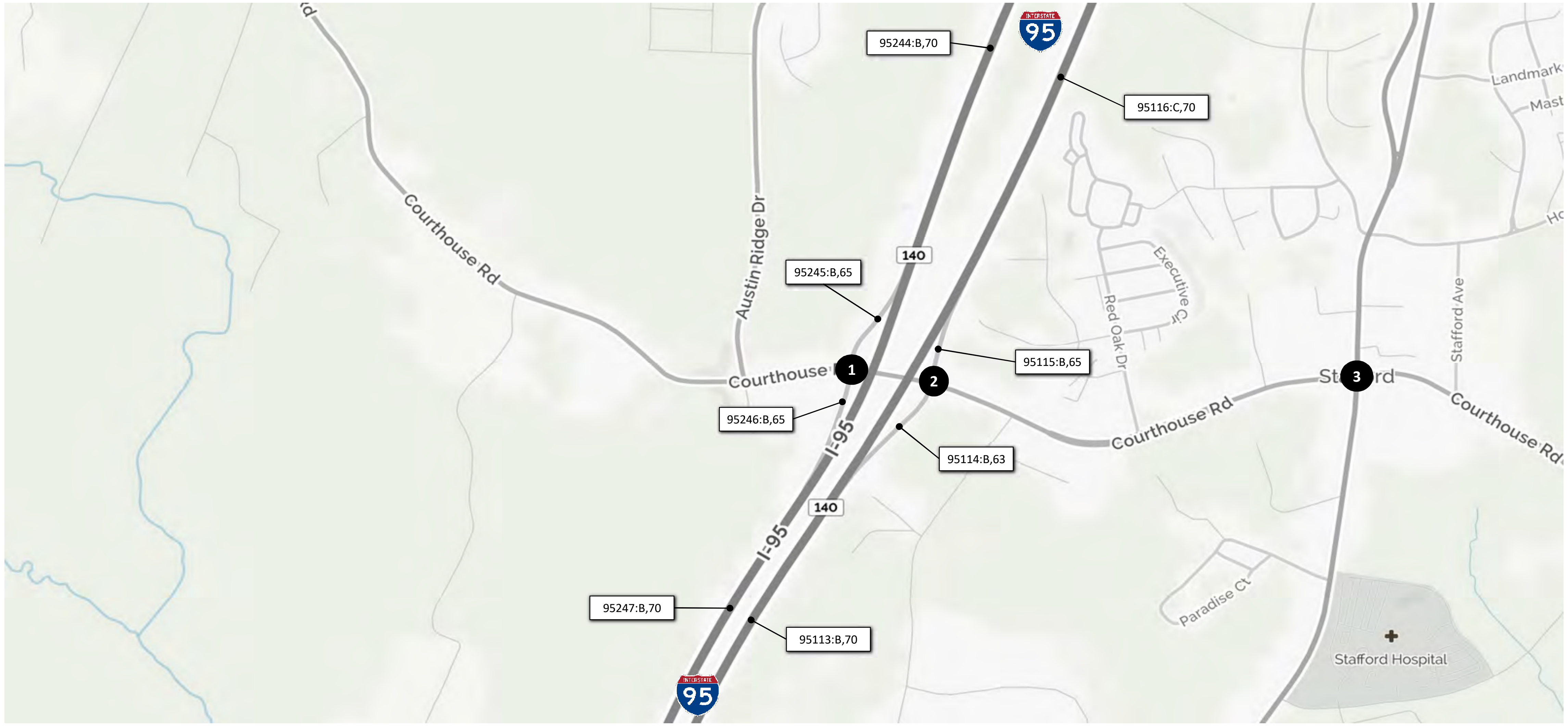
U.S. Department of Transportation Federal Highway Administration

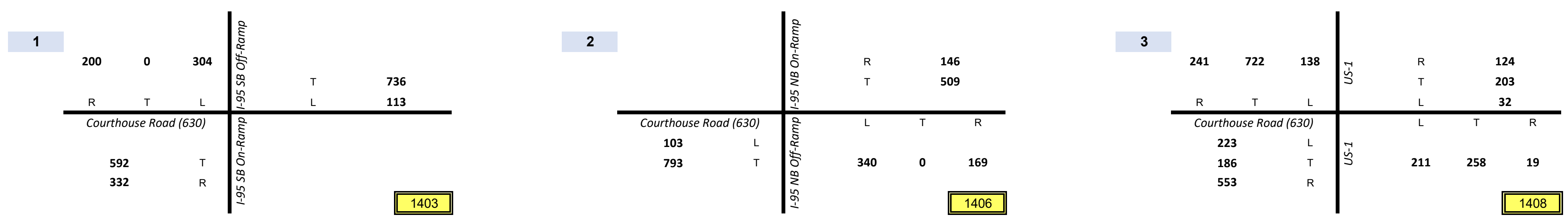
EXIT 136 - CENTREPORT PARKWAY

2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

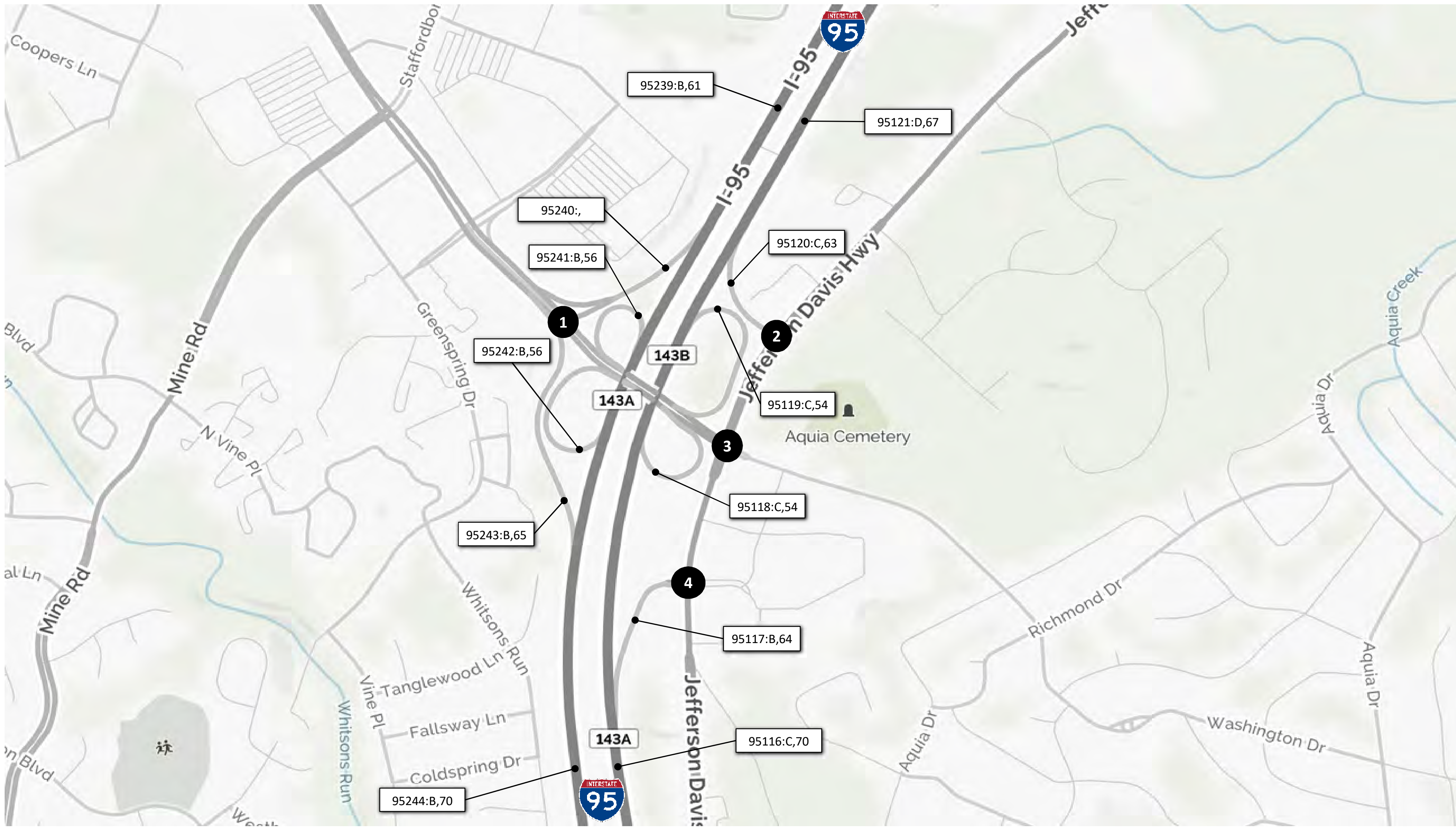
U.S. Department of Transportation Federal Highway Administration

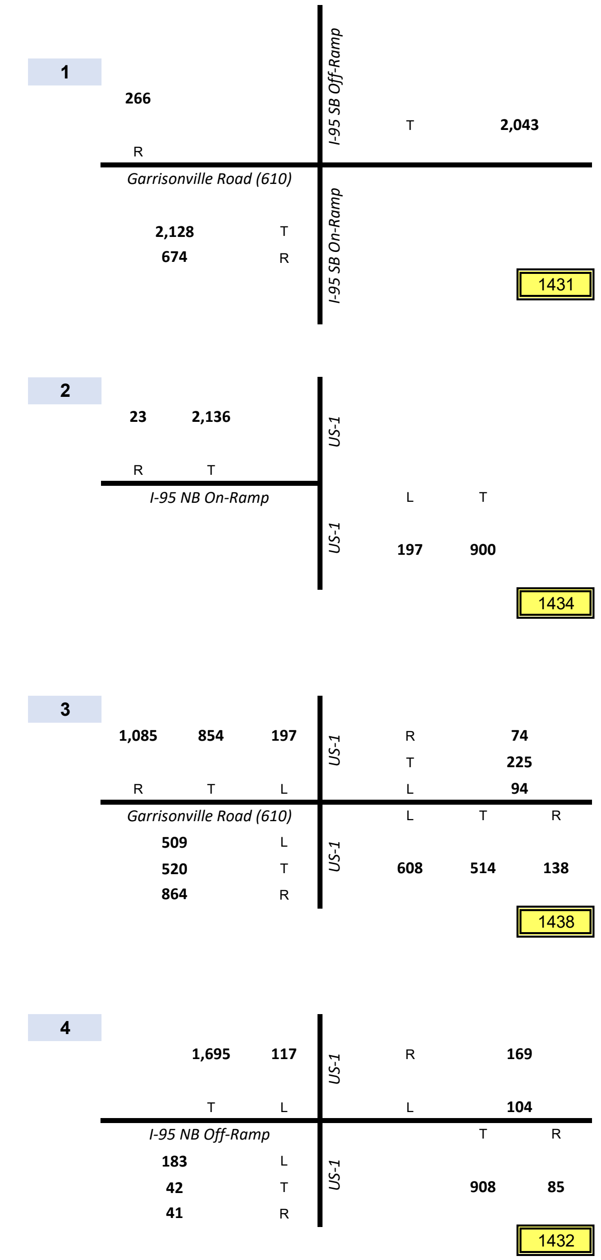
EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

2016 Existing Weekday 7-8 AM Volumes I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2016 Existing

Weekday 7-8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1

Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

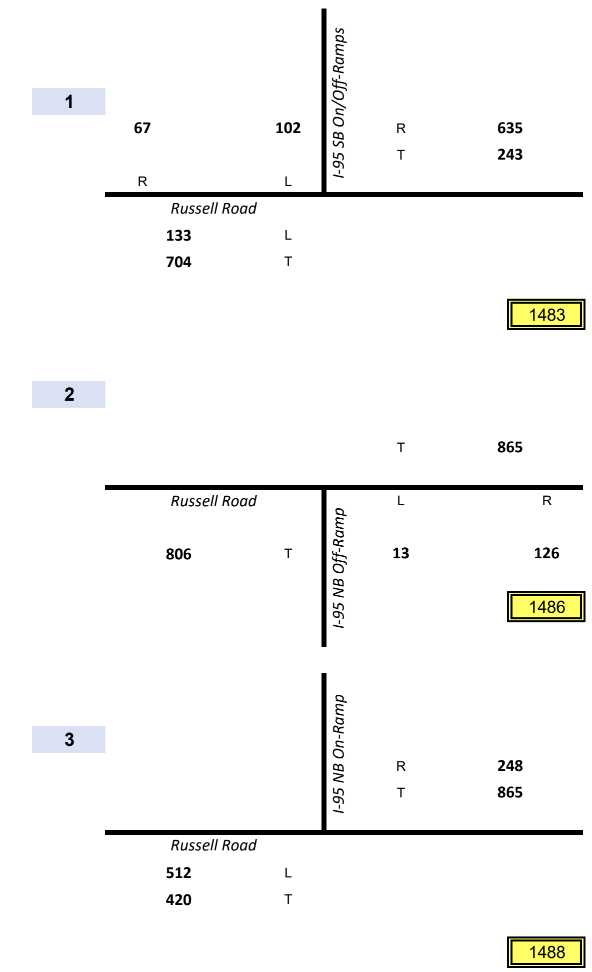
2016 Existing

Weekday 7-8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

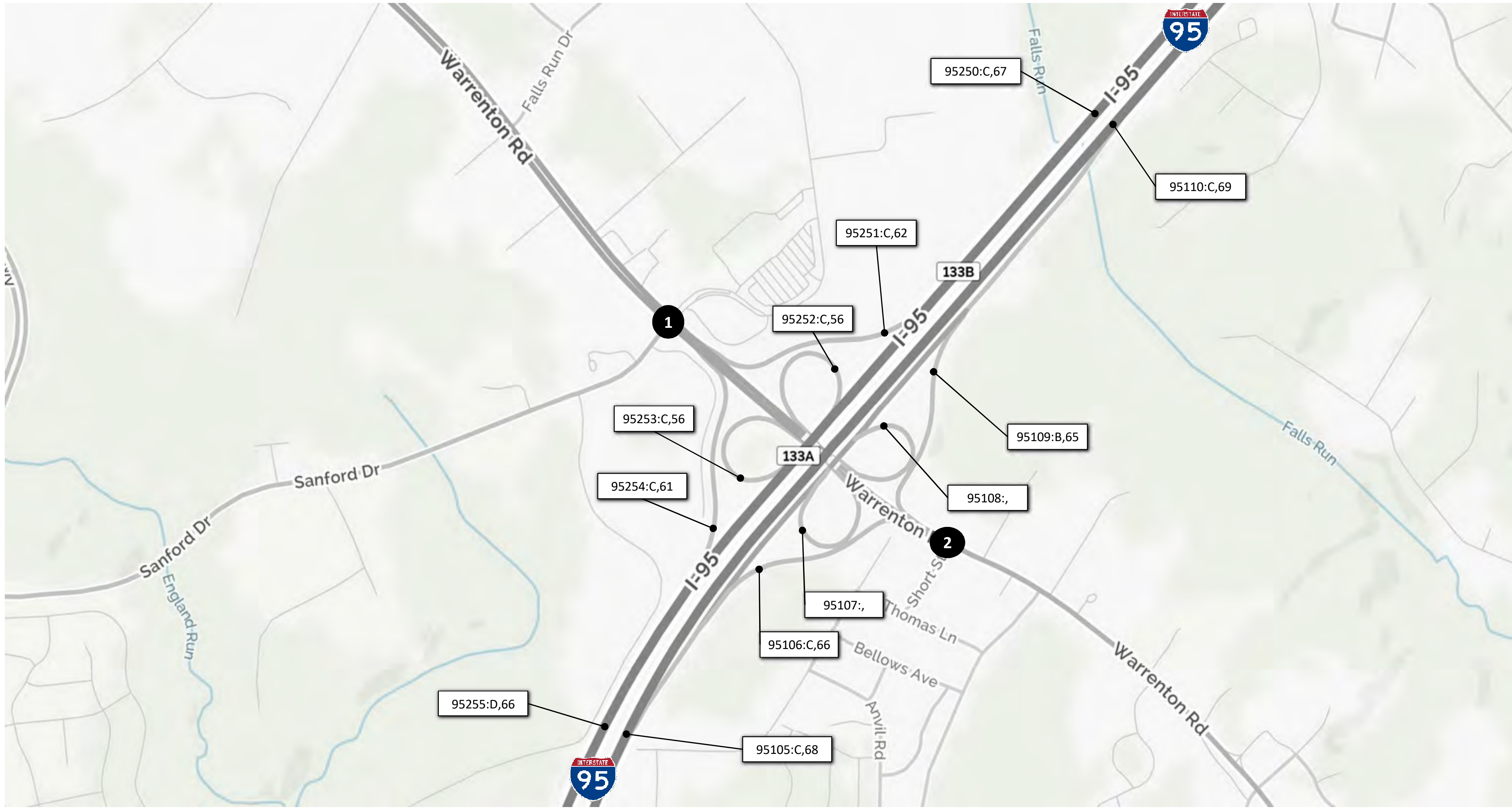
U.S. Department of Transportation Federal Highway Administration

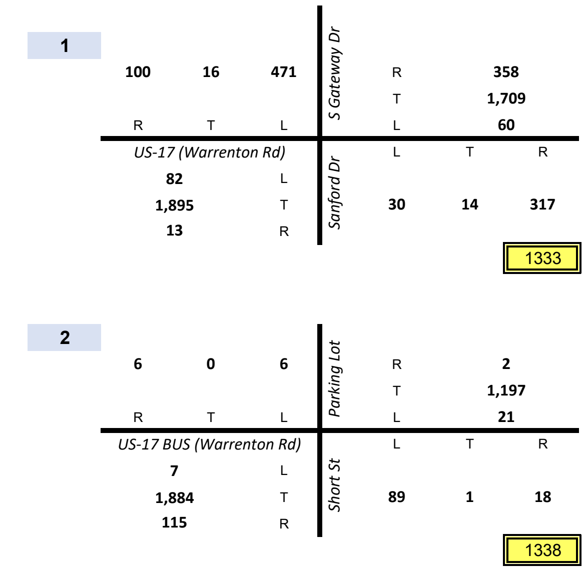
EXIT 148 - RUSSELL ROAD

2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT
Virginia Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

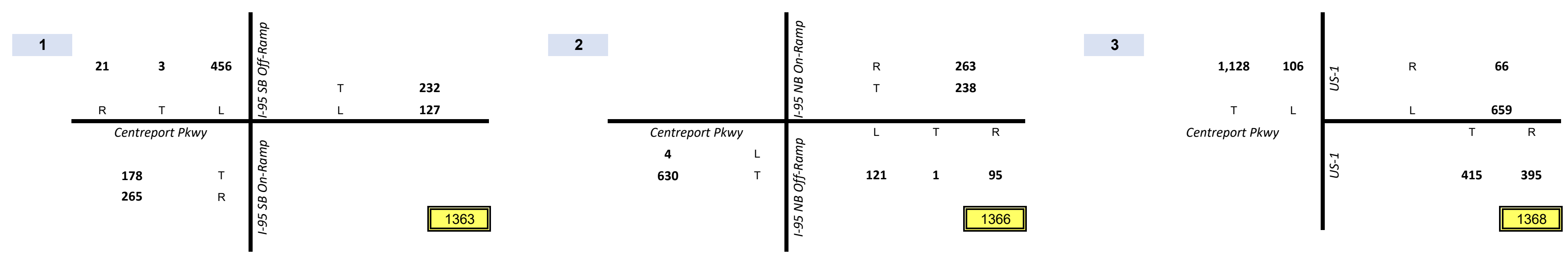
2016 Existing

Weekday 5-6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

x,xxx Weekday 5-6 PM Volume

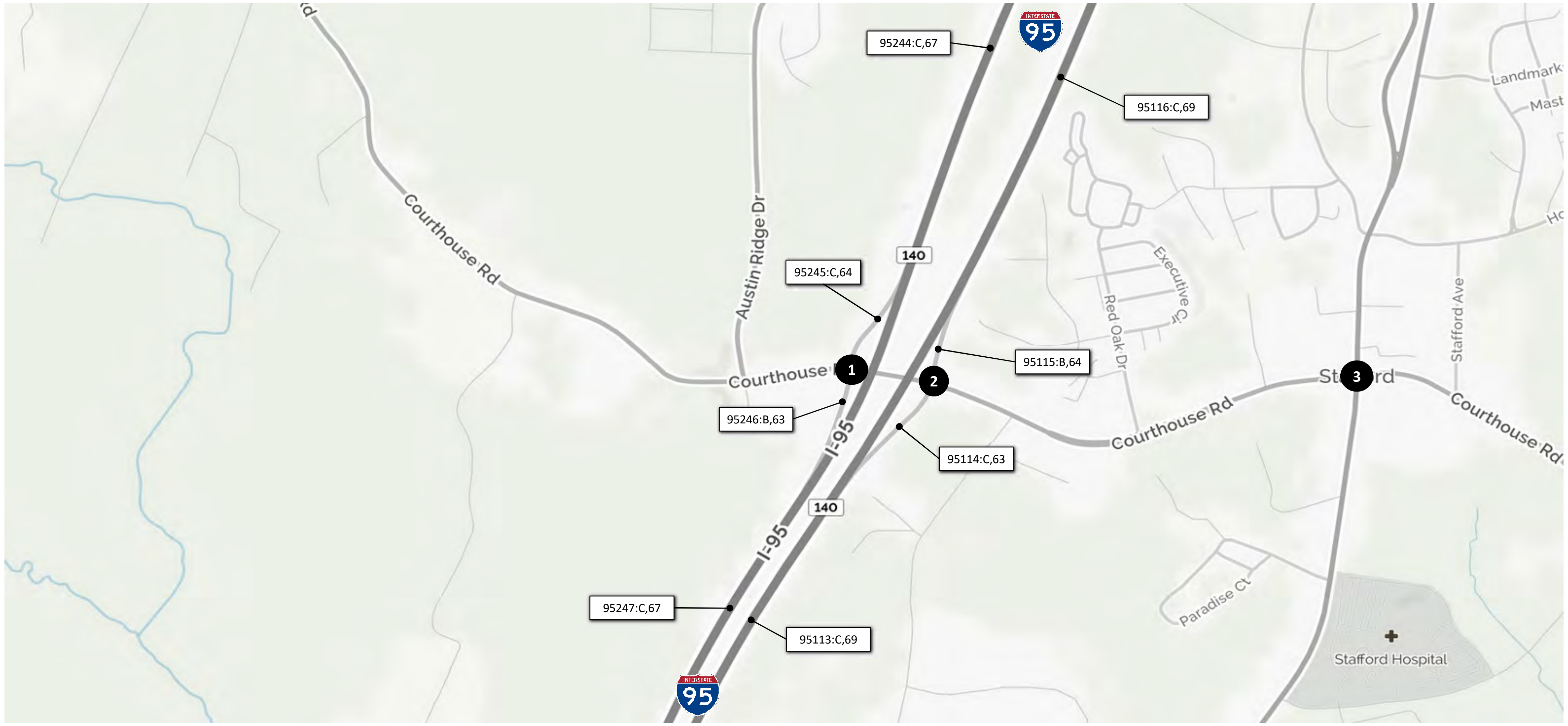
NOT TO SCALE

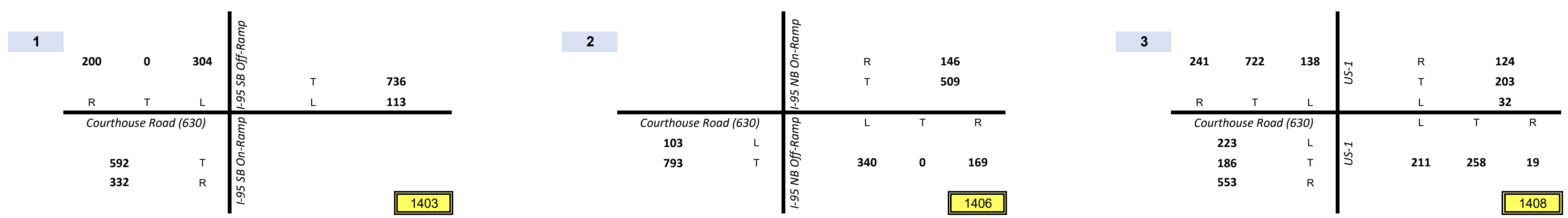
EXIT 136 - CENTREPORT PARKWAY

2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

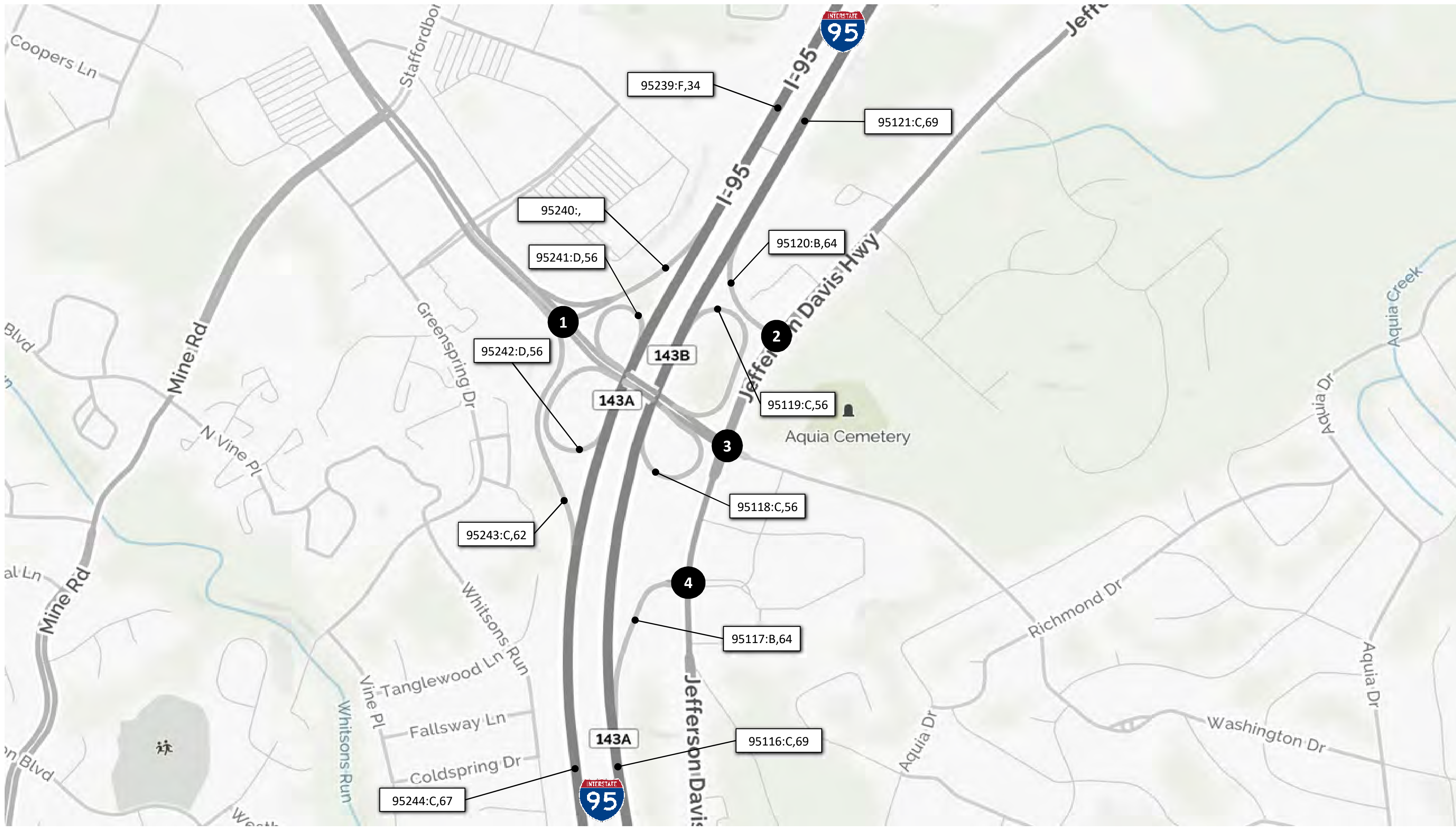
U.S. Department of Transportation Federal Highway Administration

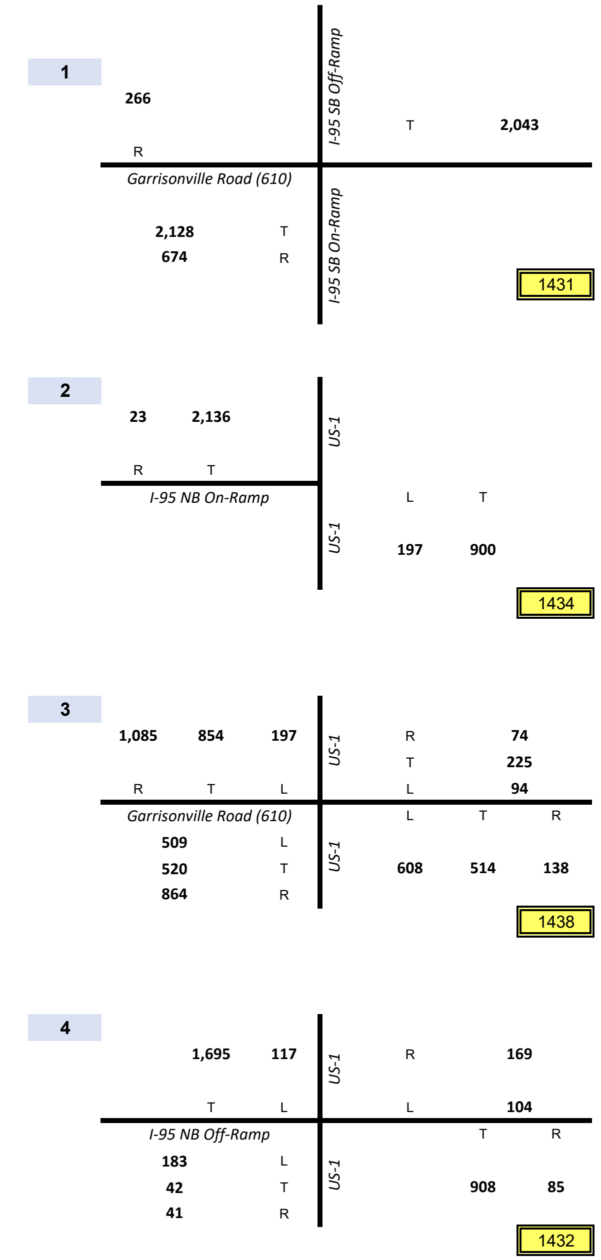
EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

2016 Existing Weekday 5-6 PM Volumes I-95 Corridor

April 2017

Figure G.1-1





Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2016 Existing

Weekday 5-6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1

Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

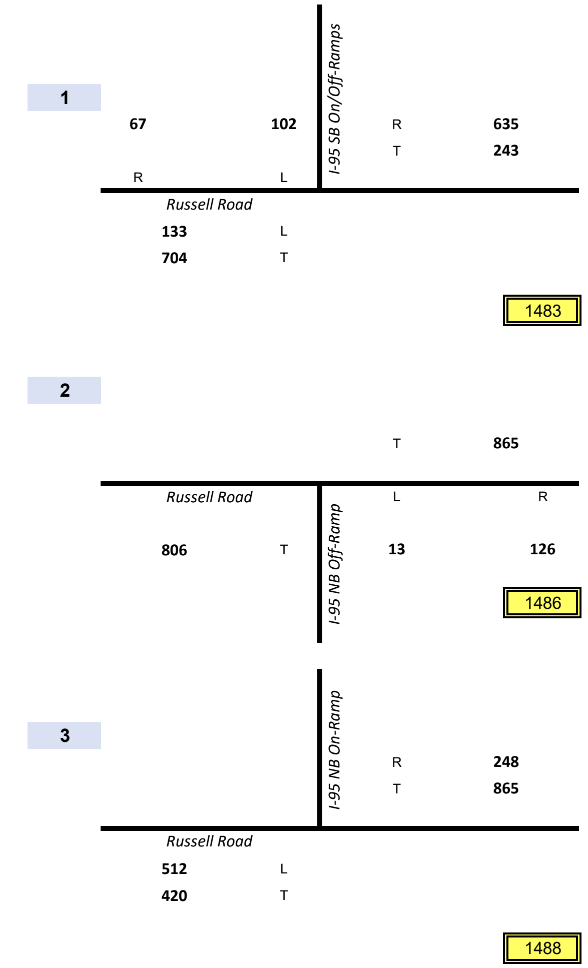
2016 Existing

Weekday 5-6 PM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE

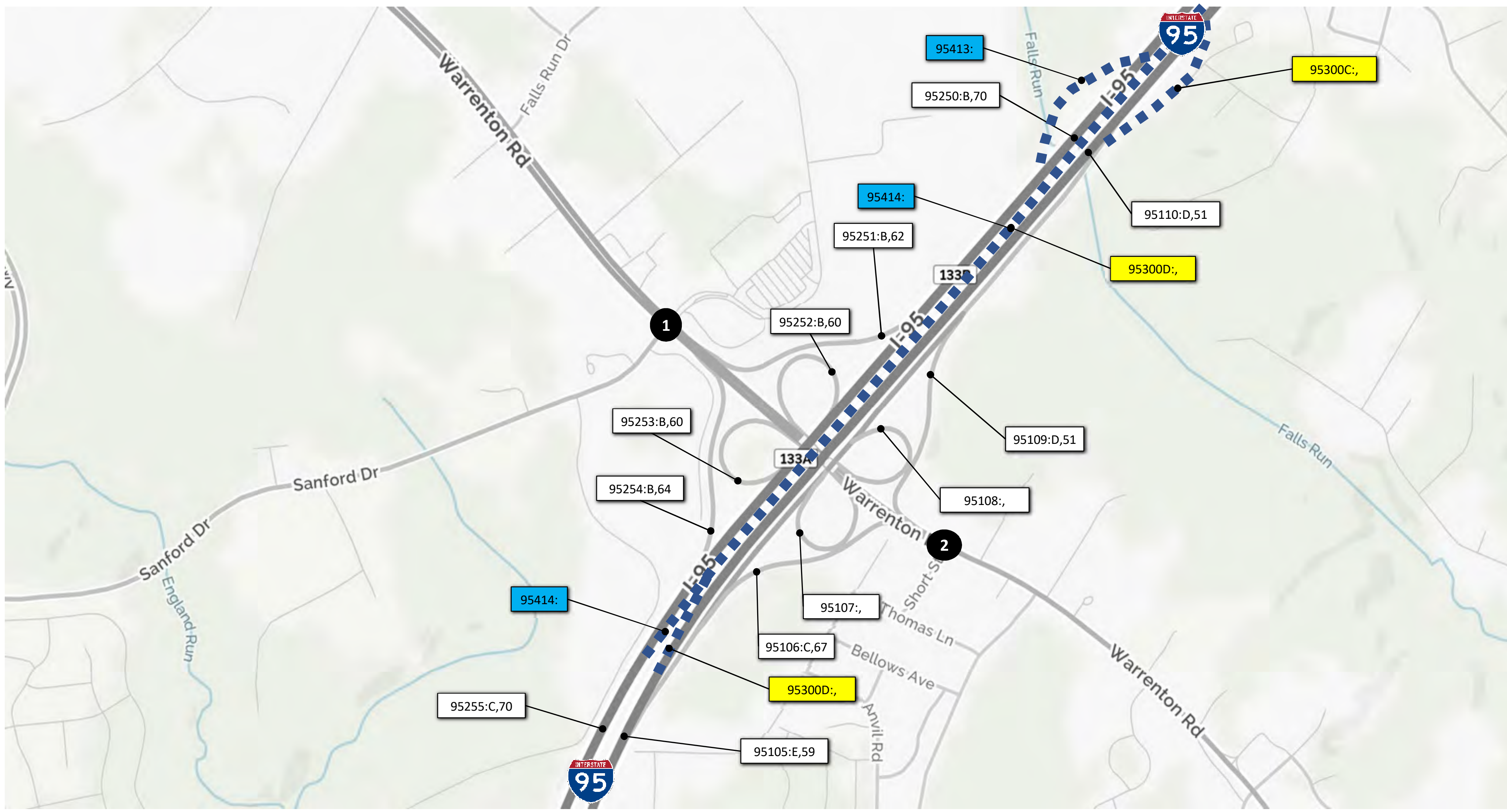
VDOT Virginia Department of Transportation

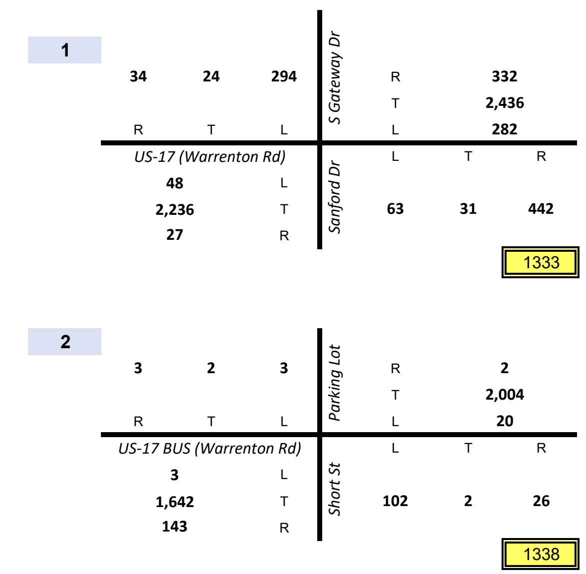
U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

April 2017 | Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

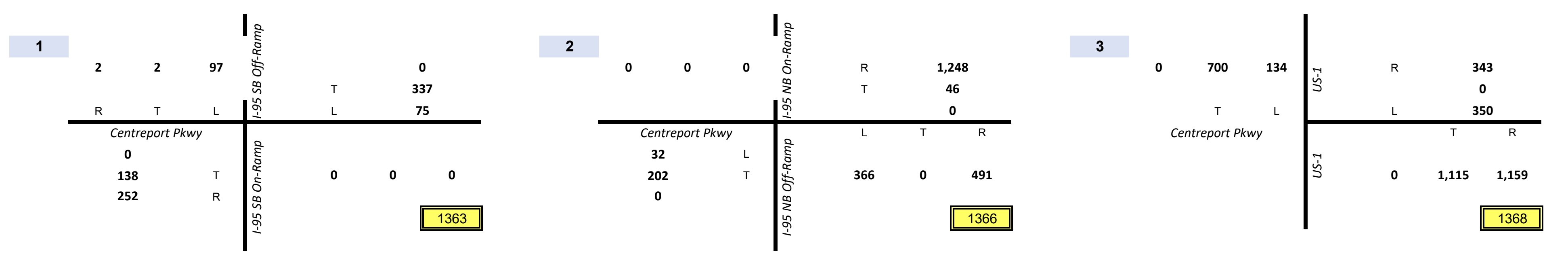
2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

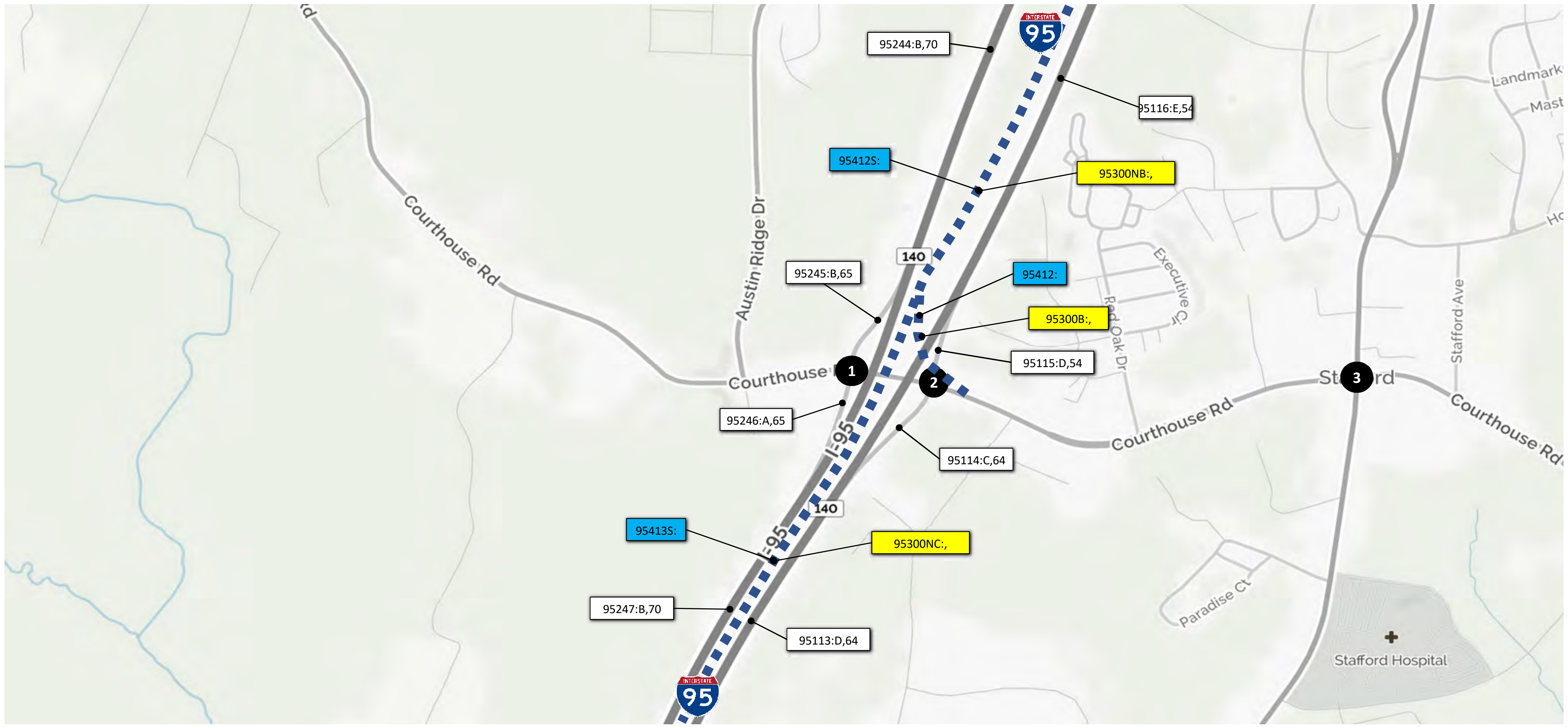
VDOT Virginia Department of Transportation

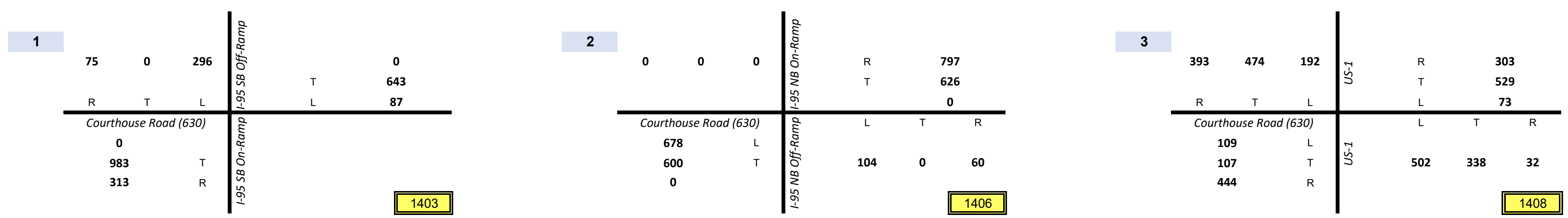
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017 | Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

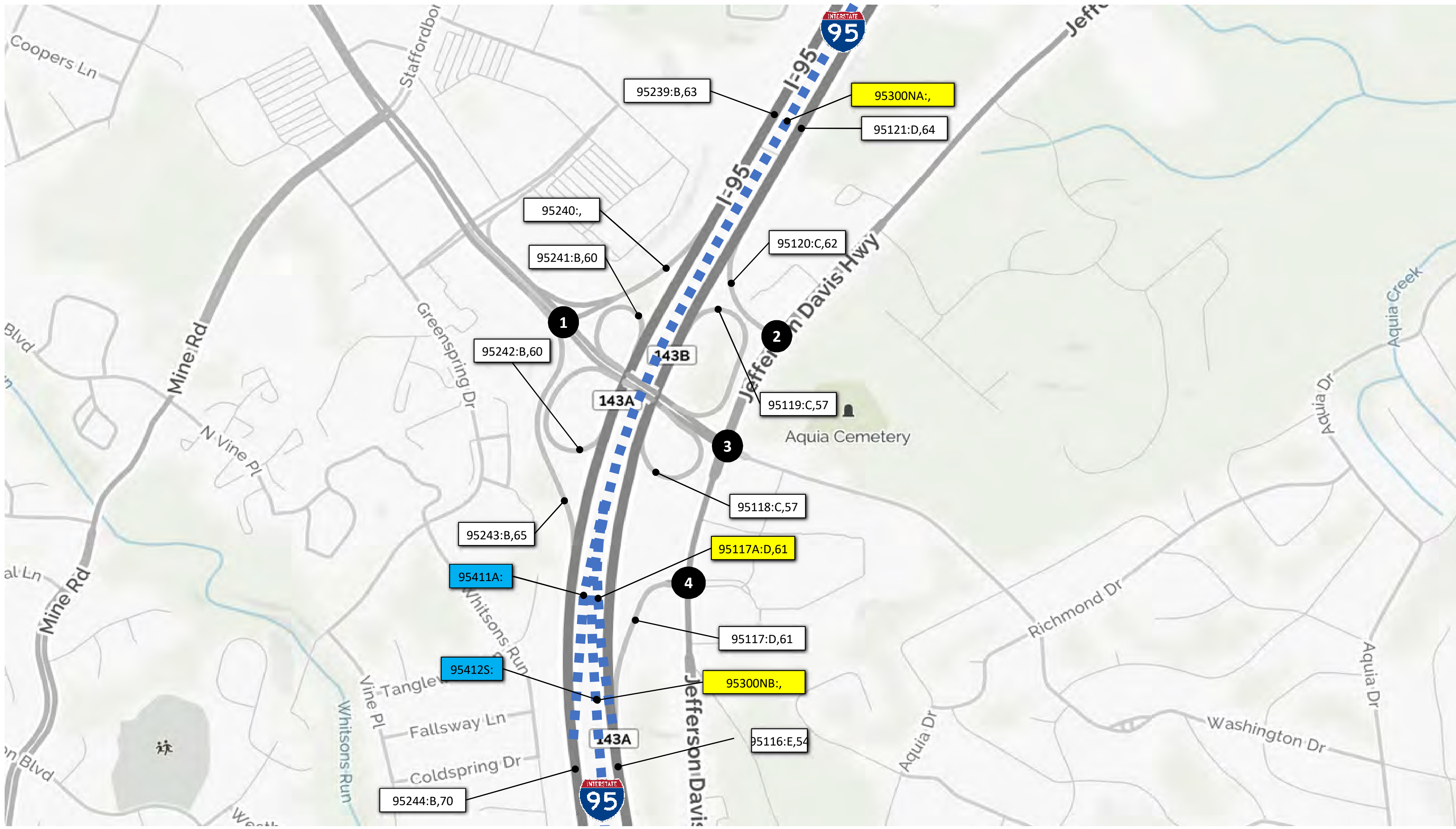
2042 No Build

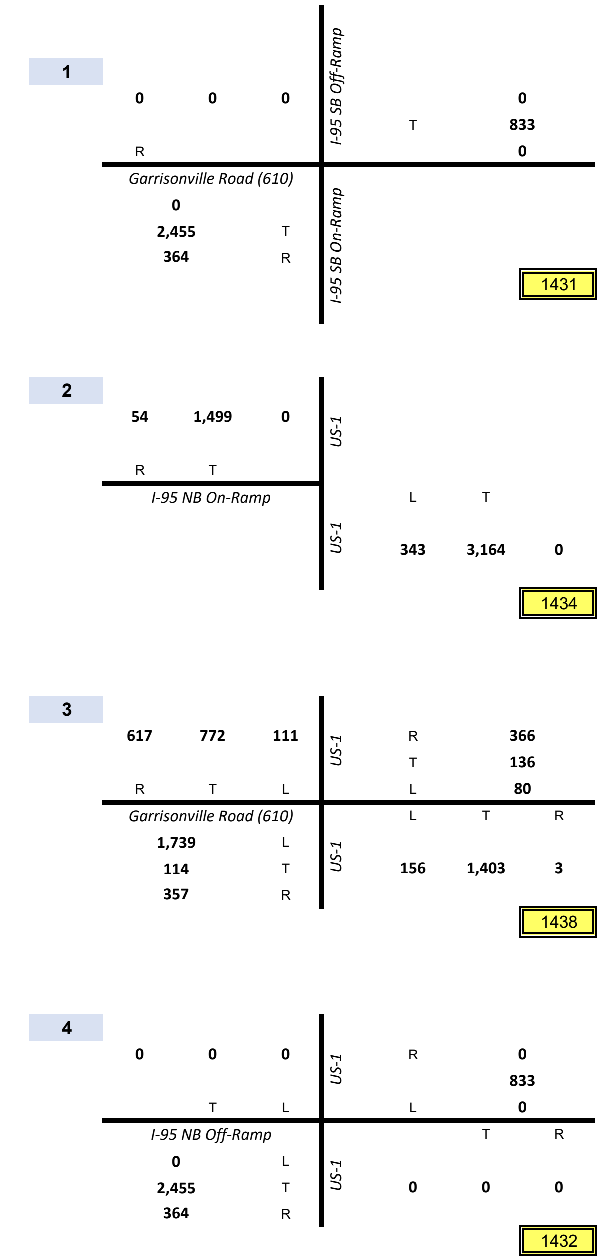
Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1





Legend

xx,xxx — Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

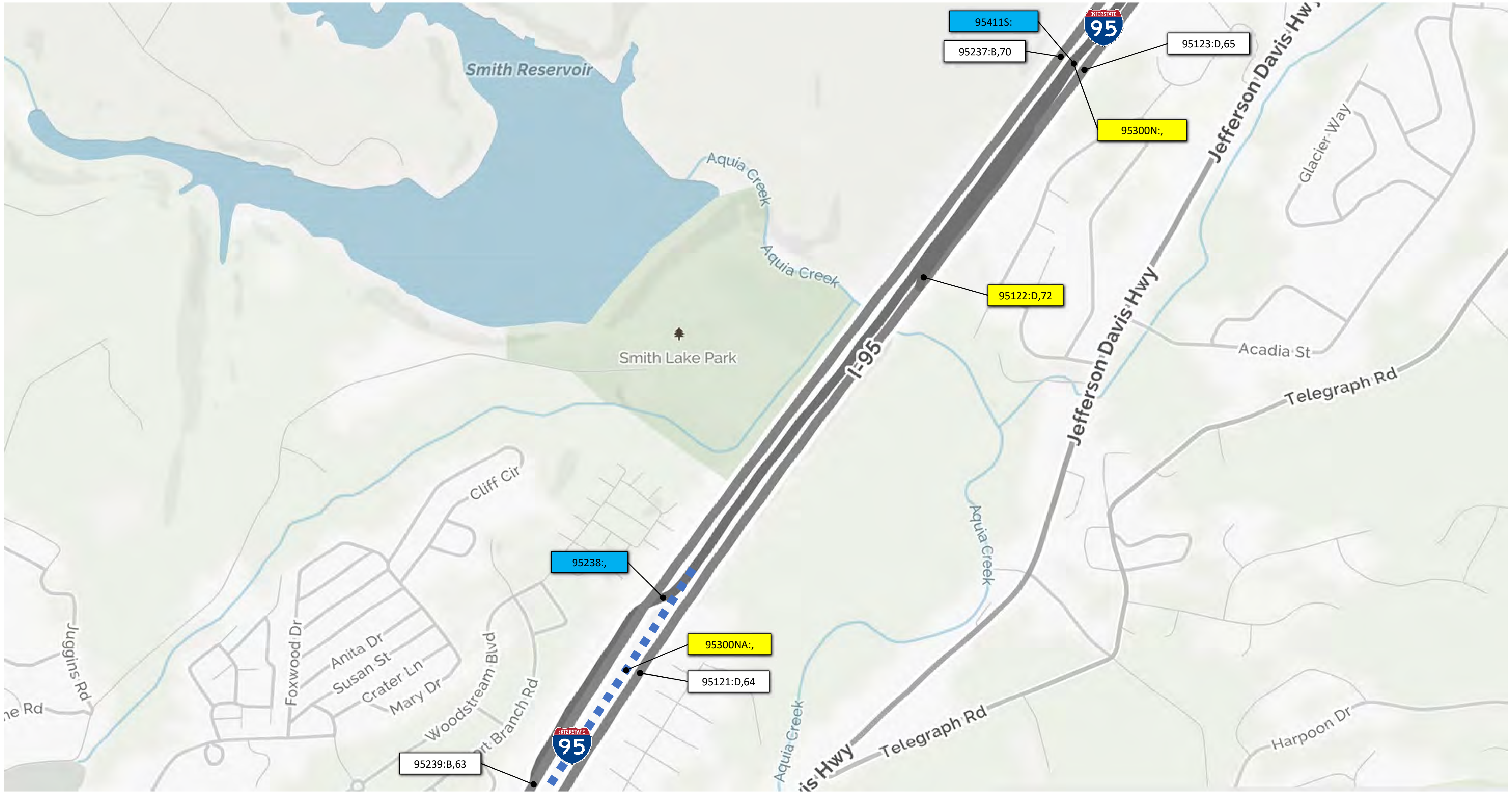
EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017	Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

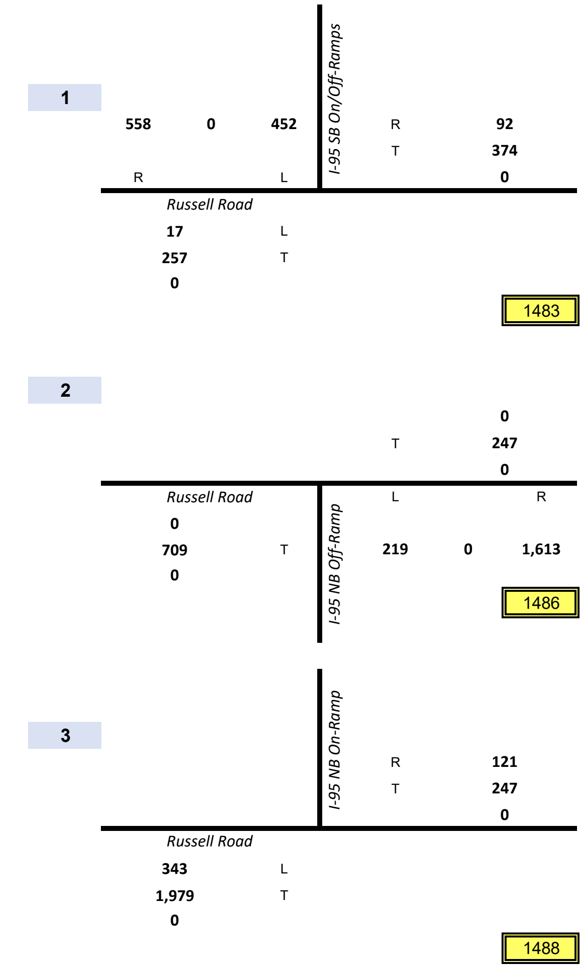
2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

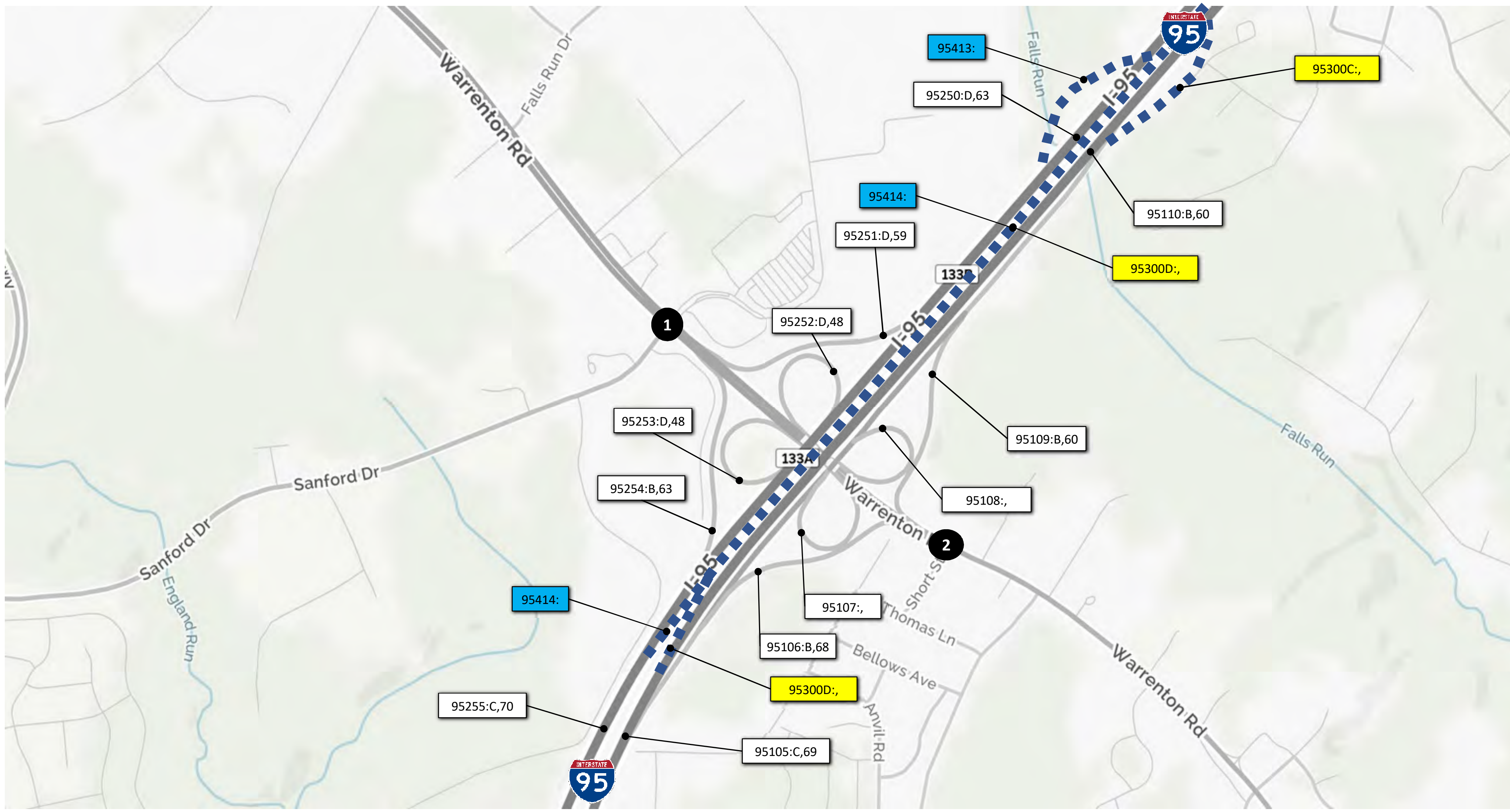
VDOT Virginia Department of Transportation

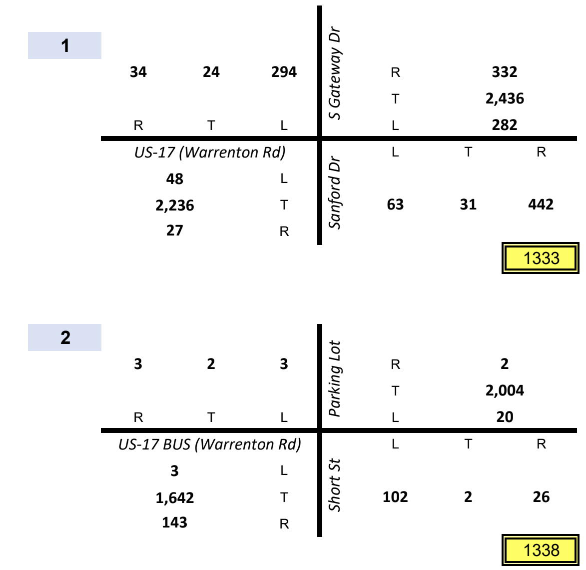
U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017 | Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

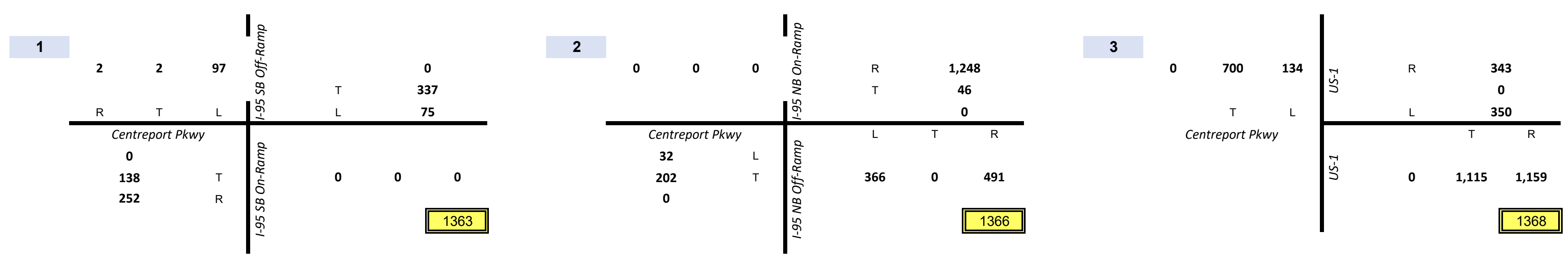
2042 Build

Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

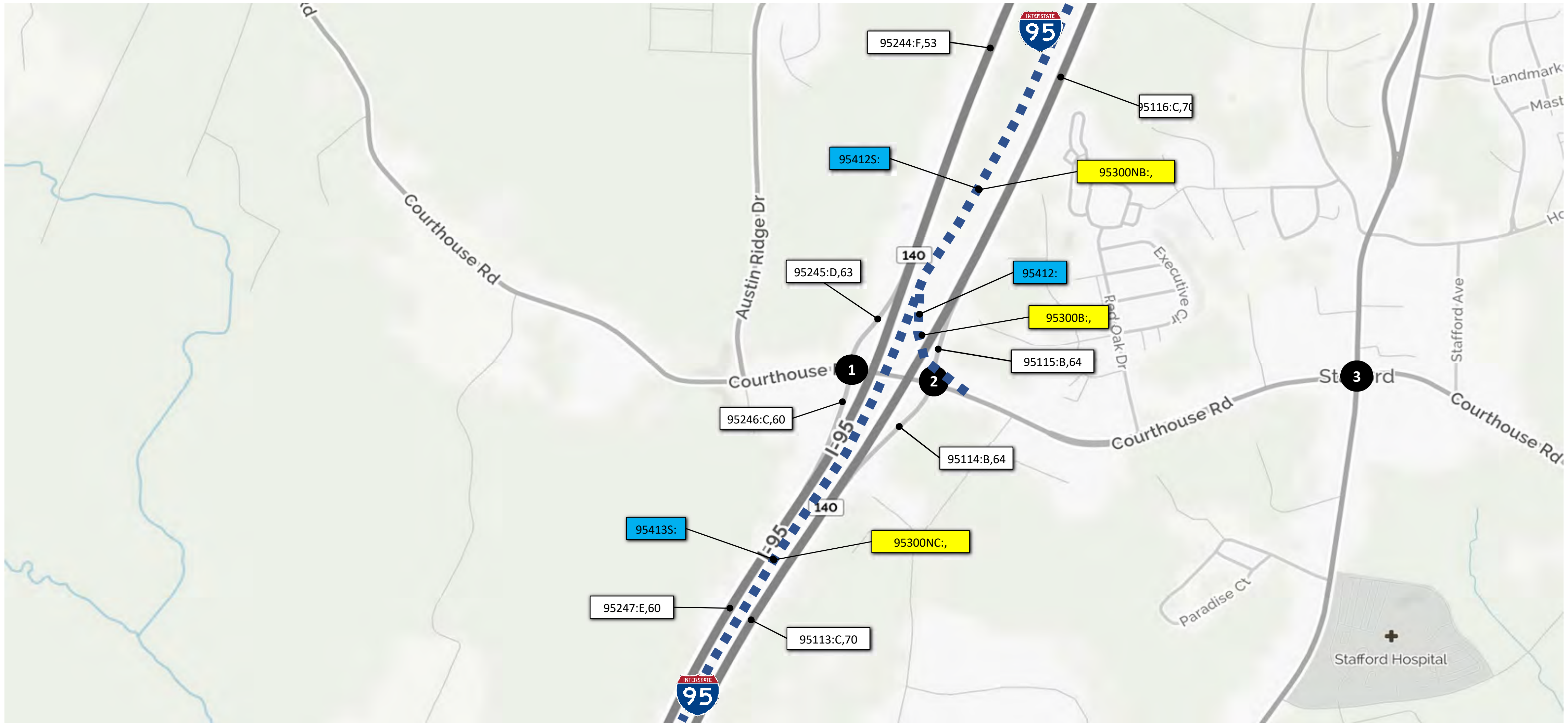
2042 Build

Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1



1 — Courthouse Road (630) / I-95 SB Off-Ramp / I-95 SB On-Ramp

Approach	L	T	R
I-95 SB Off-Ramp	296	0	75
Courthouse Road (630) westbound	87	643	0
Courthouse Road (630) eastbound	0	983	313

1403

2 — Courthouse Road (630) / I-95 NB On-Ramp / I-95 NB Off-Ramp

Approach	L	T	R
I-95 NB On-Ramp	0	0	0
Courthouse Road (630) westbound	0	626	797
Courthouse Road (630) eastbound	678	600	0
I-95 NB Off-Ramp	104	0	60

1406

3 — Courthouse Road (630) / US-1

Approach	L	T	R
US-1 southbound	192	474	393
Courthouse Road (630) westbound	73	529	303
Courthouse Road (630) eastbound	109	107	444
US-1 northbound	502	338	32

1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

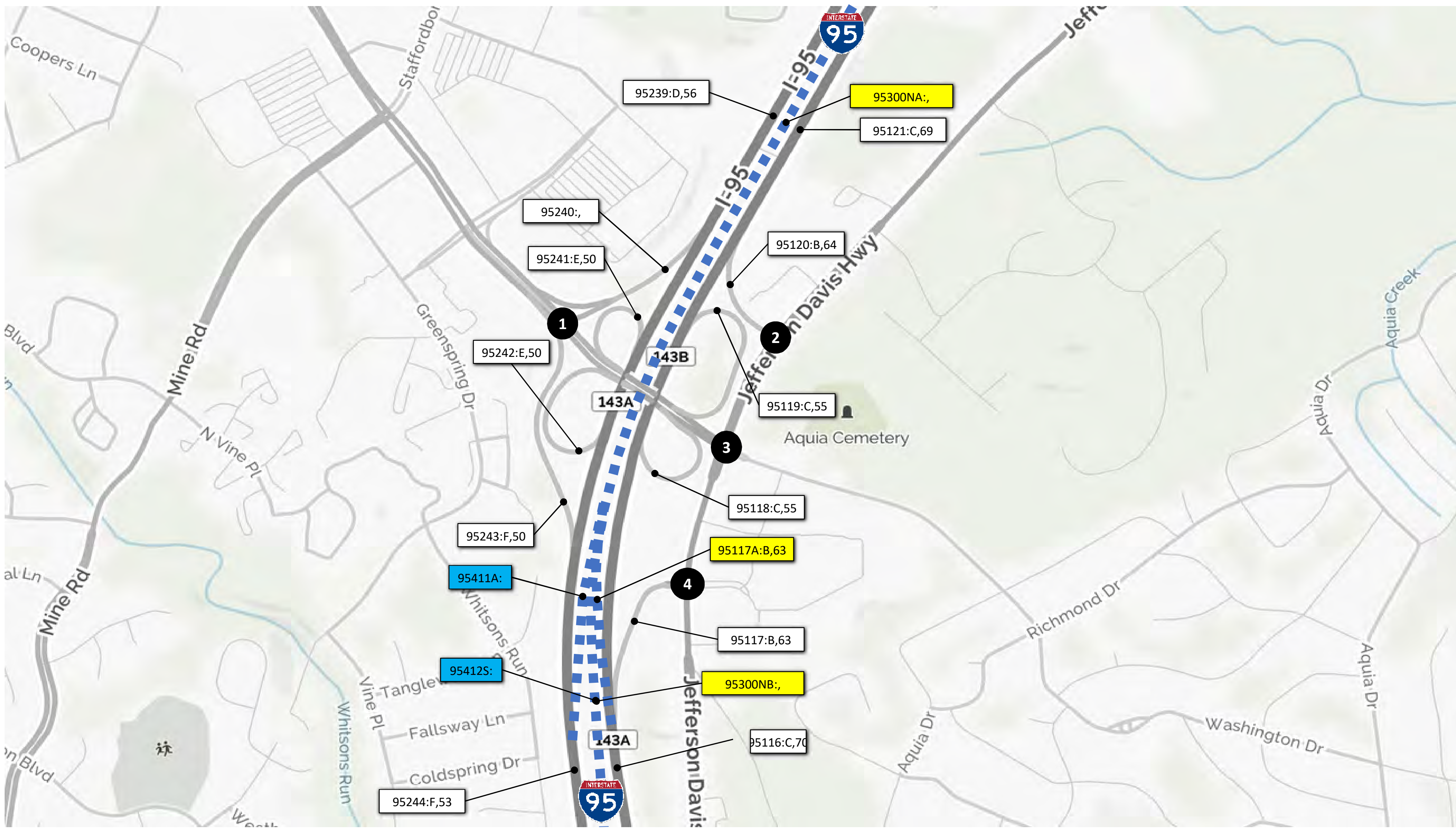
2042 Build

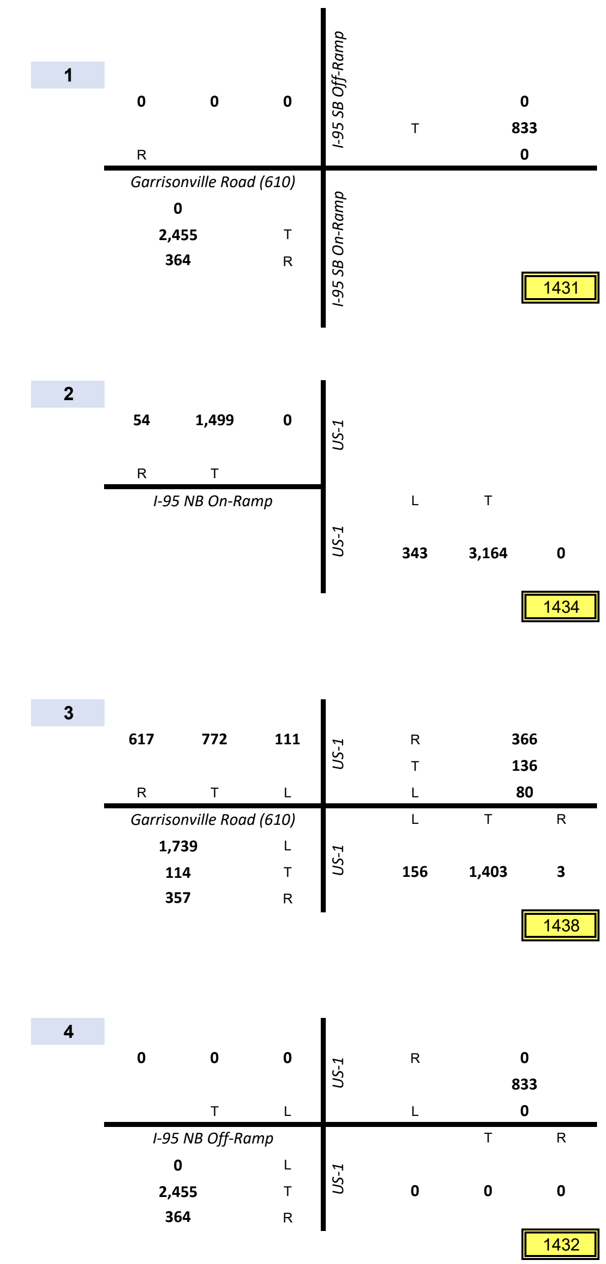
Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

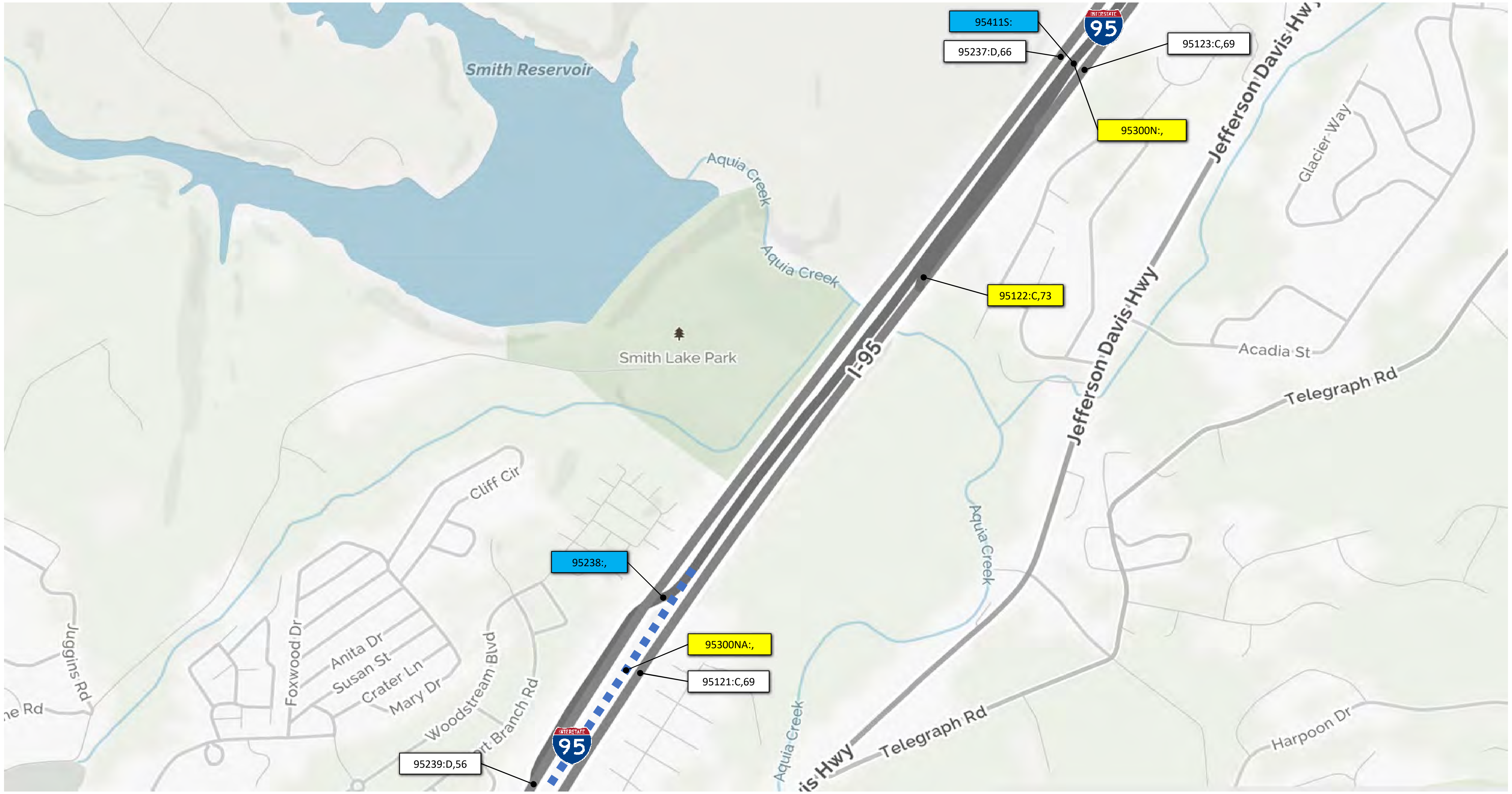
2042 Build

Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

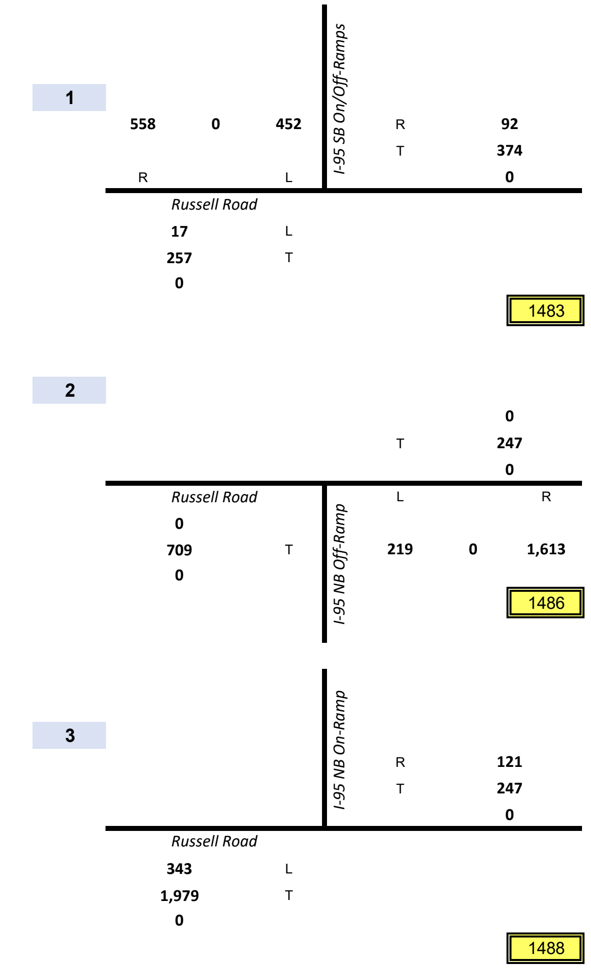
2042 Build

Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

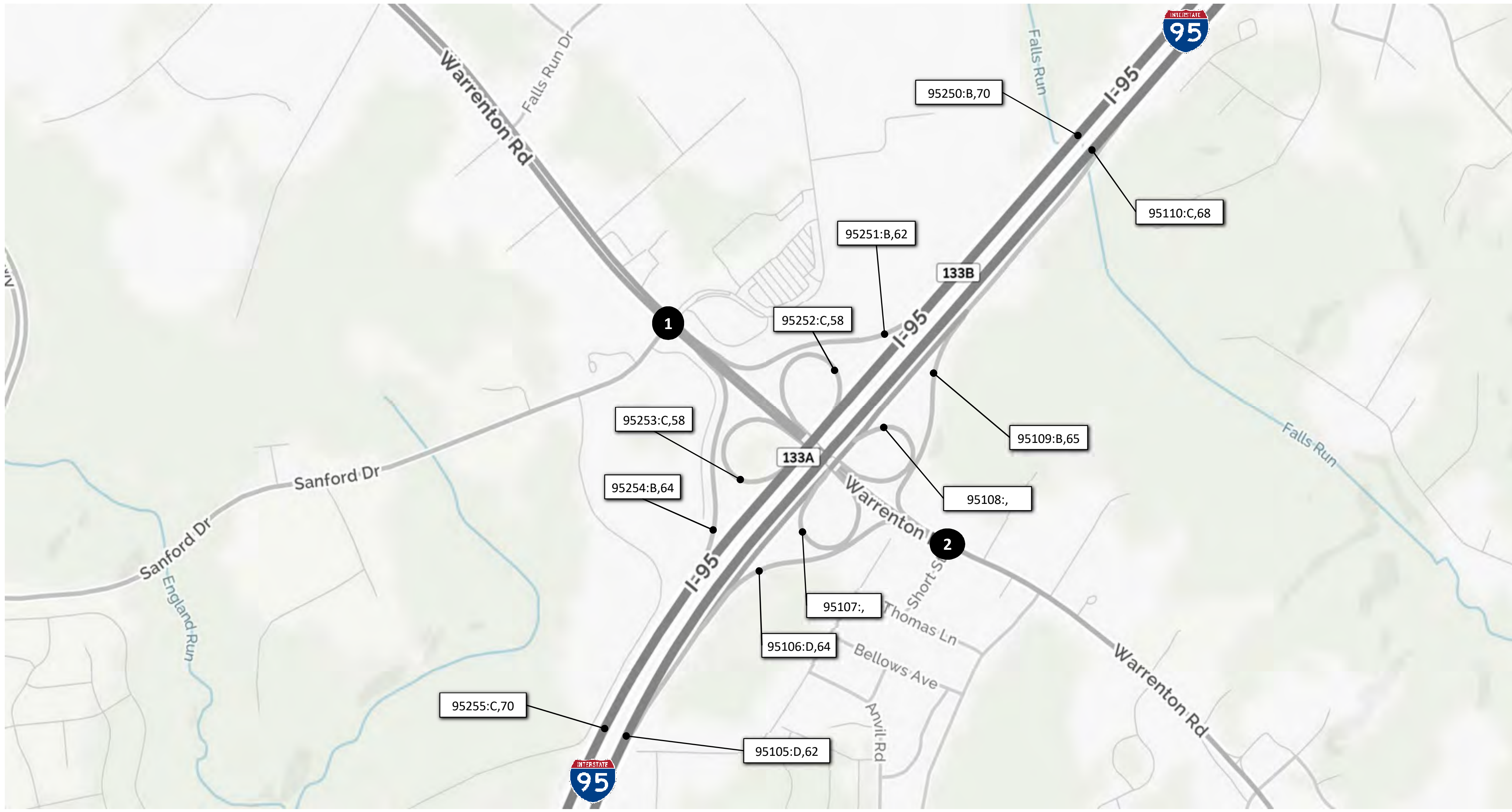
2042 Build

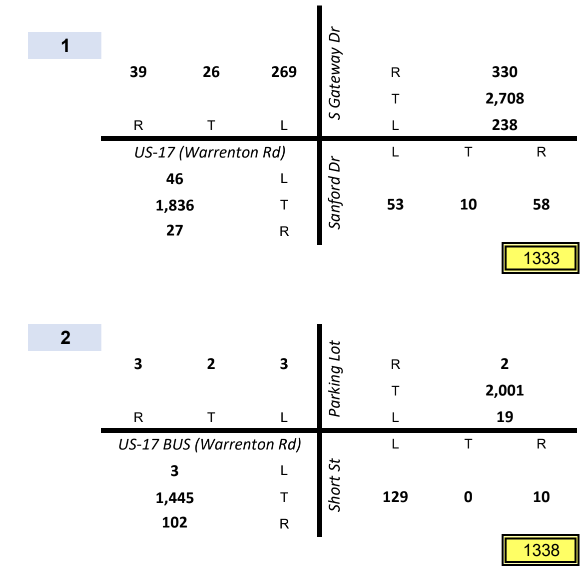
Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

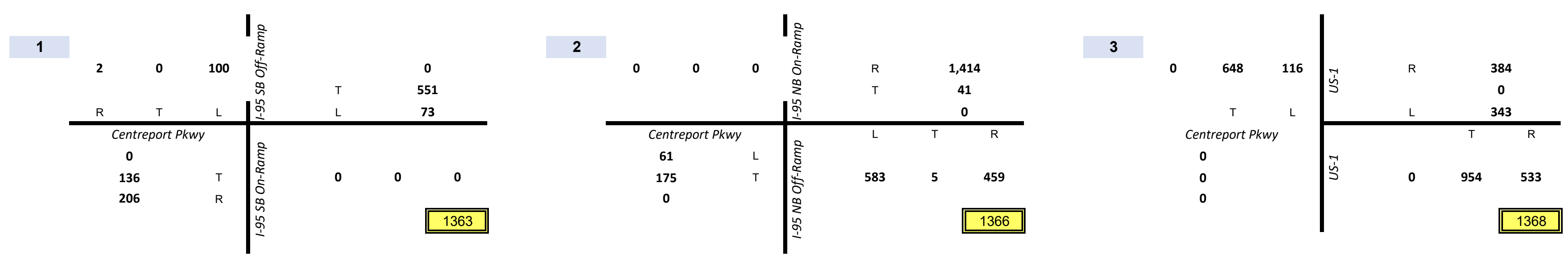
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

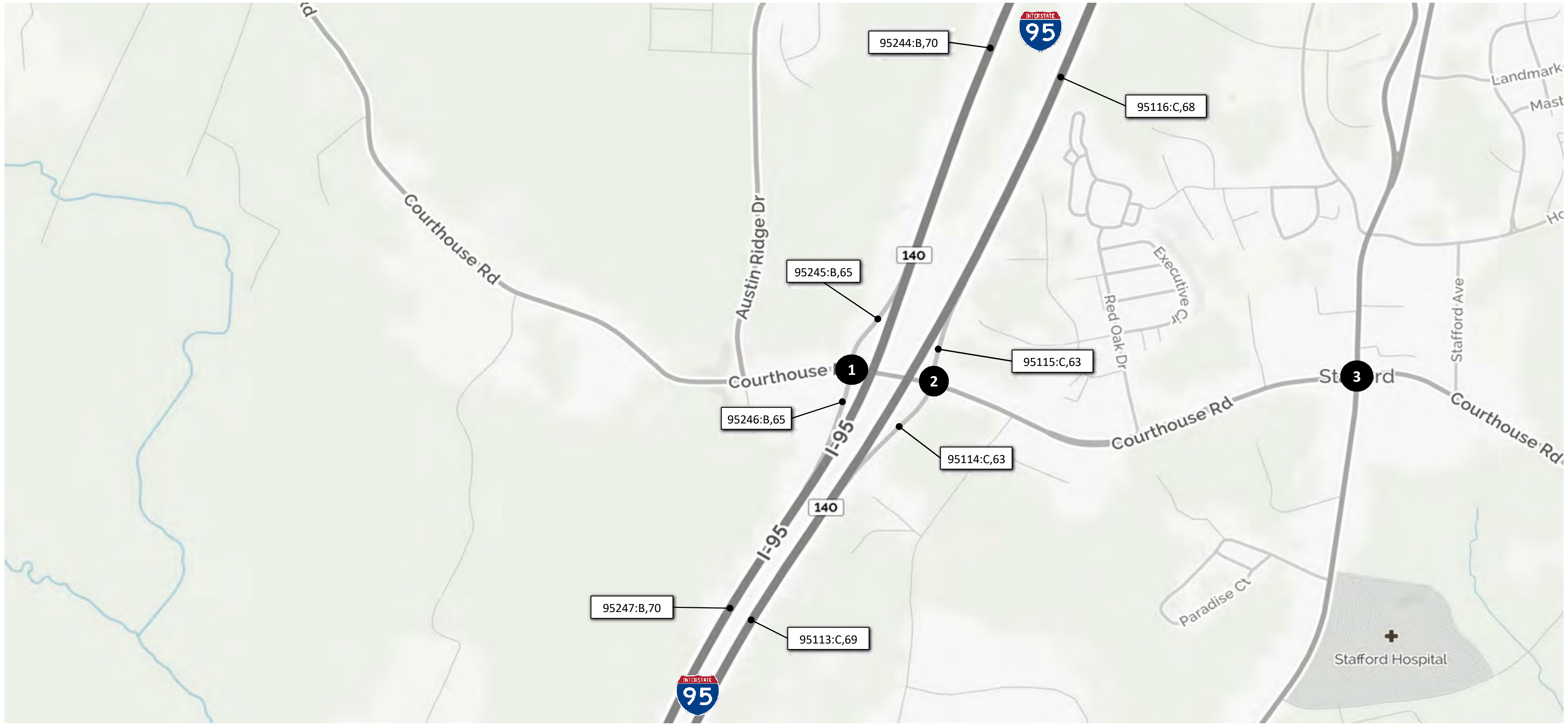
VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 No Build
Weekday 7- 8 AM Volumes
I-95 Corridor

April 2017 | Figure G.1-1



1

71	0	199	I-95 SB Off-Ramp		0
				T	782
R	T	L		L	94
Courthouse Road (630)			I-95 SB On-Ramp		
0					
573		T		0	0	0
405		R			

1403

2

0	0	0	I-95 NB On-Ramp	R	1,576
				T	420
				L	0
Courthouse Road (630)			I-95 NB Off-Ramp	L T R	
269		L			
503		T		456 15 115	
0					

1406

3

447	388	158	US-1	R	337
				T	668
R	T	L		L	73
Courthouse Road (630)			US-1	L T R	
102		L			
102		T		881 427 12	
400		R			

1408

Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

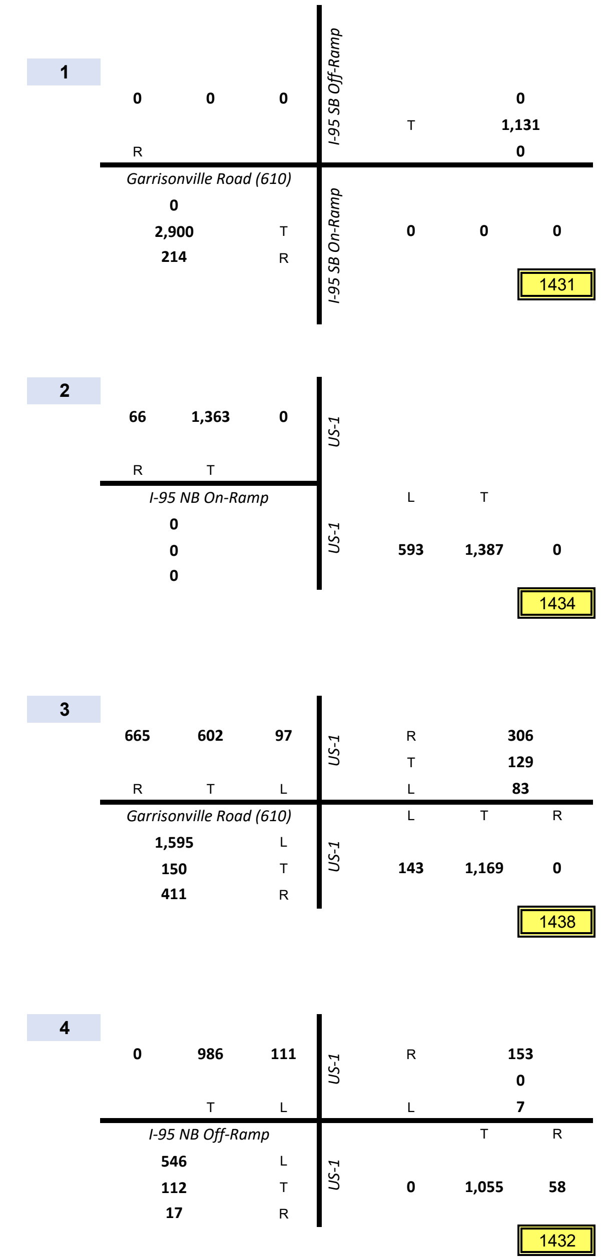
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx	Weekday Daily Volume
■ ■ ■ ■ ■	Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1

Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

SOUTHERN START/END I-95 EXPRESS LANES

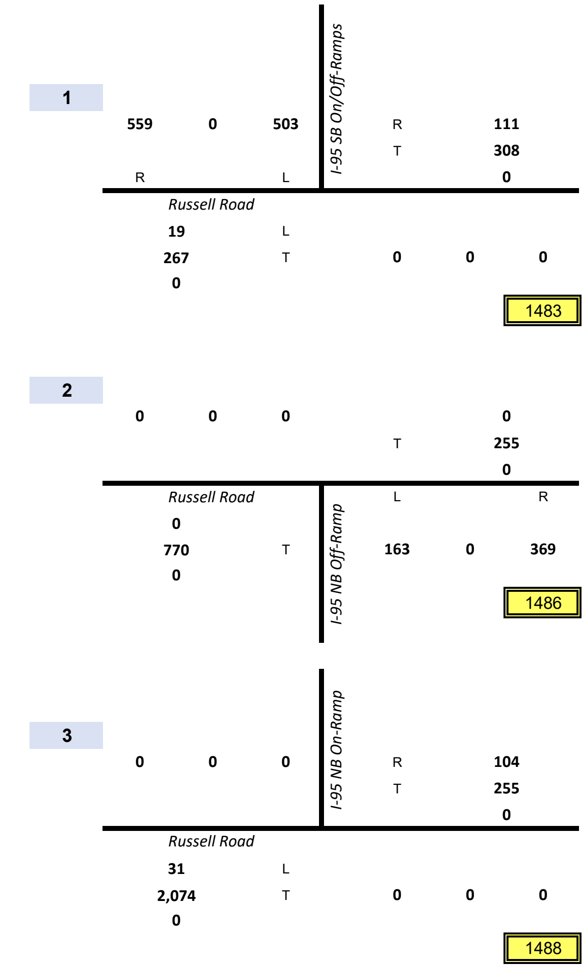
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

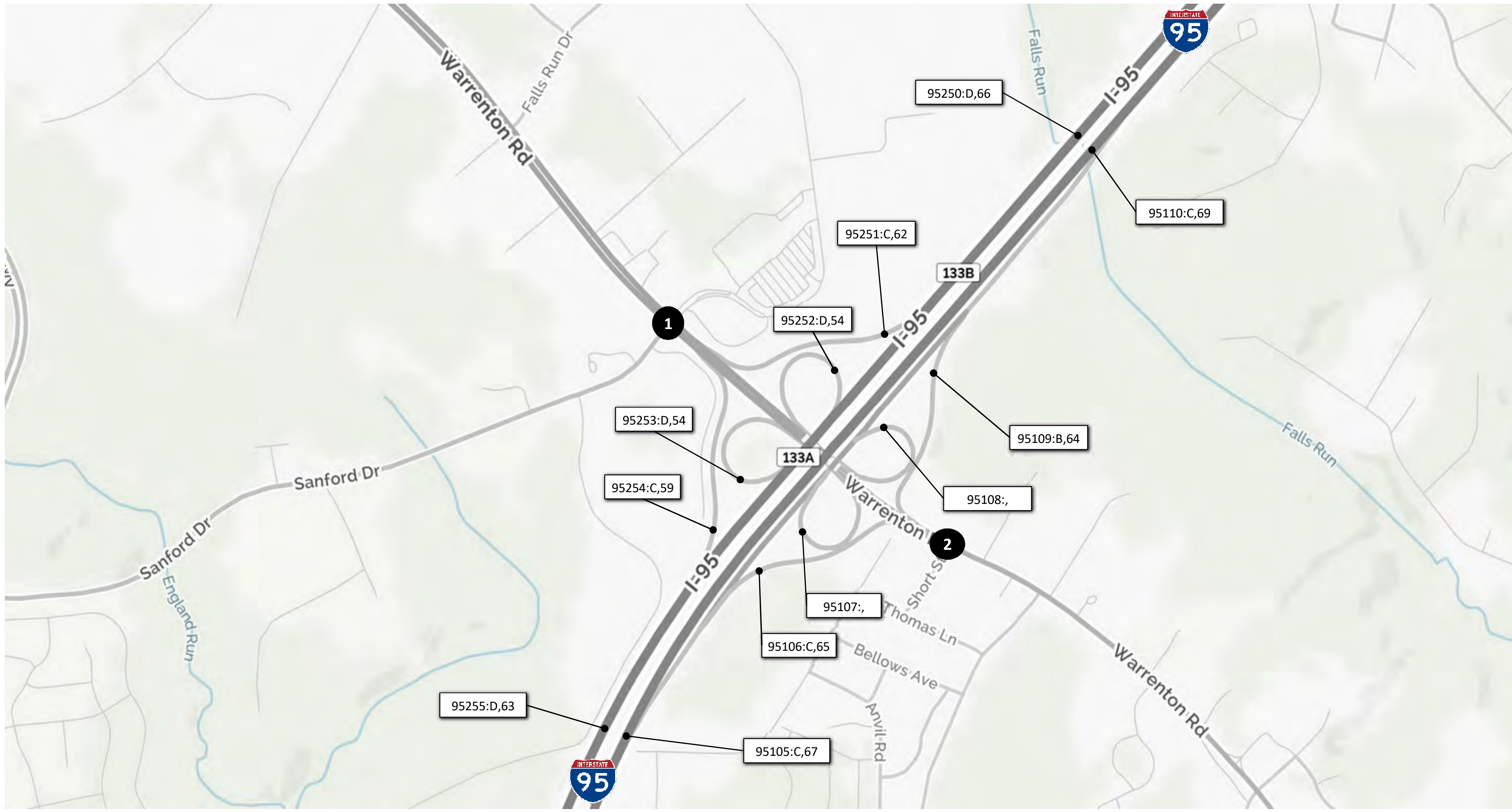
xx,xxx Weekday Daily Volume

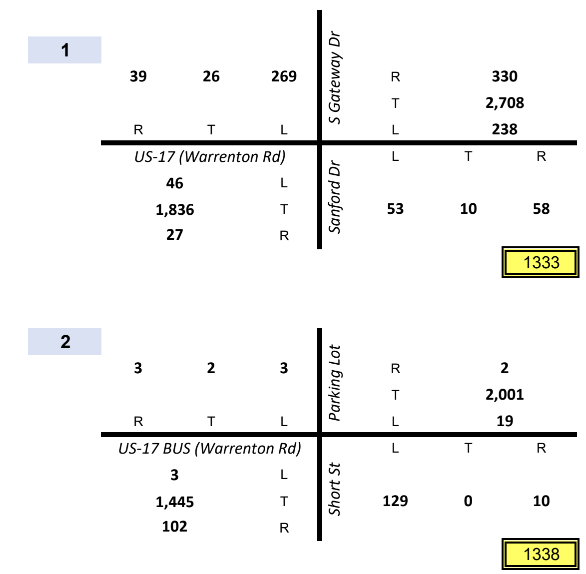
NOT TO SCALE

EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 7- 8 AM Volumes
I-95 Corridor

April 2017 | Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

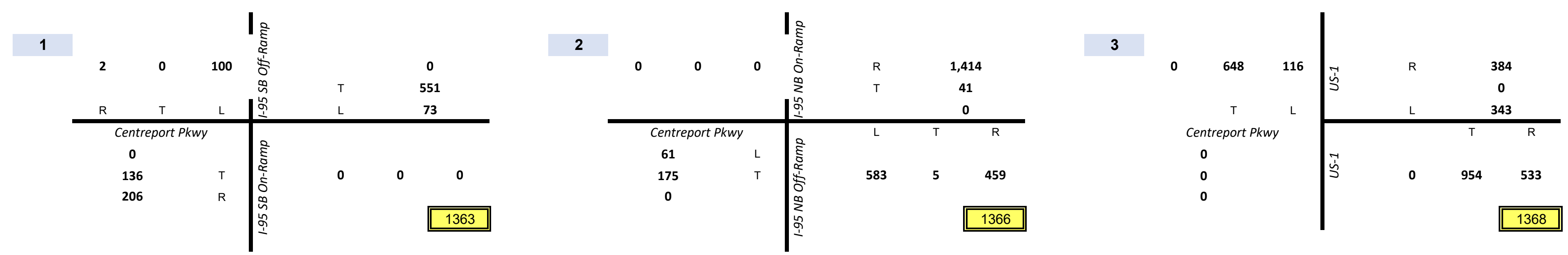
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

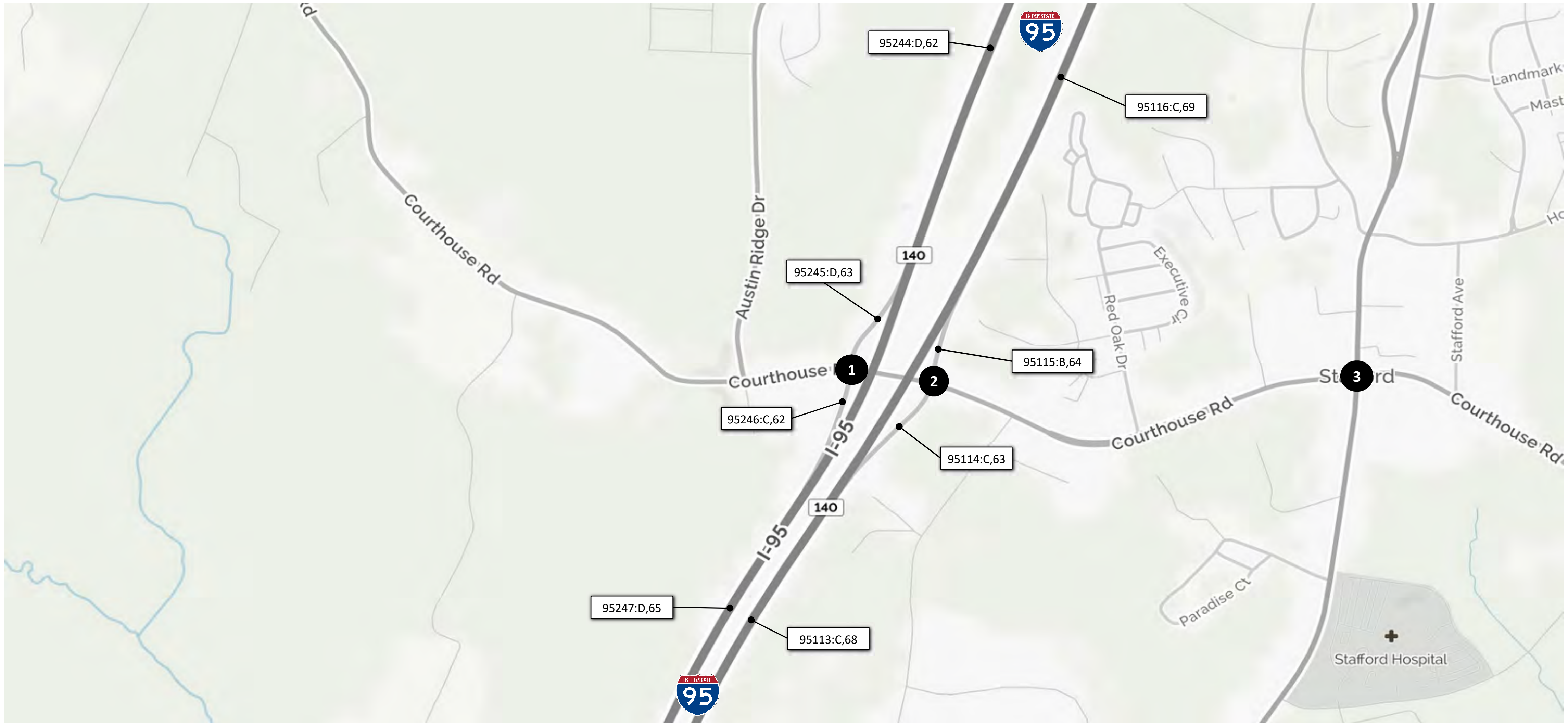
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 No Build
Weekday 7- 8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1



1

I-95 SB Off-Ramp: 71 (R) 0 (T) 199 (L)

Courthouse Road (630) westbound: R 0, T 782, L 94

Courthouse Road (630) eastbound: L 0, T 573, R 405

I-95 SB On-Ramp: 0 0 0

1403

2

I-95 NB On-Ramp: 0 0 0

Courthouse Road (630) westbound: R 1,576, T 420, L 0

Courthouse Road (630) eastbound: L 269, T 503, R 0

I-95 NB Off-Ramp: L 456, T 15, R 115

1406

3

US-1 southbound: 447 (R) 388 (T) 158 (L)

Courthouse Road (630) westbound: R 337, T 668, L 73

Courthouse Road (630) eastbound: L 102, T 102, R 400

US-1 northbound: L 881, T 427, R 12

1408

Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

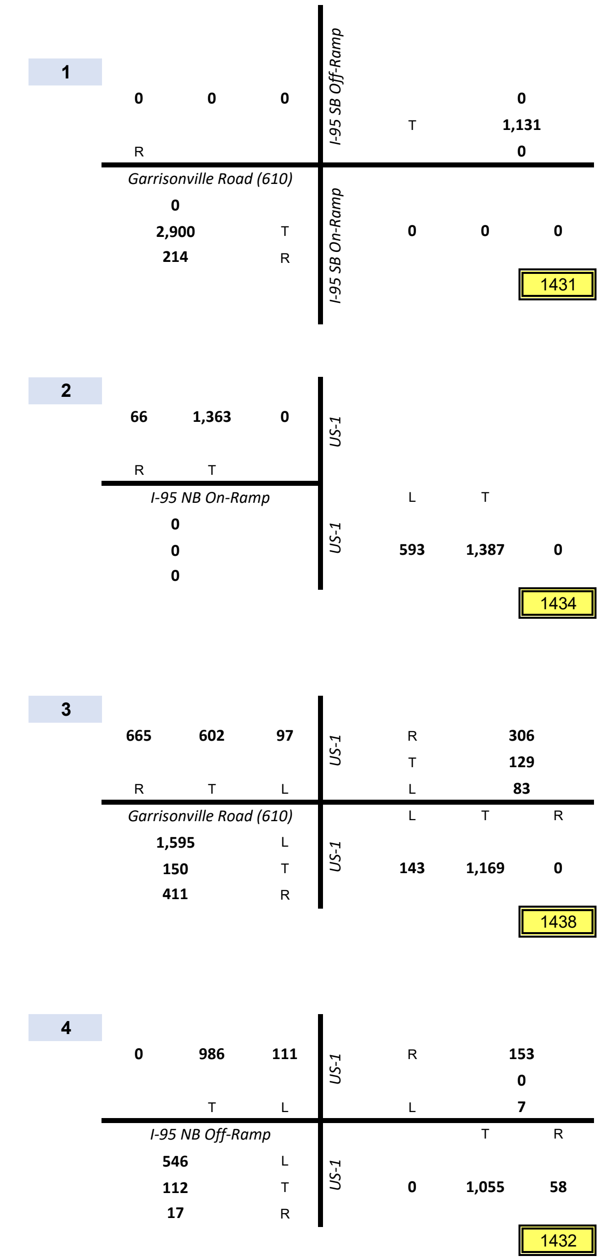
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume
Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

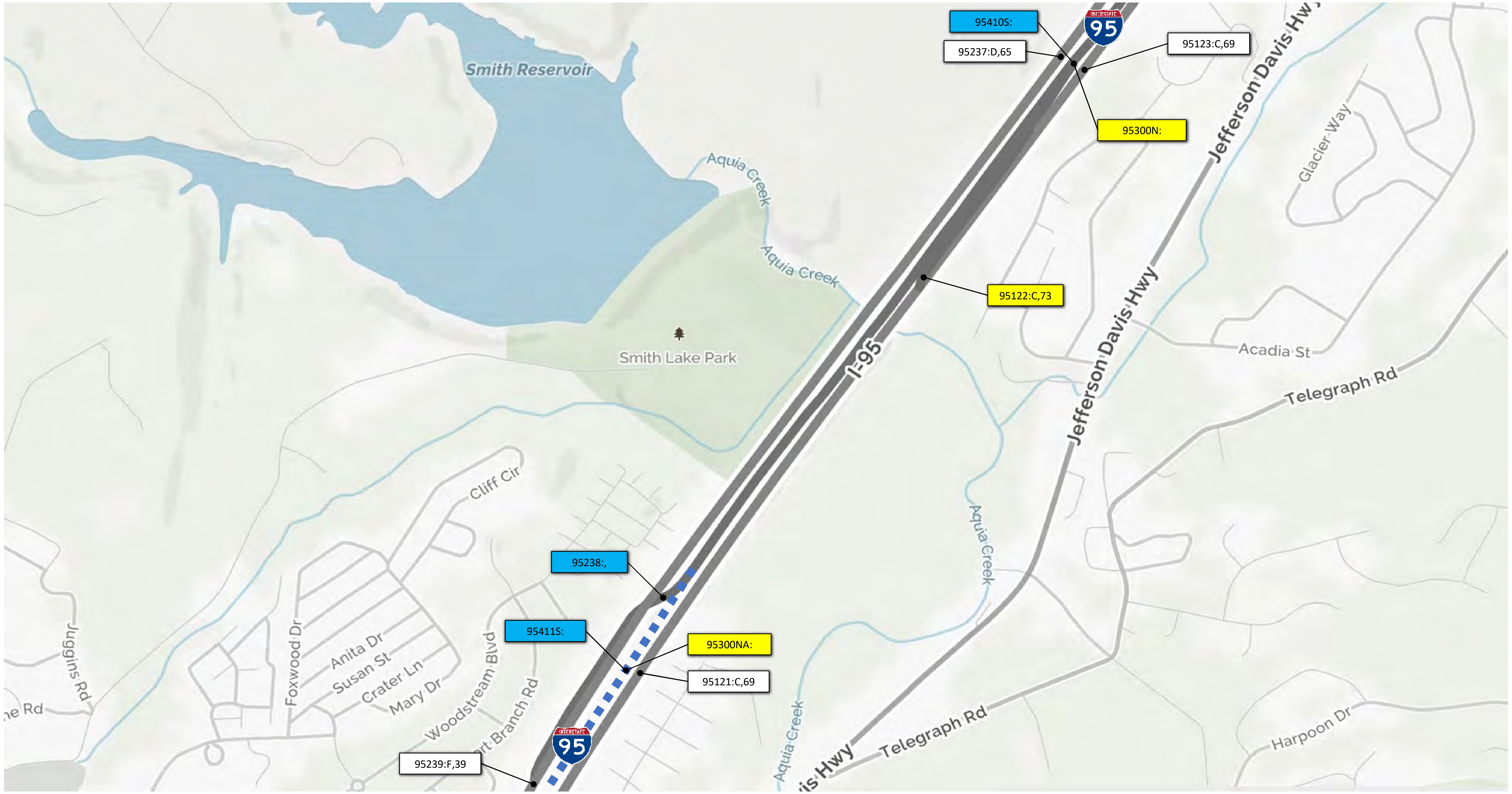
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

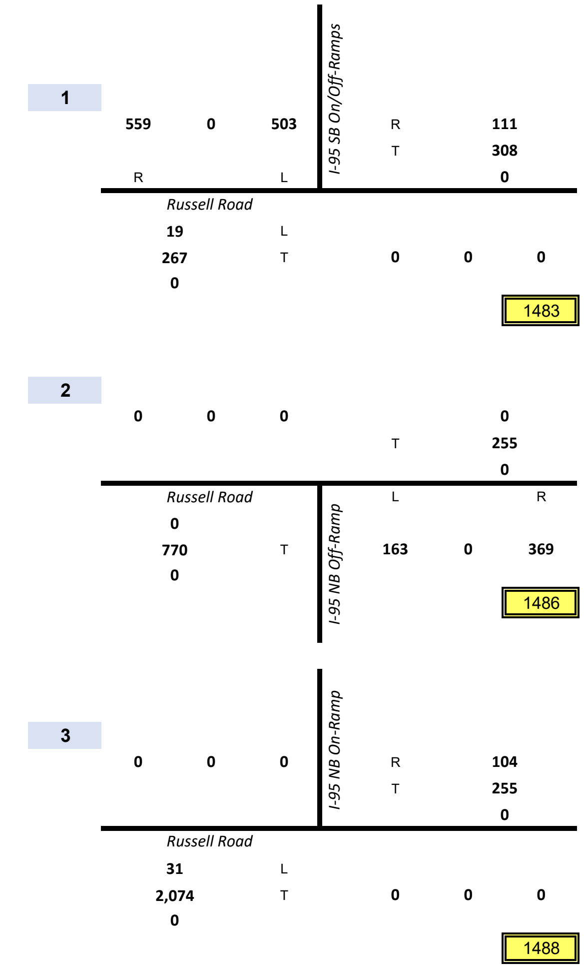
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

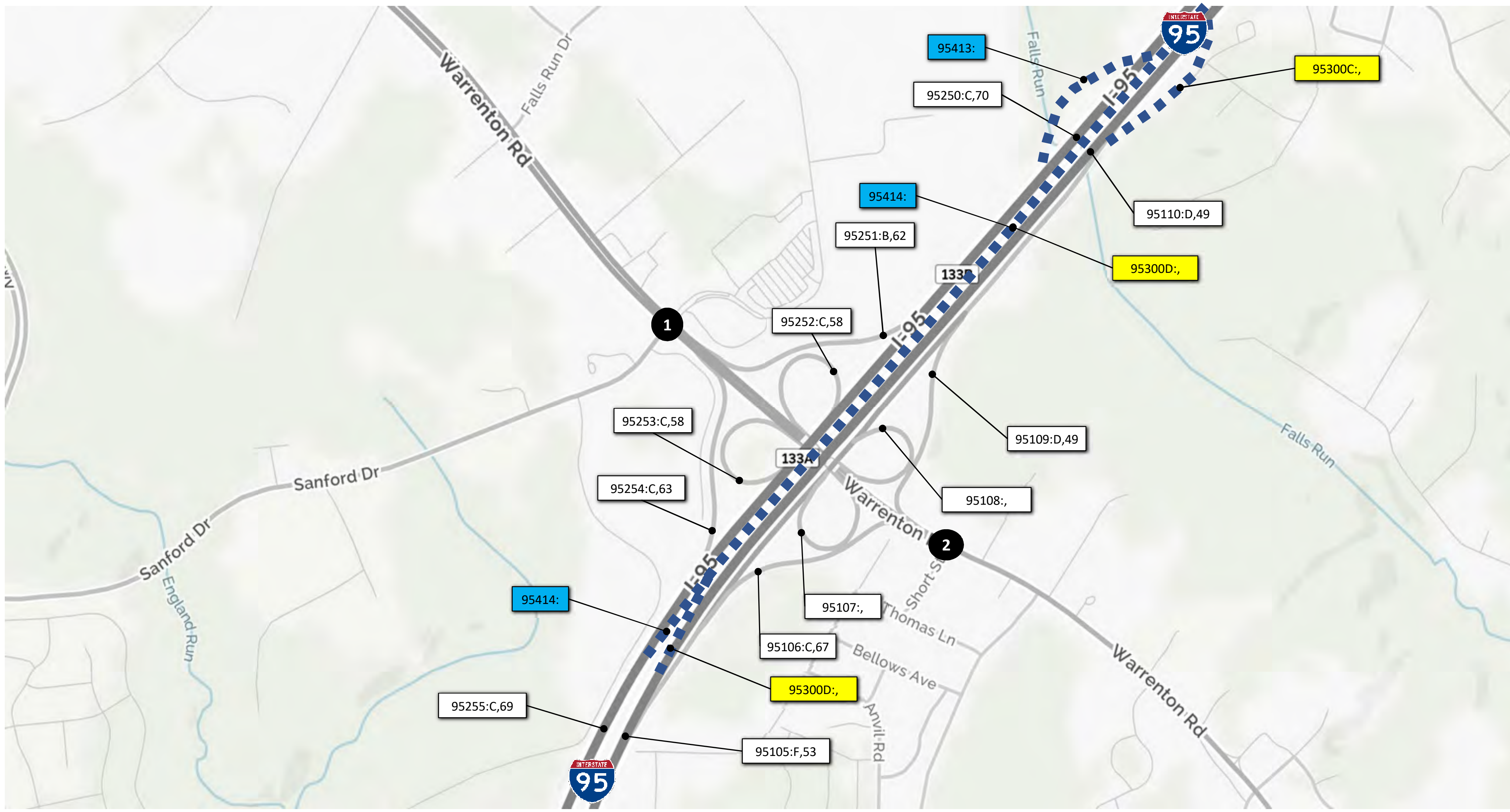
2042 No Build

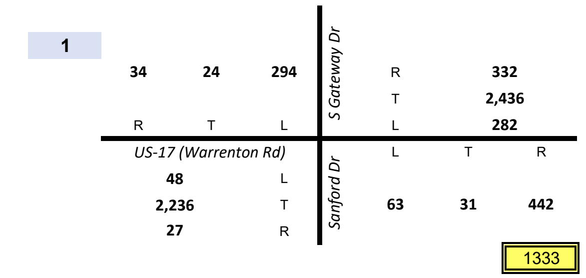
Weekday 7- 8 AM Volumes

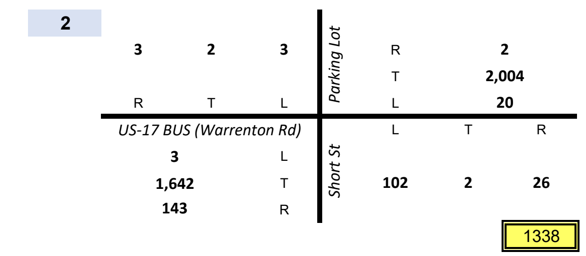
I-95 Corridor

April 2017

Figure G.1-1







Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1

1

2	2	97	
R	T	L	

I-95 SB Off-Ramp

	0
T	337
L	75

Centreport Pkwy

0	
138	T
252	R

I-95 SB On-Ramp

0	0	0

1363

2

0	0	0

I-95 NB On-Ramp

R	1,248
T	46
	0

Centreport Pkwy

32	L
202	T
0	

I-95 NB Off-Ramp

L	T	R
366	0	491

1366

3

0	700	134
	T	L

Centreport Pkwy

US-1

R	343
	0
L	350

US-1

	T	R
0	1,115	1,159

1368

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

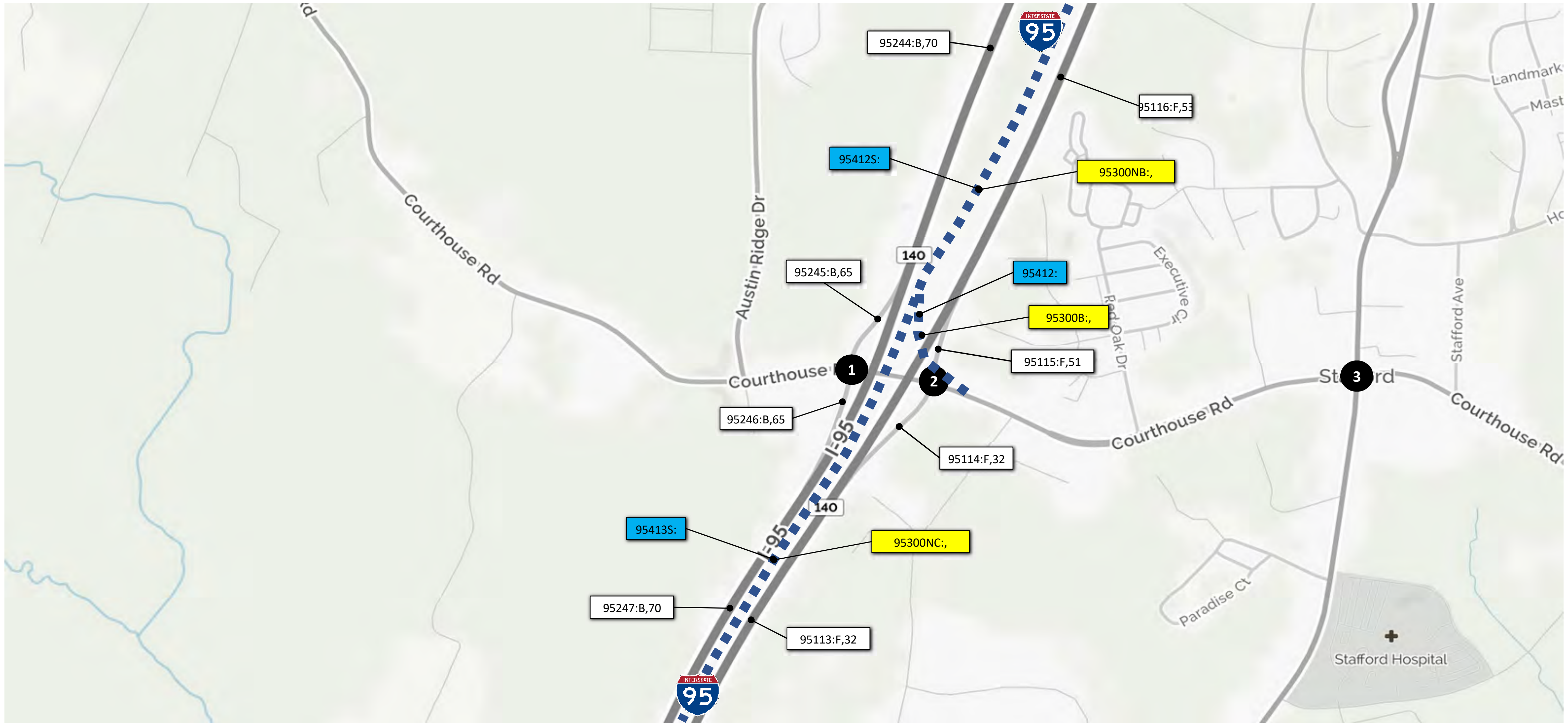
VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017 | Figure G.1-1



1

75	0	296
R	T	L

I-95 SB Off-Ramp

	0
T	643
L	87

Courthouse Road (630)

0	
983	T
313	R

I-95 SB On-Ramp

1403

2

0	0	0

I-95 NB On-Ramp

R	797
T	626
	0

Courthouse Road (630)

678	L
600	T
0	

I-95 NB Off-Ramp

L	T	R
104	0	60

1406

3

393	474	192
R	T	L

US-1

R	303
T	529
L	73

Courthouse Road (630)

109	L
107	T
444	R

US-1

L	T	R
502	338	32

1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

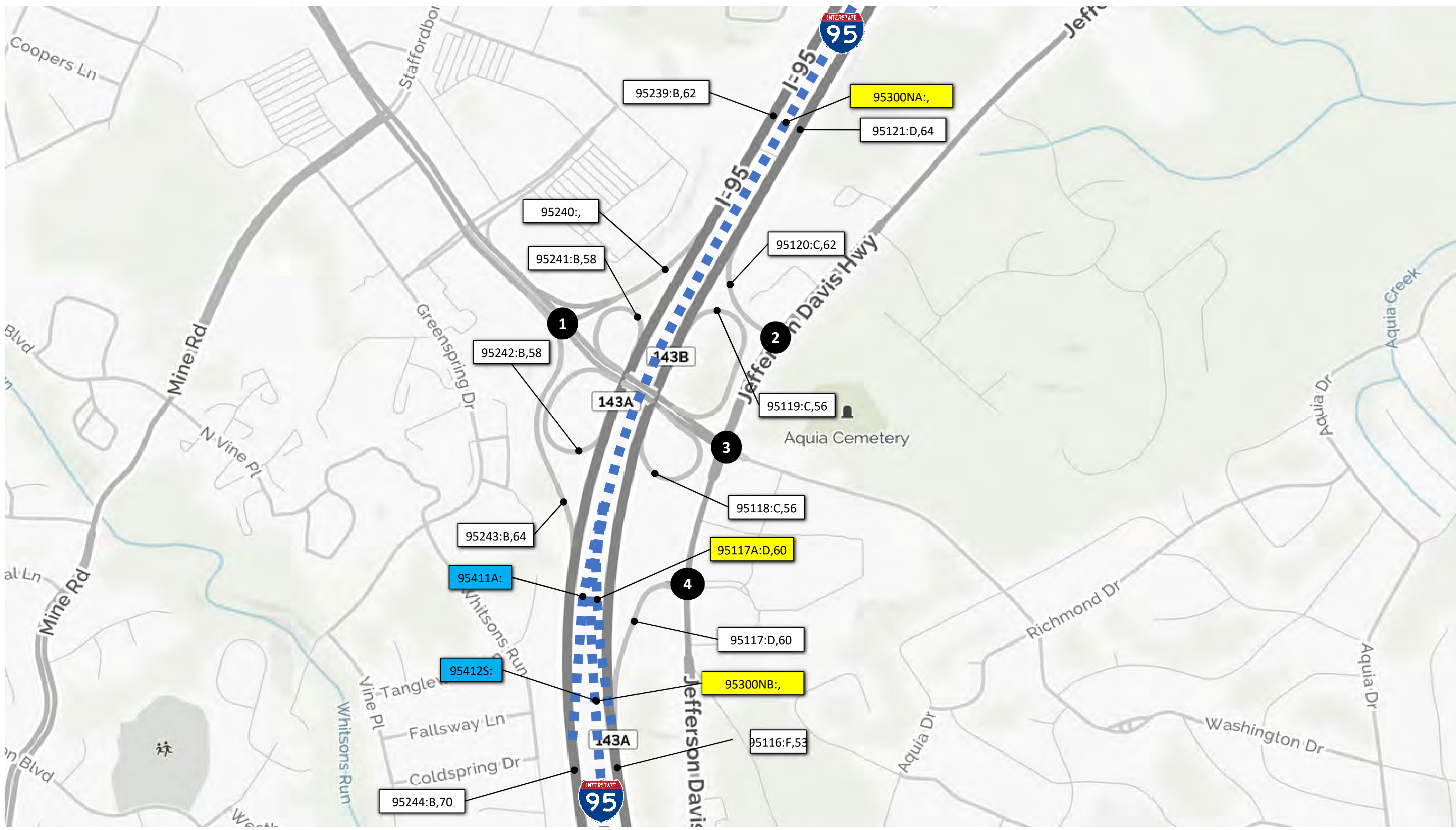
2042 No Build

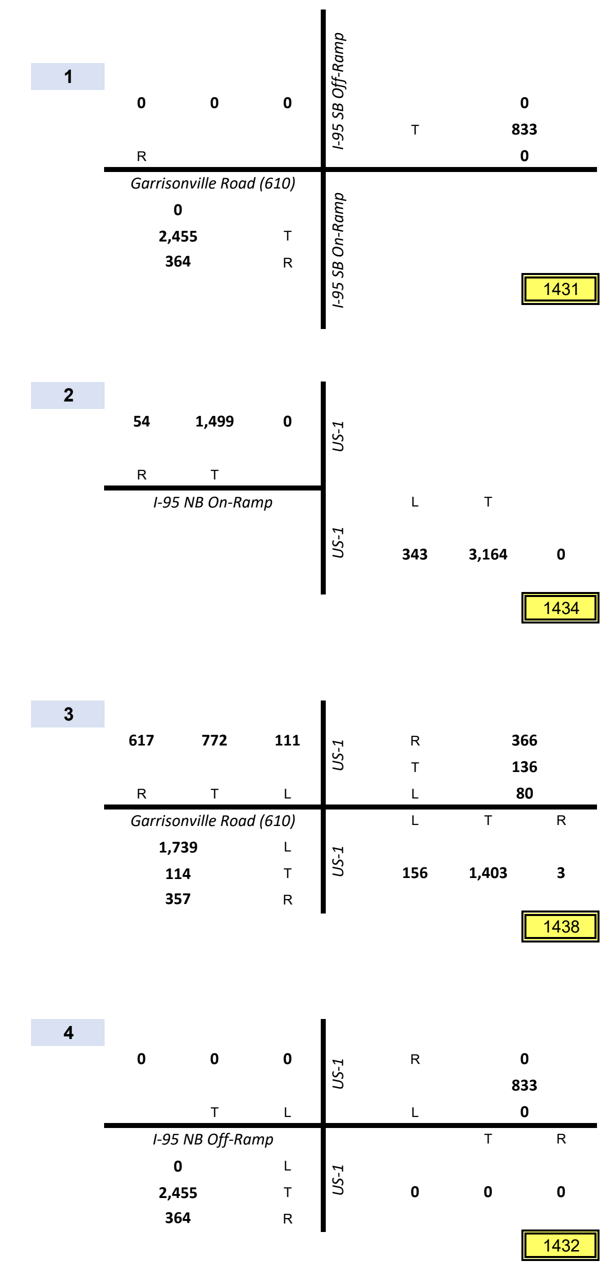
Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

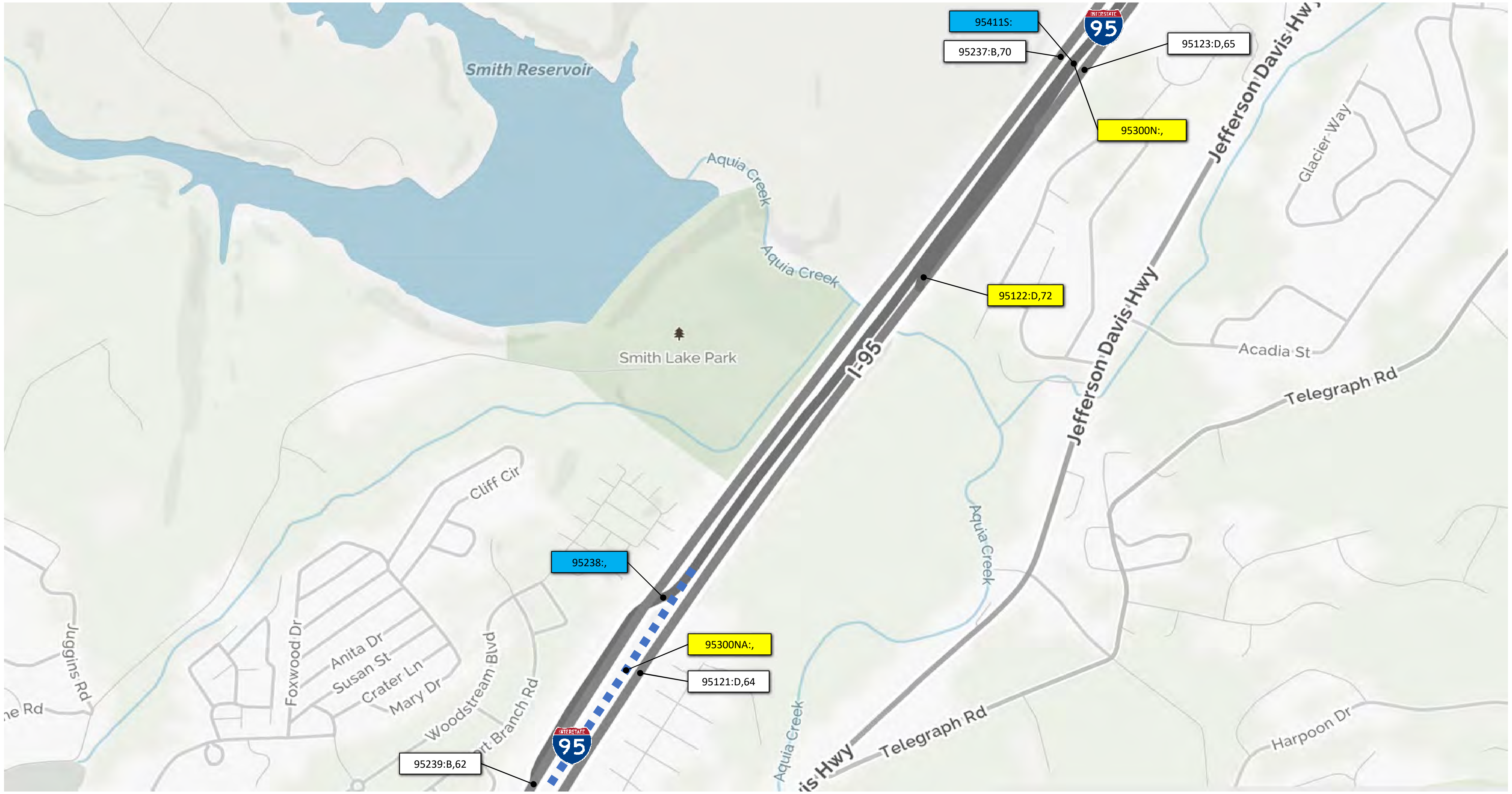
2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

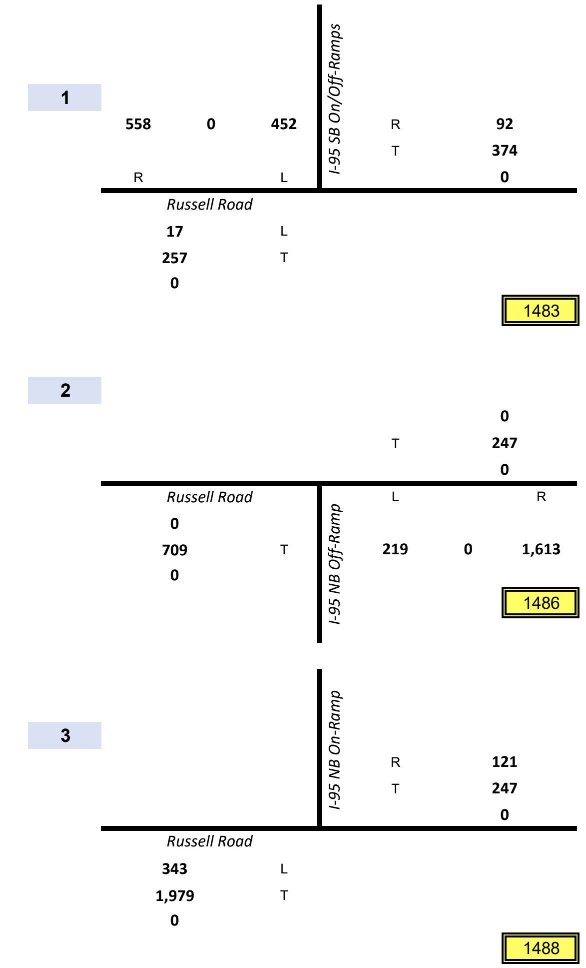
SOUTHERN START/END I-95 EXPRESS LANES

2042 No Build

Weekday 7-8 AM Volumes

I-95 Corridor

February 2017 | Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

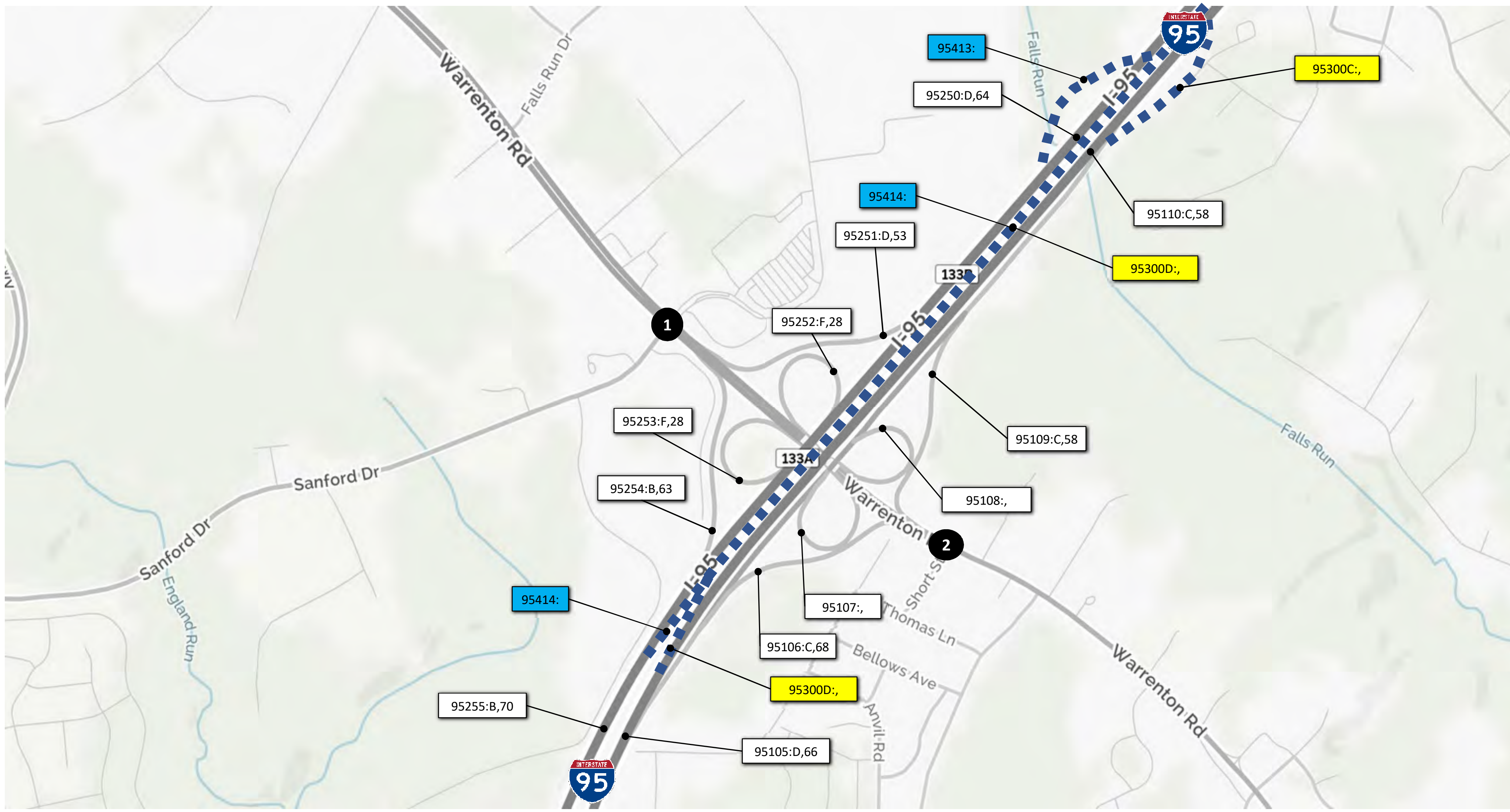
VDOT Virginia Department of Transportation

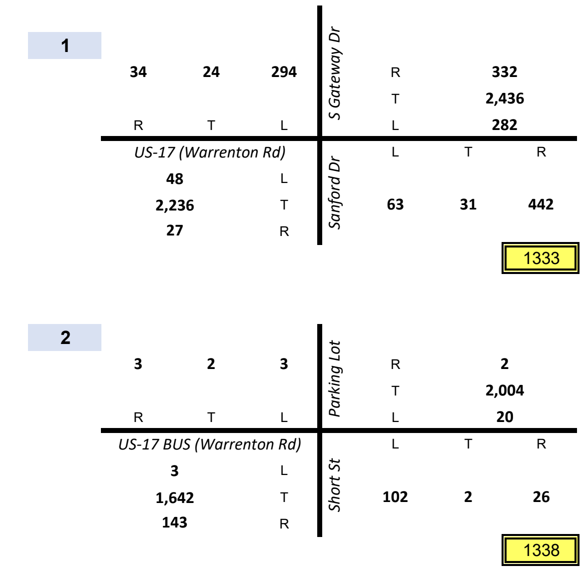
U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

February 2017	Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

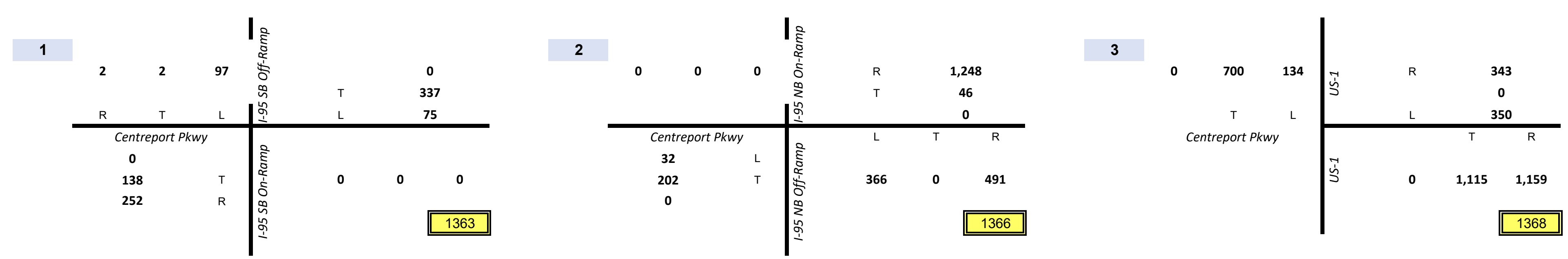
2042 Build

Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

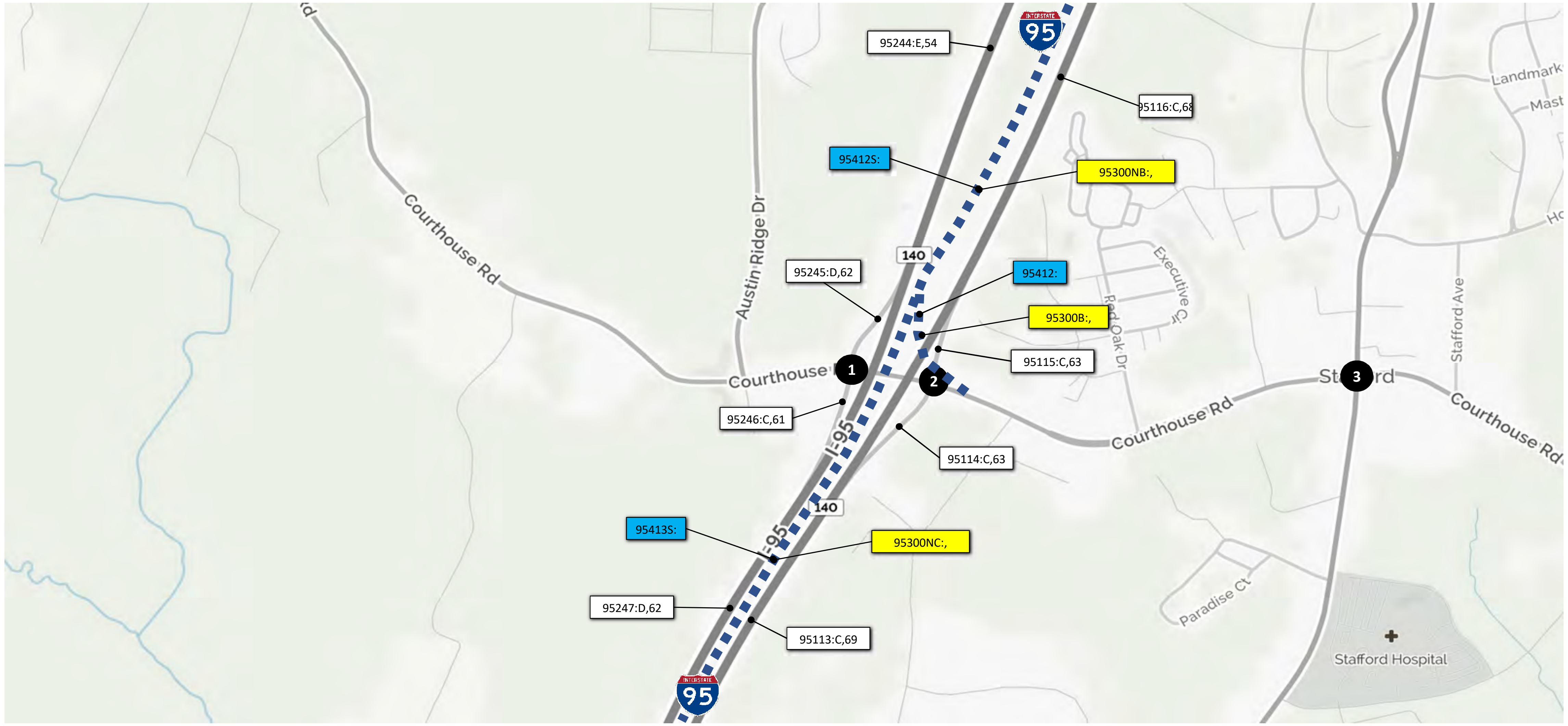
VDOT Virginia Department of Transportation

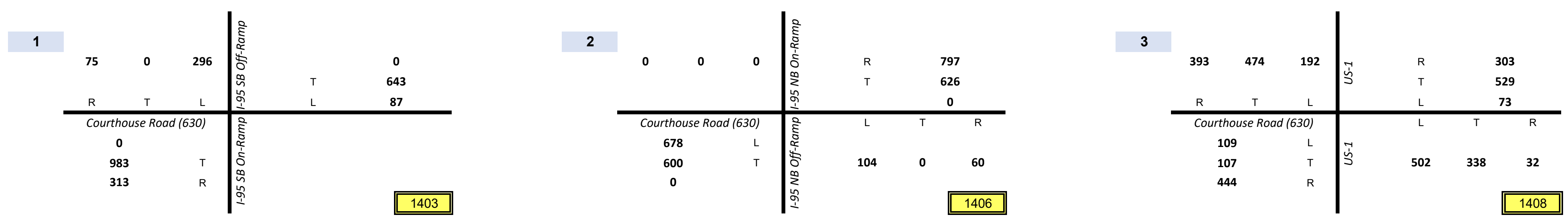
U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

2042 Build
Weekday 5-6 PM LOS & Speed
I-95 Corridor

May 2017 | Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

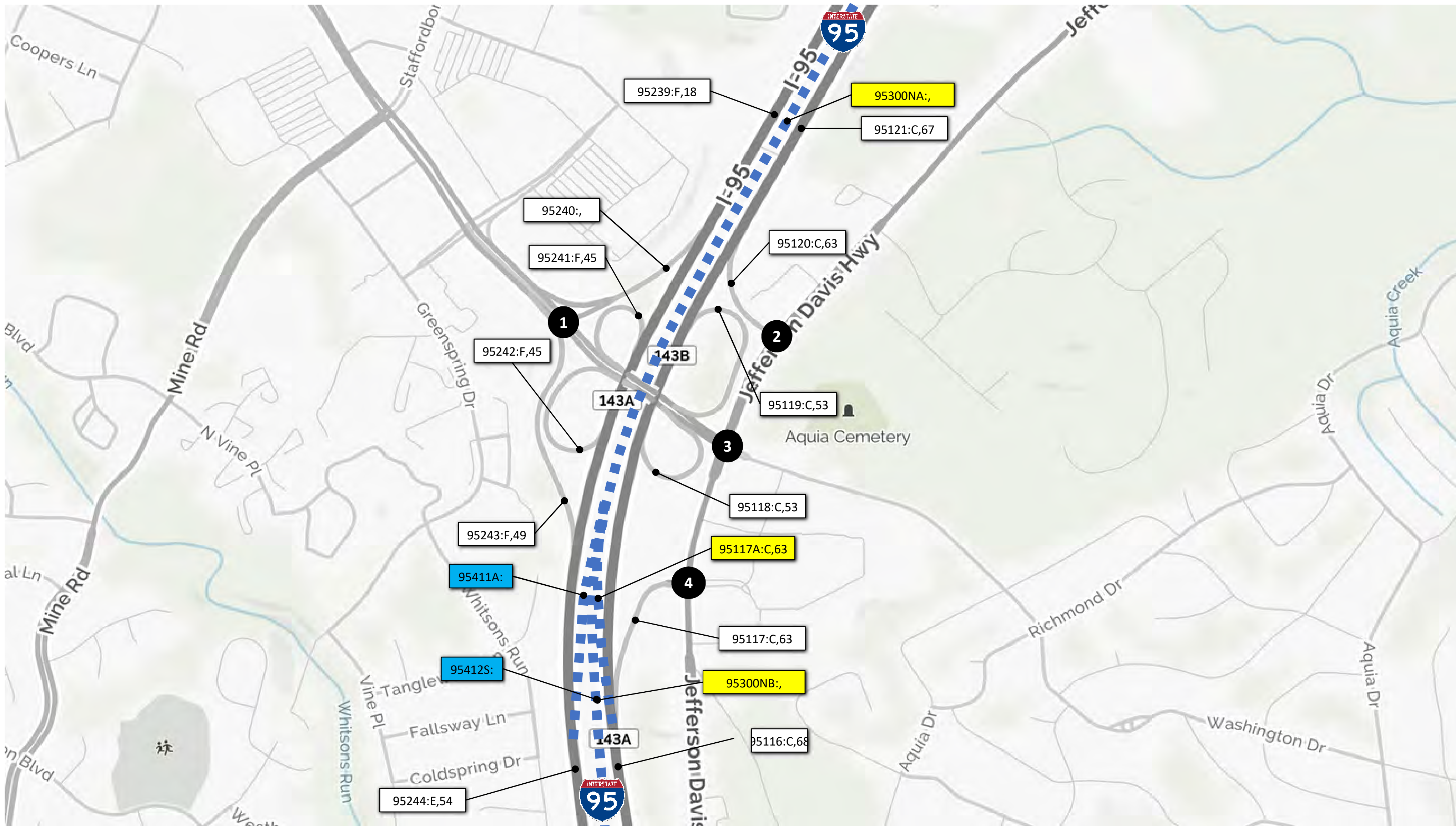
2042 Build

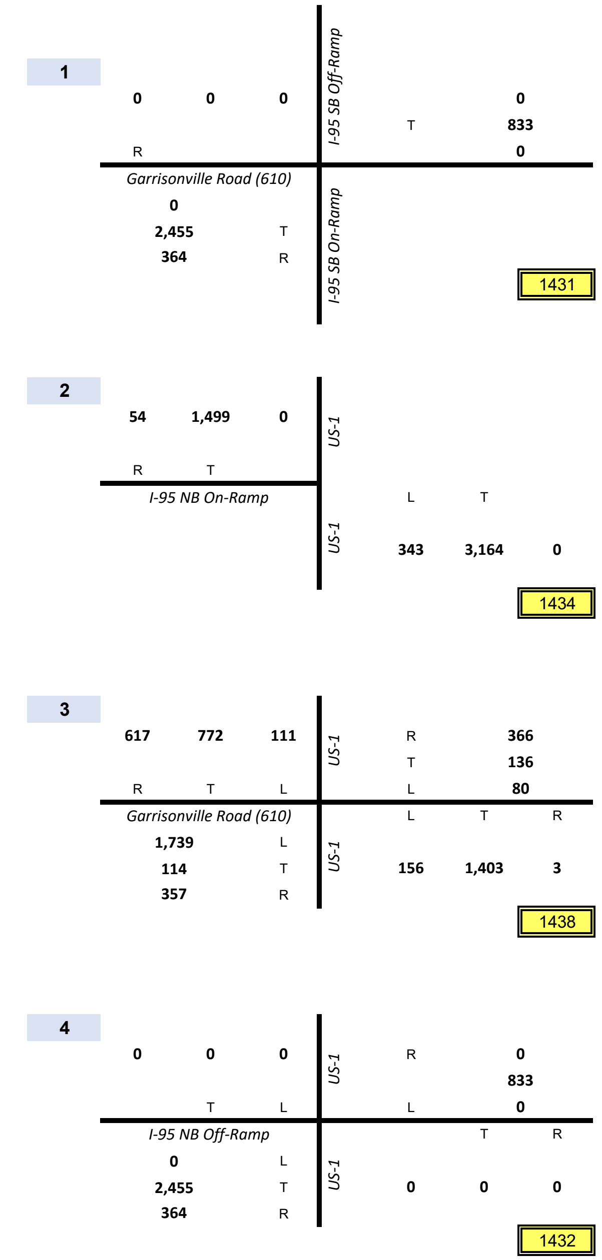
Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

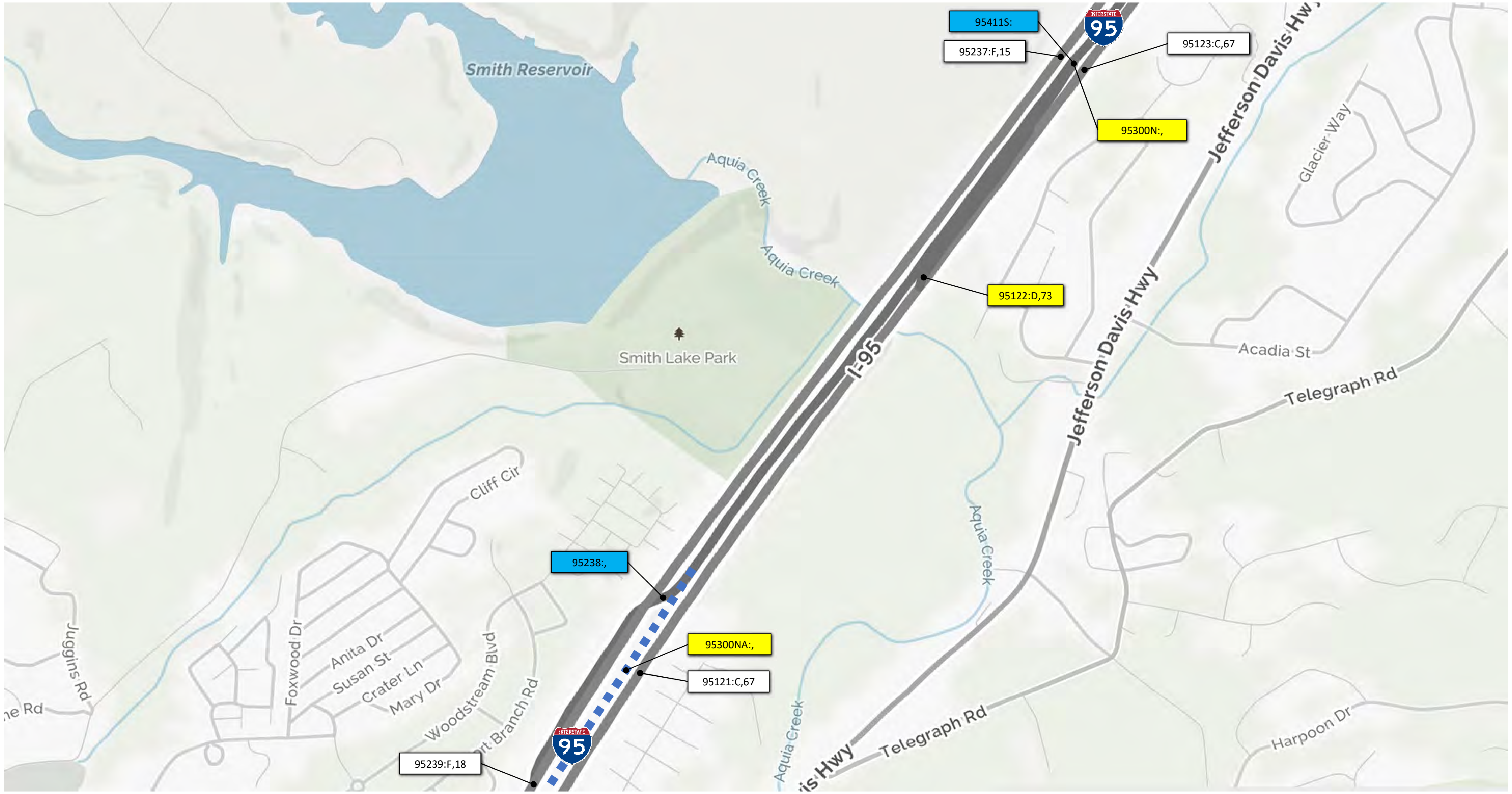
2042 Build

Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

SOUTHERN START/END I-95 EXPRESS LANES

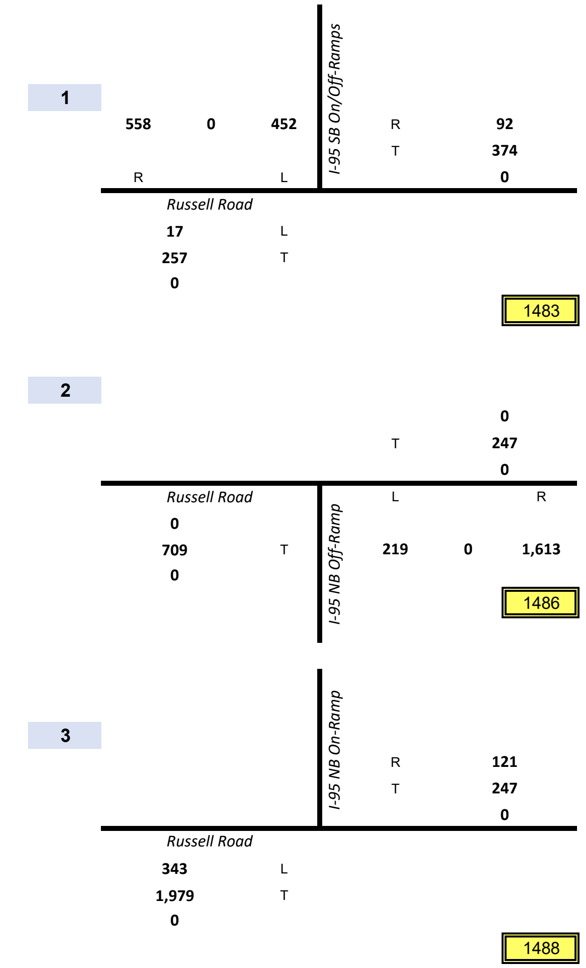
2042 Build

Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1



Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

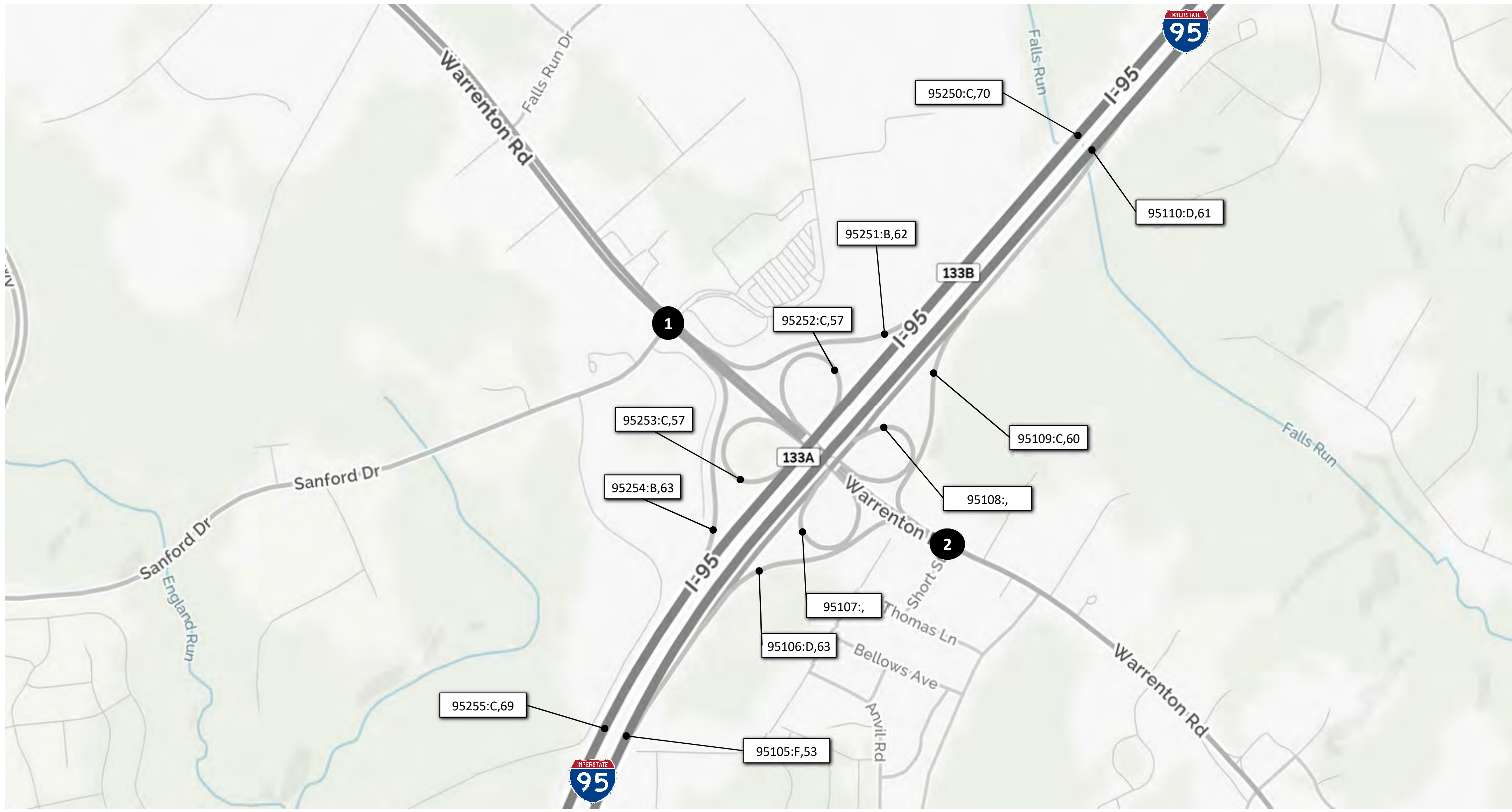
2042 Build

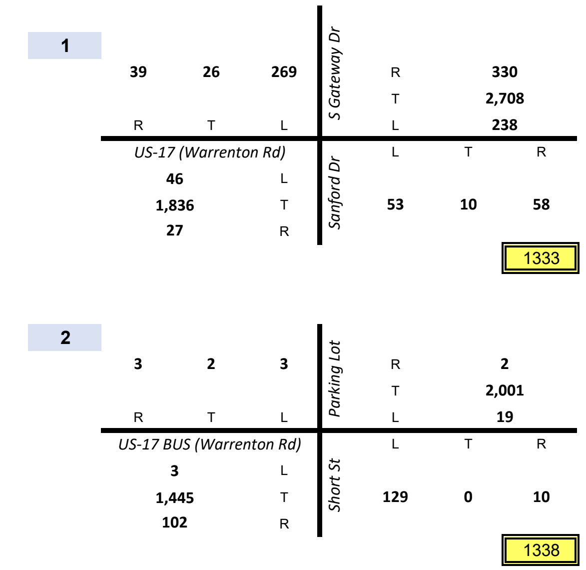
Weekday 5-6 PM LOS & Speed

I-95 Corridor

May 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

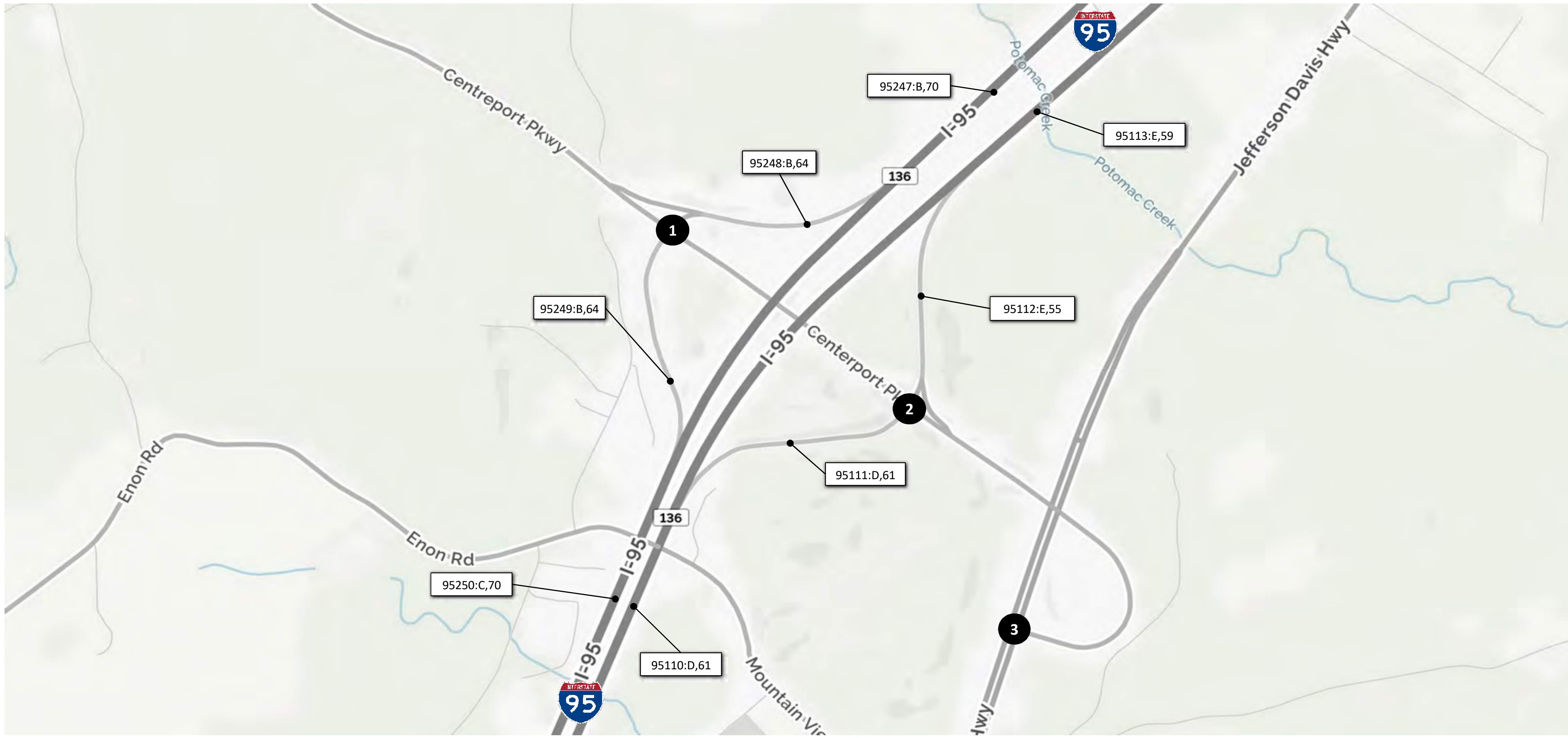
2042 No Build

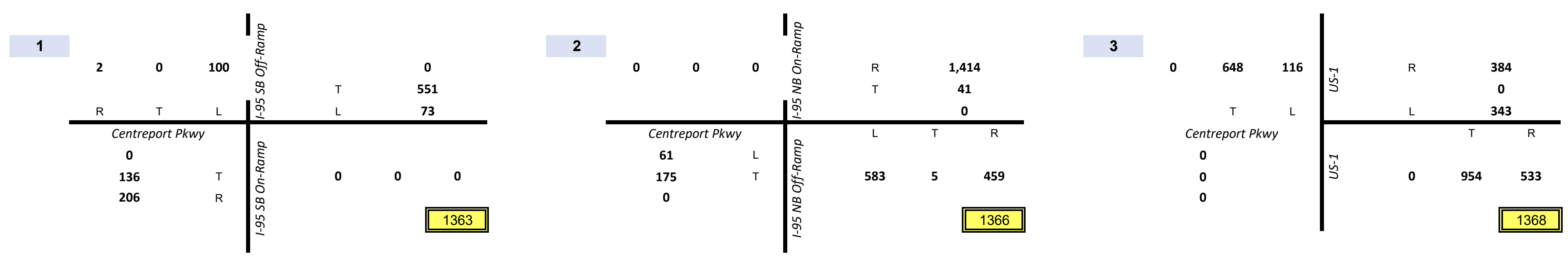
Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend	
xx,xxx	Weekday Daily Volume
NOT TO SCALE	

EXIT 136 - CENTREPORT PARKWAY

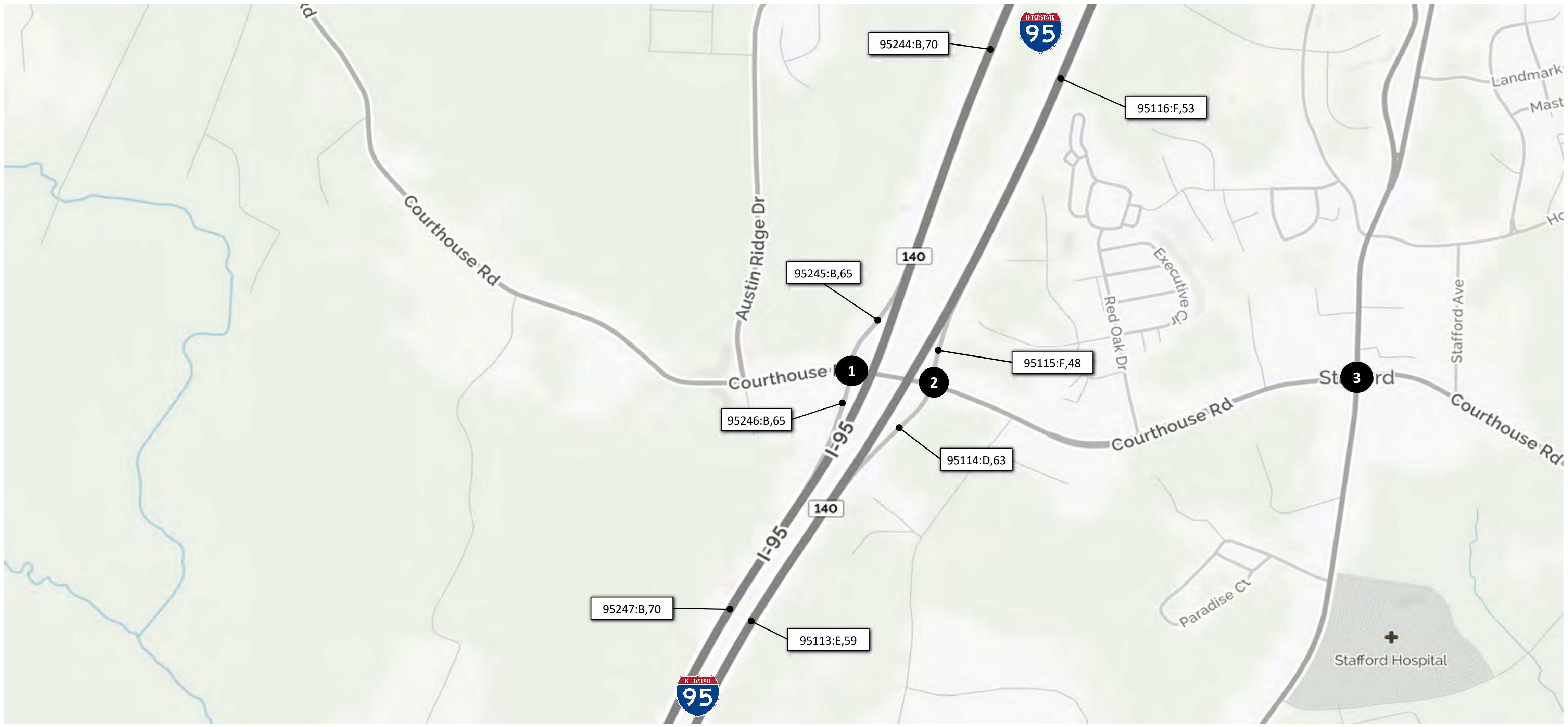
2042 No Build

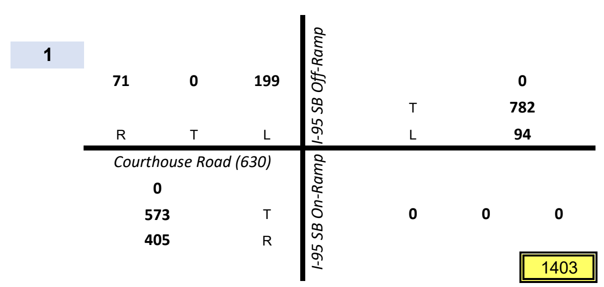
Weekday 7- 8 AM Volumes

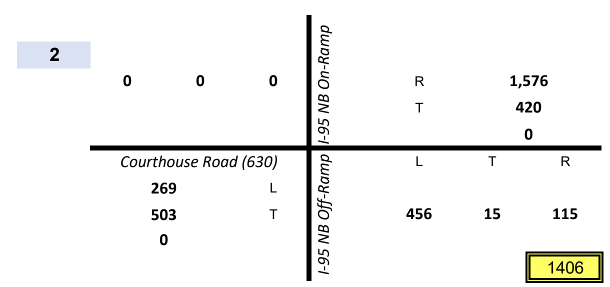
I-95 Corridor

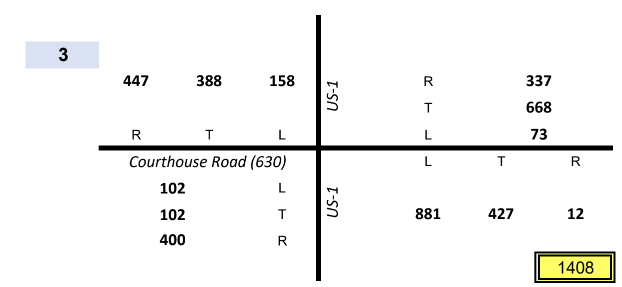
April 2017

Figure G.1-1









Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

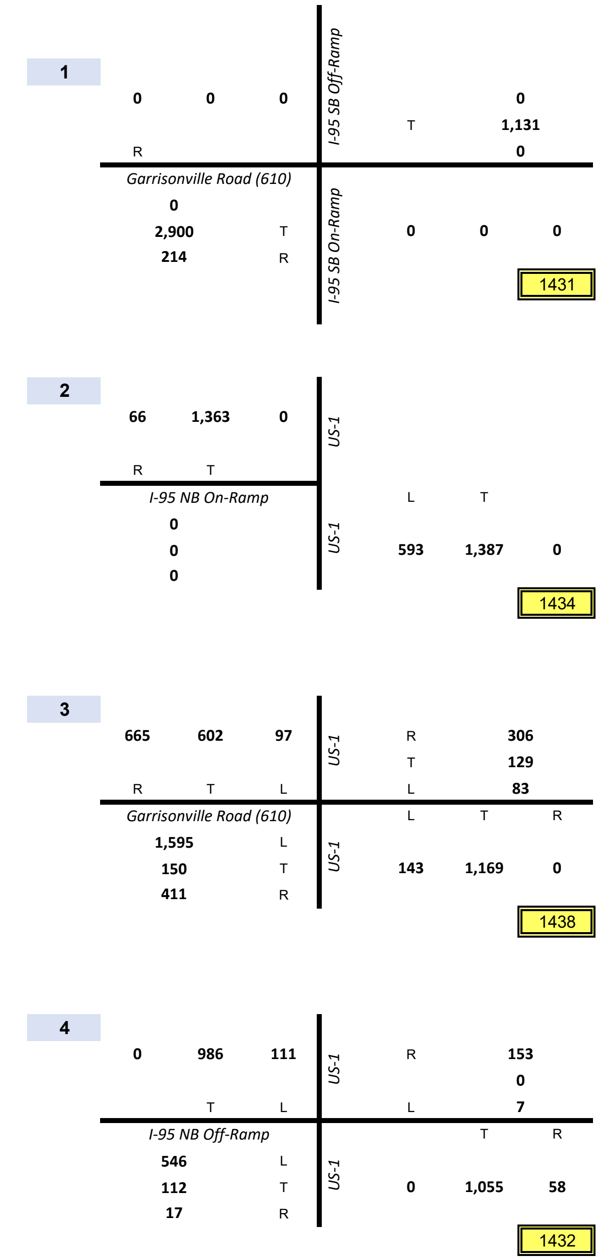
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1

Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

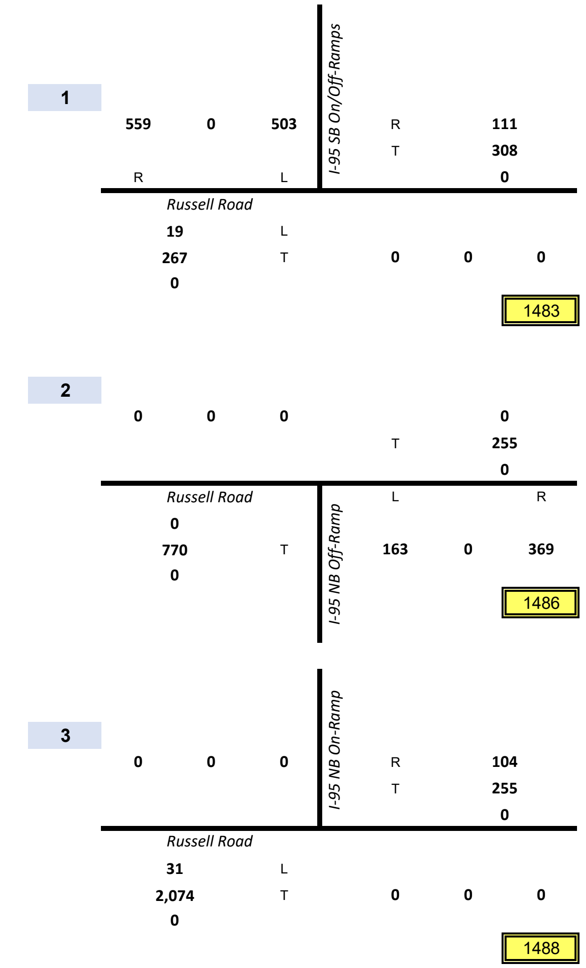
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

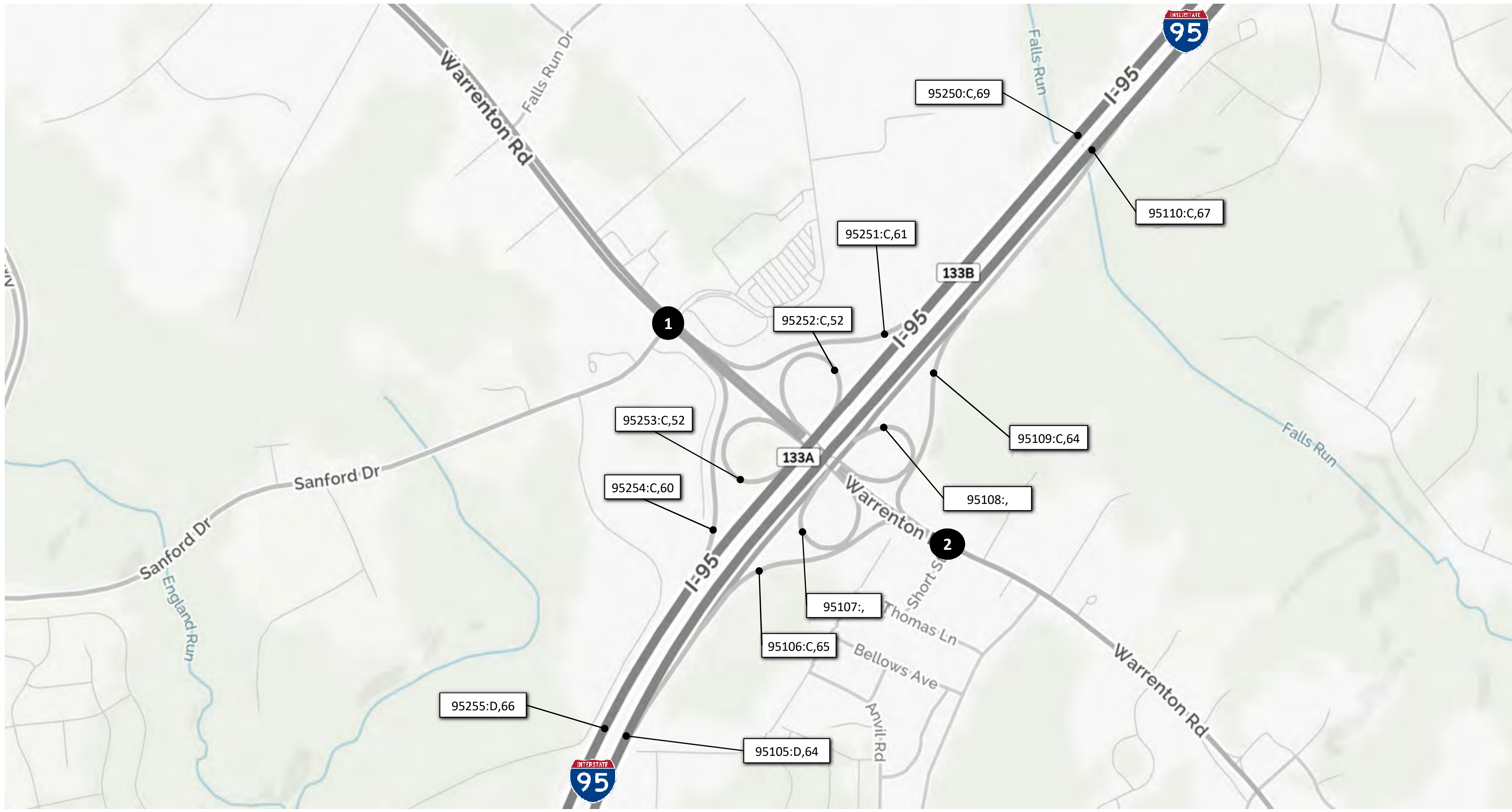
U.S. Department of Transportation Federal Highway Administration

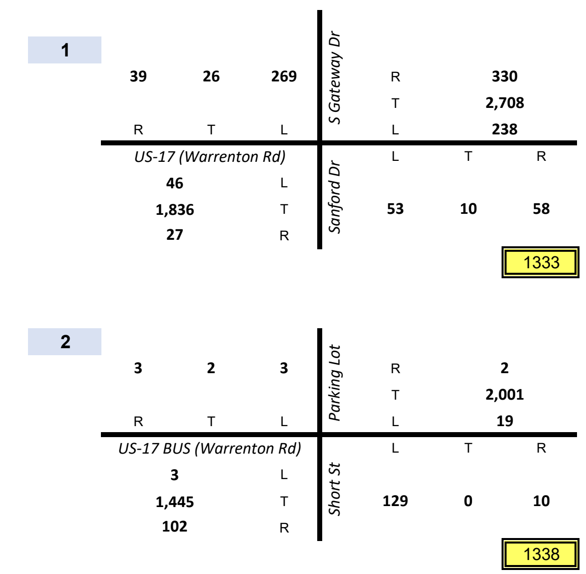
EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 7- 8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 133 – US-17 BUSINESS (WARRENTON ROAD)

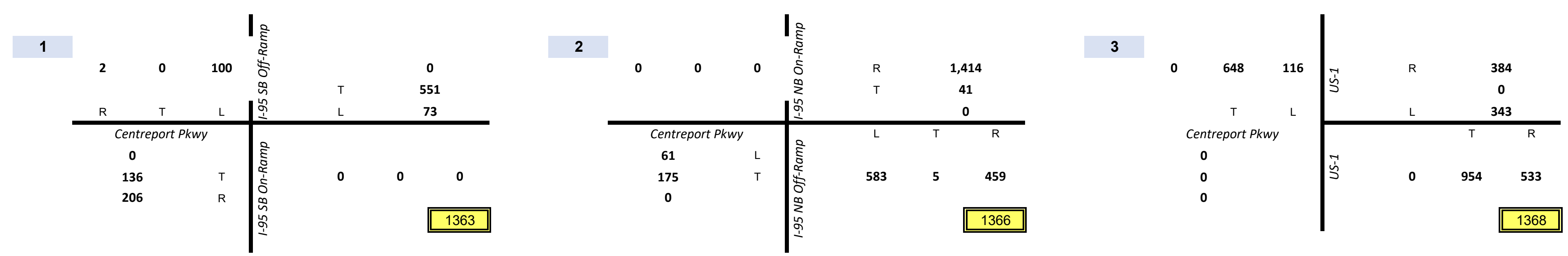
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 136 - CENTREPORT PARKWAY

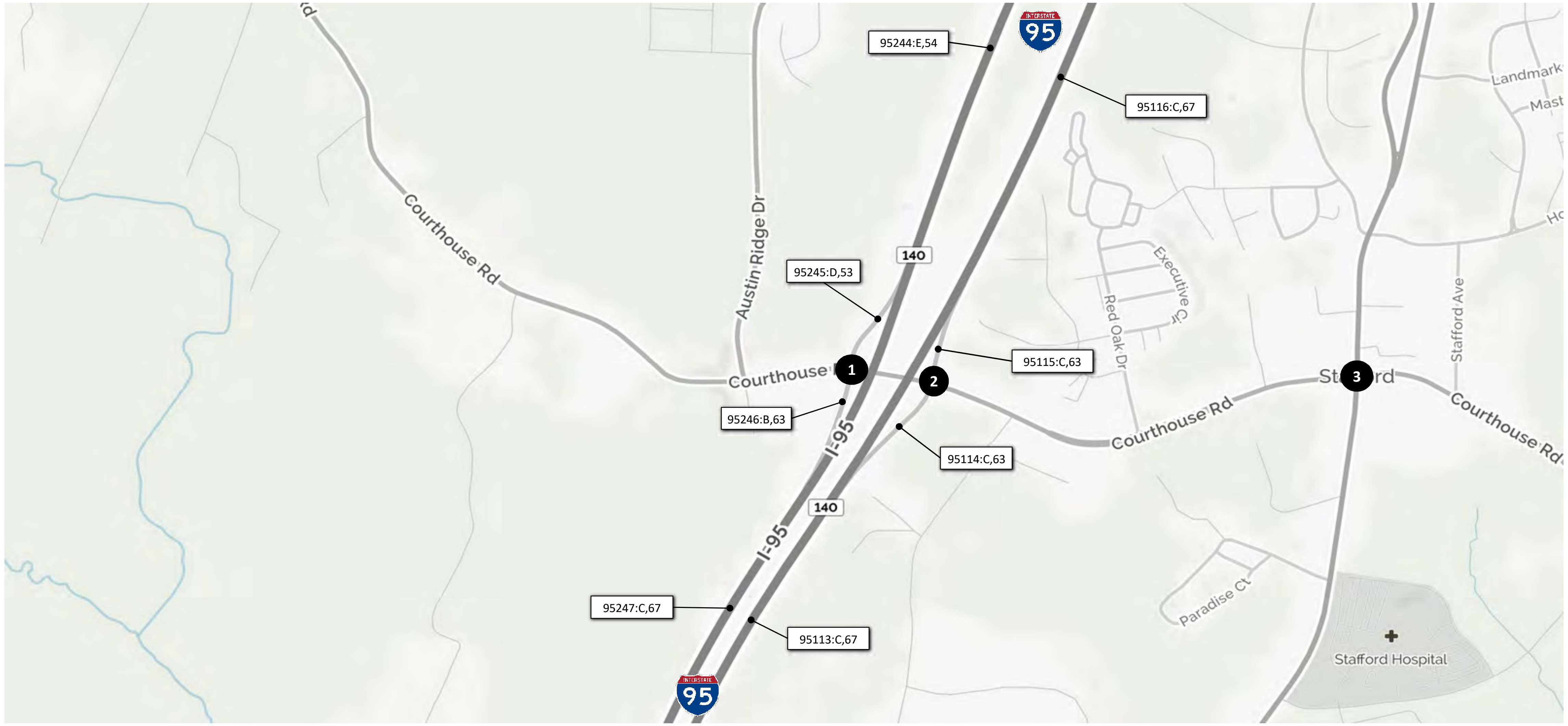
2042 No Build

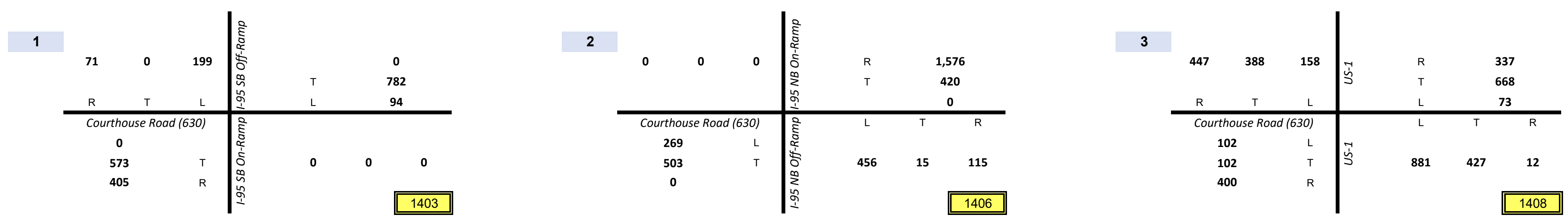
Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1





Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

U.S. Department of Transportation Federal Highway Administration

EXIT 140 – ROUTE 630 (COURTHOUSE ROAD)

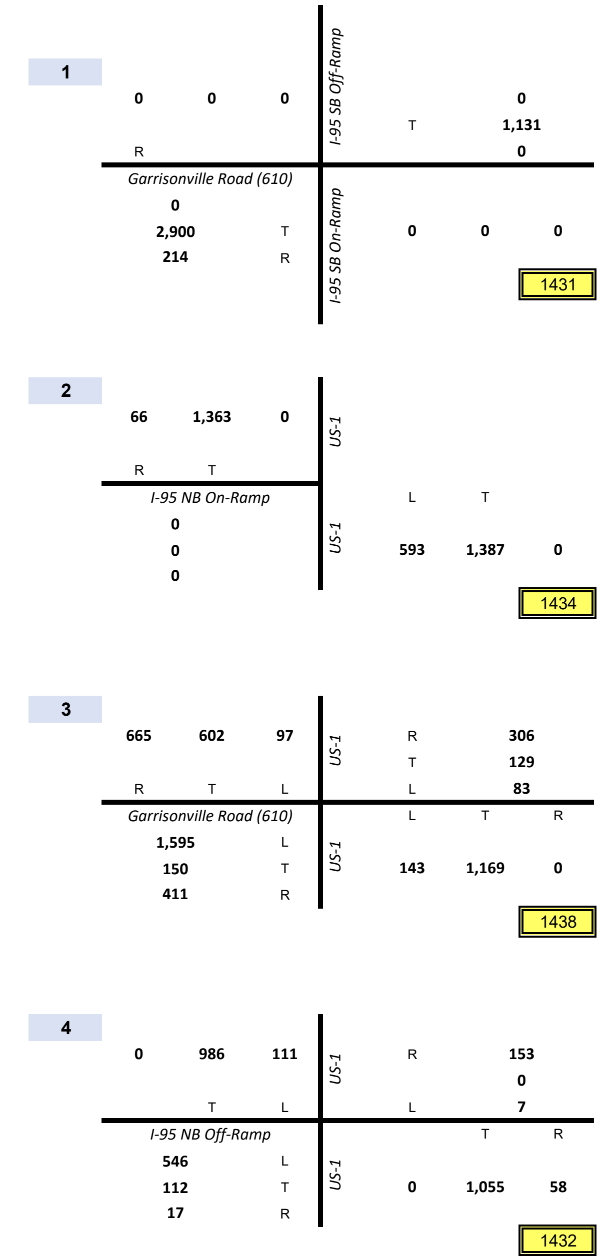
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 143 – ROUTE 610 (GARRISONVILLE ROAD)

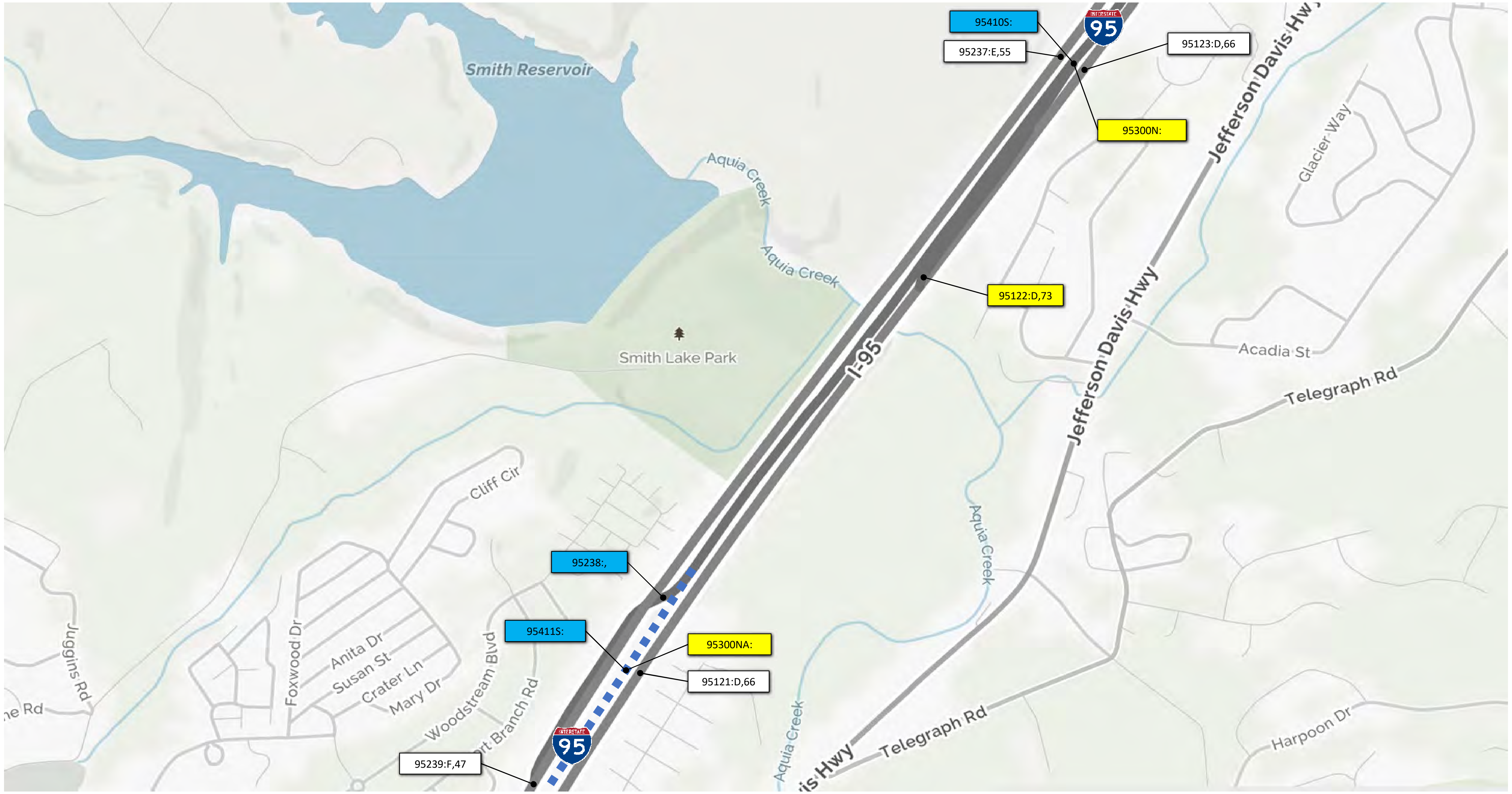
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

Proposed Express Lane Extension (Done by Others)

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

SOUTHERN START/END I-95 EXPRESS LANES

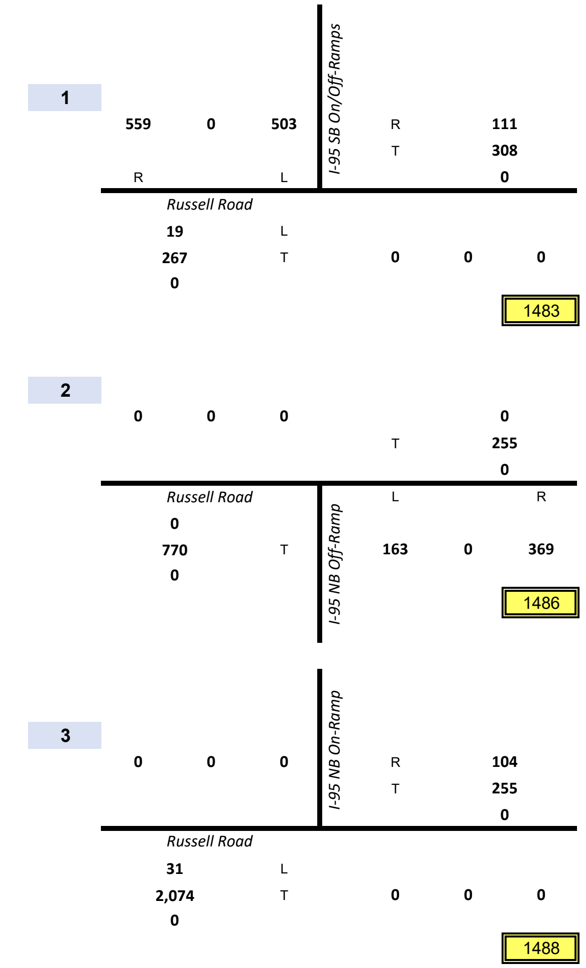
2042 No Build

Weekday 7- 8 AM Volumes

I-95 Corridor

April 2017

Figure G.1-1



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE

VDOT Virginia Department of Transportation

U.S. Department of Transportation Federal Highway Administration

EXIT 148 - RUSSELL ROAD

2042 No Build
Weekday 7- 8 AM Volumes
I-95 Corridor

April 2017

Figure G.1-1

Appendix B: MOVES2014a Emission Rates

Stafford County Emission Rates

Link ID	Road TypeID	Link AvgSpeed	Link Description	Link AvgGrade	2016		2022		2042	
					g/mile	g/hour	g/mile	g/hour	g/mile	g/hour
1	5	55	US17_Ramps_00	-6	0.867	N/A	0.525	N/A	0.135	N/A
2	5	55	US17_Ramps_01	-5	1.101	N/A	0.680	N/A	0.182	N/A
3	5	55	US17_Ramps_02	-4	1.353	N/A	0.847	N/A	0.233	N/A
4	5	55	US17_Ramps_03	-3	1.658	N/A	1.047	N/A	0.297	N/A
5	5	55	US17_Ramps_04	-2	2.008	N/A	1.285	N/A	0.379	N/A
6	5	55	US17_Ramps_05	-1	2.416	N/A	1.577	N/A	0.487	N/A
7	5	55	US17_Ramps_06	1	3.810	N/A	2.596	N/A	0.891	N/A
8	5	55	US17_Ramps_07	2	4.860	N/A	3.377	N/A	1.214	N/A
9	5	55	US17_Ramps_08	3	6.259	N/A	4.383	N/A	1.631	N/A
10	5	55	US17_Ramps_09	4	7.722	N/A	5.403	N/A	2.047	N/A
11	5	55	US17_Ramps_10	5	9.633	N/A	6.717	N/A	2.567	N/A
12	5	55	US17_Ramps_11	6	11.782	N/A	8.203	N/A	3.154	N/A
13	5	45	US17_00	-6	1.120	N/A	0.685	N/A	0.174	N/A
14	5	45	US17_01	-5	1.328	N/A	0.823	N/A	0.214	N/A
15	5	45	US17_02	-4	1.564	N/A	0.982	N/A	0.261	N/A
16	5	45	US17_03	-3	1.866	N/A	1.186	N/A	0.326	N/A
17	5	45	US17_04	-2	2.205	N/A	1.418	N/A	0.404	N/A
18	5	45	US17_05	-1	2.624	N/A	1.711	N/A	0.506	N/A
19	5	45	US17_06	1	3.915	N/A	2.649	N/A	0.868	N/A
20	5	45	US17_07	2	4.807	N/A	3.299	N/A	1.130	N/A
21	5	45	US17_08	3	5.928	N/A	4.105	N/A	1.452	N/A
22	5	45	US17_09	4	7.379	N/A	5.137	N/A	1.869	N/A
23	5	45	US17_10	5	8.997	N/A	6.278	N/A	2.324	N/A
24	5	45	US17_11	6	10.707	N/A	7.481	N/A	2.806	N/A
25	5	0	US17_IDLE	0	N/A	18.415	N/A	7.962	N/A	1.308
26	5	25	GatewayDr_00	-6	2.215	N/A	1.361	N/A	0.351	N/A
27	5	25	GatewayDr_01	-5	2.454	N/A	1.527	N/A	0.403	N/A
28	5	25	GatewayDr_02	-4	2.732	N/A	1.718	N/A	0.464	N/A
29	5	25	GatewayDr_03	-3	3.056	N/A	1.941	N/A	0.534	N/A
30	5	25	GatewayDr_04	-2	3.337	N/A	2.131	N/A	0.591	N/A
31	5	25	GatewayDr_05	-1	3.718	N/A	2.393	N/A	0.673	N/A
32	5	25	GatewayDr_06	1	4.782	N/A	3.172	N/A	0.967	N/A
33	5	25	GatewayDr_07	2	5.351	N/A	3.600	N/A	1.148	N/A
34	5	25	GatewayDr_08	3	5.967	N/A	4.051	N/A	1.319	N/A
35	5	25	GatewayDr_09	4	6.959	N/A	4.793	N/A	1.615	N/A
36	5	25	GatewayDr_10	5	8.658	N/A	6.102	N/A	2.149	N/A

Link ID	Road TypeID	Link AvgSpeed	Link Description	Link AvgGrade	2016		2022		2042	
					g/mile	g/hour	g/mile	g/hour	g/mile	g/hour
37	5	25	GatewayDr_11	6	9.888	N/A	7.036	N/A	2.532	N/A
38	5	35	GatewayDr_12	-6	1.539	N/A	0.946	N/A	0.250	N/A
39	5	35	GatewayDr_13	-5	1.745	N/A	1.085	N/A	0.291	N/A
40	5	35	GatewayDr_14	-4	1.990	N/A	1.249	N/A	0.341	N/A
41	5	35	GatewayDr_15	-3	2.293	N/A	1.457	N/A	0.406	N/A
42	5	35	GatewayDr_16	-2	2.641	N/A	1.701	N/A	0.492	N/A
43	5	35	GatewayDr_17	-1	3.062	N/A	2.000	N/A	0.600	N/A
44	5	35	GatewayDr_18	1	4.219	N/A	2.833	N/A	0.911	N/A
45	5	35	GatewayDr_19	2	5.040	N/A	3.433	N/A	1.144	N/A
46	5	35	GatewayDr_20	3	5.912	N/A	4.055	N/A	1.386	N/A
47	5	35	GatewayDr_21	4	7.051	N/A	4.868	N/A	1.709	N/A
48	5	35	GatewayDr_22	5	8.421	N/A	5.874	N/A	2.123	N/A
49	5	35	GatewayDr_23	6	10.063	N/A	7.097	N/A	2.638	N/A
50	5	0	GatewayDr_IDLE	0	N/A	17.748	N/A	7.126	N/A	1.079
51	5	55	Garrisonville_Ramps_00	-6	0.845	N/A	0.503	N/A	0.132	N/A
52	5	55	Garrisonville_Ramps_01	-5	1.055	N/A	0.641	N/A	0.174	N/A
53	5	55	Garrisonville_Ramps_02	-4	1.297	N/A	0.799	N/A	0.223	N/A
54	5	55	Garrisonville_Ramps_03	-3	1.610	N/A	1.004	N/A	0.289	N/A
55	5	55	Garrisonville_Ramps_04	-2	1.976	N/A	1.253	N/A	0.376	N/A
56	5	55	Garrisonville_Ramps_05	-1	2.399	N/A	1.556	N/A	0.490	N/A
57	5	55	Garrisonville_Ramps_06	1	3.839	N/A	2.613	N/A	0.919	N/A
58	5	55	Garrisonville_Ramps_07	2	4.925	N/A	3.425	N/A	1.263	N/A
59	5	55	Garrisonville_Ramps_08	3	6.400	N/A	4.487	N/A	1.709	N/A
60	5	55	Garrisonville_Ramps_09	4	7.950	N/A	5.570	N/A	2.154	N/A
61	5	55	Garrisonville_Ramps_10	5	9.971	N/A	6.961	N/A	2.709	N/A
62	5	55	Garrisonville_Ramps_11	6	12.238	N/A	8.530	N/A	3.336	N/A
63	5	35	GarrisonvilleRd_00	-6	1.541	N/A	0.945	N/A	0.243	N/A
64	5	35	GarrisonvilleRd_01	-5	1.750	N/A	1.085	N/A	0.284	N/A
65	5	35	GarrisonvilleRd_02	-4	1.994	N/A	1.248	N/A	0.332	N/A
66	5	35	GarrisonvilleRd_03	-3	2.297	N/A	1.455	N/A	0.397	N/A
67	5	35	GarrisonvilleRd_04	-2	2.645	N/A	1.699	N/A	0.482	N/A
68	5	35	GarrisonvilleRd_05	-1	3.065	N/A	1.996	N/A	0.588	N/A
69	5	35	GarrisonvilleRd_06	1	4.221	N/A	2.827	N/A	0.896	N/A
70	5	35	GarrisonvilleRd_07	2	5.036	N/A	3.421	N/A	1.126	N/A
71	5	35	GarrisonvilleRd_08	3	5.906	N/A	4.043	N/A	1.367	N/A
72	5	35	GarrisonvilleRd_09	4	7.041	N/A	4.854	N/A	1.688	N/A
73	5	35	GarrisonvilleRd_10	5	8.406	N/A	5.858	N/A	2.101	N/A

Link ID	Road TypeID	Link AvgSpeed	Link Description	Link AvgGrade	2016		2022		2042	
					g/mile	g/hour	g/mile	g/hour	g/mile	g/hour
74	5	35	GarrisonvilleRd_11	6	10.047	N/A	7.082	N/A	2.616	N/A
75	5	0	GarrisonvilleRd_IDLE	0	N/A	17.927	N/A	7.234	N/A	1.060
76	5	55	US1_95NB_Ramp_00	-6	0.861	N/A	0.521	N/A	0.140	N/A
77	5	55	US1_95NB_Ramp_01	-5	1.086	N/A	0.671	N/A	0.188	N/A
78	5	55	US1_95NB_Ramp_02	-4	1.334	N/A	0.835	N/A	0.240	N/A
79	5	55	US1_95NB_Ramp_03	-3	1.643	N/A	1.038	N/A	0.306	N/A
80	5	55	US1_95NB_Ramp_04	-2	1.998	N/A	1.280	N/A	0.390	N/A
81	5	55	US1_95NB_Ramp_05	-1	2.412	N/A	1.577	N/A	0.501	N/A
82	5	55	US1_95NB_Ramp_06	1	3.823	N/A	2.610	N/A	0.915	N/A
83	5	55	US1_95NB_Ramp_07	2	4.890	N/A	3.403	N/A	1.247	N/A
84	5	55	US1_95NB_Ramp_08	3	6.327	N/A	4.436	N/A	1.676	N/A
85	5	55	US1_95NB_Ramp_09	4	7.832	N/A	5.485	N/A	2.103	N/A
86	5	55	US1_95NB_Ramp_10	5	9.785	N/A	6.829	N/A	2.637	N/A
87	5	55	US1_95NB_Ramp_11	6	11.980	N/A	8.346	N/A	3.239	N/A
88	5	35	US1_00	-6	1.548	N/A	0.958	N/A	0.251	N/A
89	5	35	US1_01	-5	1.761	N/A	1.102	N/A	0.293	N/A
90	5	35	US1_02	-4	2.009	N/A	1.269	N/A	0.343	N/A
91	5	35	US1_03	-3	2.309	N/A	1.475	N/A	0.408	N/A
92	5	35	US1_04	-2	2.654	N/A	1.717	N/A	0.492	N/A
93	5	35	US1_05	-1	3.073	N/A	2.014	N/A	0.598	N/A
94	5	35	US1_06	1	4.221	N/A	2.839	N/A	0.900	N/A
95	5	35	US1_07	2	5.029	N/A	3.429	N/A	1.126	N/A
96	5	35	US1_08	3	5.887	N/A	4.041	N/A	1.359	N/A
97	5	35	US1_09	4	7.001	N/A	4.834	N/A	1.671	N/A
98	5	35	US1_10	5	8.336	N/A	5.813	N/A	2.069	N/A
99	5	35	US1_11	6	9.935	N/A	7.002	N/A	2.566	N/A
100	5	45	US1_12	-6	1.111	N/A	0.679	N/A	0.179	N/A
101	5	45	US1_13	-5	1.313	N/A	0.814	N/A	0.220	N/A
102	5	45	US1_14	-4	1.545	N/A	0.970	N/A	0.269	N/A
103	5	45	US1_15	-3	1.849	N/A	1.176	N/A	0.336	N/A
104	5	45	US1_16	-2	2.193	N/A	1.411	N/A	0.415	N/A
105	5	45	US1_17	-1	2.615	N/A	1.707	N/A	0.520	N/A
106	5	45	US1_18	1	3.921	N/A	2.658	N/A	0.893	N/A
107	5	45	US1_19	2	4.829	N/A	3.322	N/A	1.163	N/A
108	5	45	US1_20	3	5.969	N/A	4.143	N/A	1.495	N/A
109	5	45	US1_21	4	7.457	N/A	5.201	N/A	1.924	N/A
110	5	45	US1_22	5	9.113	N/A	6.368	N/A	2.391	N/A

Link ID	Road TypeID	Link AvgSpeed	Link Description	Link AvgGrade	2016		2022		2042	
					g/mile	g/hour	g/mile	g/hour	g/mile	g/hour
111	5	45	US1_23	6	10.858	N/A	7.596	N/A	2.886	N/A
112	5	0	US1_IDLE	0	N/A	18.079	N/A	7.593	N/A	1.248
113	4	65	I95_NB_SB_00	-6	0.692	N/A	0.412	N/A	0.096	N/A
114	4	65	I95_NB_SB_01	-5	0.929	N/A	0.564	N/A	0.135	N/A
115	4	65	I95_NB_SB_02	-4	1.205	N/A	0.746	N/A	0.189	N/A
116	4	65	I95_NB_SB_03	-3	1.525	N/A	0.962	N/A	0.261	N/A
117	4	65	I95_NB_SB_04	-2	1.856	N/A	1.185	N/A	0.335	N/A
118	4	65	I95_NB_SB_05	-1	2.355	N/A	1.545	N/A	0.471	N/A
119	4	65	I95_NB_SB_06	1	4.136	N/A	2.871	N/A	1.016	N/A
120	4	65	I95_NB_SB_07	2	5.338	N/A	3.736	N/A	1.370	N/A
121	4	65	I95_NB_SB_08	3	6.835	N/A	4.754	N/A	1.773	N/A
122	4	65	I95_NB_SB_09	4	8.665	N/A	6.005	N/A	2.269	N/A
123	4	65	I95_NB_SB_10	5	10.907	N/A	7.541	N/A	2.876	N/A
124	4	65	I95_NB_SB_11	6	12.921	N/A	8.917	N/A	3.418	N/A

Prince William County Emission Rates

Link ID	Road TypeID	Link AvgSpeed	Link Description	Link AvgGrade	2016		2022		2042	
					g/mile	g/hour	g/mile	g/hour	g/mile	g/hour
1	4	65	I95_NB_SB_01	-5	0.892	N/A	0.576	N/A	0.147	N/A
2	4	65	I95_NB_SB_02	-4	1.159	N/A	0.766	N/A	0.205	N/A
3	4	65	I95_NB_SB_03	-3	1.468	N/A	0.991	N/A	0.281	N/A
4	4	65	I95_NB_SB_04	-2	1.787	N/A	1.227	N/A	0.358	N/A
5	4	65	I95_NB_SB_05	-1	2.268	N/A	1.604	N/A	0.499	N/A
6	4	65	I95_NB_SB_06	1	4.011	N/A	2.992	N/A	1.060	N/A
7	4	65	I95_NB_SB_07	2	5.188	N/A	3.923	N/A	1.426	N/A
8	4	65	I95_NB_SB_08	3	6.648	N/A	5.040	N/A	1.839	N/A
9	4	65	I95_NB_SB_09	4	8.449	N/A	6.397	N/A	2.351	N/A
10	4	65	I95_NB_SB_10	5	10.668	N/A	8.032	N/A	2.976	N/A
11	5	55	RussellRd_95_Ramps_01	-5	1.017	N/A	0.649	N/A	0.176	N/A
12	5	55	RussellRd_95_Ramps_02	-4	1.251	N/A	0.812	N/A	0.225	N/A
13	5	55	RussellRd_95_Ramps_03	-3	1.554	N/A	1.027	N/A	0.292	N/A
14	5	55	RussellRd_95_Ramps_04	-2	1.906	N/A	1.288	N/A	0.381	N/A
15	5	55	RussellRd_95_Ramps_05	-1	2.318	N/A	1.603	N/A	0.498	N/A
16	5	55	RussellRd_95_Ramps_06	1	3.733	N/A	2.717	N/A	0.941	N/A
17	5	55	RussellRd_95_Ramps_07	2	4.815	N/A	3.580	N/A	1.298	N/A

Link ID	Road TypeID	Link AvgSpeed	Link Description	Link AvgGrade	2016		2022		2042	
					g/mile	g/hour	g/mile	g/hour	g/mile	g/hour
18	5	55	RussellRd_95_Ramps_08	3	6.290	N/A	4.736	N/A	1.758	N/A
19	5	55	RussellRd_95_Ramps_09	4	7.827	N/A	5.921	N/A	2.217	N/A
20	5	55	RussellRd_95_Ramps_10	5	9.829	N/A	7.433	N/A	2.791	N/A
21	5	35	RussellRd_01	-5	1.678	N/A	1.090	N/A	0.290	N/A
22	5	35	RussellRd_02	-4	1.918	N/A	1.261	N/A	0.340	N/A
23	5	35	RussellRd_03	-3	2.212	N/A	1.477	N/A	0.407	N/A
24	5	35	RussellRd_04	-2	2.554	N/A	1.729	N/A	0.495	N/A
25	5	35	RussellRd_05	-1	2.970	N/A	2.041	N/A	0.606	N/A
26	5	35	RussellRd_06	1	4.118	N/A	2.915	N/A	0.927	N/A
27	5	35	RussellRd_07	2	4.933	N/A	3.554	N/A	1.167	N/A
28	5	35	RussellRd_08	3	5.794	N/A	4.224	N/A	1.417	N/A
29	5	35	RussellRd_09	4	6.924	N/A	5.097	N/A	1.751	N/A
30	5	35	RussellRd_10	5	8.286	N/A	6.164	N/A	2.178	N/A
31	5	0	RussellRd_IDLE	0	N/A	18.210	N/A	6.831	N/A	0.936

Appendix C: Sample MOVES2014a Input and Output Files

(Complete Set of Files Available Upon Request)

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<onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="54" sourcetypename="Motor Home"/>

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<onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="31" sourcetypename="Passenger Truck"/>

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</offroadvehiclesccs>

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useParameters No

]]></internalcontrolstrategy>

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	</savedata>

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	</donotexecute>

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Appendix D: CAL3QHC Input / Output Files

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0,0,0,0,0,0,0,0,0,0,10.71,10.71,10.06,9.89,18.41,18.41,17.75,17.75
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'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-70.0,58.0,5.9
'N Leg, W Side - 25 m',-70.0,130.0,5.9
'N Leg, W Side - 50 m',-70.0,212.0,5.9
'N Leg, W Side-Midblk',-70.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-46.0,5.9
'S Leg, E Side - 25 m',70.0,-118.0,5.9
'S Leg, E Side - 50 m',70.0,-200.0,5.9
'S Leg, E Side-Midblk',70.0,-636.0,5.9
'S Leg, W Side-Corner',-70.0,-46.0,5.9
'S Leg, W Side - 25 m',-70.0,-118.0,5.9
'S Leg, W Side - 50 m',-70.0,-200.0,5.9
'S Leg, W Side-Midblk',-70.0,-636.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-142.0,58.0,5.9
'W Leg, N Side - 50 m',-224.0,58.0,5.9
'W Leg, N Side-Midblk',-660.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-46.0,5.9
'E Leg, S Side - 50 m',224.0,-46.0,5.9
'E Leg, S Side-Midblk',660.0,-46.0,5.9
'W Leg, S Side - 25 m',-142.0,-46.0,5.9
'W Leg, S Side - 50 m',-224.0,-46.0,5.9
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120,68,2,6150,18.41,1900,1,3
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'N Leg Dep - FreeFlow','AG',30,0,30,1200,6150,10.71,0.0,79.7
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120,68,2,6150,18.41,1900,1,3
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```

```
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120,68,2,3690,17.75,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,4920,10.06,0.0,67.7
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```

```
                            2016 US 17 and S Gateway OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - US 17
and S Gateway

      DATE :  8/15/17
      TIME :  8:40:27

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -30.0       0.0     -30.0    1200.0 *    1200.
360. AG   6150.  10.7   0.0 79.7
       2. N Leg App - Queue   *    -30.0      48.0     -30.0    5348.1 *    5300.
360. AG    140. 100.0   0.0 60.0 1.62 269.2
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   6150.  10.7   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   6150.  10.7   0.0 79.7
       5. S Leg App - Queue   *     30.0     -36.0      30.0   -5336.1 *    5300.
180. AG    140. 100.0   0.0 60.0 1.62 269.2
       6. S Leg Dep - FreeFlow*    -30.0       0.0     -30.0   -1200.0 *    1200.
180. AG   6150.  10.7   0.0 79.7
       7. E Leg App - FreeFlow*      0.0      24.0    1200.0      24.0 *    1200.
90. AG   4920.   9.9   0.0 67.7
       8. E Leg App - Queue   *     60.0      24.0    5360.1      24.0 *    5300.
90. AG    108. 100.0   0.0 48.0 1.62 269.2
       9. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   3690.   9.9   0.0 55.7
      10. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
```

```
270. AG   3690.  10.1   0.0 55.7
      11. W Leg App - Queue   *    -60.0     -18.0   -5360.1     -18.0 *    5300.
270. AG     81. 100.0   0.0 36.0 1.62 269.2
      12. W Leg Dep - FreeFlow*      0.0      24.0   -1200.0      24.0 *    1200.
270. AG   4920.  10.1   0.0 67.7
```

↑

```
                             PAGE  2
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - US 17
and S Gateway

      DATE :  8/15/17
      TIME :  8:40:27

       ADDITIONAL QUEUE LINK PARAMETERS
       --------------------------------
         LINK DESCRIPTION     *    CYCLE    RED     CLEARANCE  APPROACH  SATURATION
 IDLE   SIGNAL   ARRIVAL
                              *    LENGTH   TIME    LOST TIME    VOL     FLOW RATE
EM FAC   TYPE     RATE
                              *     (SEC)   (SEC)    (SEC)      (VPH)      (VPH)
(gm/hr)

------------------------*-------------------------------------------------------------
--------------------
       2. N Leg App - Queue   *     120       68       2.0      6150       1900
18.41      1        3
       5. S Leg App - Queue   *     120       68       2.0      6150       1900
18.41      1        3
       8. E Leg App - Queue   *     120       68       2.0      4920       1900
17.75      1        3
      11. W Leg App - Queue   *     120       68       2.0      3690       1900
17.75      1        3

       RECEPTOR LOCATIONS
       ------------------
                              *          COORDINATES (FT)          *
         RECEPTOR             *      X           Y           Z     *
     -------------------------*------------------------------------*
      1. N Leg, E Side-Corner *       70.0       58.0        5.9   *
      2. N Leg, E Side - 25 m *       70.0      130.0        5.9   *
      3. N Leg, E Side - 50 m *       70.0      212.0        5.9   *
      4. N Leg, E Side-Midblk *       70.0      648.0        5.9   *
      5. N Leg, W Side-Corner *      -70.0       58.0        5.9   *
      6. N Leg, W Side - 25 m *      -70.0      130.0        5.9   *
      7. N Leg, W Side - 50 m *      -70.0      212.0        5.9   *
      8. N Leg, W Side-Midblk *      -70.0      648.0        5.9   *
      9. S Leg, E Side-Corner *       70.0      -46.0        5.9   *
     10. S Leg, E Side - 25 m *       70.0     -118.0        5.9   *
```

```
     11. S Leg, E Side - 50 m *        70.0     -200.0        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -636.0        5.9   *
     13. S Leg, W Side-Corner *       -70.0      -46.0        5.9   *
     14. S Leg, W Side - 25 m *       -70.0     -118.0        5.9   *
     15. S Leg, W Side - 50 m *       -70.0     -200.0        5.9   *
     16. S Leg, W Side-Midblk *       -70.0     -636.0        5.9   *
     17. E Leg, N Side - 25 m *       142.0       58.0        5.9   *
     18. E Leg, N Side - 50 m *       224.0       58.0        5.9   *
     19. E Leg, N Side-Midblk *       660.0       58.0        5.9   *
     20. W Leg, N Side - 25 m *      -142.0       58.0        5.9   *
     21. W Leg, N Side - 50 m *      -224.0       58.0        5.9   *
     22. W Leg, N Side-Midblk *      -660.0       58.0        5.9   *
     23. E Leg, S Side - 25 m *       142.0      -46.0        5.9   *
     24. E Leg, S Side - 50 m *       224.0      -46.0        5.9   *
     25. E Leg, S Side-Midblk *       660.0      -46.0        5.9   *
     26. W Leg, S Side - 25 m *      -142.0      -46.0        5.9   *
     27. W Leg, S Side - 50 m *      -224.0      -46.0        5.9   *
     28. W Leg, S Side-Midblk *      -660.0      -46.0        5.9   *
```

PAGE 3

JOB: Fred Ex AQ Analysis RUN: 2016 - US 17 and S Gateway

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

```
 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-----------------------------------------
   5.  *  2.5000  2.5000  2.5000  2.0000  4.7000  4.5000  4.5000  3.9000  4.9000
4.0000  3.6000  3.4000  7.0000  5.7000  5.2000
  10.  *  1.7000  1.7000  1.7000  1.4000  5.1000  5.1000  5.0000  4.5000  4.1000
3.1000  2.8000  2.4000  7.2000  5.8000  5.5000
  15.  *  1.0000  1.0000  1.0000  0.8000  5.1000  5.0000  5.0000  4.6000  3.2000
2.3000  1.9000  1.5000  7.1000  6.0000  5.5000
  20.  *  0.6000  0.6000  0.6000  0.5000  4.9000  4.9000  4.8000  4.6000  2.8000
1.7000  1.4000  1.1000  6.9000  5.8000  5.3000
```

```
  25.  *  0.5000  0.4000  0.4000  0.4000  4.7000  4.6000  4.5000  4.5000  2.5000
1.7000  1.3000  0.8000  6.5000  5.4000  5.0000
  30.  *  0.4000  0.3000  0.3000  0.3000  4.4000  4.3000  4.3000  4.3000  2.5000
1.5000  1.3000  0.7000  6.4000  5.3000  4.8000
  35.  *  0.3000  0.2000  0.2000  0.2000  4.3000  4.2000  4.2000  4.2000  2.5000
1.5000  1.2000  0.6000  6.2000  5.0000  4.7000
  40.  *  0.3000  0.2000  0.2000  0.2000  4.0000  3.9000  3.9000  3.9000  2.7000
1.5000  1.2000  0.6000  6.1000  4.9000  4.5000
  45.  *  0.4000  0.2000  0.2000  0.2000  3.9000  3.7000  3.7000  3.7000  2.7000
1.6000  1.2000  0.6000  5.9000  4.8000  4.5000
  50.  *  0.4000  0.2000  0.2000  0.2000  3.7000  3.5000  3.5000  3.5000  2.8000
1.6000  1.2000  0.5000  5.8000  4.7000  4.4000
  55.  *  0.4000  0.2000  0.2000  0.2000  3.6000  3.4000  3.4000  3.4000  3.0000
1.6000  1.2000  0.5000  6.0000  4.7000  4.2000
  60.  *  0.3000  0.1000  0.1000  0.1000  3.5000  3.3000  3.3000  3.3000  3.1000
1.6000  1.1000  0.4000  6.1000  4.6000  4.1000
  65.  *  0.4000  0.1000  0.1000  0.1000  3.6000  3.2000  3.2000  3.2000  3.4000
1.7000  1.1000  0.4000  6.1000  4.6000  4.0000
  70.  *  0.7000  0.1000  0.1000  0.1000  3.6000  3.2000  3.2000  3.2000  3.4000
1.7000  1.1000  0.2000  6.4000  4.6000  4.0000
  75.  *  0.9000  0.0000  0.0000  0.0000  4.0000  3.3000  3.2000  3.2000  3.6000
1.6000  0.9000  0.1000  6.7000  4.6000  3.9000
  80.  *  1.6000  0.1000  0.0000  0.0000  4.6000  3.5000  3.3000  3.3000  3.6000
1.4000  0.7000  0.0000  6.6000  4.5000  3.8000
  85.  *  2.3000  0.5000  0.2000  0.0000  5.5000  3.9000  3.6000  3.4000  3.3000
1.1000  0.5000  0.0000  6.3000  4.4000  3.7000
  90.  *  3.0000  0.8000  0.4000  0.0000  6.3000  4.3000  3.8000  3.4000  2.7000
0.7000  0.3000  0.0000  5.8000  4.0000  3.5000
  95.  *  3.6000  1.1000  0.5000  0.0000  6.7000  4.6000  4.0000  3.4000  2.0000
0.4000  0.1000  0.0000  5.2000  3.7000  3.4000
 100.  *  3.8000  1.4000  0.7000  0.0000  6.8000  4.7000  4.0000  3.3000  1.4000
0.2000  0.0000  0.0000  4.5000  3.3000  3.1000
 105.  *  3.9000  1.6000  0.9000  0.1000  6.6000  4.8000  4.1000  3.3000  0.7000
0.0000  0.0000  0.0000  3.9000  3.0000  3.0000
 110.  *  3.7000  1.7000  1.1000  0.3000  6.4000  4.8000  4.2000  3.4000  0.6000
0.1000  0.1000  0.1000  3.6000  3.0000  3.0000
 115.  *  3.4000  1.7000  1.2000  0.4000  6.3000  4.8000  4.3000  3.5000  0.4000
0.1000  0.1000  0.1000  3.4000  3.0000  3.0000
 120.  *  3.3000  1.7000  1.2000  0.4000  6.0000  4.9000  4.4000  3.7000  0.3000
0.1000  0.1000  0.1000  3.3000  3.1000  3.1000
 125.  *  3.2000  1.8000  1.3000  0.6000  6.0000  5.0000  4.5000  3.8000  0.3000
0.2000  0.2000  0.2000  3.3000  3.2000  3.2000
 130.  *  3.1000  1.7000  1.2000  0.5000  6.2000  5.0000  4.6000  3.8000  0.3000
0.2000  0.2000  0.2000  3.4000  3.3000  3.3000
 135.  *  2.8000  1.7000  1.1000  0.5000  6.0000  5.1000  4.6000  4.1000  0.3000
0.2000  0.2000  0.2000  3.6000  3.5000  3.5000
 140.  *  2.7000  1.6000  1.1000  0.5000  6.0000  5.4000  4.8000  4.3000  0.3000
0.2000  0.2000  0.2000  3.7000  3.6000  3.6000
```

```
 145.  *  2.6000  1.6000  1.1000  0.5000  6.0000  5.5000  5.0000  4.5000  0.3000
0.2000  0.2000  0.2000  4.1000  4.0000  4.0000
 150.  *  2.7000  1.6000  1.2000  0.6000  6.2000  5.7000  5.4000  4.6000  0.4000
0.3000  0.3000  0.3000  4.2000  4.1000  4.1000
 155.  *  2.7000  1.7000  1.3000  0.7000  6.4000  5.8000  5.4000  4.9000  0.5000
0.4000  0.4000  0.4000  4.5000  4.4000  4.3000
 160.  *  2.8000  1.9000  1.4000  0.8000  6.7000  6.0000  5.8000  5.2000  0.7000
0.7000  0.7000  0.6000  4.6000  4.6000  4.5000
 165.  *  3.4000  2.4000  2.0000  1.3000  6.9000  6.3000  6.0000  5.6000  1.1000
1.1000  1.1000  0.9000  4.8000  4.7000  4.7000
 170.  *  4.2000  3.1000  2.7000  2.2000  7.0000  6.3000  5.8000  5.6000  1.8000
1.8000  1.8000  1.5000  4.7000  4.7000  4.7000
 175.  *  5.2000  4.0000  3.6000  3.2000  6.7000  5.6000  5.6000  5.3000  2.8000
2.8000  2.8000  2.4000  4.4000  4.2000  4.2000
 180.  *  6.3000  4.9000  4.8000  4.3000  5.9000  4.8000  4.8000  4.6000  3.9000
3.8000  3.7000  3.2000  3.6000  3.5000  3.4000
 185.  *  6.9000  5.7000  5.4000  4.9000  4.9000  4.0000  3.5000  3.5000  4.7000
4.5000  4.5000  3.9000  2.5000  2.5000  2.5000
 190.  *  7.1000  6.2000  5.5000  5.3000  3.9000  3.0000  2.8000  2.4000  5.1000
5.1000  5.1000  4.5000  1.7000  1.7000  1.7000
 195.  *  7.1000  6.0000  5.6000  5.2000  3.2000  2.3000  1.9000  1.4000  5.1000
5.0000  5.0000  4.7000  1.0000  1.0000  1.0000
 200.  *  6.8000  5.7000  5.4000  4.8000  2.7000  1.9000  1.4000  0.9000  4.9000
4.9000  4.8000  4.6000  0.6000  0.6000  0.6000
 205.  *  6.4000  5.4000  5.1000  4.7000  2.5000  1.7000  1.3000  0.7000  4.7000
4.6000  4.5000  4.5000  0.5000  0.4000  0.4000
 210.  *  6.3000  5.4000  4.9000  4.4000  2.5000  1.5000  1.2000  0.6000  4.4000
4.3000  4.3000  4.3000  0.4000  0.3000  0.3000
```



```
 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*-------------------------------------------------------------------------
-----------------------------------------
 215.  *  6.0000  5.0000  4.7000  4.3000  2.4000  1.5000  1.1000  0.6000  4.3000
4.2000  4.2000  4.2000  0.3000  0.2000  0.2000
 220.  *  6.0000  5.0000  4.6000  4.0000  2.5000  1.6000  1.1000  0.6000  4.0000
3.9000  3.9000  3.9000  0.3000  0.2000  0.2000
 225.  *  5.9000  4.8000  4.4000  3.9000  2.6000  1.6000  1.2000  0.5000  3.8000
3.7000  3.7000  3.7000  0.3000  0.2000  0.2000
```

230. * 6.0000 4.7000 4.5000 3.6000 2.8000 1.7000 1.3000 0.5000 3.6000
3.5000 3.5000 3.5000 0.3000 0.2000 0.2000
235. * 5.9000 4.7000 4.3000 3.5000 3.0000 1.7000 1.3000 0.5000 3.5000
3.4000 3.4000 3.4000 0.3000 0.2000 0.2000
240. * 5.9000 4.7000 4.2000 3.4000 3.1000 1.6000 1.2000 0.3000 3.5000
3.3000 3.3000 3.3000 0.3000 0.1000 0.1000
245. * 6.1000 4.5000 4.1000 3.2000 3.4000 1.6000 1.2000 0.3000 3.6000
3.2000 3.2000 3.2000 0.4000 0.1000 0.1000
250. * 6.2000 4.5000 4.0000 3.1000 3.4000 1.6000 1.1000 0.2000 3.8000
3.2000 3.2000 3.2000 0.6000 0.1000 0.1000
255. * 6.7000 4.5000 3.9000 3.0000 3.6000 1.5000 0.9000 0.0000 4.1000
3.2000 3.2000 3.2000 0.8000 0.0000 0.0000
260. * 6.6000 4.4000 3.8000 3.1000 3.6000 1.3000 0.7000 0.0000 4.6000
3.5000 3.3000 3.3000 1.5000 0.2000 0.0000
265. * 6.4000 4.3000 3.8000 3.2000 3.4000 1.0000 0.5000 0.0000 5.4000
3.9000 3.6000 3.4000 2.1000 0.4000 0.1000
270. * 5.9000 4.0000 3.6000 3.2000 2.8000 0.7000 0.4000 0.0000 6.0000
4.2000 3.7000 3.4000 2.9000 0.7000 0.3000
275. * 5.3000 3.6000 3.3000 3.2000 2.1000 0.4000 0.1000 0.0000 6.6000
4.5000 3.9000 3.4000 3.4000 1.0000 0.5000
280. * 4.6000 3.2000 3.1000 3.1000 1.5000 0.1000 0.0000 0.0000 6.6000
4.7000 4.0000 3.3000 3.7000 1.4000 0.7000
285. * 3.8000 3.1000 3.0000 3.0000 0.9000 0.0000 0.0000 0.0000 6.8000
4.7000 4.1000 3.2000 3.7000 1.6000 0.9000
290. * 3.4000 3.0000 3.0000 3.0000 0.6000 0.1000 0.1000 0.1000 6.3000
4.8000 4.2000 3.4000 3.6000 1.6000 1.1000
295. * 3.4000 3.0000 3.0000 3.0000 0.4000 0.1000 0.1000 0.1000 6.4000
4.9000 4.2000 3.4000 3.4000 1.6000 1.1000
300. * 3.3000 3.1000 3.1000 3.1000 0.3000 0.1000 0.1000 0.1000 6.1000
4.8000 4.3000 3.5000 3.2000 1.6000 1.1000
305. * 3.4000 3.2000 3.2000 3.2000 0.4000 0.2000 0.2000 0.2000 6.1000
5.0000 4.4000 3.7000 3.1000 1.7000 1.2000
310. * 3.5000 3.3000 3.3000 3.3000 0.4000 0.2000 0.2000 0.2000 6.0000
5.1000 4.6000 3.9000 3.0000 1.6000 1.2000
315. * 3.7000 3.5000 3.5000 3.5000 0.4000 0.2000 0.2000 0.2000 6.1000
5.0000 4.7000 4.1000 2.8000 1.6000 1.2000
320. * 3.7000 3.6000 3.6000 3.6000 0.3000 0.2000 0.2000 0.2000 6.2000
5.3000 4.8000 4.3000 2.8000 1.5000 1.2000
325. * 4.1000 4.0000 4.0000 4.0000 0.3000 0.2000 0.2000 0.2000 6.1000
5.5000 4.8000 4.6000 2.6000 1.5000 1.2000
330. * 4.2000 4.1000 4.1000 4.1000 0.4000 0.3000 0.3000 0.3000 6.3000
5.7000 5.3000 4.7000 2.6000 1.5000 1.3000
335. * 4.5000 4.4000 4.3000 4.3000 0.5000 0.4000 0.4000 0.4000 6.4000
5.8000 5.3000 5.0000 2.5000 1.7000 1.4000
340. * 4.6000 4.6000 4.5000 4.3000 0.7000 0.7000 0.7000 0.6000 6.7000
6.1000 5.7000 5.2000 2.8000 1.8000 1.5000
345. * 4.8000 4.7000 4.7000 4.3000 1.1000 1.1000 1.1000 0.9000 7.0000
6.3000 5.9000 5.6000 3.3000 2.4000 2.0000

```
 350.  *  4.7000  4.7000  4.6000  4.1000  1.8000  1.8000  1.8000  1.5000  7.0000
6.0000  5.8000  5.7000  4.2000  3.2000  2.7000
 355.  *  4.4000  4.2000  4.2000  3.6000  2.8000  2.8000  2.8000  2.3000  6.6000
5.7000  5.4000  5.4000  5.2000  4.1000  3.6000
 360.  *  3.6000  3.5000  3.4000  2.9000  3.9000  3.8000  3.7000  3.2000  5.9000
4.9000  4.7000  4.4000  6.2000  5.0000  4.5000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  7.1000  6.2000  5.6000  5.3000  7.0000  6.3000  6.0000  5.6000  7.0000
6.3000  5.9000  5.7000  7.2000  6.0000  5.5000
 DEGR. *    190     190     195     190     170     170     165     170     345
345     345     350      10      15      10
```

                            PAGE 5
      JOB: Fred Ex AQ Analysis   RUN: 2016 - US 17
and S Gateway

```
       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
   5.  *  5.0000  0.5000  0.1000  0.0000  1.4000  0.8000  0.0000  3.0000  2.4000
2.3000  4.1000  3.2000  2.4000
  10.  *  5.4000  0.3000  0.0000  0.0000  2.0000  1.0000  0.1000  2.6000  2.3000
2.3000  4.4000  3.5000  2.4000
  15.  *  5.2000  0.1000  0.0000  0.0000  2.3000  1.4000  0.1000  2.4000  2.3000
2.3000  4.6000  3.7000  2.4000
  20.  *  4.8000  0.0000  0.0000  0.0000  2.4000  1.6000  0.2000  2.3000  2.3000
2.3000  4.8000  3.9000  2.6000
  25.  *  4.7000  0.1000  0.1000  0.1000  2.5000  1.7000  0.4000  2.3000  2.3000
2.3000  4.6000  3.9000  2.7000
  30.  *  4.5000  0.1000  0.1000  0.1000  2.4000  1.7000  0.6000  2.3000  2.3000
2.3000  4.6000  4.1000  2.9000
```

```
  35.  *  4.3000  0.1000  0.1000  0.1000  2.4000  1.7000  0.6000  2.4000  2.4000
2.4000  4.7000  4.0000  3.1000
  40.  *  4.0000  0.1000  0.1000  0.1000  2.2000  1.7000  0.7000  2.6000  2.6000
2.6000  4.9000  4.2000  3.4000
  45.  *  3.9000  0.2000  0.2000  0.2000  2.3000  1.6000  0.9000  2.6000  2.6000
2.6000  4.7000  4.1000  3.4000
  50.  *  3.7000  0.2000  0.2000  0.2000  2.2000  1.6000  0.9000  2.7000  2.7000
2.7000  4.7000  4.3000  3.6000
  55.  *  3.5000  0.2000  0.2000  0.2000  2.2000  1.6000  0.9000  2.9000  2.9000
2.9000  4.9000  4.4000  3.7000
  60.  *  3.4000  0.2000  0.2000  0.2000  2.1000  1.6000  0.9000  3.0000  3.0000
3.0000  5.1000  4.6000  3.8000
  65.  *  3.3000  0.3000  0.3000  0.3000  2.2000  1.7000  1.0000  3.3000  3.3000
3.2000  5.3000  4.7000  4.0000
  70.  *  3.3000  0.6000  0.6000  0.5000  2.4000  1.8000  1.2000  3.4000  3.4000
3.3000  5.3000  4.6000  4.2000
  75.  *  3.1000  0.9000  0.9000  0.8000  2.8000  2.2000  1.5000  3.6000  3.6000
3.3000  5.6000  5.1000  4.3000
  80.  *  3.1000  1.5000  1.4000  1.3000  3.4000  2.8000  2.1000  3.5000  3.5000
3.2000  5.4000  5.1000  4.6000
  85.  *  3.2000  2.2000  2.2000  1.9000  4.1000  3.5000  2.9000  3.3000  3.2000
2.8000  5.2000  4.9000  4.1000
  90.  *  3.2000  3.0000  3.0000  2.6000  4.8000  4.3000  3.7000  2.6000  2.6000
2.3000  4.8000  4.2000  3.6000
  95.  *  3.2000  3.5000  3.5000  3.2000  5.3000  4.8000  3.9000  2.0000  1.9000
1.6000  3.8000  3.6000  3.0000
 100.  *  3.1000  3.8000  3.8000  3.4000  5.5000  4.9000  4.3000  1.4000  1.4000
1.2000  3.2000  2.8000  1.9000
 105.  *  3.0000  3.8000  3.8000  3.5000  5.5000  4.8000  4.0000  0.7000  0.7000
0.7000  2.6000  2.1000  1.7000
 110.  *  3.0000  3.7000  3.6000  3.5000  5.1000  4.9000  4.1000  0.4000  0.4000
0.4000  2.3000  1.7000  1.1000
 115.  *  3.0000  3.3000  3.3000  3.3000  5.1000  4.6000  3.8000  0.3000  0.3000
0.3000  2.1000  1.6000  1.0000
 120.  *  3.1000  3.2000  3.2000  3.2000  4.8000  4.4000  3.7000  0.2000  0.2000
0.2000  2.2000  1.6000  0.9000
 125.  *  3.2000  3.1000  3.1000  3.1000  4.7000  4.1000  3.6000  0.1000  0.1000
0.1000  2.1000  1.5000  0.8000
 130.  *  3.3000  3.0000  3.0000  3.0000  4.7000  4.0000  3.4000  0.1000  0.1000
0.1000  2.1000  1.5000  0.8000
 135.  *  3.5000  2.8000  2.8000  2.8000  4.6000  3.9000  3.2000  0.1000  0.1000
0.1000  2.2000  1.5000  0.8000
 140.  *  3.6000  2.6000  2.6000  2.6000  4.6000  3.9000  3.1000  0.1000  0.1000
0.1000  2.2000  1.6000  0.8000
 145.  *  4.0000  2.5000  2.5000  2.5000  4.6000  3.8000  2.9000  0.1000  0.1000
0.1000  2.4000  1.6000  0.7000
 150.  *  4.1000  2.4000  2.4000  2.4000  4.5000  3.8000  2.7000  0.1000  0.1000
0.1000  2.4000  1.6000  0.6000
```

```
 155.  *  4.3000  2.4000  2.4000  2.4000  4.5000  3.7000  2.6000  0.1000  0.1000
0.1000  2.4000  1.6000  0.4000
 160.  *  4.3000  2.3000  2.3000  2.3000  4.5000  3.7000  2.5000  0.0000  0.0000
0.0000  2.4000  1.5000  0.2000
 165.  *  4.4000  2.4000  2.3000  2.3000  4.4000  3.6000  2.3000  0.1000  0.0000
0.0000  2.2000  1.4000  0.1000
 170.  *  4.1000  2.8000  2.4000  2.4000  4.2000  3.3000  2.3000  0.4000  0.0000
0.0000  1.9000  0.9000  0.1000
 175.  *  3.6000  3.1000  2.7000  2.4000  3.9000  3.0000  2.3000  0.5000  0.2000
0.0000  1.5000  0.7000  0.0000
 180.  *  2.9000  3.6000  2.9000  2.5000  3.3000  2.7000  2.3000  1.1000  0.4000
0.0000  1.0000  0.4000  0.0000
 185.  *  2.1000  4.1000  3.2000  2.4000  3.0000  2.5000  2.3000  1.5000  0.8000
0.0000  0.5000  0.1000  0.0000
 190.  *  1.4000  4.5000  3.6000  2.5000  2.5000  2.2000  2.2000  2.0000  1.0000
0.1000  0.3000  0.0000  0.0000
 195.  *  0.8000  4.6000  3.7000  2.4000  2.3000  2.2000  2.2000  2.3000  1.4000
0.1000  0.1000  0.0000  0.0000
 200.  *  0.5000  4.8000  3.9000  2.6000  2.2000  2.2000  2.2000  2.5000  1.6000
0.2000  0.0000  0.0000  0.0000
 205.  *  0.4000  4.7000  4.0000  2.8000  2.2000  2.2000  2.2000  2.5000  1.7000
0.4000  0.1000  0.1000  0.1000
 210.  *  0.3000  4.7000  4.1000  2.9000  2.2000  2.2000  2.2000  2.4000  1.7000
0.6000  0.1000  0.1000  0.1000
```

PAGE 6

```
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - US 17
and S Gateway

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.2000  4.8000  4.1000  3.1000  2.3000  2.3000  2.3000  2.4000  1.7000
0.7000  0.1000  0.1000  0.1000
 220.  *  0.2000  4.8000  4.1000  3.3000  2.4000  2.4000  2.4000  2.2000  1.7000
0.8000  0.1000  0.1000  0.1000
 225.  *  0.2000  4.6000  4.0000  3.5000  2.5000  2.5000  2.5000  2.2000  1.5000
0.8000  0.1000  0.1000  0.1000
 230.  *  0.2000  4.9000  4.2000  3.7000  2.7000  2.7000  2.7000  2.1000  1.5000
0.8000  0.1000  0.1000  0.1000
 235.  *  0.2000  5.0000  4.4000  3.8000  2.9000  2.9000  2.9000  2.1000  1.5000
0.8000  0.1000  0.1000  0.1000
```

 240. * 0.1000 5.2000 4.7000 3.9000 3.0000 3.0000 3.0000 2.2000 1.6000
0.9000 0.2000 0.2000 0.2000
 245. * 0.1000 5.3000 4.8000 4.0000 3.3000 3.2000 3.1000 2.2000 1.6000
1.0000 0.3000 0.3000 0.3000
 250. * 0.1000 5.3000 5.1000 4.2000 3.4000 3.4000 3.3000 2.4000 1.7000
1.1000 0.5000 0.4000 0.4000
 255. * 0.0000 5.5000 5.1000 4.5000 3.6000 3.6000 3.3000 2.7000 2.1000
1.6000 0.8000 0.8000 0.8000
 260. * 0.0000 5.5000 5.0000 4.6000 3.6000 3.5000 3.2000 3.3000 2.7000
1.8000 1.5000 1.5000 1.3000
 265. * 0.0000 5.3000 4.8000 4.1000 3.4000 3.2000 2.9000 3.9000 3.5000
2.9000 2.1000 2.1000 1.7000
 270. * 0.0000 4.8000 4.4000 3.9000 2.8000 2.7000 2.3000 4.7000 4.0000
3.5000 2.9000 2.7000 2.4000
 275. * 0.0000 3.9000 3.5000 3.1000 2.1000 2.0000 1.8000 5.1000 4.6000
3.9000 3.4000 3.4000 3.0000
 280. * 0.0000 3.3000 2.8000 2.1000 1.5000 1.4000 1.2000 5.3000 4.9000
4.2000 3.7000 3.7000 3.3000
 285. * 0.0000 2.6000 2.1000 1.6000 0.8000 0.8000 0.7000 5.4000 4.8000
4.0000 3.7000 3.7000 3.4000
 290. * 0.1000 2.3000 1.8000 1.1000 0.5000 0.5000 0.4000 5.0000 4.4000
4.0000 3.6000 3.6000 3.4000
 295. * 0.3000 2.1000 1.7000 1.0000 0.3000 0.3000 0.3000 5.0000 4.5000
3.8000 3.3000 3.3000 3.2000
 300. * 0.3000 2.1000 1.6000 0.9000 0.2000 0.2000 0.2000 4.8000 4.3000
3.7000 3.1000 3.1000 3.1000
 305. * 0.5000 2.2000 1.6000 0.9000 0.2000 0.2000 0.2000 4.7000 4.3000
3.6000 3.0000 3.0000 3.0000
 310. * 0.6000 2.2000 1.6000 0.9000 0.2000 0.2000 0.2000 4.5000 4.2000
3.4000 2.9000 2.9000 2.9000
 315. * 0.6000 2.3000 1.6000 0.9000 0.2000 0.2000 0.2000 4.5000 4.0000
3.3000 2.7000 2.7000 2.7000
 320. * 0.6000 2.2000 1.6000 0.7000 0.1000 0.1000 0.1000 4.6000 3.9000
3.3000 2.7000 2.7000 2.7000
 325. * 0.6000 2.4000 1.6000 0.6000 0.1000 0.1000 0.1000 4.6000 3.9000
3.0000 2.5000 2.5000 2.5000
 330. * 0.7000 2.4000 1.6000 0.6000 0.1000 0.1000 0.1000 4.6000 3.9000
2.8000 2.4000 2.4000 2.4000
 335. * 0.8000 2.4000 1.6000 0.4000 0.1000 0.1000 0.1000 4.6000 3.8000
2.7000 2.3000 2.3000 2.3000
 340. * 1.0000 2.3000 1.5000 0.2000 0.0000 0.0000 0.0000 4.7000 3.8000
2.6000 2.3000 2.3000 2.3000
 345. * 1.4000 2.2000 1.4000 0.1000 0.1000 0.0000 0.0000 4.5000 3.7000
2.4000 2.4000 2.3000 2.3000
 350. * 2.2000 1.9000 0.9000 0.1000 0.4000 0.0000 0.0000 4.3000 3.4000
2.4000 2.7000 2.3000 2.3000
 355. * 3.1000 1.4000 0.7000 0.0000 0.5000 0.2000 0.0000 3.9000 3.0000
2.3000 3.1000 2.6000 2.4000

```
 360.  *  4.1000  1.0000  0.4000  0.0000  1.1000  0.4000  0.0000  3.4000  2.8000
2.4000  3.5000  2.8000  2.4000

------*-------------------------------------------------------------------------
---------------------------
 MAX   *  5.4000  5.5000  5.1000  4.6000  5.5000  4.9000  4.3000  5.4000  4.9000
4.2000  5.6000  5.1000  4.6000
 DEGR. *     10     255     250     260     100     100     100     285     280
280      75      75      80

 THE HIGHEST CONCENTRATION OF   7.2000 PPM OCCURRED AT RECEPTOR    13.
```

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,4,4,4,2200,2200,2200,2200,2200,2200,2200,2200,1230,1230,1230,1230,1230,1230,1230,1
230,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,
0,0,0,0,0,0,0,0,30,10,9.93,9.93,10.05,10.05,18.08,18.08,17.93,17.93
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,46.6,5.9
'N Leg, E Side - 25 m',70.0,118.6,5.9
'N Leg, E Side - 50 m',70.0,200.6,5.9
'N Leg, E Side-Midblk',70.0,636.6,5.9
'N Leg, W Side-Corner',-58.0,100.5,5.9
'N Leg, W Side - 25 m',-58.0,172.5,5.9
'N Leg, W Side - 50 m',-58.0,254.5,5.9
'N Leg, W Side-Midblk',-58.0,690.5,5.9
'S Leg, E Side-Corner',70.0,-71.2,5.9
'S Leg, E Side - 25 m',70.0,-143.3,5.9
'S Leg, E Side - 50 m',70.0,-225.3,5.9
'S Leg, E Side-Midblk',70.0,-661.2,5.9
'S Leg, W Side-Corner',-58.0,-33.5,5.9
'S Leg, W Side - 25 m',-58.0,-105.5,5.9
'S Leg, W Side - 50 m',-58.0,-187.5,5.9
'S Leg, W Side-Midblk',-58.0,-623.5,5.9
'E Leg, N Side - 25 m',140.9,34.0,5.9
'E Leg, N Side - 50 m',221.7,19.8,5.9
'E Leg, N Side-Midblk',651.0,-55.9,5.9
'W Leg, N Side - 25 m',-120.4,136.5,5.9
'W Leg, N Side - 50 m',-191.4,177.5,5.9
'W Leg, N Side-Midblk',-569.0,395.5,5.9
'E Leg, S Side - 25 m',140.9,-83.7,5.9
'E Leg, S Side - 50 m',221.7,-98.0,5.9
'E Leg, S Side-Midblk',651.0,-173.7,5.9
'W Leg, S Side - 25 m',-120.4,2.5,5.9
'W Leg, S Side - 50 m',-191.4,43.5,5.9
'W Leg, S Side-Midblk',-569.0,261.5,5.9
'2016 - Garrisonville Rd (SR610) and US 1',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,4920,9.93,0.0,67.7
2
'N Leg App - Queue','AG',-24,48,-24,1200,0.0,48.0,4
120,68,2,4920,18.08,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,6150,9.93,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,6150,9.93,0.0,79.7
2
'S Leg App - Queue','AG',30,-48,30,-1200,0.0,60.0,5
120,68,2,6150,18.08,1900,1,3
1
```

'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,4920,9.93,0.0,67.7
1
'E Leg App - FreeFlow','AG',8,23,1186,-185,4920,10.05,0.0,67.7
2
'E Leg App - Queue','AG',63,13,1186,-185,0.0,48.0,4
120,68,2,4920,17.93,1900,1,3
1
'E Leg Dep - FreeFlow','AG',-8,-23,1178,-232,4920,10.05,0.0,67.7
1
'W Leg App - FreeFlow','AG',-8,-23,-1051,579,4920,10.05,0.0,67.7
2
'W Leg App - Queue','AG',-54,3,-1051,579,0.0,48.0,4
120,68,2,4920,17.93,1900,1,3
1
'W Leg Dep - FreeFlow','AG',8,23,-1027,621,4920,10.05,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72

```
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                         PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2016 -
Garrisonville Rd (SR610) and US 1

      DATE :  8/15/17
      TIME :  8:47:50

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -24.0       0.0     -24.0    1200.0 *    1200.
360. AG   4920.   9.9   0.0 67.7
       2. N Leg App - Queue   *    -24.0      48.0     -24.0    5348.1 *    5300.
360. AG    110. 100.0   0.0 48.0 1.62 269.2
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   6150.   9.9   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   6150.   9.9   0.0 79.7
       5. S Leg App - Queue   *     30.0     -48.0      30.0   -5348.1 *    5300.
180. AG    137. 100.0   0.0 60.0 1.62 269.2
       6. S Leg Dep - FreeFlow*    -24.0       0.0     -24.0   -1200.0 *    1200.
180. AG   4920.   9.9   0.0 67.7
       7. E Leg App - FreeFlow*      8.0      23.0    1186.0    -185.0 *    1196.
100. AG   4920.  10.1   0.0 67.7
       8. E Leg App - Queue   *     63.0      13.0    5282.6    -907.3 *    5300.
100. AG    109. 100.0   0.0 48.0 1.62 269.2
       9. E Leg Dep - FreeFlow*     -8.0     -23.0    1178.0    -232.0 *    1204.
100. AG   4920.  10.1   0.0 67.7
      10. W Leg App - FreeFlow*     -8.0     -23.0   -1051.0     579.0 *    1204.
```

```
300. AG   4920.  10.1   0.0 67.7
      11. W Leg App - Queue   *    -54.0       3.0   -4643.2    2654.3 *    5300.
300. AG    109. 100.0   0.0 48.0 1.62 269.2
      12. W Leg Dep - FreeFlow*      8.0      23.0   -1027.0     621.0 *    1195.
300. AG   4920.  10.1   0.0 67.7

                             PAGE  2
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 -
Garrisonville Rd (SR610) and US 1

      DATE :  8/15/17
      TIME :  8:47:50

       ADDITIONAL QUEUE LINK PARAMETERS
       --------------------------------
         LINK DESCRIPTION     *    CYCLE    RED     CLEARANCE  APPROACH  SATURATION
 IDLE   SIGNAL   ARRIVAL
                              *    LENGTH   TIME    LOST TIME    VOL     FLOW RATE
EM FAC   TYPE     RATE
                              *     (SEC)   (SEC)    (SEC)      (VPH)      (VPH)
(gm/hr)

------------------------*----------------------------------------------------------
--------------------
       2. N Leg App - Queue   *     120      68       2.0      4920       1900
18.08      1        3
       5. S Leg App - Queue   *     120      68       2.0      6150       1900
18.08      1        3
       8. E Leg App - Queue   *     120      68       2.0      4920       1900
17.93      1        3
      11. W Leg App - Queue   *     120      68       2.0      4920       1900
17.93      1        3

       RECEPTOR LOCATIONS
       ------------------
                              *          COORDINATES (FT)          *
         RECEPTOR             *      X           Y          Z      *
     -------------------------*------------------------------------*
      1. N Leg, E Side-Corner *        70.0       46.6        5.9   *
      2. N Leg, E Side - 25 m *        70.0      118.6        5.9   *
      3. N Leg, E Side - 50 m *        70.0      200.6        5.9   *
      4. N Leg, E Side-Midblk *        70.0      636.6        5.9   *
      5. N Leg, W Side-Corner *       -58.0      100.5        5.9   *
      6. N Leg, W Side - 25 m *       -58.0      172.5        5.9   *
      7. N Leg, W Side - 50 m *       -58.0      254.5        5.9   *
      8. N Leg, W Side-Midblk *       -58.0      690.5        5.9   *
      9. S Leg, E Side-Corner *        70.0      -71.2        5.9   *
     10. S Leg, E Side - 25 m *        70.0     -143.3        5.9   *
```

```
     11. S Leg, E Side - 50 m *        70.0     -225.3        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -661.2        5.9   *
     13. S Leg, W Side-Corner *       -58.0      -33.5        5.9   *
     14. S Leg, W Side - 25 m *       -58.0     -105.5        5.9   *
     15. S Leg, W Side - 50 m *       -58.0     -187.5        5.9   *
     16. S Leg, W Side-Midblk *       -58.0     -623.5        5.9   *
     17. E Leg, N Side - 25 m *       140.9       34.0        5.9   *
     18. E Leg, N Side - 50 m *       221.7       19.8        5.9   *
     19. E Leg, N Side-Midblk *       651.0      -55.9        5.9   *
     20. W Leg, N Side - 25 m *      -120.4      136.5        5.9   *
     21. W Leg, N Side - 50 m *      -191.4      177.5        5.9   *
     22. W Leg, N Side-Midblk *      -569.0      395.5        5.9   *
     23. E Leg, S Side - 25 m *       140.9      -83.7        5.9   *
     24. E Leg, S Side - 50 m *       221.7      -98.0        5.9   *
     25. E Leg, S Side-Midblk *       651.0     -173.7        5.9   *
     26. W Leg, S Side - 25 m *      -120.4        2.5        5.9   *
     27. W Leg, S Side - 50 m *      -191.4       43.5        5.9   *
     28. W Leg, S Side-Midblk *      -569.0      261.5        5.9   *

                              PAGE  3
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 -
Garrisonville Rd (SR610) and US 1

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
   5.  *  2.3000  2.3000  2.2000  1.9000  4.0000  3.9000  3.9000  3.3000  4.8000
4.0000  3.5000  3.2000  6.5000  5.4000  4.9000
  10.  *  1.6000  1.6000  1.5000  1.3000  4.3000  4.2000  4.2000  3.7000  4.2000
3.2000  2.7000  2.2000  6.7000  5.7000  5.2000
  15.  *  0.9000  0.9000  0.9000  0.7000  4.4000  4.4000  4.4000  3.9000  3.5000
2.5000  2.0000  1.4000  6.6000  5.5000  5.0000
  20.  *  0.5000  0.5000  0.5000  0.5000  4.2000  4.2000  4.2000  3.9000  3.1000
2.0000  1.5000  1.0000  6.4000  5.3000  5.0000
```

```
  25.  *  0.4000  0.4000  0.4000  0.3000  3.9000  3.9000  3.9000  3.8000  2.8000
1.9000  1.4000  0.7000  6.2000  5.1000  4.7000
  30.  *  0.3000  0.3000  0.3000  0.3000  3.8000  3.8000  3.8000  3.7000  2.8000
1.7000  1.2000  0.7000  5.9000  4.7000  4.4000
  35.  *  0.3000  0.2000  0.2000  0.2000  3.6000  3.6000  3.6000  3.6000  2.7000
1.7000  1.2000  0.6000  5.6000  4.7000  4.4000
  40.  *  0.3000  0.2000  0.2000  0.2000  3.5000  3.5000  3.5000  3.5000  2.7000
1.7000  1.2000  0.6000  5.7000  4.5000  4.2000
  45.  *  0.3000  0.2000  0.2000  0.2000  3.3000  3.3000  3.3000  3.3000  2.8000
1.7000  1.3000  0.6000  5.6000  4.7000  4.1000
  50.  *  0.3000  0.2000  0.2000  0.2000  3.1000  3.1000  3.1000  3.1000  2.9000
1.7000  1.3000  0.6000  5.3000  4.4000  4.3000
  55.  *  0.3000  0.1000  0.1000  0.1000  3.1000  3.0000  3.0000  3.0000  3.0000
1.6000  1.3000  0.5000  5.3000  4.4000  4.1000
  60.  *  0.3000  0.1000  0.1000  0.1000  2.9000  2.8000  2.8000  2.8000  3.1000
1.8000  1.3000  0.5000  5.6000  4.4000  3.9000
  65.  *  0.3000  0.1000  0.1000  0.1000  2.9000  2.8000  2.8000  2.8000  3.3000
1.8000  1.3000  0.4000  5.8000  4.5000  3.9000
  70.  *  0.3000  0.1000  0.1000  0.1000  2.9000  2.8000  2.8000  2.8000  3.4000
1.8000  1.3000  0.4000  5.9000  4.5000  3.8000
  75.  *  0.3000  0.0000  0.0000  0.0000  2.9000  2.7000  2.7000  2.7000  3.5000
1.7000  1.2000  0.3000  6.3000  4.7000  3.8000
  80.  *  0.5000  0.0000  0.0000  0.0000  3.1000  2.8000  2.8000  2.8000  3.8000
1.9000  1.1000  0.1000  6.4000  4.8000  3.9000
  85.  *  0.9000  0.0000  0.0000  0.0000  3.3000  2.9000  2.9000  2.9000  3.9000
1.7000  1.0000  0.1000  6.8000  4.8000  3.9000
  90.  *  1.6000  0.3000  0.0000  0.0000  3.6000  3.0000  2.9000  2.9000  3.9000
1.5000  0.8000  0.0000  7.2000  4.6000  3.7000
  95.  *  2.4000  0.5000  0.2000  0.0000  4.2000  3.3000  3.0000  2.9000  3.6000
1.1000  0.6000  0.0000  6.9000  4.3000  3.4000
 100.  *  3.2000  0.9000  0.4000  0.0000  4.6000  3.4000  3.1000  2.8000  3.0000
0.7000  0.4000  0.0000  6.5000  3.7000  3.1000
 105.  *  3.9000  1.3000  0.6000  0.0000  5.1000  3.7000  3.2000  2.7000  2.2000
0.5000  0.1000  0.0000  5.9000  3.3000  2.8000
 110.  *  4.2000  1.6000  0.9000  0.1000  5.6000  4.1000  3.5000  2.8000  1.6000
0.3000  0.1000  0.1000  5.1000  3.0000  2.7000
 115.  *  4.3000  1.8000  1.1000  0.2000  6.0000  4.3000  3.8000  2.9000  1.0000
0.1000  0.1000  0.1000  4.3000  2.8000  2.7000
 120.  *  4.2000  2.0000  1.3000  0.4000  6.0000  4.4000  3.8000  3.1000  0.6000
0.1000  0.1000  0.1000  4.1000  2.7000  2.7000
 125.  *  3.8000  1.9000  1.3000  0.4000  6.1000  4.5000  4.1000  3.3000  0.4000
0.1000  0.1000  0.1000  3.6000  2.9000  2.9000
 130.  *  3.6000  2.0000  1.4000  0.6000  6.1000  4.6000  4.2000  3.6000  0.4000
0.2000  0.2000  0.2000  3.5000  3.0000  3.0000
 135.  *  3.5000  2.0000  1.4000  0.7000  6.3000  4.6000  4.4000  3.8000  0.4000
0.2000  0.2000  0.2000  3.3000  3.2000  3.2000
 140.  *  3.3000  2.0000  1.4000  0.7000  6.3000  4.9000  4.5000  3.9000  0.4000
0.2000  0.2000  0.2000  3.4000  3.4000  3.4000
```

```
 145.  *  3.1000  1.8000  1.4000  0.6000  6.4000  5.2000  4.7000  4.0000  0.4000
0.2000  0.2000  0.2000  3.6000  3.5000  3.5000
 150.  *  3.0000  1.8000  1.3000  0.7000  6.5000  5.3000  4.8000  4.1000  0.4000
0.3000  0.3000  0.3000  3.8000  3.7000  3.7000
 155.  *  2.9000  2.0000  1.5000  0.7000  6.7000  5.3000  5.2000  4.4000  0.5000
0.4000  0.4000  0.3000  3.9000  3.8000  3.8000
 160.  *  3.2000  2.0000  1.5000  0.9000  6.8000  5.6000  5.2000  4.7000  0.7000
0.6000  0.6000  0.6000  4.1000  4.0000  4.0000
 165.  *  3.6000  2.5000  2.0000  1.4000  7.0000  6.0000  5.5000  5.0000  1.1000
1.0000  1.0000  0.8000  4.2000  4.2000  4.2000
 170.  *  4.3000  3.2000  2.6000  2.1000  6.8000  5.8000  5.6000  5.0000  1.7000
1.7000  1.6000  1.4000  4.2000  4.1000  4.0000
 175.  *  5.1000  4.1000  3.4000  2.9000  6.6000  5.7000  5.1000  4.7000  2.6000
2.6000  2.5000  2.2000  3.9000  3.7000  3.7000
 180.  *  6.0000  4.9000  4.4000  4.0000  5.7000  4.9000  4.7000  4.2000  3.5000
3.4000  3.4000  2.9000  3.3000  3.0000  3.0000
 185.  *  6.8000  5.4000  5.0000  4.4000  4.8000  4.0000  3.5000  3.0000  4.1000
4.1000  4.1000  3.6000  2.4000  2.3000  2.2000
 190.  *  6.9000  5.5000  5.2000  4.8000  3.9000  3.1000  2.6000  2.2000  4.5000
4.4000  4.4000  3.9000  1.5000  1.5000  1.4000
 195.  *  6.9000  5.6000  5.3000  4.8000  3.4000  2.4000  1.8000  1.5000  4.5000
4.5000  4.5000  4.1000  0.8000  0.8000  0.8000
 200.  *  6.4000  5.1000  4.8000  4.3000  3.0000  1.9000  1.6000  0.9000  4.3000
4.3000  4.3000  4.1000  0.5000  0.5000  0.5000
 205.  *  6.1000  5.0000  4.7000  4.2000  2.9000  1.9000  1.4000  0.7000  4.0000
4.0000  4.0000  3.9000  0.3000  0.3000  0.3000
 210.  *  6.0000  4.8000  4.4000  3.9000  2.8000  1.7000  1.3000  0.6000  3.8000
3.9000  3.8000  3.7000  0.2000  0.2000  0.2000
```

```
                            PAGE  4
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 -
Garrisonville Rd (SR610) and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  5.5000  4.6000  4.4000  3.7000  2.8000  1.7000  1.4000  0.6000  3.7000
3.6000  3.6000  3.6000  0.2000  0.2000  0.2000
 220.  *  5.5000  4.3000  4.0000  3.6000  2.7000  1.7000  1.4000  0.6000  3.5000
3.5000  3.5000  3.5000  0.2000  0.2000  0.2000
 225.  *  5.3000  4.4000  4.0000  3.5000  2.7000  1.7000  1.2000  0.6000  3.4000
3.3000  3.3000  3.3000  0.2000  0.2000  0.2000
```

```
 230.  *  5.3000  4.2000  3.9000  3.3000  2.6000  1.6000  1.2000  0.5000  3.2000
3.1000  3.1000  3.1000  0.1000  0.1000  0.1000
 235.  *  5.4000  4.1000  3.8000  3.2000  2.6000  1.6000  1.2000  0.5000  3.2000
3.0000  3.0000  3.0000  0.2000  0.1000  0.1000
 240.  *  5.3000  4.1000  3.7000  3.1000  2.6000  1.6000  1.3000  0.5000  3.1000
2.9000  2.9000  2.9000  0.2000  0.1000  0.1000
 245.  *  5.3000  3.9000  3.7000  3.0000  2.7000  1.6000  1.3000  0.5000  3.0000
2.8000  2.8000  2.8000  0.2000  0.1000  0.1000
 250.  *  5.2000  3.9000  3.7000  3.0000  2.8000  1.6000  1.2000  0.4000  3.0000
2.8000  2.8000  2.8000  0.1000  0.0000  0.0000
 255.  *  5.4000  4.1000  3.8000  3.0000  2.9000  1.7000  1.2000  0.5000  3.0000
2.8000  2.8000  2.8000  0.2000  0.0000  0.0000
 260.  *  5.3000  4.1000  3.8000  3.1000  3.0000  1.7000  1.2000  0.5000  3.1000
2.8000  2.8000  2.8000  0.2000  0.0000  0.0000
 265.  *  5.6000  4.3000  3.9000  3.1000  3.2000  1.7000  1.2000  0.3000  3.4000
2.9000  2.9000  2.9000  0.2000  0.0000  0.0000
 270.  *  6.0000  4.5000  4.0000  3.1000  3.3000  1.8000  1.2000  0.3000  3.7000
3.0000  3.0000  3.0000  0.2000  0.0000  0.0000
 275.  *  5.9000  4.4000  3.9000  3.0000  3.5000  1.9000  1.2000  0.2000  3.9000
2.9000  2.9000  2.9000  0.3000  0.0000  0.0000
 280.  *  6.0000  4.4000  3.8000  2.7000  3.7000  1.9000  1.2000  0.1000  4.5000
2.9000  2.8000  2.8000  0.5000  0.0000  0.0000
 285.  *  5.8000  4.3000  3.6000  2.7000  3.9000  1.9000  1.1000  0.1000  5.0000
2.9000  2.8000  2.8000  0.9000  0.1000  0.0000
 290.  *  5.6000  4.1000  3.4000  2.6000  3.9000  1.7000  0.8000  0.0000  5.7000
3.2000  2.9000  2.8000  1.6000  0.4000  0.0000
 295.  *  5.2000  3.7000  3.2000  2.6000  3.7000  1.4000  0.7000  0.1000  6.3000
3.8000  3.2000  2.8000  2.4000  0.7000  0.4000
 300.  *  4.8000  3.4000  3.1000  2.7000  3.1000  1.0000  0.5000  0.1000  7.0000
4.3000  3.5000  2.9000  3.2000  1.1000  0.5000
 305.  *  4.2000  3.2000  2.9000  2.8000  2.3000  0.6000  0.2000  0.1000  7.4000
5.0000  4.0000  3.0000  3.9000  1.4000  0.8000
 310.  *  3.9000  3.0000  2.9000  2.9000  1.6000  0.3000  0.1000  0.1000  7.4000
5.3000  4.5000  3.4000  4.2000  1.8000  1.2000
 315.  *  3.4000  3.1000  3.1000  3.1000  1.0000  0.3000  0.2000  0.2000  7.2000
5.5000  4.7000  3.6000  4.2000  2.1000  1.5000
 320.  *  3.4000  3.2000  3.2000  3.2000  0.7000  0.2000  0.2000  0.2000  6.9000
5.6000  4.7000  3.9000  4.0000  2.1000  1.4000
 325.  *  3.4000  3.3000  3.3000  3.3000  0.5000  0.2000  0.2000  0.2000  6.6000
5.6000  5.0000  4.1000  3.7000  2.1000  1.5000
 330.  *  3.6000  3.6000  3.5000  3.4000  0.4000  0.2000  0.2000  0.2000  6.4000
5.7000  5.2000  4.4000  3.7000  2.1000  1.5000
 335.  *  3.8000  3.7000  3.7000  3.6000  0.5000  0.3000  0.3000  0.3000  6.5000
5.7000  5.3000  4.7000  3.5000  2.1000  1.6000
 340.  *  4.0000  3.9000  3.9000  3.7000  0.8000  0.6000  0.6000  0.5000  6.7000
5.8000  5.4000  4.7000  3.5000  2.3000  1.6000
 345.  *  4.2000  4.1000  4.1000  3.7000  1.1000  0.9000  0.9000  0.8000  6.6000
6.0000  5.6000  5.3000  3.8000  2.8000  2.2000
```

```
 350.  *  4.1000  4.1000  4.0000  3.6000  1.7000  1.5000  1.5000  1.3000  6.4000
6.0000  5.5000  5.2000  4.4000  3.0000  2.8000
 355.  *  3.7000  3.7000  3.7000  3.2000  2.6000  2.3000  2.3000  1.9000  6.4000
5.5000  5.2000  4.8000  5.0000  3.9000  3.5000
 360.  *  3.2000  3.1000  3.1000  2.6000  3.3000  3.2000  3.2000  2.6000  5.7000
5.0000  4.6000  4.3000  5.9000  4.8000  4.3000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  6.9000  5.6000  5.3000  4.8000  7.0000  6.0000  5.6000  5.0000  7.4000
6.0000  5.6000  5.3000  7.2000  5.7000  5.2000
 DEGR. *    190     195     195     190     165     165     170     165     305
345     345     345      90      10      10
```

PAGE 5

```
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 -
Garrisonville Rd (SR610) and US 1

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
----------------------------
   5.  *  4.3000  0.5000  0.1000  0.0000  1.5000  0.7000  0.1000  3.1000  2.7000
2.6000  4.0000  3.3000  2.6000
  10.  *  4.8000  0.2000  0.0000  0.0000  1.8000  1.0000  0.1000  2.8000  2.6000
2.6000  4.4000  3.7000  2.7000
  15.  *  4.7000  0.1000  0.0000  0.0000  2.0000  1.2000  0.1000  2.7000  2.6000
2.6000  4.7000  3.9000  2.7000
  20.  *  4.5000  0.0000  0.0000  0.0000  2.1000  1.3000  0.1000  2.5000  2.5000
2.5000  4.7000  3.9000  2.7000
  25.  *  4.2000  0.0000  0.0000  0.0000  2.1000  1.3000  0.2000  2.5000  2.5000
2.5000  4.8000  4.1000  3.0000
  30.  *  4.0000  0.0000  0.0000  0.0000  2.1000  1.4000  0.3000  2.5000  2.5000
2.5000  4.8000  4.1000  3.0000
```

```
  35.  *  3.9000  0.1000  0.1000  0.1000  2.0000  1.4000  0.3000  2.5000  2.5000
2.5000  4.7000  4.1000  3.2000
  40.  *  3.8000  0.1000  0.1000  0.1000  2.0000  1.3000  0.5000  2.5000  2.5000
2.5000  4.6000  3.9000  3.1000
  45.  *  3.6000  0.1000  0.1000  0.1000  1.9000  1.3000  0.5000  2.6000  2.6000
2.6000  4.5000  3.9000  3.2000
  50.  *  3.4000  0.1000  0.1000  0.1000  1.8000  1.3000  0.6000  2.7000  2.7000
2.7000  4.2000  3.9000  3.2000
  55.  *  3.3000  0.2000  0.2000  0.2000  1.9000  1.4000  0.7000  2.9000  2.9000
2.9000  4.4000  3.9000  3.2000
  60.  *  3.1000  0.2000  0.2000  0.2000  1.9000  1.3000  0.7000  3.0000  3.0000
3.0000  4.5000  3.9000  3.2000
  65.  *  3.1000  0.2000  0.2000  0.2000  1.9000  1.3000  0.6000  3.2000  3.2000
3.1000  4.5000  3.9000  3.2000
  70.  *  3.1000  0.2000  0.2000  0.2000  1.9000  1.2000  0.6000  3.3000  3.3000
3.3000  4.9000  4.0000  3.3000
  75.  *  2.9000  0.3000  0.3000  0.3000  2.0000  1.4000  0.7000  3.5000  3.5000
3.4000  5.1000  4.4000  3.6000
  80.  *  2.9000  0.5000  0.5000  0.4000  2.0000  1.4000  0.7000  3.7000  3.7000
3.5000  5.5000  4.7000  3.7000
  85.  *  2.9000  0.9000  0.9000  0.8000  2.1000  1.4000  0.7000  3.9000  3.9000
3.6000  6.0000  5.1000  3.9000
  90.  *  2.8000  1.6000  1.5000  1.3000  2.4000  1.6000  0.7000  3.9000  3.8000
3.4000  6.3000  5.9000  4.2000
  95.  *  2.8000  2.4000  2.3000  2.0000  2.8000  1.9000  0.9000  3.5000  3.4000
3.0000  6.3000  5.8000  4.5000
 100.  *  2.7000  3.2000  3.1000  2.7000  3.2000  2.4000  1.3000  2.9000  2.9000
2.5000  6.3000  5.8000  4.9000
 105.  *  2.6000  3.9000  3.7000  3.3000  3.8000  2.9000  1.8000  2.2000  2.1000
1.7000  5.8000  5.6000  5.1000
 110.  *  2.7000  4.1000  4.0000  3.7000  4.1000  3.3000  2.3000  1.5000  1.4000
1.2000  4.8000  4.9000  4.9000
 115.  *  2.7000  4.1000  4.1000  3.9000  4.5000  3.8000  3.1000  0.8000  0.8000
0.7000  4.1000  4.3000  4.6000
 120.  *  2.7000  4.0000  4.0000  3.8000  4.8000  4.4000  3.9000  0.5000  0.5000
0.4000  3.3000  3.3000  3.7000
 125.  *  2.9000  3.7000  3.7000  3.6000  4.9000  4.5000  4.0000  0.3000  0.3000
0.3000  2.9000  2.7000  2.6000
 130.  *  3.0000  3.5000  3.5000  3.5000  4.9000  4.8000  4.3000  0.2000  0.2000
0.2000  2.6000  2.2000  2.0000
 135.  *  3.2000  3.4000  3.4000  3.3000  5.0000  4.7000  4.5000  0.2000  0.2000
0.2000  2.4000  1.9000  1.5000
 140.  *  3.4000  3.2000  3.2000  3.2000  5.1000  4.7000  4.2000  0.2000  0.2000
0.2000  2.3000  1.7000  1.2000
 145.  *  3.5000  3.1000  3.1000  3.1000  5.0000  4.7000  4.1000  0.2000  0.2000
0.2000  2.2000  1.7000  0.9000
 150.  *  3.6000  2.8000  2.8000  2.8000  4.9000  4.4000  3.9000  0.1000  0.1000
0.1000  2.3000  1.6000  0.8000
```

```
 155.  *  3.7000  2.7000  2.7000  2.7000  5.2000  4.7000  3.7000  0.1000  0.1000
0.1000  2.3000  1.8000  0.7000
 160.  *  3.8000  2.6000  2.6000  2.6000  4.9000  4.5000  3.5000  0.1000  0.1000
0.1000  2.3000  1.6000  0.6000
 165.  *  3.9000  2.7000  2.6000  2.6000  4.9000  4.3000  3.2000  0.2000  0.1000
0.1000  2.3000  1.6000  0.5000
 170.  *  3.7000  2.9000  2.6000  2.6000  4.7000  3.9000  3.0000  0.2000  0.0000
0.0000  1.9000  1.2000  0.2000
 175.  *  3.2000  3.1000  2.8000  2.6000  4.1000  3.4000  2.6000  0.5000  0.2000
0.0000  1.5000  0.9000  0.1000
 180.  *  2.6000  3.6000  3.0000  2.6000  3.5000  3.0000  2.5000  0.9000  0.4000
0.0000  1.0000  0.6000  0.1000
 185.  *  2.0000  4.1000  3.5000  2.7000  3.1000  2.8000  2.5000  1.3000  0.7000
0.0000  0.7000  0.4000  0.1000
 190.  *  1.2000  4.5000  3.7000  2.8000  2.8000  2.6000  2.5000  1.8000  0.9000
0.1000  0.3000  0.0000  0.0000
 195.  *  0.8000  4.8000  4.0000  2.8000  2.6000  2.5000  2.5000  2.0000  1.1000
0.1000  0.1000  0.0000  0.0000
 200.  *  0.4000  4.7000  3.9000  2.8000  2.5000  2.5000  2.5000  2.1000  1.3000
0.1000  0.0000  0.0000  0.0000
 205.  *  0.3000  4.7000  4.1000  2.9000  2.6000  2.6000  2.6000  2.2000  1.4000
0.3000  0.0000  0.0000  0.0000
 210.  *  0.2000  4.5000  4.1000  3.0000  2.6000  2.6000  2.6000  1.9000  1.4000
0.4000  0.0000  0.0000  0.0000
```

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```
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 -
Garrisonville Rd (SR610) and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.2000  4.5000  4.0000  3.1000  2.6000  2.6000  2.6000  2.0000  1.5000
0.5000  0.0000  0.0000  0.0000
 220.  *  0.2000  4.4000  3.9000  3.2000  2.5000  2.5000  2.5000  2.0000  1.5000
0.6000  0.0000  0.0000  0.0000
 225.  *  0.2000  4.4000  4.0000  3.3000  2.5000  2.5000  2.5000  1.9000  1.4000
0.7000  0.0000  0.0000  0.0000
 230.  *  0.1000  4.6000  4.1000  3.5000  2.5000  2.5000  2.5000  1.9000  1.3000
0.7000  0.0000  0.0000  0.0000
 235.  *  0.1000  4.4000  4.1000  3.7000  2.5000  2.5000  2.5000  2.0000  1.4000
0.8000  0.1000  0.1000  0.1000
```

```
 240.  *  0.1000  4.6000  4.4000  3.8000  2.5000  2.5000  2.5000  2.0000  1.3000
0.8000  0.1000  0.1000  0.1000
 245.  *  0.1000  4.7000  4.4000  4.0000  2.6000  2.6000  2.6000  1.9000  1.3000
0.8000  0.1000  0.1000  0.1000
 250.  *  0.0000  4.9000  4.4000  4.1000  2.8000  2.8000  2.8000  1.9000  1.3000
0.8000  0.1000  0.1000  0.1000
 255.  *  0.0000  4.7000  4.6000  4.2000  2.9000  2.9000  2.9000  2.0000  1.4000
0.9000  0.2000  0.2000  0.2000
 260.  *  0.0000  4.8000  4.5000  4.4000  3.0000  3.0000  3.0000  2.0000  1.5000
1.0000  0.2000  0.2000  0.2000
 265.  *  0.0000  4.9000  4.6000  4.6000  3.2000  3.2000  3.1000  2.2000  1.7000
1.4000  0.2000  0.2000  0.2000
 270.  *  0.0000  4.6000  4.4000  4.5000  3.3000  3.3000  3.3000  2.5000  2.0000
1.8000  0.2000  0.2000  0.2000
 275.  *  0.0000  4.9000  4.4000  4.2000  3.5000  3.5000  3.4000  2.9000  2.7000
2.4000  0.3000  0.3000  0.3000
 280.  *  0.0000  4.7000  4.5000  4.0000  3.7000  3.7000  3.4000  3.6000  3.5000
3.5000  0.6000  0.6000  0.5000
 285.  *  0.0000  4.4000  4.1000  3.2000  3.9000  3.9000  3.6000  4.3000  4.1000
4.2000  0.9000  0.9000  0.8000
 290.  *  0.0000  4.2000  3.6000  2.5000  3.9000  3.8000  3.4000  5.2000  4.9000
4.7000  1.6000  1.5000  1.3000
 295.  *  0.1000  3.7000  2.8000  1.9000  3.4000  3.4000  3.0000  5.6000  5.5000
4.8000  2.4000  2.3000  2.0000
 300.  *  0.1000  3.2000  2.4000  1.2000  2.9000  2.9000  2.5000  6.0000  5.6000
4.6000  3.2000  3.1000  2.7000
 305.  *  0.1000  2.7000  2.1000  0.9000  2.2000  2.1000  1.7000  6.0000  5.5000
4.1000  3.9000  3.7000  3.3000
 310.  *  0.2000  2.3000  1.6000  0.7000  1.5000  1.4000  1.2000  5.8000  5.0000
3.9000  4.1000  4.0000  3.7000
 315.  *  0.5000  2.0000  1.6000  0.7000  0.8000  0.8000  0.7000  5.6000  4.8000
3.7000  4.1000  4.1000  3.9000
 320.  *  0.6000  2.0000  1.5000  0.7000  0.5000  0.5000  0.4000  5.1000  4.6000
3.5000  4.0000  4.0000  3.9000
 325.  *  0.7000  2.0000  1.5000  0.7000  0.3000  0.3000  0.3000  4.9000  4.3000
3.4000  3.7000  3.7000  3.6000
 330.  *  0.7000  1.9000  1.5000  0.5000  0.2000  0.2000  0.2000  4.6000  4.1000
3.3000  3.5000  3.5000  3.5000
 335.  *  0.9000  2.1000  1.5000  0.5000  0.2000  0.2000  0.2000  4.6000  4.0000
3.0000  3.4000  3.4000  3.3000
 340.  *  1.0000  2.1000  1.3000  0.4000  0.2000  0.2000  0.2000  4.5000  3.8000
2.8000  3.2000  3.2000  3.2000
 345.  *  1.4000  2.0000  1.2000  0.2000  0.3000  0.2000  0.2000  4.5000  3.7000
2.7000  3.2000  3.1000  3.1000
 350.  *  2.0000  1.7000  0.9000  0.0000  0.4000  0.1000  0.1000  4.2000  3.4000
2.5000  3.3000  2.9000  2.9000
 355.  *  3.0000  1.2000  0.7000  0.0000  0.7000  0.3000  0.1000  3.8000  3.2000
2.5000  3.3000  3.0000  2.7000
```

```
 360.  *  3.9000  0.8000  0.4000  0.0000  1.1000  0.5000  0.1000  3.4000  2.9000
2.5000  3.6000  3.0000  2.6000

------*---------------------------------------------------------------------------
---------------------------
 MAX   *  4.8000  4.9000  4.6000  4.6000  5.2000  4.8000  4.5000  6.0000  5.6000
4.8000  6.3000  5.9000  5.1000
 DEGR. *     10     250     255     265     155     130     135     305     300
295      90      90     105

 THE HIGHEST CONCENTRATION OF   7.4000 PPM OCCURRED AT RECEPTOR     9.
```

2016 US 1 and I95 NB Entrance Ramp IN

```
Q,EPA,,F,,0,T,T,T,T,0.78,
1,1,3,3,2200,2200,2200,2200,2200,2200,2200,2200,1,1230,1230,1230,1,1230,1230,1230,1,
11,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0
,0,0,0,0,0,0,11.98,11.98,9.93,9.93,18.08,18.08,18.08,18.08
0,120,120,120,0,68,68,68,0,2,2,2,0,1900,1900,1900,0,1,1,1,0,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,23,0.3048,1,0
'N Leg, E Side-Corner',11.0,46.0,5.9
'N Leg, E Side - 0 m',0.0,46.0,5.9
'N Leg, W Side-Corner',-21.0,46.0,5.9
'S Leg, E Side-Corner',11.0,-46.0,5.9
'S Leg, E Side - 25 m',11.0,-118.0,5.9
'S Leg, E Side - 50 m',11.0,-200.0,5.9
'S Leg, E Side-Midblk',11.0,-636.0,5.9
'S Leg, W Side-Corner',-21.0,-46.0,5.9
'S Leg, W Side - 25 m',-21.0,-118.0,5.9
'S Leg, W Side - 50 m',-21.0,-200.0,5.9
'S Leg, W Side-Midblk',-21.0,-636.0,5.9
'E Leg, N Side - 25 m',83.0,46.0,5.9
'E Leg, N Side - 50 m',165.0,46.0,5.9
'E Leg, N Side-Midblk',601.0,46.0,5.9
'W Leg, N Side - 25 m',-93.0,46.0,5.9
'W Leg, N Side - 50 m',-175.0,46.0,5.9
'W Leg, N Side-Midblk',-611.0,46.0,5.9
'E Leg, S Side - 25 m',83.0,-46.0,5.9
'E Leg, S Side - 50 m',165.0,-46.0,5.9
'E Leg, S Side-Midblk',601.0,-46.0,5.9
'W Leg, S Side - 25 m',-93.0,-46.0,5.9
'W Leg, S Side - 50 m',-175.0,-46.0,5.9
'W Leg, S Side-Midblk',-611.0,-46.0,5.9
'2016 - US 1 and I95 NB Entrance Ramp',9,1,0,'CO'
1
'S Leg App - FreeFlow','AG',1,18,1,-1200,1,11.98,0.0,20.7
2
'S Leg App - Queue','AG',1,-36,1,-1200,0.0,1.0,1
120,68,2,1,18.08,1900,1,3
1
'S Leg Dep - FreeFlow','AG',-6,18,-6,-1200,1230,11.98,0.0,30.7
1
'E Leg App - FreeFlow','AG',0,18,1200,18,3690,9.93,0.0,55.7
2
'E Leg App - Queue','AG',1,18,1200,18,0.0,36.0,3
120,68,2,3690,18.08,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,3690,9.93,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,3690,9.93,0.0,55.7
2
'W Leg App - Queue','AG',-11,-18,-1200,-18,0.0,36.0,3
```

```
120,68,2,3690,18.08,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,18,-1200,18,3690,9.93,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                       2016 US 1 and I95 NB Entrance Ramp OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                       PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - US 1 and
I95 NB Entrance Ramp

      DATE :  8/15/17
      TIME :  9:34:38

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1         Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. S Leg App - FreeFlow*      1.0      18.0       1.0   -1200.0 *    1218.
180. AG      1.  12.0   0.0 20.7
       2. S Leg App - Queue   *      1.0     -36.0       1.0     -36.4 *       0.
180. AG     27. 100.0   0.0  1.0 0.00   0.0
       3. S Leg Dep - FreeFlow*     -6.0      18.0      -6.0   -1200.0 *    1218.
180. AG   1230.  12.0   0.0 30.7
       4. E Leg App - FreeFlow*      0.0      18.0    1200.0      18.0 *    1200.
90. AG   3690.   9.9   0.0 55.7
       5. E Leg App - Queue   *      1.0      18.0    5301.1      18.0 *    5300.
90. AG     82. 100.0   0.0 36.0 1.62 269.2
       6. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   3690.   9.9   0.0 55.7
       7. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
270. AG   3690.   9.9   0.0 55.7
       8. W Leg App - Queue   *    -11.0     -18.0   -5311.1     -18.0 *    5300.
270. AG     82. 100.0   0.0 36.0 1.62 269.2
       9. W Leg Dep - FreeFlow*      0.0      18.0   -1200.0      18.0 *    1200.
270. AG   3690.   9.9   0.0 55.7
```

JOB: Fred Ex AQ Analysis RUN: 2016 - US 1 and I95 NB Entrance Ramp

DATE : 8/15/17
TIME : 9:34:38

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. S Leg App - Queue	120	68	2.0	1	1900	18.08	1	3
5. E Leg App - Queue	120	68	2.0	3690	1900	18.08	1	3
8. W Leg App - Queue	120	68	2.0	3690	1900	18.08	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	11.0	46.0	5.9
2. N Leg, E Side - 0 m	0.0	46.0	5.9
3. N Leg, W Side-Corner	-21.0	46.0	5.9
4. S Leg, E Side-Corner	11.0	-46.0	5.9
5. S Leg, E Side - 25 m	11.0	-118.0	5.9
6. S Leg, E Side - 50 m	11.0	-200.0	5.9
7. S Leg, E Side-Midblk	11.0	-636.0	5.9
8. S Leg, W Side-Corner	-21.0	-46.0	5.9
9. S Leg, W Side - 25 m	-21.0	-118.0	5.9
10. S Leg, W Side - 50 m	-21.0	-200.0	5.9
11. S Leg, W Side-Midblk	-21.0	-636.0	5.9
12. E Leg, N Side - 25 m	83.0	46.0	5.9
13. E Leg, N Side - 50 m	165.0	46.0	5.9
14. E Leg, N Side-Midblk	601.0	46.0	5.9
15. W Leg, N Side - 25 m	-93.0	46.0	5.9
16. W Leg, N Side - 50 m	-175.0	46.0	5.9
17. W Leg, N Side-Midblk	-611.0	46.0	5.9
18. E Leg, S Side - 25 m	83.0	-46.0	5.9

2016 US 1 and I95 NB Entrance Ramp OUT

19. E Leg, S Side - 50 m * 165.0 -46.0 5.9 *
20. E Leg, S Side-Midblk * 601.0 -46.0 5.9 *
21. W Leg, S Side - 25 m * -93.0 -46.0 5.9 *
22. W Leg, S Side - 50 m * -175.0 -46.0 5.9 *
23. W Leg, S Side-Midblk * -611.0 -46.0 5.9 *

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JOB: Fred Ex AQ Analysis RUN: 2016 - US 1 and I95 NB Entrance Ramp

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15

------*--

5. * 0.0000 0.0000 0.0000 2.3000 1.4000 1.2000 0.8000 2.6000 1.9000
1.6000 1.3000 0.0000 0.0000 0.0000 0.0000
10. * 0.0000 0.0000 0.0000 2.2000 1.5000 1.2000 0.6000 2.7000 1.7000
1.4000 1.2000 0.0000 0.0000 0.0000 0.0000
15. * 0.0000 0.0000 0.0000 2.0000 1.2000 0.9000 0.5000 2.7000 1.8000
1.5000 1.1000 0.0000 0.0000 0.0000 0.0000
20. * 0.0000 0.0000 0.0000 2.0000 1.1000 0.8000 0.4000 2.7000 1.9000
1.6000 1.1000 0.0000 0.0000 0.0000 0.0000
25. * 0.1000 0.1000 0.0000 2.1000 1.1000 0.9000 0.4000 2.9000 1.8000
1.5000 1.1000 0.1000 0.1000 0.1000 0.1000
30. * 0.1000 0.1000 0.0000 2.0000 1.3000 0.9000 0.4000 2.9000 1.8000
1.5000 1.1000 0.1000 0.1000 0.1000 0.1000
35. * 0.1000 0.1000 0.0000 2.2000 1.2000 0.8000 0.5000 2.8000 1.7000
1.5000 1.1000 0.1000 0.1000 0.1000 0.1000
40. * 0.1000 0.1000 0.0000 2.3000 1.2000 0.8000 0.4000 3.0000 1.7000
1.5000 1.1000 0.1000 0.1000 0.1000 0.1000
45. * 0.1000 0.1000 0.0000 2.3000 1.2000 0.9000 0.4000 2.9000 1.8000
1.5000 1.0000 0.1000 0.1000 0.1000 0.1000
50. * 0.1000 0.1000 0.0000 2.5000 1.2000 0.9000 0.3000 3.1000 1.8000
1.5000 0.9000 0.1000 0.1000 0.1000 0.1000
55. * 0.1000 0.1000 0.0000 2.6000 1.2000 0.9000 0.2000 3.0000 1.7000

```
1.4000  0.8000  0.1000  0.1000  0.1000  0.1000
  60.  *  0.2000  0.2000  0.1000  2.7000  1.3000  0.9000  0.2000  3.2000  1.8000
1.4000  0.7000  0.2000  0.2000  0.2000  0.1000
  65.  *  0.3000  0.3000  0.1000  2.9000  1.3000  0.9000  0.2000  3.3000  1.8000
1.4000  0.7000  0.3000  0.3000  0.3000  0.3000
  70.  *  0.4000  0.4000  0.3000  3.0000  1.3000  0.9000  0.0000  3.6000  1.8000
1.4000  0.5000  0.4000  0.4000  0.4000  0.4000
  75.  *  0.8000  0.8000  0.8000  3.2000  1.3000  0.8000  0.0000  3.8000  1.8000
1.3000  0.5000  0.8000  0.8000  0.8000  0.8000
  80.  *  1.4000  1.4000  1.3000  3.2000  1.1000  0.6000  0.0000  3.6000  1.6000
1.1000  0.5000  1.4000  1.4000  1.2000  1.2000
  85.  *  2.0000  2.0000  2.0000  3.0000  0.9000  0.5000  0.0000  3.5000  1.4000
1.0000  0.5000  2.0000  2.0000  1.7000  2.0000
  90.  *  2.7000  2.7000  2.7000  2.6000  0.6000  0.3000  0.0000  3.1000  1.2000
0.8000  0.5000  2.7000  2.6000  2.3000  2.6000
  95.  *  3.2000  3.2000  3.2000  1.9000  0.4000  0.1000  0.0000  2.4000  0.9000
0.6000  0.5000  3.2000  3.2000  2.8000  3.2000
 100.  *  3.4000  3.4000  3.3000  1.3000  0.2000  0.0000  0.0000  1.7000  0.7000
0.5000  0.5000  3.4000  3.3000  3.1000  3.4000
 105.  *  3.4000  3.4000  3.5000  0.7000  0.0000  0.0000  0.0000  1.2000  0.5000
0.5000  0.5000  3.4000  3.4000  3.2000  3.4000
 110.  *  3.2000  3.2000  3.2000  0.4000  0.0000  0.0000  0.0000  0.8000  0.5000
0.5000  0.5000  3.2000  3.2000  3.1000  3.1000
 115.  *  3.0000  3.1000  2.9000  0.3000  0.0000  0.0000  0.0000  0.6000  0.5000
0.5000  0.5000  3.0000  3.0000  2.9000  3.0000
 120.  *  2.8000  2.8000  2.7000  0.2000  0.0000  0.0000  0.0000  0.6000  0.5000
0.5000  0.5000  2.8000  2.8000  2.8000  2.9000
 125.  *  2.7000  2.7000  2.6000  0.1000  0.0000  0.0000  0.0000  0.6000  0.6000
0.6000  0.6000  2.7000  2.7000  2.7000  2.7000
 130.  *  2.6000  2.6000  2.6000  0.1000  0.0000  0.0000  0.0000  0.6000  0.6000
0.6000  0.6000  2.6000  2.6000  2.6000  2.6000
 135.  *  2.4000  2.4000  2.5000  0.1000  0.0000  0.0000  0.0000  0.6000  0.6000
0.6000  0.6000  2.4000  2.4000  2.4000  2.6000
 140.  *  2.4000  2.3000  2.5000  0.1000  0.0000  0.0000  0.0000  0.7000  0.7000
0.7000  0.7000  2.4000  2.4000  2.4000  2.3000
 145.  *  2.3000  2.3000  2.3000  0.2000  0.1000  0.1000  0.1000  0.7000  0.7000
0.7000  0.7000  2.3000  2.3000  2.3000  2.3000
 150.  *  2.1000  2.1000  2.5000  0.2000  0.1000  0.1000  0.1000  0.8000  0.8000
0.8000  0.8000  2.1000  2.1000  2.1000  2.2000
 155.  *  2.2000  2.2000  2.6000  0.2000  0.1000  0.1000  0.1000  0.8000  0.8000
0.8000  0.8000  2.1000  2.1000  2.1000  2.2000
 160.  *  2.1000  2.4000  2.4000  0.2000  0.2000  0.2000  0.2000  0.9000  0.9000
0.9000  0.9000  2.1000  2.1000  2.1000  2.2000
 165.  *  2.2000  2.3000  2.6000  0.3000  0.3000  0.3000  0.3000  1.0000  1.0000
1.0000  0.9000  2.0000  2.0000  2.0000  2.2000
 170.  *  2.5000  2.6000  2.7000  0.5000  0.5000  0.4000  0.4000  1.0000  1.0000
1.0000  1.0000  2.0000  2.0000  2.0000  2.1000
 175.  *  2.6000  2.8000  2.7000  0.6000  0.6000  0.6000  0.6000  1.0000  1.0000
```

```
1.0000  0.9000  2.1000  2.0000  2.0000  2.1000
 180.  *  2.7000  2.8000  2.6000  0.8000  0.8000  0.8000  0.7000  0.9000  0.9000
0.9000  0.8000  2.2000  2.2000  2.1000  2.1000
 185.  *  2.9000  3.0000  2.4000  0.9000  0.9000  0.9000  0.8000  0.7000  0.7000
0.7000  0.7000  2.2000  2.1000  2.0000  2.0000
 190.  *  2.8000  2.7000  2.3000  0.9000  0.9000  0.9000  0.9000  0.5000  0.5000
0.5000  0.5000  2.2000  2.1000  2.0000  1.9000
 195.  *  2.7000  2.4000  2.2000  0.9000  0.9000  0.9000  0.9000  0.4000  0.4000
0.4000  0.3000  2.3000  2.1000  2.0000  1.9000
 200.  *  2.5000  2.4000  2.1000  0.8000  0.8000  0.8000  0.8000  0.2000  0.2000
0.2000  0.2000  2.3000  2.2000  2.1000  2.0000
 205.  *  2.4000  2.2000  2.1000  0.8000  0.8000  0.8000  0.8000  0.3000  0.2000
0.2000  0.2000  2.3000  2.3000  2.1000  2.0000
 210.  *  2.5000  2.1000  2.1000  0.7000  0.7000  0.7000  0.7000  0.2000  0.1000
0.1000  0.1000  2.3000  2.3000  2.1000  2.0000
```

```
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      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - US 1 and
I95 NB Entrance Ramp

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
 215.  *  2.5000  2.3000  2.2000  0.7000  0.7000  0.7000  0.7000  0.2000  0.1000
0.1000  0.1000  2.5000  2.5000  2.4000  2.1000
 220.  *  2.4000  2.2000  2.3000  0.6000  0.6000  0.6000  0.6000  0.2000  0.1000
0.1000  0.1000  2.6000  2.5000  2.5000  2.3000
 225.  *  2.5000  2.4000  2.3000  0.6000  0.6000  0.6000  0.6000  0.2000  0.1000
0.1000  0.1000  2.8000  2.5000  2.5000  2.3000
 230.  *  2.5000  2.5000  2.5000  0.6000  0.6000  0.6000  0.6000  0.1000  0.0000
0.0000  0.0000  3.0000  2.7000  2.7000  2.5000
 235.  *  2.7000  2.6000  2.6000  0.6000  0.5000  0.5000  0.5000  0.1000  0.0000
0.0000  0.0000  3.1000  2.8000  2.8000  2.6000
 240.  *  2.7000  2.7000  2.7000  0.6000  0.5000  0.5000  0.5000  0.2000  0.0000
0.0000  0.0000  3.2000  2.9000  2.9000  2.7000
 245.  *  3.0000  3.0000  2.9000  0.7000  0.5000  0.5000  0.5000  0.3000  0.0000
0.0000  0.0000  3.0000  3.2000  3.0000  2.9000
 250.  *  3.0000  3.0000  3.0000  0.8000  0.5000  0.5000  0.5000  0.4000  0.0000
0.0000  0.0000  3.4000  3.4000  3.3000  3.0000
 255.  *  3.2000  3.2000  3.2000  1.3000  0.5000  0.5000  0.5000  0.8000  0.0000
0.0000  0.0000  3.6000  3.5000  3.4000  3.2000
 260.  *  3.2000  3.2000  3.2000  1.8000  0.7000  0.5000  0.5000  1.4000  0.2000
```

```
0.0000  0.0000  3.5000  3.6000  3.5000  3.2000
 265.  *  2.9000  3.0000  3.0000  2.4000  0.9000  0.6000  0.5000  2.0000  0.4000
0.1000  0.0000  3.1000  3.4000  3.3000  3.0000
 270.  *  2.5000  2.6000  2.6000  3.1000  1.2000  0.8000  0.5000  2.7000  0.6000
0.3000  0.0000  2.7000  2.6000  2.8000  2.6000
 275.  *  1.8000  1.9000  1.9000  3.6000  1.4000  1.0000  0.5000  3.2000  0.9000
0.5000  0.0000  1.9000  2.0000  2.2000  1.9000
 280.  *  1.2000  1.3000  1.3000  3.9000  1.7000  1.1000  0.5000  3.4000  1.2000
0.6000  0.0000  1.3000  1.4000  1.3000  1.3000
 285.  *  0.7000  0.7000  0.7000  3.9000  1.9000  1.3000  0.5000  3.4000  1.4000
0.8000  0.0000  0.7000  0.7000  1.0000  0.7000
 290.  *  0.3000  0.4000  0.4000  3.6000  1.8000  1.4000  0.5000  3.2000  1.3000
0.9000  0.0000  0.4000  0.4000  0.4000  0.4000
 295.  *  0.2000  0.3000  0.3000  3.6000  1.8000  1.4000  0.7000  3.0000  1.3000
0.9000  0.2000  0.3000  0.2000  0.3000  0.3000
 300.  *  0.1000  0.2000  0.2000  3.2000  1.8000  1.4000  0.7000  2.8000  1.3000
0.9000  0.2000  0.1000  0.2000  0.2000  0.2000
 305.  *  0.1000  0.1000  0.1000  3.1000  1.7000  1.4000  0.7000  2.7000  1.2000
0.9000  0.2000  0.1000  0.1000  0.1000  0.1000
 310.  *  0.0000  0.1000  0.1000  3.0000  1.8000  1.5000  0.9000  2.6000  1.2000
0.9000  0.3000  0.1000  0.1000  0.1000  0.1000
 315.  *  0.0000  0.1000  0.1000  3.0000  1.8000  1.5000  1.0000  2.5000  1.3000
1.0000  0.5000  0.1000  0.1000  0.1000  0.1000
 320.  *  0.0000  0.1000  0.1000  2.7000  1.8000  1.4000  1.0000  2.5000  1.3000
0.9000  0.5000  0.1000  0.1000  0.1000  0.1000
 325.  *  0.0000  0.1000  0.1000  2.7000  1.8000  1.5000  1.1000  2.4000  1.3000
0.9000  0.5000  0.1000  0.1000  0.1000  0.1000
 330.  *  0.0000  0.1000  0.1000  2.7000  1.7000  1.5000  1.0000  2.3000  1.3000
0.9000  0.4000  0.1000  0.1000  0.1000  0.1000
 335.  *  0.0000  0.1000  0.1000  2.5000  1.8000  1.4000  1.1000  2.2000  1.2000
0.9000  0.5000  0.1000  0.1000  0.1000  0.1000
 340.  *  0.0000  0.0000  0.0000  2.4000  1.8000  1.5000  1.0000  2.2000  1.2000
0.9000  0.4000  0.0000  0.0000  0.0000  0.0000
 345.  *  0.0000  0.0000  0.0000  2.5000  1.8000  1.7000  1.1000  2.2000  1.3000
1.0000  0.6000  0.0000  0.0000  0.0000  0.0000
 350.  *  0.0000  0.0000  0.0000  2.5000  1.7000  1.4000  1.1000  2.3000  1.4000
1.1000  0.7000  0.0000  0.0000  0.0000  0.0000
 355.  *  0.0000  0.0000  0.0000  2.5000  1.6000  1.4000  1.3000  2.3000  1.7000
1.5000  0.9000  0.0000  0.0000  0.0000  0.0000
 360.  *  0.0000  0.0000  0.0000  2.3000  1.7000  1.2000  1.1000  2.5000  1.6000
1.3000  1.2000  0.0000  0.0000  0.0000  0.0000

------*--------------------------------------------------------------------------
-----------------------------------------
 MAX   *  3.4000  3.4000  3.5000  3.9000  1.9000  1.7000  1.3000  3.8000  1.9000
1.6000  1.3000  3.6000  3.6000  3.5000  3.4000
 DEGR. *    100     100     105     280     285     345     355      75       5
 5       5     255     260     260     100
```

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JOB: Fred Ex AQ Analysis RUN: 2016 - US 1 and I95 NB Entrance Ramp

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
5.	0.0000	0.0000	1.9000	1.9000	1.9000	2.0000	2.0000	2.0000
10.	0.0000	0.0000	1.9000	1.9000	1.9000	2.0000	2.0000	2.0000
15.	0.0000	0.0000	1.9000	1.9000	1.9000	2.0000	2.0000	2.0000
20.	0.0000	0.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.1000
25.	0.1000	0.1000	2.0000	2.0000	2.0000	2.0000	2.1000	2.1000
30.	0.1000	0.1000	2.0000	2.0000	2.0000	2.1000	2.1000	2.1000
35.	0.1000	0.1000	2.1000	2.1000	2.1000	2.3000	2.3000	2.3000
40.	0.1000	0.1000	2.3000	2.3000	2.3000	2.3000	2.4000	2.4000
45.	0.1000	0.1000	2.3000	2.3000	2.3000	2.7000	2.4000	2.4000
50.	0.1000	0.1000	2.5000	2.5000	2.5000	2.8000	2.6000	2.6000
55.	0.1000	0.1000	2.6000	2.6000	2.6000	2.9000	2.7000	2.7000
60.	0.2000	0.2000	2.7000	2.7000	2.7000	3.0000	2.8000	2.8000
65.	0.2000	0.3000	2.9000	2.9000	2.8000	3.3000	3.1000	2.9000
70.	0.4000	0.4000	3.0000	3.0000	2.9000	3.5000	3.3000	3.3000
75.	0.8000	0.9000	3.2000	3.2000	3.0000	3.7000	3.5000	3.4000
80.	1.3000	1.3000	3.2000	3.1000	2.9000	3.6000	3.5000	3.5000
85.	2.0000	2.1000	3.0000	3.0000	2.6000	3.4000	3.3000	3.2000
90.	2.6000	2.7000	2.6000	2.5000	2.2000	2.9000	2.7000	2.8000
95.	3.0000	3.0000	1.9000	1.9000	1.6000	2.1000	2.2000	2.2000
100.	3.3000	3.4000	1.3000	1.3000	1.1000	1.4000	1.5000	1.5000
105.	3.3000	3.2000	0.7000	0.7000	0.7000	0.9000	0.8000	1.1000
110.	3.1000	3.1000	0.4000	0.4000	0.4000	0.6000	0.5000	0.5000
115.	2.8000	2.9000	0.3000	0.3000	0.3000	0.5000	0.3000	0.4000
120.	2.7000	2.8000	0.2000	0.2000	0.2000	0.3000	0.3000	0.3000
125.	2.6000	2.7000	0.1000	0.1000	0.1000	0.3000	0.2000	0.2000
130.	2.6000	2.6000	0.1000	0.1000	0.1000	0.3000	0.2000	0.2000
135.	2.4000	2.4000	0.1000	0.1000	0.1000	0.3000	0.2000	0.2000
140.	2.3000	2.4000	0.1000	0.1000	0.1000	0.3000	0.2000	0.2000

145.	*	2.3000	2.2000	0.1000	0.1000	0.1000	0.3000	0.3000	0.2000
150.	*	2.2000	2.0000	0.1000	0.1000	0.1000	0.3000	0.3000	0.1000
155.	*	2.2000	2.0000	0.1000	0.1000	0.1000	0.4000	0.3000	0.1000
160.	*	2.1000	2.0000	0.0000	0.0000	0.0000	0.3000	0.2000	0.0000
165.	*	2.0000	1.9000	0.0000	0.0000	0.0000	0.3000	0.1000	0.0000
170.	*	2.0000	1.9000	0.0000	0.0000	0.0000	0.2000	0.1000	0.0000
175.	*	2.0000	1.9000	0.1000	0.0000	0.0000	0.2000	0.1000	0.0000
180.	*	2.1000	2.0000	0.1000	0.0000	0.0000	0.1000	0.1000	0.0000
185.	*	1.9000	1.9000	0.2000	0.1000	0.0000	0.1000	0.0000	0.0000
190.	*	1.9000	1.9000	0.2000	0.1000	0.0000	0.0000	0.0000	0.0000
195.	*	1.9000	1.9000	0.3000	0.1000	0.0000	0.0000	0.0000	0.0000
200.	*	2.0000	2.0000	0.3000	0.2000	0.0000	0.0000	0.0000	0.0000
205.	*	2.0000	2.0000	0.4000	0.3000	0.1000	0.1000	0.1000	0.1000
210.	*	2.0000	2.0000	0.3000	0.3000	0.1000	0.1000	0.1000	0.1000

JOB: Fred Ex AQ Analysis RUN: 2016 - US 1 and I95 NB Entrance Ramp

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
215.	*	2.1000	2.1000	0.3000	0.3000	0.1000	0.1000	0.1000	0.1000
220.	*	2.3000	2.3000	0.3000	0.2000	0.2000	0.1000	0.1000	0.1000
225.	*	2.3000	2.3000	0.3000	0.2000	0.2000	0.1000	0.1000	0.1000
230.	*	2.5000	2.5000	0.3000	0.2000	0.2000	0.1000	0.1000	0.1000
235.	*	2.6000	2.6000	0.3000	0.2000	0.2000	0.1000	0.1000	0.1000
240.	*	2.7000	2.7000	0.3000	0.3000	0.3000	0.2000	0.2000	0.2000
245.	*	2.9000	2.8000	0.5000	0.3000	0.4000	0.3000	0.3000	0.3000
250.	*	3.0000	2.9000	0.6000	0.5000	0.5000	0.4000	0.4000	0.4000
255.	*	3.2000	3.0000	1.0000	0.9000	1.0000	0.8000	0.8000	0.8000
260.	*	3.1000	2.9000	1.5000	1.4000	1.3000	1.4000	1.4000	1.2000
265.	*	3.0000	2.6000	2.2000	2.0000	2.1000	2.0000	2.0000	1.7000
270.	*	2.5000	2.2000	2.8000	2.7000	2.7000	2.7000	2.6000	2.3000
275.	*	1.9000	1.6000	3.3000	3.3000	3.1000	3.2000	3.2000	2.8000
280.	*	1.3000	1.1000	3.5000	3.4000	3.4000	3.4000	3.3000	3.1000
285.	*	0.7000	0.7000	3.5000	3.3000	3.2000	3.4000	3.4000	3.2000
290.	*	0.4000	0.4000	3.2000	3.2000	3.1000	3.2000	3.2000	3.1000
295.	*	0.3000	0.3000	2.9000	2.8000	2.8000	3.0000	3.0000	2.9000
300.	*	0.2000	0.2000	2.9000	2.6000	2.7000	2.8000	2.8000	2.8000
305.	*	0.1000	0.1000	2.7000	2.5000	2.6000	2.7000	2.7000	2.7000
310.	*	0.1000	0.1000	2.6000	2.5000	2.5000	2.6000	2.6000	2.6000
315.	*	0.1000	0.1000	2.5000	2.3000	2.3000	2.4000	2.4000	2.4000
320.	*	0.1000	0.1000	2.2000	2.3000	2.3000	2.4000	2.4000	2.4000
325.	*	0.1000	0.1000	2.1000	2.1000	2.1000	2.3000	2.3000	2.3000

2016 US 1 and I95 NB Entrance Ramp OUT

330.	*	0.1000	0.1000	2.0000	2.0000	2.0000	2.1000	2.1000	2.1000
335.	*	0.1000	0.1000	1.9000	2.0000	2.0000	2.1000	2.1000	2.1000
340.	*	0.0000	0.0000	1.9000	1.9000	2.0000	2.1000	2.1000	2.1000
345.	*	0.0000	0.0000	1.9000	1.9000	1.9000	2.0000	2.0000	2.0000
350.	*	0.0000	0.0000	1.9000	1.9000	1.9000	2.0000	2.0000	2.0000
355.	*	0.0000	0.0000	1.9000	1.9000	1.9000	2.0000	2.0000	2.0000
360.	*	0.0000	0.0000	2.0000	2.0000	2.0000	2.1000	2.1000	2.1000
MAX	*	3.3000	3.4000	3.5000	3.4000	3.4000	3.7000	3.5000	3.5000
DEGR.	*	100	100	280	280	280	75	75	80

THE HIGHEST CONCENTRATION OF 3.9000 PPM OCCURRED AT RECEPTOR 4.

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,5,3,4,2200,2200,2200,2200,2200,2200,2200,2200,478,444.2,132,145.75,478,444.2,132,1
45.75,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-120
0,0,0,0,0,0,0,0,0,0,0,7.48,7.48,7.04,7.1,7.96,7.96,7.13,7.13
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-70.0,58.0,5.9
'N Leg, W Side - 25 m',-70.0,130.0,5.9
'N Leg, W Side - 50 m',-70.0,212.0,5.9
'N Leg, W Side-Midblk',-70.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-46.0,5.9
'S Leg, E Side - 25 m',70.0,-118.0,5.9
'S Leg, E Side - 50 m',70.0,-200.0,5.9
'S Leg, E Side-Midblk',70.0,-636.0,5.9
'S Leg, W Side-Corner',-70.0,-46.0,5.9
'S Leg, W Side - 25 m',-70.0,-118.0,5.9
'S Leg, W Side - 50 m',-70.0,-200.0,5.9
'S Leg, W Side-Midblk',-70.0,-636.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-142.0,58.0,5.9
'W Leg, N Side - 50 m',-224.0,58.0,5.9
'W Leg, N Side-Midblk',-660.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-46.0,5.9
'E Leg, S Side - 50 m',224.0,-46.0,5.9
'E Leg, S Side-Midblk',660.0,-46.0,5.9
'W Leg, S Side - 25 m',-142.0,-46.0,5.9
'W Leg, S Side - 50 m',-224.0,-46.0,5.9
'W Leg, S Side-Midblk',-660.0,-46.0,5.9
'2022 NO BUILD - US 17 and S Gateway',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-30,0,-30,1200,2221,7.48,0.0,79.7
2
'N Leg App - Queue','AG',-30,48,-30,1200,0.0,60.0,5
120,68,2,2221,7.96,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,2390,7.48,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,2390,7.48,0.0,79.7
2
'S Leg App - Queue','AG',30,-36,30,-1200,0.0,60.0,5
120,68,2,2390,7.96,1900,1,3
1
```

```
'S Leg Dep - FreeFlow','AG',-30,0,-30,-1200,2221,7.48,0.0,79.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,583,7.1,0.0,67.7
2
'E Leg App - Queue','AG',60,24,1200,24,0.0,48.0,4
120,68,2,583,7.13,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,396,7.1,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,396,7.04,0.0,55.7
2
'W Leg App - Queue','AG',-60,-18,-1200,-18,0.0,36.0,3
120,68,2,396,7.13,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,583,7.04,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                        2022 NoBuild US 17 and S Gateway OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                   RUN: 2022 NO BUILD -
US 17 and S Gateway

      DATE :  8/15/17
      TIME : 10:18:35

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -30.0       0.0     -30.0    1200.0 *    1200.
360. AG   2221.   7.5   0.0 79.7
       2. N Leg App - Queue   *    -30.0      48.0     -30.0     213.1 *     165.
360. AG     60. 100.0   0.0 60.0 0.58   8.4
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   2390.   7.5   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   2390.   7.5   0.0 79.7
       5. S Leg App - Queue   *     30.0     -36.0      30.0    -213.7 *     178.
180. AG     60. 100.0   0.0 60.0 0.63   9.0
       6. S Leg Dep - FreeFlow*    -30.0       0.0     -30.0   -1200.0 *    1200.
180. AG   2221.   7.5   0.0 79.7
       7. E Leg App - FreeFlow*      0.0      24.0    1200.0      24.0 *    1200.
90. AG    583.   7.1   0.0 67.7
       8. E Leg App - Queue   *     60.0      24.0     113.9      24.0 *      54.
90. AG     43. 100.0   0.0 48.0 0.19   2.7
       9. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG    396.   7.1   0.0 55.7
      10. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
```

```
270. AG    396.   7.0   0.0 55.7
      11. W Leg App - Queue   *    -60.0     -18.0    -109.1     -18.0 *      49.
270. AG     33. 100.0   0.0 36.0 0.17   2.5
      12. W Leg Dep - FreeFlow*      0.0      24.0   -1200.0      24.0 *    1200.
270. AG    583.   7.0   0.0 67.7
```

PAGE 2

JOB: Fred Ex AQ Analysis   RUN: 2022 NO BUILD - US 17 and S Gateway

DATE : 8/15/17
TIME : 10:18:35

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. N Leg App - Queue	*	120	68	2.0	2221	1900	7.96	1	3
5. S Leg App - Queue	*	120	68	2.0	2390	1900	7.96	1	3
8. E Leg App - Queue	*	120	68	2.0	583	1900	7.13	1	3
11. W Leg App - Queue	*	120	68	2.0	396	1900	7.13	1	3

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. N Leg, E Side-Corner	*	70.0	58.0	5.9	*
2. N Leg, E Side - 25 m	*	70.0	130.0	5.9	*
3. N Leg, E Side - 50 m	*	70.0	212.0	5.9	*
4. N Leg, E Side-Midblk	*	70.0	648.0	5.9	*
5. N Leg, W Side-Corner	*	-70.0	58.0	5.9	*
6. N Leg, W Side - 25 m	*	-70.0	130.0	5.9	*
7. N Leg, W Side - 50 m	*	-70.0	212.0	5.9	*
8. N Leg, W Side-Midblk	*	-70.0	648.0	5.9	*
9. S Leg, E Side-Corner	*	70.0	-46.0	5.9	*
10. S Leg, E Side - 25 m	*	70.0	-118.0	5.9	*

```
     11. S Leg, E Side - 50 m *        70.0     -200.0        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -636.0        5.9   *
     13. S Leg, W Side-Corner *       -70.0      -46.0        5.9   *
     14. S Leg, W Side - 25 m *       -70.0     -118.0        5.9   *
     15. S Leg, W Side - 50 m *       -70.0     -200.0        5.9   *
     16. S Leg, W Side-Midblk *       -70.0     -636.0        5.9   *
     17. E Leg, N Side - 25 m *       142.0       58.0        5.9   *
     18. E Leg, N Side - 50 m *       224.0       58.0        5.9   *
     19. E Leg, N Side-Midblk *       660.0       58.0        5.9   *
     20. W Leg, N Side - 25 m *      -142.0       58.0        5.9   *
     21. W Leg, N Side - 50 m *      -224.0       58.0        5.9   *
     22. W Leg, N Side-Midblk *      -660.0       58.0        5.9   *
     23. E Leg, S Side - 25 m *       142.0      -46.0        5.9   *
     24. E Leg, S Side - 50 m *       224.0      -46.0        5.9   *
     25. E Leg, S Side-Midblk *       660.0      -46.0        5.9   *
     26. W Leg, S Side - 25 m *      -142.0      -46.0        5.9   *
     27. W Leg, S Side - 50 m *      -224.0      -46.0        5.9   *
     28. W Leg, S Side-Midblk *      -660.0      -46.0        5.9   *

                             PAGE  3
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NO BUILD -
US 17 and S Gateway

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*---------------------------------------------------------------------------------
-----------------------------------------
   5.  *  0.7000  0.6000  0.6000  0.6000  1.2000  1.2000  1.0000  0.9000  0.9000
0.8000  0.7000  0.8000  1.5000  1.2000  1.1000
  10.  *  0.5000  0.4000  0.4000  0.3000  1.2000  1.2000  1.1000  0.9000  0.8000
0.6000  0.5000  0.4000  1.5000  1.2000  1.2000
  15.  *  0.2000  0.2000  0.2000  0.2000  1.4000  1.3000  1.2000  1.0000  0.6000
0.3000  0.3000  0.2000  1.6000  1.2000  1.2000
  20.  *  0.2000  0.2000  0.2000  0.1000  1.3000  1.2000  1.1000  1.0000  0.4000
0.3000  0.1000  0.1000  1.5000  1.1000  1.1000
```

```
  25.  *  0.1000  0.1000  0.1000  0.1000  1.3000  1.2000  1.1000  1.0000  0.3000
0.2000  0.1000  0.1000  1.4000  1.1000  1.1000
  30.  *  0.1000  0.1000  0.1000  0.1000  1.2000  1.1000  1.0000  0.9000  0.2000
0.2000  0.1000  0.1000  1.3000  1.0000  1.1000
  35.  *  0.1000  0.1000  0.1000  0.1000  1.1000  1.1000  0.9000  0.9000  0.2000
0.2000  0.1000  0.1000  1.1000  0.9000  1.1000
  40.  *  0.1000  0.1000  0.1000  0.1000  1.1000  1.1000  0.9000  0.9000  0.2000
0.2000  0.1000  0.1000  1.1000  1.0000  1.1000
  45.  *  0.1000  0.1000  0.1000  0.1000  1.0000  1.0000  0.8000  0.8000  0.2000
0.2000  0.1000  0.1000  1.1000  0.9000  0.9000
  50.  *  0.0000  0.0000  0.0000  0.0000  1.0000  1.0000  0.8000  0.8000  0.2000
0.1000  0.0000  0.0000  1.1000  1.1000  0.9000
  55.  *  0.0000  0.0000  0.0000  0.0000  1.0000  1.0000  0.8000  0.8000  0.2000
0.1000  0.0000  0.0000  1.0000  1.1000  0.9000
  60.  *  0.0000  0.0000  0.0000  0.0000  1.0000  1.0000  0.8000  0.8000  0.2000
0.2000  0.0000  0.0000  1.0000  1.0000  0.9000
  65.  *  0.0000  0.0000  0.0000  0.0000  0.9000  0.9000  0.7000  0.7000  0.2000
0.2000  0.0000  0.0000  1.1000  1.0000  0.8000
  70.  *  0.0000  0.0000  0.0000  0.0000  0.9000  0.9000  0.7000  0.7000  0.2000
0.2000  0.0000  0.0000  1.0000  1.0000  0.8000
  75.  *  0.1000  0.0000  0.0000  0.0000  0.8000  0.9000  0.7000  0.7000  0.3000
0.2000  0.0000  0.0000  1.1000  1.0000  0.8000
  80.  *  0.1000  0.0000  0.0000  0.0000  1.0000  0.9000  0.8000  0.7000  0.3000
0.0000  0.0000  0.0000  1.1000  0.9000  0.8000
  85.  *  0.1000  0.0000  0.0000  0.0000  1.0000  1.0000  0.9000  0.8000  0.3000
0.0000  0.0000  0.0000  1.1000  0.9000  0.9000
  90.  *  0.2000  0.0000  0.0000  0.0000  1.1000  1.0000  0.9000  0.8000  0.2000
0.0000  0.0000  0.0000  1.2000  0.9000  0.9000
  95.  *  0.3000  0.1000  0.0000  0.0000  1.2000  1.1000  0.9000  0.8000  0.1000
0.0000  0.0000  0.0000  1.0000  0.9000  0.9000
 100.  *  0.3000  0.1000  0.0000  0.0000  1.2000  1.0000  0.8000  0.7000  0.1000
0.0000  0.0000  0.0000  0.9000  0.8000  0.7000
 105.  *  0.3000  0.1000  0.0000  0.0000  1.2000  1.0000  0.8000  0.7000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.7000
 110.  *  0.4000  0.1000  0.0000  0.0000  1.1000  1.0000  0.8000  0.7000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.7000
 115.  *  0.4000  0.1000  0.0000  0.0000  1.1000  1.0000  0.9000  0.7000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.7000
 120.  *  0.4000  0.1000  0.0000  0.0000  1.1000  1.1000  1.1000  0.8000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.8000
 125.  *  0.4000  0.1000  0.0000  0.0000  0.9000  1.1000  1.0000  0.8000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.8000
 130.  *  0.3000  0.1000  0.0000  0.0000  0.9000  1.2000  1.0000  0.8000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.8000
 135.  *  0.3000  0.2000  0.1000  0.1000  1.1000  1.1000  1.0000  0.8000  0.1000
0.1000  0.1000  0.1000  0.9000  0.9000  0.8000
 140.  *  0.3000  0.2000  0.1000  0.1000  1.1000  1.0000  1.1000  0.9000  0.1000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
```

145. * 0.3000 0.2000 0.1000 0.1000 1.2000 1.2000 1.2000 0.9000 0.1000
0.1000 0.1000 0.1000 1.0000 0.9000 0.9000
150. * 0.3000 0.2000 0.1000 0.1000 1.1000 1.0000 1.1000 0.9000 0.1000
0.1000 0.1000 0.1000 1.1000 1.0000 1.0000
155. * 0.4000 0.2000 0.1000 0.1000 1.3000 1.2000 1.3000 1.0000 0.1000
0.1000 0.1000 0.1000 1.1000 1.1000 1.1000
160. * 0.5000 0.3000 0.1000 0.1000 1.4000 1.5000 1.3000 1.0000 0.2000
0.2000 0.2000 0.1000 1.1000 1.1000 1.1000
165. * 0.6000 0.3000 0.3000 0.2000 1.3000 1.3000 1.4000 1.3000 0.2000
0.2000 0.2000 0.2000 1.2000 1.2000 1.2000
170. * 0.8000 0.6000 0.5000 0.4000 1.3000 1.3000 1.4000 1.3000 0.5000
0.4000 0.4000 0.3000 1.1000 1.1000 1.1000
175. * 1.0000 0.8000 0.6000 0.8000 1.2000 1.3000 1.1000 1.1000 0.8000
0.6000 0.6000 0.6000 1.1000 1.1000 1.0000
180. * 1.3000 1.1000 0.9000 0.9000 1.1000 1.0000 1.0000 0.9000 1.0000
0.9000 0.9000 0.7000 0.9000 0.9000 0.9000
185. * 1.6000 1.3000 1.0000 1.2000 0.9000 0.7000 0.7000 0.8000 1.1000
1.1000 1.0000 0.9000 0.6000 0.6000 0.6000
190. * 1.5000 1.4000 1.3000 1.2000 0.7000 0.6000 0.4000 0.4000 1.3000
1.3000 1.2000 1.0000 0.5000 0.5000 0.3000
195. * 1.5000 1.4000 1.2000 1.3000 0.4000 0.3000 0.3000 0.2000 1.4000
1.3000 1.1000 1.1000 0.2000 0.2000 0.2000
200. * 1.4000 1.3000 1.1000 1.1000 0.4000 0.3000 0.1000 0.1000 1.3000
1.2000 1.1000 1.1000 0.1000 0.1000 0.1000
205. * 1.2000 1.2000 1.1000 1.0000 0.2000 0.2000 0.1000 0.1000 1.2000
1.2000 1.0000 1.0000 0.1000 0.1000 0.1000
210. * 1.2000 1.0000 1.1000 1.0000 0.2000 0.2000 0.1000 0.1000 1.2000
1.2000 1.0000 1.0000 0.1000 0.1000 0.1000

PAGE 4
JOB: Fred Ex AQ Analysis   RUN: 2022 NO BUILD -
US 17 and S Gateway

WIND ANGLE RANGE: 5.-360.

WIND * CONCENTRATION
ANGLE *   (PPM)
(DEGR)*   1   2   3   4   5   6   7   8   9
10   11   12   13   14   15

------*--
----
215. * 1.1000 1.1000 1.1000 0.9000 0.2000 0.2000 0.1000 0.1000 1.1000
1.1000 0.9000 0.9000 0.1000 0.1000 0.1000
220. * 1.0000 0.9000 1.0000 0.9000 0.2000 0.2000 0.1000 0.1000 1.1000
1.1000 0.9000 0.9000 0.1000 0.1000 0.1000
225. * 1.0000 1.0000 1.0000 0.9000 0.2000 0.2000 0.1000 0.1000 1.1000
1.1000 0.9000 0.9000 0.1000 0.1000 0.1000

```
 230.  *  1.0000  1.1000  0.9000  0.8000  0.2000  0.1000  0.0000  0.0000  1.0000
1.0000  0.8000  0.8000  0.0000  0.0000  0.0000
 235.  *  1.0000  1.0000  0.9000  0.8000  0.3000  0.1000  0.0000  0.0000  1.0000
1.0000  0.8000  0.8000  0.0000  0.0000  0.0000
 240.  *  1.1000  1.0000  0.9000  0.8000  0.3000  0.1000  0.0000  0.0000  1.0000
1.0000  0.9000  0.8000  0.0000  0.0000  0.0000
 245.  *  1.1000  1.0000  1.0000  0.8000  0.3000  0.1000  0.0000  0.0000  1.0000
1.0000  0.9000  0.8000  0.0000  0.0000  0.0000
 250.  *  1.1000  1.0000  0.9000  0.8000  0.3000  0.1000  0.0000  0.0000  1.0000
1.0000  0.9000  0.8000  0.0000  0.0000  0.0000
 255.  *  1.0000  1.0000  0.9000  0.8000  0.3000  0.1000  0.0000  0.0000  0.9000
1.0000  0.9000  0.8000  0.0000  0.0000  0.0000
 260.  *  1.1000  1.0000  0.9000  0.8000  0.3000  0.1000  0.0000  0.0000  0.9000
1.0000  0.9000  0.8000  0.1000  0.0000  0.0000
 265.  *  1.1000  1.0000  0.9000  0.8000  0.3000  0.1000  0.0000  0.0000  1.0000
1.0000  0.9000  0.8000  0.1000  0.0000  0.0000
 270.  *  1.1000  0.9000  0.8000  0.8000  0.2000  0.0000  0.0000  0.0000  1.2000
1.0000  0.9000  0.8000  0.2000  0.0000  0.0000
 275.  *  1.0000  0.9000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  1.2000
1.0000  0.9000  0.8000  0.3000  0.0000  0.0000
 280.  *  1.0000  0.9000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  1.1000
1.1000  1.0000  0.8000  0.3000  0.0000  0.0000
 285.  *  0.9000  0.9000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  1.2000
1.2000  1.0000  0.8000  0.3000  0.2000  0.0000
 290.  *  0.9000  0.9000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  1.2000
1.2000  1.0000  0.8000  0.2000  0.2000  0.0000
 295.  *  0.9000  0.9000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  1.1000
1.2000  1.0000  0.8000  0.3000  0.2000  0.0000
 300.  *  0.9000  0.9000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  1.0000
1.1000  1.0000  0.8000  0.3000  0.2000  0.0000
 305.  *  0.9000  0.9000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  1.0000
1.1000  1.0000  0.8000  0.3000  0.1000  0.0000
 310.  *  0.9000  0.9000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  1.1000
1.1000  1.0000  0.8000  0.3000  0.1000  0.0000
 315.  *  1.0000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.2000
1.0000  1.1000  0.9000  0.3000  0.2000  0.1000
 320.  *  1.0000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.3000
1.3000  1.2000  0.9000  0.3000  0.2000  0.1000
 325.  *  1.0000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.2000
1.2000  1.1000  0.9000  0.3000  0.2000  0.1000
 330.  *  1.1000  1.0000  1.0000  1.0000  0.1000  0.1000  0.1000  0.1000  1.3000
1.2000  1.2000  1.0000  0.3000  0.2000  0.1000
 335.  *  1.0000  1.0000  1.0000  1.0000  0.1000  0.1000  0.1000  0.1000  1.4000
1.2000  1.3000  1.0000  0.3000  0.2000  0.1000
 340.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.4000
1.2000  1.3000  1.1000  0.4000  0.3000  0.1000
 345.  *  1.2000  1.2000  1.1000  1.1000  0.2000  0.2000  0.2000  0.2000  1.4000
1.3000  1.4000  1.3000  0.6000  0.3000  0.2000
```

```
 350.  *  1.2000  1.2000  1.2000  1.0000  0.5000  0.5000  0.3000  0.3000  1.4000
1.2000  1.4000  1.2000  0.8000  0.6000  0.4000
 355.  *  1.0000  1.0000  1.0000  0.9000  0.7000  0.6000  0.6000  0.5000  1.3000
1.3000  1.1000  1.2000  0.9000  0.7000  0.6000
 360.  *  0.9000  0.9000  0.9000  0.7000  1.0000  0.9000  0.9000  0.7000  1.3000
1.0000  1.0000  0.9000  1.3000  0.9000  0.9000

------*------------------------------------------------------------------------
-------------------------------------------
 MAX   *  1.6000  1.4000  1.3000  1.3000  1.4000  1.5000  1.4000  1.3000  1.4000
1.3000  1.4000  1.3000  1.6000  1.2000  1.2000
 DEGR. *    185     190     190     195     160     160     165     165     195
320     345     345      15       5      10
```

🡅


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      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NO BUILD -
US 17 and S Gateway

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*------------------------------------------------------------------------
---------------------------
   5.  *  1.1000  0.1000  0.0000  0.0000  0.3000  0.2000  0.0000  0.3000  0.2000
0.2000  0.5000  0.4000  0.2000
  10.  *  1.2000  0.0000  0.0000  0.0000  0.5000  0.2000  0.0000  0.2000  0.2000
0.2000  0.7000  0.4000  0.2000
  15.  *  1.3000  0.0000  0.0000  0.0000  0.5000  0.3000  0.0000  0.2000  0.2000
0.2000  0.7000  0.5000  0.2000
  20.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.4000  0.0000  0.2000  0.2000
0.2000  0.7000  0.6000  0.2000
  25.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.4000  0.0000  0.2000  0.2000
0.2000  0.8000  0.6000  0.2000
  30.  *  0.9000  0.0000  0.0000  0.0000  0.5000  0.4000  0.0000  0.2000  0.2000
0.2000  0.8000  0.6000  0.3000
```

```
  35.  *  0.9000  0.0000  0.0000  0.0000  0.6000  0.4000  0.2000  0.2000  0.2000
0.2000  0.8000  0.6000  0.4000
  40.  *  0.9000  0.0000  0.0000  0.0000  0.6000  0.4000  0.2000  0.2000  0.2000
0.2000  0.8000  0.6000  0.4000
  45.  *  0.8000  0.0000  0.0000  0.0000  0.6000  0.4000  0.2000  0.2000  0.2000
0.2000  0.7000  0.6000  0.4000
  50.  *  0.8000  0.0000  0.0000  0.0000  0.6000  0.4000  0.2000  0.2000  0.2000
0.2000  0.6000  0.6000  0.4000
  55.  *  0.8000  0.0000  0.0000  0.0000  0.6000  0.4000  0.2000  0.2000  0.2000
0.2000  0.7000  0.6000  0.4000
  60.  *  0.8000  0.0000  0.0000  0.0000  0.6000  0.4000  0.2000  0.2000  0.2000
0.2000  0.8000  0.5000  0.4000
  65.  *  0.7000  0.0000  0.0000  0.0000  0.6000  0.5000  0.2000  0.2000  0.2000
0.2000  0.7000  0.4000  0.4000
  70.  *  0.7000  0.0000  0.0000  0.0000  0.6000  0.4000  0.2000  0.2000  0.2000
0.2000  0.6000  0.5000  0.4000
  75.  *  0.7000  0.1000  0.1000  0.1000  0.6000  0.4000  0.3000  0.3000  0.3000
0.2000  0.7000  0.7000  0.4000
  80.  *  0.7000  0.1000  0.1000  0.1000  0.7000  0.4000  0.3000  0.3000  0.3000
0.2000  0.8000  0.6000  0.4000
  85.  *  0.8000  0.1000  0.1000  0.1000  0.8000  0.5000  0.3000  0.3000  0.2000
0.2000  0.7000  0.5000  0.2000
  90.  *  0.8000  0.2000  0.2000  0.2000  0.7000  0.5000  0.3000  0.2000  0.2000
0.1000  0.7000  0.4000  0.2000
  95.  *  0.8000  0.2000  0.2000  0.2000  0.6000  0.4000  0.2000  0.1000  0.1000
0.1000  0.5000  0.4000  0.3000
 100.  *  0.7000  0.3000  0.3000  0.2000  0.7000  0.7000  0.4000  0.1000  0.1000
0.1000  0.6000  0.4000  0.3000
 105.  *  0.7000  0.3000  0.3000  0.3000  0.8000  0.6000  0.5000  0.0000  0.0000
0.0000  0.6000  0.3000  0.2000
 110.  *  0.7000  0.3000  0.3000  0.3000  0.7000  0.5000  0.5000  0.0000  0.0000
0.0000  0.6000  0.3000  0.2000
 115.  *  0.7000  0.3000  0.3000  0.3000  0.5000  0.4000  0.5000  0.0000  0.0000
0.0000  0.6000  0.4000  0.2000
 120.  *  0.8000  0.3000  0.3000  0.3000  0.5000  0.5000  0.5000  0.0000  0.0000
0.0000  0.6000  0.4000  0.2000
 125.  *  0.8000  0.3000  0.3000  0.3000  0.6000  0.7000  0.5000  0.0000  0.0000
0.0000  0.6000  0.4000  0.2000
 130.  *  0.8000  0.2000  0.2000  0.2000  0.6000  0.6000  0.4000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 135.  *  0.8000  0.2000  0.2000  0.2000  0.5000  0.6000  0.4000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 140.  *  0.9000  0.2000  0.2000  0.2000  0.7000  0.6000  0.4000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 145.  *  0.9000  0.2000  0.2000  0.2000  0.7000  0.6000  0.4000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 150.  *  0.9000  0.2000  0.2000  0.2000  0.7000  0.6000  0.3000  0.0000  0.0000
0.0000  0.5000  0.4000  0.0000
```

```
 155.  *  1.0000  0.2000  0.2000  0.2000  0.7000  0.6000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.0000
 160.  *  1.0000  0.2000  0.2000  0.2000  0.7000  0.6000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.0000
 165.  *  1.0000  0.2000  0.2000  0.2000  0.7000  0.5000  0.2000  0.0000  0.0000
0.0000  0.5000  0.3000  0.0000
 170.  *  0.9000  0.2000  0.2000  0.2000  0.7000  0.4000  0.2000  0.0000  0.0000
0.0000  0.5000  0.2000  0.0000
 175.  *  0.9000  0.3000  0.2000  0.2000  0.5000  0.4000  0.2000  0.1000  0.0000
0.0000  0.3000  0.2000  0.0000
 180.  *  0.7000  0.5000  0.3000  0.2000  0.5000  0.3000  0.2000  0.3000  0.1000
0.0000  0.2000  0.1000  0.0000
 185.  *  0.5000  0.5000  0.4000  0.2000  0.3000  0.2000  0.2000  0.3000  0.2000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.3000  0.7000  0.5000  0.2000  0.2000  0.2000  0.2000  0.5000  0.2000
0.0000  0.0000  0.0000  0.0000
 195.  *  0.2000  0.7000  0.5000  0.2000  0.2000  0.2000  0.2000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  0.7000  0.6000  0.2000  0.2000  0.2000  0.2000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.1000  0.8000  0.6000  0.2000  0.2000  0.2000  0.2000  0.5000  0.4000
0.0000  0.0000  0.0000  0.0000
 210.  *  0.1000  0.8000  0.6000  0.3000  0.2000  0.2000  0.2000  0.5000  0.4000
0.1000  0.0000  0.0000  0.0000
```

```
                              PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NO BUILD -
US 17 and S Gateway

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16       17       18       19       20       21       22       23       24
 25      26      27      28

------*--------------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  0.9000  0.6000  0.4000  0.2000  0.2000  0.2000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 220.  *  0.1000  0.9000  0.6000  0.4000  0.2000  0.2000  0.2000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 225.  *  0.1000  0.7000  0.6000  0.4000  0.2000  0.2000  0.2000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 230.  *  0.0000  0.7000  0.5000  0.4000  0.2000  0.2000  0.2000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 235.  *  0.0000  0.7000  0.6000  0.5000  0.3000  0.3000  0.3000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000
```

```
 240.  *  0.0000  0.6000  0.6000  0.5000  0.3000  0.3000  0.3000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000
 245.  *  0.0000  0.7000  0.5000  0.5000  0.3000  0.3000  0.3000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 250.  *  0.0000  0.8000  0.5000  0.5000  0.3000  0.3000  0.3000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 255.  *  0.0000  0.9000  0.6000  0.5000  0.3000  0.3000  0.3000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 260.  *  0.0000  0.7000  0.7000  0.4000  0.3000  0.3000  0.2000  0.6000  0.4000
0.3000  0.1000  0.1000  0.1000
 265.  *  0.0000  0.7000  0.4000  0.2000  0.2000  0.2000  0.2000  0.7000  0.4000
0.3000  0.1000  0.1000  0.1000
 270.  *  0.0000  0.7000  0.5000  0.3000  0.2000  0.2000  0.2000  0.9000  0.5000
0.3000  0.2000  0.2000  0.1000
 275.  *  0.0000  0.7000  0.5000  0.3000  0.1000  0.1000  0.1000  0.6000  0.5000
0.2000  0.2000  0.2000  0.2000
 280.  *  0.0000  0.7000  0.4000  0.3000  0.1000  0.1000  0.1000  0.8000  0.6000
0.3000  0.3000  0.3000  0.2000
 285.  *  0.0000  0.6000  0.3000  0.3000  0.1000  0.1000  0.1000  0.7000  0.7000
0.4000  0.3000  0.3000  0.2000
 290.  *  0.0000  0.6000  0.3000  0.2000  0.0000  0.0000  0.0000  0.7000  0.5000
0.4000  0.2000  0.2000  0.2000
 295.  *  0.0000  0.6000  0.3000  0.2000  0.0000  0.0000  0.0000  0.7000  0.4000
0.4000  0.2000  0.2000  0.2000
 300.  *  0.0000  0.6000  0.3000  0.2000  0.0000  0.0000  0.0000  0.7000  0.5000
0.4000  0.2000  0.2000  0.2000
 305.  *  0.0000  0.5000  0.3000  0.2000  0.0000  0.0000  0.0000  0.7000  0.5000
0.4000  0.2000  0.2000  0.2000
 310.  *  0.0000  0.5000  0.4000  0.2000  0.0000  0.0000  0.0000  0.6000  0.5000
0.4000  0.2000  0.2000  0.2000
 315.  *  0.1000  0.5000  0.4000  0.2000  0.0000  0.0000  0.0000  0.7000  0.6000
0.4000  0.2000  0.2000  0.2000
 320.  *  0.1000  0.5000  0.4000  0.2000  0.0000  0.0000  0.0000  0.7000  0.6000
0.4000  0.2000  0.2000  0.2000
 325.  *  0.1000  0.5000  0.4000  0.2000  0.0000  0.0000  0.0000  0.8000  0.6000
0.4000  0.2000  0.2000  0.2000
 330.  *  0.1000  0.5000  0.4000  0.1000  0.0000  0.0000  0.0000  0.7000  0.6000
0.3000  0.2000  0.2000  0.2000
 335.  *  0.1000  0.5000  0.4000  0.0000  0.0000  0.0000  0.0000  0.7000  0.6000
0.2000  0.2000  0.2000  0.2000
 340.  *  0.1000  0.5000  0.3000  0.0000  0.0000  0.0000  0.0000  0.7000  0.6000
0.2000  0.2000  0.2000  0.2000
 345.  *  0.2000  0.5000  0.3000  0.0000  0.0000  0.0000  0.0000  0.7000  0.5000
0.2000  0.2000  0.2000  0.2000
 350.  *  0.4000  0.5000  0.2000  0.0000  0.0000  0.0000  0.0000  0.7000  0.5000
0.2000  0.2000  0.2000  0.2000
 355.  *  0.8000  0.3000  0.2000  0.0000  0.1000  0.0000  0.0000  0.5000  0.4000
0.2000  0.3000  0.2000  0.2000
```

```
 360.  *  0.9000  0.3000  0.1000  0.0000  0.2000  0.1000  0.0000  0.5000  0.3000
0.2000  0.5000  0.3000  0.2000

------*--------------------------------------------------------------------------
--------------------------
 MAX   *  1.3000  0.9000  0.7000  0.5000  0.8000  0.7000  0.5000  0.9000  0.7000
0.4000  0.8000  0.7000  0.4000
 DEGR. *     15     215     260     235      85     100     105     270     285
285      25      75      35

 THE HIGHEST CONCENTRATION OF   1.6000 PPM OCCURRED AT RECEPTOR    13.
```

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,5,3,4,2200,2200,2200,2200,2200,2200,2200,2200,1230,1230,1230,1230,1230,1230,1230,1
230,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,
0,0,0,0,0,0,0,0,0,0,7.48,7.48,7.04,7.1,7.96,7.96,7.13,7.13
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-70.0,58.0,5.9
'N Leg, W Side - 25 m',-70.0,130.0,5.9
'N Leg, W Side - 50 m',-70.0,212.0,5.9
'N Leg, W Side-Midblk',-70.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-46.0,5.9
'S Leg, E Side - 25 m',70.0,-118.0,5.9
'S Leg, E Side - 50 m',70.0,-200.0,5.9
'S Leg, E Side-Midblk',70.0,-636.0,5.9
'S Leg, W Side-Corner',-70.0,-46.0,5.9
'S Leg, W Side - 25 m',-70.0,-118.0,5.9
'S Leg, W Side - 50 m',-70.0,-200.0,5.9
'S Leg, W Side-Midblk',-70.0,-636.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-142.0,58.0,5.9
'W Leg, N Side - 50 m',-224.0,58.0,5.9
'W Leg, N Side-Midblk',-660.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-46.0,5.9
'E Leg, S Side - 50 m',224.0,-46.0,5.9
'E Leg, S Side-Midblk',660.0,-46.0,5.9
'W Leg, S Side - 25 m',-142.0,-46.0,5.9
'W Leg, S Side - 50 m',-224.0,-46.0,5.9
'W Leg, S Side-Midblk',-660.0,-46.0,5.9
'2022 - US 17 and S Gateway',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-30,0,-30,1200,6150,7.48,0.0,79.7
2
'N Leg App - Queue','AG',-30,48,-30,1200,0.0,60.0,5
120,68,2,6150,7.96,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,6150,7.48,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,6150,7.48,0.0,79.7
2
'S Leg App - Queue','AG',30,-36,30,-1200,0.0,60.0,5
120,68,2,6150,7.96,1900,1,3
1
```

'S Leg Dep - FreeFlow','AG',-30,0,-30,-1200,6150,7.48,0.0,79.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,4920,7.04,0.0,67.7
2
'E Leg App - Queue','AG',60,24,1200,24,0.0,48.0,4
120,68,2,4920,7.13,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,3690,7.04,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,3690,7.1,0.0,55.7
2
'W Leg App - Queue','AG',-60,-18,-1200,-18,0.0,36.0,3
120,68,2,3690,7.13,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,4920,7.1,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72

2022 US 17 and S Gateway OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface
CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: Fred Ex AQ Analysis RUN: 2022 - US 17 and S Gateway

DATE : 8/15/17
TIME : 9:40:35

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

```
   LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                        *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*----------------------------------------*-----------------
----------------------------------------
       1. N Leg App - FreeFlow*    -30.0       0.0     -30.0    1200.0 *    1200.
360. AG   6150.   7.5   0.0 79.7
       2. N Leg App - Queue   *    -30.0      48.0     -30.0    5348.1 *    5300.
360. AG     60. 100.0   0.0 60.0 1.62 269.2
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   6150.   7.5   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   6150.   7.5   0.0 79.7
       5. S Leg App - Queue   *     30.0     -36.0      30.0   -5336.1 *    5300.
180. AG     60. 100.0   0.0 60.0 1.62 269.2
       6. S Leg Dep - FreeFlow*    -30.0       0.0     -30.0   -1200.0 *    1200.
180. AG   6150.   7.5   0.0 79.7
       7. E Leg App - FreeFlow*      0.0      24.0    1200.0      24.0 *    1200.
90. AG   4920.   7.0   0.0 67.7
       8. E Leg App - Queue   *     60.0      24.0    5360.1      24.0 *    5300.
90. AG     43. 100.0   0.0 48.0 1.62 269.2
       9. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   3690.   7.0   0.0 55.7
      10. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
```

```
270. AG   3690.   7.1   0.0 55.7
      11. W Leg App - Queue   *    -60.0     -18.0   -5360.1     -18.0 *    5300.
270. AG     33. 100.0   0.0 36.0 1.62 269.2
      12. W Leg Dep - FreeFlow*      0.0      24.0   -1200.0      24.0 *    1200.
270. AG   4920.   7.1   0.0 67.7
```


JOB: Fred Ex AQ Analysis RUN: 2022 - US 17 and S Gateway

DATE : 8/15/17
TIME : 9:40:35

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. N Leg App - Queue	120	68	2.0	6150	1900	7.96	1	3
5. S Leg App - Queue	120	68	2.0	6150	1900	7.96	1	3
8. E Leg App - Queue	120	68	2.0	4920	1900	7.13	1	3
11. W Leg App - Queue	120	68	2.0	3690	1900	7.13	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	70.0	58.0	5.9
2. N Leg, E Side - 25 m	70.0	130.0	5.9
3. N Leg, E Side - 50 m	70.0	212.0	5.9
4. N Leg, E Side-Midblk	70.0	648.0	5.9
5. N Leg, W Side-Corner	-70.0	58.0	5.9
6. N Leg, W Side - 25 m	-70.0	130.0	5.9
7. N Leg, W Side - 50 m	-70.0	212.0	5.9
8. N Leg, W Side-Midblk	-70.0	648.0	5.9
9. S Leg, E Side-Corner	70.0	-46.0	5.9
10. S Leg, E Side - 25 m	70.0	-118.0	5.9

```
     11. S Leg, E Side - 50 m *        70.0     -200.0        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -636.0        5.9   *
     13. S Leg, W Side-Corner *       -70.0      -46.0        5.9   *
     14. S Leg, W Side - 25 m *       -70.0     -118.0        5.9   *
     15. S Leg, W Side - 50 m *       -70.0     -200.0        5.9   *
     16. S Leg, W Side-Midblk *       -70.0     -636.0        5.9   *
     17. E Leg, N Side - 25 m *       142.0       58.0        5.9   *
     18. E Leg, N Side - 50 m *       224.0       58.0        5.9   *
     19. E Leg, N Side-Midblk *       660.0       58.0        5.9   *
     20. W Leg, N Side - 25 m *      -142.0       58.0        5.9   *
     21. W Leg, N Side - 50 m *      -224.0       58.0        5.9   *
     22. W Leg, N Side-Midblk *      -660.0       58.0        5.9   *
     23. E Leg, S Side - 25 m *       142.0      -46.0        5.9   *
     24. E Leg, S Side - 50 m *       224.0      -46.0        5.9   *
     25. E Leg, S Side-Midblk *       660.0      -46.0        5.9   *
     26. W Leg, S Side - 25 m *      -142.0      -46.0        5.9   *
     27. W Leg, S Side - 50 m *      -224.0      -46.0        5.9   *
     28. W Leg, S Side-Midblk *      -660.0      -46.0        5.9   *
```

```
                             PAGE  3
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - US 17
and S Gateway

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
----------------------------------------
   5.  *  1.8000  1.8000  1.8000  1.4000  3.1000  3.1000  3.0000  2.6000  3.5000
2.6000  2.5000  2.3000  4.7000  3.9000  3.7000
  10.  *  1.1000  1.1000  1.1000  0.9000  3.3000  3.3000  3.3000  2.9000  2.8000
2.0000  1.8000  1.6000  5.0000  4.1000  3.8000
  15.  *  0.7000  0.7000  0.6000  0.6000  3.4000  3.4000  3.4000  3.1000  2.3000
1.5000  1.3000  0.9000  5.1000  4.1000  3.8000
  20.  *  0.4000  0.4000  0.4000  0.4000  3.3000  3.2000  3.2000  3.1000  1.9000
1.2000  0.9000  0.6000  4.8000  3.9000  3.5000
```

```
  25.  *  0.4000  0.3000  0.3000  0.3000  3.1000  3.0000  3.0000  3.0000  1.8000
1.1000  0.8000  0.5000  4.4000  3.8000  3.5000
  30.  *  0.3000  0.2000  0.2000  0.2000  3.0000  2.9000  2.9000  2.9000  1.7000
1.1000  0.8000  0.4000  4.3000  3.5000  3.5000
  35.  *  0.3000  0.2000  0.2000  0.2000  2.9000  2.8000  2.8000  2.8000  1.7000
1.0000  0.8000  0.4000  4.1000  3.5000  3.2000
  40.  *  0.2000  0.1000  0.1000  0.1000  2.8000  2.7000  2.7000  2.7000  1.9000
1.1000  0.7000  0.3000  4.1000  3.5000  2.9000
  45.  *  0.2000  0.1000  0.1000  0.1000  2.6000  2.5000  2.5000  2.5000  1.9000
1.1000  0.7000  0.3000  4.2000  3.3000  3.1000
  50.  *  0.2000  0.1000  0.1000  0.1000  2.5000  2.4000  2.4000  2.4000  2.0000
1.1000  0.7000  0.3000  4.2000  3.4000  2.9000
  55.  *  0.2000  0.1000  0.1000  0.1000  2.5000  2.3000  2.3000  2.3000  2.1000
1.2000  0.8000  0.3000  4.1000  3.1000  2.9000
  60.  *  0.3000  0.1000  0.1000  0.1000  2.4000  2.3000  2.3000  2.3000  2.2000
1.2000  0.8000  0.3000  4.1000  3.2000  2.9000
  65.  *  0.3000  0.1000  0.1000  0.1000  2.4000  2.2000  2.2000  2.2000  2.2000
1.2000  0.8000  0.2000  4.5000  3.2000  2.8000
  70.  *  0.3000  0.0000  0.0000  0.0000  2.6000  2.2000  2.2000  2.2000  2.3000
1.1000  0.6000  0.0000  4.4000  3.2000  2.7000
  75.  *  0.5000  0.0000  0.0000  0.0000  2.7000  2.2000  2.2000  2.2000  2.4000
1.1000  0.6000  0.0000  4.7000  3.1000  2.7000
  80.  *  1.0000  0.1000  0.0000  0.0000  3.1000  2.3000  2.2000  2.2000  2.5000
0.9000  0.4000  0.0000  4.4000  2.9000  2.5000
  85.  *  1.5000  0.3000  0.1000  0.0000  3.7000  2.6000  2.4000  2.3000  2.2000
0.7000  0.2000  0.0000  4.4000  3.0000  2.6000
  90.  *  2.0000  0.5000  0.1000  0.0000  4.2000  2.9000  2.6000  2.4000  1.8000
0.4000  0.2000  0.0000  4.2000  2.8000  2.5000
  95.  *  2.4000  0.8000  0.3000  0.0000  4.4000  3.1000  2.6000  2.3000  1.5000
0.2000  0.0000  0.0000  3.6000  2.5000  2.2000
 100.  *  2.6000  1.0000  0.5000  0.0000  4.7000  3.1000  2.8000  2.2000  0.9000
0.1000  0.0000  0.0000  3.1000  2.3000  2.1000
 105.  *  2.6000  1.0000  0.7000  0.0000  4.5000  3.2000  2.9000  2.2000  0.5000
0.0000  0.0000  0.0000  2.7000  2.1000  2.1000
 110.  *  2.4000  1.2000  0.7000  0.0000  4.4000  3.4000  2.9000  2.3000  0.3000
0.0000  0.0000  0.0000  2.3000  2.1000  2.1000
 115.  *  2.4000  1.3000  0.9000  0.2000  4.4000  3.3000  3.0000  2.4000  0.3000
0.1000  0.1000  0.1000  2.3000  2.1000  2.1000
 120.  *  2.3000  1.2000  0.8000  0.3000  4.1000  3.5000  3.0000  2.5000  0.2000
0.1000  0.1000  0.1000  2.3000  2.2000  2.2000
 125.  *  2.2000  1.1000  0.8000  0.3000  4.0000  3.3000  3.0000  2.5000  0.2000
0.1000  0.1000  0.1000  2.4000  2.2000  2.2000
 130.  *  2.0000  1.1000  0.7000  0.3000  4.1000  3.4000  3.0000  2.7000  0.2000
0.1000  0.1000  0.1000  2.4000  2.3000  2.3000
 135.  *  1.9000  1.1000  0.7000  0.4000  4.2000  3.5000  3.2000  2.8000  0.2000
0.1000  0.1000  0.1000  2.5000  2.4000  2.4000
 140.  *  1.8000  1.0000  0.7000  0.4000  4.2000  3.5000  3.0000  3.0000  0.2000
0.1000  0.1000  0.1000  2.7000  2.6000  2.6000
```

```
 145.  *  1.8000  1.0000  0.8000  0.5000  4.3000  3.7000  3.4000  3.1000  0.3000
0.2000  0.2000  0.2000  2.8000  2.7000  2.7000
 150.  *  1.7000  1.1000  0.8000  0.5000  4.3000  3.7000  3.4000  3.2000  0.3000
0.2000  0.2000  0.2000  2.9000  2.8000  2.8000
 155.  *  1.8000  1.2000  0.8000  0.6000  4.5000  3.9000  3.6000  3.3000  0.3000
0.3000  0.3000  0.3000  2.9000  2.9000  2.9000
 160.  *  2.0000  1.2000  0.9000  0.7000  4.5000  4.0000  4.0000  3.5000  0.4000
0.4000  0.4000  0.4000  3.1000  3.1000  3.0000
 165.  *  2.3000  1.6000  1.2000  0.9000  4.9000  4.3000  4.0000  3.8000  0.8000
0.8000  0.8000  0.7000  3.2000  3.2000  3.2000
 170.  *  2.9000  2.2000  1.9000  1.5000  4.8000  4.1000  4.1000  3.8000  1.2000
1.2000  1.2000  1.1000  3.1000  3.1000  3.1000
 175.  *  3.4000  2.7000  2.4000  2.2000  4.5000  3.9000  3.6000  3.6000  1.9000
1.9000  1.9000  1.6000  2.9000  2.9000  2.8000
 180.  *  4.3000  3.3000  3.1000  2.9000  4.1000  3.3000  3.2000  3.1000  2.6000
2.5000  2.4000  2.1000  2.5000  2.4000  2.3000
 185.  *  4.7000  3.9000  3.5000  3.5000  3.3000  2.7000  2.6000  2.3000  3.1000
3.1000  3.0000  2.6000  1.8000  1.8000  1.8000
 190.  *  5.0000  4.0000  4.0000  3.7000  2.7000  2.0000  1.8000  1.6000  3.3000
3.3000  3.3000  2.9000  1.1000  1.1000  1.1000
 195.  *  5.1000  4.2000  3.8000  3.6000  2.2000  1.5000  1.3000  0.9000  3.4000
3.4000  3.4000  3.1000  0.7000  0.7000  0.7000
 200.  *  4.6000  3.9000  3.7000  3.4000  1.9000  1.1000  0.9000  0.7000  3.3000
3.3000  3.2000  3.1000  0.4000  0.4000  0.4000
 205.  *  4.4000  3.7000  3.4000  3.2000  1.8000  1.1000  0.8000  0.6000  3.0000
3.0000  3.0000  3.0000  0.3000  0.3000  0.3000
 210.  *  4.3000  3.5000  3.3000  3.1000  1.7000  1.0000  0.8000  0.5000  3.0000
2.9000  2.9000  2.9000  0.3000  0.2000  0.2000
```



```
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - US 17
and S Gateway

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  4.2000  3.5000  3.3000  3.0000  1.8000  0.9000  0.8000  0.5000  2.9000
2.8000  2.8000  2.8000  0.3000  0.2000  0.2000
 220.  *  4.1000  3.3000  3.0000  2.9000  1.8000  1.0000  0.7000  0.4000  2.8000
2.7000  2.7000  2.7000  0.2000  0.1000  0.1000
 225.  *  4.1000  3.3000  3.1000  2.7000  1.9000  1.0000  0.7000  0.4000  2.6000
2.5000  2.5000  2.5000  0.2000  0.1000  0.1000
```

230. * 4.1000 3.3000 2.9000 2.6000 2.0000 1.0000 0.7000 0.3000 2.5000
2.4000 2.4000 2.4000 0.2000 0.1000 0.1000
235. * 4.0000 3.2000 2.9000 2.4000 2.1000 1.1000 0.8000 0.3000 2.5000
2.3000 2.3000 2.3000 0.2000 0.1000 0.1000
240. * 4.1000 3.3000 2.9000 2.4000 2.2000 1.1000 0.8000 0.3000 2.4000
2.3000 2.3000 2.3000 0.2000 0.1000 0.1000
245. * 4.3000 3.2000 2.8000 2.3000 2.3000 1.2000 0.8000 0.2000 2.4000
2.2000 2.2000 2.2000 0.3000 0.1000 0.1000
250. * 4.3000 3.2000 2.7000 2.2000 2.3000 1.1000 0.6000 0.0000 2.4000
2.2000 2.2000 2.2000 0.3000 0.0000 0.0000
255. * 4.4000 3.0000 2.7000 2.1000 2.5000 0.9000 0.6000 0.0000 2.7000
2.2000 2.2000 2.2000 0.6000 0.0000 0.0000
260. * 4.6000 2.9000 2.6000 2.1000 2.5000 0.9000 0.4000 0.0000 3.1000
2.4000 2.2000 2.2000 1.0000 0.1000 0.0000
265. * 4.3000 2.9000 2.5000 2.2000 2.3000 0.7000 0.3000 0.0000 3.6000
2.6000 2.3000 2.3000 1.5000 0.2000 0.0000
270. * 4.2000 2.7000 2.5000 2.3000 1.9000 0.4000 0.1000 0.0000 4.2000
2.9000 2.6000 2.4000 2.0000 0.4000 0.2000
275. * 3.6000 2.5000 2.3000 2.2000 1.4000 0.3000 0.1000 0.0000 4.5000
3.1000 2.7000 2.3000 2.2000 0.7000 0.2000
280. * 3.0000 2.2000 2.1000 2.1000 0.9000 0.1000 0.0000 0.0000 4.6000
3.0000 2.6000 2.2000 2.6000 0.9000 0.4000
285. * 2.7000 2.1000 2.1000 2.1000 0.5000 0.0000 0.0000 0.0000 4.8000
3.2000 2.8000 2.2000 2.5000 1.1000 0.6000
290. * 2.5000 2.1000 2.1000 2.1000 0.3000 0.0000 0.0000 0.0000 4.4000
3.3000 2.9000 2.2000 2.3000 1.1000 0.6000
295. * 2.3000 2.1000 2.1000 2.1000 0.3000 0.1000 0.1000 0.1000 4.6000
3.2000 2.9000 2.4000 2.2000 1.2000 0.8000
300. * 2.3000 2.2000 2.2000 2.2000 0.3000 0.1000 0.1000 0.1000 4.2000
3.2000 3.0000 2.5000 2.2000 1.2000 0.8000
305. * 2.4000 2.2000 2.2000 2.2000 0.2000 0.1000 0.1000 0.1000 4.1000
3.2000 3.0000 2.5000 2.1000 1.2000 0.8000
310. * 2.4000 2.3000 2.3000 2.3000 0.2000 0.1000 0.1000 0.1000 4.2000
3.5000 3.1000 2.6000 2.0000 1.0000 0.8000
315. * 2.5000 2.4000 2.4000 2.4000 0.2000 0.1000 0.1000 0.1000 4.2000
3.5000 3.2000 2.8000 1.9000 1.0000 0.7000
320. * 2.7000 2.6000 2.6000 2.6000 0.2000 0.1000 0.1000 0.1000 4.2000
3.8000 3.0000 2.9000 1.9000 1.0000 0.7000
325. * 2.8000 2.7000 2.7000 2.7000 0.3000 0.2000 0.2000 0.2000 4.2000
3.7000 3.3000 3.0000 1.8000 0.9000 0.8000
330. * 2.9000 2.8000 2.8000 2.8000 0.3000 0.2000 0.2000 0.2000 4.3000
3.8000 3.6000 3.1000 1.7000 1.0000 0.8000
335. * 3.0000 2.9000 2.9000 2.9000 0.4000 0.3000 0.3000 0.3000 4.4000
4.0000 3.7000 3.3000 1.8000 1.1000 0.8000
340. * 3.1000 3.0000 3.0000 2.9000 0.4000 0.4000 0.4000 0.4000 4.6000
4.0000 3.8000 3.5000 1.9000 1.2000 0.9000
345. * 3.2000 3.2000 3.2000 2.9000 0.8000 0.8000 0.7000 0.7000 4.9000
4.2000 4.0000 3.8000 2.3000 1.5000 1.3000

```
 350.  *  3.1000  3.1000  3.1000  2.7000  1.2000  1.2000  1.2000  1.0000  4.8000
4.2000  3.9000  3.8000  2.9000  2.1000  1.9000
 355.  *  2.9000  2.9000  2.8000  2.4000  1.9000  1.9000  1.9000  1.5000  4.5000
3.9000  3.8000  3.6000  3.5000  2.6000  2.4000
 360.  *  2.5000  2.4000  2.3000  2.0000  2.6000  2.5000  2.4000  2.1000  4.1000
3.3000  3.1000  3.1000  4.3000  3.3000  3.0000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  5.1000  4.2000  4.0000  3.7000  4.9000  4.3000  4.1000  3.8000  4.9000
4.2000  4.0000  3.8000  5.1000  4.1000  3.8000
 DEGR. *    195     195     190     190     165     165     170     165     345
350     345     345      15      10      15
```

```
                            PAGE  5
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - US 17
and S Gateway

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
   5.  *  3.5000  0.3000  0.1000  0.0000  1.0000  0.5000  0.0000  1.9000  1.7000
1.6000  2.6000  2.2000  1.6000
  10.  *  3.7000  0.1000  0.0000  0.0000  1.2000  0.7000  0.0000  1.7000  1.6000
1.6000  3.0000  2.4000  1.6000
  15.  *  3.6000  0.0000  0.0000  0.0000  1.4000  0.9000  0.0000  1.6000  1.6000
1.6000  3.2000  2.5000  1.6000
  20.  *  3.4000  0.0000  0.0000  0.0000  1.6000  1.0000  0.0000  1.6000  1.6000
1.6000  3.2000  2.6000  1.7000
  25.  *  3.2000  0.1000  0.1000  0.1000  1.7000  1.2000  0.3000  1.6000  1.6000
1.6000  3.2000  2.7000  1.8000
  30.  *  3.0000  0.1000  0.1000  0.1000  1.6000  1.2000  0.3000  1.6000  1.6000
1.6000  3.1000  2.8000  1.9000
```

```
  35.  *  2.9000  0.1000  0.1000  0.1000  1.6000  1.1000  0.4000  1.6000  1.6000
1.6000  3.2000  2.8000  2.1000
  40.  *  2.8000  0.1000  0.1000  0.1000  1.6000  1.1000  0.5000  1.8000  1.8000
1.7000  3.1000  2.7000  2.2000
  45.  *  2.7000  0.1000  0.1000  0.1000  1.6000  1.1000  0.5000  1.8000  1.8000
1.8000  3.3000  2.8000  2.2000
  50.  *  2.5000  0.1000  0.1000  0.1000  1.4000  1.1000  0.5000  1.9000  1.9000
1.9000  3.1000  2.9000  2.3000
  55.  *  2.4000  0.1000  0.1000  0.1000  1.4000  1.1000  0.5000  2.0000  2.0000
2.0000  3.2000  2.9000  2.4000
  60.  *  2.4000  0.2000  0.2000  0.2000  1.4000  1.1000  0.6000  2.1000  2.1000
2.1000  3.3000  3.0000  2.5000
  65.  *  2.3000  0.2000  0.2000  0.2000  1.5000  1.2000  0.6000  2.2000  2.2000
2.2000  3.4000  3.1000  2.6000
  70.  *  2.1000  0.3000  0.3000  0.3000  1.6000  1.4000  0.7000  2.3000  2.3000
2.2000  3.7000  3.4000  2.8000
  75.  *  2.1000  0.5000  0.5000  0.5000  1.9000  1.7000  1.0000  2.4000  2.4000
2.3000  3.9000  3.5000  2.9000
  80.  *  2.1000  1.0000  1.0000  0.9000  2.2000  1.8000  1.5000  2.4000  2.3000
2.1000  3.8000  3.4000  2.9000
  85.  *  2.2000  1.5000  1.4000  1.2000  2.8000  2.4000  2.0000  2.2000  2.2000
1.9000  3.6000  3.1000  2.8000
  90.  *  2.3000  2.0000  2.0000  1.7000  3.2000  2.9000  2.5000  1.8000  1.8000
1.6000  3.3000  2.9000  2.5000
  95.  *  2.2000  2.4000  2.3000  2.0000  3.5000  3.3000  2.8000  1.4000  1.4000
1.2000  2.8000  2.1000  1.9000
 100.  *  2.1000  2.6000  2.5000  2.2000  3.8000  3.4000  2.9000  0.9000  0.9000
0.7000  2.2000  1.8000  1.3000
 105.  *  2.1000  2.6000  2.6000  2.4000  3.8000  3.4000  3.0000  0.5000  0.5000
0.5000  1.9000  1.4000  0.9000
 110.  *  2.1000  2.4000  2.4000  2.4000  3.4000  3.3000  2.9000  0.3000  0.3000
0.3000  1.6000  1.2000  0.7000
 115.  *  2.1000  2.3000  2.3000  2.3000  3.4000  3.0000  2.6000  0.2000  0.2000
0.2000  1.4000  1.1000  0.6000
 120.  *  2.2000  2.2000  2.2000  2.2000  3.2000  3.0000  2.5000  0.1000  0.1000
0.1000  1.4000  1.0000  0.5000
 125.  *  2.2000  2.1000  2.1000  2.0000  3.4000  2.7000  2.4000  0.1000  0.1000
0.1000  1.4000  1.1000  0.5000
 130.  *  2.3000  1.9000  1.9000  1.9000  3.1000  2.7000  2.3000  0.1000  0.1000
0.1000  1.4000  1.1000  0.5000
 135.  *  2.4000  1.8000  1.8000  1.8000  3.1000  2.8000  2.2000  0.1000  0.1000
0.1000  1.6000  1.1000  0.5000
 140.  *  2.6000  1.7000  1.7000  1.7000  3.1000  2.7000  2.1000  0.1000  0.1000
0.1000  1.6000  1.1000  0.5000
 145.  *  2.7000  1.7000  1.7000  1.7000  3.1000  2.7000  2.1000  0.1000  0.1000
0.1000  1.6000  1.1000  0.4000
 150.  *  2.8000  1.6000  1.6000  1.6000  3.0000  2.8000  1.9000  0.1000  0.1000
0.1000  1.6000  1.2000  0.3000
```

```
 155.  *  2.9000  1.6000  1.6000  1.6000  3.1000  2.7000  1.8000  0.0000  0.0000
0.0000  1.6000  1.1000  0.2000
 160.  *  2.9000  1.6000  1.6000  1.6000  3.2000  2.6000  1.7000  0.0000  0.0000
0.0000  1.6000  1.0000  0.1000
 165.  *  2.9000  1.6000  1.6000  1.6000  3.2000  2.6000  1.6000  0.0000  0.0000
0.0000  1.4000  0.9000  0.0000
 170.  *  2.7000  1.7000  1.6000  1.6000  3.0000  2.4000  1.6000  0.1000  0.0000
0.0000  1.2000  0.7000  0.0000
 175.  *  2.4000  2.1000  1.7000  1.6000  2.6000  2.2000  1.6000  0.4000  0.1000
0.0000  1.0000  0.5000  0.0000
 180.  *  2.0000  2.4000  2.0000  1.7000  2.4000  2.0000  1.7000  0.7000  0.2000
0.0000  0.7000  0.2000  0.0000
 185.  *  1.5000  2.6000  2.2000  1.6000  2.0000  1.7000  1.6000  1.0000  0.5000
0.0000  0.3000  0.1000  0.0000
 190.  *  1.0000  3.0000  2.4000  1.6000  1.7000  1.6000  1.6000  1.2000  0.7000
0.0000  0.1000  0.0000  0.0000
 195.  *  0.6000  3.2000  2.6000  1.6000  1.6000  1.6000  1.6000  1.4000  0.9000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.4000  3.1000  2.5000  1.7000  1.6000  1.6000  1.6000  1.6000  1.0000
0.1000  0.0000  0.0000  0.0000
 205.  *  0.3000  3.2000  2.7000  1.8000  1.6000  1.6000  1.6000  1.6000  1.1000
0.2000  0.0000  0.0000  0.0000
 210.  *  0.2000  3.1000  2.8000  1.9000  1.6000  1.6000  1.6000  1.6000  1.2000
0.3000  0.1000  0.1000  0.1000

                              PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - US 17
and S Gateway

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16       17       18       19       20       21       22       23       24
 25      26      27      28

------*------------------------------------------------------------------------------------
---------------------------
 215.  *  0.2000  3.2000  2.7000  2.1000  1.7000  1.7000  1.7000  1.6000  1.1000
0.4000  0.1000  0.1000  0.1000
 220.  *  0.1000  3.2000  2.7000  2.1000  1.7000  1.7000  1.7000  1.6000  1.1000
0.5000  0.1000  0.1000  0.1000
 225.  *  0.1000  3.2000  2.8000  2.2000  1.8000  1.8000  1.8000  1.6000  1.1000
0.5000  0.1000  0.1000  0.1000
 230.  *  0.1000  3.1000  2.8000  2.3000  1.9000  1.9000  1.9000  1.4000  1.1000
0.5000  0.1000  0.1000  0.1000
 235.  *  0.1000  3.4000  2.8000  2.5000  2.0000  2.0000  2.0000  1.4000  1.1000
0.5000  0.1000  0.1000  0.1000
```

```
 240.  *  0.1000  3.3000  3.1000  2.6000  2.1000  2.1000  2.1000  1.4000  1.1000
0.5000  0.1000  0.1000  0.1000
 245.  *  0.1000  3.5000  3.2000  2.7000  2.2000  2.2000  2.2000  1.4000  1.2000
0.6000  0.2000  0.2000  0.2000
 250.  *  0.0000  3.5000  3.4000  3.0000  2.3000  2.3000  2.3000  1.6000  1.3000
0.7000  0.3000  0.3000  0.3000
 255.  *  0.0000  3.8000  3.5000  3.0000  2.5000  2.5000  2.3000  1.9000  1.5000
0.9000  0.5000  0.5000  0.5000
 260.  *  0.0000  3.9000  3.4000  3.1000  2.5000  2.4000  2.2000  2.2000  1.8000
1.3000  1.0000  1.0000  0.8000
 265.  *  0.0000  3.6000  3.4000  3.0000  2.3000  2.2000  2.0000  2.8000  2.1000
1.8000  1.4000  1.4000  1.2000
 270.  *  0.0000  3.2000  2.9000  2.6000  1.9000  1.9000  1.6000  3.4000  2.9000
2.3000  1.8000  1.8000  1.6000
 275.  *  0.0000  2.6000  2.4000  2.1000  1.4000  1.4000  1.1000  3.5000  3.0000
2.8000  2.2000  2.2000  1.9000
 280.  *  0.0000  2.2000  1.8000  1.5000  0.9000  0.9000  0.8000  3.7000  3.3000
2.9000  2.6000  2.5000  2.3000
 285.  *  0.0000  1.9000  1.6000  1.0000  0.5000  0.5000  0.5000  3.7000  3.3000
2.9000  2.5000  2.5000  2.4000
 290.  *  0.0000  1.6000  1.3000  0.7000  0.3000  0.3000  0.3000  3.5000  3.3000
2.8000  2.3000  2.3000  2.3000
 295.  *  0.2000  1.5000  1.1000  0.6000  0.2000  0.2000  0.2000  3.3000  3.1000
2.6000  2.2000  2.2000  2.2000
 300.  *  0.3000  1.4000  1.0000  0.6000  0.2000  0.2000  0.2000  3.2000  3.0000
2.5000  2.1000  2.1000  2.1000
 305.  *  0.3000  1.4000  1.1000  0.5000  0.1000  0.1000  0.1000  3.1000  2.9000
2.4000  2.0000  2.0000  2.0000
 310.  *  0.3000  1.4000  1.1000  0.5000  0.1000  0.1000  0.1000  3.1000  2.8000
2.3000  1.9000  1.9000  1.9000
 315.  *  0.3000  1.6000  1.1000  0.5000  0.1000  0.1000  0.1000  3.3000  2.8000
2.2000  1.8000  1.8000  1.8000
 320.  *  0.3000  1.6000  1.1000  0.5000  0.1000  0.1000  0.1000  3.1000  2.7000
2.1000  1.8000  1.8000  1.8000
 325.  *  0.4000  1.6000  1.1000  0.4000  0.1000  0.1000  0.1000  3.1000  2.7000
2.0000  1.7000  1.7000  1.7000
 330.  *  0.4000  1.6000  1.2000  0.3000  0.1000  0.1000  0.1000  3.1000  2.8000
1.9000  1.6000  1.6000  1.6000
 335.  *  0.5000  1.7000  1.2000  0.3000  0.1000  0.1000  0.1000  3.2000  2.7000
1.8000  1.6000  1.6000  1.6000
 340.  *  0.6000  1.6000  1.0000  0.0000  0.0000  0.0000  0.0000  3.1000  2.6000
1.7000  1.6000  1.6000  1.6000
 345.  *  0.9000  1.4000  0.9000  0.0000  0.0000  0.0000  0.0000  3.2000  2.5000
1.6000  1.6000  1.6000  1.6000
 350.  *  1.5000  1.2000  0.7000  0.0000  0.1000  0.0000  0.0000  3.0000  2.4000
1.6000  1.7000  1.6000  1.6000
 355.  *  2.2000  1.0000  0.5000  0.0000  0.4000  0.1000  0.0000  2.6000  2.2000
1.6000  2.0000  1.7000  1.6000
```

```
 360.  *  2.9000  0.7000  0.2000  0.0000  0.7000  0.2000  0.0000  2.3000  1.9000
1.6000  2.4000  2.0000  1.7000

------*---------------------------------------------------------------------------
---------------------------
 MAX   *  3.7000  3.9000  3.5000  3.1000  3.8000  3.4000  3.0000  3.7000  3.3000
2.9000  3.9000  3.5000  2.9000
 DEGR. *     10     260     255     260     105     105     105     280     280
280      75      75      75

 THE HIGHEST CONCENTRATION OF   5.1000 PPM OCCURRED AT RECEPTOR    13.
```

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,4,4,4,2200,2200,2200,2200,2200,2200,2200,2200,297.2,641.25,481.75,108.5,297.2,641.
25,481.75,108.5,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0
,1200,-1200,0,0,0,0,0,0,0,0,30,10,7,7,7.08,7.08,7.59,7.59,7.23,7.23
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,46.6,5.9
'N Leg, E Side - 25 m',70.0,118.6,5.9
'N Leg, E Side - 50 m',70.0,200.6,5.9
'N Leg, E Side-Midblk',70.0,636.6,5.9
'N Leg, W Side-Corner',-58.0,100.5,5.9
'N Leg, W Side - 25 m',-58.0,172.5,5.9
'N Leg, W Side - 50 m',-58.0,254.5,5.9
'N Leg, W Side-Midblk',-58.0,690.5,5.9
'S Leg, E Side-Corner',70.0,-71.2,5.9
'S Leg, E Side - 25 m',70.0,-143.3,5.9
'S Leg, E Side - 50 m',70.0,-225.3,5.9
'S Leg, E Side-Midblk',70.0,-661.2,5.9
'S Leg, W Side-Corner',-58.0,-33.5,5.9
'S Leg, W Side - 25 m',-58.0,-105.5,5.9
'S Leg, W Side - 50 m',-58.0,-187.5,5.9
'S Leg, W Side-Midblk',-58.0,-623.5,5.9
'E Leg, N Side - 25 m',140.9,34.0,5.9
'E Leg, N Side - 50 m',221.7,19.8,5.9
'E Leg, N Side-Midblk',651.0,-55.9,5.9
'W Leg, N Side - 25 m',-120.4,136.5,5.9
'W Leg, N Side - 50 m',-191.4,177.5,5.9
'W Leg, N Side-Midblk',-569.0,395.5,5.9
'E Leg, S Side - 25 m',140.9,-83.7,5.9
'E Leg, S Side - 50 m',221.7,-98.0,5.9
'E Leg, S Side-Midblk',651.0,-173.7,5.9
'W Leg, S Side - 25 m',-120.4,2.5,5.9
'W Leg, S Side - 50 m',-191.4,43.5,5.9
'W Leg, S Side-Midblk',-569.0,261.5,5.9
'2022 NO BUILD - SR610 and US 1',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,2565,7,0.0,67.7
2
'N Leg App - Queue','AG',-24,48,-24,1200,0.0,48.0,4
120,68,2,2565,7.59,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,1486,7,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,1486,7,0.0,79.7
2
'S Leg App - Queue','AG',30,-48,30,-1200,0.0,60.0,5
120,68,2,1486,7.59,1900,1,3
1
```

```
'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,2565,7,0.0,67.7
1
'E Leg App - FreeFlow','AG',8,23,1186,-185,434,7.08,0.0,67.7
2
'E Leg App - Queue','AG',63,13,1186,-185,0.0,48.0,4
120,68,2,434,7.23,1900,1,3
1
'E Leg Dep - FreeFlow','AG',-8,-23,1178,-232,1927,7.08,0.0,67.7
1
'W Leg App - FreeFlow','AG',-8,-23,-1051,579,1927,7.08,0.0,67.7
2
'W Leg App - Queue','AG',-54,3,-1051,579,0.0,48.0,4
120,68,2,1927,7.23,1900,1,3
1
'W Leg Dep - FreeFlow','AG',8,23,-1027,621,434,7.08,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2022 NoBuild SR610 and US 1 OUT

*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: Fred Ex AQ Analysis RUN: 2022 NO BUILD - SR610 and US 1

DATE : 8/15/17
TIME : 10:22:20

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-24.0	0.0	-24.0	1200.0	1200.	360.	AG	2565.	7.0	0.0	67.7		
2. N Leg App - Queue	-24.0	48.0	-24.0	299.8	252.	360.	AG	46.	100.0	0.0	48.0	0.84	12.8
3. N Leg Dep - FreeFlow	30.0	0.0	30.0	1200.0	1200.	360.	AG	1486.	7.0	0.0	79.7		
4. S Leg App - FreeFlow	30.0	0.0	30.0	-1200.0	1200.	180.	AG	1486.	7.0	0.0	79.7		
5. S Leg App - Queue	30.0	-48.0	30.0	-158.4	110.	180.	AG	58.	100.0	0.0	60.0	0.39	5.6
6. S Leg Dep - FreeFlow	-24.0	0.0	-24.0	-1200.0	1200.	180.	AG	2565.	7.0	0.0	67.7		
7. E Leg App - FreeFlow	8.0	23.0	1186.0	-185.0	1196.	100.	AG	434.	7.1	0.0	67.7		
8. E Leg App - Queue	63.0	13.0	102.5	6.0	40.	100.	AG	44.	100.0	0.0	48.0	0.14	2.0
9. E Leg Dep - FreeFlow	-8.0	-23.0	1178.0	-232.0	1204.	100.	AG	1927.	7.1	0.0	67.7		
10. W Leg App - FreeFlow	-8.0	-23.0	-1051.0	579.0	1204.								

```
300. AG   1927.   7.1   0.0 67.7
      11. W Leg App - Queue   *    -54.0       3.0    -208.9      92.5 *     179.
300. AG     44. 100.0   0.0 48.0 0.63   9.1
      12. W Leg Dep - FreeFlow*      8.0      23.0   -1027.0     621.0 *    1195.
300. AG    434.   7.1   0.0 67.7
```

PAGE 2

JOB: Fred Ex AQ Analysis RUN: 2022 NO BUILD - SR610 and US 1

DATE : 8/15/17
TIME : 10:22:20

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. N Leg App - Queue	120	68	2.0	2565	1900	7.59	1	3
5. S Leg App - Queue	120	68	2.0	1486	1900	7.59	1	3
8. E Leg App - Queue	120	68	2.0	434	1900	7.23	1	3
11. W Leg App - Queue	120	68	2.0	1927	1900	7.23	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	70.0	46.6	5.9
2. N Leg, E Side - 25 m	70.0	118.6	5.9
3. N Leg, E Side - 50 m	70.0	200.6	5.9
4. N Leg, E Side-Midblk	70.0	636.6	5.9
5. N Leg, W Side-Corner	-58.0	100.5	5.9
6. N Leg, W Side - 25 m	-58.0	172.5	5.9
7. N Leg, W Side - 50 m	-58.0	254.5	5.9
8. N Leg, W Side-Midblk	-58.0	690.5	5.9
9. S Leg, E Side-Corner	70.0	-71.2	5.9
10. S Leg, E Side - 25 m	70.0	-143.3	5.9

```
     11. S Leg, E Side - 50 m *        70.0     -225.3        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -661.2        5.9   *
     13. S Leg, W Side-Corner *       -58.0      -33.5        5.9   *
     14. S Leg, W Side - 25 m *       -58.0     -105.5        5.9   *
     15. S Leg, W Side - 50 m *       -58.0     -187.5        5.9   *
     16. S Leg, W Side-Midblk *       -58.0     -623.5        5.9   *
     17. E Leg, N Side - 25 m *       140.9       34.0        5.9   *
     18. E Leg, N Side - 50 m *       221.7       19.8        5.9   *
     19. E Leg, N Side-Midblk *       651.0      -55.9        5.9   *
     20. W Leg, N Side - 25 m *      -120.4      136.5        5.9   *
     21. W Leg, N Side - 50 m *      -191.4      177.5        5.9   *
     22. W Leg, N Side-Midblk *      -569.0      395.5        5.9   *
     23. E Leg, S Side - 25 m *       140.9      -83.7        5.9   *
     24. E Leg, S Side - 50 m *       221.7      -98.0        5.9   *
     25. E Leg, S Side-Midblk *       651.0     -173.7        5.9   *
     26. W Leg, S Side - 25 m *      -120.4        2.5        5.9   *
     27. W Leg, S Side - 50 m *      -191.4       43.5        5.9   *
     28. W Leg, S Side-Midblk *      -569.0      261.5        5.9   *
```

PAGE 3

JOB: Fred Ex AQ Analysis RUN: 2022 NO BUILD - SR610 and US 1

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5.	0.4000	0.4000	0.4000	0.4000	1.2000	1.2000	1.1000	0.9000	0.9000	0.7000	0.5000	0.7000	1.8000	1.4000	1.2000
10.	0.3000	0.3000	0.3000	0.2000	1.2000	1.2000	1.1000	1.0000	0.8000	0.5000	0.4000	0.3000	1.8000	1.5000	1.2000
15.	0.1000	0.1000	0.1000	0.1000	1.3000	1.2000	1.1000	1.1000	0.7000	0.4000	0.2000	0.2000	1.7000	1.3000	1.5000
20.	0.1000	0.1000	0.1000	0.1000	1.2000	1.1000	1.1000	1.0000	0.5000	0.3000	0.2000	0.2000	1.6000	1.4000	1.3000

```
  25.  *  0.1000  0.1000  0.1000  0.1000  1.2000  1.1000  1.1000  1.0000  0.5000
0.2000  0.2000  0.2000  1.6000  1.3000  1.1000
  30.  *  0.0000  0.0000  0.0000  0.0000  1.1000  1.0000  1.0000  0.9000  0.5000
0.2000  0.1000  0.1000  1.6000  1.3000  1.3000
  35.  *  0.0000  0.0000  0.0000  0.0000  1.1000  1.1000  1.0000  0.9000  0.5000
0.2000  0.1000  0.1000  1.3000  1.1000  1.2000
  40.  *  0.0000  0.0000  0.0000  0.0000  1.0000  0.9000  0.9000  0.8000  0.5000
0.2000  0.1000  0.1000  1.2000  1.2000  1.0000
  45.  *  0.0000  0.0000  0.0000  0.0000  0.9000  0.9000  0.9000  0.8000  0.5000
0.2000  0.1000  0.1000  1.3000  1.0000  1.1000
  50.  *  0.0000  0.0000  0.0000  0.0000  0.9000  0.9000  0.9000  0.8000  0.5000
0.2000  0.2000  0.1000  1.3000  1.0000  1.1000
  55.  *  0.0000  0.0000  0.0000  0.0000  0.9000  0.9000  0.9000  0.8000  0.6000
0.2000  0.2000  0.1000  1.2000  1.0000  1.1000
  60.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.7000  0.6000
0.2000  0.2000  0.1000  1.1000  1.0000  1.0000
  65.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.7000  0.6000
0.2000  0.2000  0.0000  1.4000  1.1000  1.0000
  70.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.7000  0.7000
0.3000  0.2000  0.0000  1.4000  1.1000  1.0000
  75.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.7000  0.7000
0.3000  0.2000  0.0000  1.4000  1.1000  0.9000
  80.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.7000  0.8000
0.3000  0.2000  0.0000  1.4000  1.1000  0.9000
  85.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.7000  0.8000
0.3000  0.1000  0.0000  1.6000  1.1000  0.9000
  90.  *  0.2000  0.0000  0.0000  0.0000  0.9000  0.9000  0.9000  0.8000  0.8000
0.2000  0.1000  0.0000  1.6000  1.2000  0.9000
  95.  *  0.2000  0.0000  0.0000  0.0000  0.9000  0.8000  0.8000  0.7000  0.8000
0.2000  0.1000  0.0000  1.6000  1.0000  0.8000
 100.  *  0.3000  0.1000  0.0000  0.0000  1.0000  0.9000  0.8000  0.7000  0.6000
0.1000  0.0000  0.0000  1.5000  1.0000  0.8000
 105.  *  0.4000  0.1000  0.1000  0.0000  1.1000  0.9000  0.8000  0.7000  0.5000
0.1000  0.0000  0.0000  1.5000  0.9000  0.7000
 110.  *  0.5000  0.2000  0.1000  0.0000  1.1000  0.9000  0.9000  0.7000  0.3000
0.0000  0.0000  0.0000  1.4000  0.9000  0.7000
 115.  *  0.5000  0.3000  0.1000  0.0000  1.1000  1.0000  0.9000  0.7000  0.2000
0.0000  0.0000  0.0000  1.2000  0.8000  0.7000
 120.  *  0.4000  0.3000  0.1000  0.0000  1.2000  1.0000  0.9000  0.7000  0.1000
0.0000  0.0000  0.0000  1.1000  0.8000  0.7000
 125.  *  0.5000  0.3000  0.1000  0.0000  1.2000  1.1000  1.0000  0.8000  0.1000
0.0000  0.0000  0.0000  1.1000  0.8000  0.8000
 130.  *  0.5000  0.3000  0.1000  0.0000  1.4000  1.1000  1.0000  0.8000  0.1000
0.0000  0.0000  0.0000  1.1000  0.8000  0.8000
 135.  *  0.5000  0.3000  0.1000  0.0000  1.2000  1.1000  1.0000  0.9000  0.1000
0.0000  0.0000  0.0000  0.9000  0.8000  0.8000
 140.  *  0.5000  0.3000  0.1000  0.1000  1.3000  1.1000  1.1000  0.9000  0.0000
0.0000  0.0000  0.0000  0.9000  0.8000  0.8000
```

```
 145.  *  0.5000  0.3000  0.1000  0.1000  1.4000  1.2000  1.2000  1.0000  0.0000
0.0000  0.0000  0.0000  1.0000  0.9000  0.9000
 150.  *  0.5000  0.3000  0.1000  0.1000  1.5000  1.2000  1.2000  1.0000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
 155.  *  0.5000  0.2000  0.2000  0.2000  1.4000  1.2000  1.4000  1.1000  0.1000
0.1000  0.1000  0.1000  1.0000  1.0000  1.0000
 160.  *  0.6000  0.3000  0.2000  0.2000  1.5000  1.5000  1.3000  1.1000  0.1000
0.1000  0.1000  0.1000  1.0000  1.0000  1.0000
 165.  *  0.6000  0.4000  0.3000  0.2000  1.6000  1.6000  1.5000  1.2000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 170.  *  0.9000  0.5000  0.4000  0.3000  1.5000  1.3000  1.5000  1.3000  0.3000
0.3000  0.3000  0.2000  1.1000  1.1000  1.1000
 175.  *  0.8000  0.6000  0.5000  0.6000  1.4000  1.4000  1.2000  1.1000  0.4000
0.4000  0.4000  0.4000  1.1000  1.1000  1.1000
 180.  *  1.0000  0.8000  0.8000  0.7000  1.3000  1.2000  1.1000  1.0000  0.6000
0.6000  0.6000  0.5000  0.9000  0.9000  0.9000
 185.  *  1.3000  1.0000  0.9000  0.8000  1.2000  1.1000  0.9000  0.8000  0.9000
0.8000  0.8000  0.6000  0.7000  0.7000  0.7000
 190.  *  1.3000  1.0000  1.0000  1.0000  0.8000  0.8000  0.5000  0.6000  0.9000
0.8000  0.8000  0.7000  0.4000  0.4000  0.4000
 195.  *  1.4000  1.0000  1.0000  0.9000  0.6000  0.5000  0.4000  0.4000  1.0000
0.9000  0.9000  0.8000  0.3000  0.3000  0.3000
 200.  *  1.3000  0.9000  1.1000  0.8000  0.6000  0.4000  0.2000  0.3000  1.0000
0.9000  0.9000  0.7000  0.2000  0.2000  0.2000
 205.  *  1.3000  1.0000  1.0000  0.9000  0.5000  0.3000  0.2000  0.2000  0.9000
0.8000  0.8000  0.7000  0.1000  0.1000  0.1000
 210.  *  1.1000  0.9000  0.8000  0.9000  0.5000  0.3000  0.2000  0.2000  0.9000
0.8000  0.8000  0.7000  0.1000  0.1000  0.1000
```



```
 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  1.0000  1.0000  1.0000  0.8000  0.5000  0.4000  0.2000  0.2000  0.9000
0.7000  0.7000  0.7000  0.1000  0.1000  0.1000
 220.  *  1.1000  0.8000  0.8000  0.8000  0.5000  0.4000  0.2000  0.2000  0.9000
0.7000  0.7000  0.7000  0.1000  0.1000  0.1000
 225.  *  1.0000  0.7000  0.8000  0.7000  0.5000  0.4000  0.2000  0.2000  0.8000
0.6000  0.6000  0.6000  0.1000  0.1000  0.1000
```

230. * 0.9000 0.8000 0.8000 0.7000 0.5000 0.4000 0.2000 0.2000 0.8000
0.6000 0.6000 0.6000 0.1000 0.1000 0.1000
235. * 0.9000 0.8000 0.8000 0.7000 0.5000 0.3000 0.1000 0.1000 0.8000
0.6000 0.6000 0.6000 0.0000 0.0000 0.0000
240. * 1.1000 0.8000 0.8000 0.7000 0.5000 0.3000 0.1000 0.1000 0.8000
0.7000 0.6000 0.6000 0.0000 0.0000 0.0000
245. * 1.0000 0.9000 0.8000 0.7000 0.5000 0.3000 0.1000 0.1000 0.8000
0.7000 0.6000 0.6000 0.0000 0.0000 0.0000
250. * 0.9000 0.9000 0.8000 0.7000 0.5000 0.3000 0.1000 0.1000 0.7000
0.7000 0.6000 0.6000 0.0000 0.0000 0.0000
255. * 0.9000 0.9000 0.8000 0.7000 0.5000 0.3000 0.1000 0.1000 0.8000
0.7000 0.6000 0.6000 0.0000 0.0000 0.0000
260. * 1.0000 1.0000 0.8000 0.7000 0.5000 0.3000 0.1000 0.0000 0.9000
0.7000 0.6000 0.6000 0.0000 0.0000 0.0000
265. * 1.1000 1.0000 0.8000 0.6000 0.4000 0.3000 0.1000 0.0000 0.9000
0.7000 0.6000 0.6000 0.1000 0.0000 0.0000
270. * 1.2000 1.0000 0.8000 0.6000 0.4000 0.3000 0.1000 0.0000 1.0000
0.7000 0.6000 0.6000 0.1000 0.0000 0.0000
275. * 1.0000 1.0000 0.8000 0.6000 0.4000 0.3000 0.1000 0.0000 1.0000
0.7000 0.6000 0.6000 0.1000 0.0000 0.0000
280. * 1.1000 1.0000 0.8000 0.6000 0.4000 0.3000 0.1000 0.0000 1.1000
0.7000 0.6000 0.6000 0.1000 0.0000 0.0000
285. * 1.1000 1.0000 0.8000 0.6000 0.5000 0.3000 0.1000 0.0000 1.2000
0.7000 0.6000 0.6000 0.2000 0.0000 0.0000
290. * 1.0000 0.8000 0.8000 0.6000 0.5000 0.3000 0.1000 0.0000 1.3000
0.8000 0.6000 0.6000 0.3000 0.0000 0.0000
295. * 1.0000 0.8000 0.8000 0.6000 0.4000 0.1000 0.1000 0.0000 1.4000
1.0000 0.7000 0.6000 0.5000 0.1000 0.0000
300. * 0.9000 0.8000 0.7000 0.6000 0.3000 0.1000 0.0000 0.0000 1.6000
1.0000 0.7000 0.6000 0.7000 0.1000 0.1000
305. * 0.9000 0.7000 0.7000 0.6000 0.2000 0.0000 0.0000 0.0000 1.6000
1.1000 0.7000 0.6000 0.9000 0.2000 0.1000
310. * 0.7000 0.7000 0.7000 0.6000 0.3000 0.1000 0.1000 0.1000 1.6000
1.1000 0.8000 0.6000 0.9000 0.4000 0.2000
315. * 0.7000 0.7000 0.6000 0.6000 0.1000 0.1000 0.1000 0.1000 1.6000
1.4000 0.8000 0.6000 0.9000 0.4000 0.3000
320. * 0.8000 0.8000 0.7000 0.7000 0.1000 0.1000 0.1000 0.1000 1.5000
1.2000 0.8000 0.8000 0.8000 0.4000 0.3000
325. * 0.8000 0.8000 0.7000 0.7000 0.1000 0.1000 0.1000 0.1000 1.3000
1.2000 1.1000 0.8000 0.8000 0.4000 0.3000
330. * 0.9000 0.9000 0.8000 0.7000 0.1000 0.1000 0.1000 0.1000 1.3000
1.2000 1.0000 0.9000 0.8000 0.5000 0.3000
335. * 0.9000 0.8000 0.8000 0.7000 0.1000 0.1000 0.1000 0.1000 1.3000
1.2000 1.2000 0.9000 0.8000 0.5000 0.3000
340. * 0.9000 0.9000 0.9000 0.7000 0.2000 0.2000 0.2000 0.2000 1.4000
1.2000 1.2000 0.8000 0.8000 0.6000 0.3000
345. * 0.9000 0.9000 0.9000 0.8000 0.3000 0.3000 0.3000 0.2000 1.4000
1.1000 1.2000 1.0000 1.0000 0.5000 0.5000

```
 350.  *  0.8000  0.8000  0.8000  0.7000  0.4000  0.4000  0.4000  0.4000  1.3000
1.1000  1.2000  1.0000  1.0000  0.7000  0.7000
 355.  *  0.8000  0.8000  0.8000  0.6000  0.8000  0.7000  0.7000  0.5000  1.3000
1.1000  0.9000  0.8000  1.4000  0.9000  0.9000
 360.  *  0.6000  0.6000  0.6000  0.5000  1.0000  1.0000  0.9000  0.8000  1.1000
0.8000  0.9000  0.7000  1.6000  1.1000  1.0000

------*--------------------------------------------------------------------------
-----------------------------------------
 MAX   *  1.4000  1.0000  1.1000  1.0000  1.6000  1.6000  1.5000  1.3000  1.6000
1.4000  1.2000  1.0000  1.8000  1.5000  1.5000
 DEGR. *    195     185     200     190     165     165     165     170     300
315     335     345       5      10      15
```

```
                              PAGE  5
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NO BUILD -
SR610 and US 1

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
-------------------------
   5.  *  1.1000  0.1000  0.0000  0.0000  0.4000  0.1000  0.0000  0.6000  0.5000
0.5000  1.0000  0.7000  0.5000
  10.  *  1.3000  0.0000  0.0000  0.0000  0.4000  0.3000  0.0000  0.5000  0.5000
0.5000  1.0000  0.9000  0.5000
  15.  *  1.2000  0.0000  0.0000  0.0000  0.5000  0.3000  0.0000  0.5000  0.5000
0.5000  1.1000  0.9000  0.5000
  20.  *  1.1000  0.0000  0.0000  0.0000  0.6000  0.3000  0.0000  0.5000  0.5000
0.5000  1.3000  0.9000  0.5000
  25.  *  1.1000  0.0000  0.0000  0.0000  0.6000  0.3000  0.0000  0.5000  0.5000
0.5000  1.3000  0.9000  0.5000
  30.  *  1.0000  0.0000  0.0000  0.0000  0.6000  0.3000  0.0000  0.5000  0.5000
0.5000  1.3000  0.9000  0.6000
```

35. * 1.0000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.5000 0.5000
0.5000 1.1000 0.9000 0.6000
40. * 0.9000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.5000 0.5000
0.5000 1.1000 0.9000 0.6000
45. * 0.9000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.5000 0.5000
0.5000 1.1000 0.9000 0.6000
50. * 0.9000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.5000 0.5000
0.5000 1.1000 0.9000 0.6000
55. * 0.9000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.6000 0.6000
0.6000 1.0000 0.9000 0.6000
60. * 0.8000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.6000 0.6000
0.6000 1.0000 0.9000 0.6000
65. * 0.8000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.6000 0.6000
0.6000 1.0000 0.9000 0.6000
70. * 0.7000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.7000 0.7000
0.7000 0.9000 0.9000 0.6000
75. * 0.7000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.7000 0.7000
0.7000 1.0000 1.0000 0.7000
80. * 0.7000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.8000 0.8000
0.7000 1.1000 1.0000 0.7000
85. * 0.7000 0.0000 0.0000 0.0000 0.5000 0.3000 0.1000 0.8000 0.8000
0.8000 1.3000 1.1000 0.7000
90. * 0.8000 0.2000 0.2000 0.1000 0.5000 0.3000 0.1000 0.8000 0.8000
0.6000 1.5000 1.0000 0.8000
95. * 0.7000 0.2000 0.2000 0.2000 0.6000 0.3000 0.1000 0.8000 0.8000
0.6000 1.5000 1.2000 0.8000
100. * 0.7000 0.3000 0.3000 0.2000 0.6000 0.4000 0.1000 0.6000 0.6000
0.5000 1.4000 1.2000 0.9000
105. * 0.7000 0.4000 0.4000 0.3000 0.6000 0.4000 0.1000 0.5000 0.5000
0.4000 1.3000 1.2000 1.0000
110. * 0.7000 0.5000 0.5000 0.3000 0.8000 0.5000 0.3000 0.3000 0.3000
0.3000 1.1000 1.1000 1.0000
115. * 0.7000 0.5000 0.5000 0.4000 0.9000 0.6000 0.4000 0.2000 0.2000
0.2000 0.9000 1.0000 0.7000
120. * 0.7000 0.4000 0.4000 0.4000 0.9000 0.6000 0.4000 0.1000 0.1000
0.1000 0.8000 0.9000 0.7000
125. * 0.8000 0.4000 0.4000 0.4000 0.8000 0.7000 0.4000 0.1000 0.1000
0.1000 0.7000 0.7000 0.5000
130. * 0.8000 0.4000 0.4000 0.4000 1.0000 0.8000 0.5000 0.1000 0.1000
0.1000 0.6000 0.5000 0.4000
135. * 0.8000 0.4000 0.4000 0.4000 0.9000 0.7000 0.6000 0.1000 0.1000
0.1000 0.5000 0.4000 0.4000
140. * 0.8000 0.4000 0.4000 0.4000 0.7000 0.7000 0.5000 0.0000 0.0000
0.0000 0.5000 0.4000 0.3000
145. * 0.9000 0.4000 0.4000 0.4000 0.9000 0.8000 0.6000 0.0000 0.0000
0.0000 0.5000 0.4000 0.2000
150. * 0.9000 0.4000 0.4000 0.4000 0.8000 0.8000 0.5000 0.0000 0.0000
0.0000 0.7000 0.4000 0.2000

```
 155.  *  1.0000  0.4000  0.4000  0.4000  0.8000  0.8000  0.5000  0.0000  0.0000
0.0000  0.6000  0.3000  0.2000
 160.  *  1.0000  0.4000  0.4000  0.4000  1.0000  0.8000  0.5000  0.0000  0.0000
0.0000  0.6000  0.3000  0.1000
 165.  *  1.1000  0.4000  0.4000  0.4000  0.9000  0.8000  0.4000  0.0000  0.0000
0.0000  0.5000  0.3000  0.0000
 170.  *  1.1000  0.4000  0.4000  0.4000  0.9000  0.8000  0.4000  0.0000  0.0000
0.0000  0.4000  0.3000  0.0000
 175.  *  0.9000  0.4000  0.3000  0.3000  0.9000  0.7000  0.4000  0.1000  0.0000
0.0000  0.4000  0.1000  0.0000
 180.  *  0.8000  0.5000  0.3000  0.3000  0.8000  0.6000  0.4000  0.2000  0.0000
0.0000  0.3000  0.1000  0.0000
 185.  *  0.5000  0.5000  0.5000  0.3000  0.6000  0.4000  0.4000  0.2000  0.2000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.4000  0.7000  0.5000  0.3000  0.5000  0.4000  0.4000  0.4000  0.2000
0.0000  0.1000  0.0000  0.0000
 195.  *  0.2000  0.7000  0.5000  0.3000  0.4000  0.3000  0.3000  0.4000  0.2000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.2000  0.7000  0.6000  0.3000  0.4000  0.3000  0.3000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.1000  0.7000  0.6000  0.3000  0.4000  0.3000  0.3000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 210.  *  0.1000  0.7000  0.6000  0.3000  0.4000  0.3000  0.3000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000

                             PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NO BUILD -
SR610 and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*---------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  0.9000  0.7000  0.5000  0.4000  0.3000  0.3000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 220.  *  0.1000  0.9000  0.7000  0.5000  0.4000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 225.  *  0.1000  0.9000  0.7000  0.5000  0.4000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 230.  *  0.1000  0.6000  0.7000  0.5000  0.4000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 235.  *  0.0000  0.7000  0.7000  0.5000  0.5000  0.4000  0.4000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
```

```
 240.  *  0.0000  0.8000  0.7000  0.5000  0.4000  0.4000  0.4000  0.5000  0.3000
0.1000  0.0000  0.0000  0.0000
 245.  *  0.0000  0.9000  0.6000  0.5000  0.4000  0.4000  0.4000  0.5000  0.3000
0.2000  0.0000  0.0000  0.0000
 250.  *  0.0000  0.9000  0.5000  0.5000  0.4000  0.4000  0.4000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000
 255.  *  0.0000  0.8000  0.6000  0.5000  0.4000  0.4000  0.4000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000
 260.  *  0.0000  0.9000  0.7000  0.5000  0.4000  0.4000  0.4000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000
 265.  *  0.0000  0.7000  0.7000  0.6000  0.4000  0.4000  0.4000  0.6000  0.3000
0.3000  0.1000  0.1000  0.1000
 270.  *  0.0000  0.6000  0.6000  0.4000  0.4000  0.4000  0.4000  0.7000  0.4000
0.4000  0.1000  0.1000  0.1000
 275.  *  0.0000  0.7000  0.6000  0.4000  0.4000  0.4000  0.4000  0.9000  0.6000
0.5000  0.1000  0.1000  0.1000
 280.  *  0.0000  0.8000  0.5000  0.4000  0.4000  0.4000  0.4000  0.9000  0.7000
0.6000  0.1000  0.1000  0.1000
 285.  *  0.0000  0.8000  0.5000  0.4000  0.5000  0.5000  0.4000  0.9000  0.9000
0.7000  0.2000  0.2000  0.2000
 290.  *  0.0000  0.7000  0.4000  0.3000  0.5000  0.5000  0.3000  1.0000  1.0000
1.0000  0.3000  0.3000  0.3000
 295.  *  0.0000  0.7000  0.4000  0.1000  0.4000  0.4000  0.3000  1.2000  1.1000
1.0000  0.5000  0.5000  0.4000
 300.  *  0.0000  0.5000  0.4000  0.1000  0.3000  0.3000  0.2000  1.2000  1.0000
0.9000  0.7000  0.6000  0.5000
 305.  *  0.0000  0.5000  0.3000  0.1000  0.2000  0.2000  0.2000  1.2000  0.9000
0.8000  0.9000  0.8000  0.6000
 310.  *  0.1000  0.4000  0.3000  0.1000  0.2000  0.2000  0.1000  1.2000  0.9000
0.8000  0.9000  0.8000  0.8000
 315.  *  0.1000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  1.0000  0.9000
0.7000  0.9000  0.8000  0.8000
 320.  *  0.1000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  1.0000  0.9000
0.7000  0.8000  0.7000  0.7000
 325.  *  0.2000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  1.0000  0.9000
0.7000  0.8000  0.8000  0.7000
 330.  *  0.2000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.9000  0.8000
0.6000  0.8000  0.8000  0.7000
 335.  *  0.2000  0.4000  0.3000  0.0000  0.0000  0.0000  0.0000  0.9000  0.8000
0.5000  0.7000  0.7000  0.6000
 340.  *  0.3000  0.4000  0.3000  0.0000  0.0000  0.0000  0.0000  0.9000  0.8000
0.5000  0.7000  0.7000  0.6000
 345.  *  0.4000  0.4000  0.2000  0.0000  0.0000  0.0000  0.0000  0.9000  0.7000
0.5000  0.7000  0.7000  0.6000
 350.  *  0.6000  0.4000  0.2000  0.0000  0.1000  0.0000  0.0000  0.9000  0.7000
0.5000  0.7000  0.6000  0.5000
 355.  *  0.8000  0.2000  0.2000  0.0000  0.1000  0.0000  0.0000  0.7000  0.7000
0.5000  0.7000  0.6000  0.5000
```

```
 360.  *  1.0000  0.2000  0.0000  0.0000  0.3000  0.1000  0.0000  0.7000  0.5000
0.5000  0.9000  0.7000  0.5000

------*--------------------------------------------------------------------------
--------------------------
 MAX   *  1.3000  0.9000  0.7000  0.6000  1.0000  0.8000  0.6000  1.2000  1.1000
1.0000  1.5000  1.2000  1.0000
 DEGR. *     10     215     215     265     130     130     135     295     295
290      90      95     105

 THE HIGHEST CONCENTRATION OF   1.8000 PPM OCCURRED AT RECEPTOR    13.
```

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,4,4,4,2200,2200,2200,2200,2200,2200,2200,2200,1230,1230,1230,1230,1230,1230,1230,1
230,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,
0,0,0,0,0,0,0,0,30,10,7,7,7.08,7.08,7.59,7.59,7.23,7.23
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,46.6,5.9
'N Leg, E Side - 25 m',70.0,118.6,5.9
'N Leg, E Side - 50 m',70.0,200.6,5.9
'N Leg, E Side-Midblk',70.0,636.6,5.9
'N Leg, W Side-Corner',-58.0,100.5,5.9
'N Leg, W Side - 25 m',-58.0,172.5,5.9
'N Leg, W Side - 50 m',-58.0,254.5,5.9
'N Leg, W Side-Midblk',-58.0,690.5,5.9
'S Leg, E Side-Corner',70.0,-71.2,5.9
'S Leg, E Side - 25 m',70.0,-143.3,5.9
'S Leg, E Side - 50 m',70.0,-225.3,5.9
'S Leg, E Side-Midblk',70.0,-661.2,5.9
'S Leg, W Side-Corner',-58.0,-33.5,5.9
'S Leg, W Side - 25 m',-58.0,-105.5,5.9
'S Leg, W Side - 50 m',-58.0,-187.5,5.9
'S Leg, W Side-Midblk',-58.0,-623.5,5.9
'E Leg, N Side - 25 m',140.9,34.0,5.9
'E Leg, N Side - 50 m',221.7,19.8,5.9
'E Leg, N Side-Midblk',651.0,-55.9,5.9
'W Leg, N Side - 25 m',-120.4,136.5,5.9
'W Leg, N Side - 50 m',-191.4,177.5,5.9
'W Leg, N Side-Midblk',-569.0,395.5,5.9
'E Leg, S Side - 25 m',140.9,-83.7,5.9
'E Leg, S Side - 50 m',221.7,-98.0,5.9
'E Leg, S Side-Midblk',651.0,-173.7,5.9
'W Leg, S Side - 25 m',-120.4,2.5,5.9
'W Leg, S Side - 50 m',-191.4,43.5,5.9
'W Leg, S Side-Midblk',-569.0,261.5,5.9
'2022 - Garrisonville Rd (SR610) and US 1',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,4920,7,0.0,67.7
2
'N Leg App - Queue','AG',-24,48,-24,1200,0.0,48.0,4
120,68,2,4920,7.59,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,6150,7,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,6150,7,0.0,79.7
2
'S Leg App - Queue','AG',30,-48,30,-1200,0.0,60.0,5
120,68,2,6150,7.59,1900,1,3
1
```

```
'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,4920,7,0.0,67.7
1
'E Leg App - FreeFlow','AG',8,23,1186,-185,4920,7.08,0.0,67.7
2
'E Leg App - Queue','AG',63,13,1186,-185,0.0,48.0,4
120,68,2,4920,7.23,1900,1,3
1
'E Leg Dep - FreeFlow','AG',-8,-23,1178,-232,4920,7.08,0.0,67.7
1
'W Leg App - FreeFlow','AG',-8,-23,-1051,579,4920,7.08,0.0,67.7
2
'W Leg App - Queue','AG',-54,3,-1051,579,0.0,48.0,4
120,68,2,4920,7.23,1900,1,3
1
'W Leg Dep - FreeFlow','AG',8,23,-1027,621,4920,7.08,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2022 SR610 and US 1 OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface
↑ CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: Fred Ex AQ Analysis RUN: 2022 - Garrisonville Rd (SR610) and US 1

DATE : 8/15/17
TIME : 10: 4:58

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	*	-24.0	0.0	-24.0	1200.0	*	1200.	360.	AG	4920.	7.0	0.0	67.7		
2. N Leg App - Queue	*	-24.0	48.0	-24.0	5348.1	*	5300.	360.	AG	46.	100.0	0.0	48.0	1.62	269.2
3. N Leg Dep - FreeFlow	*	30.0	0.0	30.0	1200.0	*	1200.	360.	AG	6150.	7.0	0.0	79.7		
4. S Leg App - FreeFlow	*	30.0	0.0	30.0	-1200.0	*	1200.	180.	AG	6150.	7.0	0.0	79.7		
5. S Leg App - Queue	*	30.0	-48.0	30.0	-5348.1	*	5300.	180.	AG	58.	100.0	0.0	60.0	1.62	269.2
6. S Leg Dep - FreeFlow	*	-24.0	0.0	-24.0	-1200.0	*	1200.	180.	AG	4920.	7.0	0.0	67.7		
7. E Leg App - FreeFlow	*	8.0	23.0	1186.0	-185.0	*	1196.	100.	AG	4920.	7.1	0.0	67.7		
8. E Leg App - Queue	*	63.0	13.0	5282.6	-907.3	*	5300.	100.	AG	44.	100.0	0.0	48.0	1.62	269.2
9. E Leg Dep - FreeFlow	*	-8.0	-23.0	1178.0	-232.0	*	1204.	100.	AG	4920.	7.1	0.0	67.7		
10. W Leg App - FreeFlow	*	-8.0	-23.0	-1051.0	579.0	*	1204.								

```
300. AG   4920.   7.1   0.0 67.7
      11. W Leg App - Queue   *    -54.0       3.0   -4643.2    2654.3 *    5300.
300. AG     44. 100.0   0.0 48.0 1.62 269.2
      12. W Leg Dep - FreeFlow*      8.0      23.0   -1027.0     621.0 *    1195.
300. AG   4920.   7.1   0.0 67.7
```

PAGE 2

```
      JOB: Fred Ex AQ Analysis                                    RUN: 2022 -
Garrisonville Rd (SR610) and US 1

      DATE :  8/15/17
      TIME : 10: 4:58
```

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. N Leg App - Queue	120	68	2.0	4920	1900	7.59	1	3
5. S Leg App - Queue	120	68	2.0	6150	1900	7.59	1	3
8. E Leg App - Queue	120	68	2.0	4920	1900	7.23	1	3
11. W Leg App - Queue	120	68	2.0	4920	1900	7.23	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	70.0	46.6	5.9
2. N Leg, E Side - 25 m	70.0	118.6	5.9
3. N Leg, E Side - 50 m	70.0	200.6	5.9
4. N Leg, E Side-Midblk	70.0	636.6	5.9
5. N Leg, W Side-Corner	-58.0	100.5	5.9
6. N Leg, W Side - 25 m	-58.0	172.5	5.9
7. N Leg, W Side - 50 m	-58.0	254.5	5.9
8. N Leg, W Side-Midblk	-58.0	690.5	5.9
9. S Leg, E Side-Corner	70.0	-71.2	5.9
10. S Leg, E Side - 25 m	70.0	-143.3	5.9

```
     11. S Leg, E Side - 50 m *       70.0     -225.3        5.9   *
     12. S Leg, E Side-Midblk *       70.0     -661.2        5.9   *
     13. S Leg, W Side-Corner *      -58.0      -33.5        5.9   *
     14. S Leg, W Side - 25 m *      -58.0     -105.5        5.9   *
     15. S Leg, W Side - 50 m *      -58.0     -187.5        5.9   *
     16. S Leg, W Side-Midblk *      -58.0     -623.5        5.9   *
     17. E Leg, N Side - 25 m *      140.9       34.0        5.9   *
     18. E Leg, N Side - 50 m *      221.7       19.8        5.9   *
     19. E Leg, N Side-Midblk *      651.0      -55.9        5.9   *
     20. W Leg, N Side - 25 m *     -120.4      136.5        5.9   *
     21. W Leg, N Side - 50 m *     -191.4      177.5        5.9   *
     22. W Leg, N Side-Midblk *     -569.0      395.5        5.9   *
     23. E Leg, S Side - 25 m *      140.9      -83.7        5.9   *
     24. E Leg, S Side - 50 m *      221.7      -98.0        5.9   *
     25. E Leg, S Side-Midblk *      651.0     -173.7        5.9   *
     26. W Leg, S Side - 25 m *     -120.4        2.5        5.9   *
     27. W Leg, S Side - 50 m *     -191.4       43.5        5.9   *
     28. W Leg, S Side-Midblk *     -569.0      261.5        5.9   *
```

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JOB: Fred Ex AQ Analysis RUN: 2022 - Garrisonville Rd (SR610) and US 1

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

```
 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*------------------------------------------------------------------------------------------------------------------------
   5.  *  1.5000  1.5000  1.5000  1.2000  2.7000  2.6000  2.6000  2.2000  3.2000
2.5000  2.3000  1.9000  4.6000  3.6000  3.5000
  10.  *  1.0000  1.0000  1.0000  0.9000  2.9000  2.9000  2.8000  2.4000  2.8000
2.0000  1.8000  1.4000  4.5000  3.7000  3.4000
  15.  *  0.6000  0.6000  0.6000  0.5000  3.0000  3.0000  2.9000  2.6000  2.3000
1.6000  1.4000  0.8000  4.5000  3.9000  3.6000
  20.  *  0.4000  0.4000  0.4000  0.3000  2.8000  2.8000  2.8000  2.7000  2.1000
1.2000  1.1000  0.7000  4.4000  3.7000  3.3000
```

```
  25.  *  0.3000  0.3000  0.2000  0.2000  2.7000  2.7000  2.7000  2.6000  2.0000
1.2000  0.9000  0.5000  4.3000  3.5000  3.2000
  30.  *  0.2000  0.2000  0.2000  0.2000  2.6000  2.6000  2.6000  2.5000  1.8000
1.1000  0.9000  0.5000  4.2000  3.4000  3.1000
  35.  *  0.3000  0.2000  0.2000  0.2000  2.4000  2.4000  2.4000  2.4000  1.8000
1.0000  0.8000  0.5000  3.9000  3.3000  3.0000
  40.  *  0.2000  0.1000  0.1000  0.1000  2.3000  2.3000  2.3000  2.3000  1.9000
1.0000  0.8000  0.4000  4.0000  3.2000  2.9000
  45.  *  0.2000  0.1000  0.1000  0.1000  2.2000  2.2000  2.2000  2.2000  2.0000
1.0000  0.8000  0.4000  3.9000  3.1000  2.9000
  50.  *  0.2000  0.1000  0.1000  0.1000  2.0000  2.0000  2.0000  2.0000  2.0000
1.2000  0.8000  0.4000  3.9000  3.0000  2.7000
  55.  *  0.2000  0.1000  0.1000  0.1000  2.1000  2.0000  2.0000  2.0000  2.1000
1.3000  0.8000  0.4000  3.9000  3.0000  2.7000
  60.  *  0.2000  0.1000  0.1000  0.1000  2.0000  1.9000  1.9000  1.9000  2.2000
1.3000  0.8000  0.3000  3.8000  3.1000  2.7000
  65.  *  0.2000  0.1000  0.1000  0.1000  2.0000  1.9000  1.9000  1.9000  2.2000
1.3000  0.8000  0.3000  4.0000  3.2000  2.7000
  70.  *  0.2000  0.0000  0.0000  0.0000  2.0000  1.9000  1.9000  1.9000  2.3000
1.2000  0.8000  0.2000  4.1000  3.1000  2.7000
  75.  *  0.2000  0.0000  0.0000  0.0000  2.0000  1.9000  1.9000  1.9000  2.4000
1.3000  0.7000  0.1000  4.5000  3.1000  2.7000
  80.  *  0.3000  0.0000  0.0000  0.0000  2.0000  1.9000  1.9000  1.9000  2.6000
1.3000  0.7000  0.0000  4.5000  3.3000  2.8000
  85.  *  0.6000  0.0000  0.0000  0.0000  2.1000  1.9000  1.9000  1.9000  2.7000
1.1000  0.7000  0.0000  4.7000  3.3000  2.7000
  90.  *  1.0000  0.1000  0.0000  0.0000  2.4000  2.1000  2.0000  2.0000  2.6000
1.1000  0.5000  0.0000  4.9000  3.2000  2.5000
  95.  *  1.6000  0.3000  0.1000  0.0000  2.7000  2.1000  1.9000  1.9000  2.4000
0.9000  0.3000  0.0000  4.6000  2.9000  2.3000
 100.  *  2.1000  0.6000  0.2000  0.0000  3.1000  2.2000  2.1000  1.9000  2.0000
0.5000  0.2000  0.0000  4.5000  2.5000  2.2000
 105.  *  2.5000  0.9000  0.3000  0.0000  3.4000  2.5000  2.1000  1.9000  1.6000
0.3000  0.1000  0.0000  4.1000  2.3000  2.0000
 110.  *  2.7000  1.1000  0.6000  0.0000  3.7000  2.7000  2.4000  1.9000  0.9000
0.1000  0.0000  0.0000  3.5000  2.1000  1.9000
 115.  *  2.8000  1.4000  0.9000  0.1000  4.0000  2.9000  2.5000  1.9000  0.7000
0.1000  0.1000  0.1000  3.0000  2.0000  1.9000
 120.  *  2.8000  1.4000  0.9000  0.2000  4.1000  3.0000  2.6000  2.0000  0.4000
0.1000  0.1000  0.1000  2.7000  1.9000  1.9000
 125.  *  2.6000  1.4000  0.9000  0.3000  4.1000  3.0000  2.7000  2.2000  0.3000
0.1000  0.1000  0.1000  2.5000  2.0000  2.0000
 130.  *  2.4000  1.3000  1.0000  0.3000  4.1000  3.1000  2.7000  2.2000  0.3000
0.1000  0.1000  0.1000  2.3000  2.0000  2.0000
 135.  *  2.3000  1.3000  0.8000  0.3000  4.2000  3.2000  2.8000  2.4000  0.2000
0.1000  0.1000  0.1000  2.4000  2.2000  2.2000
 140.  *  2.2000  1.3000  0.8000  0.4000  4.2000  3.2000  2.9000  2.6000  0.2000
0.1000  0.1000  0.1000  2.3000  2.2000  2.2000
```

```
 145.  *  2.1000  1.3000  0.8000  0.6000  4.4000  3.5000  3.0000  2.7000  0.3000
0.2000  0.2000  0.2000  2.4000  2.3000  2.3000
 150.  *  2.0000  1.3000  0.9000  0.5000  4.5000  3.5000  3.4000  2.8000  0.3000
0.2000  0.2000  0.2000  2.6000  2.5000  2.5000
 155.  *  2.1000  1.3000  0.9000  0.5000  4.7000  3.5000  3.2000  2.9000  0.4000
0.2000  0.2000  0.2000  2.6000  2.6000  2.6000
 160.  *  2.1000  1.3000  1.1000  0.7000  4.6000  3.8000  3.5000  3.0000  0.5000
0.4000  0.4000  0.3000  2.7000  2.7000  2.7000
 165.  *  2.3000  1.6000  1.4000  0.9000  4.8000  4.1000  3.8000  3.3000  0.8000
0.7000  0.7000  0.6000  2.9000  2.9000  2.9000
 170.  *  2.8000  2.0000  1.9000  1.4000  4.6000  4.0000  3.7000  3.5000  1.1000
1.1000  1.1000  1.0000  2.8000  2.8000  2.8000
 175.  *  3.3000  2.6000  2.3000  1.8000  4.4000  3.8000  3.4000  3.4000  1.7000
1.7000  1.7000  1.4000  2.5000  2.5000  2.5000
 180.  *  4.1000  3.2000  2.9000  2.7000  3.9000  3.4000  3.2000  2.7000  2.3000
2.3000  2.2000  1.9000  2.1000  2.1000  2.1000
 185.  *  4.4000  3.5000  3.4000  3.2000  3.4000  2.6000  2.5000  2.0000  2.8000
2.8000  2.8000  2.3000  1.6000  1.6000  1.5000
 190.  *  4.9000  3.8000  3.6000  3.3000  2.7000  2.1000  1.8000  1.5000  3.0000
3.0000  3.0000  2.7000  1.0000  1.0000  1.0000
 195.  *  4.7000  4.0000  3.5000  3.2000  2.4000  1.6000  1.4000  0.9000  3.1000
3.1000  3.0000  2.8000  0.6000  0.6000  0.6000
 200.  *  4.4000  3.6000  3.3000  3.1000  2.0000  1.3000  1.1000  0.7000  2.8000
2.8000  2.8000  2.6000  0.3000  0.3000  0.3000
 205.  *  4.2000  3.5000  3.0000  2.9000  2.0000  1.2000  0.9000  0.6000  2.7000
2.7000  2.7000  2.6000  0.2000  0.2000  0.2000
 210.  *  4.3000  3.4000  3.0000  2.8000  1.9000  1.1000  0.8000  0.6000  2.6000
2.6000  2.6000  2.5000  0.2000  0.2000  0.2000

                              PAGE  4
      JOB: Fred Ex AQ Analysis                                RUN: 2022 -
Garrisonville Rd (SR610) and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
------------------------------------------
 215.  *  3.8000  3.2000  3.0000  2.8000  1.8000  1.1000  0.8000  0.5000  2.6000
2.5000  2.5000  2.5000  0.1000  0.1000  0.1000
 220.  *  4.0000  3.1000  2.8000  2.6000  1.8000  1.1000  0.8000  0.5000  2.4000
2.3000  2.3000  2.3000  0.1000  0.1000  0.1000
 225.  *  3.8000  2.9000  2.7000  2.5000  1.8000  1.1000  0.8000  0.5000  2.3000
2.2000  2.2000  2.2000  0.1000  0.1000  0.1000
```

 230. * 3.8000 2.8000 2.6000 2.4000 1.8000 1.1000 0.8000 0.5000 2.2000
2.1000 2.1000 2.1000 0.1000 0.1000 0.1000
 235. * 3.8000 2.8000 2.7000 2.4000 1.8000 1.1000 0.8000 0.5000 2.2000
2.1000 2.1000 2.1000 0.2000 0.1000 0.1000
 240. * 3.7000 2.7000 2.6000 2.3000 1.9000 1.2000 0.8000 0.5000 2.1000
2.0000 2.0000 2.0000 0.2000 0.1000 0.1000
 245. * 3.8000 2.7000 2.5000 2.2000 2.0000 1.2000 0.8000 0.5000 2.0000
1.9000 1.9000 1.9000 0.2000 0.1000 0.1000
 250. * 3.6000 2.7000 2.5000 2.2000 1.9000 1.2000 0.7000 0.4000 2.0000
1.9000 1.9000 1.9000 0.1000 0.0000 0.0000
 255. * 3.7000 2.8000 2.5000 2.1000 2.0000 1.2000 0.8000 0.3000 2.0000
1.8000 1.8000 1.8000 0.1000 0.0000 0.0000
 260. * 3.8000 3.0000 2.6000 2.1000 2.1000 1.2000 0.8000 0.2000 2.2000
2.0000 2.0000 2.0000 0.1000 0.0000 0.0000
 265. * 3.8000 3.1000 2.7000 2.1000 2.1000 1.3000 0.8000 0.2000 2.3000
2.0000 2.0000 2.0000 0.1000 0.0000 0.0000
 270. * 4.1000 3.2000 2.8000 2.2000 2.3000 1.3000 0.9000 0.2000 2.5000
2.1000 2.1000 2.1000 0.2000 0.0000 0.0000
 275. * 4.1000 3.1000 2.7000 2.0000 2.4000 1.3000 0.9000 0.0000 2.6000
2.0000 2.0000 2.0000 0.2000 0.0000 0.0000
 280. * 4.2000 3.1000 2.6000 1.9000 2.5000 1.3000 0.7000 0.0000 2.9000
2.0000 2.0000 2.0000 0.3000 0.0000 0.0000
 285. * 4.1000 2.9000 2.5000 1.8000 2.7000 1.3000 0.8000 0.0000 3.3000
1.9000 1.8000 1.8000 0.6000 0.0000 0.0000
 290. * 3.9000 2.8000 2.3000 1.8000 2.6000 1.1000 0.5000 0.0000 3.8000
2.1000 1.9000 1.9000 1.0000 0.1000 0.0000
 295. * 3.7000 2.6000 2.1000 1.8000 2.5000 1.0000 0.4000 0.1000 4.3000
2.6000 2.1000 1.9000 1.6000 0.4000 0.2000
 300. * 3.3000 2.4000 2.1000 1.9000 2.1000 0.6000 0.3000 0.1000 4.8000
3.0000 2.3000 2.0000 2.2000 0.8000 0.4000
 305. * 2.9000 2.3000 2.1000 2.0000 1.7000 0.4000 0.2000 0.1000 5.1000
3.3000 2.8000 2.1000 2.5000 1.0000 0.7000
 310. * 2.5000 2.1000 2.0000 2.0000 1.0000 0.2000 0.1000 0.1000 5.3000
3.7000 3.0000 2.2000 2.7000 1.2000 0.8000
 315. * 2.4000 2.1000 2.1000 2.1000 0.7000 0.1000 0.1000 0.1000 5.1000
3.7000 3.2000 2.4000 2.8000 1.4000 0.9000
 320. * 2.4000 2.2000 2.2000 2.2000 0.4000 0.1000 0.1000 0.1000 4.7000
3.9000 3.3000 2.5000 2.6000 1.4000 1.1000
 325. * 2.4000 2.4000 2.4000 2.4000 0.3000 0.1000 0.1000 0.1000 4.7000
3.9000 3.5000 2.8000 2.5000 1.4000 1.1000
 330. * 2.5000 2.5000 2.5000 2.4000 0.4000 0.2000 0.2000 0.2000 4.6000
3.9000 3.4000 2.9000 2.3000 1.4000 1.1000
 335. * 2.7000 2.6000 2.6000 2.5000 0.3000 0.2000 0.2000 0.2000 4.4000
3.9000 3.5000 3.1000 2.2000 1.6000 1.1000
 340. * 2.8000 2.7000 2.7000 2.5000 0.4000 0.3000 0.3000 0.3000 4.4000
4.2000 3.6000 3.4000 2.3000 1.5000 1.1000
 345. * 2.9000 2.9000 2.8000 2.6000 0.7000 0.6000 0.6000 0.5000 4.6000
4.1000 3.9000 3.2000 2.6000 1.9000 1.4000

```
 350.  *  2.8000  2.8000  2.8000  2.5000  1.2000  1.1000  1.1000  0.9000  4.6000
4.1000  3.8000  3.4000  3.1000  2.4000  1.7000
 355.  *  2.6000  2.6000  2.6000  2.2000  1.7000  1.6000  1.5000  1.3000  4.2000
3.8000  3.5000  3.3000  3.5000  2.7000  2.3000
 360.  *  2.2000  2.2000  2.1000  1.8000  2.3000  2.2000  2.2000  1.8000  3.9000
3.2000  3.1000  2.9000  4.0000  3.2000  2.8000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  4.9000  4.0000  3.6000  3.3000  4.8000  4.1000  3.8000  3.5000  5.3000
4.2000  3.9000  3.4000  4.9000  3.9000  3.6000
 DEGR. *    190     195     190     190     165     165     165     170     310
340     345     340      90      15      15
```

```
                             PAGE  5
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 -
Garrisonville Rd (SR610) and US 1

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*     16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
   5.  *  3.1000  0.3000  0.1000  0.0000  1.0000  0.6000  0.1000  2.0000  1.8000
1.7000  2.7000  2.2000  1.7000
  10.  *  3.4000  0.1000  0.0000  0.0000  1.2000  0.7000  0.0000  1.9000  1.8000
1.8000  2.9000  2.4000  1.7000
  15.  *  3.1000  0.0000  0.0000  0.0000  1.4000  0.8000  0.0000  1.7000  1.7000
1.7000  3.1000  2.6000  1.7000
  20.  *  3.0000  0.0000  0.0000  0.0000  1.4000  0.9000  0.0000  1.7000  1.7000
1.7000  3.1000  2.6000  1.7000
  25.  *  2.9000  0.0000  0.0000  0.0000  1.4000  1.0000  0.0000  1.7000  1.7000
1.7000  3.1000  2.8000  1.9000
  30.  *  2.7000  0.0000  0.0000  0.0000  1.4000  1.0000  0.2000  1.7000  1.7000
1.7000  3.2000  2.9000  2.0000
```

```
  35.  *  2.6000  0.1000  0.1000  0.0000  1.4000  1.0000  0.2000  1.7000  1.7000
1.7000  3.1000  2.7000  1.9000
  40.  *  2.6000  0.1000  0.1000  0.1000  1.3000  1.0000  0.2000  1.8000  1.8000
1.8000  3.0000  2.7000  2.1000
  45.  *  2.5000  0.1000  0.1000  0.1000  1.3000  0.9000  0.4000  1.9000  1.9000
1.9000  3.0000  2.6000  2.1000
  50.  *  2.3000  0.1000  0.1000  0.1000  1.3000  0.8000  0.4000  1.9000  1.9000
1.9000  2.9000  2.5000  2.1000
  55.  *  2.4000  0.1000  0.1000  0.1000  1.3000  0.9000  0.5000  2.0000  2.0000
2.0000  2.9000  2.5000  2.1000
  60.  *  2.2000  0.1000  0.1000  0.1000  1.3000  0.9000  0.5000  2.1000  2.1000
2.1000  2.9000  2.6000  2.2000
  65.  *  2.1000  0.1000  0.1000  0.1000  1.3000  0.9000  0.5000  2.1000  2.1000
2.1000  3.1000  2.7000  2.3000
  70.  *  2.1000  0.2000  0.2000  0.2000  1.3000  0.9000  0.5000  2.3000  2.3000
2.3000  3.2000  2.8000  2.3000
  75.  *  2.1000  0.2000  0.2000  0.2000  1.3000  0.9000  0.5000  2.4000  2.4000
2.4000  3.5000  2.9000  2.4000
  80.  *  1.9000  0.3000  0.3000  0.3000  1.3000  0.9000  0.5000  2.6000  2.6000
2.4000  3.6000  3.0000  2.5000
  85.  *  1.9000  0.6000  0.6000  0.5000  1.4000  0.9000  0.5000  2.7000  2.7000
2.5000  4.1000  3.4000  2.6000
  90.  *  2.0000  1.0000  1.0000  0.9000  1.5000  1.0000  0.6000  2.6000  2.6000
2.4000  4.4000  3.6000  2.9000
  95.  *  1.9000  1.6000  1.6000  1.3000  1.8000  1.3000  0.6000  2.4000  2.4000
2.0000  4.3000  3.9000  3.1000
 100.  *  1.9000  2.1000  2.1000  1.8000  2.1000  1.7000  0.9000  2.0000  2.0000
1.7000  4.2000  3.9000  3.2000
 105.  *  1.9000  2.5000  2.5000  2.1000  2.6000  2.0000  1.1000  1.6000  1.6000
1.3000  4.0000  3.9000  3.3000
 110.  *  1.9000  2.7000  2.7000  2.5000  2.9000  2.4000  1.7000  0.9000  0.9000
0.8000  3.2000  3.3000  3.3000
 115.  *  1.9000  2.8000  2.8000  2.6000  3.2000  2.8000  2.0000  0.6000  0.6000
0.5000  2.6000  2.9000  3.1000
 120.  *  1.9000  2.7000  2.7000  2.5000  3.4000  2.8000  2.5000  0.3000  0.3000
0.3000  2.4000  2.2000  2.5000
 125.  *  2.0000  2.5000  2.5000  2.5000  3.6000  3.0000  2.9000  0.2000  0.2000
0.2000  1.9000  1.8000  1.9000
 130.  *  2.0000  2.4000  2.4000  2.4000  3.3000  3.1000  3.0000  0.2000  0.2000
0.2000  1.8000  1.4000  1.4000
 135.  *  2.2000  2.2000  2.2000  2.2000  3.5000  3.1000  2.9000  0.1000  0.1000
0.1000  1.7000  1.3000  0.9000
 140.  *  2.2000  2.1000  2.1000  2.1000  3.3000  3.2000  3.0000  0.1000  0.1000
0.1000  1.5000  1.2000  0.7000
 145.  *  2.3000  2.0000  2.0000  2.0000  3.2000  3.2000  2.8000  0.1000  0.1000
0.1000  1.6000  1.2000  0.6000
 150.  *  2.4000  1.9000  1.9000  1.9000  3.6000  3.4000  2.7000  0.1000  0.1000
0.1000  1.5000  1.2000  0.6000
```

```
 155.  *  2.5000  1.9000  1.9000  1.9000  3.4000  3.1000  2.5000  0.1000  0.1000
0.1000  1.5000  1.2000  0.4000
 160.  *  2.6000  1.8000  1.8000  1.8000  3.4000  3.0000  2.3000  0.1000  0.1000
0.1000  1.5000  1.1000  0.3000
 165.  *  2.6000  1.7000  1.7000  1.7000  3.4000  2.9000  2.2000  0.1000  0.1000
0.1000  1.5000  1.0000  0.3000
 170.  *  2.5000  1.8000  1.7000  1.7000  3.1000  2.7000  1.9000  0.1000  0.0000
0.0000  1.3000  0.8000  0.1000
 175.  *  2.2000  2.1000  1.8000  1.7000  2.9000  2.5000  1.9000  0.4000  0.1000
0.0000  1.1000  0.7000  0.1000
 180.  *  1.7000  2.4000  2.0000  1.7000  2.6000  2.1000  1.8000  0.6000  0.2000
0.0000  0.8000  0.4000  0.1000
 185.  *  1.3000  2.7000  2.2000  1.7000  2.0000  1.9000  1.7000  0.9000  0.4000
0.0000  0.3000  0.3000  0.1000
 190.  *  0.8000  3.0000  2.5000  1.8000  1.9000  1.7000  1.7000  1.1000  0.6000
0.0000  0.2000  0.0000  0.0000
 195.  *  0.5000  3.0000  2.6000  1.7000  1.7000  1.7000  1.7000  1.3000  0.7000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.3000  3.1000  2.6000  1.7000  1.7000  1.7000  1.7000  1.3000  0.9000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.2000  3.1000  2.6000  1.9000  1.7000  1.7000  1.7000  1.4000  0.9000
0.1000  0.0000  0.0000  0.0000
 210.  *  0.2000  3.0000  2.6000  1.9000  1.8000  1.8000  1.8000  1.4000  0.9000
0.2000  0.0000  0.0000  0.0000
↑
                              PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 -
Garrisonville Rd (SR610) and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  3.0000  2.6000  2.0000  1.7000  1.7000  1.7000  1.4000  1.0000
0.3000  0.0000  0.0000  0.0000
 220.  *  0.1000  3.0000  2.7000  2.1000  1.7000  1.7000  1.7000  1.3000  1.0000
0.4000  0.0000  0.0000  0.0000
 225.  *  0.1000  3.1000  2.8000  2.2000  1.7000  1.7000  1.7000  1.3000  1.0000
0.4000  0.0000  0.0000  0.0000
 230.  *  0.1000  3.0000  2.8000  2.2000  1.7000  1.7000  1.7000  1.3000  1.0000
0.4000  0.0000  0.0000  0.0000
 235.  *  0.1000  3.1000  2.9000  2.3000  1.7000  1.7000  1.7000  1.3000  1.0000
0.4000  0.1000  0.1000  0.1000
```

```
 240.  *  0.1000  2.9000  2.7000  2.4000  1.8000  1.8000  1.8000  1.3000  1.0000
0.4000  0.1000  0.1000  0.1000
 245.  *  0.1000  3.2000  2.9000  2.5000  1.9000  1.9000  1.9000  1.3000  1.0000
0.4000  0.1000  0.1000  0.1000
 250.  *  0.0000  3.2000  2.8000  2.7000  1.9000  1.9000  1.9000  1.3000  0.9000
0.5000  0.1000  0.1000  0.1000
 255.  *  0.0000  3.2000  3.0000  2.8000  2.0000  2.0000  2.0000  1.4000  1.0000
0.5000  0.1000  0.1000  0.1000
 260.  *  0.0000  3.3000  3.0000  2.9000  2.1000  2.1000  2.1000  1.4000  1.2000
0.6000  0.1000  0.1000  0.1000
 265.  *  0.0000  3.2000  2.9000  3.0000  2.1000  2.1000  2.1000  1.6000  1.3000
0.8000  0.1000  0.1000  0.1000
 270.  *  0.0000  3.3000  3.0000  3.0000  2.3000  2.3000  2.3000  1.8000  1.4000
1.3000  0.2000  0.2000  0.2000
 275.  *  0.0000  3.1000  3.0000  3.0000  2.4000  2.4000  2.3000  2.2000  1.8000
1.8000  0.2000  0.2000  0.2000
 280.  *  0.0000  3.2000  3.1000  2.5000  2.5000  2.5000  2.4000  2.3000  2.2000
2.4000  0.3000  0.3000  0.3000
 285.  *  0.0000  3.2000  2.7000  2.1000  2.7000  2.7000  2.5000  3.0000  2.9000
3.0000  0.6000  0.6000  0.5000
 290.  *  0.0000  2.9000  2.2000  1.6000  2.6000  2.6000  2.2000  3.5000  3.3000
3.1000  1.0000  1.0000  0.9000
 295.  *  0.1000  2.6000  2.0000  1.1000  2.4000  2.4000  2.0000  3.9000  3.8000
3.2000  1.6000  1.6000  1.3000
 300.  *  0.1000  2.2000  1.6000  0.8000  2.0000  2.0000  1.7000  4.2000  3.9000
3.1000  2.1000  2.1000  1.9000
 305.  *  0.1000  1.8000  1.3000  0.5000  1.6000  1.5000  1.3000  4.2000  3.7000
2.9000  2.5000  2.5000  2.2000
 310.  *  0.1000  1.5000  1.0000  0.5000  0.9000  0.9000  0.8000  4.0000  3.5000
2.6000  2.7000  2.7000  2.5000
 315.  *  0.2000  1.4000  0.9000  0.4000  0.6000  0.6000  0.5000  3.8000  3.2000
2.4000  2.8000  2.8000  2.6000
 320.  *  0.3000  1.3000  0.9000  0.4000  0.3000  0.3000  0.3000  3.4000  3.0000
2.4000  2.6000  2.6000  2.6000
 325.  *  0.3000  1.4000  0.9000  0.4000  0.2000  0.2000  0.2000  3.2000  2.9000
2.3000  2.5000  2.5000  2.5000
 330.  *  0.5000  1.5000  0.9000  0.4000  0.2000  0.2000  0.2000  3.3000  2.7000
2.2000  2.4000  2.4000  2.4000
 335.  *  0.6000  1.5000  0.9000  0.3000  0.1000  0.1000  0.1000  3.4000  2.7000
2.1000  2.2000  2.2000  2.2000
 340.  *  0.7000  1.5000  0.9000  0.2000  0.1000  0.1000  0.1000  3.2000  2.6000
1.9000  2.2000  2.2000  2.2000
 345.  *  1.0000  1.4000  0.9000  0.0000  0.1000  0.1000  0.1000  3.0000  2.5000
1.7000  2.0000  2.0000  2.0000
 350.  *  1.4000  1.1000  0.6000  0.0000  0.2000  0.1000  0.1000  2.9000  2.3000
1.7000  2.1000  1.9000  1.9000
 355.  *  1.8000  0.9000  0.4000  0.0000  0.4000  0.2000  0.1000  2.7000  2.1000
1.7000  2.2000  2.0000  1.9000
```

```
 360.  *  2.6000  0.6000  0.2000  0.0000  0.7000  0.3000  0.1000  2.3000  2.0000
1.7000  2.5000  2.0000  1.8000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  3.4000  3.3000  3.1000  3.0000  3.6000  3.4000  3.0000  4.2000  3.9000
3.2000  4.4000  3.9000  3.3000
 DEGR. *     10     260     280     265     150     150     130     300     300
295      90     100     105

 THE HIGHEST CONCENTRATION OF   5.3000 PPM OCCURRED AT RECEPTOR     9.
```

```
Q,EPA,,F,,0,T,T,T,T,0.78,
1,1,3,3,2200,2200,2200,2200,2200,2200,2200,2200,1,700,508.666666666667,874.333333333
333,1,700,508.666666666667,874.333333333333,1,11,12,12,10,10,10,10,0,0,-1200,1200,0,
0,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0,0,0,0,0,0,0,8.35,8.35,7,7,7.59,7.59,7
.59,7.59
0,120,120,120,0,68,68,68,0,2,2,2,0,1900,1900,1900,0,1,1,1,0,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,23,0.3048,1,0
'N Leg, E Side-Corner',11.0,46.0,5.9
'N Leg, E Side - 0 m',0.0,46.0,5.9
'N Leg, W Side-Corner',-21.0,46.0,5.9
'S Leg, E Side-Corner',11.0,-46.0,5.9
'S Leg, E Side - 25 m',11.0,-118.0,5.9
'S Leg, E Side - 50 m',11.0,-200.0,5.9
'S Leg, E Side-Midblk',11.0,-636.0,5.9
'S Leg, W Side-Corner',-21.0,-46.0,5.9
'S Leg, W Side - 25 m',-21.0,-118.0,5.9
'S Leg, W Side - 50 m',-21.0,-200.0,5.9
'S Leg, W Side-Midblk',-21.0,-636.0,5.9
'E Leg, N Side - 25 m',83.0,46.0,5.9
'E Leg, N Side - 50 m',165.0,46.0,5.9
'E Leg, N Side-Midblk',601.0,46.0,5.9
'W Leg, N Side - 25 m',-93.0,46.0,5.9
'W Leg, N Side - 50 m',-175.0,46.0,5.9
'W Leg, N Side-Midblk',-611.0,46.0,5.9
'E Leg, S Side - 25 m',83.0,-46.0,5.9
'E Leg, S Side - 50 m',165.0,-46.0,5.9
'E Leg, S Side-Midblk',601.0,-46.0,5.9
'W Leg, S Side - 25 m',-93.0,-46.0,5.9
'W Leg, S Side - 50 m',-175.0,-46.0,5.9
'W Leg, S Side-Midblk',-611.0,-46.0,5.9
'2022 NOBUILD - US 1 and I95 NB Entr Ramp',9,1,0,'CO'
1
'S Leg App - FreeFlow','AG',1,18,1,-1200,1,8.35,0.0,20.7
2
'S Leg App - Queue','AG',1,-36,1,-1200,0.0,1.0,1
120,68,2,1,7.59,1900,1,3
1
'S Leg Dep - FreeFlow','AG',-6,18,-6,-1200,700,8.35,0.0,30.7
1
'E Leg App - FreeFlow','AG',0,18,1200,18,2623,7,0.0,55.7
2
'E Leg App - Queue','AG',1,18,1200,18,0.0,36.0,3
120,68,2,2623,7.59,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,1526,7,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,1526,7,0.0,55.7
2
```

```
'W Leg App - Queue','AG',-11,-18,-1200,-18,0.0,36.0,3
120,68,2,1526,7.59,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,18,-1200,18,2623,7,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                    2022 NoBuild US 1 and I95 NB Entrance Ramp OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                       PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NOBUILD -
US 1 and I95 NB Entr Ramp

      DATE :  8/15/17
      TIME : 10:25:22

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. S Leg App - FreeFlow*      1.0      18.0       1.0   -1200.0 *    1218.
180. AG      1.   8.4   0.0 20.7
       2. S Leg App - Queue   *      1.0     -36.0       1.0     -36.4 *       0.
180. AG     12. 100.0   0.0  1.0 0.00   0.0
       3. S Leg Dep - FreeFlow*     -6.0      18.0      -6.0   -1200.0 *    1218.
180. AG    700.   8.4   0.0 30.7
       4. E Leg App - FreeFlow*      0.0      18.0    1200.0      18.0 *    1200.
90. AG   2623.   7.0   0.0 55.7
       5. E Leg App - Queue   *      1.0      18.0    1602.0      18.0 *    1601.
90. AG     35. 100.0   0.0 36.0 1.15  81.3
       6. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   1526.   7.0   0.0 55.7
       7. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
270. AG   1526.   7.0   0.0 55.7
       8. W Leg App - Queue   *    -11.0     -18.0    -199.9     -18.0 *     189.
270. AG     35. 100.0   0.0 36.0 0.67   9.6
       9. W Leg Dep - FreeFlow*      0.0      18.0   -1200.0      18.0 *    1200.
270. AG   2623.   7.0   0.0 55.7
```

JOB: Fred Ex AQ Analysis RUN: 2022 NOBUILD - US 1 and I95 NB Entr Ramp

DATE : 8/15/17
TIME : 10:25:22

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. S Leg App - Queue	120	68	2.0	1	1900	7.59	1	3
5. E Leg App - Queue	120	68	2.0	2623	1900	7.59	1	3
8. W Leg App - Queue	120	68	2.0	1526	1900	7.59	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	11.0	46.0	5.9
2. N Leg, E Side - 0 m	0.0	46.0	5.9
3. N Leg, W Side-Corner	-21.0	46.0	5.9
4. S Leg, E Side-Corner	11.0	-46.0	5.9
5. S Leg, E Side - 25 m	11.0	-118.0	5.9
6. S Leg, E Side - 50 m	11.0	-200.0	5.9
7. S Leg, E Side-Midblk	11.0	-636.0	5.9
8. S Leg, W Side-Corner	-21.0	-46.0	5.9
9. S Leg, W Side - 25 m	-21.0	-118.0	5.9
10. S Leg, W Side - 50 m	-21.0	-200.0	5.9
11. S Leg, W Side-Midblk	-21.0	-636.0	5.9
12. E Leg, N Side - 25 m	83.0	46.0	5.9
13. E Leg, N Side - 50 m	165.0	46.0	5.9
14. E Leg, N Side-Midblk	601.0	46.0	5.9
15. W Leg, N Side - 25 m	-93.0	46.0	5.9
16. W Leg, N Side - 50 m	-175.0	46.0	5.9
17. W Leg, N Side-Midblk	-611.0	46.0	5.9
18. E Leg, S Side - 25 m	83.0	-46.0	5.9

```
                  2022 NoBuild US 1 and I95 NB Entrance Ramp OUT
     19. E Leg, S Side - 50 m *       165.0      -46.0        5.9   *
     20. E Leg, S Side-Midblk *       601.0      -46.0        5.9   *
     21. W Leg, S Side - 25 m *       -93.0      -46.0        5.9   *
     22. W Leg, S Side - 50 m *      -175.0      -46.0        5.9   *
     23. W Leg, S Side-Midblk *      -611.0      -46.0        5.9   *
```

```
                              PAGE  3
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NOBUILD -
US 1 and I95 NB Entr Ramp

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
   5.  *  0.0000  0.0000  0.0000  0.8000  0.6000  0.4000  0.3000  1.0000  0.7000
0.6000  0.4000  0.0000  0.0000  0.0000  0.0000
  10.  *  0.0000  0.0000  0.0000  0.8000  0.4000  0.3000  0.3000  1.0000  0.7000
0.6000  0.5000  0.0000  0.0000  0.0000  0.0000
  15.  *  0.0000  0.0000  0.0000  0.8000  0.5000  0.3000  0.2000  1.0000  0.7000
0.5000  0.5000  0.0000  0.0000  0.0000  0.0000
  20.  *  0.0000  0.0000  0.0000  0.8000  0.5000  0.3000  0.2000  1.0000  0.6000
0.5000  0.4000  0.0000  0.0000  0.0000  0.0000
  25.  *  0.0000  0.0000  0.0000  0.8000  0.4000  0.3000  0.1000  0.9000  0.6000
0.6000  0.4000  0.0000  0.0000  0.0000  0.0000
  30.  *  0.0000  0.0000  0.0000  0.8000  0.4000  0.3000  0.1000  1.0000  0.6000
0.6000  0.4000  0.0000  0.0000  0.0000  0.0000
  35.  *  0.0000  0.0000  0.0000  0.8000  0.4000  0.3000  0.1000  1.2000  0.6000
0.6000  0.4000  0.0000  0.0000  0.0000  0.0000
  40.  *  0.1000  0.1000  0.0000  0.9000  0.4000  0.3000  0.1000  1.0000  0.7000
0.6000  0.4000  0.1000  0.1000  0.1000  0.1000
  45.  *  0.1000  0.1000  0.0000  0.9000  0.4000  0.3000  0.1000  1.1000  0.6000
0.5000  0.3000  0.1000  0.1000  0.1000  0.1000
  50.  *  0.1000  0.1000  0.0000  0.9000  0.5000  0.3000  0.1000  1.2000  0.7000
0.5000  0.3000  0.1000  0.1000  0.1000  0.1000
  55.  *  0.1000  0.1000  0.0000  0.9000  0.5000  0.3000  0.1000  1.2000  0.7000
```

```
0.5000  0.3000  0.1000  0.1000  0.1000  0.1000
  60.  *  0.1000  0.1000  0.0000  1.1000  0.5000  0.3000  0.0000  1.1000  0.7000
0.5000  0.3000  0.1000  0.1000  0.1000  0.1000
  65.  *  0.1000  0.1000  0.1000  1.1000  0.5000  0.3000  0.0000  1.3000  0.7000
0.5000  0.2000  0.1000  0.1000  0.1000  0.1000
  70.  *  0.2000  0.2000  0.1000  1.1000  0.5000  0.3000  0.0000  1.3000  0.7000
0.5000  0.2000  0.2000  0.2000  0.2000  0.2000
  75.  *  0.3000  0.3000  0.3000  1.2000  0.5000  0.3000  0.0000  1.4000  0.7000
0.5000  0.2000  0.3000  0.3000  0.3000  0.4000
  80.  *  0.7000  0.7000  0.7000  1.2000  0.4000  0.2000  0.0000  1.4000  0.6000
0.4000  0.2000  0.7000  0.7000  0.5000  0.6000
  85.  *  0.9000  0.9000  0.9000  1.1000  0.3000  0.2000  0.0000  1.3000  0.5000
0.4000  0.2000  0.9000  0.9000  0.8000  0.9000
  90.  *  1.2000  1.2000  1.1000  0.9000  0.2000  0.0000  0.0000  1.1000  0.4000
0.2000  0.2000  1.2000  1.2000  1.0000  1.2000
  95.  *  1.3000  1.3000  1.3000  0.6000  0.2000  0.0000  0.0000  0.8000  0.4000
0.2000  0.2000  1.3000  1.3000  1.2000  1.3000
 100.  *  1.5000  1.5000  1.5000  0.4000  0.0000  0.0000  0.0000  0.5000  0.2000
0.2000  0.2000  1.5000  1.5000  1.4000  1.4000
 105.  *  1.5000  1.5000  1.4000  0.3000  0.0000  0.0000  0.0000  0.4000  0.2000
0.2000  0.2000  1.5000  1.5000  1.5000  1.4000
 110.  *  1.4000  1.4000  1.3000  0.1000  0.0000  0.0000  0.0000  0.3000  0.2000
0.2000  0.2000  1.4000  1.4000  1.4000  1.3000
 115.  *  1.3000  1.2000  1.2000  0.1000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  1.3000  1.3000  1.2000  1.2000
 120.  *  1.2000  1.2000  1.2000  0.1000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  1.2000  1.2000  1.2000  1.3000
 125.  *  1.1000  1.1000  1.1000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  1.1000  1.1000  1.1000  1.1000
 130.  *  1.1000  1.2000  1.1000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  1.1000  1.1000  1.1000  1.2000
 135.  *  1.0000  1.0000  1.1000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  1.0000  1.0000  1.0000  1.0000
 140.  *  0.9000  1.0000  1.0000  0.0000  0.0000  0.0000  0.0000  0.3000  0.3000
0.3000  0.3000  0.9000  0.9000  0.9000  1.0000
 145.  *  0.9000  0.9000  1.0000  0.0000  0.0000  0.0000  0.0000  0.3000  0.3000
0.3000  0.3000  0.9000  0.9000  0.9000  1.0000
 150.  *  0.9000  0.9000  1.0000  0.0000  0.0000  0.0000  0.0000  0.3000  0.3000
0.3000  0.3000  0.9000  0.9000  0.9000  1.0000
 155.  *  0.8000  1.0000  1.0000  0.0000  0.0000  0.0000  0.0000  0.3000  0.3000
0.3000  0.3000  0.8000  0.8000  0.8000  0.9000
 160.  *  0.9000  0.9000  1.0000  0.1000  0.1000  0.1000  0.1000  0.3000  0.3000
0.3000  0.3000  0.8000  0.8000  0.8000  0.9000
 165.  *  0.9000  1.0000  1.0000  0.1000  0.1000  0.1000  0.1000  0.4000  0.4000
0.4000  0.4000  0.8000  0.8000  0.8000  0.9000
 170.  *  0.9000  1.2000  1.1000  0.2000  0.2000  0.2000  0.2000  0.4000  0.4000
0.4000  0.4000  0.8000  0.8000  0.8000  0.9000
 175.  *  1.0000  1.1000  1.1000  0.3000  0.2000  0.2000  0.2000  0.4000  0.4000
```

```
0.4000  0.4000  0.9000  0.9000  0.9000  1.0000
 180.  *  1.2000  1.1000  1.1000  0.3000  0.3000  0.3000  0.3000  0.4000  0.4000
0.4000  0.3000  1.0000  0.9000  0.9000  1.0000
 185.  *  1.2000  1.0000  1.0000  0.4000  0.4000  0.4000  0.3000  0.3000  0.3000
0.3000  0.3000  1.0000  0.9000  0.9000  0.9000
 190.  *  1.2000  1.2000  1.1000  0.4000  0.4000  0.4000  0.4000  0.2000  0.2000
0.2000  0.2000  0.9000  0.8000  0.8000  0.8000
 195.  *  1.1000  0.9000  0.9000  0.4000  0.4000  0.4000  0.3000  0.1000  0.1000
0.1000  0.1000  0.9000  0.9000  0.8000  0.8000
 200.  *  1.1000  0.9000  1.0000  0.3000  0.3000  0.3000  0.3000  0.1000  0.1000
0.1000  0.1000  0.9000  0.9000  0.8000  0.8000
 205.  *  1.0000  0.9000  0.9000  0.3000  0.3000  0.3000  0.3000  0.1000  0.1000
0.1000  0.1000  0.9000  0.9000  0.8000  0.8000
 210.  *  0.9000  1.0000  0.9000  0.3000  0.3000  0.3000  0.3000  0.0000  0.0000
0.0000  0.0000  1.0000  1.0000  0.9000  0.9000

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      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NOBUILD -
US 1 and I95 NB Entr Ramp

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  1.0000  1.0000  0.9000  0.3000  0.3000  0.3000  0.3000  0.0000  0.0000
0.0000  0.0000  1.0000  1.0000  0.9000  0.9000
 220.  *  1.1000  1.0000  0.9000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  1.1000  1.0000  0.9000  0.9000
 225.  *  1.1000  1.0000  1.0000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  1.1000  1.1000  1.0000  1.0000
 230.  *  1.1000  1.2000  1.1000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  1.2000  1.1000  1.1000  1.1000
 235.  *  1.2000  1.1000  1.1000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  1.1000  1.1000  1.1000  1.0000
 240.  *  1.2000  1.2000  1.2000  0.2000  0.2000  0.2000  0.2000  0.1000  0.0000
0.0000  0.0000  1.3000  1.2000  1.2000  1.1000
 245.  *  1.2000  1.2000  1.3000  0.3000  0.2000  0.2000  0.2000  0.1000  0.0000
0.0000  0.0000  1.4000  1.3000  1.2000  1.2000
 250.  *  1.3000  1.2000  1.2000  0.3000  0.2000  0.2000  0.2000  0.1000  0.0000
0.0000  0.0000  1.3000  1.3000  1.3000  1.2000
 255.  *  1.3000  1.3000  1.3000  0.5000  0.2000  0.2000  0.2000  0.3000  0.0000
0.0000  0.0000  1.4000  1.5000  1.6000  1.3000
 260.  *  1.3000  1.3000  1.3000  0.6000  0.2000  0.2000  0.2000  0.4000  0.0000
```

0.0000 0.0000 1.4000 1.4000 1.5000 1.3000
 265. * 1.2000 1.2000 1.2000 0.8000 0.4000 0.2000 0.2000 0.6000 0.2000
0.0000 0.0000 1.2000 1.3000 1.4000 1.2000
 270. * 1.0000 1.1000 1.1000 1.1000 0.4000 0.2000 0.2000 0.9000 0.2000
0.0000 0.0000 1.1000 1.2000 1.2000 1.1000
 275. * 0.7000 0.8000 0.8000 1.2000 0.5000 0.4000 0.2000 1.1000 0.3000
0.2000 0.0000 0.8000 0.8000 1.0000 0.8000
 280. * 0.6000 0.6000 0.6000 1.3000 0.6000 0.4000 0.2000 1.2000 0.4000
0.2000 0.0000 0.6000 0.6000 0.5000 0.6000
 285. * 0.3000 0.3000 0.3000 1.4000 0.7000 0.5000 0.2000 1.2000 0.5000
0.3000 0.0000 0.4000 0.3000 0.3000 0.3000
 290. * 0.2000 0.2000 0.2000 1.4000 0.7000 0.5000 0.2000 1.1000 0.5000
0.3000 0.0000 0.2000 0.2000 0.2000 0.2000
 295. * 0.1000 0.1000 0.1000 1.3000 0.7000 0.5000 0.2000 1.1000 0.5000
0.3000 0.0000 0.1000 0.1000 0.1000 0.1000
 300. * 0.1000 0.1000 0.1000 1.3000 0.7000 0.5000 0.3000 1.1000 0.5000
0.3000 0.0000 0.1000 0.1000 0.1000 0.1000
 305. * 0.0000 0.1000 0.1000 1.2000 0.7000 0.5000 0.3000 0.9000 0.5000
0.3000 0.1000 0.1000 0.1000 0.1000 0.1000
 310. * 0.0000 0.1000 0.1000 1.1000 0.7000 0.5000 0.3000 0.9000 0.5000
0.3000 0.1000 0.1000 0.1000 0.1000 0.1000
 315. * 0.0000 0.1000 0.1000 1.1000 0.6000 0.5000 0.3000 0.9000 0.4000
0.3000 0.1000 0.1000 0.1000 0.1000 0.1000
 320. * 0.0000 0.1000 0.1000 1.1000 0.6000 0.5000 0.3000 0.9000 0.4000
0.3000 0.1000 0.1000 0.1000 0.1000 0.1000
 325. * 0.0000 0.0000 0.0000 0.8000 0.7000 0.6000 0.4000 0.9000 0.4000
0.3000 0.1000 0.0000 0.0000 0.0000 0.0000
 330. * 0.0000 0.0000 0.0000 0.8000 0.7000 0.6000 0.4000 0.8000 0.4000
0.3000 0.1000 0.0000 0.0000 0.0000 0.0000
 335. * 0.0000 0.0000 0.0000 1.0000 0.6000 0.6000 0.4000 0.8000 0.5000
0.4000 0.2000 0.0000 0.0000 0.0000 0.0000
 340. * 0.0000 0.0000 0.0000 1.0000 0.6000 0.5000 0.4000 0.9000 0.5000
0.4000 0.2000 0.0000 0.0000 0.0000 0.0000
 345. * 0.0000 0.0000 0.0000 0.8000 0.7000 0.5000 0.5000 0.9000 0.5000
0.3000 0.2000 0.0000 0.0000 0.0000 0.0000
 350. * 0.0000 0.0000 0.0000 0.9000 0.7000 0.5000 0.5000 0.9000 0.5000
0.4000 0.3000 0.0000 0.0000 0.0000 0.0000
 355. * 0.0000 0.0000 0.0000 0.9000 0.6000 0.6000 0.3000 0.8000 0.5000
0.4000 0.4000 0.0000 0.0000 0.0000 0.0000
 360. * 0.0000 0.0000 0.0000 0.8000 0.6000 0.5000 0.3000 0.9000 0.6000
0.6000 0.3000 0.0000 0.0000 0.0000 0.0000

------*--

 MAX   * 1.5000 1.5000 1.5000 1.4000 0.7000 0.6000 0.5000 1.4000 0.7000
0.6000 0.5000 1.5000 1.5000 1.6000 1.4000
 DEGR. *   100   100   100   285   285   325   345   75   5
 5   10   100   100   255   100

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
5.	0.0000	0.0000	0.8000	0.8000	0.8000	0.8000	0.8000	0.7000
10.	0.0000	0.0000	0.8000	0.8000	0.8000	0.8000	0.8000	0.7000
15.	0.0000	0.0000	0.8000	0.8000	0.8000	0.8000	0.8000	0.7000
20.	0.0000	0.0000	0.8000	0.8000	0.8000	0.8000	0.8000	0.7000
25.	0.0000	0.0000	0.8000	0.8000	0.8000	0.8000	0.8000	0.7000
30.	0.0000	0.0000	0.8000	0.8000	0.8000	0.8000	0.8000	0.7000
35.	0.0000	0.0000	0.8000	0.8000	0.8000	0.8000	0.8000	0.7000
40.	0.1000	0.1000	0.9000	0.9000	0.9000	1.0000	0.9000	0.8000
45.	0.1000	0.1000	0.9000	0.9000	0.9000	0.9000	0.9000	0.8000
50.	0.1000	0.1000	0.9000	0.9000	0.9000	1.0000	0.9000	0.8000
55.	0.1000	0.1000	0.9000	0.9000	0.9000	1.1000	1.0000	0.8000
60.	0.1000	0.1000	1.1000	1.1000	1.1000	1.2000	1.0000	1.0000
65.	0.1000	0.1000	1.1000	1.1000	1.1000	1.2000	1.1000	1.0000
70.	0.2000	0.2000	1.1000	1.1000	1.1000	1.4000	1.1000	1.0000
75.	0.3000	0.3000	1.2000	1.2000	1.1000	1.4000	1.2000	1.1000
80.	0.6000	0.5000	1.2000	1.2000	1.1000	1.3000	1.2000	1.2000
85.	0.9000	0.9000	1.1000	1.1000	0.9000	1.2000	1.2000	1.0000
90.	1.2000	1.1000	0.9000	0.9000	0.7000	1.0000	1.0000	0.9000
95.	1.5000	1.3000	0.6000	0.6000	0.5000	0.7000	0.7000	0.7000
100.	1.4000	1.4000	0.4000	0.4000	0.4000	0.5000	0.5000	0.5000
105.	1.4000	1.4000	0.2000	0.2000	0.2000	0.4000	0.3000	0.2000
110.	1.3000	1.2000	0.1000	0.1000	0.1000	0.2000	0.2000	0.1000
115.	1.2000	1.1000	0.1000	0.1000	0.1000	0.2000	0.2000	0.1000
120.	1.2000	1.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
125.	1.1000	1.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
130.	1.1000	1.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
135.	1.1000	0.9000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
140.	1.0000	0.8000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000

2022 NoBuild US 1 and I95 NB Entrance Ramp OUT

145.	*	1.0000	0.8000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
150.	*	1.0000	0.8000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
155.	*	0.9000	0.7000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
160.	*	0.9000	0.7000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
165.	*	0.9000	0.7000	0.0000	0.0000	0.0000	0.1000	0.1000	0.0000
170.	*	0.8000	0.7000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
175.	*	0.9000	0.8000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
180.	*	0.9000	0.8000	0.1000	0.0000	0.0000	0.1000	0.0000	0.0000
185.	*	0.9000	0.8000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
190.	*	0.7000	0.7000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
195.	*	0.7000	0.7000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
200.	*	0.7000	0.7000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
205.	*	0.7000	0.7000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
210.	*	0.8000	0.8000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000

JOB: Fred Ex AQ Analysis RUN: 2022 NOBUILD - US 1 and I95 NB Entr Ramp

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
215.	*	0.8000	0.8000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
220.	*	0.8000	0.8000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
225.	*	0.9000	0.9000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
230.	*	1.0000	1.0000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
235.	*	1.0000	1.0000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
240.	*	1.1000	1.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
245.	*	1.2000	1.1000	0.1000	0.2000	0.1000	0.1000	0.1000	0.1000
250.	*	1.2000	1.2000	0.3000	0.2000	0.1000	0.1000	0.1000	0.1000
255.	*	1.3000	1.3000	0.4000	0.4000	0.2000	0.2000	0.2000	0.2000
260.	*	1.3000	1.2000	0.5000	0.5000	0.5000	0.4000	0.4000	0.4000
265.	*	1.2000	1.1000	0.7000	0.6000	0.7000	0.6000	0.6000	0.5000
270.	*	1.1000	0.9000	0.9000	0.8000	0.9000	0.8000	0.8000	0.7000
275.	*	0.8000	0.7000	1.2000	1.0000	1.1000	1.1000	1.0000	0.8000
280.	*	0.6000	0.4000	1.2000	1.0000	1.3000	1.2000	1.1000	1.0000
285.	*	0.3000	0.3000	1.3000	1.1000	1.2000	1.2000	1.1000	1.0000
290.	*	0.2000	0.2000	1.1000	1.0000	1.1000	1.1000	1.0000	1.0000
295.	*	0.1000	0.1000	1.2000	1.0000	1.1000	1.1000	1.0000	1.0000
300.	*	0.1000	0.1000	1.1000	0.9000	1.1000	1.1000	1.0000	1.0000
305.	*	0.1000	0.1000	0.9000	1.0000	0.9000	0.9000	0.8000	0.8000
310.	*	0.1000	0.1000	0.9000	0.9000	0.9000	0.9000	0.8000	0.8000
315.	*	0.1000	0.1000	0.8000	0.9000	0.9000	0.9000	0.9000	0.8000
320.	*	0.1000	0.1000	0.9000	0.9000	0.9000	0.9000	0.9000	0.8000
325.	*	0.0000	0.0000	0.9000	0.8000	0.8000	0.8000	0.8000	0.7000

```
330.  *  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.8000  0.7000
335.  *  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.8000  0.7000
340.  *  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.8000  0.7000
345.  *  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.8000  0.7000
350.  *  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.8000  0.7000
355.  *  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.8000  0.7000
360.  *  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.8000  0.7000
------*------------------------------------------------------------
MAX   *  1.5000  1.4000  1.3000  1.2000  1.3000  1.4000  1.2000  1.2000
DEGR. *     95     100     285      75     280      70      75      80
```

THE HIGHEST CONCENTRATION OF   1.6000 PPM OCCURRED AT RECEPTOR   14.

```
Q,EPA,,F,,0,T,T,T,T,0.78,
1,1,3,3,2200,2200,2200,2200,2200,2200,2200,2200,1,1230,1230,1230,1,1230,1230,1230,1,
11,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0
,0,0,0,0,0,0,8.35,8.35,7,7,7.59,7.59,7.59,7.59
0,120,120,120,0,68,68,68,0,2,2,2,0,1900,1900,1900,0,1,1,1,0,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,23,0.3048,1,0
'N Leg, E Side-Corner',11.0,46.0,5.9
'N Leg, E Side - 0 m',0.0,46.0,5.9
'N Leg, W Side-Corner',-21.0,46.0,5.9
'S Leg, E Side-Corner',11.0,-46.0,5.9
'S Leg, E Side - 25 m',11.0,-118.0,5.9
'S Leg, E Side - 50 m',11.0,-200.0,5.9
'S Leg, E Side-Midblk',11.0,-636.0,5.9
'S Leg, W Side-Corner',-21.0,-46.0,5.9
'S Leg, W Side - 25 m',-21.0,-118.0,5.9
'S Leg, W Side - 50 m',-21.0,-200.0,5.9
'S Leg, W Side-Midblk',-21.0,-636.0,5.9
'E Leg, N Side - 25 m',83.0,46.0,5.9
'E Leg, N Side - 50 m',165.0,46.0,5.9
'E Leg, N Side-Midblk',601.0,46.0,5.9
'W Leg, N Side - 25 m',-93.0,46.0,5.9
'W Leg, N Side - 50 m',-175.0,46.0,5.9
'W Leg, N Side-Midblk',-611.0,46.0,5.9
'E Leg, S Side - 25 m',83.0,-46.0,5.9
'E Leg, S Side - 50 m',165.0,-46.0,5.9
'E Leg, S Side-Midblk',601.0,-46.0,5.9
'W Leg, S Side - 25 m',-93.0,-46.0,5.9
'W Leg, S Side - 50 m',-175.0,-46.0,5.9
'W Leg, S Side-Midblk',-611.0,-46.0,5.9
'2022 - US 1 and I95 NB Entrance Ramp',9,1,0,'CO'
1
'S Leg App - FreeFlow','AG',1,18,1,-1200,1,8.35,0.0,20.7
2
'S Leg App - Queue','AG',1,-36,1,-1200,0.0,1.0,1
120,68,2,1,7.59,1900,1,3
1
'S Leg Dep - FreeFlow','AG',-6,18,-6,-1200,1230,8.35,0.0,30.7
1
'E Leg App - FreeFlow','AG',0,18,1200,18,3690,7,0.0,55.7
2
'E Leg App - Queue','AG',1,18,1200,18,0.0,36.0,3
120,68,2,3690,7.59,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,3690,7,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,3690,7,0.0,55.7
2
'W Leg App - Queue','AG',-11,-18,-1200,-18,0.0,36.0,3
```

```
120,68,2,3690,7.59,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,18,-1200,18,3690,7,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                        2022 US 1 and I95 NB Entrance Ramp OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - US 1 and
I95 NB Entrance Ramp

      DATE :  8/15/17
      TIME : 10:14:43

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*----------------------------------------*------------------
----------------------------------------
       1. S Leg App - FreeFlow*      1.0      18.0       1.0   -1200.0 *    1218.
180. AG      1.   8.4   0.0 20.7
       2. S Leg App - Queue   *      1.0     -36.0       1.0     -36.4 *       0.
180. AG     12. 100.0   0.0  1.0 0.00   0.0
       3. S Leg Dep - FreeFlow*     -6.0      18.0      -6.0   -1200.0 *    1218.
180. AG   1230.   8.4   0.0 30.7
       4. E Leg App - FreeFlow*      0.0      18.0    1200.0      18.0 *    1200.
90. AG   3690.   7.0   0.0 55.7
       5. E Leg App - Queue   *      1.0      18.0    5301.1      18.0 *    5300.
90. AG     35. 100.0   0.0 36.0 1.62 269.2
       6. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   3690.   7.0   0.0 55.7
       7. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
270. AG   3690.   7.0   0.0 55.7
       8. W Leg App - Queue   *    -11.0     -18.0   -5311.1     -18.0 *    5300.
270. AG     35. 100.0   0.0 36.0 1.62 269.2
       9. W Leg Dep - FreeFlow*      0.0      18.0   -1200.0      18.0 *    1200.
270. AG   3690.   7.0   0.0 55.7
↑
```

JOB: Fred Ex AQ Analysis RUN: 2022 - US 1 and I95 NB Entrance Ramp

DATE : 8/15/17
TIME : 10:14:43

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. S Leg App - Queue	120	68	2.0	1	1900	7.59	1	3
5. E Leg App - Queue	120	68	2.0	3690	1900	7.59	1	3
8. W Leg App - Queue	120	68	2.0	3690	1900	7.59	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	11.0	46.0	5.9
2. N Leg, E Side - 0 m	0.0	46.0	5.9
3. N Leg, W Side-Corner	-21.0	46.0	5.9
4. S Leg, E Side-Corner	11.0	-46.0	5.9
5. S Leg, E Side - 25 m	11.0	-118.0	5.9
6. S Leg, E Side - 50 m	11.0	-200.0	5.9
7. S Leg, E Side-Midblk	11.0	-636.0	5.9
8. S Leg, W Side-Corner	-21.0	-46.0	5.9
9. S Leg, W Side - 25 m	-21.0	-118.0	5.9
10. S Leg, W Side - 50 m	-21.0	-200.0	5.9
11. S Leg, W Side-Midblk	-21.0	-636.0	5.9
12. E Leg, N Side - 25 m	83.0	46.0	5.9
13. E Leg, N Side - 50 m	165.0	46.0	5.9
14. E Leg, N Side-Midblk	601.0	46.0	5.9
15. W Leg, N Side - 25 m	-93.0	46.0	5.9
16. W Leg, N Side - 50 m	-175.0	46.0	5.9
17. W Leg, N Side-Midblk	-611.0	46.0	5.9
18. E Leg, S Side - 25 m	83.0	-46.0	5.9

2022 US 1 and I95 NB Entrance Ramp OUT

```
19. E Leg, S Side - 50 m *       165.0      -46.0        5.9   *
20. E Leg, S Side-Midblk *       601.0      -46.0        5.9   *
21. W Leg, S Side - 25 m *       -93.0      -46.0        5.9   *
22. W Leg, S Side - 50 m *      -175.0      -46.0        5.9   *
23. W Leg, S Side-Midblk *      -611.0      -46.0        5.9   *
```

PAGE 3

JOB: Fred Ex AQ Analysis RUN: 2022 - US 1 and I95 NB Entrance Ramp

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

```
 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
   5.  *  0.0000  0.0000  0.0000  1.6000  1.0000  0.9000  0.6000  1.8000  1.2000
0.9000  0.9000  0.0000  0.0000  0.0000  0.0000
  10.  *  0.0000  0.0000  0.0000  1.5000  0.9000  0.6000  0.5000  2.0000  1.2000
1.1000  0.9000  0.0000  0.0000  0.0000  0.0000
  15.  *  0.0000  0.0000  0.0000  1.5000  0.8000  0.6000  0.4000  1.8000  1.2000
1.2000  0.9000  0.0000  0.0000  0.0000  0.0000
  20.  *  0.0000  0.0000  0.0000  1.5000  0.8000  0.5000  0.3000  1.8000  1.2000
1.0000  0.8000  0.0000  0.0000  0.0000  0.0000
  25.  *  0.0000  0.0000  0.0000  1.4000  0.8000  0.6000  0.3000  1.8000  1.2000
0.9000  0.8000  0.0000  0.0000  0.0000  0.0000
  30.  *  0.1000  0.1000  0.0000  1.4000  0.7000  0.5000  0.2000  1.8000  1.1000
1.0000  0.7000  0.1000  0.1000  0.1000  0.1000
  35.  *  0.1000  0.1000  0.0000  1.5000  0.7000  0.5000  0.2000  1.9000  1.2000
1.0000  0.7000  0.1000  0.1000  0.1000  0.1000
  40.  *  0.1000  0.1000  0.0000  1.6000  0.7000  0.5000  0.2000  2.1000  1.2000
1.0000  0.7000  0.1000  0.1000  0.1000  0.1000
  45.  *  0.1000  0.1000  0.0000  1.6000  0.7000  0.5000  0.2000  2.0000  1.1000
0.9000  0.6000  0.1000  0.1000  0.1000  0.1000
  50.  *  0.1000  0.1000  0.0000  1.7000  0.8000  0.6000  0.2000  2.1000  1.2000
1.0000  0.6000  0.1000  0.1000  0.1000  0.1000
  55.  *  0.1000  0.1000  0.0000  1.8000  0.9000  0.6000  0.2000  2.2000  1.3000
```

```
1.0000  0.6000  0.1000  0.1000  0.1000  0.1000
  60.  *  0.1000  0.1000  0.0000  1.9000  0.9000  0.6000  0.2000  2.2000  1.3000
1.0000  0.6000  0.1000  0.1000  0.1000  0.1000
  65.  *  0.2000  0.2000  0.1000  2.0000  0.9000  0.6000  0.1000  2.3000  1.2000
0.9000  0.4000  0.2000  0.2000  0.2000  0.2000
  70.  *  0.3000  0.3000  0.2000  2.1000  1.0000  0.5000  0.0000  2.4000  1.3000
0.9000  0.3000  0.3000  0.3000  0.3000  0.3000
  75.  *  0.5000  0.5000  0.5000  2.2000  1.0000  0.5000  0.0000  2.6000  1.3000
0.8000  0.3000  0.5000  0.5000  0.4000  0.5000
  80.  *  1.0000  1.0000  1.0000  2.3000  0.8000  0.4000  0.0000  2.5000  1.1000
0.7000  0.3000  1.0000  0.9000  0.8000  1.0000
  85.  *  1.4000  1.4000  1.3000  2.1000  0.5000  0.3000  0.0000  2.5000  1.0000
0.7000  0.4000  1.4000  1.4000  1.2000  1.4000
  90.  *  1.7000  1.7000  1.8000  1.7000  0.4000  0.2000  0.0000  2.2000  0.8000
0.6000  0.4000  1.7000  1.7000  1.5000  1.8000
  95.  *  2.2000  2.2000  2.2000  1.3000  0.2000  0.0000  0.0000  1.6000  0.6000
0.4000  0.4000  2.2000  2.1000  1.9000  2.1000
 100.  *  2.4000  2.4000  2.3000  0.9000  0.1000  0.0000  0.0000  1.2000  0.4000
0.3000  0.3000  2.3000  2.2000  2.1000  2.2000
 105.  *  2.3000  2.3000  2.3000  0.5000  0.0000  0.0000  0.0000  0.8000  0.3000
0.3000  0.3000  2.3000  2.3000  2.2000  2.3000
 110.  *  2.2000  2.2000  2.1000  0.3000  0.0000  0.0000  0.0000  0.5000  0.3000
0.3000  0.3000  2.2000  2.2000  2.2000  2.2000
 115.  *  2.0000  2.0000  2.0000  0.2000  0.0000  0.0000  0.0000  0.4000  0.3000
0.3000  0.3000  2.0000  2.0000  2.0000  2.0000
 120.  *  1.9000  2.0000  1.8000  0.1000  0.0000  0.0000  0.0000  0.4000  0.4000
0.4000  0.4000  1.9000  1.9000  1.8000  1.9000
 125.  *  1.8000  1.8000  1.8000  0.1000  0.0000  0.0000  0.0000  0.4000  0.4000
0.4000  0.4000  1.8000  1.8000  1.8000  1.8000
 130.  *  1.7000  1.7000  1.8000  0.1000  0.0000  0.0000  0.0000  0.4000  0.4000
0.4000  0.4000  1.7000  1.7000  1.7000  1.7000
 135.  *  1.6000  1.6000  1.7000  0.1000  0.0000  0.0000  0.0000  0.4000  0.4000
0.4000  0.4000  1.6000  1.6000  1.6000  1.8000
 140.  *  1.6000  1.6000  1.8000  0.1000  0.0000  0.0000  0.0000  0.5000  0.5000
0.5000  0.5000  1.6000  1.6000  1.6000  1.8000
 145.  *  1.5000  1.5000  1.6000  0.1000  0.0000  0.0000  0.0000  0.5000  0.5000
0.5000  0.5000  1.4000  1.4000  1.4000  1.7000
 150.  *  1.4000  1.5000  1.6000  0.1000  0.0000  0.0000  0.0000  0.5000  0.5000
0.5000  0.5000  1.4000  1.4000  1.4000  1.6000
 155.  *  1.4000  1.5000  1.7000  0.1000  0.1000  0.1000  0.1000  0.6000  0.6000
0.6000  0.6000  1.4000  1.4000  1.4000  1.6000
 160.  *  1.5000  1.6000  1.8000  0.1000  0.1000  0.1000  0.1000  0.6000  0.6000
0.6000  0.6000  1.4000  1.4000  1.4000  1.5000
 165.  *  1.6000  1.7000  1.7000  0.2000  0.2000  0.2000  0.2000  0.7000  0.7000
0.7000  0.7000  1.4000  1.4000  1.4000  1.5000
 170.  *  1.7000  1.7000  2.0000  0.3000  0.3000  0.3000  0.3000  0.7000  0.7000
0.7000  0.7000  1.4000  1.4000  1.4000  1.6000
 175.  *  1.8000  1.9000  1.8000  0.4000  0.4000  0.4000  0.4000  0.7000  0.7000
```

0.7000 0.6000 1.5000 1.4000 1.4000 1.5000
180. * 1.8000 1.9000 1.9000 0.6000 0.6000 0.5000 0.5000 0.6000 0.6000
0.6000 0.6000 1.5000 1.4000 1.4000 1.5000
185. * 2.0000 1.8000 1.7000 0.6000 0.6000 0.6000 0.6000 0.5000 0.5000
0.5000 0.5000 1.5000 1.5000 1.4000 1.5000
190. * 2.0000 1.7000 1.7000 0.7000 0.6000 0.6000 0.6000 0.4000 0.4000
0.4000 0.4000 1.6000 1.5000 1.4000 1.4000
195. * 1.8000 1.7000 1.6000 0.6000 0.6000 0.6000 0.6000 0.3000 0.3000
0.3000 0.2000 1.5000 1.4000 1.4000 1.4000
200. * 1.7000 1.6000 1.5000 0.6000 0.6000 0.6000 0.6000 0.2000 0.2000
0.2000 0.2000 1.5000 1.4000 1.4000 1.4000
205. * 1.6000 1.5000 1.5000 0.5000 0.5000 0.5000 0.5000 0.1000 0.1000
0.1000 0.1000 1.6000 1.5000 1.4000 1.4000
210. * 1.6000 1.6000 1.4000 0.5000 0.5000 0.5000 0.5000 0.2000 0.1000
0.1000 0.1000 1.6000 1.5000 1.4000 1.4000

PAGE 4
JOB: Fred Ex AQ Analysis RUN: 2022 - US 1 and
I95 NB Entrance Ramp

WIND ANGLE RANGE: 5.-360.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15

------*--
215. * 1.7000 1.6000 1.6000 0.5000 0.5000 0.5000 0.5000 0.2000 0.1000
0.1000 0.1000 1.7000 1.5000 1.4000 1.4000
220. * 1.6000 1.7000 1.6000 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000
0.0000 0.0000 1.8000 1.6000 1.6000 1.6000
225. * 1.8000 1.7000 1.6000 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000
0.0000 0.0000 1.8000 1.7000 1.6000 1.6000
230. * 1.8000 1.7000 1.7000 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000
0.0000 0.0000 1.9000 1.9000 1.7000 1.7000
235. * 1.9000 1.8000 1.7000 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000
0.0000 0.0000 1.9000 1.8000 1.8000 1.8000
240. * 1.8000 2.0000 1.9000 0.5000 0.4000 0.4000 0.4000 0.1000 0.0000
0.0000 0.0000 2.0000 2.0000 1.8000 1.9000
245. * 2.0000 2.0000 2.0000 0.4000 0.3000 0.3000 0.3000 0.2000 0.0000
0.0000 0.0000 2.3000 2.2000 2.0000 2.0000
250. * 2.1000 2.1000 2.1000 0.5000 0.3000 0.3000 0.3000 0.3000 0.0000
0.0000 0.0000 2.3000 2.3000 2.2000 2.1000
255. * 2.2000 2.2000 2.2000 0.8000 0.3000 0.3000 0.3000 0.5000 0.0000
0.0000 0.0000 2.5000 2.5000 2.4000 2.2000
260. * 2.2000 2.3000 2.3000 1.2000 0.4000 0.3000 0.3000 1.0000 0.1000

```
0.0000  0.0000  2.3000  2.4000  2.3000  2.1000
 265.  *  2.1000  2.1000  2.1000  1.7000  0.6000  0.4000  0.4000  1.4000  0.2000
0.0000  0.0000  2.1000  2.2000  2.2000  2.1000
 270.  *  1.7000  1.7000  1.7000  2.1000  0.8000  0.6000  0.4000  1.7000  0.4000
0.2000  0.0000  1.7000  2.0000  1.9000  1.7000
 275.  *  1.2000  1.3000  1.3000  2.6000  1.1000  0.7000  0.4000  2.2000  0.6000
0.3000  0.0000  1.3000  1.3000  1.4000  1.3000
 280.  *  0.8000  0.9000  0.9000  2.6000  1.1000  0.7000  0.3000  2.4000  0.8000
0.4000  0.0000  0.9000  0.9000  0.9000  0.9000
 285.  *  0.5000  0.5000  0.5000  2.5000  1.3000  0.8000  0.3000  2.3000  1.0000
0.5000  0.0000  0.5000  0.6000  0.5000  0.5000
 290.  *  0.2000  0.3000  0.3000  2.4000  1.3000  0.9000  0.3000  2.2000  1.0000
0.5000  0.0000  0.3000  0.3000  0.3000  0.3000
 295.  *  0.1000  0.2000  0.2000  2.3000  1.3000  0.9000  0.4000  2.0000  1.0000
0.6000  0.1000  0.2000  0.1000  0.2000  0.2000
 300.  *  0.1000  0.1000  0.1000  2.1000  1.4000  1.0000  0.6000  1.9000  1.0000
0.6000  0.2000  0.1000  0.1000  0.1000  0.1000
 305.  *  0.0000  0.1000  0.1000  2.2000  1.4000  1.0000  0.6000  1.7000  1.0000
0.6000  0.2000  0.1000  0.1000  0.1000  0.1000
 310.  *  0.0000  0.1000  0.1000  2.1000  1.3000  1.0000  0.6000  1.7000  0.9000
0.6000  0.2000  0.1000  0.1000  0.1000  0.1000
 315.  *  0.0000  0.1000  0.1000  2.1000  1.1000  0.9000  0.6000  1.6000  0.8000
0.5000  0.2000  0.1000  0.1000  0.1000  0.1000
 320.  *  0.0000  0.1000  0.1000  1.9000  1.1000  0.9000  0.6000  1.6000  0.7000
0.5000  0.2000  0.1000  0.1000  0.1000  0.1000
 325.  *  0.0000  0.1000  0.1000  1.8000  1.2000  1.0000  0.7000  1.6000  0.8000
0.6000  0.3000  0.1000  0.1000  0.1000  0.1000
 330.  *  0.0000  0.1000  0.1000  1.8000  1.2000  1.0000  0.7000  1.5000  0.8000
0.6000  0.3000  0.1000  0.1000  0.1000  0.1000
 335.  *  0.0000  0.0000  0.0000  1.7000  1.1000  0.9000  0.7000  1.5000  0.8000
0.6000  0.3000  0.0000  0.0000  0.0000  0.0000
 340.  *  0.0000  0.0000  0.0000  1.7000  1.2000  0.9000  0.8000  1.5000  0.8000
0.5000  0.4000  0.0000  0.0000  0.0000  0.0000
 345.  *  0.0000  0.0000  0.0000  1.7000  1.2000  1.1000  0.8000  1.5000  0.9000
0.6000  0.4000  0.0000  0.0000  0.0000  0.0000
 350.  *  0.0000  0.0000  0.0000  1.7000  1.2000  1.1000  0.8000  1.6000  1.0000
0.7000  0.6000  0.0000  0.0000  0.0000  0.0000
 355.  *  0.0000  0.0000  0.0000  1.7000  1.2000  0.9000  0.8000  1.6000  1.0000
0.8000  0.7000  0.0000  0.0000  0.0000  0.0000
 360.  *  0.0000  0.0000  0.0000  1.5000  1.1000  0.9000  0.8000  1.8000  1.1000
1.0000  0.8000  0.0000  0.0000  0.0000  0.0000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  2.4000  2.4000  2.3000  2.6000  1.4000  1.1000  0.8000  2.6000  1.3000
1.2000  0.9000  2.5000  2.5000  2.4000  2.3000
 DEGR. *    100     100     100     275     300     345     340      75      70
15       5     255     255     255     105
```

PAGE 5

JOB: Fred Ex AQ Analysis RUN: 2022 - US 1 and I95 NB Entrance Ramp

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
5.	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
10.	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
15.	0.0000	0.0000	1.4000	1.4000	1.4000	1.3000	1.3000	1.4000
20.	0.0000	0.0000	1.4000	1.4000	1.4000	1.3000	1.3000	1.4000
25.	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
30.	0.1000	0.1000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
35.	0.1000	0.1000	1.4000	1.4000	1.4000	1.5000	1.4000	1.4000
40.	0.1000	0.1000	1.6000	1.6000	1.6000	1.6000	1.5000	1.6000
45.	0.1000	0.1000	1.6000	1.6000	1.6000	1.7000	1.6000	1.6000
50.	0.1000	0.1000	1.7000	1.7000	1.7000	1.8000	1.8000	1.7000
55.	0.1000	0.1000	1.8000	1.8000	1.8000	1.9000	1.7000	1.8000
60.	0.1000	0.1000	1.9000	1.9000	1.8000	2.0000	2.0000	1.8000
65.	0.2000	0.2000	2.0000	2.0000	2.0000	2.2000	2.0000	2.0000
70.	0.3000	0.3000	2.1000	2.1000	2.1000	2.3000	2.1000	2.2000
75.	0.6000	0.5000	2.2000	2.2000	2.1000	2.4000	2.5000	2.4000
80.	0.9000	0.9000	2.2000	2.1000	2.0000	2.4000	2.5000	2.3000
85.	1.4000	1.3000	2.1000	2.0000	1.8000	2.2000	2.3000	2.2000
90.	1.9000	1.8000	1.7000	1.7000	1.5000	1.9000	2.1000	1.9000
95.	2.1000	2.2000	1.3000	1.3000	1.1000	1.4000	1.4000	1.4000
100.	2.3000	2.3000	0.9000	0.8000	0.7000	1.0000	1.0000	0.9000
105.	2.3000	2.3000	0.5000	0.5000	0.4000	0.6000	0.7000	0.5000
110.	2.1000	2.2000	0.3000	0.3000	0.3000	0.4000	0.4000	0.3000
115.	2.0000	2.0000	0.2000	0.2000	0.2000	0.3000	0.3000	0.2000
120.	2.1000	1.8000	0.1000	0.1000	0.1000	0.2000	0.2000	0.1000
125.	1.8000	1.8000	0.1000	0.1000	0.1000	0.2000	0.2000	0.1000
130.	1.9000	1.7000	0.1000	0.1000	0.1000	0.3000	0.2000	0.1000
135.	1.7000	1.6000	0.1000	0.1000	0.1000	0.3000	0.2000	0.1000
140.	1.6000	1.6000	0.1000	0.1000	0.1000	0.3000	0.2000	0.1000

145.	*	1.5000	1.4000	0.1000	0.1000	0.1000	0.3000	0.2000	0.1000
150.	*	1.5000	1.4000	0.1000	0.1000	0.1000	0.3000	0.2000	0.1000
155.	*	1.5000	1.4000	0.0000	0.0000	0.0000	0.2000	0.1000	0.0000
160.	*	1.4000	1.4000	0.0000	0.0000	0.0000	0.2000	0.1000	0.0000
165.	*	1.4000	1.4000	0.0000	0.0000	0.0000	0.2000	0.1000	0.0000
170.	*	1.5000	1.4000	0.0000	0.0000	0.0000	0.2000	0.1000	0.0000
175.	*	1.5000	1.4000	0.1000	0.0000	0.0000	0.1000	0.1000	0.0000
180.	*	1.4000	1.4000	0.1000	0.0000	0.0000	0.1000	0.0000	0.0000
185.	*	1.4000	1.4000	0.1000	0.1000	0.0000	0.1000	0.0000	0.0000
190.	*	1.4000	1.4000	0.2000	0.1000	0.0000	0.0000	0.0000	0.0000
195.	*	1.4000	1.4000	0.2000	0.1000	0.0000	0.0000	0.0000	0.0000
200.	*	1.4000	1.4000	0.2000	0.1000	0.0000	0.0000	0.0000	0.0000
205.	*	1.4000	1.4000	0.2000	0.1000	0.0000	0.0000	0.0000	0.0000
210.	*	1.4000	1.4000	0.3000	0.2000	0.1000	0.1000	0.1000	0.1000

PAGE 6

JOB: Fred Ex AQ Analysis RUN: 2022 - US 1 and I95 NB Entrance Ramp

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
215.	*	1.4000	1.4000	0.3000	0.2000	0.1000	0.1000	0.1000	0.1000
220.	*	1.6000	1.6000	0.3000	0.2000	0.1000	0.1000	0.1000	0.1000
225.	*	1.6000	1.6000	0.3000	0.2000	0.1000	0.1000	0.1000	0.1000
230.	*	1.7000	1.7000	0.2000	0.2000	0.1000	0.1000	0.1000	0.1000
235.	*	1.8000	1.8000	0.2000	0.2000	0.1000	0.1000	0.1000	0.1000
240.	*	1.9000	1.8000	0.2000	0.2000	0.1000	0.1000	0.1000	0.1000
245.	*	2.0000	2.0000	0.3000	0.2000	0.2000	0.2000	0.2000	0.2000
250.	*	2.1000	2.0000	0.4000	0.4000	0.3000	0.3000	0.3000	0.3000
255.	*	2.2000	2.1000	0.6000	0.7000	0.5000	0.5000	0.5000	0.4000
260.	*	2.1000	2.0000	1.1000	1.0000	0.9000	1.0000	0.9000	0.8000
265.	*	2.0000	1.8000	1.5000	1.5000	1.3000	1.4000	1.4000	1.2000
270.	*	1.7000	1.5000	1.8000	2.0000	1.8000	1.7000	1.7000	1.5000
275.	*	1.3000	1.1000	2.2000	2.2000	2.2000	2.2000	2.1000	1.9000
280.	*	0.8000	0.7000	2.3000	2.4000	2.3000	2.2000	2.2000	2.1000
285.	*	0.5000	0.4000	2.4000	2.3000	2.3000	2.3000	2.3000	2.2000
290.	*	0.3000	0.3000	2.2000	2.1000	2.2000	2.2000	2.2000	2.1000
295.	*	0.2000	0.2000	2.1000	2.0000	2.0000	2.0000	2.0000	2.0000
300.	*	0.1000	0.1000	1.9000	1.9000	1.8000	1.9000	1.9000	1.8000
305.	*	0.1000	0.1000	1.8000	1.7000	1.8000	1.8000	1.8000	1.8000
310.	*	0.1000	0.1000	1.8000	1.8000	1.7000	1.7000	1.7000	1.7000
315.	*	0.1000	0.1000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000
320.	*	0.1000	0.1000	1.6000	1.5000	1.6000	1.6000	1.6000	1.6000
325.	*	0.1000	0.1000	1.5000	1.4000	1.4000	1.4000	1.4000	1.4000

2022 US 1 and I95 NB Entrance Ramp OUT

330.	*	0.1000	0.1000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
335.	*	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
340.	*	0.0000	0.0000	1.3000	1.3000	1.4000	1.4000	1.4000	1.4000
345.	*	0.0000	0.0000	1.3000	1.3000	1.4000	1.4000	1.4000	1.4000
350.	*	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
355.	*	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
360.	*	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	1.4000	1.4000
MAX	*	2.3000	2.3000	2.4000	2.4000	2.3000	2.4000	2.5000	2.4000
DEGR.	*	100	100	285	280	280	75	80	75

THE HIGHEST CONCENTRATION OF 2.6000 PPM OCCURRED AT RECEPTOR 8.

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,5,3,4,2200,2200,2200,2200,2200,2200,2200,2200,653.4,598.4,171,142.75,653.4,598.4,1
71,142.75,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,
-1200,0,0,0,0,0,0,0,0,0,0,2.81,2.81,2.53,2.64,1.31,1.31,1.08,1.08
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-70.0,58.0,5.9
'N Leg, W Side - 25 m',-70.0,130.0,5.9
'N Leg, W Side - 50 m',-70.0,212.0,5.9
'N Leg, W Side-Midblk',-70.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-46.0,5.9
'S Leg, E Side - 25 m',70.0,-118.0,5.9
'S Leg, E Side - 50 m',70.0,-200.0,5.9
'S Leg, E Side-Midblk',70.0,-636.0,5.9
'S Leg, W Side-Corner',-70.0,-46.0,5.9
'S Leg, W Side - 25 m',-70.0,-118.0,5.9
'S Leg, W Side - 50 m',-70.0,-200.0,5.9
'S Leg, W Side-Midblk',-70.0,-636.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-142.0,58.0,5.9
'W Leg, N Side - 50 m',-224.0,58.0,5.9
'W Leg, N Side-Midblk',-660.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-46.0,5.9
'E Leg, S Side - 50 m',224.0,-46.0,5.9
'E Leg, S Side-Midblk',660.0,-46.0,5.9
'W Leg, S Side - 25 m',-142.0,-46.0,5.9
'W Leg, S Side - 50 m',-224.0,-46.0,5.9
'W Leg, S Side-Midblk',-660.0,-46.0,5.9
'2042 NO BUILD - US 17 and S Gateway',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-30,0,-30,1200,2992,2.81,0.0,79.7
2
'N Leg App - Queue','AG',-30,48,-30,1200,0.0,60.0,5
120,68,2,2992,1.31,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,3267,2.81,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,3267,2.81,0.0,79.7
2
'S Leg App - Queue','AG',30,-36,30,-1200,0.0,60.0,5
120,68,2,3267,1.31,1900,1,3
1
```

```
'S Leg Dep - FreeFlow','AG',-30,0,-30,-1200,2992,2.81,0.0,79.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,571,2.53,0.0,67.7
2
'E Leg App - Queue','AG',60,24,1200,24,0.0,48.0,4
120,68,2,571,1.08,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,513,2.53,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,513,2.64,0.0,55.7
2
'W Leg App - Queue','AG',-60,-18,-1200,-18,0.0,36.0,3
120,68,2,513,1.08,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,571,2.64,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                        2042 NoBuild US 17 and S Gateway OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                        CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
US 17 and S Gateway

      DATE :  8/15/17
      TIME : 10:48:24

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*-----------------
----------------------------------------
       1. N Leg App - FreeFlow*    -30.0       0.0     -30.0    1200.0 *    1200.
360. AG   2992.   2.8   0.0 79.7
       2. N Leg App - Queue   *    -30.0      48.0     -30.0     270.4 *     222.
360. AG     10. 100.0   0.0 60.0 0.79  11.3
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   3267.   2.8   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   3267.   2.8   0.0 79.7
       5. S Leg App - Queue   *     30.0     -36.0      30.0    -297.7 *     262.
180. AG     10. 100.0   0.0 60.0 0.86  13.3
       6. S Leg Dep - FreeFlow*    -30.0       0.0     -30.0   -1200.0 *    1200.
180. AG   2992.   2.8   0.0 79.7
       7. E Leg App - FreeFlow*      0.0      24.0    1200.0      24.0 *    1200.
90. AG    571.   2.5   0.0 67.7
       8. E Leg App - Queue   *     60.0      24.0     112.8      24.0 *      53.
90. AG      7. 100.0   0.0 48.0 0.19   2.7
       9. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG    513.   2.5   0.0 55.7
      10. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
```

```
                         2042 NoBuild US 17 and S Gateway OUT
270. AG    513.   2.6   0.0 55.7
      11. W Leg App - Queue   *    -60.0     -18.0    -123.6     -18.0 *      64.
270. AG      5. 100.0   0.0 36.0 0.22   3.2
      12. W Leg Dep - FreeFlow*      0.0      24.0   -1200.0      24.0 *    1200.
270. AG    571.   2.6   0.0 67.7
```



```
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
US 17 and S Gateway

      DATE :  8/15/17
      TIME : 10:48:24
```

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. N Leg App - Queue	120	68	2.0	2992	1900	1.31	1	3
5. S Leg App - Queue	120	68	2.0	3267	1900	1.31	1	3
8. E Leg App - Queue	120	68	2.0	571	1900	1.08	1	3
11. W Leg App - Queue	120	68	2.0	513	1900	1.08	1	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. N Leg, E Side-Corner	70.0	58.0	5.9
2. N Leg, E Side - 25 m	70.0	130.0	5.9
3. N Leg, E Side - 50 m	70.0	212.0	5.9
4. N Leg, E Side-Midblk	70.0	648.0	5.9
5. N Leg, W Side-Corner	-70.0	58.0	5.9
6. N Leg, W Side - 25 m	-70.0	130.0	5.9
7. N Leg, W Side - 50 m	-70.0	212.0	5.9
8. N Leg, W Side-Midblk	-70.0	648.0	5.9
9. S Leg, E Side-Corner	70.0	-46.0	5.9
10. S Leg, E Side - 25 m	70.0	-118.0	5.9

```
     11. S Leg, E Side - 50 m *        70.0     -200.0        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -636.0        5.9   *
     13. S Leg, W Side-Corner *       -70.0      -46.0        5.9   *
     14. S Leg, W Side - 25 m *       -70.0     -118.0        5.9   *
     15. S Leg, W Side - 50 m *       -70.0     -200.0        5.9   *
     16. S Leg, W Side-Midblk *       -70.0     -636.0        5.9   *
     17. E Leg, N Side - 25 m *       142.0       58.0        5.9   *
     18. E Leg, N Side - 50 m *       224.0       58.0        5.9   *
     19. E Leg, N Side-Midblk *       660.0       58.0        5.9   *
     20. W Leg, N Side - 25 m *      -142.0       58.0        5.9   *
     21. W Leg, N Side - 50 m *      -224.0       58.0        5.9   *
     22. W Leg, N Side-Midblk *      -660.0       58.0        5.9   *
     23. E Leg, S Side - 25 m *       142.0      -46.0        5.9   *
     24. E Leg, S Side - 50 m *       224.0      -46.0        5.9   *
     25. E Leg, S Side-Midblk *       660.0      -46.0        5.9   *
     26. W Leg, S Side - 25 m *      -142.0      -46.0        5.9   *
     27. W Leg, S Side - 50 m *      -224.0      -46.0        5.9   *
     28. W Leg, S Side-Midblk *      -660.0      -46.0        5.9   *

                         PAGE  3
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
US 17 and S Gateway

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
---------------------------------------
   5.  *  0.4000  0.4000  0.3000  0.2000  0.5000  0.5000  0.5000  0.4000  0.4000
0.4000  0.4000  0.4000  0.5000  0.5000  0.5000
  10.  *  0.2000  0.2000  0.2000  0.2000  0.6000  0.6000  0.6000  0.5000  0.2000
0.2000  0.2000  0.2000  0.6000  0.6000  0.5000
  15.  *  0.1000  0.1000  0.1000  0.1000  0.6000  0.6000  0.6000  0.5000  0.1000
0.2000  0.1000  0.1000  0.6000  0.6000  0.5000
  20.  *  0.1000  0.1000  0.1000  0.1000  0.6000  0.6000  0.6000  0.6000  0.0000
0.0000  0.1000  0.1000  0.6000  0.5000  0.6000
```

```
  25.  *  0.1000  0.1000  0.1000  0.1000  0.5000  0.5000  0.5000  0.5000  0.0000
0.0000  0.0000  0.1000  0.5000  0.6000  0.5000
  30.  *  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.6000  0.5000
  35.  *  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.6000  0.5000  0.4000
  40.  *  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.4000
  45.  *  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.4000  0.5000  0.5000
  50.  *  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.4000  0.4000  0.5000
  55.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.4000  0.3000  0.4000
  60.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.4000  0.3000  0.4000
  65.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.4000  0.4000  0.4000
  70.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.4000  0.3000  0.4000
  75.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.3000  0.3000  0.4000
  80.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.3000  0.3000  0.4000
  85.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.3000  0.4000  0.4000
  90.  *  0.1000  0.0000  0.0000  0.0000  0.3000  0.4000  0.4000  0.4000  0.1000
0.0000  0.0000  0.0000  0.3000  0.4000  0.4000
  95.  *  0.1000  0.0000  0.0000  0.0000  0.3000  0.4000  0.4000  0.4000  0.0000
0.0000  0.0000  0.0000  0.3000  0.4000  0.4000
 100.  *  0.1000  0.0000  0.0000  0.0000  0.3000  0.3000  0.4000  0.4000  0.0000
0.0000  0.0000  0.0000  0.4000  0.4000  0.4000
 105.  *  0.1000  0.0000  0.0000  0.0000  0.3000  0.3000  0.4000  0.4000  0.0000
0.0000  0.0000  0.0000  0.4000  0.4000  0.4000
 110.  *  0.1000  0.0000  0.0000  0.0000  0.3000  0.4000  0.4000  0.4000  0.0000
0.0000  0.0000  0.0000  0.4000  0.4000  0.4000
 115.  *  0.1000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.0000
0.0000  0.0000  0.0000  0.4000  0.4000  0.4000
 120.  *  0.1000  0.0000  0.0000  0.0000  0.4000  0.4000  0.4000  0.4000  0.0000
0.0000  0.0000  0.0000  0.4000  0.4000  0.4000
 125.  *  0.1000  0.0000  0.0000  0.0000  0.4000  0.3000  0.4000  0.4000  0.0000
0.0000  0.0000  0.0000  0.4000  0.4000  0.4000
 130.  *  0.1000  0.0000  0.0000  0.0000  0.5000  0.4000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 135.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.5000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 140.  *  0.0000  0.0000  0.0000  0.0000  0.4000  0.5000  0.4000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
```

```
 145.  *  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000  0.4000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 150.  *  0.0000  0.0000  0.0000  0.0000  0.6000  0.6000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 155.  *  0.0000  0.0000  0.0000  0.1000  0.6000  0.5000  0.5000  0.5000  0.1000
0.1000  0.1000  0.1000  0.5000  0.5000  0.5000
 160.  *  0.0000  0.0000  0.1000  0.1000  0.6000  0.6000  0.6000  0.6000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 165.  *  0.1000  0.2000  0.1000  0.1000  0.6000  0.6000  0.6000  0.6000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 170.  *  0.2000  0.2000  0.2000  0.2000  0.6000  0.6000  0.5000  0.6000  0.2000
0.2000  0.2000  0.2000  0.6000  0.6000  0.6000
 175.  *  0.4000  0.4000  0.4000  0.4000  0.5000  0.5000  0.6000  0.7000  0.4000
0.4000  0.3000  0.2000  0.5000  0.5000  0.5000
 180.  *  0.5000  0.5000  0.5000  0.5000  0.4000  0.5000  0.4000  0.6000  0.5000
0.5000  0.5000  0.4000  0.4000  0.4000  0.4000
 185.  *  0.5000  0.5000  0.6000  0.7000  0.4000  0.3000  0.4000  0.2000  0.5000
0.5000  0.5000  0.5000  0.4000  0.4000  0.4000
 190.  *  0.6000  0.6000  0.6000  0.6000  0.2000  0.2000  0.2000  0.2000  0.6000
0.6000  0.5000  0.5000  0.2000  0.2000  0.2000
 195.  *  0.7000  0.7000  0.5000  0.5000  0.1000  0.2000  0.1000  0.1000  0.6000
0.6000  0.6000  0.5000  0.1000  0.1000  0.1000
 200.  *  0.6000  0.5000  0.6000  0.6000  0.0000  0.0000  0.1000  0.1000  0.6000
0.6000  0.6000  0.6000  0.1000  0.1000  0.1000
 205.  *  0.6000  0.5000  0.5000  0.6000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 210.  *  0.6000  0.6000  0.5000  0.6000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
```



```
 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-----------------------------------------
 215.  *  0.4000  0.5000  0.4000  0.5000  0.0000  0.0000  0.0000  0.0000  0.5000
0.5000  0.5000  0.5000  0.0000  0.0000  0.0000
 220.  *  0.4000  0.5000  0.4000  0.5000  0.0000  0.0000  0.0000  0.0000  0.5000
0.5000  0.5000  0.5000  0.0000  0.0000  0.0000
 225.  *  0.4000  0.4000  0.4000  0.5000  0.1000  0.0000  0.0000  0.0000  0.5000
0.5000  0.5000  0.5000  0.0000  0.0000  0.0000
```

230. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
235. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
240. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
245. * 0.4000 0.3000 0.3000 0.3000 0.1000 0.0000 0.0000 0.0000 0.3000
0.3000 0.3000 0.3000 0.0000 0.0000 0.0000
250. * 0.3000 0.3000 0.3000 0.3000 0.1000 0.0000 0.0000 0.0000 0.3000
0.3000 0.3000 0.3000 0.0000 0.0000 0.0000
255. * 0.3000 0.3000 0.3000 0.3000 0.1000 0.0000 0.0000 0.0000 0.3000
0.3000 0.3000 0.3000 0.0000 0.0000 0.0000
260. * 0.4000 0.3000 0.3000 0.3000 0.1000 0.0000 0.0000 0.0000 0.3000
0.3000 0.3000 0.3000 0.0000 0.0000 0.0000
265. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.1000 0.0000 0.0000
270. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.1000 0.0000 0.0000
275. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.1000 0.0000 0.0000
280. * 0.3000 0.3000 0.3000 0.3000 0.0000 0.0000 0.0000 0.0000 0.4000
0.3000 0.3000 0.3000 0.1000 0.0000 0.0000
285. * 0.3000 0.3000 0.3000 0.3000 0.0000 0.0000 0.0000 0.0000 0.3000
0.3000 0.3000 0.3000 0.1000 0.0000 0.0000
290. * 0.3000 0.3000 0.3000 0.3000 0.0000 0.0000 0.0000 0.0000 0.4000
0.3000 0.3000 0.3000 0.1000 0.0000 0.0000
295. * 0.3000 0.3000 0.3000 0.3000 0.0000 0.0000 0.0000 0.0000 0.4000
0.3000 0.3000 0.3000 0.1000 0.0000 0.0000
300. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.5000
0.3000 0.4000 0.4000 0.1000 0.0000 0.0000
305. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.1000 0.0000 0.0000
310. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.1000 0.0000 0.0000
315. * 0.5000 0.5000 0.5000 0.5000 0.0000 0.0000 0.0000 0.0000 0.4000
0.5000 0.4000 0.5000 0.0000 0.0000 0.0000
320. * 0.5000 0.5000 0.5000 0.5000 0.0000 0.0000 0.0000 0.0000 0.4000
0.5000 0.4000 0.5000 0.0000 0.0000 0.0000
325. * 0.5000 0.5000 0.5000 0.5000 0.0000 0.0000 0.0000 0.0000 0.6000
0.6000 0.4000 0.5000 0.0000 0.0000 0.0000
330. * 0.6000 0.6000 0.6000 0.6000 0.0000 0.0000 0.0000 0.0000 0.6000
0.5000 0.5000 0.6000 0.0000 0.0000 0.0000
335. * 0.6000 0.6000 0.6000 0.6000 0.0000 0.0000 0.0000 0.0000 0.5000
0.5000 0.6000 0.6000 0.0000 0.0000 0.0000
340. * 0.6000 0.6000 0.6000 0.6000 0.1000 0.1000 0.1000 0.1000 0.6000
0.7000 0.6000 0.6000 0.0000 0.0000 0.1000
345. * 0.6000 0.6000 0.6000 0.5000 0.1000 0.1000 0.1000 0.1000 0.6000
0.6000 0.5000 0.5000 0.1000 0.2000 0.1000

```
 350.  *  0.6000  0.6000  0.5000  0.5000  0.2000  0.2000  0.2000  0.2000  0.6000
0.6000  0.6000  0.6000  0.1000  0.2000  0.2000
 355.  *  0.5000  0.5000  0.5000  0.5000  0.4000  0.4000  0.4000  0.2000  0.5000
0.5000  0.6000  0.7000  0.4000  0.3000  0.4000
 360.  *  0.5000  0.5000  0.5000  0.3000  0.4000  0.4000  0.4000  0.4000  0.5000
0.5000  0.5000  0.6000  0.5000  0.5000  0.4000

------*--------------------------------------------------------------------------
---------------------------------------
 MAX   *  0.7000  0.7000  0.6000  0.7000  0.6000  0.6000  0.6000  0.7000  0.6000
0.7000  0.6000  0.7000  0.6000  0.6000  0.6000
 DEGR. *    195     195     185     185      10      10      10     175     190
340     195     355      10      10      20
```

```
                              PAGE  5
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
US 17 and S Gateway

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
--------------------------
   5.  *  0.7000  0.0000  0.0000  0.0000  0.2000  0.0000  0.0000  0.0000  0.0000
0.0000  0.2000  0.1000  0.0000
  10.  *  0.6000  0.0000  0.0000  0.0000  0.2000  0.1000  0.0000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
  15.  *  0.6000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
  20.  *  0.6000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
  25.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
  30.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
```

```
  35.  *  0.5000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
  40.  *  0.5000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
  45.  *  0.5000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
  50.  *  0.5000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.3000  0.1000
  55.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000
0.1000  0.3000  0.3000  0.1000
  60.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000
0.1000  0.3000  0.3000  0.1000
  65.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000
0.1000  0.4000  0.3000  0.1000
  70.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000
0.1000  0.4000  0.3000  0.1000
  75.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000
0.1000  0.4000  0.1000  0.1000
  80.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000
0.1000  0.2000  0.2000  0.1000
  85.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000
0.1000  0.2000  0.3000  0.1000
  90.  *  0.4000  0.1000  0.1000  0.1000  0.2000  0.2000  0.1000  0.1000  0.1000
0.1000  0.2000  0.2000  0.1000
  95.  *  0.4000  0.1000  0.1000  0.1000  0.2000  0.3000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 100.  *  0.4000  0.1000  0.1000  0.1000  0.2000  0.2000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 105.  *  0.4000  0.1000  0.1000  0.1000  0.3000  0.1000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 110.  *  0.4000  0.1000  0.1000  0.1000  0.3000  0.2000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 115.  *  0.4000  0.1000  0.1000  0.1000  0.4000  0.3000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 120.  *  0.4000  0.1000  0.1000  0.1000  0.4000  0.3000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 125.  *  0.4000  0.1000  0.1000  0.1000  0.3000  0.3000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 130.  *  0.5000  0.1000  0.1000  0.1000  0.3000  0.3000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 135.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.3000  0.1000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 140.  *  0.5000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 145.  *  0.5000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 150.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
```

```
 155.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 160.  *  0.6000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 165.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 170.  *  0.5000  0.0000  0.0000  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000
0.0000  0.2000  0.1000  0.0000
 175.  *  0.4000  0.0000  0.0000  0.0000  0.2000  0.1000  0.0000  0.0000  0.0000
0.0000  0.2000  0.0000  0.0000
 180.  *  0.4000  0.1000  0.0000  0.0000  0.1000  0.0000  0.0000  0.1000  0.0000
0.0000  0.1000  0.0000  0.0000
 185.  *  0.2000  0.2000  0.1000  0.0000  0.0000  0.0000  0.0000  0.2000  0.1000
0.0000  0.0000  0.0000  0.0000
 190.  *  0.2000  0.3000  0.1000  0.0000  0.0000  0.0000  0.0000  0.2000  0.1000
0.0000  0.0000  0.0000  0.0000
 195.  *  0.1000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.3000  0.2000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.3000  0.2000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.3000  0.2000
0.0000  0.0000  0.0000  0.0000
 210.  *  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.3000  0.2000
0.0000  0.0000  0.0000  0.0000

                              PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
US 17 and S Gateway

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16       17       18       19       20       21       22       23       24
 25      26      27      28

------*---------------------------------------------------------------------------
---------------------------
 215.  *  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.3000  0.2000
0.0000  0.0000  0.0000  0.0000
 220.  *  0.0000  0.2000  0.2000  0.0000  0.0000  0.0000  0.0000  0.3000  0.2000
0.0000  0.0000  0.0000  0.0000
 225.  *  0.0000  0.2000  0.2000  0.0000  0.1000  0.1000  0.1000  0.3000  0.2000
0.0000  0.0000  0.0000  0.0000
 230.  *  0.0000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 235.  *  0.0000  0.4000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
```

240. * 0.0000 0.4000 0.3000 0.1000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
245. * 0.0000 0.4000 0.3000 0.1000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
250. * 0.0000 0.2000 0.2000 0.1000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
255. * 0.0000 0.2000 0.2000 0.1000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
260. * 0.0000 0.2000 0.2000 0.1000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
265. * 0.0000 0.2000 0.2000 0.1000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.1000 0.0000 0.0000
270. * 0.0000 0.2000 0.2000 0.1000 0.1000 0.1000 0.1000 0.2000 0.2000
0.1000 0.1000 0.1000 0.1000
275. * 0.0000 0.2000 0.2000 0.0000 0.1000 0.0000 0.0000 0.2000 0.2000
0.1000 0.1000 0.1000 0.1000
280. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.2000 0.2000
0.1000 0.1000 0.1000 0.1000
285. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.2000 0.2000
0.1000 0.1000 0.1000 0.1000
290. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.3000
0.1000 0.1000 0.1000 0.1000
295. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.3000
0.1000 0.1000 0.1000 0.1000
300. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.3000
0.1000 0.1000 0.1000 0.1000
305. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.3000
0.1000 0.1000 0.1000 0.1000
310. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.2000 0.2000
0.0000 0.1000 0.1000 0.1000
315. * 0.0000 0.3000 0.2000 0.0000 0.0000 0.0000 0.0000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
320. * 0.0000 0.3000 0.2000 0.0000 0.0000 0.0000 0.0000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
325. * 0.0000 0.3000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.2000
0.0000 0.0000 0.0000 0.0000
330. * 0.0000 0.3000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.2000
0.0000 0.0000 0.0000 0.0000
335. * 0.0000 0.3000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.2000
0.0000 0.0000 0.0000 0.0000
340. * 0.1000 0.3000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.2000
0.0000 0.0000 0.0000 0.0000
345. * 0.1000 0.3000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.2000
0.0000 0.0000 0.0000 0.0000
350. * 0.2000 0.2000 0.1000 0.0000 0.0000 0.0000 0.0000 0.3000 0.1000
0.0000 0.0000 0.0000 0.0000
355. * 0.2000 0.2000 0.1000 0.0000 0.0000 0.0000 0.0000 0.2000 0.1000
0.0000 0.0000 0.0000 0.0000

```
 360.  *  0.6000  0.1000  0.0000  0.0000  0.1000  0.0000  0.0000  0.1000  0.0000
0.0000  0.1000  0.0000  0.0000

------*--------------------------------------------------------------------------------
---------------------------
 MAX   *  0.7000  0.4000  0.3000  0.1000  0.4000  0.3000  0.1000  0.4000  0.3000
0.1000  0.4000  0.3000  0.1000
 DEGR. *      5     235     230      90     115      95      90     290     290
55      65      50      50

 THE HIGHEST CONCENTRATION OF   0.7000 PPM OCCURRED AT RECEPTOR    16.
```

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,5,3,4,2200,2200,2200,2200,2200,2200,2200,2200,1230,1230,1230,1230,1230,1230,1230,1
230,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,
0,0,0,0,0,0,0,0,0,0,2.81,2.81,2.53,2.64,1.31,1.31,1.08,1.08
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-70.0,58.0,5.9
'N Leg, W Side - 25 m',-70.0,130.0,5.9
'N Leg, W Side - 50 m',-70.0,212.0,5.9
'N Leg, W Side-Midblk',-70.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-46.0,5.9
'S Leg, E Side - 25 m',70.0,-118.0,5.9
'S Leg, E Side - 50 m',70.0,-200.0,5.9
'S Leg, E Side-Midblk',70.0,-636.0,5.9
'S Leg, W Side-Corner',-70.0,-46.0,5.9
'S Leg, W Side - 25 m',-70.0,-118.0,5.9
'S Leg, W Side - 50 m',-70.0,-200.0,5.9
'S Leg, W Side-Midblk',-70.0,-636.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-142.0,58.0,5.9
'W Leg, N Side - 50 m',-224.0,58.0,5.9
'W Leg, N Side-Midblk',-660.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-46.0,5.9
'E Leg, S Side - 50 m',224.0,-46.0,5.9
'E Leg, S Side-Midblk',660.0,-46.0,5.9
'W Leg, S Side - 25 m',-142.0,-46.0,5.9
'W Leg, S Side - 50 m',-224.0,-46.0,5.9
'W Leg, S Side-Midblk',-660.0,-46.0,5.9
'2042 - US 17 and S Gateway',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-30,0,-30,1200,6150,2.81,0.0,79.7
2
'N Leg App - Queue','AG',-30,48,-30,1200,0.0,60.0,5
120,68,2,6150,1.31,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,6150,2.81,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,6150,2.81,0.0,79.7
2
'S Leg App - Queue','AG',30,-36,30,-1200,0.0,60.0,5
120,68,2,6150,1.31,1900,1,3
1
```

```
'S Leg Dep - FreeFlow','AG',-30,0,-30,-1200,6150,2.81,0.0,79.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,4920,2.63,0.0,67.7
2
'E Leg App - Queue','AG',60,24,1200,24,0.0,48.0,4
120,68,2,4920,1.08,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,3690,2.53,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,3690,2.64,0.0,55.7
2
'W Leg App - Queue','AG',-60,-18,-1200,-18,0.0,36.0,3
120,68,2,3690,1.08,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,4920,2.64,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2042 US 17 and S Gateway OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface
CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

```
      JOB: Fred Ex AQ Analysis                                    RUN: 2042 - US 17
and S Gateway

      DATE :  8/15/17
      TIME : 10:34:59

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -30.0       0.0     -30.0    1200.0 *    1200.
360. AG   6150.   2.8   0.0 79.7
       2. N Leg App - Queue   *    -30.0      48.0     -30.0    5348.1 *    5300.
360. AG     10. 100.0   0.0 60.0 1.62 269.2
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   6150.   2.8   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   6150.   2.8   0.0 79.7
       5. S Leg App - Queue   *     30.0     -36.0      30.0   -5336.1 *    5300.
180. AG     10. 100.0   0.0 60.0 1.62 269.2
       6. S Leg Dep - FreeFlow*    -30.0       0.0     -30.0   -1200.0 *    1200.
180. AG   6150.   2.8   0.0 79.7
       7. E Leg App - FreeFlow*      0.0      24.0    1200.0      24.0 *    1200.
90. AG   4920.   2.6   0.0 67.7
       8. E Leg App - Queue   *     60.0      24.0    5360.1      24.0 *    5300.
90. AG      7. 100.0   0.0 48.0 1.62 269.2
       9. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   3690.   2.5   0.0 55.7
      10. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
```

```
270. AG   3690.   2.6   0.0 55.7
      11. W Leg App - Queue   *    -60.0     -18.0   -5360.1     -18.0 *    5300.
270. AG      5. 100.0   0.0 36.0 1.62 269.2
      12. W Leg Dep - FreeFlow*      0.0      24.0   -1200.0      24.0 *    1200.
270. AG   4920.   2.6   0.0 67.7

                             PAGE  2
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 - US 17
and S Gateway

      DATE :  8/15/17
      TIME : 10:34:59

       ADDITIONAL QUEUE LINK PARAMETERS
       --------------------------------
         LINK DESCRIPTION     *    CYCLE    RED     CLEARANCE  APPROACH  SATURATION
 IDLE   SIGNAL   ARRIVAL
                              *    LENGTH   TIME    LOST TIME    VOL      FLOW RATE
EM FAC   TYPE     RATE
                              *     (SEC)   (SEC)    (SEC)      (VPH)      (VPH)
(gm/hr)

------------------------*-----------------------------------------------------------
--------------------
       2. N Leg App - Queue   *     120       68       2.0      6150       1900
 1.31      1         3
       5. S Leg App - Queue   *     120       68       2.0      6150       1900
 1.31      1         3
       8. E Leg App - Queue   *     120       68       2.0      4920       1900
 1.08      1         3
      11. W Leg App - Queue   *     120       68       2.0      3690       1900
 1.08      1         3

       RECEPTOR LOCATIONS
       ------------------
                              *          COORDINATES (FT)           *
         RECEPTOR             *      X           Y          Z       *
     -------------------------*-------------------------------------*
      1. N Leg, E Side-Corner *       70.0       58.0        5.9    *
      2. N Leg, E Side - 25 m *       70.0      130.0        5.9    *
      3. N Leg, E Side - 50 m *       70.0      212.0        5.9    *
      4. N Leg, E Side-Midblk *       70.0      648.0        5.9    *
      5. N Leg, W Side-Corner *      -70.0       58.0        5.9    *
      6. N Leg, W Side - 25 m *      -70.0      130.0        5.9    *
      7. N Leg, W Side - 50 m *      -70.0      212.0        5.9    *
      8. N Leg, W Side-Midblk *      -70.0      648.0        5.9    *
      9. S Leg, E Side-Corner *       70.0      -46.0        5.9    *
     10. S Leg, E Side - 25 m *       70.0     -118.0        5.9    *
```

```
     11. S Leg, E Side - 50 m *        70.0     -200.0        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -636.0        5.9   *
     13. S Leg, W Side-Corner *       -70.0      -46.0        5.9   *
     14. S Leg, W Side - 25 m *       -70.0     -118.0        5.9   *
     15. S Leg, W Side - 50 m *       -70.0     -200.0        5.9   *
     16. S Leg, W Side-Midblk *       -70.0     -636.0        5.9   *
     17. E Leg, N Side - 25 m *       142.0       58.0        5.9   *
     18. E Leg, N Side - 50 m *       224.0       58.0        5.9   *
     19. E Leg, N Side-Midblk *       660.0       58.0        5.9   *
     20. W Leg, N Side - 25 m *      -142.0       58.0        5.9   *
     21. W Leg, N Side - 50 m *      -224.0       58.0        5.9   *
     22. W Leg, N Side-Midblk *      -660.0       58.0        5.9   *
     23. E Leg, S Side - 25 m *       142.0      -46.0        5.9   *
     24. E Leg, S Side - 50 m *       224.0      -46.0        5.9   *
     25. E Leg, S Side-Midblk *       660.0      -46.0        5.9   *
     26. W Leg, S Side - 25 m *      -142.0      -46.0        5.9   *
     27. W Leg, S Side - 50 m *      -224.0      -46.0        5.9   *
     28. W Leg, S Side-Midblk *      -660.0      -46.0        5.9   *
```

PAGE 3

JOB: Fred Ex AQ Analysis RUN: 2042 - US 17 and S Gateway

```
       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*---------------------------------------------------------------------------------
------------------------------------------
   5.  *  0.6000  0.6000  0.6000  0.6000  1.1000  1.0000  1.0000  0.9000  1.2000
0.9000  0.8000  0.8000  1.7000  1.4000  1.2000
  10.  *  0.5000  0.5000  0.4000  0.3000  1.1000  1.1000  1.1000  1.0000  1.1000
0.8000  0.7000  0.5000  1.7000  1.3000  1.5000
  15.  *  0.2000  0.2000  0.2000  0.2000  1.2000  1.1000  1.1000  1.1000  0.9000
0.5000  0.5000  0.3000  1.7000  1.4000  1.4000
  20.  *  0.2000  0.1000  0.1000  0.1000  1.2000  1.2000  1.2000  1.0000  0.7000
0.5000  0.3000  0.2000  1.7000  1.3000  1.4000
```

```
  25.  *  0.1000  0.1000  0.1000  0.1000  1.1000  1.1000  1.1000  1.0000  0.6000
0.4000  0.3000  0.2000  1.7000  1.4000  1.3000
  30.  *  0.1000  0.1000  0.1000  0.1000  1.0000  1.0000  1.0000  1.0000  0.6000
0.4000  0.3000  0.2000  1.5000  1.4000  1.2000
  35.  *  0.1000  0.1000  0.1000  0.1000  0.9000  0.9000  0.9000  0.9000  0.6000
0.4000  0.3000  0.2000  1.5000  1.3000  1.1000
  40.  *  0.1000  0.1000  0.1000  0.1000  0.9000  0.9000  0.9000  0.9000  0.6000
0.4000  0.3000  0.2000  1.5000  1.3000  1.2000
  45.  *  0.1000  0.1000  0.1000  0.1000  0.9000  0.9000  0.9000  0.9000  0.6000
0.5000  0.3000  0.2000  1.5000  1.1000  1.0000
  50.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.7000
0.4000  0.2000  0.1000  1.6000  1.1000  1.0000
  55.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.7000
0.4000  0.2000  0.0000  1.5000  1.1000  1.0000
  60.  *  0.1000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.7000
0.4000  0.2000  0.0000  1.5000  1.2000  1.0000
  65.  *  0.1000  0.0000  0.0000  0.0000  0.9000  0.8000  0.8000  0.8000  0.7000
0.4000  0.2000  0.0000  1.6000  1.2000  1.0000
  70.  *  0.1000  0.0000  0.0000  0.0000  1.0000  0.8000  0.8000  0.8000  0.8000
0.4000  0.2000  0.0000  1.6000  1.1000  0.9000
  75.  *  0.2000  0.0000  0.0000  0.0000  1.0000  0.8000  0.8000  0.8000  0.8000
0.4000  0.2000  0.0000  1.7000  1.2000  1.0000
  80.  *  0.3000  0.0000  0.0000  0.0000  1.1000  0.8000  0.8000  0.8000  0.8000
0.4000  0.2000  0.0000  1.6000  1.2000  1.0000
  85.  *  0.5000  0.1000  0.0000  0.0000  1.4000  0.9000  0.8000  0.8000  0.8000
0.2000  0.2000  0.0000  1.6000  1.0000  1.0000
  90.  *  0.7000  0.1000  0.0000  0.0000  1.5000  1.0000  0.8000  0.8000  0.6000
0.2000  0.0000  0.0000  1.5000  1.0000  0.8000
  95.  *  0.8000  0.3000  0.1000  0.0000  1.6000  1.1000  0.9000  0.8000  0.5000
0.1000  0.0000  0.0000  1.2000  0.9000  0.8000
 100.  *  0.9000  0.3000  0.2000  0.0000  1.7000  1.1000  1.0000  0.8000  0.3000
0.0000  0.0000  0.0000  1.2000  0.8000  0.8000
 105.  *  0.9000  0.3000  0.2000  0.0000  1.7000  1.1000  1.0000  0.8000  0.2000
0.0000  0.0000  0.0000  1.0000  0.8000  0.8000
 110.  *  0.8000  0.3000  0.2000  0.0000  1.6000  1.0000  1.0000  0.8000  0.1000
0.0000  0.0000  0.0000  0.9000  0.8000  0.8000
 115.  *  0.8000  0.3000  0.3000  0.0000  1.5000  1.1000  1.1000  0.8000  0.1000
0.0000  0.0000  0.0000  0.8000  0.8000  0.8000
 120.  *  0.7000  0.3000  0.3000  0.0000  1.6000  1.1000  1.1000  0.8000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.8000
 125.  *  0.7000  0.3000  0.3000  0.0000  1.5000  1.1000  1.1000  0.9000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.8000
 130.  *  0.7000  0.3000  0.2000  0.1000  1.5000  1.2000  1.0000  0.9000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.8000
 135.  *  0.6000  0.4000  0.3000  0.2000  1.6000  1.2000  1.0000  1.0000  0.1000
0.1000  0.1000  0.1000  0.8000  0.9000  0.9000
 140.  *  0.6000  0.4000  0.3000  0.2000  1.5000  1.2000  1.1000  1.0000  0.1000
0.1000  0.1000  0.1000  0.9000  0.9000  0.9000
```

```
 145.  *  0.6000  0.4000  0.3000  0.2000  1.6000  1.4000  1.2000  1.0000  0.1000
0.1000  0.1000  0.1000  0.9000  0.9000  0.9000
 150.  *  0.6000  0.4000  0.3000  0.2000  1.6000  1.3000  1.2000  1.1000  0.1000
0.1000  0.1000  0.1000  1.0000  1.0000  1.0000
 155.  *  0.6000  0.4000  0.3000  0.2000  1.6000  1.5000  1.4000  1.1000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 160.  *  0.8000  0.5000  0.3000  0.2000  1.8000  1.5000  1.2000  1.1000  0.2000
0.1000  0.1000  0.1000  1.2000  1.2000  1.2000
 165.  *  0.9000  0.5000  0.5000  0.3000  1.9000  1.5000  1.3000  1.3000  0.2000
0.2000  0.2000  0.2000  1.2000  1.1000  1.1000
 170.  *  1.1000  0.8000  0.7000  0.5000  1.8000  1.4000  1.5000  1.2000  0.5000
0.5000  0.4000  0.3000  1.1000  1.1000  1.1000
 175.  *  1.3000  1.0000  0.8000  0.8000  1.7000  1.4000  1.2000  1.1000  0.6000
0.6000  0.6000  0.6000  1.1000  1.0000  1.0000
 180.  *  1.5000  1.2000  1.1000  0.9000  1.5000  1.2000  1.1000  0.9000  0.9000
0.9000  0.9000  0.7000  0.9000  0.9000  0.9000
 185.  *  1.7000  1.4000  1.2000  1.1000  1.3000  1.0000  0.8000  0.8000  1.1000
1.0000  1.0000  0.9000  0.6000  0.6000  0.6000
 190.  *  1.8000  1.4000  1.5000  1.2000  1.1000  0.8000  0.7000  0.5000  1.1000
1.1000  1.1000  1.0000  0.5000  0.5000  0.4000
 195.  *  1.9000  1.5000  1.3000  1.3000  0.9000  0.5000  0.5000  0.3000  1.2000
1.1000  1.1000  1.1000  0.2000  0.2000  0.2000
 200.  *  1.8000  1.5000  1.2000  1.1000  0.8000  0.5000  0.3000  0.2000  1.2000
1.2000  1.2000  1.0000  0.2000  0.1000  0.1000
 205.  *  1.6000  1.5000  1.4000  1.1000  0.6000  0.4000  0.3000  0.2000  1.1000
1.1000  1.1000  1.0000  0.1000  0.1000  0.1000
 210.  *  1.5000  1.3000  1.2000  1.1000  0.6000  0.4000  0.3000  0.2000  1.0000
1.0000  1.0000  1.0000  0.1000  0.1000  0.1000
```

```
                              PAGE   4
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 - US 17
and S Gateway

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-----------------------------------------
 215.  *  1.6000  1.4000  1.2000  1.0000  0.6000  0.4000  0.3000  0.2000  0.9000
0.9000  0.9000  0.9000  0.1000  0.1000  0.1000
 220.  *  1.5000  1.2000  1.1000  1.0000  0.6000  0.4000  0.3000  0.2000  0.9000
0.9000  0.9000  0.9000  0.1000  0.1000  0.1000
 225.  *  1.6000  1.2000  1.0000  1.0000  0.6000  0.4000  0.3000  0.2000  0.8000
0.9000  0.9000  0.9000  0.1000  0.1000  0.1000
```

```
 230.  *  1.5000  1.2000  1.0000  0.9000  0.7000  0.3000  0.2000  0.1000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 235.  *  1.6000  1.1000  1.1000  0.9000  0.7000  0.3000  0.3000  0.0000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 240.  *  1.6000  1.1000  1.1000  0.8000  0.7000  0.3000  0.3000  0.0000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 245.  *  1.5000  1.1000  1.1000  0.8000  0.8000  0.3000  0.3000  0.0000  0.8000
0.8000  0.8000  0.8000  0.1000  0.0000  0.0000
 250.  *  1.6000  1.0000  1.0000  0.8000  0.8000  0.3000  0.2000  0.0000  1.0000
0.8000  0.8000  0.8000  0.1000  0.0000  0.0000
 255.  *  1.7000  1.1000  1.0000  0.8000  0.9000  0.3000  0.2000  0.0000  1.0000
0.8000  0.8000  0.8000  0.2000  0.0000  0.0000
 260.  *  1.7000  1.1000  1.0000  0.8000  0.9000  0.3000  0.2000  0.0000  1.2000
0.8000  0.8000  0.8000  0.4000  0.0000  0.0000
 265.  *  1.6000  1.1000  0.9000  0.8000  0.8000  0.3000  0.1000  0.0000  1.2000
0.9000  0.8000  0.8000  0.5000  0.1000  0.0000
 270.  *  1.5000  1.0000  0.8000  0.8000  0.7000  0.1000  0.0000  0.0000  1.5000
1.0000  0.8000  0.8000  0.7000  0.2000  0.0000
 275.  *  1.4000  0.9000  0.8000  0.8000  0.5000  0.1000  0.0000  0.0000  1.6000
1.0000  1.0000  0.8000  0.8000  0.2000  0.2000
 280.  *  1.1000  0.8000  0.8000  0.8000  0.3000  0.0000  0.0000  0.0000  1.6000
1.2000  1.0000  0.8000  0.8000  0.4000  0.2000
 285.  *  1.0000  0.8000  0.8000  0.8000  0.2000  0.0000  0.0000  0.0000  1.6000
1.2000  1.0000  0.8000  0.8000  0.4000  0.2000
 290.  *  1.0000  0.8000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  1.6000
1.1000  0.9000  0.8000  0.8000  0.4000  0.2000
 295.  *  0.9000  0.8000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  1.6000
1.2000  1.0000  0.8000  0.8000  0.4000  0.2000
 300.  *  0.8000  0.8000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  1.5000
1.2000  1.0000  0.8000  0.7000  0.4000  0.2000
 305.  *  0.8000  0.8000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  1.5000
1.2000  1.0000  0.8000  0.7000  0.4000  0.2000
 310.  *  0.8000  0.8000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  1.6000
1.1000  1.0000  0.9000  0.7000  0.4000  0.2000
 315.  *  0.9000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.5000
1.1000  1.0000  1.0000  0.7000  0.5000  0.3000
 320.  *  0.9000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.5000
1.3000  1.2000  1.0000  0.6000  0.5000  0.3000
 325.  *  0.9000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.5000
1.3000  1.1000  1.0000  0.6000  0.4000  0.3000
 330.  *  1.0000  1.0000  1.0000  1.0000  0.1000  0.1000  0.1000  0.1000  1.5000
1.4000  1.2000  1.1000  0.6000  0.4000  0.3000
 335.  *  1.1000  1.1000  1.1000  1.0000  0.1000  0.1000  0.1000  0.1000  1.7000
1.4000  1.3000  1.1000  0.6000  0.4000  0.3000
 340.  *  1.2000  1.2000  1.2000  1.0000  0.2000  0.1000  0.1000  0.1000  1.7000
1.3000  1.4000  1.0000  0.7000  0.5000  0.3000
 345.  *  1.2000  1.1000  1.1000  1.1000  0.2000  0.2000  0.2000  0.2000  1.7000
1.4000  1.4000  1.3000  0.9000  0.5000  0.5000
```

```
 350.  *  1.1000  1.1000  1.1000  1.0000  0.5000  0.5000  0.4000  0.3000  1.7000
1.3000  1.5000  1.2000  1.1000  0.8000  0.7000
 355.  *  1.1000  1.0000  1.0000  0.9000  0.6000  0.6000  0.6000  0.6000  1.7000
1.4000  1.2000  1.1000  1.2000  0.9000  0.8000
 360.  *  0.9000  0.9000  0.9000  0.7000  0.9000  0.9000  0.9000  0.7000  1.5000
1.2000  1.1000  0.9000  1.5000  1.2000  1.1000

------*--------------------------------------------------------------------------
-----------------------------------------
 MAX   *  1.9000  1.5000  1.5000  1.3000  1.9000  1.5000  1.5000  1.3000  1.7000
1.4000  1.5000  1.3000  1.7000  1.4000  1.5000
 DEGR. *    195     195     190     195     165     155     170     165     335
330     350     345       5       5      10
```

```
                             PAGE  5
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 - US 17
and S Gateway

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
   5.  *  1.1000  0.1000  0.0000  0.0000  0.3000  0.2000  0.0000  0.7000  0.6000
0.6000  0.9000  0.8000  0.6000
  10.  *  1.2000  0.0000  0.0000  0.0000  0.5000  0.2000  0.0000  0.6000  0.6000
0.6000  1.1000  0.8000  0.6000
  15.  *  1.3000  0.0000  0.0000  0.0000  0.5000  0.3000  0.0000  0.6000  0.6000
0.6000  1.1000  0.9000  0.6000
  20.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.3000  0.0000  0.6000  0.6000
0.6000  1.1000  1.0000  0.6000
  25.  *  1.1000  0.0000  0.0000  0.0000  0.5000  0.4000  0.0000  0.6000  0.6000
0.6000  1.1000  1.0000  0.6000
  30.  *  1.1000  0.0000  0.0000  0.0000  0.5000  0.4000  0.1000  0.6000  0.6000
0.6000  1.1000  1.0000  0.7000
```

```
  35.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.4000  0.2000  0.6000  0.6000
0.6000  1.1000  1.0000  0.8000
  40.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.4000  0.2000  0.6000  0.6000
0.6000  1.1000  1.0000  0.8000
  45.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.4000  0.2000  0.6000  0.6000
0.6000  1.1000  1.0000  0.9000
  50.  *  0.9000  0.0000  0.0000  0.0000  0.5000  0.4000  0.2000  0.7000  0.7000
0.7000  1.2000  1.1000  0.9000
  55.  *  0.8000  0.0000  0.0000  0.0000  0.5000  0.4000  0.2000  0.7000  0.7000
0.7000  1.2000  1.1000  0.9000
  60.  *  0.8000  0.1000  0.1000  0.1000  0.6000  0.5000  0.3000  0.7000  0.7000
0.7000  1.2000  1.1000  0.9000
  65.  *  0.8000  0.1000  0.1000  0.1000  0.6000  0.4000  0.3000  0.7000  0.7000
0.7000  1.2000  1.0000  1.0000
  70.  *  0.8000  0.1000  0.1000  0.1000  0.6000  0.4000  0.3000  0.8000  0.8000
0.8000  1.3000  1.1000  1.0000
  75.  *  0.8000  0.2000  0.2000  0.2000  0.7000  0.5000  0.4000  0.8000  0.8000
0.8000  1.5000  1.3000  1.0000
  80.  *  0.8000  0.3000  0.3000  0.3000  0.8000  0.6000  0.5000  0.8000  0.8000
0.8000  1.5000  1.2000  1.1000
  85.  *  0.8000  0.5000  0.5000  0.4000  1.0000  0.9000  0.8000  0.8000  0.8000
0.7000  1.1000  1.2000  0.9000
  90.  *  0.8000  0.7000  0.7000  0.6000  1.2000  1.0000  0.9000  0.6000  0.6000
0.5000  1.1000  1.0000  0.8000
  95.  *  0.8000  0.8000  0.8000  0.7000  1.4000  0.9000  0.9000  0.4000  0.4000
0.4000  1.0000  0.7000  0.7000
 100.  *  0.8000  0.9000  0.9000  0.8000  1.3000  1.3000  1.1000  0.3000  0.3000
0.2000  0.8000  0.7000  0.5000
 105.  *  0.8000  0.9000  0.9000  0.8000  1.3000  1.2000  1.0000  0.2000  0.2000
0.1000  0.7000  0.4000  0.4000
 110.  *  0.8000  0.8000  0.8000  0.8000  1.4000  1.1000  1.0000  0.1000  0.1000
0.1000  0.6000  0.4000  0.3000
 115.  *  0.8000  0.8000  0.8000  0.8000  1.3000  1.2000  1.0000  0.1000  0.1000
0.1000  0.6000  0.4000  0.3000
 120.  *  0.8000  0.7000  0.7000  0.7000  1.1000  0.9000  0.9000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 125.  *  0.8000  0.7000  0.7000  0.7000  1.2000  1.0000  0.9000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 130.  *  0.8000  0.7000  0.7000  0.7000  1.2000  1.1000  0.9000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 135.  *  0.9000  0.6000  0.6000  0.6000  1.0000  1.0000  0.8000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 140.  *  0.9000  0.6000  0.6000  0.6000  1.1000  1.0000  0.8000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 145.  *  0.9000  0.6000  0.6000  0.6000  1.1000  1.0000  0.8000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 150.  *  1.0000  0.6000  0.6000  0.6000  1.1000  1.0000  0.7000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
```

```
 155.  *  1.0000  0.6000  0.6000  0.6000  1.1000  1.0000  0.6000  0.0000  0.0000
0.0000  0.5000  0.4000  0.0000
 160.  *  1.0000  0.6000  0.6000  0.6000  1.1000  1.0000  0.6000  0.0000  0.0000
0.0000  0.5000  0.4000  0.0000
 165.  *  1.1000  0.6000  0.6000  0.6000  1.1000  0.9000  0.6000  0.0000  0.0000
0.0000  0.5000  0.3000  0.0000
 170.  *  1.0000  0.6000  0.6000  0.6000  1.1000  0.8000  0.6000  0.0000  0.0000
0.0000  0.5000  0.2000  0.0000
 175.  *  0.9000  0.7000  0.6000  0.6000  0.9000  0.8000  0.6000  0.1000  0.0000
0.0000  0.3000  0.2000  0.0000
 180.  *  0.7000  0.9000  0.7000  0.6000  0.9000  0.7000  0.6000  0.3000  0.1000
0.0000  0.3000  0.1000  0.0000
 185.  *  0.6000  0.9000  0.8000  0.6000  0.7000  0.6000  0.6000  0.3000  0.2000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.3000  1.1000  0.8000  0.6000  0.6000  0.6000  0.6000  0.5000  0.2000
0.0000  0.0000  0.0000  0.0000
 195.  *  0.2000  1.1000  0.9000  0.6000  0.6000  0.6000  0.6000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  1.1000  1.0000  0.6000  0.6000  0.6000  0.6000  0.5000  0.4000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.1000  1.1000  1.0000  0.6000  0.6000  0.6000  0.6000  0.5000  0.4000
0.0000  0.0000  0.0000  0.0000
 210.  *  0.1000  1.1000  1.0000  0.7000  0.6000  0.6000  0.6000  0.5000  0.4000
0.1000  0.0000  0.0000  0.0000

                              PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 - US 17
and S Gateway

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16       17       18       19       20       21       22       23       24
 25      26      27      28

------*--------------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  1.1000  1.0000  0.8000  0.6000  0.6000  0.6000  0.5000  0.4000
0.2000  0.0000  0.0000  0.0000
 220.  *  0.1000  1.1000  1.0000  0.8000  0.6000  0.6000  0.6000  0.5000  0.4000
0.2000  0.0000  0.0000  0.0000
 225.  *  0.1000  1.0000  1.0000  0.8000  0.6000  0.6000  0.6000  0.5000  0.4000
0.2000  0.0000  0.0000  0.0000
 230.  *  0.0000  1.2000  1.1000  0.9000  0.7000  0.7000  0.7000  0.5000  0.4000
0.2000  0.0000  0.0000  0.0000
 235.  *  0.0000  1.2000  1.0000  0.9000  0.7000  0.7000  0.7000  0.5000  0.4000
0.2000  0.0000  0.0000  0.0000
```

240. * 0.0000 1.1000 0.9000 0.9000 0.7000 0.7000 0.7000 0.5000 0.4000
0.2000 0.0000 0.0000 0.0000
245. * 0.0000 1.3000 1.2000 1.0000 0.8000 0.8000 0.8000 0.6000 0.4000
0.3000 0.1000 0.1000 0.1000
250. * 0.0000 1.5000 1.1000 1.0000 0.8000 0.8000 0.8000 0.6000 0.4000
0.3000 0.1000 0.1000 0.1000
255. * 0.0000 1.3000 1.3000 1.0000 0.9000 0.9000 0.8000 0.7000 0.4000
0.4000 0.2000 0.2000 0.2000
260. * 0.0000 1.3000 1.3000 1.1000 0.9000 0.9000 0.8000 0.8000 0.7000
0.5000 0.4000 0.4000 0.2000
265. * 0.0000 1.4000 0.9000 0.9000 0.8000 0.8000 0.7000 1.0000 0.7000
0.8000 0.5000 0.5000 0.4000
270. * 0.0000 1.2000 1.0000 0.9000 0.7000 0.7000 0.6000 1.1000 1.1000
0.8000 0.7000 0.7000 0.5000
275. * 0.0000 1.0000 0.9000 0.8000 0.5000 0.5000 0.4000 1.1000 1.2000
0.9000 0.8000 0.8000 0.7000
280. * 0.0000 0.8000 0.6000 0.5000 0.3000 0.3000 0.3000 1.4000 1.2000
1.1000 0.8000 0.8000 0.8000
285. * 0.0000 0.7000 0.5000 0.4000 0.2000 0.2000 0.2000 1.5000 1.3000
1.0000 0.8000 0.8000 0.8000
290. * 0.0000 0.6000 0.4000 0.3000 0.1000 0.1000 0.1000 1.3000 1.1000
1.0000 0.8000 0.8000 0.8000
295. * 0.0000 0.6000 0.4000 0.3000 0.1000 0.1000 0.1000 1.2000 1.0000
0.9000 0.8000 0.8000 0.7000
300. * 0.0000 0.6000 0.5000 0.3000 0.1000 0.1000 0.1000 1.2000 1.1000
0.9000 0.7000 0.7000 0.7000
305. * 0.0000 0.5000 0.4000 0.2000 0.0000 0.0000 0.0000 1.2000 1.1000
0.9000 0.7000 0.7000 0.7000
310. * 0.1000 0.5000 0.4000 0.2000 0.0000 0.0000 0.0000 1.1000 1.1000
0.9000 0.7000 0.7000 0.7000
315. * 0.2000 0.5000 0.4000 0.2000 0.0000 0.0000 0.0000 1.1000 1.0000
0.8000 0.7000 0.7000 0.7000
320. * 0.2000 0.5000 0.4000 0.2000 0.0000 0.0000 0.0000 1.1000 1.0000
0.8000 0.6000 0.6000 0.6000
325. * 0.2000 0.5000 0.4000 0.2000 0.0000 0.0000 0.0000 1.1000 1.0000
0.8000 0.6000 0.6000 0.6000
330. * 0.2000 0.5000 0.4000 0.1000 0.0000 0.0000 0.0000 1.1000 1.0000
0.7000 0.6000 0.6000 0.6000
335. * 0.2000 0.5000 0.4000 0.0000 0.0000 0.0000 0.0000 1.1000 1.0000
0.6000 0.6000 0.6000 0.6000
340. * 0.2000 0.5000 0.3000 0.0000 0.0000 0.0000 0.0000 1.1000 1.0000
0.6000 0.6000 0.6000 0.6000
345. * 0.3000 0.5000 0.3000 0.0000 0.0000 0.0000 0.0000 1.1000 0.9000
0.6000 0.6000 0.6000 0.6000
350. * 0.5000 0.5000 0.2000 0.0000 0.0000 0.0000 0.0000 1.1000 0.8000
0.6000 0.6000 0.6000 0.6000
355. * 0.8000 0.3000 0.2000 0.0000 0.1000 0.0000 0.0000 0.9000 0.8000
0.6000 0.7000 0.6000 0.6000

```
 360.  *  0.9000  0.3000  0.1000  0.0000  0.3000  0.1000  0.0000  0.9000  0.7000
0.6000  0.9000  0.7000  0.6000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  1.3000  1.5000  1.3000  1.1000  1.4000  1.3000  1.1000  1.5000  1.3000
1.1000  1.5000  1.3000  1.1000
 DEGR. *     15     250     255     260     110     100     100     285     285
280      75      75      80

 THE HIGHEST CONCENTRATION OF   1.9000 PPM OCCURRED AT RECEPTOR     5.
```

2042 NoBuild SR610 and US 1 IN

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,4,4,4,2200,2200,2200,2200,2200,2200,2200,2200,447.8,998.75,510.5,142.5,447.8,998.7
5,510.5,142.5,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1
200,-1200,0,0,0,0,0,0,0,0,30,10,2.57,2.57,2.62,2.62,1.25,1.25,1.06,1.06
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,46.6,5.9
'N Leg, E Side - 25 m',70.0,118.6,5.9
'N Leg, E Side - 50 m',70.0,200.6,5.9
'N Leg, E Side-Midblk',70.0,636.6,5.9
'N Leg, W Side-Corner',-58.0,100.5,5.9
'N Leg, W Side - 25 m',-58.0,172.5,5.9
'N Leg, W Side - 50 m',-58.0,254.5,5.9
'N Leg, W Side-Midblk',-58.0,690.5,5.9
'S Leg, E Side-Corner',70.0,-71.2,5.9
'S Leg, E Side - 25 m',70.0,-143.3,5.9
'S Leg, E Side - 50 m',70.0,-225.3,5.9
'S Leg, E Side-Midblk',70.0,-661.2,5.9
'S Leg, W Side-Corner',-58.0,-33.5,5.9
'S Leg, W Side - 25 m',-58.0,-105.5,5.9
'S Leg, W Side - 50 m',-58.0,-187.5,5.9
'S Leg, W Side-Midblk',-58.0,-623.5,5.9
'E Leg, N Side - 25 m',140.9,34.0,5.9
'E Leg, N Side - 50 m',221.7,19.8,5.9
'E Leg, N Side-Midblk',651.0,-55.9,5.9
'W Leg, N Side - 25 m',-120.4,136.5,5.9
'W Leg, N Side - 50 m',-191.4,177.5,5.9
'W Leg, N Side-Midblk',-569.0,395.5,5.9
'E Leg, S Side - 25 m',140.9,-83.7,5.9
'E Leg, S Side - 50 m',221.7,-98.0,5.9
'E Leg, S Side-Midblk',651.0,-173.7,5.9
'W Leg, S Side - 25 m',-120.4,2.5,5.9
'W Leg, S Side - 50 m',-191.4,43.5,5.9
'W Leg, S Side-Midblk',-569.0,261.5,5.9
'2042 NO BUILD - SR610 and US 1',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,3995,2.57,0.0,67.7
2
'N Leg App - Queue','AG',-24,48,-24,1200,0.0,48.0,4
120,68,2,3995,1.25,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,2239,2.57,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,2239,2.57,0.0,79.7
2
'S Leg App - Queue','AG',30,-48,30,-1200,0.0,60.0,5
120,68,2,2239,1.25,1900,1,3
1
```

```
'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,3995,2.57,0.0,67.7
1
'E Leg App - FreeFlow','AG',8,23,1186,-185,570,2.62,0.0,67.7
2
'E Leg App - Queue','AG',63,13,1186,-185,0.0,48.0,4
120,68,2,570,1.06,1900,1,3
1
'E Leg Dep - FreeFlow','AG',-8,-23,1178,-232,2042,2.62,0.0,67.7
1
'W Leg App - FreeFlow','AG',-8,-23,-1051,579,2042,2.62,0.0,67.7
2
'W Leg App - Queue','AG',-54,3,-1051,579,0.0,48.0,4
120,68,2,2042,1.06,1900,1,3
1
'W Leg Dep - FreeFlow','AG',8,23,-1027,621,570,2.62,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                        2042 NoBuild SR610 and US 1 OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
SR610 and US 1

      DATE :  8/15/17
      TIME : 10:51:58

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -24.0       0.0     -24.0    1200.0 *    1200.
360. AG   3995.   2.6   0.0 67.7
       2. N Leg App - Queue   *    -24.0      48.0     -24.0    2937.5 *    2889.
360. AG      8. 100.0   0.0 48.0 1.31 146.8
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   2239.   2.6   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   2239.   2.6   0.0 79.7
       5. S Leg App - Queue   *     30.0     -48.0      30.0    -214.2 *     166.
180. AG      9. 100.0   0.0 60.0 0.59   8.4
       6. S Leg Dep - FreeFlow*    -24.0       0.0     -24.0   -1200.0 *    1200.
180. AG   3995.   2.6   0.0 67.7
       7. E Leg App - FreeFlow*      8.0      23.0    1186.0    -185.0 *    1196.
100. AG    570.   2.6   0.0 67.7
       8. E Leg App - Queue   *     63.0      13.0     115.0       3.8 *      53.
100. AG      6. 100.0   0.0 48.0 0.19   2.7
       9. E Leg Dep - FreeFlow*     -8.0     -23.0    1178.0    -232.0 *    1204.
100. AG   2042.   2.6   0.0 67.7
      10. W Leg App - FreeFlow*     -8.0     -23.0   -1051.0     579.0 *    1204.
```

```
300. AG   2042.   2.6   0.0 67.7
      11. W Leg App - Queue   *    -54.0       3.0    -218.2      97.9 *     190.
300. AG      6. 100.0   0.0 48.0 0.67   9.6
      12. W Leg Dep - FreeFlow*      8.0      23.0   -1027.0     621.0 *    1195.
300. AG    570.   2.6   0.0 67.7

                               PAGE  2
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
SR610 and US 1

      DATE :  8/15/17
      TIME : 10:51:58

       ADDITIONAL QUEUE LINK PARAMETERS
       --------------------------------
         LINK DESCRIPTION     *    CYCLE    RED     CLEARANCE  APPROACH  SATURATION
 IDLE   SIGNAL   ARRIVAL
                              *    LENGTH   TIME    LOST TIME    VOL     FLOW RATE
EM FAC   TYPE     RATE
                              *     (SEC)   (SEC)    (SEC)      (VPH)      (VPH)
(gm/hr)

------------------------*---------------------------------------------------------
--------------------
       2. N Leg App - Queue   *     120       68       2.0      3995       1900
 1.25      1         3
       5. S Leg App - Queue   *     120       68       2.0      2239       1900
 1.25      1         3
       8. E Leg App - Queue   *     120       68       2.0       570       1900
 1.06      1         3
      11. W Leg App - Queue   *     120       68       2.0      2042       1900
 1.06      1         3

       RECEPTOR LOCATIONS
       ------------------
                              *         COORDINATES (FT)          *
         RECEPTOR             *      X           Y          Z       *
     -------------------------*-----------------------------------*
      1. N Leg, E Side-Corner *       70.0        46.6        5.9   *
      2. N Leg, E Side - 25 m *       70.0       118.6        5.9   *
      3. N Leg, E Side - 50 m *       70.0       200.6        5.9   *
      4. N Leg, E Side-Midblk *       70.0       636.6        5.9   *
      5. N Leg, W Side-Corner *      -58.0       100.5        5.9   *
      6. N Leg, W Side - 25 m *      -58.0       172.5        5.9   *
      7. N Leg, W Side - 50 m *      -58.0       254.5        5.9   *
      8. N Leg, W Side-Midblk *      -58.0       690.5        5.9   *
      9. S Leg, E Side-Corner *       70.0       -71.2        5.9   *
     10. S Leg, E Side - 25 m *       70.0      -143.3        5.9   *
```

11. S Leg, E Side - 50 m *	70.0	-225.3	5.9	*
12. S Leg, E Side-Midblk *	70.0	-661.2	5.9	*
13. S Leg, W Side-Corner *	-58.0	-33.5	5.9	*
14. S Leg, W Side - 25 m *	-58.0	-105.5	5.9	*
15. S Leg, W Side - 50 m *	-58.0	-187.5	5.9	*
16. S Leg, W Side-Midblk *	-58.0	-623.5	5.9	*
17. E Leg, N Side - 25 m *	140.9	34.0	5.9	*
18. E Leg, N Side - 50 m *	221.7	19.8	5.9	*
19. E Leg, N Side-Midblk *	651.0	-55.9	5.9	*
20. W Leg, N Side - 25 m *	-120.4	136.5	5.9	*
21. W Leg, N Side - 50 m *	-191.4	177.5	5.9	*
22. W Leg, N Side-Midblk *	-569.0	395.5	5.9	*
23. E Leg, S Side - 25 m *	140.9	-83.7	5.9	*
24. E Leg, S Side - 50 m *	221.7	-98.0	5.9	*
25. E Leg, S Side-Midblk *	651.0	-173.7	5.9	*
26. W Leg, S Side - 25 m *	-120.4	2.5	5.9	*
27. W Leg, S Side - 50 m *	-191.4	43.5	5.9	*
28. W Leg, S Side-Midblk *	-569.0	261.5	5.9	*

PAGE 3

JOB: Fred Ex AQ Analysis RUN: 2042 NO BUILD - SR610 and US 1

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR) *	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5. *	0.3000	0.3000	0.3000	0.2000	0.6000	0.6000	0.6000	0.6000	0.5000	0.4000	0.4000	0.2000	0.8000	0.7000	0.6000
10. *	0.1000	0.1000	0.1000	0.1000	0.6000	0.6000	0.6000	0.6000	0.3000	0.3000	0.2000	0.1000	0.8000	0.8000	0.7000
15. *	0.1000	0.1000	0.1000	0.1000	0.6000	0.6000	0.6000	0.6000	0.2000	0.1000	0.2000	0.1000	0.7000	0.7000	0.6000
20. *	0.1000	0.0000	0.0000	0.0000	0.6000	0.6000	0.6000	0.6000	0.2000	0.1000	0.1000	0.0000	0.8000	0.7000	0.7000

25. * 0.0000 0.0000 0.0000 0.0000 0.5000 0.5000 0.5000 0.5000 0.1000
0.1000 0.1000 0.0000 0.8000 0.6000 0.7000
30. * 0.0000 0.0000 0.0000 0.0000 0.5000 0.5000 0.5000 0.5000 0.1000
0.1000 0.1000 0.0000 0.8000 0.5000 0.5000
35. * 0.0000 0.0000 0.0000 0.0000 0.5000 0.5000 0.5000 0.5000 0.2000
0.1000 0.1000 0.0000 0.7000 0.7000 0.6000
40. * 0.0000 0.0000 0.0000 0.0000 0.5000 0.5000 0.5000 0.5000 0.2000
0.1000 0.1000 0.0000 0.7000 0.6000 0.6000
45. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.1000 0.1000 0.0000 0.7000 0.5000 0.5000
50. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.1000 0.1000 0.0000 0.5000 0.5000 0.5000
55. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.1000 0.1000 0.0000 0.5000 0.5000 0.5000
60. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.1000 0.1000 0.0000 0.6000 0.5000 0.5000
65. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.1000 0.1000 0.0000 0.7000 0.5000 0.5000
70. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.1000 0.1000 0.0000 0.7000 0.5000 0.5000
75. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.1000 0.1000 0.0000 0.6000 0.5000 0.5000
80. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.3000
0.1000 0.1000 0.0000 0.7000 0.5000 0.5000
85. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.3000
0.1000 0.1000 0.0000 0.7000 0.5000 0.5000
90. * 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.3000
0.1000 0.0000 0.0000 0.7000 0.5000 0.5000
95. * 0.1000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.3000
0.1000 0.0000 0.0000 0.7000 0.5000 0.4000
100. * 0.2000 0.0000 0.0000 0.0000 0.4000 0.4000 0.4000 0.4000 0.2000
0.0000 0.0000 0.0000 0.7000 0.5000 0.4000
105. * 0.2000 0.0000 0.0000 0.0000 0.5000 0.4000 0.4000 0.4000 0.2000
0.0000 0.0000 0.0000 0.7000 0.4000 0.4000
110. * 0.2000 0.1000 0.0000 0.0000 0.5000 0.4000 0.4000 0.4000 0.1000
0.0000 0.0000 0.0000 0.6000 0.4000 0.4000
115. * 0.2000 0.1000 0.0000 0.0000 0.5000 0.5000 0.4000 0.4000 0.1000
0.0000 0.0000 0.0000 0.6000 0.4000 0.4000
120. * 0.2000 0.1000 0.0000 0.0000 0.5000 0.5000 0.4000 0.4000 0.1000
0.0000 0.0000 0.0000 0.6000 0.4000 0.4000
125. * 0.2000 0.1000 0.1000 0.0000 0.5000 0.5000 0.4000 0.4000 0.0000
0.0000 0.0000 0.0000 0.4000 0.4000 0.4000
130. * 0.2000 0.1000 0.1000 0.0000 0.5000 0.5000 0.4000 0.4000 0.0000
0.0000 0.0000 0.0000 0.4000 0.4000 0.4000
135. * 0.2000 0.1000 0.1000 0.0000 0.5000 0.5000 0.4000 0.4000 0.0000
0.0000 0.0000 0.0000 0.4000 0.4000 0.4000
140. * 0.2000 0.1000 0.1000 0.0000 0.6000 0.6000 0.5000 0.5000 0.0000
0.0000 0.0000 0.0000 0.5000 0.5000 0.5000

```
 145.  *  0.2000  0.1000  0.1000  0.0000  0.7000  0.6000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 150.  *  0.1000  0.1000  0.0000  0.0000  0.6000  0.6000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 155.  *  0.1000  0.1000  0.0000  0.0000  0.6000  0.7000  0.5000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 160.  *  0.1000  0.1000  0.0000  0.0000  0.7000  0.6000  0.7000  0.6000  0.1000
0.0000  0.0000  0.0000  0.6000  0.6000  0.6000
 165.  *  0.2000  0.1000  0.1000  0.1000  0.7000  0.7000  0.7000  0.6000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 170.  *  0.2000  0.3000  0.2000  0.1000  0.8000  0.7000  0.6000  0.6000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 175.  *  0.3000  0.4000  0.3000  0.2000  0.7000  0.7000  0.7000  0.7000  0.3000
0.3000  0.3000  0.2000  0.6000  0.6000  0.6000
 180.  *  0.5000  0.4000  0.3000  0.4000  0.7000  0.7000  0.6000  0.6000  0.3000
0.3000  0.3000  0.3000  0.6000  0.5000  0.5000
 185.  *  0.6000  0.5000  0.4000  0.4000  0.5000  0.5000  0.3000  0.4000  0.5000
0.5000  0.4000  0.3000  0.4000  0.3000  0.3000
 190.  *  0.6000  0.5000  0.5000  0.6000  0.3000  0.3000  0.3000  0.2000  0.5000
0.5000  0.5000  0.4000  0.2000  0.2000  0.2000
 195.  *  0.6000  0.6000  0.6000  0.5000  0.3000  0.3000  0.1000  0.1000  0.5000
0.5000  0.5000  0.5000  0.2000  0.2000  0.2000
 200.  *  0.6000  0.5000  0.5000  0.4000  0.2000  0.2000  0.1000  0.1000  0.5000
0.5000  0.5000  0.4000  0.1000  0.1000  0.1000
 205.  *  0.5000  0.5000  0.4000  0.4000  0.1000  0.2000  0.1000  0.1000  0.4000
0.4000  0.4000  0.4000  0.1000  0.1000  0.1000
 210.  *  0.5000  0.4000  0.4000  0.4000  0.1000  0.1000  0.0000  0.0000  0.4000
0.4000  0.4000  0.4000  0.0000  0.0000  0.0000

                           PAGE  4
     JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
SR610 and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
------------------------------------------
 215.  *  0.5000  0.4000  0.4000  0.4000  0.1000  0.1000  0.0000  0.0000  0.4000
0.4000  0.4000  0.4000  0.0000  0.0000  0.0000
 220.  *  0.5000  0.4000  0.4000  0.4000  0.1000  0.1000  0.0000  0.0000  0.4000
0.4000  0.4000  0.4000  0.0000  0.0000  0.0000
 225.  *  0.5000  0.5000  0.4000  0.4000  0.1000  0.1000  0.0000  0.0000  0.4000
0.4000  0.4000  0.4000  0.0000  0.0000  0.0000
```

230. * 0.4000 0.5000 0.4000 0.4000 0.1000 0.1000 0.0000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
235. * 0.4000 0.5000 0.4000 0.4000 0.1000 0.1000 0.1000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
240. * 0.4000 0.5000 0.4000 0.4000 0.1000 0.1000 0.1000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
245. * 0.4000 0.5000 0.4000 0.4000 0.1000 0.1000 0.1000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
250. * 0.5000 0.4000 0.4000 0.4000 0.1000 0.1000 0.1000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
255. * 0.4000 0.4000 0.5000 0.4000 0.2000 0.1000 0.1000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
260. * 0.4000 0.5000 0.5000 0.4000 0.2000 0.1000 0.1000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
265. * 0.5000 0.5000 0.5000 0.4000 0.2000 0.1000 0.1000 0.0000 0.4000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
270. * 0.5000 0.5000 0.5000 0.4000 0.2000 0.1000 0.1000 0.0000 0.5000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
275. * 0.5000 0.5000 0.5000 0.4000 0.2000 0.1000 0.1000 0.0000 0.5000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
280. * 0.5000 0.5000 0.5000 0.4000 0.2000 0.1000 0.1000 0.0000 0.6000
0.4000 0.4000 0.4000 0.0000 0.0000 0.0000
285. * 0.5000 0.5000 0.4000 0.4000 0.2000 0.1000 0.0000 0.0000 0.6000
0.3000 0.4000 0.4000 0.1000 0.0000 0.0000
290. * 0.5000 0.5000 0.4000 0.4000 0.2000 0.1000 0.0000 0.0000 0.6000
0.3000 0.3000 0.4000 0.1000 0.0000 0.0000
295. * 0.5000 0.4000 0.4000 0.4000 0.2000 0.0000 0.0000 0.0000 0.6000
0.5000 0.4000 0.4000 0.2000 0.0000 0.0000
300. * 0.5000 0.4000 0.4000 0.4000 0.2000 0.0000 0.0000 0.0000 0.7000
0.5000 0.4000 0.4000 0.2000 0.1000 0.0000
305. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.0000 0.0000 0.0000 0.8000
0.5000 0.5000 0.4000 0.3000 0.1000 0.0000
310. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.7000
0.5000 0.5000 0.4000 0.3000 0.1000 0.1000
315. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.7000
0.5000 0.5000 0.4000 0.3000 0.1000 0.1000
320. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.6000
0.5000 0.5000 0.4000 0.3000 0.1000 0.1000
325. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.6000
0.5000 0.5000 0.4000 0.2000 0.1000 0.1000
330. * 0.4000 0.4000 0.4000 0.4000 0.0000 0.0000 0.0000 0.0000 0.6000
0.6000 0.6000 0.4000 0.2000 0.1000 0.1000
335. * 0.4000 0.4000 0.4000 0.4000 0.1000 0.1000 0.1000 0.1000 0.6000
0.6000 0.4000 0.4000 0.2000 0.1000 0.2000
340. * 0.5000 0.5000 0.5000 0.4000 0.1000 0.1000 0.1000 0.1000 0.6000
0.6000 0.4000 0.4000 0.3000 0.2000 0.2000
345. * 0.5000 0.5000 0.5000 0.5000 0.2000 0.2000 0.2000 0.1000 0.6000
0.6000 0.5000 0.5000 0.3000 0.3000 0.3000

```
 350.  *  0.5000  0.5000  0.5000  0.4000  0.2000  0.2000  0.2000  0.2000  0.6000
0.6000  0.5000  0.6000  0.4000  0.3000  0.3000
 355.  *  0.5000  0.5000  0.4000  0.3000  0.3000  0.3000  0.3000  0.3000  0.6000
0.5000  0.4000  0.4000  0.6000  0.5000  0.4000
 360.  *  0.3000  0.3000  0.3000  0.3000  0.5000  0.5000  0.5000  0.4000  0.6000
0.4000  0.4000  0.4000  0.8000  0.7000  0.7000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  0.6000  0.6000  0.6000  0.6000  0.8000  0.7000  0.7000  0.7000  0.8000
0.6000  0.6000  0.6000  0.8000  0.8000  0.7000
 DEGR. *    185     195     195     190     170     155     160     175     305
330     330     350       5      10      10
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↑

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                             PAGE  5
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
SR610 and US 1

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
   5.  *  0.7000  0.0000  0.0000  0.0000  0.1000  0.1000  0.0000  0.2000  0.2000
0.2000  0.4000  0.2000  0.1000
  10.  *  0.7000  0.0000  0.0000  0.0000  0.3000  0.1000  0.0000  0.2000  0.2000
0.2000  0.4000  0.2000  0.1000
  15.  *  0.6000  0.0000  0.0000  0.0000  0.3000  0.1000  0.0000  0.2000  0.2000
0.2000  0.4000  0.3000  0.1000
  20.  *  0.6000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.5000  0.4000  0.2000
  25.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.1000  0.1000
0.1000  0.5000  0.4000  0.2000
  30.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.1000  0.1000
0.1000  0.5000  0.4000  0.2000
```

```
  35.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.1000
0.1000  0.5000  0.4000  0.2000
  40.  *  0.5000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.5000  0.4000  0.2000
  45.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.4000  0.3000  0.1000
  50.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.4000  0.3000  0.2000
  55.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.1000  0.2000  0.2000
0.2000  0.4000  0.3000  0.2000
  60.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.1000  0.2000  0.2000
0.2000  0.5000  0.4000  0.3000
  65.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.5000  0.4000  0.2000
  70.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.5000  0.4000  0.2000
  75.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.4000  0.4000  0.2000
  80.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.3000  0.3000
0.2000  0.4000  0.4000  0.2000
  85.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.3000  0.3000
0.3000  0.5000  0.3000  0.2000
  90.  *  0.4000  0.0000  0.0000  0.0000  0.3000  0.2000  0.0000  0.3000  0.3000
0.3000  0.5000  0.4000  0.2000
  95.  *  0.4000  0.1000  0.0000  0.0000  0.3000  0.2000  0.0000  0.3000  0.3000
0.2000  0.5000  0.4000  0.2000
 100.  *  0.4000  0.2000  0.2000  0.1000  0.3000  0.2000  0.0000  0.2000  0.2000
0.2000  0.5000  0.4000  0.3000
 105.  *  0.4000  0.2000  0.2000  0.2000  0.4000  0.2000  0.0000  0.2000  0.2000
0.2000  0.5000  0.5000  0.3000
 110.  *  0.4000  0.2000  0.2000  0.2000  0.4000  0.3000  0.0000  0.1000  0.1000
0.1000  0.5000  0.4000  0.3000
 115.  *  0.4000  0.2000  0.2000  0.2000  0.4000  0.2000  0.0000  0.1000  0.1000
0.1000  0.5000  0.4000  0.2000
 120.  *  0.4000  0.2000  0.2000  0.2000  0.4000  0.2000  0.2000  0.1000  0.1000
0.0000  0.5000  0.3000  0.2000
 125.  *  0.4000  0.2000  0.2000  0.2000  0.4000  0.3000  0.2000  0.0000  0.0000
0.0000  0.4000  0.3000  0.2000
 130.  *  0.4000  0.2000  0.2000  0.2000  0.4000  0.2000  0.2000  0.0000  0.0000
0.0000  0.4000  0.3000  0.1000
 135.  *  0.4000  0.2000  0.2000  0.2000  0.3000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.3000  0.2000
 140.  *  0.5000  0.2000  0.2000  0.2000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 145.  *  0.5000  0.2000  0.2000  0.2000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 150.  *  0.5000  0.1000  0.1000  0.1000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
```

```
 155.  *  0.5000  0.1000  0.1000  0.1000  0.6000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 160.  *  0.6000  0.1000  0.1000  0.1000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 165.  *  0.6000  0.1000  0.1000  0.1000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 170.  *  0.6000  0.1000  0.1000  0.1000  0.4000  0.2000  0.1000  0.0000  0.0000
0.0000  0.3000  0.1000  0.0000
 175.  *  0.6000  0.1000  0.1000  0.1000  0.4000  0.2000  0.1000  0.0000  0.0000
0.0000  0.3000  0.1000  0.0000
 180.  *  0.4000  0.2000  0.1000  0.1000  0.2000  0.2000  0.1000  0.1000  0.0000
0.0000  0.1000  0.0000  0.0000
 185.  *  0.3000  0.3000  0.1000  0.1000  0.2000  0.1000  0.1000  0.2000  0.0000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.2000  0.3000  0.2000  0.1000  0.1000  0.1000  0.1000  0.2000  0.1000
0.0000  0.0000  0.0000  0.0000
 195.  *  0.1000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.1000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 210.  *  0.0000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
↑
                              PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NO BUILD -
SR610 and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
--------------------------
 215.  *  0.0000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 220.  *  0.0000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 225.  *  0.0000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 230.  *  0.0000  0.3000  0.3000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
 235.  *  0.0000  0.3000  0.4000  0.2000  0.1000  0.1000  0.1000  0.2000  0.2000
0.0000  0.0000  0.0000  0.0000
```

240. * 0.0000 0.4000 0.4000 0.2000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
245. * 0.0000 0.4000 0.4000 0.2000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
250. * 0.0000 0.4000 0.3000 0.2000 0.1000 0.1000 0.1000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
255. * 0.0000 0.3000 0.3000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
260. * 0.0000 0.5000 0.3000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000
0.0000 0.0000 0.0000 0.0000
265. * 0.0000 0.3000 0.2000 0.2000 0.2000 0.2000 0.2000 0.3000 0.3000
0.1000 0.0000 0.0000 0.0000
270. * 0.0000 0.3000 0.3000 0.2000 0.2000 0.2000 0.2000 0.3000 0.3000
0.1000 0.0000 0.0000 0.0000
275. * 0.0000 0.3000 0.3000 0.2000 0.2000 0.2000 0.2000 0.3000 0.3000
0.2000 0.0000 0.0000 0.0000
280. * 0.0000 0.3000 0.3000 0.2000 0.2000 0.2000 0.2000 0.4000 0.4000
0.2000 0.0000 0.0000 0.0000
285. * 0.0000 0.3000 0.3000 0.0000 0.2000 0.2000 0.2000 0.5000 0.4000
0.2000 0.1000 0.1000 0.1000
290. * 0.0000 0.3000 0.3000 0.0000 0.2000 0.2000 0.2000 0.5000 0.3000
0.3000 0.1000 0.1000 0.1000
295. * 0.0000 0.3000 0.2000 0.0000 0.2000 0.2000 0.2000 0.6000 0.4000
0.3000 0.2000 0.2000 0.2000
300. * 0.0000 0.2000 0.2000 0.0000 0.2000 0.2000 0.1000 0.6000 0.4000
0.2000 0.2000 0.2000 0.2000
305. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.5000 0.4000
0.2000 0.3000 0.3000 0.2000
310. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000
0.2000 0.3000 0.3000 0.3000
315. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000
0.2000 0.3000 0.3000 0.3000
320. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000
0.2000 0.3000 0.3000 0.2000
325. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000
0.2000 0.2000 0.2000 0.2000
330. * 0.0000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000
0.2000 0.2000 0.2000 0.2000
335. * 0.1000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000
0.2000 0.2000 0.2000 0.2000
340. * 0.1000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.4000 0.4000
0.2000 0.2000 0.2000 0.2000
345. * 0.1000 0.2000 0.2000 0.0000 0.0000 0.0000 0.0000 0.3000 0.3000
0.1000 0.2000 0.2000 0.2000
350. * 0.2000 0.2000 0.1000 0.0000 0.0000 0.0000 0.0000 0.3000 0.3000
0.1000 0.2000 0.2000 0.2000
355. * 0.4000 0.2000 0.0000 0.0000 0.1000 0.0000 0.0000 0.3000 0.1000
0.1000 0.3000 0.2000 0.2000

```
 360.  *  0.5000  0.1000  0.0000  0.0000  0.1000  0.0000  0.0000  0.3000  0.2000
0.2000  0.3000  0.2000  0.2000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  0.7000  0.5000  0.4000  0.2000  0.6000  0.4000  0.3000  0.6000  0.4000
0.3000  0.5000  0.5000  0.3000
 DEGR. *      5     260     235     105     155     135     145     295     280
85      20     105      60

 THE HIGHEST CONCENTRATION OF   0.8000 PPM OCCURRED AT RECEPTOR    14.
```

```
Q,EPA,,F,,0,T,T,F,T,0.78,
5,4,4,4,2200,2200,2200,2200,2200,2200,2200,2200,1230,1230,1230,1230,1230,1230,1230,1
230,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,
0,0,0,0,0,0,0,0,30,10,2.57,2.57,2.62,2.62,1.25,1.25,1.06,1.06
120,120,120,120,68,68,68,68,2,2,2,2,1900,1900,1900,1900,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,46.6,5.9
'N Leg, E Side - 25 m',70.0,118.6,5.9
'N Leg, E Side - 50 m',70.0,200.6,5.9
'N Leg, E Side-Midblk',70.0,636.6,5.9
'N Leg, W Side-Corner',-58.0,100.5,5.9
'N Leg, W Side - 25 m',-58.0,172.5,5.9
'N Leg, W Side - 50 m',-58.0,254.5,5.9
'N Leg, W Side-Midblk',-58.0,690.5,5.9
'S Leg, E Side-Corner',70.0,-71.2,5.9
'S Leg, E Side - 25 m',70.0,-143.3,5.9
'S Leg, E Side - 50 m',70.0,-225.3,5.9
'S Leg, E Side-Midblk',70.0,-661.2,5.9
'S Leg, W Side-Corner',-58.0,-33.5,5.9
'S Leg, W Side - 25 m',-58.0,-105.5,5.9
'S Leg, W Side - 50 m',-58.0,-187.5,5.9
'S Leg, W Side-Midblk',-58.0,-623.5,5.9
'E Leg, N Side - 25 m',140.9,34.0,5.9
'E Leg, N Side - 50 m',221.7,19.8,5.9
'E Leg, N Side-Midblk',651.0,-55.9,5.9
'W Leg, N Side - 25 m',-120.4,136.5,5.9
'W Leg, N Side - 50 m',-191.4,177.5,5.9
'W Leg, N Side-Midblk',-569.0,395.5,5.9
'E Leg, S Side - 25 m',140.9,-83.7,5.9
'E Leg, S Side - 50 m',221.7,-98.0,5.9
'E Leg, S Side-Midblk',651.0,-173.7,5.9
'W Leg, S Side - 25 m',-120.4,2.5,5.9
'W Leg, S Side - 50 m',-191.4,43.5,5.9
'W Leg, S Side-Midblk',-569.0,261.5,5.9
'2042 - Garrisonville Rd (SR610) and US 1',12,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,4920,2.57,0.0,67.7
2
'N Leg App - Queue','AG',-24,48,-24,1200,0.0,48.0,4
120,68,2,4920,1.25,1900,1,3
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,6150,2.57,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,6150,2.57,0.0,79.7
2
'S Leg App - Queue','AG',30,-48,30,-1200,0.0,60.0,5
120,68,2,6150,1.25,1900,1,3
1
```

```
'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,4920,2.57,0.0,67.7
1
'E Leg App - FreeFlow','AG',8,23,1186,-185,4920,2.62,0.0,67.7
2
'E Leg App - Queue','AG',63,13,1186,-185,0.0,48.0,4
120,68,2,4920,1.06,1900,1,3
1
'E Leg Dep - FreeFlow','AG',-8,-23,1178,-232,4920,2.62,0.0,67.7
1
'W Leg App - FreeFlow','AG',-8,-23,-1051,579,4920,2.62,0.0,67.7
2
'W Leg App - Queue','AG',-54,3,-1051,579,0.0,48.0,4
120,68,2,4920,1.06,1900,1,3
1
'W Leg Dep - FreeFlow','AG',8,23,-1027,621,4920,2.62,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                              2042 SR 610 and US 1 OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2042 -
Garrisonville Rd (SR610) and US 1

      DATE :  8/15/17
      TIME : 10:38:18

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -24.0       0.0     -24.0    1200.0 *    1200.
360. AG   4920.   2.6   0.0 67.7
       2. N Leg App - Queue   *    -24.0      48.0     -24.0    5348.1 *    5300.
360. AG      8. 100.0   0.0 48.0 1.62 269.2
       3. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   6150.   2.6   0.0 79.7
       4. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   6150.   2.6   0.0 79.7
       5. S Leg App - Queue   *     30.0     -48.0      30.0   -5348.1 *    5300.
180. AG      9. 100.0   0.0 60.0 1.62 269.2
       6. S Leg Dep - FreeFlow*    -24.0       0.0     -24.0   -1200.0 *    1200.
180. AG   4920.   2.6   0.0 67.7
       7. E Leg App - FreeFlow*      8.0      23.0    1186.0    -185.0 *    1196.
100. AG   4920.   2.6   0.0 67.7
       8. E Leg App - Queue   *     63.0      13.0    5282.6    -907.3 *    5300.
100. AG      6. 100.0   0.0 48.0 1.62 269.2
       9. E Leg Dep - FreeFlow*     -8.0     -23.0    1178.0    -232.0 *    1204.
100. AG   4920.   2.6   0.0 67.7
      10. W Leg App - FreeFlow*     -8.0     -23.0   -1051.0     579.0 *    1204.
```

```
300. AG   4920.   2.6   0.0 67.7
      11. W Leg App - Queue   *    -54.0       3.0   -4643.2    2654.3 *    5300.
300. AG      6. 100.0   0.0 48.0 1.62 269.2
      12. W Leg Dep - FreeFlow*      8.0      23.0   -1027.0     621.0 *    1195.
300. AG   4920.   2.6   0.0 67.7
```

```
                             PAGE  2
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 -
Garrisonville Rd (SR610) and US 1

      DATE :  8/15/17
      TIME : 10:38:18

       ADDITIONAL QUEUE LINK PARAMETERS
       --------------------------------
         LINK DESCRIPTION     *    CYCLE    RED     CLEARANCE  APPROACH  SATURATION
 IDLE   SIGNAL   ARRIVAL
                              *    LENGTH   TIME    LOST TIME    VOL     FLOW RATE
EM FAC   TYPE     RATE
                              *     (SEC)   (SEC)    (SEC)      (VPH)      (VPH)
(gm/hr)

------------------------*--------------------------------------------------------------
--------------------
       2. N Leg App - Queue   *     120       68       2.0      4920       1900
 1.25      1        3
       5. S Leg App - Queue   *     120       68       2.0      6150       1900
 1.25      1        3
       8. E Leg App - Queue   *     120       68       2.0      4920       1900
 1.06      1        3
      11. W Leg App - Queue   *     120       68       2.0      4920       1900
 1.06      1        3

       RECEPTOR LOCATIONS
       ------------------
                              *          COORDINATES (FT)          *
         RECEPTOR             *      X           Y          Z      *
     -------------------------*------------------------------------*
      1. N Leg, E Side-Corner *       70.0       46.6        5.9   *
      2. N Leg, E Side - 25 m *       70.0      118.6        5.9   *
      3. N Leg, E Side - 50 m *       70.0      200.6        5.9   *
      4. N Leg, E Side-Midblk *       70.0      636.6        5.9   *
      5. N Leg, W Side-Corner *      -58.0      100.5        5.9   *
      6. N Leg, W Side - 25 m *      -58.0      172.5        5.9   *
      7. N Leg, W Side - 50 m *      -58.0      254.5        5.9   *
      8. N Leg, W Side-Midblk *      -58.0      690.5        5.9   *
      9. S Leg, E Side-Corner *       70.0      -71.2        5.9   *
     10. S Leg, E Side - 25 m *       70.0     -143.3        5.9   *
```

```
                              2042 SR 610 and US 1 OUT
     11. S Leg, E Side - 50 m *        70.0     -225.3        5.9   *
     12. S Leg, E Side-Midblk *        70.0     -661.2        5.9   *
     13. S Leg, W Side-Corner *       -58.0      -33.5        5.9   *
     14. S Leg, W Side - 25 m *       -58.0     -105.5        5.9   *
     15. S Leg, W Side - 50 m *       -58.0     -187.5        5.9   *
     16. S Leg, W Side-Midblk *       -58.0     -623.5        5.9   *
     17. E Leg, N Side - 25 m *       140.9       34.0        5.9   *
     18. E Leg, N Side - 50 m *       221.7       19.8        5.9   *
     19. E Leg, N Side-Midblk *       651.0      -55.9        5.9   *
     20. W Leg, N Side - 25 m *      -120.4      136.5        5.9   *
     21. W Leg, N Side - 50 m *      -191.4      177.5        5.9   *
     22. W Leg, N Side-Midblk *      -569.0      395.5        5.9   *
     23. E Leg, S Side - 25 m *       140.9      -83.7        5.9   *
     24. E Leg, S Side - 50 m *       221.7      -98.0        5.9   *
     25. E Leg, S Side-Midblk *       651.0     -173.7        5.9   *
     26. W Leg, S Side - 25 m *      -120.4        2.5        5.9   *
     27. W Leg, S Side - 50 m *      -191.4       43.5        5.9   *
     28. W Leg, S Side-Midblk *      -569.0      261.5        5.9   *
```



```
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 -
Garrisonville Rd (SR610) and US 1

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-----------------------------------------
   5.  *  0.6000  0.6000  0.6000  0.4000  0.9000  0.9000  0.9000  0.8000  1.2000
0.9000  0.8000  0.7000  1.5000  1.2000  1.0000
  10.  *  0.3000  0.3000  0.3000  0.3000  1.0000  1.0000  0.9000  0.8000  0.9000
0.8000  0.5000  0.5000  1.6000  1.2000  1.2000
  15.  *  0.2000  0.2000  0.2000  0.2000  1.0000  1.0000  1.0000  0.9000  0.8000
0.6000  0.4000  0.4000  1.7000  1.3000  1.5000
  20.  *  0.1000  0.1000  0.1000  0.1000  1.0000  1.0000  1.0000  0.9000  0.8000
0.5000  0.3000  0.3000  1.6000  1.5000  1.3000
```

```
  25.  *  0.1000  0.1000  0.1000  0.1000  1.0000  1.0000  1.0000  0.8000  0.7000
0.5000  0.3000  0.3000  1.6000  1.4000  1.2000
  30.  *  0.1000  0.1000  0.1000  0.1000  0.9000  0.9000  0.8000  0.8000  0.6000
0.4000  0.3000  0.3000  1.4000  1.2000  1.0000
  35.  *  0.1000  0.1000  0.1000  0.1000  0.8000  0.8000  0.8000  0.8000  0.6000
0.5000  0.3000  0.3000  1.5000  1.2000  1.1000
  40.  *  0.1000  0.1000  0.1000  0.1000  0.8000  0.8000  0.8000  0.8000  0.6000
0.4000  0.3000  0.3000  1.4000  1.1000  0.9000
  45.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.6000
0.4000  0.2000  0.2000  1.4000  1.0000  0.9000
  50.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.6000
0.4000  0.2000  0.2000  1.4000  1.1000  0.9000
  55.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.7000
0.4000  0.2000  0.2000  1.4000  1.1000  1.0000
  60.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.8000
0.4000  0.2000  0.1000  1.4000  1.1000  1.0000
  65.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.8000
0.4000  0.3000  0.0000  1.4000  1.1000  1.0000
  70.  *  0.1000  0.0000  0.0000  0.0000  0.6000  0.6000  0.6000  0.6000  0.8000
0.4000  0.3000  0.0000  1.4000  1.1000  0.9000
  75.  *  0.1000  0.0000  0.0000  0.0000  0.6000  0.6000  0.6000  0.6000  0.9000
0.4000  0.3000  0.0000  1.6000  1.1000  0.9000
  80.  *  0.1000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.9000
0.5000  0.3000  0.0000  1.7000  1.2000  1.0000
  85.  *  0.2000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  1.0000
0.4000  0.2000  0.0000  1.6000  1.2000  1.0000
  90.  *  0.4000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  1.0000
0.3000  0.2000  0.0000  1.7000  1.2000  0.9000
  95.  *  0.5000  0.1000  0.0000  0.0000  1.1000  0.7000  0.7000  0.7000  0.8000
0.3000  0.1000  0.0000  1.7000  1.0000  0.9000
 100.  *  0.8000  0.2000  0.0000  0.0000  1.1000  0.9000  0.7000  0.7000  0.8000
0.2000  0.0000  0.0000  1.6000  1.0000  0.8000
 105.  *  0.8000  0.3000  0.1000  0.0000  1.2000  0.8000  0.7000  0.6000  0.5000
0.1000  0.0000  0.0000  1.4000  0.7000  0.6000
 110.  *  1.0000  0.3000  0.2000  0.0000  1.2000  0.9000  0.8000  0.6000  0.4000
0.0000  0.0000  0.0000  1.3000  0.6000  0.6000
 115.  *  1.0000  0.4000  0.2000  0.0000  1.3000  1.0000  0.9000  0.7000  0.2000
0.0000  0.0000  0.0000  1.1000  0.7000  0.7000
 120.  *  0.9000  0.5000  0.3000  0.0000  1.4000  1.1000  0.9000  0.7000  0.1000
0.0000  0.0000  0.0000  0.9000  0.7000  0.7000
 125.  *  0.9000  0.4000  0.3000  0.0000  1.6000  1.1000  0.9000  0.7000  0.1000
0.0000  0.0000  0.0000  0.9000  0.7000  0.7000
 130.  *  0.8000  0.4000  0.3000  0.0000  1.4000  1.1000  0.9000  0.7000  0.1000
0.0000  0.0000  0.0000  0.8000  0.7000  0.7000
 135.  *  0.8000  0.4000  0.3000  0.1000  1.4000  1.1000  0.9000  0.8000  0.0000
0.0000  0.0000  0.0000  0.7000  0.7000  0.7000
 140.  *  0.8000  0.4000  0.3000  0.3000  1.5000  1.1000  1.0000  1.0000  0.1000
0.1000  0.1000  0.1000  0.8000  0.8000  0.8000
```

```
 145.  *  0.7000  0.5000  0.3000  0.3000  1.6000  1.2000  1.0000  1.0000  0.1000
0.1000  0.1000  0.1000  0.8000  0.8000  0.8000
 150.  *  0.6000  0.5000  0.3000  0.3000  1.5000  1.1000  1.1000  1.0000  0.1000
0.1000  0.1000  0.1000  0.9000  0.9000  0.9000
 155.  *  0.6000  0.5000  0.3000  0.3000  1.6000  1.3000  1.1000  1.0000  0.1000
0.1000  0.1000  0.1000  1.0000  1.0000  1.0000
 160.  *  0.7000  0.6000  0.3000  0.3000  1.6000  1.4000  1.3000  1.0000  0.1000
0.1000  0.1000  0.1000  1.0000  1.0000  1.0000
 165.  *  0.8000  0.6000  0.4000  0.4000  1.7000  1.5000  1.3000  1.0000  0.2000
0.2000  0.2000  0.2000  1.0000  1.0000  1.0000
 170.  *  1.0000  0.7000  0.5000  0.6000  1.5000  1.3000  1.2000  1.1000  0.3000
0.3000  0.3000  0.3000  1.0000  1.0000  1.0000
 175.  *  1.2000  1.0000  0.8000  0.7000  1.6000  1.3000  1.2000  1.0000  0.6000
0.6000  0.6000  0.4000  0.9000  0.9000  0.9000
 180.  *  1.4000  1.2000  1.0000  0.9000  1.3000  1.0000  1.0000  0.8000  0.7000
0.7000  0.7000  0.6000  0.8000  0.8000  0.7000
 185.  *  1.6000  1.2000  1.2000  1.0000  1.2000  0.9000  0.8000  0.8000  0.9000
0.9000  0.9000  0.7000  0.5000  0.5000  0.5000
 190.  *  1.6000  1.3000  1.2000  1.1000  1.0000  0.8000  0.6000  0.5000  1.0000
1.0000  1.0000  0.9000  0.4000  0.4000  0.4000
 195.  *  1.7000  1.2000  1.3000  1.1000  0.8000  0.6000  0.4000  0.4000  1.1000
1.1000  1.0000  0.9000  0.2000  0.2000  0.2000
 200.  *  1.6000  1.3000  1.4000  1.1000  0.7000  0.5000  0.3000  0.3000  1.0000
1.0000  1.0000  0.9000  0.1000  0.1000  0.1000
 205.  *  1.6000  1.4000  1.1000  1.0000  0.7000  0.5000  0.3000  0.3000  1.0000
1.0000  1.0000  0.8000  0.1000  0.1000  0.1000
 210.  *  1.4000  1.3000  1.2000  1.0000  0.6000  0.5000  0.3000  0.3000  0.9000
0.9000  0.9000  0.8000  0.1000  0.1000  0.1000
```

```
                            PAGE  4
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 -
Garrisonville Rd (SR610) and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  1.4000  1.2000  1.0000  1.0000  0.6000  0.4000  0.2000  0.2000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 220.  *  1.5000  1.1000  0.9000  0.9000  0.6000  0.4000  0.2000  0.2000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 225.  *  1.4000  1.1000  0.9000  0.9000  0.6000  0.4000  0.2000  0.2000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
```

```
 230.  *  1.6000  1.1000  0.9000  0.9000  0.6000  0.4000  0.2000  0.2000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 235.  *  1.4000  1.0000  0.9000  0.9000  0.6000  0.4000  0.2000  0.2000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 240.  *  1.4000  0.9000  0.8000  0.8000  0.6000  0.4000  0.2000  0.2000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 245.  *  1.4000  1.0000  0.8000  0.8000  0.6000  0.4000  0.2000  0.2000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 250.  *  1.3000  1.0000  0.8000  0.8000  0.7000  0.4000  0.3000  0.2000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 255.  *  1.4000  1.0000  0.8000  0.8000  0.7000  0.4000  0.3000  0.2000  0.7000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 260.  *  1.3000  1.0000  0.8000  0.7000  0.8000  0.4000  0.3000  0.0000  0.7000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 265.  *  1.4000  1.0000  0.9000  0.6000  0.8000  0.4000  0.3000  0.0000  0.7000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 270.  *  1.4000  1.1000  1.0000  0.7000  0.8000  0.5000  0.3000  0.0000  0.8000
0.7000  0.7000  0.7000  0.1000  0.0000  0.0000
 275.  *  1.4000  1.0000  0.9000  0.6000  0.9000  0.5000  0.3000  0.0000  0.9000
0.6000  0.6000  0.6000  0.1000  0.0000  0.0000
 280.  *  1.5000  1.0000  0.9000  0.6000  0.9000  0.5000  0.3000  0.0000  0.9000
0.6000  0.6000  0.6000  0.1000  0.0000  0.0000
 285.  *  1.4000  1.0000  0.8000  0.6000  1.0000  0.5000  0.2000  0.0000  1.2000
0.6000  0.6000  0.6000  0.2000  0.0000  0.0000
 290.  *  1.3000  0.9000  0.8000  0.6000  1.0000  0.3000  0.2000  0.0000  1.3000
0.7000  0.6000  0.6000  0.4000  0.0000  0.0000
 295.  *  1.3000  0.9000  0.7000  0.6000  0.8000  0.3000  0.1000  0.0000  1.5000
0.8000  0.7000  0.6000  0.5000  0.1000  0.0000
 300.  *  1.1000  0.8000  0.6000  0.6000  0.8000  0.2000  0.0000  0.0000  1.7000
0.9000  0.8000  0.6000  0.8000  0.2000  0.1000
 305.  *  1.0000  0.8000  0.7000  0.7000  0.5000  0.1000  0.0000  0.0000  1.7000
1.2000  0.9000  0.7000  0.8000  0.3000  0.2000
 310.  *  0.8000  0.7000  0.7000  0.7000  0.4000  0.0000  0.0000  0.0000  1.8000
1.2000  1.0000  0.7000  1.0000  0.4000  0.2000
 315.  *  0.8000  0.7000  0.7000  0.7000  0.2000  0.0000  0.0000  0.0000  1.7000
1.3000  1.0000  0.7000  1.0000  0.5000  0.3000
 320.  *  0.7000  0.7000  0.7000  0.7000  0.1000  0.0000  0.0000  0.0000  1.8000
1.3000  1.1000  0.8000  0.9000  0.5000  0.3000
 325.  *  0.8000  0.8000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  1.6000
1.3000  1.2000  1.0000  0.9000  0.5000  0.3000
 330.  *  0.9000  0.9000  0.9000  0.8000  0.2000  0.1000  0.1000  0.1000  1.7000
1.2000  1.1000  1.0000  0.8000  0.5000  0.4000
 335.  *  0.9000  1.0000  1.0000  0.8000  0.1000  0.1000  0.1000  0.1000  1.6000
1.5000  1.3000  1.1000  0.8000  0.5000  0.4000
 340.  *  1.0000  1.0000  1.0000  0.9000  0.1000  0.1000  0.1000  0.1000  1.7000
1.5000  1.2000  1.1000  0.9000  0.5000  0.4000
 345.  *  1.1000  1.1000  1.1000  0.9000  0.2000  0.2000  0.2000  0.2000  1.7000
1.4000  1.5000  1.3000  0.8000  0.6000  0.5000
```

```
                             2042 SR 610 and US 1 OUT
 350.  *  1.0000  1.0000  1.0000  0.9000  0.4000  0.4000  0.4000  0.3000  1.6000
1.3000  1.3000  1.1000  1.1000  0.8000  0.6000
 355.  *  0.9000  0.9000  0.9000  0.7000  0.5000  0.5000  0.5000  0.5000  1.6000
1.3000  1.2000  1.0000  1.1000  0.9000  0.8000
 360.  *  0.7000  0.7000  0.7000  0.7000  0.8000  0.7000  0.7000  0.6000  1.3000
1.0000  1.0000  0.9000  1.3000  1.2000  0.9000

------*--------------------------------------------------------------------------
-----------------------------------------
 MAX   *  1.7000  1.4000  1.4000  1.1000  1.7000  1.5000  1.3000  1.1000  1.8000
1.5000  1.5000  1.3000  1.7000  1.5000  1.5000
 DEGR. *    195     205     200     190     165     165     160     170     320
335     345     345      15      20      15

                            PAGE  5
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 -
Garrisonville Rd (SR610) and US 1

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
--------------------------
   5.  *  1.0000  0.1000  0.0000  0.0000  0.3000  0.2000  0.0000  0.7000  0.6000
0.6000  0.9000  0.8000  0.6000
  10.  *  1.1000  0.0000  0.0000  0.0000  0.4000  0.2000  0.0000  0.6000  0.6000
0.6000  1.0000  0.8000  0.6000
  15.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.2000  0.0000  0.6000  0.6000
0.6000  1.1000  0.8000  0.6000
  20.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.4000  0.0000  0.6000  0.6000
0.6000  1.1000  1.0000  0.6000
  25.  *  1.0000  0.0000  0.0000  0.0000  0.5000  0.4000  0.0000  0.6000  0.6000
0.6000  1.1000  1.0000  0.6000
  30.  *  1.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.0000  0.6000  0.6000
0.6000  1.0000  1.0000  0.6000
```

```
  35.  * 1.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.0000  0.6000  0.6000
0.6000  1.0000  1.0000  0.7000
  40.  * 1.0000  0.0000  0.0000  0.0000  0.4000  0.4000  0.1000  0.6000  0.6000
0.6000  1.0000  1.0000  0.8000
  45.  * 0.9000  0.0000  0.0000  0.0000  0.4000  0.4000  0.2000  0.6000  0.6000
0.6000  1.0000  1.0000  0.8000
  50.  * 0.9000  0.0000  0.0000  0.0000  0.4000  0.3000  0.2000  0.6000  0.6000
0.6000  1.0000  0.9000  0.8000
  55.  * 0.9000  0.0000  0.0000  0.0000  0.4000  0.3000  0.2000  0.7000  0.7000
0.7000  1.0000  0.9000  0.8000
  60.  * 0.9000  0.0000  0.0000  0.0000  0.4000  0.3000  0.2000  0.8000  0.8000
0.8000  1.0000  0.9000  0.8000
  65.  * 0.8000  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.8000  0.8000
0.8000  1.1000  0.8000  0.8000
  70.  * 0.6000  0.1000  0.1000  0.1000  0.4000  0.2000  0.2000  0.8000  0.8000
0.8000  1.1000  0.8000  0.8000
  75.  * 0.6000  0.1000  0.1000  0.1000  0.4000  0.2000  0.2000  0.9000  0.9000
0.9000  1.3000  0.8000  0.9000
  80.  * 0.7000  0.1000  0.1000  0.1000  0.4000  0.2000  0.2000  0.9000  0.9000
0.9000  1.3000  1.0000  1.0000
  85.  * 0.7000  0.2000  0.2000  0.2000  0.4000  0.3000  0.2000  1.0000  1.0000
0.8000  1.4000  1.1000  1.0000
  90.  * 0.7000  0.4000  0.3000  0.3000  0.6000  0.3000  0.3000  1.0000  1.0000
0.8000  1.5000  1.2000  1.0000
  95.  * 0.7000  0.5000  0.5000  0.5000  0.6000  0.4000  0.3000  0.8000  0.8000
0.8000  1.5000  1.3000  1.1000
 100.  * 0.7000  0.8000  0.8000  0.6000  0.8000  0.5000  0.3000  0.8000  0.8000
0.6000  1.5000  1.4000  1.3000
 105.  * 0.6000  0.8000  0.8000  0.8000  0.8000  0.6000  0.5000  0.5000  0.5000
0.5000  1.3000  1.4000  1.2000
 110.  * 0.6000  1.0000  1.0000  0.8000  1.0000  0.7000  0.7000  0.4000  0.3000
0.3000  1.1000  1.2000  1.0000
 115.  * 0.7000  1.0000  1.0000  0.8000  1.0000  0.9000  0.9000  0.2000  0.2000
0.2000  1.0000  0.9000  1.0000
 120.  * 0.7000  0.9000  0.9000  0.9000  1.1000  1.0000  0.8000  0.1000  0.1000
0.1000  0.8000  0.7000  0.8000
 125.  * 0.7000  0.9000  0.9000  0.9000  1.2000  1.1000  0.9000  0.1000  0.1000
0.1000  0.7000  0.6000  0.6000
 130.  * 0.7000  0.8000  0.8000  0.8000  1.2000  1.1000  0.9000  0.1000  0.1000
0.1000  0.5000  0.5000  0.5000
 135.  * 0.7000  0.8000  0.8000  0.8000  1.3000  1.2000  1.1000  0.0000  0.0000
0.0000  0.5000  0.5000  0.4000
 140.  * 0.8000  0.8000  0.8000  0.8000  1.3000  1.1000  1.1000  0.0000  0.0000
0.0000  0.5000  0.5000  0.3000
 145.  * 0.8000  0.7000  0.7000  0.7000  1.2000  1.0000  1.1000  0.0000  0.0000
0.0000  0.5000  0.5000  0.3000
 150.  * 0.8000  0.6000  0.6000  0.6000  1.3000  1.0000  1.0000  0.0000  0.0000
0.0000  0.4000  0.5000  0.3000
```

```
 155.  *  0.8000  0.6000  0.6000  0.6000  1.2000  1.2000  1.0000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 160.  *  0.9000  0.6000  0.6000  0.6000  1.1000  1.2000  0.8000  0.0000  0.0000
0.0000  0.5000  0.4000  0.0000
 165.  *  0.9000  0.6000  0.6000  0.6000  1.0000  1.1000  0.7000  0.0000  0.0000
0.0000  0.5000  0.3000  0.0000
 170.  *  0.9000  0.6000  0.6000  0.6000  1.0000  0.8000  0.6000  0.0000  0.0000
0.0000  0.4000  0.2000  0.0000
 175.  *  0.8000  0.7000  0.6000  0.6000  0.9000  0.8000  0.6000  0.1000  0.0000
0.0000  0.3000  0.2000  0.0000
 180.  *  0.6000  0.8000  0.7000  0.6000  0.8000  0.7000  0.6000  0.2000  0.0000
0.0000  0.2000  0.1000  0.0000
 185.  *  0.5000  0.9000  0.7000  0.6000  0.8000  0.6000  0.6000  0.3000  0.1000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.3000  1.0000  0.8000  0.6000  0.6000  0.6000  0.6000  0.4000  0.2000
0.0000  0.0000  0.0000  0.0000
 195.  *  0.2000  1.1000  0.9000  0.6000  0.6000  0.6000  0.6000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  1.1000  0.9000  0.6000  0.6000  0.6000  0.6000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.1000  1.1000  0.9000  0.6000  0.6000  0.6000  0.6000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
 210.  *  0.1000  1.1000  0.9000  0.6000  0.6000  0.6000  0.6000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000

                              PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 -
Garrisonville Rd (SR610) and US 1

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.0000  1.1000  0.9000  0.7000  0.6000  0.6000  0.6000  0.5000  0.3000
0.1000  0.0000  0.0000  0.0000
 220.  *  0.0000  1.1000  0.9000  0.7000  0.6000  0.6000  0.6000  0.5000  0.3000
0.1000  0.0000  0.0000  0.0000
 225.  *  0.0000  1.0000  0.9000  0.8000  0.6000  0.6000  0.6000  0.5000  0.3000
0.1000  0.0000  0.0000  0.0000
 230.  *  0.0000  0.9000  0.9000  0.9000  0.6000  0.6000  0.6000  0.5000  0.3000
0.2000  0.0000  0.0000  0.0000
 235.  *  0.0000  0.9000  1.0000  0.9000  0.6000  0.6000  0.6000  0.4000  0.3000
0.2000  0.0000  0.0000  0.0000
```

 240. * 0.0000 1.0000 1.0000 1.0000 0.6000 0.6000 0.6000 0.4000 0.3000
0.2000 0.0000 0.0000 0.0000
 245. * 0.0000 1.2000 1.0000 1.0000 0.6000 0.6000 0.6000 0.3000 0.3000
0.2000 0.0000 0.0000 0.0000
 250. * 0.0000 1.0000 0.9000 1.0000 0.7000 0.7000 0.7000 0.4000 0.4000
0.3000 0.0000 0.0000 0.0000
 255. * 0.0000 1.2000 1.0000 1.1000 0.7000 0.7000 0.7000 0.4000 0.4000
0.3000 0.0000 0.0000 0.0000
 260. * 0.0000 1.2000 1.1000 1.0000 0.8000 0.8000 0.8000 0.4000 0.4000
0.3000 0.0000 0.0000 0.0000
 265. * 0.0000 1.2000 1.2000 1.0000 0.8000 0.8000 0.8000 0.4000 0.4000
0.3000 0.0000 0.0000 0.0000
 270. * 0.0000 1.1000 1.1000 0.8000 0.8000 0.8000 0.8000 0.5000 0.5000
0.4000 0.1000 0.1000 0.1000
 275. * 0.0000 1.0000 1.0000 1.0000 0.9000 0.9000 0.9000 0.6000 0.7000
0.6000 0.1000 0.1000 0.1000
 280. * 0.0000 1.1000 1.0000 0.8000 0.9000 0.9000 0.9000 0.7000 0.8000
0.7000 0.1000 0.1000 0.1000
 285. * 0.0000 1.0000 1.0000 0.8000 1.0000 1.0000 0.8000 1.0000 1.1000
1.0000 0.2000 0.2000 0.2000
 290. * 0.0000 1.0000 0.9000 0.6000 1.0000 1.0000 0.8000 1.1000 1.1000
1.0000 0.4000 0.4000 0.3000
 295. * 0.0000 0.8000 0.7000 0.5000 0.8000 0.8000 0.7000 1.6000 1.3000
1.2000 0.5000 0.5000 0.5000
 300. * 0.0000 0.8000 0.6000 0.3000 0.8000 0.8000 0.6000 1.7000 1.4000
1.1000 0.8000 0.8000 0.6000
 305. * 0.0000 0.7000 0.5000 0.3000 0.5000 0.5000 0.5000 1.5000 1.3000
1.1000 0.8000 0.8000 0.8000
 310. * 0.0000 0.6000 0.4000 0.3000 0.4000 0.3000 0.3000 1.4000 1.1000
1.0000 1.0000 1.0000 0.8000
 315. * 0.0000 0.5000 0.3000 0.2000 0.2000 0.2000 0.2000 1.4000 1.1000
1.0000 1.0000 1.0000 0.9000
 320. * 0.0000 0.5000 0.3000 0.2000 0.1000 0.1000 0.1000 1.3000 1.2000
1.0000 0.9000 0.9000 0.9000
 325. * 0.1000 0.5000 0.3000 0.1000 0.1000 0.1000 0.1000 1.1000 1.0000
0.8000 0.9000 0.9000 0.9000
 330. * 0.3000 0.5000 0.3000 0.1000 0.1000 0.1000 0.1000 1.1000 1.0000
0.8000 0.8000 0.8000 0.8000
 335. * 0.3000 0.5000 0.3000 0.0000 0.0000 0.0000 0.0000 1.1000 0.9000
0.6000 0.8000 0.8000 0.8000
 340. * 0.3000 0.5000 0.3000 0.0000 0.0000 0.0000 0.0000 1.1000 0.9000
0.6000 0.8000 0.8000 0.8000
 345. * 0.4000 0.5000 0.3000 0.0000 0.0000 0.0000 0.0000 1.1000 0.9000
0.6000 0.7000 0.7000 0.7000
 350. * 0.5000 0.4000 0.2000 0.0000 0.0000 0.0000 0.0000 1.0000 0.8000
0.6000 0.7000 0.7000 0.7000
 355. * 0.8000 0.3000 0.1000 0.0000 0.1000 0.0000 0.0000 0.9000 0.7000
0.6000 0.7000 0.6000 0.6000

```
 360.  *  0.8000  0.2000  0.1000  0.0000  0.2000  0.0000  0.0000  0.9000  0.7000
0.6000  0.8000  0.7000  0.6000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  1.1000  1.2000  1.2000  1.1000  1.3000  1.2000  1.1000  1.7000  1.4000
1.2000  1.5000  1.4000  1.3000
 DEGR. *     10     245     265     255     135     135     135     300     300
295      90     100     100

 THE HIGHEST CONCENTRATION OF   1.8000 PPM OCCURRED AT RECEPTOR     9.
```

```
                   2042 NoBuild US 1 and I95 NB Entrance Ramp IN
Q,EPA,,F,,0,T,T,T,T,0.78,
1,1,3,3,2200,2200,2200,2200,2200,2200,2200,2200,1,700,764,1346,1,700,764,1346,1,11,1
2,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0,0,0
,0,0,0,0,3.24,3.24,2.57,2.57,1.25,1.25,1.25,1.25
0,120,120,120,0,68,68,68,0,2,2,2,0,1900,1900,1900,0,1,1,1,0,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,23,0.3048,1,0
'N Leg, E Side-Corner',11.0,46.0,5.9
'N Leg, E Side - 0 m',0.0,46.0,5.9
'N Leg, W Side-Corner',-21.0,46.0,5.9
'S Leg, E Side-Corner',11.0,-46.0,5.9
'S Leg, E Side - 25 m',11.0,-118.0,5.9
'S Leg, E Side - 50 m',11.0,-200.0,5.9
'S Leg, E Side-Midblk',11.0,-636.0,5.9
'S Leg, W Side-Corner',-21.0,-46.0,5.9
'S Leg, W Side - 25 m',-21.0,-118.0,5.9
'S Leg, W Side - 50 m',-21.0,-200.0,5.9
'S Leg, W Side-Midblk',-21.0,-636.0,5.9
'E Leg, N Side - 25 m',83.0,46.0,5.9
'E Leg, N Side - 50 m',165.0,46.0,5.9
'E Leg, N Side-Midblk',601.0,46.0,5.9
'W Leg, N Side - 25 m',-93.0,46.0,5.9
'W Leg, N Side - 50 m',-175.0,46.0,5.9
'W Leg, N Side-Midblk',-611.0,46.0,5.9
'E Leg, S Side - 25 m',83.0,-46.0,5.9
'E Leg, S Side - 50 m',165.0,-46.0,5.9
'E Leg, S Side-Midblk',601.0,-46.0,5.9
'W Leg, S Side - 25 m',-93.0,-46.0,5.9
'W Leg, S Side - 50 m',-175.0,-46.0,5.9
'W Leg, S Side-Midblk',-611.0,-46.0,5.9
'2042 NOBUILD - US 1 and I95 NB Entr Ramp',9,1,0,'CO'
1
'S Leg App - FreeFlow','AG',1,18,1,-1200,1,3.24,0.0,20.7
2
'S Leg App - Queue','AG',1,-36,1,-1200,0.0,1.0,1
120,68,2,1,1.25,1900,1,3
1
'S Leg Dep - FreeFlow','AG',-6,18,-6,-1200,700,3.24,0.0,30.7
1
'E Leg App - FreeFlow','AG',0,18,1200,18,4038,2.57,0.0,55.7
2
'E Leg App - Queue','AG',1,18,1200,18,0.0,36.0,3
120,68,2,4038,1.25,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,2292,2.57,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,2292,2.57,0.0,55.7
2
'W Leg App - Queue','AG',-11,-18,-1200,-18,0.0,36.0,3
```

```
120,68,2,2292,1.25,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,18,-1200,18,4038,2.57,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2042 NoBuild US 1 and I95 NB Entrance Ramp OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface

```
                          CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NOBUILD -
US 1 and I95 NB Entr Ramp

      DATE :  8/15/17
      TIME : 10:54:35

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. S Leg App - FreeFlow*      1.0      18.0       1.0   -1200.0 *    1218.
180. AG      1.   3.2   0.0 20.7
       2. S Leg App - Queue   *      1.0     -36.0       1.0     -36.4 *       0.
180. AG      2. 100.0   0.0  1.0 0.00   0.0
       3. S Leg Dep - FreeFlow*     -6.0      18.0      -6.0   -1200.0 *    1218.
180. AG    700.   3.2   0.0 30.7
       4. E Leg App - FreeFlow*      0.0      18.0    1200.0      18.0 *    1200.
90. AG   4038.   2.6   0.0 55.7
       5. E Leg App - Queue   *      1.0      18.0    6506.4      18.0 *    6505.
90. AG      6. 100.0   0.0 36.0 1.77 330.5
       6. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   2292.   2.6   0.0 55.7
       7. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
270. AG   2292.   2.6   0.0 55.7
       8. W Leg App - Queue   *    -11.0     -18.0    -469.1     -18.0 *     458.
270. AG      6. 100.0   0.0 36.0 1.01  23.3
       9. W Leg Dep - FreeFlow*      0.0      18.0   -1200.0      18.0 *    1200.
270. AG   4038.   2.6   0.0 55.7
```

JOB: Fred Ex AQ Analysis RUN: 2042 NOBUILD - US 1 and I95 NB Entr Ramp

DATE : 8/15/17
TIME : 10:54:35

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. S Leg App - Queue	120	68	2.0	1	1900	1.25	1	3
5. E Leg App - Queue	120	68	2.0	4038	1900	1.25	1	3
8. W Leg App - Queue	120	68	2.0	2292	1900	1.25	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	11.0	46.0	5.9
2. N Leg, E Side - 0 m	0.0	46.0	5.9
3. N Leg, W Side-Corner	-21.0	46.0	5.9
4. S Leg, E Side-Corner	11.0	-46.0	5.9
5. S Leg, E Side - 25 m	11.0	-118.0	5.9
6. S Leg, E Side - 50 m	11.0	-200.0	5.9
7. S Leg, E Side-Midblk	11.0	-636.0	5.9
8. S Leg, W Side-Corner	-21.0	-46.0	5.9
9. S Leg, W Side - 25 m	-21.0	-118.0	5.9
10. S Leg, W Side - 50 m	-21.0	-200.0	5.9
11. S Leg, W Side-Midblk	-21.0	-636.0	5.9
12. E Leg, N Side - 25 m	83.0	46.0	5.9
13. E Leg, N Side - 50 m	165.0	46.0	5.9
14. E Leg, N Side-Midblk	601.0	46.0	5.9
15. W Leg, N Side - 25 m	-93.0	46.0	5.9
16. W Leg, N Side - 50 m	-175.0	46.0	5.9
17. W Leg, N Side-Midblk	-611.0	46.0	5.9
18. E Leg, S Side - 25 m	83.0	-46.0	5.9

```
                   2042 NoBuild US 1 and I95 NB Entrance Ramp OUT
     19. E Leg, S Side - 50 m *       165.0       -46.0         5.9   *
     20. E Leg, S Side-Midblk *       601.0       -46.0         5.9   *
     21. W Leg, S Side - 25 m *       -93.0       -46.0         5.9   *
     22. W Leg, S Side - 50 m *      -175.0       -46.0         5.9   *
     23. W Leg, S Side-Midblk *      -611.0       -46.0         5.9   *
```

```
                             PAGE  3
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NOBUILD - 
US 1 and I95 NB Entr Ramp

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*-------------------------------------------------------------------------
-------------------------------------------
   5.  *  0.0000  0.0000  0.0000  0.4000  0.3000  0.2000  0.1000  0.5000  0.4000
0.1000  0.1000  0.0000  0.0000  0.0000  0.0000
  10.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.1000  0.5000  0.3000
0.2000  0.1000  0.0000  0.0000  0.0000  0.0000
  15.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.5000  0.3000
0.2000  0.1000  0.0000  0.0000  0.0000  0.0000
  20.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.4000  0.3000
0.2000  0.1000  0.0000  0.0000  0.0000  0.0000
  25.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.5000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  30.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.6000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  35.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.5000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  40.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.5000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  45.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.5000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  50.  *  0.0000  0.0000  0.0000  0.4000  0.2000  0.2000  0.0000  0.5000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  55.  *  0.0000  0.0000  0.0000  0.5000  0.2000  0.2000  0.0000  0.6000  0.3000
```

```
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  60.  *  0.1000  0.1000  0.0000  0.6000  0.3000  0.2000  0.0000  0.7000  0.4000
0.3000  0.1000  0.1000  0.1000  0.1000  0.0000
  65.  *  0.1000  0.1000  0.0000  0.6000  0.3000  0.2000  0.0000  0.7000  0.4000
0.3000  0.1000  0.1000  0.1000  0.1000  0.0000
  70.  *  0.1000  0.1000  0.1000  0.6000  0.3000  0.2000  0.0000  0.7000  0.4000
0.3000  0.1000  0.1000  0.1000  0.1000  0.1000
  75.  *  0.2000  0.2000  0.1000  0.6000  0.2000  0.2000  0.0000  0.8000  0.3000
0.3000  0.1000  0.2000  0.2000  0.2000  0.2000
  80.  *  0.3000  0.3000  0.2000  0.6000  0.2000  0.1000  0.0000  0.8000  0.3000
0.3000  0.1000  0.3000  0.3000  0.2000  0.3000
  85.  *  0.5000  0.5000  0.5000  0.5000  0.2000  0.0000  0.0000  0.7000  0.3000
0.1000  0.1000  0.5000  0.5000  0.4000  0.5000
  90.  *  0.6000  0.6000  0.6000  0.5000  0.2000  0.0000  0.0000  0.5000  0.3000
0.1000  0.1000  0.6000  0.6000  0.6000  0.6000
  95.  *  0.7000  0.7000  0.7000  0.3000  0.0000  0.0000  0.0000  0.4000  0.1000
0.1000  0.1000  0.7000  0.7000  0.6000  0.7000
 100.  *  0.8000  0.8000  0.8000  0.3000  0.0000  0.0000  0.0000  0.3000  0.1000
0.1000  0.1000  0.7000  0.7000  0.6000  0.7000
 105.  *  0.8000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  0.2000  0.1000
0.1000  0.1000  0.8000  0.8000  0.6000  0.6000
 110.  *  0.7000  0.7000  0.7000  0.1000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.7000  0.7000  0.6000  0.6000
 115.  *  0.7000  0.7000  0.7000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.7000  0.7000  0.6000  0.6000
 120.  *  0.6000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.6000  0.6000  0.5000  0.7000
 125.  *  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.5000  0.5000  0.5000  0.7000
 130.  *  0.5000  0.5000  0.6000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.5000  0.5000  0.5000  0.5000
 135.  *  0.5000  0.4000  0.5000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.5000  0.5000  0.5000  0.5000
 140.  *  0.5000  0.4000  0.5000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.5000  0.5000  0.5000  0.4000
 145.  *  0.4000  0.4000  0.5000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 150.  *  0.4000  0.4000  0.4000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 155.  *  0.4000  0.4000  0.5000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 160.  *  0.4000  0.4000  0.7000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 165.  *  0.4000  0.5000  0.6000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 170.  *  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
0.2000  0.1000  0.4000  0.4000  0.4000  0.4000
 175.  *  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.2000  0.2000
```

```
0.2000  0.1000  0.4000  0.4000  0.4000  0.4000
 180.  *  0.5000  0.7000  0.5000  0.1000  0.1000  0.1000  0.1000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 185.  *  0.6000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 190.  *  0.6000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 195.  *  0.5000  0.5000  0.4000  0.1000  0.1000  0.1000  0.1000  0.1000  0.1000
0.1000  0.1000  0.4000  0.4000  0.4000  0.4000
 200.  *  0.6000  0.5000  0.4000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.4000  0.4000  0.4000  0.4000
 205.  *  0.6000  0.5000  0.4000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.4000  0.4000  0.4000  0.4000
 210.  *  0.5000  0.4000  0.4000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.4000  0.4000  0.4000  0.4000
```

```
                    PAGE  4
      JOB: Fred Ex AQ Analysis                                 RUN: 2042 NOBUILD -
US 1 and I95 NB Entr Ramp

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*-------------------------------------------------------------------------------------
-------------------------------------------
 215.  *  0.4000  0.4000  0.4000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.4000  0.4000  0.4000  0.4000
 220.  *  0.5000  0.4000  0.5000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.4000  0.5000  0.5000  0.5000
 225.  *  0.5000  0.4000  0.5000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.5000  0.5000  0.5000  0.5000
 230.  *  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.6000  0.5000  0.5000  0.5000
 235.  *  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.7000  0.5000  0.5000  0.5000
 240.  *  0.6000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.7000  0.5000  0.5000  0.6000
 245.  *  0.7000  0.7000  0.7000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.6000  0.7000  0.6000  0.7000
 250.  *  0.8000  0.7000  0.7000  0.2000  0.1000  0.1000  0.1000  0.1000  0.0000
0.0000  0.0000  0.6000  0.7000  0.6000  0.7000
 255.  *  0.8000  0.8000  0.8000  0.2000  0.1000  0.1000  0.1000  0.1000  0.0000
0.0000  0.0000  0.7000  0.8000  0.6000  0.8000
 260.  *  0.7000  0.8000  0.7000  0.3000  0.1000  0.1000  0.1000  0.3000  0.0000
```

0.0000 0.0000 0.7000 0.7000 0.7000 0.7000
 265. * 0.6000 0.7000 0.7000 0.4000 0.1000 0.1000 0.1000 0.3000 0.0000
0.0000 0.0000 0.7000 0.7000 0.7000 0.7000
 270. * 0.6000 0.6000 0.6000 0.6000 0.3000 0.1000 0.1000 0.5000 0.2000
0.0000 0.0000 0.6000 0.6000 0.7000 0.6000
 275. * 0.5000 0.5000 0.5000 0.6000 0.3000 0.1000 0.1000 0.5000 0.2000
0.0000 0.0000 0.5000 0.5000 0.5000 0.5000
 280. * 0.3000 0.3000 0.3000 0.7000 0.3000 0.3000 0.1000 0.6000 0.2000
0.1000 0.0000 0.3000 0.3000 0.2000 0.3000
 285. * 0.2000 0.2000 0.2000 0.7000 0.3000 0.3000 0.1000 0.6000 0.2000
0.2000 0.0000 0.2000 0.2000 0.2000 0.2000
 290. * 0.1000 0.1000 0.1000 0.7000 0.4000 0.3000 0.1000 0.6000 0.3000
0.2000 0.0000 0.1000 0.1000 0.1000 0.1000
 295. * 0.1000 0.1000 0.1000 0.6000 0.4000 0.3000 0.1000 0.6000 0.3000
0.2000 0.0000 0.0000 0.1000 0.1000 0.1000
 300. * 0.0000 0.1000 0.1000 0.6000 0.4000 0.3000 0.1000 0.6000 0.3000
0.2000 0.0000 0.0000 0.0000 0.1000 0.1000
 305. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.3000 0.1000 0.5000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 310. * 0.0000 0.0000 0.0000 0.6000 0.3000 0.3000 0.1000 0.4000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 315. * 0.0000 0.0000 0.0000 0.6000 0.3000 0.3000 0.1000 0.4000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 320. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.3000 0.1000 0.4000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 325. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.3000 0.1000 0.4000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 330. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.3000 0.1000 0.4000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 335. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.3000 0.1000 0.4000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 340. * 0.0000 0.0000 0.0000 0.6000 0.3000 0.2000 0.1000 0.4000 0.2000
0.2000 0.0000 0.0000 0.0000 0.0000 0.0000
 345. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.2000 0.1000 0.4000 0.2000
0.2000 0.1000 0.0000 0.0000 0.0000 0.0000
 350. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.2000 0.1000 0.4000 0.3000
0.3000 0.1000 0.0000 0.0000 0.0000 0.0000
 355. * 0.0000 0.0000 0.0000 0.5000 0.3000 0.2000 0.1000 0.5000 0.3000
0.2000 0.1000 0.0000 0.0000 0.0000 0.0000
 360. * 0.0000 0.0000 0.0000 0.6000 0.3000 0.2000 0.1000 0.5000 0.3000
0.2000 0.1000 0.0000 0.0000 0.0000 0.0000

------*--

 MAX   * 0.8000 0.8000 0.8000 0.7000 0.4000 0.3000 0.1000 0.8000 0.4000
0.3000 0.1000 0.8000 0.8000 0.7000 0.8000
 DEGR. *   100   100   100   280   290   280   5   75   5
25   5   105   105   260   255

PAGE 5

JOB: Fred Ex AQ Analysis RUN: 2042 NOBUILD - US 1 and I95 NB Entr Ramp

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
5.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
10.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
15.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
20.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
25.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
30.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
35.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
40.	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
45.	0.0000	0.0000	0.4000	0.4000	0.4000	0.5000	0.4000	0.4000
50.	0.0000	0.0000	0.4000	0.4000	0.4000	0.5000	0.4000	0.4000
55.	0.0000	0.0000	0.5000	0.5000	0.5000	0.4000	0.4000	0.5000
60.	0.0000	0.1000	0.6000	0.6000	0.6000	0.6000	0.5000	0.6000
65.	0.1000	0.1000	0.6000	0.6000	0.6000	0.6000	0.5000	0.6000
70.	0.1000	0.1000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
75.	0.2000	0.2000	0.6000	0.6000	0.6000	0.5000	0.6000	0.6000
80.	0.3000	0.3000	0.6000	0.6000	0.5000	0.6000	0.6000	0.6000
85.	0.5000	0.5000	0.5000	0.5000	0.5000	0.6000	0.6000	0.6000
90.	0.6000	0.7000	0.5000	0.5000	0.4000	0.5000	0.5000	0.5000
95.	0.7000	0.7000	0.3000	0.3000	0.3000	0.3000	0.3000	0.4000
100.	0.7000	0.7000	0.3000	0.3000	0.1000	0.3000	0.3000	0.1000
105.	0.7000	0.6000	0.1000	0.1000	0.1000	0.2000	0.1000	0.1000
110.	0.7000	0.6000	0.1000	0.1000	0.1000	0.0000	0.0000	0.1000
115.	0.7000	0.6000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
120.	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
125.	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
130.	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
135.	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
140.	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

145.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
150.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
155.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
160.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
165.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
170.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
175.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
180.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
185.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
190.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
195.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
200.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
205.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
210.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PAGE 6

JOB: Fred Ex AQ Analysis RUN: 2042 NOBUILD - US 1 and I95 NB Entr Ramp

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
215.	*	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
220.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
225.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
230.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
235.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
240.	*	0.6000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
245.	*	0.7000	0.6000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
250.	*	0.7000	0.6000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000
255.	*	0.8000	0.6000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
260.	*	0.7000	0.6000	0.3000	0.3000	0.1000	0.3000	0.3000	0.1000
265.	*	0.7000	0.6000	0.3000	0.3000	0.4000	0.3000	0.3000	0.3000
270.	*	0.6000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4000
275.	*	0.5000	0.3000	0.5000	0.5000	0.6000	0.5000	0.5000	0.5000
280.	*	0.3000	0.2000	0.7000	0.6000	0.6000	0.6000	0.6000	0.5000
285.	*	0.2000	0.2000	0.7000	0.6000	0.6000	0.6000	0.6000	0.5000
290.	*	0.1000	0.1000	0.5000	0.5000	0.6000	0.6000	0.6000	0.6000
295.	*	0.1000	0.1000	0.6000	0.5000	0.6000	0.6000	0.6000	0.6000
300.	*	0.1000	0.1000	0.6000	0.5000	0.6000	0.6000	0.6000	0.6000
305.	*	0.0000	0.0000	0.4000	0.4000	0.5000	0.5000	0.5000	0.5000
310.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
315.	*	0.0000	0.0000	0.5000	0.4000	0.4000	0.4000	0.4000	0.4000
320.	*	0.0000	0.0000	0.5000	0.4000	0.4000	0.4000	0.4000	0.4000
325.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000

330.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
335.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
340.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
345.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
350.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
355.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
360.	*	0.0000	0.0000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
MAX	*	0.8000	0.7000	0.7000	0.6000	0.6000	0.6000	0.6000	0.6000
DEGR.	*	255	90	280	60	60	60	70	60

THE HIGHEST CONCENTRATION OF 0.8000 PPM OCCURRED AT RECEPTOR 8.

2042 US 1 and I95 NB Entrance Ramp IN

```
Q,EPA,,F,,0,T,T,T,T,0.78,
1,1,3,3,2200,2200,2200,2200,2200,2200,2200,2200,1,1230,1230,1230,1,1230,1230,1230,1,
11,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0
,0,0,0,0,0,0,3.24,3.24,2.57,2.57,1.25,1.25,1.25,1.25
0,120,120,120,0,68,68,68,0,2,2,2,0,1900,1900,1900,0,1,1,1,0,3,3,3
'Fred Ex AQ Analysis',60,175,0.0,0.0,23,0.3048,1,0
'N Leg, E Side-Corner',11.0,46.0,5.9
'N Leg, E Side - 0 m',0.0,46.0,5.9
'N Leg, W Side-Corner',-21.0,46.0,5.9
'S Leg, E Side-Corner',11.0,-46.0,5.9
'S Leg, E Side - 25 m',11.0,-118.0,5.9
'S Leg, E Side - 50 m',11.0,-200.0,5.9
'S Leg, E Side-Midblk',11.0,-636.0,5.9
'S Leg, W Side-Corner',-21.0,-46.0,5.9
'S Leg, W Side - 25 m',-21.0,-118.0,5.9
'S Leg, W Side - 50 m',-21.0,-200.0,5.9
'S Leg, W Side-Midblk',-21.0,-636.0,5.9
'E Leg, N Side - 25 m',83.0,46.0,5.9
'E Leg, N Side - 50 m',165.0,46.0,5.9
'E Leg, N Side-Midblk',601.0,46.0,5.9
'W Leg, N Side - 25 m',-93.0,46.0,5.9
'W Leg, N Side - 50 m',-175.0,46.0,5.9
'W Leg, N Side-Midblk',-611.0,46.0,5.9
'E Leg, S Side - 25 m',83.0,-46.0,5.9
'E Leg, S Side - 50 m',165.0,-46.0,5.9
'E Leg, S Side-Midblk',601.0,-46.0,5.9
'W Leg, S Side - 25 m',-93.0,-46.0,5.9
'W Leg, S Side - 50 m',-175.0,-46.0,5.9
'W Leg, S Side-Midblk',-611.0,-46.0,5.9
'2042 - US 1 and I95 NB Entrance Ramp',9,1,0,'CO'
1
'S Leg App - FreeFlow','AG',1,18,1,-1200,1,3.24,0.0,20.7
2
'S Leg App - Queue','AG',1,-36,1,-1200,0.0,1.0,1
120,68,2,1,1.25,1900,1,3
1
'S Leg Dep - FreeFlow','AG',-6,18,-6,-1200,1230,3.24,0.0,30.7
1
'E Leg App - FreeFlow','AG',0,18,1200,18,3690,2.57,0.0,55.7
2
'E Leg App - Queue','AG',1,18,1200,18,0.0,36.0,3
120,68,2,3690,1.25,1900,1,3
1
'E Leg Dep - FreeFlow','AG',0,-18,1200,-18,3690,2.57,0.0,55.7
1
'W Leg App - FreeFlow','AG',0,-18,-1200,-18,3690,2.57,0.0,55.7
2
'W Leg App - Queue','AG',-11,-18,-1200,-18,0.0,36.0,3
```

```
120,68,2,3690,1.25,1900,1,3
1
'W Leg Dep - FreeFlow','AG',0,18,-1200,18,3690,2.57,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                       2042 US 1 and I95 NB Entrance Ramp OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: Fred Ex AQ Analysis                                 RUN: 2042 - US 1 and
I95 NB Entrance Ramp

      DATE :  8/15/17
      TIME : 10:41:46

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*----------------------------------------*------------------
----------------------------------------
       1. S Leg App - FreeFlow*      1.0      18.0       1.0   -1200.0 *    1218.
180. AG      1.   3.2   0.0 20.7
       2. S Leg App - Queue   *      1.0     -36.0       1.0     -36.4 *       0.
180. AG      2. 100.0   0.0  1.0 0.00   0.0
       3. S Leg Dep - FreeFlow*     -6.0      18.0      -6.0   -1200.0 *    1218.
180. AG   1230.   3.2   0.0 30.7
       4. E Leg App - FreeFlow*      0.0      18.0    1200.0      18.0 *    1200.
90. AG   3690.   2.6   0.0 55.7
       5. E Leg App - Queue   *      1.0      18.0    5301.1      18.0 *    5300.
90. AG      6. 100.0   0.0 36.0 1.62 269.2
       6. E Leg Dep - FreeFlow*      0.0     -18.0    1200.0     -18.0 *    1200.
90. AG   3690.   2.6   0.0 55.7
       7. W Leg App - FreeFlow*      0.0     -18.0   -1200.0     -18.0 *    1200.
270. AG   3690.   2.6   0.0 55.7
       8. W Leg App - Queue   *    -11.0     -18.0   -5311.1     -18.0 *    5300.
270. AG      6. 100.0   0.0 36.0 1.62 269.2
       9. W Leg Dep - FreeFlow*      0.0      18.0   -1200.0      18.0 *    1200.
270. AG   3690.   2.6   0.0 55.7
```

JOB: Fred Ex AQ Analysis RUN: 2042 - US 1 and I95 NB Entrance Ramp

DATE : 8/15/17
TIME : 10:41:46

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. S Leg App - Queue	*	120	68	2.0	1	1900	1.25	1	3
5. E Leg App - Queue	*	120	68	2.0	3690	1900	1.25	1	3
8. W Leg App - Queue	*	120	68	2.0	3690	1900	1.25	1	3

RECEPTOR LOCATIONS

RECEPTOR	*	X (FT)	Y (FT)	Z (FT)	*
1. N Leg, E Side-Corner	*	11.0	46.0	5.9	*
2. N Leg, E Side - 0 m	*	0.0	46.0	5.9	*
3. N Leg, W Side-Corner	*	-21.0	46.0	5.9	*
4. S Leg, E Side-Corner	*	11.0	-46.0	5.9	*
5. S Leg, E Side - 25 m	*	11.0	-118.0	5.9	*
6. S Leg, E Side - 50 m	*	11.0	-200.0	5.9	*
7. S Leg, E Side-Midblk	*	11.0	-636.0	5.9	*
8. S Leg, W Side-Corner	*	-21.0	-46.0	5.9	*
9. S Leg, W Side - 25 m	*	-21.0	-118.0	5.9	*
10. S Leg, W Side - 50 m	*	-21.0	-200.0	5.9	*
11. S Leg, W Side-Midblk	*	-21.0	-636.0	5.9	*
12. E Leg, N Side - 25 m	*	83.0	46.0	5.9	*
13. E Leg, N Side - 50 m	*	165.0	46.0	5.9	*
14. E Leg, N Side-Midblk	*	601.0	46.0	5.9	*
15. W Leg, N Side - 25 m	*	-93.0	46.0	5.9	*
16. W Leg, N Side - 50 m	*	-175.0	46.0	5.9	*
17. W Leg, N Side-Midblk	*	-611.0	46.0	5.9	*
18. E Leg, S Side - 25 m	*	83.0	-46.0	5.9	*

```
                       2042 US 1 and I95 NB Entrance Ramp OUT
     19. E Leg, S Side - 50 m *       165.0      -46.0        5.9   *
     20. E Leg, S Side-Midblk *       601.0      -46.0        5.9   *
     21. W Leg, S Side - 25 m *       -93.0      -46.0        5.9   *
     22. W Leg, S Side - 50 m *      -175.0      -46.0        5.9   *
     23. W Leg, S Side-Midblk *      -611.0      -46.0        5.9   *
```

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                             PAGE  3
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 - US 1 and
I95 NB Entrance Ramp

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
   5.  *  0.0000  0.0000  0.0000  0.6000  0.3000  0.3000  0.2000  0.6000  0.4000
0.3000  0.3000  0.0000  0.0000  0.0000  0.0000
  10.  *  0.0000  0.0000  0.0000  0.5000  0.3000  0.3000  0.1000  0.6000  0.6000
0.4000  0.3000  0.0000  0.0000  0.0000  0.0000
  15.  *  0.0000  0.0000  0.0000  0.5000  0.3000  0.3000  0.1000  0.7000  0.5000
0.4000  0.3000  0.0000  0.0000  0.0000  0.0000
  20.  *  0.0000  0.0000  0.0000  0.5000  0.2000  0.2000  0.0000  0.7000  0.4000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
  25.  *  0.0000  0.0000  0.0000  0.5000  0.2000  0.2000  0.0000  0.7000  0.4000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
  30.  *  0.0000  0.0000  0.0000  0.5000  0.2000  0.2000  0.0000  0.6000  0.4000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
  35.  *  0.0000  0.0000  0.0000  0.5000  0.2000  0.2000  0.0000  0.8000  0.4000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
  40.  *  0.0000  0.0000  0.0000  0.5000  0.2000  0.2000  0.0000  0.8000  0.4000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
  45.  *  0.0000  0.0000  0.0000  0.5000  0.3000  0.2000  0.0000  0.8000  0.5000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
  50.  *  0.0000  0.0000  0.0000  0.6000  0.3000  0.2000  0.0000  0.7000  0.5000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
  55.  *  0.0000  0.0000  0.0000  0.6000  0.3000  0.2000  0.0000  0.7000  0.4000
```

```
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  60.  *  0.0000  0.0000  0.0000  0.6000  0.3000  0.2000  0.0000  0.7000  0.4000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
  65.  *  0.1000  0.1000  0.0000  0.6000  0.3000  0.2000  0.0000  0.7000  0.4000
0.3000  0.1000  0.1000  0.1000  0.1000  0.0000
  70.  *  0.1000  0.1000  0.1000  0.8000  0.3000  0.2000  0.0000  0.9000  0.4000
0.3000  0.1000  0.1000  0.1000  0.1000  0.1000
  75.  *  0.2000  0.2000  0.1000  0.8000  0.3000  0.2000  0.0000  0.9000  0.4000
0.3000  0.1000  0.2000  0.2000  0.2000  0.2000
  80.  *  0.4000  0.4000  0.3000  0.7000  0.3000  0.2000  0.0000  0.8000  0.4000
0.3000  0.1000  0.4000  0.3000  0.2000  0.3000
  85.  *  0.5000  0.5000  0.4000  0.7000  0.2000  0.1000  0.0000  0.8000  0.3000
0.2000  0.1000  0.5000  0.5000  0.4000  0.5000
  90.  *  0.7000  0.7000  0.7000  0.7000  0.2000  0.0000  0.0000  0.8000  0.3000
0.1000  0.1000  0.7000  0.6000  0.5000  0.7000
  95.  *  0.7000  0.7000  0.7000  0.5000  0.1000  0.0000  0.0000  0.5000  0.2000
0.1000  0.1000  0.7000  0.7000  0.7000  0.7000
 100.  *  0.7000  0.7000  0.7000  0.4000  0.0000  0.0000  0.0000  0.4000  0.1000
0.1000  0.1000  0.7000  0.7000  0.7000  0.8000
 105.  *  0.8000  0.8000  0.8000  0.2000  0.0000  0.0000  0.0000  0.2000  0.1000
0.1000  0.1000  0.8000  0.8000  0.7000  0.7000
 110.  *  0.8000  0.8000  0.8000  0.1000  0.0000  0.0000  0.0000  0.2000  0.1000
0.1000  0.1000  0.8000  0.8000  0.7000  0.8000
 115.  *  0.6000  0.6000  0.6000  0.1000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.6000  0.6000  0.6000  0.7000
 120.  *  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.6000  0.6000  0.6000  0.6000
 125.  *  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  0.1000  0.1000
0.1000  0.1000  0.6000  0.6000  0.6000  0.6000
 130.  *  0.6000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  0.6000  0.6000  0.6000  0.7000
 135.  *  0.5000  0.5000  0.6000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  0.5000  0.5000  0.5000  0.7000
 140.  *  0.5000  0.5000  0.7000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  0.5000  0.5000  0.5000  0.6000
 145.  *  0.5000  0.5000  0.7000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  0.5000  0.5000  0.5000  0.6000
 150.  *  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  0.5000  0.5000  0.5000  0.6000
 155.  *  0.5000  0.4000  0.6000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  0.5000  0.5000  0.5000  0.6000
 160.  *  0.5000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  0.2000  0.2000
0.2000  0.2000  0.5000  0.5000  0.5000  0.6000
 165.  *  0.6000  0.6000  0.7000  0.1000  0.1000  0.1000  0.1000  0.3000  0.3000
0.3000  0.3000  0.5000  0.5000  0.5000  0.6000
 170.  *  0.6000  0.6000  0.7000  0.1000  0.1000  0.1000  0.1000  0.3000  0.3000
0.3000  0.3000  0.5000  0.5000  0.5000  0.6000
 175.  *  0.6000  0.7000  0.7000  0.2000  0.2000  0.2000  0.2000  0.3000  0.3000
```

```
0.3000  0.3000  0.5000  0.5000  0.5000  0.6000
 180.  *  0.7000  0.8000  0.7000  0.2000  0.2000  0.2000  0.2000  0.2000  0.2000
0.2000  0.2000  0.5000  0.5000  0.5000  0.5000
 185.  *  0.7000  0.7000  0.6000  0.2000  0.2000  0.2000  0.2000  0.2000  0.2000
0.2000  0.2000  0.6000  0.5000  0.5000  0.5000
 190.  *  0.7000  0.7000  0.6000  0.3000  0.3000  0.3000  0.2000  0.1000  0.1000
0.1000  0.1000  0.6000  0.5000  0.5000  0.5000
 195.  *  0.7000  0.7000  0.6000  0.2000  0.2000  0.2000  0.2000  0.1000  0.1000
0.1000  0.1000  0.6000  0.5000  0.5000  0.5000
 200.  *  0.6000  0.6000  0.5000  0.2000  0.2000  0.2000  0.2000  0.1000  0.1000
0.1000  0.1000  0.6000  0.5000  0.5000  0.5000
 205.  *  0.6000  0.5000  0.5000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  0.6000  0.5000  0.5000  0.5000
 210.  *  0.6000  0.6000  0.5000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  0.6000  0.5000  0.5000  0.5000
```

```
                              PAGE  4
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 - US 1 and
I95 NB Entrance Ramp

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
------------------------------------------
 215.  *  0.6000  0.5000  0.5000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  0.6000  0.5000  0.5000  0.5000
 220.  *  0.6000  0.5000  0.5000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  0.6000  0.5000  0.5000  0.5000
 225.  *  0.6000  0.5000  0.5000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  0.7000  0.5000  0.5000  0.5000
 230.  *  0.6000  0.5000  0.6000  0.2000  0.2000  0.2000  0.2000  0.0000  0.0000
0.0000  0.0000  0.6000  0.6000  0.6000  0.6000
 235.  *  0.6000  0.6000  0.6000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.6000  0.6000  0.6000  0.6000
 240.  *  0.6000  0.6000  0.6000  0.1000  0.1000  0.1000  0.1000  0.0000  0.0000
0.0000  0.0000  0.7000  0.7000  0.6000  0.6000
 245.  *  0.7000  0.6000  0.6000  0.1000  0.1000  0.1000  0.1000  0.1000  0.0000
0.0000  0.0000  0.7000  0.8000  0.6000  0.6000
 250.  *  0.8000  0.8000  0.8000  0.2000  0.1000  0.1000  0.1000  0.1000  0.0000
0.0000  0.0000  0.7000  0.7000  0.7000  0.8000
 255.  *  0.9000  0.8000  0.8000  0.2000  0.1000  0.1000  0.1000  0.2000  0.0000
0.0000  0.0000  0.7000  0.8000  0.7000  0.8000
 260.  *  0.7000  0.7000  0.7000  0.4000  0.1000  0.1000  0.1000  0.4000  0.0000
```

```
0.0000  0.0000  0.8000  0.9000  0.8000  0.7000
 265.  *  0.7000  0.7000  0.7000  0.5000  0.2000  0.1000  0.1000  0.5000  0.1000
0.0000  0.0000  0.7000  0.7000  0.9000  0.7000
 270.  *  0.6000  0.7000  0.7000  0.7000  0.3000  0.1000  0.1000  0.7000  0.2000
0.0000  0.0000  0.7000  0.6000  0.7000  0.7000
 275.  *  0.4000  0.5000  0.5000  0.8000  0.3000  0.2000  0.1000  0.7000  0.2000
0.1000  0.0000  0.5000  0.5000  0.5000  0.5000
 280.  *  0.3000  0.4000  0.4000  0.8000  0.4000  0.3000  0.1000  0.7000  0.3000
0.2000  0.0000  0.3000  0.4000  0.2000  0.4000
 285.  *  0.1000  0.2000  0.2000  1.0000  0.4000  0.3000  0.1000  0.8000  0.3000
0.2000  0.0000  0.2000  0.2000  0.2000  0.2000
 290.  *  0.1000  0.1000  0.1000  0.9000  0.4000  0.3000  0.1000  0.8000  0.3000
0.2000  0.0000  0.1000  0.1000  0.1000  0.1000
 295.  *  0.0000  0.1000  0.1000  0.8000  0.4000  0.3000  0.1000  0.6000  0.3000
0.2000  0.0000  0.0000  0.1000  0.1000  0.1000
 300.  *  0.0000  0.0000  0.0000  0.7000  0.4000  0.3000  0.1000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 305.  *  0.0000  0.0000  0.0000  0.7000  0.4000  0.3000  0.1000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 310.  *  0.0000  0.0000  0.0000  0.7000  0.5000  0.4000  0.2000  0.6000  0.3000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 315.  *  0.0000  0.0000  0.0000  0.8000  0.5000  0.4000  0.2000  0.5000  0.3000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 320.  *  0.0000  0.0000  0.0000  0.7000  0.4000  0.4000  0.2000  0.5000  0.2000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 325.  *  0.0000  0.0000  0.0000  0.7000  0.4000  0.4000  0.2000  0.5000  0.2000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 330.  *  0.0000  0.0000  0.0000  0.7000  0.4000  0.4000  0.2000  0.5000  0.2000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 335.  *  0.0000  0.0000  0.0000  0.7000  0.4000  0.4000  0.2000  0.5000  0.2000
0.2000  0.0000  0.0000  0.0000  0.0000  0.0000
 340.  *  0.0000  0.0000  0.0000  0.7000  0.4000  0.4000  0.2000  0.5000  0.2000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
 345.  *  0.0000  0.0000  0.0000  0.6000  0.4000  0.4000  0.2000  0.6000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
 350.  *  0.0000  0.0000  0.0000  0.6000  0.5000  0.4000  0.2000  0.6000  0.3000
0.3000  0.1000  0.0000  0.0000  0.0000  0.0000
 355.  *  0.0000  0.0000  0.0000  0.6000  0.6000  0.3000  0.2000  0.6000  0.3000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000
 360.  *  0.0000  0.0000  0.0000  0.6000  0.3000  0.3000  0.2000  0.6000  0.4000
0.4000  0.2000  0.0000  0.0000  0.0000  0.0000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  0.9000  0.8000  0.8000  1.0000  0.6000  0.4000  0.2000  0.9000  0.6000
0.4000  0.3000  0.8000  0.9000  0.9000  0.8000
 DEGR. *    255     105     105     285     355     310       5      70      10
10       5     105     260     265     100
```

PAGE 5

JOB: Fred Ex AQ Analysis RUN: 2042 - US 1 and I95 NB Entrance Ramp

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
5.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
10.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
15.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
20.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
25.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
30.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
35.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
40.	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
45.	0.0000	0.0000	0.5000	0.5000	0.5000	0.6000	0.5000	0.5000
50.	0.0000	0.0000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
55.	0.0000	0.0000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
60.	0.0000	0.0000	0.6000	0.6000	0.6000	0.6000	0.7000	0.6000
65.	0.1000	0.1000	0.6000	0.6000	0.6000	0.7000	0.8000	0.6000
70.	0.1000	0.1000	0.8000	0.8000	0.7000	0.8000	0.7000	0.7000
75.	0.2000	0.2000	0.8000	0.8000	0.7000	0.8000	0.8000	0.7000
80.	0.4000	0.2000	0.7000	0.7000	0.7000	0.9000	0.9000	0.8000
85.	0.4000	0.5000	0.7000	0.7000	0.7000	0.8000	0.7000	0.9000
90.	0.6000	0.7000	0.7000	0.6000	0.5000	0.8000	0.6000	0.7000
95.	0.7000	0.9000	0.5000	0.5000	0.4000	0.6000	0.4000	0.5000
100.	0.9000	0.8000	0.4000	0.3000	0.2000	0.4000	0.4000	0.2000
105.	0.8000	0.7000	0.2000	0.2000	0.2000	0.3000	0.2000	0.2000
110.	0.7000	0.7000	0.1000	0.1000	0.1000	0.2000	0.1000	0.1000
115.	0.8000	0.6000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
120.	0.7000	0.6000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
125.	0.6000	0.6000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
130.	0.6000	0.6000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
135.	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
140.	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000

2042 US 1 and I95 NB Entrance Ramp OUT

145.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
150.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
155.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
160.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
165.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
170.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
175.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.1000	0.0000	0.0000
180.	*	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
185.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
190.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
195.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
200.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
205.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
210.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23
215.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
220.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
225.	*	0.5000	0.5000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
230.	*	0.6000	0.6000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
235.	*	0.6000	0.6000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
240.	*	0.6000	0.6000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000
245.	*	0.6000	0.6000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
250.	*	0.8000	0.7000	0.2000	0.1000	0.1000	0.1000	0.1000	0.1000
255.	*	0.8000	0.7000	0.3000	0.2000	0.2000	0.2000	0.2000	0.1000
260.	*	0.7000	0.7000	0.4000	0.4000	0.2000	0.4000	0.3000	0.2000
265.	*	0.7000	0.7000	0.6000	0.5000	0.5000	0.5000	0.5000	0.4000
270.	*	0.5000	0.5000	0.8000	0.6000	0.7000	0.7000	0.5000	0.5000
275.	*	0.5000	0.4000	0.8000	0.7000	0.9000	0.7000	0.7000	0.7000
280.	*	0.3000	0.2000	0.9000	0.9000	0.8000	0.7000	0.7000	0.7000
285.	*	0.2000	0.1000	0.7000	0.8000	0.7000	0.8000	0.8000	0.7000
290.	*	0.1000	0.1000	0.7000	0.7000	0.7000	0.8000	0.8000	0.7000
295.	*	0.1000	0.1000	0.7000	0.8000	0.6000	0.6000	0.6000	0.6000
300.	*	0.0000	0.0000	0.7000	0.7000	0.6000	0.6000	0.6000	0.6000
305.	*	0.0000	0.0000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
310.	*	0.0000	0.0000	0.5000	0.6000	0.6000	0.6000	0.6000	0.6000
315.	*	0.0000	0.0000	0.6000	0.5000	0.5000	0.5000	0.5000	0.5000
320.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
325.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000

2042 US 1 and I95 NB Entrance Ramp OUT

330.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
335.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
340.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
345.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
350.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
355.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
360.	*	0.0000	0.0000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
MAX	*	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
DEGR.	*	100	95	280	280	275	80	80	85

THE HIGHEST CONCENTRATION OF 1.0000 PPM OCCURRED AT RECEPTOR 4.

```
Q,EPA,,F,,0,T,T,F,F,0.78,
5,4,4,4,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-58.0,58.0,5.9
'N Leg, W Side - 25 m',-58.0,130.0,5.9
'N Leg, W Side - 50 m',-58.0,212.0,5.9
'N Leg, W Side-Midblk',-58.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-58.0,5.9
'S Leg, E Side - 25 m',70.0,-130.0,5.9
'S Leg, E Side - 50 m',70.0,-212.0,5.9
'S Leg, E Side-Midblk',70.0,-648.0,5.9
'S Leg, W Side-Corner',-58.0,-58.0,5.9
'S Leg, W Side - 25 m',-58.0,-130.0,5.9
'S Leg, W Side - 50 m',-58.0,-212.0,5.9
'S Leg, W Side-Midblk',-58.0,-648.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-130.0,58.0,5.9
'W Leg, N Side - 50 m',-212.0,58.0,5.9
'W Leg, N Side-Midblk',-648.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-58.0,5.9
'E Leg, S Side - 50 m',224.0,-58.0,5.9
'E Leg, S Side-Midblk',660.0,-58.0,5.9
'W Leg, S Side - 25 m',-130.0,-58.0,5.9
'W Leg, S Side - 50 m',-212.0,-58.0,5.9
'W Leg, S Side-Midblk',-648.0,-58.0,5.9
'2016 - I95 and US17 (Exit 133)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,9600,8.67,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,12000,4.14,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,12000,8.67,0.0,79.7
1
'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,9600,4.14,0.0,67.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,9600,7.72,0.0,67.7
1
'E Leg Dep - FreeFlow','AG',0,-24,1200,-24,9600,3.92,0.0,67.7
1
```

'W Leg App - FreeFlow','AG',0,-24,-1200,-24,9600,7.72,0.0,67.7
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,9600,3.92,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72

2016 I95 and US 17 OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface
↑ CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: FredEx AQ Analysis RUN: 2016 - I95 and US17 (Exit 133)

DATE : 8/15/17
TIME : 10:58:57

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-24.0	0.0	-24.0	1200.0	1200.	360.	AG	9600.	8.7	0.0	67.7		
2. N Leg Dep - FreeFlow	30.0	0.0	30.0	1200.0	1200.	360.	AG	12000.	4.1	0.0	79.7		
3. S Leg App - FreeFlow	30.0	0.0	30.0	-1200.0	1200.	180.	AG	12000.	8.7	0.0	79.7		
4. S Leg Dep - FreeFlow	-24.0	0.0	-24.0	-1200.0	1200.	180.	AG	9600.	4.1	0.0	67.7		
5. E Leg App - FreeFlow	0.0	24.0	1200.0	24.0	1200.	90.	AG	9600.	7.7	0.0	67.7		
6. E Leg Dep - FreeFlow	0.0	-24.0	1200.0	-24.0	1200.	90.	AG	9600.	3.9	0.0	67.7		
7. W Leg App - FreeFlow	0.0	-24.0	-1200.0	-24.0	1200.	270.	AG	9600.	7.7	0.0	67.7		
8. W Leg Dep - FreeFlow	0.0	24.0	-1200.0	24.0	1200.	270.	AG	9600.	3.9	0.0	67.7		

↑
PAGE 2
JOB: FredEx AQ Analysis RUN: 2016 - I95 and

2016 I95 and US 17 OUT
US17 (Exit 133)

DATE : 8/15/17
TIME : 10:58:57

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X (FT)	Y (FT)	Z (FT)	*
1. N Leg, E Side-Corner	*	70.0	58.0	5.9	*
2. N Leg, E Side - 25 m	*	70.0	130.0	5.9	*
3. N Leg, E Side - 50 m	*	70.0	212.0	5.9	*
4. N Leg, E Side-Midblk	*	70.0	648.0	5.9	*
5. N Leg, W Side-Corner	*	-58.0	58.0	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	130.0	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	212.0	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	648.0	5.9	*
9. S Leg, E Side-Corner	*	70.0	-58.0	5.9	*
10. S Leg, E Side - 25 m	*	70.0	-130.0	5.9	*
11. S Leg, E Side - 50 m	*	70.0	-212.0	5.9	*
12. S Leg, E Side-Midblk	*	70.0	-648.0	5.9	*
13. S Leg, W Side-Corner	*	-58.0	-58.0	5.9	*
14. S Leg, W Side - 25 m	*	-58.0	-130.0	5.9	*
15. S Leg, W Side - 50 m	*	-58.0	-212.0	5.9	*
16. S Leg, W Side-Midblk	*	-58.0	-648.0	5.9	*
17. E Leg, N Side - 25 m	*	142.0	58.0	5.9	*
18. E Leg, N Side - 50 m	*	224.0	58.0	5.9	*
19. E Leg, N Side-Midblk	*	660.0	58.0	5.9	*
20. W Leg, N Side - 25 m	*	-130.0	58.0	5.9	*
21. W Leg, N Side - 50 m	*	-212.0	58.0	5.9	*
22. W Leg, N Side-Midblk	*	-648.0	58.0	5.9	*
23. E Leg, S Side - 25 m	*	142.0	-58.0	5.9	*
24. E Leg, S Side - 50 m	*	224.0	-58.0	5.9	*
25. E Leg, S Side-Midblk	*	660.0	-58.0	5.9	*
26. W Leg, S Side - 25 m	*	-130.0	-58.0	5.9	*

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     27. W Leg, S Side - 50 m *      -212.0      -58.0        5.9   *
     28. W Leg, S Side-Midblk *      -648.0      -58.0        5.9   *
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                              PAGE  3
      JOB: FredEx AQ Analysis                                   RUN: 2016 - I95 and
US17 (Exit 133)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
   5.  *  2.0000  2.0000  2.0000  1.6000  5.1000  4.9000  4.9000  4.3000  5.1000
4.4000  4.3000  4.1000  7.3000  5.6000  5.0000
  10.  *  1.4000  1.3000  1.2000  1.0000  5.3000  5.3000  5.3000  4.8000  4.2000
3.5000  3.1000  3.0000  7.5000  5.9000  5.2000
  15.  *  0.8000  0.8000  0.8000  0.6000  5.4000  5.3000  5.3000  4.9000  3.4000
2.7000  2.3000  2.0000  7.6000  5.8000  5.4000
  20.  *  0.5000  0.4000  0.4000  0.4000  5.1000  5.0000  5.0000  4.8000  3.0000
2.2000  1.8000  1.4000  7.1000  5.6000  5.1000
  25.  *  0.4000  0.3000  0.3000  0.3000  4.7000  4.7000  4.7000  4.7000  2.9000
2.0000  1.6000  1.1000  6.9000  5.4000  5.0000
  30.  *  0.3000  0.2000  0.2000  0.2000  4.6000  4.5000  4.5000  4.5000  2.8000
1.9000  1.5000  0.9000  6.8000  5.2000  4.7000
  35.  *  0.4000  0.2000  0.2000  0.2000  4.4000  4.3000  4.3000  4.3000  2.8000
1.8000  1.5000  0.9000  6.5000  5.1000  4.7000
  40.  *  0.4000  0.2000  0.2000  0.2000  4.1000  4.0000  4.0000  4.0000  2.8000
1.8000  1.4000  0.8000  6.7000  4.9000  4.5000
  45.  *  0.4000  0.2000  0.2000  0.2000  3.9000  3.8000  3.8000  3.8000  3.0000
1.9000  1.4000  0.8000  6.6000  4.9000  4.5000
  50.  *  0.3000  0.1000  0.1000  0.1000  3.8000  3.7000  3.7000  3.7000  3.1000
1.9000  1.4000  0.8000  6.7000  4.9000  4.4000
  55.  *  0.4000  0.1000  0.1000  0.1000  3.7000  3.5000  3.5000  3.5000  3.2000
1.9000  1.3000  0.5000  6.7000  4.9000  4.3000
  60.  *  0.4000  0.1000  0.1000  0.1000  3.6000  3.3000  3.3000  3.3000  3.3000
1.9000  1.4000  0.5000  7.0000  4.7000  4.5000
```

```
  65.  *  0.6000  0.1000  0.1000  0.1000  3.5000  3.2000  3.2000  3.2000  3.4000
1.9000  1.4000  0.4000  7.0000  4.8000  4.2000
  70.  *  0.7000  0.0000  0.0000  0.0000  3.8000  3.2000  3.2000  3.2000  3.6000
1.8000  1.2000  0.2000  7.1000  4.6000  4.1000
  75.  *  1.2000  0.1000  0.0000  0.0000  4.2000  3.3000  3.2000  3.2000  3.6000
1.7000  1.0000  0.0000  7.2000  4.6000  3.9000
  80.  *  2.0000  0.2000  0.0000  0.0000  5.0000  3.5000  3.4000  3.3000  3.6000
1.4000  0.7000  0.0000  7.2000  4.3000  3.7000
  85.  *  2.8000  0.5000  0.1000  0.0000  5.9000  3.9000  3.5000  3.4000  3.2000
1.1000  0.5000  0.0000  6.9000  4.2000  3.6000
  90.  *  3.7000  0.9000  0.3000  0.0000  6.8000  4.4000  3.9000  3.5000  2.6000
0.7000  0.2000  0.0000  6.3000  3.9000  3.4000
  95.  *  4.4000  1.3000  0.5000  0.0000  7.3000  4.7000  4.1000  3.4000  1.9000
0.4000  0.2000  0.0000  5.4000  3.5000  3.3000
 100.  *  4.7000  1.6000  0.8000  0.0000  7.4000  5.0000  4.1000  3.3000  1.2000
0.2000  0.0000  0.0000  4.5000  3.2000  3.0000
 105.  *  4.7000  1.9000  1.1000  0.0000  7.4000  5.1000  4.3000  3.3000  0.7000
0.0000  0.0000  0.0000  3.9000  3.0000  3.0000
 110.  *  4.4000  1.9000  1.2000  0.1000  7.1000  5.1000  4.5000  3.3000  0.6000
0.1000  0.1000  0.1000  3.6000  3.0000  3.0000
 115.  *  4.2000  2.0000  1.4000  0.3000  6.9000  5.1000  4.5000  3.5000  0.4000
0.2000  0.2000  0.2000  3.4000  3.0000  3.0000
 120.  *  3.9000  2.0000  1.4000  0.4000  7.0000  5.2000  4.6000  3.6000  0.4000
0.2000  0.2000  0.2000  3.4000  3.2000  3.2000
 125.  *  3.7000  1.9000  1.4000  0.5000  6.9000  5.3000  4.8000  3.9000  0.3000
0.2000  0.2000  0.2000  3.4000  3.2000  3.2000
 130.  *  3.6000  1.9000  1.3000  0.5000  6.9000  5.6000  4.9000  4.2000  0.4000
0.3000  0.3000  0.3000  3.5000  3.3000  3.3000
 135.  *  3.4000  1.9000  1.4000  0.7000  6.9000  5.7000  5.0000  4.3000  0.4000
0.3000  0.3000  0.3000  3.6000  3.5000  3.5000
 140.  *  3.2000  1.9000  1.3000  0.7000  6.8000  5.9000  5.2000  4.5000  0.4000
0.3000  0.3000  0.3000  3.8000  3.6000  3.6000
 145.  *  3.1000  1.9000  1.3000  0.7000  7.1000  6.2000  5.4000  4.8000  0.5000
0.4000  0.4000  0.4000  3.9000  3.7000  3.7000
 150.  *  3.1000  1.8000  1.3000  0.7000  7.2000  6.5000  5.8000  5.1000  0.5000
0.4000  0.4000  0.4000  4.0000  3.9000  3.9000
 155.  *  3.1000  1.8000  1.4000  0.8000  7.5000  6.7000  6.1000  5.3000  0.7000
0.6000  0.6000  0.6000  4.2000  4.1000  4.1000
 160.  *  3.5000  2.1000  1.5000  1.0000  7.4000  7.0000  6.5000  5.7000  0.9000
0.9000  0.9000  0.8000  4.4000  4.3000  4.3000
 165.  *  3.9000  2.7000  2.1000  1.4000  7.7000  7.2000  6.8000  6.2000  1.5000
1.4000  1.4000  1.3000  4.4000  4.4000  4.3000
 170.  *  4.8000  3.3000  2.8000  2.1000  7.5000  6.9000  6.7000  6.2000  2.3000
2.3000  2.3000  2.0000  4.3000  4.2000  4.1000
 175.  *  6.1000  4.3000  3.6000  2.9000  7.1000  6.5000  6.3000  6.0000  3.5000
3.4000  3.3000  2.9000  3.8000  3.7000  3.7000
 180.  *  7.0000  5.3000  4.5000  3.7000  6.3000  5.5000  5.4000  5.1000  4.6000
4.6000  4.5000  3.8000  3.0000  3.0000  2.9000
```

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 185.  *  7.7000  5.8000  5.3000  4.5000  5.1000  4.5000  4.1000  4.0000  5.4000
5.4000  5.3000  4.6000  2.2000  2.1000  2.0000
 190.  *  8.0000  6.2000  5.3000  4.6000  4.1000  3.4000  3.1000  2.7000  5.8000
5.7000  5.7000  5.1000  1.3000  1.3000  1.3000
 195.  *  7.7000  6.1000  5.4000  4.8000  3.5000  2.7000  2.3000  2.0000  5.8000
5.8000  5.7000  5.4000  0.8000  0.8000  0.8000
 200.  *  7.3000  5.7000  5.1000  4.4000  3.1000  2.1000  1.8000  1.3000  5.4000
5.4000  5.4000  5.1000  0.6000  0.5000  0.5000
 205.  *  7.0000  5.4000  4.9000  4.2000  2.9000  2.0000  1.5000  1.0000  5.2000
5.1000  5.1000  5.0000  0.4000  0.3000  0.3000
 210.  *  6.8000  5.2000  4.8000  4.0000  2.8000  1.8000  1.5000  0.9000  4.9000
4.8000  4.8000  4.8000  0.3000  0.2000  0.2000
```

```
                              PAGE  4
     JOB: FredEx AQ Analysis                                   RUN: 2016 - I95 and
US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  6.7000  5.0000  4.4000  3.9000  2.8000  1.8000  1.4000  0.8000  4.6000
4.6000  4.6000  4.6000  0.3000  0.1000  0.1000
 220.  *  6.6000  5.0000  4.5000  3.8000  2.8000  1.8000  1.4000  0.8000  4.3000
4.3000  4.3000  4.2000  0.3000  0.1000  0.1000
 225.  *  6.6000  4.7000  4.1000  3.6000  3.0000  1.9000  1.4000  0.8000  4.1000
4.0000  4.0000  4.0000  0.3000  0.1000  0.1000
 230.  *  6.7000  4.6000  4.0000  3.4000  3.1000  1.8000  1.3000  0.7000  4.0000
3.9000  3.9000  3.9000  0.3000  0.1000  0.1000
 235.  *  6.8000  4.6000  3.9000  3.4000  3.2000  1.9000  1.3000  0.5000  3.9000
3.7000  3.7000  3.7000  0.4000  0.1000  0.1000
 240.  *  6.7000  4.6000  4.1000  3.1000  3.2000  1.9000  1.4000  0.5000  3.8000
3.6000  3.6000  3.6000  0.4000  0.1000  0.1000
 245.  *  7.0000  4.5000  3.9000  2.9000  3.4000  1.8000  1.3000  0.3000  3.9000
3.5000  3.5000  3.5000  0.6000  0.1000  0.1000
 250.  *  7.0000  4.5000  3.8000  2.9000  3.6000  1.8000  1.2000  0.2000  4.1000
3.4000  3.4000  3.4000  0.7000  0.0000  0.0000
 255.  *  7.0000  4.4000  3.7000  2.7000  3.6000  1.7000  1.0000  0.0000  4.5000
3.5000  3.4000  3.4000  1.2000  0.1000  0.0000
 260.  *  7.1000  4.1000  3.5000  2.7000  3.6000  1.4000  0.7000  0.0000  5.1000
3.7000  3.6000  3.5000  2.0000  0.2000  0.0000
 265.  *  6.6000  3.9000  3.3000  2.8000  3.2000  1.1000  0.5000  0.0000  6.0000
4.1000  3.7000  3.6000  2.8000  0.5000  0.1000
```

```
 270.  *  6.2000  3.7000  3.2000  2.9000  2.7000  0.7000  0.2000  0.0000  7.0000
4.7000  4.2000  3.8000  3.8000  0.9000  0.3000
 275.  *  5.2000  3.2000  3.0000  2.8000  1.9000  0.4000  0.2000  0.0000  7.4000
4.9000  4.3000  3.6000  4.4000  1.3000  0.5000
 280.  *  4.2000  2.9000  2.7000  2.7000  1.2000  0.2000  0.0000  0.0000  7.6000
5.2000  4.4000  3.5000  4.7000  1.6000  0.8000
 285.  *  3.6000  2.7000  2.7000  2.7000  0.7000  0.0000  0.0000  0.0000  7.5000
5.3000  4.5000  3.5000  4.7000  1.9000  1.1000
 290.  *  3.4000  2.7000  2.7000  2.7000  0.6000  0.1000  0.1000  0.1000  7.2000
5.3000  4.7000  3.5000  4.4000  1.9000  1.2000
 295.  *  3.1000  2.7000  2.7000  2.7000  0.3000  0.1000  0.1000  0.1000  7.3000
5.3000  4.8000  3.8000  4.1000  2.0000  1.4000
 300.  *  3.1000  2.8000  2.8000  2.8000  0.4000  0.2000  0.2000  0.2000  7.1000
5.4000  4.9000  4.0000  3.9000  2.0000  1.4000
 305.  *  3.1000  2.9000  2.9000  2.9000  0.3000  0.2000  0.2000  0.2000  6.9000
5.6000  5.0000  4.1000  3.7000  1.9000  1.4000
 310.  *  3.1000  2.9000  2.9000  2.9000  0.3000  0.2000  0.2000  0.2000  6.8000
5.7000  5.2000  4.4000  3.6000  1.9000  1.3000
 315.  *  3.3000  3.1000  3.1000  3.1000  0.4000  0.3000  0.3000  0.3000  7.0000
5.9000  5.3000  4.5000  3.4000  1.8000  1.3000
 320.  *  3.5000  3.3000  3.3000  3.3000  0.4000  0.3000  0.3000  0.3000  6.8000
6.0000  5.4000  4.8000  3.2000  1.8000  1.2000
 325.  *  3.6000  3.4000  3.4000  3.4000  0.4000  0.3000  0.3000  0.3000  7.1000
6.2000  5.8000  5.1000  3.1000  1.8000  1.2000
 330.  *  3.7000  3.6000  3.6000  3.5000  0.5000  0.4000  0.4000  0.4000  7.1000
6.5000  6.0000  5.3000  3.1000  1.8000  1.3000
 335.  *  3.8000  3.7000  3.7000  3.6000  0.6000  0.5000  0.5000  0.5000  7.1000
6.7000  6.4000  5.6000  3.1000  1.9000  1.4000
 340.  *  4.0000  3.9000  3.9000  3.6000  0.8000  0.8000  0.8000  0.8000  7.4000
6.8000  6.5000  6.0000  3.4000  2.0000  1.5000
 345.  *  4.1000  4.1000  4.1000  3.6000  1.4000  1.4000  1.3000  1.1000  7.4000
7.0000  6.9000  6.6000  3.9000  2.5000  1.9000
 350.  *  4.0000  3.9000  3.9000  3.3000  2.2000  2.2000  2.1000  1.8000  7.3000
6.8000  6.8000  6.6000  4.7000  3.2000  2.6000
 355.  *  3.6000  3.5000  3.5000  2.8000  3.2000  3.2000  3.2000  2.7000  6.9000
6.3000  6.3000  6.1000  5.7000  4.1000  3.5000
 360.  *  2.9000  2.9000  2.8000  2.2000  4.3000  4.2000  4.2000  3.6000  6.2000
5.4000  5.3000  5.3000  6.8000  5.0000  4.4000

------*---------------------------------------------------------------------------
-------------------------------------------
 MAX   *  8.0000  6.2000  5.4000  4.8000  7.7000  7.2000  6.8000  6.2000  7.6000
7.0000  6.9000  6.6000  7.6000  5.9000  5.4000
 DEGR. *    190     190     195     195     165     165     165     165     280
345     345     345      15      10      15
```

JOB: FredEx AQ Analysis RUN: 2016 - I95 and US17 (Exit 133)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	16	17	18	19	20	21	22	23	24	25	26	27	28
	CONCENTRATION (PPM)												
5.	4.6000	0.5000	0.2000	0.0000	1.5000	0.7000	0.0000	2.9000	2.6000	2.4000	4.4000	3.6000	2.9000
10.	4.9000	0.2000	0.0000	0.0000	1.9000	1.0000	0.0000	2.6000	2.4000	2.4000	4.8000	3.8000	2.8000
15.	5.1000	0.0000	0.0000	0.0000	2.1000	1.3000	0.0000	2.4000	2.4000	2.4000	5.0000	4.0000	2.8000
20.	4.7000	0.1000	0.1000	0.1000	2.3000	1.5000	0.1000	2.4000	2.4000	2.4000	5.0000	4.2000	3.0000
25.	4.7000	0.1000	0.1000	0.1000	2.4000	1.6000	0.4000	2.5000	2.5000	2.5000	5.1000	4.3000	3.1000
30.	4.4000	0.1000	0.1000	0.1000	2.3000	1.6000	0.4000	2.5000	2.5000	2.5000	5.0000	4.4000	3.3000
35.	4.2000	0.2000	0.2000	0.2000	2.3000	1.6000	0.6000	2.6000	2.6000	2.6000	5.2000	4.5000	3.5000
40.	4.1000	0.2000	0.2000	0.2000	2.2000	1.6000	0.7000	2.6000	2.6000	2.6000	5.4000	4.6000	3.7000
45.	3.9000	0.2000	0.2000	0.2000	2.1000	1.5000	0.7000	2.8000	2.8000	2.8000	5.3000	4.7000	3.9000
50.	3.8000	0.2000	0.2000	0.2000	2.0000	1.5000	0.7000	2.9000	2.9000	2.9000	5.6000	4.8000	4.1000
55.	3.7000	0.3000	0.3000	0.3000	2.0000	1.5000	0.7000	3.0000	3.0000	3.0000	5.6000	5.0000	4.2000
60.	3.5000	0.3000	0.3000	0.3000	2.0000	1.6000	0.8000	3.1000	3.1000	3.1000	5.8000	5.3000	4.4000
65.	3.2000	0.5000	0.5000	0.5000	2.2000	1.6000	0.8000	3.3000	3.3000	3.2000	6.2000	5.6000	4.7000
70.	3.2000	0.7000	0.7000	0.7000	2.3000	1.7000	1.0000	3.5000	3.5000	3.2000	6.2000	5.9000	5.0000

```
  75.  *  3.0000  1.2000  1.2000  1.0000  2.8000  2.1000  1.3000  3.6000  3.6000
3.2000  6.4000  6.0000  5.4000
  80.  *  3.0000  1.9000  1.8000  1.6000  3.5000  2.7000  1.9000  3.5000  3.4000
3.0000  6.4000  6.2000  5.4000
  85.  *  3.1000  2.8000  2.8000  2.4000  4.1000  3.5000  2.8000  3.2000  3.0000
2.6000  6.1000  5.7000  5.2000
  90.  *  3.1000  3.7000  3.7000  3.1000  4.9000  4.3000  3.4000  2.5000  2.5000
2.0000  5.3000  5.1000  4.6000
  95.  *  3.1000  4.3000  4.2000  3.8000  5.5000  4.8000  4.0000  1.9000  1.8000
1.4000  4.4000  4.0000  3.6000
 100.  *  3.0000  4.6000  4.6000  4.1000  5.7000  5.1000  4.3000  1.2000  1.2000
1.0000  3.4000  3.0000  2.6000
 105.  *  3.0000  4.7000  4.7000  4.3000  5.8000  5.1000  4.3000  0.7000  0.7000
0.6000  2.8000  2.4000  1.8000
 110.  *  3.0000  4.4000  4.4000  4.2000  5.5000  4.7000  4.1000  0.4000  0.4000
0.3000  2.5000  2.0000  1.3000
 115.  *  3.0000  4.1000  4.1000  4.0000  5.2000  4.7000  3.8000  0.2000  0.2000
0.2000  2.2000  1.7000  1.1000
 120.  *  3.2000  3.8000  3.8000  3.8000  5.0000  4.4000  3.7000  0.2000  0.2000
0.2000  2.1000  1.6000  0.9000
 125.  *  3.2000  3.6000  3.6000  3.6000  4.9000  4.4000  3.7000  0.1000  0.1000
0.1000  2.2000  1.7000  1.0000
 130.  *  3.3000  3.5000  3.5000  3.5000  4.8000  4.2000  3.5000  0.1000  0.1000
0.1000  2.1000  1.6000  0.8000
 135.  *  3.4000  3.3000  3.3000  3.3000  4.9000  4.1000  3.5000  0.1000  0.1000
0.1000  2.3000  1.6000  0.8000
 140.  *  3.6000  3.1000  3.1000  3.1000  4.7000  4.1000  3.2000  0.1000  0.1000
0.1000  2.3000  1.7000  0.8000
 145.  *  3.7000  3.0000  3.0000  3.0000  4.7000  4.2000  3.2000  0.1000  0.1000
0.1000  2.3000  1.7000  0.6000
 150.  *  3.8000  2.9000  2.9000  2.9000  4.7000  4.1000  2.9000  0.1000  0.1000
0.1000  2.3000  1.7000  0.5000
 155.  *  3.9000  2.8000  2.8000  2.8000  4.7000  4.1000  2.8000  0.1000  0.1000
0.1000  2.4000  1.6000  0.4000
 160.  *  4.0000  2.8000  2.8000  2.8000  4.6000  3.9000  2.6000  0.0000  0.0000
0.0000  2.3000  1.6000  0.2000
 165.  *  3.9000  2.8000  2.7000  2.7000  4.5000  3.6000  2.4000  0.1000  0.0000
0.0000  2.0000  1.2000  0.0000
 170.  *  3.5000  3.1000  2.9000  2.8000  4.3000  3.3000  2.4000  0.3000  0.1000
0.0000  1.8000  0.9000  0.0000
 175.  *  3.0000  3.6000  3.1000  2.9000  3.8000  3.0000  2.4000  0.6000  0.2000
0.0000  1.3000  0.6000  0.0000
 180.  *  2.3000  4.2000  3.5000  3.0000  3.4000  2.8000  2.5000  1.1000  0.4000
0.0000  0.9000  0.3000  0.0000
 185.  *  1.7000  4.6000  3.6000  2.9000  2.9000  2.6000  2.4000  1.6000  0.7000
0.0000  0.5000  0.2000  0.0000
 190.  *  1.0000  4.9000  3.9000  2.8000  2.6000  2.4000  2.4000  2.1000  1.0000
0.0000  0.2000  0.0000  0.0000
```

```
 195.  *  0.6000  5.2000  4.1000  2.8000  2.4000  2.4000  2.4000  2.4000  1.4000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.4000  5.2000  4.3000  3.0000  2.4000  2.4000  2.4000  2.5000  1.5000
0.1000  0.1000  0.1000  0.1000
 205.  *  0.2000  5.3000  4.5000  3.2000  2.5000  2.5000  2.5000  2.6000  1.8000
0.4000  0.1000  0.1000  0.1000
 210.  *  0.2000  5.2000  4.6000  3.4000  2.5000  2.5000  2.5000  2.5000  1.8000
0.5000  0.1000  0.1000  0.1000
```
```
                             PAGE   6
      JOB: FredEx AQ Analysis                                   RUN: 2016 - I95 and
US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*-------------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  5.3000  4.6000  3.5000  2.6000  2.6000  2.6000  2.4000  1.7000
0.6000  0.2000  0.2000  0.2000
 220.  *  0.1000  5.4000  4.7000  3.8000  2.6000  2.6000  2.6000  2.4000  1.7000
0.6000  0.2000  0.2000  0.2000
 225.  *  0.1000  5.4000  4.9000  4.0000  2.8000  2.8000  2.8000  2.4000  1.7000
0.8000  0.2000  0.2000  0.2000
 230.  *  0.1000  5.6000  4.8000  4.2000  2.9000  2.9000  2.9000  2.3000  1.6000
0.8000  0.2000  0.2000  0.2000
 235.  *  0.1000  5.7000  5.1000  4.3000  3.0000  3.0000  3.0000  2.2000  1.5000
0.8000  0.3000  0.3000  0.3000
 240.  *  0.1000  6.0000  5.5000  4.5000  3.1000  3.1000  3.1000  2.1000  1.6000
0.9000  0.3000  0.3000  0.3000
 245.  *  0.1000  6.1000  5.7000  4.8000  3.3000  3.3000  3.2000  2.3000  1.7000
0.9000  0.5000  0.5000  0.5000
 250.  *  0.0000  6.3000  5.8000  5.0000  3.5000  3.5000  3.3000  2.4000  1.8000
1.1000  0.7000  0.7000  0.7000
 255.  *  0.0000  6.6000  6.2000  5.4000  3.6000  3.6000  3.2000  2.9000  2.3000
1.3000  1.2000  1.2000  1.0000
 260.  *  0.0000  6.3000  6.1000  5.5000  3.6000  3.4000  3.0000  3.5000  2.8000
1.9000  1.9000  1.8000  1.6000
 265.  *  0.0000  6.1000  5.6000  5.2000  3.2000  3.0000  2.6000  4.3000  3.6000
2.8000  2.8000  2.8000  2.4000
 270.  *  0.0000  5.1000  5.1000  4.5000  2.5000  2.5000  2.1000  5.1000  4.4000
3.5000  3.7000  3.7000  3.2000
 275.  *  0.0000  4.2000  3.8000  3.6000  1.9000  1.9000  1.5000  5.4000  4.9000
4.0000  4.4000  4.2000  3.8000
```

```
 280.  *  0.0000  3.4000  3.0000  2.5000  1.2000  1.2000  1.0000  5.7000  5.0000
4.3000  4.6000  4.6000  4.1000
 285.  *  0.0000  2.7000  2.3000  1.7000  0.7000  0.7000  0.6000  5.7000  4.9000
4.4000  4.7000  4.7000  4.3000
 290.  *  0.1000  2.4000  2.0000  1.2000  0.4000  0.4000  0.3000  5.3000  4.7000
4.0000  4.4000  4.4000  4.2000
 295.  *  0.3000  2.2000  1.6000  1.0000  0.2000  0.2000  0.2000  5.2000  4.7000
3.7000  4.1000  4.1000  4.0000
 300.  *  0.4000  2.0000  1.5000  0.8000  0.2000  0.2000  0.2000  5.0000  4.4000
3.6000  3.8000  3.8000  3.8000
 305.  *  0.5000  2.1000  1.5000  0.8000  0.1000  0.1000  0.1000  5.0000  4.3000
3.5000  3.6000  3.6000  3.6000
 310.  *  0.5000  2.0000  1.4000  0.7000  0.1000  0.1000  0.1000  4.7000  4.1000
3.4000  3.5000  3.5000  3.5000
 315.  *  0.6000  2.0000  1.6000  0.7000  0.1000  0.1000  0.1000  4.7000  4.2000
3.4000  3.3000  3.3000  3.3000
 320.  *  0.6000  2.1000  1.6000  0.7000  0.1000  0.1000  0.1000  4.7000  4.0000
3.1000  3.1000  3.1000  3.1000
 325.  *  0.6000  2.2000  1.6000  0.7000  0.1000  0.1000  0.1000  4.5000  4.0000
3.1000  3.0000  3.0000  3.0000
 330.  *  0.7000  2.1000  1.5000  0.4000  0.1000  0.1000  0.1000  4.5000  3.9000
2.9000  2.9000  2.9000  2.9000
 335.  *  0.7000  2.1000  1.5000  0.3000  0.1000  0.1000  0.1000  4.4000  3.9000
2.8000  2.8000  2.8000  2.8000
 340.  *  1.0000  2.1000  1.4000  0.3000  0.0000  0.0000  0.0000  4.4000  3.8000
2.6000  2.8000  2.8000  2.8000
 345.  *  1.5000  1.9000  1.1000  0.0000  0.1000  0.0000  0.0000  4.2000  3.4000
2.4000  2.8000  2.7000  2.7000
 350.  *  2.0000  1.6000  0.8000  0.0000  0.2000  0.0000  0.0000  4.1000  3.3000
2.4000  3.1000  2.9000  2.8000
 355.  *  2.9000  1.2000  0.6000  0.0000  0.5000  0.1000  0.0000  3.7000  3.0000
2.4000  3.5000  3.0000  2.9000
 360.  *  3.8000  0.8000  0.3000  0.0000  1.0000  0.4000  0.0000  3.4000  2.9000
2.5000  4.1000  3.4000  3.0000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  5.1000  6.6000  6.2000  5.5000  5.8000  5.1000  4.3000  5.7000  5.0000
4.4000  6.4000  6.2000  5.4000
 DEGR. *     15     255     255     260     105     100     100     280     280
285      75      80      75

 THE HIGHEST CONCENTRATION OF   8.0000 PPM OCCURRED AT RECEPTOR     1.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
4,4,5,3,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,-15,0,10,10,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',58.0,36.5,5.9
'N Leg, E Side - 25 m',58.0,108.5,5.9
'N Leg, E Side - 50 m',58.0,190.5,5.9
'N Leg, E Side-Midblk',58.0,626.5,5.9
'N Leg, W Side-Corner',-58.0,56.9,5.9
'N Leg, W Side - 25 m',-58.0,129.0,5.9
'N Leg, W Side - 50 m',-58.0,211.0,5.9
'N Leg, W Side-Midblk',-58.0,646.9,5.9
'S Leg, E Side-Corner',83.0,-85.7,5.9
'S Leg, E Side - 25 m',101.7,-155.3,5.9
'S Leg, E Side - 50 m',122.9,-234.5,5.9
'S Leg, E Side-Midblk',235.7,-655.6,5.9
'S Leg, W Side-Corner',-43.0,-63.5,5.9
'S Leg, W Side - 25 m',-24.4,-133.1,5.9
'S Leg, W Side - 50 m',-3.2,-212.3,5.9
'S Leg, W Side-Midblk',109.7,-633.4,5.9
'E Leg, N Side - 25 m',128.9,24.0,5.9
'E Leg, N Side - 50 m',209.7,9.7,5.9
'E Leg, N Side-Midblk',639.0,-66.0,5.9
'W Leg, N Side - 25 m',-128.9,69.4,5.9
'W Leg, N Side - 50 m',-209.7,83.7,5.9
'W Leg, N Side-Midblk',-639.0,159.4,5.9
'E Leg, S Side - 25 m',153.9,-98.2,5.9
'E Leg, S Side - 50 m',234.7,-112.5,5.9
'E Leg, S Side-Midblk',664.1,-188.2,5.9
'W Leg, S Side - 25 m',-114.0,-51.0,5.9
'W Leg, S Side - 50 m',-194.7,-36.7,5.9
'W Leg, S Side-Midblk',-624.1,39.0,5.9
'2016 - I95 and SR 610 (Exit 143)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,-3,-24,1200,9600,8.67,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',24,3,24,1200,9600,4.14,0.0,67.7
1
'S Leg App - FreeFlow','AG',24,3,334,-1153,9600,8.67,0.0,67.7
1
'S Leg Dep - FreeFlow','AG',-24,-3,287,-1165,9600,4.14,0.0,67.7
1
'E Leg App - FreeFlow','AG',3,18,1185,-191,7200,7.95,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',-5,-30,1177,-238,12000,4.22,0.0,79.7
1
```

'W Leg App - FreeFlow','AG',-5,-30,-1187,179,12000,7.95,0.0,79.7
1
'W Leg Dep - FreeFlow','AG',3,18,-1179,226,7200,4.22,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72

```
                                2016 I95 and SR 610 OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: FredEx AQ Analysis                                   RUN: 2016 - I95 and
SR 610 (Exit 143)

      DATE :  8/15/17
      TIME : 11: 1:52

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -24.0      -3.0     -24.0    1200.0 *    1203.
360. AG   9600.   8.7   0.0 67.7
       2. N Leg Dep - FreeFlow*     24.0       3.0      24.0    1200.0 *    1197.
360. AG   9600.   4.1   0.0 67.7
       3. S Leg App - FreeFlow*     24.0       3.0     334.0   -1153.0 *    1197.
165. AG   9600.   8.7   0.0 67.7
       4. S Leg Dep - FreeFlow*    -24.0      -3.0     287.0   -1165.0 *    1203.
165. AG   9600.   4.1   0.0 67.7
       5. E Leg App - FreeFlow*      3.0      18.0    1185.0    -191.0 *    1200.
100. AG   7200.   7.9   0.0 55.7
       6. E Leg Dep - FreeFlow*     -5.0     -30.0    1177.0    -238.0 *    1200.
100. AG  12000.   4.2   0.0 79.7
       7. W Leg App - FreeFlow*     -5.0     -30.0   -1187.0     179.0 *    1200.
280. AG  12000.   7.9   0.0 79.7
       8. W Leg Dep - FreeFlow*      3.0      18.0   -1179.0     226.0 *    1200.
280. AG   7200.   4.2   0.0 55.7
↑
                             PAGE  2
      JOB: FredEx AQ Analysis                                   RUN: 2016 - I95 and
```

2016 I95 and SR 610 OUT

SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11: 1:52

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. N Leg, E Side-Corner	*	58.0	36.5	5.9	*
2. N Leg, E Side - 25 m	*	58.0	108.5	5.9	*
3. N Leg, E Side - 50 m	*	58.0	190.5	5.9	*
4. N Leg, E Side-Midblk	*	58.0	626.5	5.9	*
5. N Leg, W Side-Corner	*	-58.0	56.9	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	129.0	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	211.0	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	646.9	5.9	*
9. S Leg, E Side-Corner	*	83.0	-85.7	5.9	*
10. S Leg, E Side - 25 m	*	101.7	-155.3	5.9	*
11. S Leg, E Side - 50 m	*	122.9	-234.5	5.9	*
12. S Leg, E Side-Midblk	*	235.7	-655.6	5.9	*
13. S Leg, W Side-Corner	*	-43.0	-63.5	5.9	*
14. S Leg, W Side - 25 m	*	-24.4	-133.1	5.9	*
15. S Leg, W Side - 50 m	*	-3.2	-212.3	5.9	*
16. S Leg, W Side-Midblk	*	109.7	-633.4	5.9	*
17. E Leg, N Side - 25 m	*	128.9	24.0	5.9	*
18. E Leg, N Side - 50 m	*	209.7	9.7	5.9	*
19. E Leg, N Side-Midblk	*	639.0	-66.0	5.9	*
20. W Leg, N Side - 25 m	*	-128.9	69.4	5.9	*
21. W Leg, N Side - 50 m	*	-209.7	83.7	5.9	*
22. W Leg, N Side-Midblk	*	-639.0	159.4	5.9	*
23. E Leg, S Side - 25 m	*	153.9	-98.2	5.9	*
24. E Leg, S Side - 50 m	*	234.7	-112.5	5.9	*
25. E Leg, S Side-Midblk	*	664.1	-188.2	5.9	*
26. W Leg, S Side - 25 m	*	-114.0	-51.0	5.9	*

27. W Leg, S Side - 50 m * -194.7 -36.7 5.9 *
28. W Leg, S Side-Midblk * -624.1 39.0 5.9 *

PAGE 3

JOB: FredEx AQ Analysis RUN: 2016 - I95 and SR 610 (Exit 143)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5.	2.1000	2.0000	1.9000	1.6000	4.9000	4.8000	4.8000	4.2000	3.8000	2.8000	2.3000	1.4000	8.0000	6.3000	5.7000
10.	1.3000	1.2000	1.2000	1.0000	5.1000	5.1000	5.1000	4.6000	3.3000	2.2000	1.8000	0.9000	8.0000	6.2000	5.4000
15.	0.7000	0.7000	0.7000	0.6000	5.2000	5.1000	5.1000	4.8000	2.8000	1.9000	1.6000	0.8000	7.9000	5.7000	4.9000
20.	0.5000	0.5000	0.5000	0.4000	4.8000	4.8000	4.8000	4.6000	2.7000	1.7000	1.4000	0.7000	7.5000	5.3000	4.6000
25.	0.3000	0.3000	0.3000	0.2000	4.5000	4.5000	4.5000	4.5000	2.6000	1.7000	1.4000	0.7000	7.1000	4.9000	4.3000
30.	0.2000	0.2000	0.2000	0.2000	4.3000	4.3000	4.3000	4.3000	2.5000	1.7000	1.4000	0.7000	6.7000	4.6000	4.1000
35.	0.2000	0.1000	0.1000	0.1000	4.1000	4.1000	4.1000	4.0000	2.5000	1.6000	1.3000	0.6000	6.3000	4.6000	4.0000
40.	0.2000	0.1000	0.1000	0.1000	3.9000	3.8000	3.8000	3.8000	2.6000	1.7000	1.3000	0.6000	6.0000	4.2000	3.9000
45.	0.2000	0.1000	0.1000	0.1000	3.7000	3.6000	3.6000	3.6000	2.7000	1.7000	1.3000	0.6000	6.1000	4.2000	3.9000
50.	0.3000	0.1000	0.1000	0.1000	3.6000	3.5000	3.5000	3.5000	2.7000	1.7000	1.2000	0.5000	6.0000	4.2000	3.7000
55.	0.3000	0.1000	0.1000	0.1000	3.5000	3.4000	3.4000	3.4000	2.7000	1.7000	1.2000	0.5000	5.8000	4.2000	3.7000
60.	0.3000	0.1000	0.1000	0.1000	3.3000	3.1000	3.1000	3.1000	2.8000	1.6000	1.1000	0.4000	6.2000	4.2000	3.7000

65. * 0.3000 0.1000 0.1000 0.1000 3.1000 3.0000 3.0000 3.0000 2.9000
1.6000 1.2000 0.3000 6.2000 4.2000 3.8000
70. * 0.3000 0.0000 0.0000 0.0000 3.2000 3.0000 3.0000 3.0000 3.1000
1.8000 1.3000 0.2000 6.4000 4.5000 4.0000
75. * 0.4000 0.0000 0.0000 0.0000 3.2000 3.0000 3.0000 3.0000 3.3000
1.8000 1.1000 0.1000 6.6000 4.5000 4.0000
80. * 0.6000 0.0000 0.0000 0.0000 3.6000 3.1000 3.1000 3.1000 3.5000
1.8000 1.1000 0.0000 6.8000 4.5000 3.8000
85. * 1.1000 0.1000 0.0000 0.0000 4.1000 3.3000 3.2000 3.2000 3.6000
1.7000 0.9000 0.0000 6.8000 4.3000 3.6000
90. * 1.8000 0.3000 0.0000 0.0000 4.9000 3.6000 3.3000 3.3000 3.6000
1.5000 0.7000 0.0000 6.7000 4.1000 3.4000
95. * 2.7000 0.5000 0.1000 0.0000 5.6000 3.7000 3.4000 3.2000 3.4000
1.2000 0.6000 0.1000 6.4000 3.7000 3.1000
100. * 3.6000 0.8000 0.3000 0.0000 6.4000 4.0000 3.4000 3.1000 2.8000
0.9000 0.4000 0.1000 5.9000 3.4000 2.9000
105. * 4.1000 1.2000 0.5000 0.0000 6.8000 4.3000 3.6000 3.0000 2.2000
0.6000 0.3000 0.2000 5.1000 3.2000 3.0000
110. * 4.4000 1.6000 0.8000 0.0000 7.1000 4.6000 3.9000 3.0000 1.5000
0.4000 0.2000 0.2000 4.3000 3.0000 2.8000
115. * 4.5000 1.9000 1.1000 0.1000 7.3000 4.8000 4.1000 3.1000 1.0000
0.3000 0.2000 0.2000 3.7000 3.0000 2.9000
120. * 4.3000 2.0000 1.3000 0.3000 7.3000 5.1000 4.3000 3.3000 0.8000
0.3000 0.3000 0.3000 3.4000 3.0000 3.0000
125. * 4.0000 2.0000 1.3000 0.3000 7.4000 5.2000 4.5000 3.7000 0.6000
0.3000 0.3000 0.3000 3.3000 3.1000 3.1000
130. * 3.8000 2.0000 1.3000 0.5000 7.3000 5.4000 4.7000 3.9000 0.5000
0.3000 0.3000 0.3000 3.4000 3.3000 3.3000
135. * 3.6000 1.8000 1.3000 0.5000 7.4000 5.8000 5.0000 4.0000 0.6000
0.4000 0.4000 0.4000 3.5000 3.4000 3.4000
140. * 3.5000 1.8000 1.2000 0.6000 7.8000 6.2000 5.3000 4.3000 0.7000
0.5000 0.5000 0.5000 3.6000 3.6000 3.6000
145. * 3.5000 1.9000 1.3000 0.6000 8.0000 6.6000 5.6000 4.5000 1.0000
0.8000 0.8000 0.7000 3.9000 3.9000 3.9000
150. * 3.9000 2.0000 1.5000 0.7000 8.1000 7.0000 6.1000 4.9000 1.5000
1.3000 1.3000 1.1000 3.9000 3.9000 3.9000
155. * 4.4000 2.4000 1.8000 0.7000 8.0000 7.4000 6.6000 5.2000 2.3000
2.1000 2.0000 1.8000 3.9000 3.8000 3.7000
160. * 5.2000 3.0000 2.3000 1.1000 7.8000 7.3000 6.8000 5.6000 3.2000
3.1000 3.0000 2.6000 3.5000 3.4000 3.4000
165. * 5.9000 3.8000 2.9000 1.5000 7.2000 7.0000 6.9000 6.1000 4.2000
4.1000 4.1000 3.5000 2.8000 2.7000 2.7000
170. * 6.7000 4.3000 3.4000 2.1000 6.4000 6.3000 6.3000 6.2000 4.9000
4.8000 4.8000 4.2000 2.1000 2.0000 1.9000
175. * 7.1000 4.9000 3.8000 2.9000 5.7000 5.3000 5.4000 5.6000 5.1000
5.1000 5.1000 4.5000 1.3000 1.2000 1.2000
180. * 7.3000 5.1000 4.2000 3.6000 4.8000 4.5000 4.6000 4.9000 5.1000
5.1000 5.1000 4.7000 0.7000 0.7000 0.7000

```
 185.  *  7.1000  5.1000  4.6000  4.0000  4.3000  3.6000  3.4000  3.5000  4.8000
4.8000  4.8000  4.6000  0.5000  0.5000  0.5000
 190.  *  7.0000  4.9000  4.3000  4.4000  3.8000  3.0000  2.7000  2.6000  4.5000
4.5000  4.5000  4.5000  0.3000  0.3000  0.3000
 195.  *  6.5000  4.8000  4.2000  4.2000  3.5000  2.5000  2.2000  1.7000  4.3000
4.3000  4.3000  4.3000  0.2000  0.2000  0.2000
 200.  *  6.3000  4.7000  4.2000  4.3000  3.3000  2.2000  1.8000  1.3000  4.1000
4.1000  4.1000  4.0000  0.1000  0.1000  0.1000
 205.  *  6.3000  4.7000  4.3000  4.0000  3.1000  2.1000  1.6000  1.0000  3.8000
3.8000  3.8000  3.8000  0.1000  0.1000  0.1000
 210.  *  6.0000  4.6000  4.2000  3.9000  3.1000  2.0000  1.5000  0.9000  3.7000
3.6000  3.6000  3.6000  0.2000  0.1000  0.1000

                           PAGE   4
     JOB: FredEx AQ Analysis                                   RUN: 2016 - I95 and
SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-----------------------------------------
 215.  *  6.1000  4.7000  4.4000  3.8000  3.0000  2.0000  1.5000  0.8000  3.6000
3.5000  3.5000  3.5000  0.3000  0.1000  0.1000
 220.  *  6.1000  4.5000  4.3000  3.6000  3.1000  2.0000  1.5000  0.8000  3.5000
3.4000  3.4000  3.4000  0.3000  0.1000  0.1000
 225.  *  6.2000  4.7000  4.1000  3.5000  3.2000  2.0000  1.5000  0.8000  3.2000
3.1000  3.1000  3.1000  0.3000  0.1000  0.1000
 230.  *  6.2000  4.5000  4.1000  3.4000  3.2000  1.9000  1.4000  0.7000  3.1000
3.0000  3.0000  3.0000  0.4000  0.1000  0.1000
 235.  *  6.2000  4.7000  4.1000  3.3000  3.4000  2.0000  1.5000  0.7000  3.2000
3.0000  3.0000  3.0000  0.3000  0.0000  0.0000
 240.  *  6.4000  4.4000  4.1000  3.3000  3.6000  2.1000  1.5000  0.7000  3.2000
3.0000  3.0000  3.0000  0.3000  0.0000  0.0000
 245.  *  6.4000  4.5000  4.0000  3.0000  3.6000  2.0000  1.5000  0.5000  3.3000
3.1000  3.1000  3.1000  0.3000  0.0000  0.0000
 250.  *  6.6000  4.6000  4.0000  3.0000  3.8000  2.1000  1.5000  0.4000  3.5000
3.2000  3.2000  3.2000  0.4000  0.0000  0.0000
 255.  *  6.9000  4.7000  4.0000  2.9000  3.9000  2.1000  1.4000  0.1000  3.7000
3.3000  3.3000  3.3000  0.6000  0.0000  0.0000
 260.  *  7.2000  4.7000  4.0000  2.7000  4.1000  2.0000  1.3000  0.1000  3.9000
3.2000  3.2000  3.2000  0.9000  0.0000  0.0000
 265.  *  7.4000  4.7000  3.8000  2.7000  4.2000  1.9000  1.1000  0.0000  4.1000
3.2000  3.1000  3.1000  1.3000  0.1000  0.0000
```

```
 270.  *  7.2000  4.4000  3.6000  2.7000  4.0000  1.6000  0.8000  0.0000  4.8000
3.3000  3.1000  3.0000  2.2000  0.3000  0.1000
 275.  *  6.8000  4.0000  3.3000  2.7000  3.6000  1.2000  0.6000  0.0000  5.7000
3.7000  3.2000  3.0000  3.2000  0.7000  0.2000
 280.  *  6.0000  3.5000  2.9000  2.6000  2.9000  0.8000  0.3000  0.0000  6.7000
4.2000  3.5000  3.0000  4.2000  1.1000  0.6000
 285.  *  5.1000  3.1000  2.8000  2.6000  2.1000  0.5000  0.1000  0.0000  7.4000
4.8000  3.9000  3.1000  5.1000  1.7000  0.8000
 290.  *  4.2000  2.8000  2.6000  2.6000  1.4000  0.3000  0.1000  0.1000  7.8000
5.4000  4.5000  3.5000  5.4000  2.1000  1.2000
 295.  *  3.6000  2.6000  2.6000  2.6000  0.8000  0.1000  0.1000  0.1000  7.7000
5.7000  4.9000  3.7000  5.3000  2.4000  1.4000
 300.  *  3.4000  2.8000  2.8000  2.8000  0.6000  0.2000  0.2000  0.2000  7.8000
5.8000  5.1000  4.0000  5.0000  2.5000  1.6000
 305.  *  3.1000  2.8000  2.8000  2.8000  0.4000  0.2000  0.2000  0.2000  7.5000
5.9000  5.4000  4.3000  4.6000  2.4000  1.6000
 310.  *  3.1000  2.9000  2.9000  2.9000  0.4000  0.2000  0.2000  0.2000  7.4000
6.1000  5.5000  4.6000  4.4000  2.3000  1.6000
 315.  *  3.2000  3.1000  3.1000  3.0000  0.4000  0.3000  0.3000  0.3000  7.1000
6.0000  5.7000  4.9000  4.2000  2.4000  1.7000
 320.  *  3.3000  3.1000  3.1000  3.1000  0.4000  0.3000  0.3000  0.3000  7.0000
6.1000  5.9000  5.1000  4.1000  2.3000  1.7000
 325.  *  3.5000  3.3000  3.3000  3.3000  0.4000  0.3000  0.3000  0.3000  6.9000
6.3000  5.9000  5.5000  3.8000  2.4000  1.8000
 330.  *  3.7000  3.4000  3.4000  3.4000  0.5000  0.4000  0.4000  0.4000  7.0000
6.3000  6.1000  5.8000  3.8000  2.5000  2.0000
 335.  *  3.7000  3.6000  3.6000  3.5000  0.6000  0.5000  0.5000  0.5000  6.7000
6.1000  5.9000  5.8000  4.1000  2.9000  2.2000
 340.  *  3.9000  3.8000  3.8000  3.6000  0.9000  0.8000  0.8000  0.8000  6.8000
6.1000  5.7000  5.6000  4.4000  3.4000  2.9000
 345.  *  4.0000  3.9000  3.9000  3.5000  1.4000  1.4000  1.3000  1.1000  6.4000
5.9000  5.3000  5.0000  5.0000  4.0000  3.7000
 350.  *  3.9000  3.9000  3.8000  3.3000  2.2000  2.2000  2.1000  1.8000  5.8000
5.0000  4.6000  4.0000  5.8000  4.9000  4.5000
 355.  *  3.5000  3.4000  3.4000  2.9000  3.1000  3.1000  3.1000  2.7000  5.1000
4.2000  3.8000  2.9000  6.9000  5.7000  5.2000
 360.  *  2.9000  2.8000  2.7000  2.2000  4.2000  4.1000  4.1000  3.5000  4.5000
3.3000  2.9000  1.9000  7.5000  6.2000  5.6000

------*--------------------------------------------------------------------------
-----------------------------------------
 MAX   *  7.4000  5.1000  4.6000  4.4000  8.1000  7.4000  6.9000  6.2000  7.8000
6.3000  6.1000  5.8000  8.0000  6.3000  5.7000
 DEGR. *    265     180     185     190     150     155     165     170     290
325     330     330       5       5       5
```

JOB: FredEx AQ Analysis RUN: 2016 - I95 and SR 610 (Exit 143)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR) *	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5. *	4.6000	0.4000	0.2000	0.0000	1.4000	0.6000	0.0000	2.7000	2.5000	2.3000	5.0000	4.0000	3.2000
10. *	4.1000	0.2000	0.0000	0.0000	1.8000	0.9000	0.0000	2.6000	2.4000	2.4000	5.5000	4.4000	3.3000
15. *	3.9000	0.0000	0.0000	0.0000	2.1000	1.2000	0.0000	2.3000	2.3000	2.3000	5.6000	4.6000	3.3000
20. *	3.7000	0.0000	0.0000	0.0000	2.2000	1.4000	0.1000	2.3000	2.3000	2.3000	5.5000	4.6000	3.2000
25. *	3.5000	0.0000	0.0000	0.0000	2.2000	1.4000	0.1000	2.3000	2.3000	2.3000	5.4000	4.5000	3.3000
30. *	3.5000	0.0000	0.0000	0.0000	2.1000	1.4000	0.3000	2.2000	2.2000	2.2000	5.3000	4.5000	3.4000
35. *	3.3000	0.1000	0.1000	0.1000	2.0000	1.4000	0.4000	2.3000	2.3000	2.3000	5.1000	4.5000	3.4000
40. *	3.2000	0.1000	0.1000	0.1000	2.0000	1.5000	0.5000	2.4000	2.4000	2.4000	5.3000	4.5000	3.7000
45. *	3.2000	0.1000	0.1000	0.1000	2.0000	1.4000	0.7000	2.5000	2.5000	2.5000	5.2000	4.7000	3.9000
50. *	3.0000	0.2000	0.2000	0.2000	1.9000	1.4000	0.7000	2.6000	2.6000	2.6000	5.3000	4.8000	4.0000
55. *	3.0000	0.2000	0.2000	0.2000	1.9000	1.4000	0.7000	2.6000	2.6000	2.6000	5.5000	4.9000	4.3000
60. *	3.0000	0.2000	0.2000	0.2000	1.9000	1.4000	0.7000	2.8000	2.8000	2.8000	5.7000	5.0000	4.5000
65. *	3.0000	0.2000	0.2000	0.2000	1.9000	1.4000	0.7000	2.9000	2.9000	2.9000	5.9000	5.5000	4.7000
70. *	2.9000	0.3000	0.3000	0.3000	1.9000	1.2000	0.8000	3.1000	3.1000	3.0000	5.9000	5.6000	4.9000

```
  75.  *  2.9000  0.4000  0.4000  0.4000  2.1000  1.4000  0.8000  3.3000  3.3000
3.1000  6.2000  5.8000  5.2000
  80.  *  2.7000  0.6000  0.6000  0.6000  2.2000  1.6000  1.0000  3.5000  3.5000
3.2000  6.4000  6.0000  5.3000
  85.  *  2.6000  1.1000  1.1000  1.0000  2.6000  2.0000  1.5000  3.6000  3.5000
3.1000  6.4000  6.3000  5.8000
  90.  *  2.6000  1.8000  1.7000  1.6000  3.4000  2.7000  1.8000  3.5000  3.4000
3.0000  6.2000  6.1000  5.8000
  95.  *  2.6000  2.7000  2.6000  2.2000  4.0000  3.4000  2.7000  3.1000  3.1000
2.6000  5.9000  5.8000  5.7000
 100.  *  2.6000  3.4000  3.4000  3.0000  4.6000  4.1000  3.6000  2.6000  2.6000
2.1000  5.2000  4.9000  4.9000
 105.  *  2.8000  4.1000  4.1000  3.5000  5.3000  4.8000  4.2000  2.0000  1.8000
1.5000  4.3000  4.0000  3.8000
 110.  *  2.8000  4.4000  4.4000  4.0000  5.7000  5.1000  4.7000  1.3000  1.3000
1.0000  3.4000  3.1000  2.8000
 115.  *  2.9000  4.4000  4.4000  4.1000  5.8000  5.2000  4.9000  0.8000  0.8000
0.6000  3.0000  2.6000  2.0000
 120.  *  3.1000  4.3000  4.3000  4.1000  5.9000  5.2000  4.7000  0.4000  0.4000
0.4000  2.5000  2.0000  1.4000
 125.  *  3.1000  4.0000  4.0000  3.9000  5.6000  5.1000  4.5000  0.3000  0.3000
0.3000  2.3000  1.9000  1.1000
 130.  *  3.3000  3.8000  3.8000  3.7000  5.7000  5.0000  4.3000  0.2000  0.2000
0.2000  2.2000  1.8000  1.0000
 135.  *  3.4000  3.5000  3.5000  3.5000  5.6000  4.8000  4.1000  0.2000  0.2000
0.2000  2.3000  1.7000  0.8000
 140.  *  3.5000  3.4000  3.4000  3.4000  5.6000  4.8000  3.9000  0.2000  0.2000
0.2000  2.3000  1.7000  0.7000
 145.  *  3.6000  3.2000  3.2000  3.2000  5.6000  4.7000  3.5000  0.2000  0.2000
0.2000  2.3000  1.6000  0.6000
 150.  *  3.5000  3.2000  3.1000  3.1000  5.4000  4.3000  3.3000  0.2000  0.1000
0.1000  2.2000  1.5000  0.5000
 155.  *  3.3000  3.2000  3.1000  3.0000  4.9000  4.2000  3.1000  0.3000  0.2000
0.1000  1.9000  1.2000  0.2000
 160.  *  2.8000  3.3000  2.9000  2.8000  4.4000  3.7000  2.9000  0.7000  0.2000
0.1000  1.5000  0.9000  0.2000
 165.  *  2.2000  3.7000  3.1000  2.7000  3.9000  3.3000  2.8000  1.1000  0.5000
0.1000  1.0000  0.6000  0.1000
 170.  *  1.6000  4.1000  3.4000  2.7000  3.3000  3.0000  2.8000  1.5000  0.7000
0.1000  0.5000  0.3000  0.1000
 175.  *  1.0000  4.5000  3.6000  2.7000  3.1000  2.7000  2.8000  1.8000  0.9000
0.0000  0.2000  0.0000  0.0000
 180.  *  0.7000  4.8000  3.9000  2.7000  2.9000  2.7000  2.8000  2.1000  1.2000
0.0000  0.0000  0.0000  0.0000
 185.  *  0.4000  5.0000  4.2000  2.9000  2.9000  2.9000  2.8000  2.3000  1.4000
0.0000  0.0000  0.0000  0.0000
 190.  *  0.2000  5.1000  4.3000  3.0000  2.9000  2.9000  2.9000  2.2000  1.5000
0.1000  0.0000  0.0000  0.0000
```

```
 195.  *  0.2000  4.9000  4.2000  3.1000  2.9000  2.8000  2.8000  2.2000  1.5000
0.3000  0.0000  0.0000  0.0000
 200.  *  0.2000  4.7000  4.1000  3.1000  2.8000  2.8000  2.8000  2.1000  1.4000
0.3000  0.0000  0.0000  0.0000
 205.  *  0.1000  4.6000  4.1000  3.2000  2.8000  2.8000  2.8000  2.0000  1.4000
0.4000  0.0000  0.0000  0.0000
 210.  *  0.1000  4.6000  4.1000  3.3000  2.8000  2.8000  2.8000  2.1000  1.5000
0.7000  0.1000  0.1000  0.1000
```



```
      JOB: FredEx AQ Analysis                                   RUN: 2016 - I95 and
SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*-------------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  4.5000  4.0000  3.3000  2.8000  2.8000  2.8000  2.0000  1.5000
0.7000  0.1000  0.1000  0.1000
 220.  *  0.1000  4.7000  4.1000  3.4000  2.9000  2.9000  2.9000  2.0000  1.4000
0.7000  0.2000  0.2000  0.2000
 225.  *  0.1000  4.8000  4.3000  3.6000  3.0000  3.0000  3.0000  2.0000  1.4000
0.7000  0.2000  0.2000  0.2000
 230.  *  0.1000  5.1000  4.4000  3.7000  3.0000  3.0000  3.0000  2.0000  1.4000
0.7000  0.3000  0.3000  0.3000
 235.  *  0.0000  5.1000  4.5000  3.8000  3.2000  3.2000  3.2000  2.1000  1.5000
0.8000  0.3000  0.3000  0.3000
 240.  *  0.0000  5.3000  4.6000  4.0000  3.4000  3.4000  3.4000  2.0000  1.5000
0.8000  0.3000  0.3000  0.3000
 245.  *  0.0000  5.6000  4.7000  4.1000  3.5000  3.5000  3.5000  2.0000  1.5000
0.8000  0.3000  0.3000  0.3000
 250.  *  0.0000  6.0000  5.2000  4.4000  3.7000  3.7000  3.6000  2.0000  1.5000
0.8000  0.4000  0.4000  0.4000
 255.  *  0.0000  6.2000  5.5000  4.7000  3.9000  3.9000  3.8000  2.1000  1.7000
0.9000  0.6000  0.6000  0.5000
 260.  *  0.0000  6.4000  5.7000  4.9000  4.1000  4.1000  3.8000  2.4000  1.8000
1.1000  0.8000  0.8000  0.8000
 265.  *  0.0000  6.6000  6.2000  5.2000  4.2000  4.2000  3.7000  2.7000  2.2000
1.4000  1.3000  1.3000  1.2000
 270.  *  0.0000  6.6000  6.0000  5.2000  4.0000  3.9000  3.4000  3.4000  2.7000
2.1000  2.2000  2.1000  1.9000
 275.  *  0.0000  6.1000  5.7000  5.2000  3.5000  3.4000  2.9000  4.3000  3.6000
2.8000  3.2000  3.1000  2.7000
```

```
 280.  *  0.1000  5.2000  5.1000  4.4000  2.9000  2.7000  2.3000  5.2000  4.4000
3.7000  4.2000  4.1000  3.6000
 285.  *  0.1000  4.3000  3.9000  3.6000  2.0000  2.0000  1.6000  5.8000  5.1000
4.3000  4.9000  4.8000  4.3000
 290.  *  0.2000  3.2000  2.9000  2.5000  1.3000  1.3000  1.0000  6.1000  5.2000
4.5000  5.2000  5.2000  4.6000
 295.  *  0.2000  2.6000  2.2000  1.7000  0.7000  0.7000  0.6000  6.0000  5.2000
4.3000  5.2000  5.2000  4.8000
 300.  *  0.4000  2.2000  1.9000  1.1000  0.4000  0.4000  0.3000  5.6000  4.9000
4.0000  5.0000  4.9000  4.8000
 305.  *  0.6000  2.0000  1.6000  1.0000  0.2000  0.2000  0.2000  5.2000  4.6000
3.8000  4.6000  4.5000  4.5000
 310.  *  0.7000  1.9000  1.5000  0.9000  0.2000  0.2000  0.2000  5.1000  4.2000
3.5000  4.3000  4.3000  4.3000
 315.  *  0.8000  2.0000  1.4000  0.8000  0.1000  0.1000  0.1000  4.7000  4.2000
3.5000  4.1000  4.1000  4.1000
 320.  *  0.9000  2.0000  1.5000  0.7000  0.1000  0.1000  0.1000  4.6000  3.9000
3.3000  3.9000  3.9000  3.9000
 325.  *  1.0000  2.0000  1.5000  0.7000  0.1000  0.1000  0.1000  4.4000  3.8000
3.1000  3.6000  3.7000  3.7000
 330.  *  1.4000  2.1000  1.5000  0.5000  0.1000  0.1000  0.1000  4.2000  3.8000
3.0000  3.4000  3.4000  3.4000
 335.  *  1.8000  2.1000  1.4000  0.4000  0.1000  0.1000  0.1000  4.2000  3.6000
2.8000  3.3000  3.3000  3.3000
 340.  *  2.7000  2.1000  1.4000  0.3000  0.1000  0.1000  0.1000  3.9000  3.4000
2.6000  3.2000  3.2000  3.1000
 345.  *  3.6000  2.0000  1.2000  0.1000  0.1000  0.0000  0.0000  3.8000  3.2000
2.4000  3.1000  3.0000  3.0000
 350.  *  4.1000  1.6000  0.8000  0.0000  0.2000  0.0000  0.0000  3.6000  3.0000
2.3000  3.4000  3.1000  3.0000
 355.  *  4.8000  1.2000  0.5000  0.0000  0.5000  0.1000  0.0000  3.2000  2.8000
2.3000  3.7000  3.2000  3.0000
 360.  *  4.8000  0.8000  0.3000  0.0000  1.0000  0.4000  0.0000  3.0000  2.6000
2.3000  4.4000  3.6000  3.1000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  4.8000  6.6000  6.2000  5.2000  5.9000  5.2000  4.9000  6.1000  5.2000
4.5000  6.4000  6.3000  5.8000
 DEGR. *    355     265     265     265     120     115     115     290     290
290      80      85      85

 THE HIGHEST CONCENTRATION OF   8.1000 PPM OCCURRED AT RECEPTOR     5.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
6,4,3,3,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,-5,0,-25,-25,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',82.0,89.0,5.9
'N Leg, E Side - 25 m',82.0,161.0,5.9
'N Leg, E Side - 50 m',82.0,243.0,5.9
'N Leg, E Side-Midblk',82.0,679.0,5.9
'N Leg, W Side-Corner',-58.0,23.7,5.9
'N Leg, W Side - 25 m',-58.0,95.7,5.9
'N Leg, W Side - 50 m',-58.0,177.8,5.9
'N Leg, W Side-Midblk',-58.0,613.7,5.9
'S Leg, E Side-Corner',83.4,-11.9,5.9
'S Leg, E Side - 25 m',89.6,-83.6,5.9
'S Leg, E Side - 50 m',96.8,-165.3,5.9
'S Leg, E Side-Midblk',134.8,-599.6,5.9
'S Leg, W Side-Corner',-51.7,-74.9,5.9
'S Leg, W Side - 25 m',-45.4,-146.6,5.9
'S Leg, W Side - 50 m',-38.2,-228.3,5.9
'S Leg, W Side-Midblk',-0.3,-662.6,5.9
'E Leg, N Side - 25 m',147.3,119.4,5.9
'E Leg, N Side - 50 m',221.6,154.1,5.9
'E Leg, N Side-Midblk',616.7,338.3,5.9
'W Leg, N Side - 25 m',-123.3,-6.7,5.9
'W Leg, N Side - 50 m',-197.6,-41.4,5.9
'W Leg, N Side-Midblk',-592.7,-225.6,5.9
'E Leg, S Side - 25 m',148.6,18.6,5.9
'E Leg, S Side - 50 m',223.0,53.2,5.9
'E Leg, S Side-Midblk',618.1,237.5,5.9
'W Leg, S Side - 25 m',-116.9,-105.3,5.9
'W Leg, S Side - 50 m',-191.3,-140.0,5.9
'W Leg, S Side-Midblk',-586.4,-324.2,5.9
'2016 - I95 and Russell Rd (Exit 148)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,-1,-24,1200,9600,4.01,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',36,2,36,1200,14400,10.67,0.0,91.7
1
'S Leg App - FreeFlow','AG',36,2,140,-1192,14400,4.01,0.0,91.7
1
'S Leg Dep - FreeFlow','AG',-24,-1,81,-1198,9600,10.67,0.0,67.7
1
'E Leg App - FreeFlow','AG',-8,16,1080,523,7200,3.73,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',8,-16,1095,491,7200,4.93,0.0,55.7
1
```

```
'W Leg App - FreeFlow','AG',8,-16,-1080,-523,7200,4.93,0.0,55.7
1
'W Leg Dep - FreeFlow','AG',-8,16,-1095,-491,7200,3.73,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2016 I95 and Russell Rd OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface
↑ CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: Fred Ex AQ Analysis RUN: 2016 - I95 and Russell Rd (Exit 148)

DATE : 8/15/17
TIME : 12: 9:34

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	*	-24.0	-1.0	-24.0	1200.0	*	1201.	360.	AG	9600.	4.0	0.0	67.7		
2. N Leg Dep - FreeFlow	*	36.0	2.0	36.0	1200.0	*	1198.	360.	AG	14400.	10.7	0.0	91.7		
3. S Leg App - FreeFlow	*	36.0	2.0	140.0	-1192.0	*	1199.	175.	AG	14400.	4.0	0.0	91.7		
4. S Leg Dep - FreeFlow	*	-24.0	-1.0	81.0	-1198.0	*	1202.	175.	AG	9600.	10.7	0.0	67.7		
5. E Leg App - FreeFlow	*	-8.0	16.0	1080.0	523.0	*	1200.	65.	AG	7200.	3.7	0.0	55.7		
6. E Leg Dep - FreeFlow	*	8.0	-16.0	1095.0	491.0	*	1199.	65.	AG	7200.	4.9	0.0	55.7		
7. W Leg App - FreeFlow	*	8.0	-16.0	-1080.0	-523.0	*	1200.	245.	AG	7200.	4.9	0.0	55.7		
8. W Leg Dep - FreeFlow	*	-8.0	16.0	-1095.0	-491.0	*	1199.	245.	AG	7200.	3.7	0.0	55.7		

↑
PAGE 2
JOB: Fred Ex AQ Analysis RUN: 2016 - I95 and

2016 I95 and Russell Rd OUT

Russell Rd (Exit 148)

DATE : 8/15/17
TIME : 12: 9:34

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. N Leg, E Side-Corner	*	82.0	89.0	5.9	*
2. N Leg, E Side - 25 m	*	82.0	161.0	5.9	*
3. N Leg, E Side - 50 m	*	82.0	243.0	5.9	*
4. N Leg, E Side-Midblk	*	82.0	679.0	5.9	*
5. N Leg, W Side-Corner	*	-58.0	23.7	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	95.7	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	177.8	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	613.7	5.9	*
9. S Leg, E Side-Corner	*	83.4	-11.9	5.9	*
10. S Leg, E Side - 25 m	*	89.6	-83.6	5.9	*
11. S Leg, E Side - 50 m	*	96.8	-165.3	5.9	*
12. S Leg, E Side-Midblk	*	134.8	-599.6	5.9	*
13. S Leg, W Side-Corner	*	-51.7	-74.9	5.9	*
14. S Leg, W Side - 25 m	*	-45.4	-146.6	5.9	*
15. S Leg, W Side - 50 m	*	-38.2	-228.3	5.9	*
16. S Leg, W Side-Midblk	*	-0.3	-662.6	5.9	*
17. E Leg, N Side - 25 m	*	147.3	119.4	5.9	*
18. E Leg, N Side - 50 m	*	221.6	154.1	5.9	*
19. E Leg, N Side-Midblk	*	616.7	338.3	5.9	*
20. W Leg, N Side - 25 m	*	-123.3	-6.7	5.9	*
21. W Leg, N Side - 50 m	*	-197.6	-41.4	5.9	*
22. W Leg, N Side-Midblk	*	-592.7	-225.6	5.9	*
23. E Leg, S Side - 25 m	*	148.6	18.6	5.9	*
24. E Leg, S Side - 50 m	*	223.0	53.2	5.9	*
25. E Leg, S Side-Midblk	*	618.1	237.5	5.9	*
26. W Leg, S Side - 25 m	*	-116.9	-105.3	5.9	*

```
     27. W Leg, S Side - 50 m *      -191.3     -140.0        5.9   *
     28. W Leg, S Side-Midblk *      -586.4     -324.2        5.9   *
```


JOB: Fred Ex AQ Analysis RUN: 2016 - I95 and Russell Rd (Exit 148)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5.	4.6000	4.5000	4.4000	3.7000	4.5000	4.4000	4.3000	3.5000	5.8000	4.0000	3.4000	2.1000	8.0000	8.0000	7.8000
10.	3.2000	3.0000	3.0000	2.5000	5.2000	5.1000	5.0000	4.3000	4.5000	2.9000	2.3000	1.4000	8.6000	8.4000	8.2000
15.	2.0000	1.9000	1.8000	1.6000	5.6000	5.4000	5.4000	4.8000	3.4000	2.2000	1.6000	0.9000	9.1000	8.5000	8.1000
20.	1.3000	1.2000	1.2000	1.1000	5.4000	5.3000	5.3000	5.0000	2.8000	1.6000	1.2000	0.7000	8.8000	8.2000	7.3000
25.	0.9000	0.8000	0.8000	0.8000	5.3000	5.2000	5.2000	5.0000	2.5000	1.4000	1.0000	0.5000	8.8000	7.7000	6.7000
30.	0.7000	0.6000	0.6000	0.6000	5.1000	5.0000	5.0000	4.9000	2.4000	1.3000	0.9000	0.5000	8.6000	7.1000	6.3000
35.	0.6000	0.5000	0.5000	0.5000	4.9000	4.8000	4.8000	4.7000	2.4000	1.3000	0.9000	0.4000	8.3000	6.8000	5.9000
40.	0.7000	0.5000	0.5000	0.5000	4.8000	4.6000	4.6000	4.5000	2.5000	1.3000	0.9000	0.4000	8.0000	6.3000	5.5000
45.	0.8000	0.5000	0.5000	0.5000	4.7000	4.4000	4.4000	4.4000	2.6000	1.3000	0.9000	0.3000	7.9000	5.9000	5.2000
50.	1.0000	0.4000	0.4000	0.4000	4.7000	4.1000	4.1000	4.1000	2.7000	1.2000	0.7000	0.1000	7.8000	5.5000	5.0000
55.	1.3000	0.6000	0.4000	0.4000	5.0000	4.3000	4.1000	4.1000	2.7000	1.0000	0.6000	0.1000	7.4000	5.1000	4.6000
60.	1.7000	0.6000	0.3000	0.3000	5.6000	4.3000	4.1000	4.0000	2.5000	0.9000	0.4000	0.1000	6.8000	4.7000	4.3000

```
  65.  *  2.1000  0.7000  0.4000  0.2000  5.8000  4.4000  4.1000  3.9000  2.1000
0.7000  0.3000  0.1000  6.4000  4.4000  4.1000
  70.  *  2.4000  0.9000  0.5000  0.2000  6.1000  4.6000  4.2000  3.8000  1.6000
0.3000  0.1000  0.0000  5.6000  4.1000  3.9000
  75.  *  2.5000  1.0000  0.5000  0.1000  6.2000  4.8000  4.4000  3.8000  1.1000
0.1000  0.0000  0.0000  5.3000  4.0000  3.9000
  80.  *  2.5000  1.0000  0.6000  0.0000  6.2000  4.8000  4.4000  3.8000  0.7000
0.0000  0.0000  0.0000  4.8000  4.0000  4.0000
  85.  *  2.4000  1.0000  0.6000  0.0000  5.9000  5.0000  4.5000  3.8000  0.4000
0.0000  0.0000  0.0000  4.6000  4.2000  4.2000
  90.  *  2.2000  1.0000  0.7000  0.0000  5.8000  5.0000  4.6000  4.0000  0.2000
0.0000  0.0000  0.0000  4.3000  4.0000  4.0000
  95.  *  2.1000  1.0000  0.7000  0.2000  5.5000  4.8000  4.5000  4.0000  0.2000
0.0000  0.0000  0.0000  4.0000  3.9000  3.9000
 100.  *  2.0000  1.0000  0.7000  0.2000  5.5000  4.8000  4.5000  4.0000  0.1000
0.0000  0.0000  0.0000  3.9000  3.8000  3.8000
 105.  *  1.9000  1.1000  0.8000  0.3000  5.2000  4.7000  4.4000  4.0000  0.2000
0.1000  0.1000  0.1000  3.9000  3.8000  3.8000
 110.  *  1.9000  1.2000  0.9000  0.4000  5.0000  4.7000  4.5000  4.1000  0.2000
0.1000  0.1000  0.1000  4.1000  3.9000  3.9000
 115.  *  1.9000  1.2000  0.8000  0.4000  5.1000  4.6000  4.5000  4.2000  0.2000
0.1000  0.1000  0.1000  4.2000  4.1000  4.1000
 120.  *  2.0000  1.2000  0.9000  0.6000  5.4000  4.6000  4.5000  4.3000  0.2000
0.1000  0.1000  0.1000  4.4000  4.3000  4.3000
 125.  *  1.9000  1.3000  1.0000  0.7000  5.2000  4.6000  4.7000  4.4000  0.3000
0.2000  0.2000  0.2000  4.5000  4.4000  4.4000
 130.  *  1.9000  1.2000  1.0000  0.7000  5.2000  4.7000  4.8000  4.4000  0.2000
0.2000  0.2000  0.2000  4.7000  4.7000  4.7000
 135.  *  1.9000  1.3000  1.1000  0.8000  5.6000  4.8000  4.9000  4.7000  0.2000
0.2000  0.2000  0.2000  4.9000  4.9000  4.9000
 140.  *  1.9000  1.3000  1.1000  0.8000  5.9000  4.8000  5.1000  4.9000  0.2000
0.2000  0.2000  0.2000  5.1000  5.1000  5.1000
 145.  *  2.0000  1.4000  1.1000  0.8000  6.2000  5.1000  5.0000  5.0000  0.2000
0.2000  0.2000  0.2000  5.5000  5.5000  5.5000
 150.  *  2.1000  1.4000  1.2000  0.9000  6.6000  5.1000  5.2000  5.2000  0.3000
0.3000  0.3000  0.3000  5.8000  5.8000  5.8000
 155.  *  2.3000  1.5000  1.4000  1.1000  7.2000  5.7000  5.4000  5.4000  0.5000
0.5000  0.4000  0.4000  6.3000  6.2000  6.2000
 160.  *  2.5000  1.9000  1.8000  1.5000  7.6000  6.0000  5.8000  5.6000  0.8000
0.8000  0.8000  0.6000  6.5000  6.5000  6.5000
 165.  *  3.2000  2.5000  2.4000  2.1000  7.6000  6.4000  5.7000  5.7000  1.4000
1.4000  1.3000  1.1000  6.5000  6.4000  6.4000
 170.  *  4.1000  3.6000  3.6000  3.5000  7.3000  6.0000  5.4000  5.6000  2.2000
2.1000  2.1000  1.7000  6.1000  6.0000  5.9000
 175.  *  5.3000  4.9000  4.9000  5.0000  6.4000  5.3000  4.9000  5.1000  3.1000
3.0000  3.0000  2.4000  5.2000  5.1000  5.0000
 180.  *  6.5000  6.2000  6.2000  6.6000  5.4000  4.3000  4.0000  3.9000  3.9000
3.8000  3.7000  3.1000  3.9000  3.8000  3.8000
```

```
 185.  *  7.1000  7.1000  7.3000  7.7000  4.2000  3.4000  3.1000  2.8000  4.4000
4.3000  4.2000  3.6000  2.7000  2.6000  2.6000
 190.  *  7.7000  7.6000  7.7000  8.2000  3.3000  2.4000  2.0000  1.7000  4.6000
4.5000  4.5000  3.9000  1.7000  1.6000  1.6000
 195.  *  7.8000  7.8000  7.9000  8.0000  2.6000  1.8000  1.4000  1.1000  4.6000
4.5000  4.4000  4.1000  1.1000  1.0000  1.0000
 200.  *  7.7000  7.9000  7.6000  7.4000  2.2000  1.5000  1.2000  0.9000  4.3000
4.1000  4.1000  4.0000  0.8000  0.7000  0.7000
 205.  *  8.0000  7.5000  7.3000  7.0000  2.0000  1.3000  1.0000  0.5000  4.1000
4.0000  4.0000  3.9000  0.6000  0.5000  0.5000
 210.  *  7.9000  7.5000  7.0000  6.6000  2.1000  1.1000  0.9000  0.5000  3.9000
3.8000  3.8000  3.8000  0.5000  0.4000  0.4000
```

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```
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - I95 and
Russell Rd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
 215.  *  7.9000  7.2000  6.9000  6.3000  2.1000  1.1000  0.8000  0.3000  3.8000
3.7000  3.7000  3.7000  0.5000  0.3000  0.3000
 220.  *  7.9000  7.1000  6.4000  5.9000  2.2000  1.2000  0.8000  0.3000  3.7000
3.5000  3.5000  3.5000  0.5000  0.3000  0.3000
 225.  *  7.9000  6.4000  6.0000  5.5000  2.4000  1.3000  0.8000  0.3000  3.8000
3.3000  3.3000  3.3000  0.7000  0.3000  0.3000
 230.  *  7.7000  6.3000  5.6000  5.3000  2.5000  1.1000  0.7000  0.1000  4.0000
3.2000  3.2000  3.2000  0.9000  0.2000  0.2000
 235.  *  7.5000  5.9000  5.4000  4.9000  2.4000  1.1000  0.7000  0.1000  4.4000
3.2000  3.1000  3.1000  1.3000  0.3000  0.2000
 240.  *  7.2000  5.4000  5.0000  4.6000  2.3000  0.8000  0.5000  0.1000  4.8000
3.4000  3.2000  3.1000  1.7000  0.4000  0.2000
 245.  *  6.5000  5.0000  4.7000  4.5000  1.9000  0.6000  0.3000  0.1000  5.4000
3.6000  3.2000  3.0000  2.2000  0.6000  0.3000
 250.  *  5.9000  4.7000  4.6000  4.4000  1.4000  0.3000  0.1000  0.0000  5.6000
3.8000  3.3000  3.0000  2.5000  0.7000  0.3000
 255.  *  5.5000  4.6000  4.4000  4.4000  0.9000  0.2000  0.0000  0.0000  5.9000
4.0000  3.6000  3.1000  2.7000  0.9000  0.5000
 260.  *  5.2000  4.5000  4.5000  4.5000  0.6000  0.0000  0.0000  0.0000  5.7000
4.3000  3.8000  3.2000  2.6000  1.1000  0.6000
 265.  *  5.0000  4.7000  4.7000  4.7000  0.3000  0.0000  0.0000  0.0000  5.7000
4.3000  3.9000  3.2000  2.5000  1.1000  0.7000
```

```
 270.  *  5.0000  4.9000  4.9000  4.9000  0.2000  0.0000  0.0000  0.0000  5.6000
4.3000  3.9000  3.3000  2.4000  1.1000  0.7000
 275.  *  4.8000  4.7000  4.7000  4.7000  0.1000  0.0000  0.0000  0.0000  5.7000
4.1000  3.8000  3.3000  2.2000  1.1000  0.7000
 280.  *  4.6000  4.5000  4.5000  4.5000  0.1000  0.0000  0.0000  0.0000  5.7000
3.9000  3.7000  3.2000  2.1000  1.0000  0.7000
 285.  *  4.5000  4.4000  4.4000  4.4000  0.1000  0.0000  0.0000  0.0000  5.5000
3.9000  3.7000  3.3000  2.1000  1.1000  0.8000
 290.  *  4.5000  4.4000  4.4000  4.4000  0.1000  0.0000  0.0000  0.0000  5.6000
4.0000  3.7000  3.4000  2.0000  1.1000  0.8000
 295.  *  4.6000  4.5000  4.5000  4.5000  0.2000  0.1000  0.1000  0.1000  5.6000
3.9000  3.8000  3.4000  2.0000  1.2000  0.9000
 300.  *  4.7000  4.6000  4.6000  4.6000  0.2000  0.1000  0.1000  0.1000  5.7000
4.1000  3.9000  3.5000  2.0000  1.1000  0.9000
 305.  *  5.0000  4.9000  4.9000  4.9000  0.2000  0.1000  0.1000  0.1000  5.9000
4.1000  3.9000  3.7000  2.0000  1.2000  1.0000
 310.  *  5.1000  5.1000  5.1000  5.1000  0.1000  0.1000  0.1000  0.1000  5.9000
4.2000  3.8000  3.7000  2.0000  1.2000  0.9000
 315.  *  5.3000  5.3000  5.3000  5.3000  0.1000  0.1000  0.1000  0.1000  6.3000
4.4000  4.1000  4.0000  1.9000  1.2000  0.9000
 320.  *  5.7000  5.7000  5.7000  5.7000  0.1000  0.1000  0.1000  0.1000  6.6000
4.4000  4.3000  4.1000  1.8000  1.3000  1.0000
 325.  *  6.0000  6.0000  6.0000  5.9000  0.1000  0.1000  0.1000  0.1000  7.0000
4.8000  4.4000  4.2000  2.0000  1.3000  1.0000
 330.  *  6.3000  6.3000  6.3000  6.2000  0.2000  0.2000  0.2000  0.2000  7.4000
5.2000  4.6000  4.3000  2.1000  1.4000  1.2000
 335.  *  6.7000  6.7000  6.7000  6.5000  0.2000  0.2000  0.2000  0.2000  7.9000
5.6000  5.0000  4.5000  2.3000  1.6000  1.6000
 340.  *  7.1000  7.1000  7.1000  6.7000  0.5000  0.5000  0.5000  0.3000  8.3000
6.0000  5.4000  4.8000  2.6000  2.0000  2.0000
 345.  *  7.6000  7.6000  7.5000  6.8000  0.8000  0.8000  0.8000  0.6000  8.8000
6.7000  5.6000  4.9000  3.2000  2.8000  2.9000
 350.  *  7.6000  7.5000  7.4000  6.6000  1.5000  1.5000  1.4000  1.1000  8.7000
6.7000  5.7000  4.8000  4.1000  3.9000  4.1000
 355.  *  7.1000  7.0000  7.0000  6.0000  2.4000  2.4000  2.4000  1.9000  8.3000
6.3000  5.3000  4.0000  5.4000  5.3000  5.6000
 360.  *  6.0000  5.9000  5.9000  5.0000  3.6000  3.5000  3.4000  2.7000  7.4000
5.3000  4.4000  3.1000  6.7000  7.0000  7.0000

------*--------------------------------------------------------------------------
-----------------------------------------
 MAX   *  8.0000  7.9000  7.9000  8.2000  7.6000  6.4000  5.8000  5.7000  8.8000
6.7000  5.7000  4.9000  9.1000  8.5000  8.2000
 DEGR. *    205     200     195     190     160     165     160     165     345
350     350     345      15      15      10
```

```
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - I95 and
Russell Rd (Exit 148)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------------
---------------------------
   5.  *  7.4000  1.0000  0.3000  0.0000  2.0000  1.1000  0.1000  2.6000  2.0000
1.7000  3.7000  2.8000  1.7000
  10.  *  7.2000  0.5000  0.2000  0.1000  2.5000  1.5000  0.2000  2.2000  1.9000
1.8000  4.4000  3.3000  1.9000
  15.  *  6.7000  0.2000  0.1000  0.1000  3.0000  1.9000  0.4000  2.0000  1.8000
1.8000  4.9000  3.8000  2.1000
  20.  *  6.2000  0.2000  0.1000  0.1000  3.1000  2.1000  0.5000  2.0000  1.9000
1.9000  5.1000  4.0000  2.4000
  25.  *  5.9000  0.1000  0.1000  0.1000  3.2000  2.2000  0.7000  2.0000  2.0000
2.0000  5.3000  4.1000  2.7000
  30.  *  5.4000  0.1000  0.1000  0.1000  3.0000  2.3000  0.9000  2.1000  2.1000
2.0000  5.4000  4.3000  3.0000
  35.  *  5.2000  0.1000  0.1000  0.1000  3.0000  2.2000  1.0000  2.2000  2.2000
2.2000  5.5000  4.5000  3.1000
  40.  *  4.9000  0.2000  0.2000  0.2000  2.9000  2.3000  1.1000  2.4000  2.4000
2.3000  5.5000  4.7000  3.2000
  45.  *  4.6000  0.3000  0.3000  0.3000  3.1000  2.4000  1.2000  2.5000  2.5000
2.5000  5.6000  4.6000  3.3000
  50.  *  4.4000  0.6000  0.5000  0.5000  3.1000  2.5000  1.5000  2.6000  2.6000
2.4000  5.7000  4.8000  3.6000
  55.  *  4.1000  0.9000  0.9000  0.7000  3.5000  2.9000  2.0000  2.7000  2.7000
2.3000  5.5000  4.7000  3.7000
  60.  *  3.9000  1.4000  1.4000  1.1000  3.9000  3.2000  2.3000  2.5000  2.5000
2.1000  5.4000  4.6000  3.5000
  65.  *  3.8000  1.9000  1.7000  1.5000  4.4000  3.7000  3.0000  2.1000  2.1000
1.8000  4.9000  4.0000  3.3000
  70.  *  3.8000  2.1000  2.1000  1.9000  4.8000  4.0000  3.2000  1.6000  1.6000
1.4000  4.2000  3.4000  2.5000
```

75. * 3.9000 2.4000 2.4000 2.1000 5.0000 4.2000 3.3000 1.1000 1.0000
0.9000 3.6000 2.7000 1.9000
80. * 4.0000 2.4000 2.4000 2.2000 4.8000 4.3000 3.2000 0.7000 0.7000
0.5000 3.1000 2.4000 1.4000
85. * 4.2000 2.3000 2.3000 2.2000 4.7000 4.2000 3.0000 0.4000 0.4000
0.4000 2.7000 2.0000 1.2000
90. * 4.0000 2.2000 2.1000 2.1000 4.7000 3.9000 2.8000 0.3000 0.2000
0.2000 2.6000 1.8000 1.0000
95. * 3.9000 2.1000 2.1000 2.1000 4.5000 3.8000 2.9000 0.2000 0.2000
0.2000 2.5000 1.8000 1.0000
100. * 3.8000 2.0000 2.0000 2.0000 4.3000 3.6000 2.8000 0.1000 0.1000
0.1000 2.4000 1.7000 0.9000
105. * 3.8000 1.8000 1.8000 1.8000 4.4000 3.4000 2.6000 0.1000 0.1000
0.1000 2.4000 1.7000 0.9000
110. * 3.9000 1.8000 1.8000 1.8000 4.1000 3.4000 2.6000 0.1000 0.1000
0.1000 2.4000 1.7000 0.9000
115. * 4.1000 1.7000 1.7000 1.7000 4.0000 3.3000 2.5000 0.1000 0.1000
0.1000 2.4000 1.7000 0.9000
120. * 4.3000 1.7000 1.7000 1.7000 3.9000 3.3000 2.5000 0.1000 0.1000
0.1000 2.4000 1.8000 0.9000
125. * 4.4000 1.5000 1.5000 1.5000 3.9000 3.3000 2.3000 0.1000 0.1000
0.1000 2.5000 1.9000 0.9000
130. * 4.7000 1.5000 1.5000 1.5000 4.1000 3.3000 2.3000 0.0000 0.0000
0.0000 2.6000 1.8000 0.6000
135. * 4.9000 1.5000 1.5000 1.5000 4.1000 3.3000 2.1000 0.0000 0.0000
0.0000 2.6000 1.8000 0.6000
140. * 5.1000 1.5000 1.5000 1.5000 4.2000 3.4000 2.1000 0.0000 0.0000
0.0000 2.7000 1.8000 0.5000
145. * 5.3000 1.5000 1.5000 1.5000 4.3000 3.4000 1.9000 0.0000 0.0000
0.0000 2.7000 1.9000 0.3000
150. * 5.6000 1.5000 1.5000 1.5000 4.4000 3.4000 1.8000 0.0000 0.0000
0.0000 2.8000 1.9000 0.2000
155. * 6.0000 1.6000 1.6000 1.6000 4.5000 3.5000 1.7000 0.0000 0.0000
0.0000 2.8000 1.7000 0.1000
160. * 5.9000 1.6000 1.5000 1.5000 4.3000 3.2000 1.5000 0.1000 0.0000
0.0000 2.7000 1.5000 0.0000
165. * 5.7000 1.7000 1.5000 1.5000 4.0000 2.8000 1.5000 0.2000 0.0000
0.0000 2.3000 1.2000 0.0000
170. * 5.1000 2.0000 1.7000 1.5000 3.5000 2.4000 1.5000 0.5000 0.2000
0.0000 1.8000 0.8000 0.0000
175. * 4.3000 2.4000 1.9000 1.5000 2.8000 2.0000 1.5000 0.9000 0.4000
0.0000 1.3000 0.4000 0.0000
180. * 3.2000 2.9000 2.3000 1.5000 2.3000 1.8000 1.5000 1.5000 0.8000
0.0000 0.7000 0.2000 0.0000
185. * 2.2000 3.4000 2.6000 1.5000 1.9000 1.6000 1.5000 2.1000 1.2000
0.1000 0.5000 0.2000 0.1000
190. * 1.4000 3.9000 3.1000 1.9000 1.8000 1.7000 1.7000 2.4000 1.5000
0.3000 0.2000 0.1000 0.1000

```
 195.  *  0.9000  4.2000  3.3000  2.0000  1.7000  1.7000  1.7000  2.5000  1.7000
0.4000  0.1000  0.1000  0.1000
 200.  *  0.6000  4.3000  3.5000  2.3000  1.8000  1.8000  1.8000  2.5000  1.8000
0.6000  0.1000  0.1000  0.1000
 205.  *  0.5000  4.5000  3.6000  2.5000  1.8000  1.8000  1.8000  2.5000  1.8000
0.6000  0.1000  0.1000  0.1000
 210.  *  0.4000  4.7000  3.5000  2.7000  2.0000  2.0000  2.0000  2.4000  1.8000
0.8000  0.1000  0.1000  0.1000

                             PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2016 - I95 and
Russell Rd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16       17       18       19       20       21       22       23       24
 25      26      27      28

------*--------------------------------------------------------------------------------
---------------------------
 215.  *  0.3000  4.8000  3.8000  2.8000  2.1000  2.1000  2.1000  2.4000  1.9000
0.9000  0.2000  0.2000  0.2000
 220.  *  0.3000  5.1000  4.0000  2.8000  2.2000  2.2000  2.1000  2.5000  1.8000
1.0000  0.2000  0.2000  0.2000
 225.  *  0.3000  5.1000  4.2000  3.1000  2.3000  2.3000  2.2000  2.6000  2.0000
1.1000  0.4000  0.4000  0.4000
 230.  *  0.2000  5.6000  4.3000  3.2000  2.5000  2.4000  2.2000  2.8000  2.3000
1.5000  0.7000  0.7000  0.5000
 235.  *  0.2000  5.5000  4.4000  3.3000  2.4000  2.4000  2.1000  3.2000  2.5000
1.9000  1.1000  1.0000  0.9000
 240.  *  0.1000  5.4000  4.5000  3.3000  2.2000  2.1000  1.9000  3.7000  3.3000
2.4000  1.6000  1.6000  1.3000
 245.  *  0.1000  4.8000  3.9000  3.0000  1.9000  1.9000  1.5000  4.4000  4.0000
3.2000  2.1000  2.1000  1.8000
 250.  *  0.0000  4.4000  3.4000  2.4000  1.4000  1.4000  1.2000  4.7000  4.3000
3.5000  2.5000  2.5000  2.1000
 255.  *  0.0000  3.9000  3.1000  2.0000  0.9000  0.9000  0.7000  5.0000  4.5000
3.6000  2.7000  2.7000  2.3000
 260.  *  0.0000  3.4000  2.5000  1.4000  0.6000  0.6000  0.5000  5.2000  4.7000
3.6000  2.6000  2.6000  2.4000
 265.  *  0.0000  3.1000  2.3000  1.2000  0.3000  0.3000  0.3000  5.0000  4.4000
3.5000  2.5000  2.5000  2.5000
 270.  *  0.0000  3.0000  2.2000  1.1000  0.2000  0.2000  0.2000  5.1000  4.4000
3.2000  2.4000  2.4000  2.3000
 275.  *  0.1000  2.9000  2.1000  1.0000  0.1000  0.1000  0.1000  5.0000  4.3000
3.1000  2.2000  2.2000  2.2000
```

```
 280.  *  0.2000  2.9000  2.1000  1.0000  0.1000  0.1000  0.1000  4.8000  4.1000
3.0000  2.1000  2.1000  2.0000
 285.  *  0.3000  2.9000  2.1000  1.0000  0.1000  0.1000  0.1000  4.8000  3.9000
2.9000  2.0000  2.0000  2.0000
 290.  *  0.4000  3.0000  2.1000  1.0000  0.1000  0.1000  0.1000  4.7000  3.9000
2.8000  1.9000  1.9000  1.9000
 295.  *  0.5000  3.0000  2.1000  1.0000  0.1000  0.1000  0.1000  4.7000  3.8000
2.7000  1.8000  1.8000  1.8000
 300.  *  0.5000  3.0000  2.1000  1.0000  0.1000  0.1000  0.1000  4.7000  3.8000
2.7000  1.8000  1.8000  1.8000
 305.  *  0.6000  3.1000  2.1000  1.1000  0.1000  0.1000  0.1000  4.6000  3.7000
2.7000  1.7000  1.7000  1.7000
 310.  *  0.6000  3.0000  2.1000  1.0000  0.0000  0.0000  0.0000  4.5000  3.8000
2.7000  1.7000  1.7000  1.6000
 315.  *  0.6000  3.2000  2.3000  0.8000  0.0000  0.0000  0.0000  4.7000  3.7000
2.4000  1.6000  1.6000  1.6000
 320.  *  0.7000  3.3000  2.3000  0.7000  0.0000  0.0000  0.0000  4.7000  3.8000
2.3000  1.5000  1.5000  1.5000
 325.  *  0.8000  3.3000  2.3000  0.6000  0.0000  0.0000  0.0000  4.9000  3.9000
2.3000  1.6000  1.6000  1.6000
 330.  *  0.9000  3.4000  2.4000  0.4000  0.0000  0.0000  0.0000  5.0000  4.0000
2.1000  1.6000  1.6000  1.6000
 335.  *  1.2000  3.5000  2.4000  0.2000  0.0000  0.0000  0.0000  5.2000  4.0000
1.9000  1.7000  1.6000  1.6000
 340.  *  2.0000  3.5000  2.2000  0.1000  0.0000  0.0000  0.0000  5.1000  3.8000
1.7000  1.6000  1.6000  1.6000
 345.  *  2.9000  3.3000  1.9000  0.0000  0.1000  0.0000  0.0000  4.9000  3.6000
1.7000  1.8000  1.6000  1.6000
 350.  *  4.4000  2.8000  1.5000  0.0000  0.3000  0.1000  0.0000  4.5000  3.1000
1.5000  1.8000  1.6000  1.5000
 355.  *  5.8000  2.2000  1.0000  0.0000  0.6000  0.3000  0.0000  4.0000  2.6000
1.6000  2.3000  1.8000  1.5000
 360.  *  7.1000  1.5000  0.6000  0.0000  1.2000  0.6000  0.0000  3.3000  2.4000
1.7000  2.9000  2.3000  1.6000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  7.4000  5.6000  4.5000  3.3000  5.0000  4.3000  3.3000  5.2000  4.7000
3.6000  5.7000  4.8000  3.7000
 DEGR. *      5     230     240     240      75      80      75     260     260
255      50      50      55

 THE HIGHEST CONCENTRATION OF   9.1000 PPM OCCURRED AT RECEPTOR    13.
```

2022 NoBuild I95 and US 17 IN

```
Q,EPA,,F,,0,T,T,F,F,0.78,
5,4,4,4,1020,1275,530,575,1020,1275,530,575,1036.8,1036.8,1036.8,1036.8,1036.8,1036.
8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0
,1200,-1200,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-58.0,58.0,5.9
'N Leg, W Side - 25 m',-58.0,130.0,5.9
'N Leg, W Side - 50 m',-58.0,212.0,5.9
'N Leg, W Side-Midblk',-58.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-58.0,5.9
'S Leg, E Side - 25 m',70.0,-130.0,5.9
'S Leg, E Side - 50 m',70.0,-212.0,5.9
'S Leg, E Side-Midblk',70.0,-648.0,5.9
'S Leg, W Side-Corner',-58.0,-58.0,5.9
'S Leg, W Side - 25 m',-58.0,-130.0,5.9
'S Leg, W Side - 50 m',-58.0,-212.0,5.9
'S Leg, W Side-Midblk',-58.0,-648.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-130.0,58.0,5.9
'W Leg, N Side - 50 m',-212.0,58.0,5.9
'W Leg, N Side-Midblk',-648.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-58.0,5.9
'E Leg, S Side - 50 m',224.0,-58.0,5.9
'E Leg, S Side-Midblk',660.0,-58.0,5.9
'W Leg, S Side - 25 m',-130.0,-58.0,5.9
'W Leg, S Side - 50 m',-212.0,-58.0,5.9
'W Leg, S Side-Midblk',-648.0,-58.0,5.9
'2022 NO BUILD - I95 and US17 (Exit 133)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,5100,6.01,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,5100,2.87,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,5100,6.01,0.0,79.7
1
'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,5100,2.87,0.0,67.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,2300,5.40,0.0,67.7
1
'E Leg Dep - FreeFlow','AG',0,-24,1200,-24,2120,2.65,0.0,67.7
1
```

'W Leg App - FreeFlow','AG',0,-24,-1200,-24,2120,5.40,0.0,67.7
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,2300,2.65,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72

2022 NoBuild I95 and US 17 OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: FredEx AQ Analysis RUN: 2022 NO BUILD - I95 and US17 (Exit 133)

DATE : 8/15/17
TIME : 11:16:11

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-24.0	0.0	-24.0	1200.0	1200.	360.	AG	5100.	6.0	0.0	67.7		
2. N Leg Dep - FreeFlow	30.0	0.0	30.0	1200.0	1200.	360.	AG	5100.	2.9	0.0	79.7		
3. S Leg App - FreeFlow	30.0	0.0	30.0	-1200.0	1200.	180.	AG	5100.	6.0	0.0	79.7		
4. S Leg Dep - FreeFlow	-24.0	0.0	-24.0	-1200.0	1200.	180.	AG	5100.	2.9	0.0	67.7		
5. E Leg App - FreeFlow	0.0	24.0	1200.0	24.0	1200.	90.	AG	2300.	5.4	0.0	67.7		
6. E Leg Dep - FreeFlow	0.0	-24.0	1200.0	-24.0	1200.	90.	AG	2120.	2.7	0.0	67.7		
7. W Leg App - FreeFlow	0.0	-24.0	-1200.0	-24.0	1200.	270.	AG	2120.	5.4	0.0	67.7		
8. W Leg Dep - FreeFlow	0.0	24.0	-1200.0	24.0	1200.	270.	AG	2300.	2.7	0.0	67.7		

PAGE 2
JOB: FredEx AQ Analysis RUN: 2022 NO BUILD -

2022 NoBuild I95 and US 17 OUT

I95 and US17 (Exit 133)

DATE : 8/15/17
TIME : 11:16:11

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. N Leg, E Side-Corner	*	70.0	58.0	5.9	*
2. N Leg, E Side - 25 m	*	70.0	130.0	5.9	*
3. N Leg, E Side - 50 m	*	70.0	212.0	5.9	*
4. N Leg, E Side-Midblk	*	70.0	648.0	5.9	*
5. N Leg, W Side-Corner	*	-58.0	58.0	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	130.0	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	212.0	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	648.0	5.9	*
9. S Leg, E Side-Corner	*	70.0	-58.0	5.9	*
10. S Leg, E Side - 25 m	*	70.0	-130.0	5.9	*
11. S Leg, E Side - 50 m	*	70.0	-212.0	5.9	*
12. S Leg, E Side-Midblk	*	70.0	-648.0	5.9	*
13. S Leg, W Side-Corner	*	-58.0	-58.0	5.9	*
14. S Leg, W Side - 25 m	*	-58.0	-130.0	5.9	*
15. S Leg, W Side - 50 m	*	-58.0	-212.0	5.9	*
16. S Leg, W Side-Midblk	*	-58.0	-648.0	5.9	*
17. E Leg, N Side - 25 m	*	142.0	58.0	5.9	*
18. E Leg, N Side - 50 m	*	224.0	58.0	5.9	*
19. E Leg, N Side-Midblk	*	660.0	58.0	5.9	*
20. W Leg, N Side - 25 m	*	-130.0	58.0	5.9	*
21. W Leg, N Side - 50 m	*	-212.0	58.0	5.9	*
22. W Leg, N Side-Midblk	*	-648.0	58.0	5.9	*
23. E Leg, S Side - 25 m	*	142.0	-58.0	5.9	*
24. E Leg, S Side - 50 m	*	224.0	-58.0	5.9	*
25. E Leg, S Side-Midblk	*	660.0	-58.0	5.9	*
26. W Leg, S Side - 25 m	*	-130.0	-58.0	5.9	*

2022 NoBuild I95 and US 17 OUT

27. W Leg, S Side - 50 m * -212.0 -58.0 5.9 *

28. W Leg, S Side-Midblk * -648.0 -58.0 5.9 *

PAGE 3

JOB: FredEx AQ Analysis RUN: 2022 NO BUILD - I95 and US17 (Exit 133)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR) *	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5. *	0.7000	0.6000	0.6000	0.5000	1.8000	1.7000	1.7000	1.6000	1.2000	1.1000	1.2000	1.1000	2.0000	1.7000	1.4000
10. *	0.4000	0.4000	0.4000	0.3000	1.9000	1.9000	1.9000	1.7000	0.9000	0.8000	0.8000	0.8000	2.1000	1.8000	1.5000
15. *	0.2000	0.2000	0.2000	0.2000	1.9000	1.9000	1.9000	1.8000	0.6000	0.5000	0.6000	0.5000	2.0000	1.6000	1.7000
20. *	0.1000	0.1000	0.1000	0.1000	1.7000	1.7000	1.7000	1.7000	0.6000	0.4000	0.4000	0.4000	1.8000	1.6000	1.5000
25. *	0.1000	0.1000	0.1000	0.1000	1.6000	1.6000	1.6000	1.6000	0.5000	0.3000	0.4000	0.3000	1.8000	1.4000	1.3000
30. *	0.1000	0.1000	0.1000	0.1000	1.5000	1.6000	1.6000	1.5000	0.5000	0.3000	0.3000	0.2000	1.7000	1.4000	1.4000
35. *	0.1000	0.1000	0.1000	0.1000	1.5000	1.5000	1.5000	1.5000	0.5000	0.4000	0.3000	0.2000	1.7000	1.4000	1.3000
40. *	0.0000	0.0000	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	0.5000	0.4000	0.3000	0.2000	1.5000	1.4000	1.3000
45. *	0.0000	0.0000	0.0000	0.0000	1.3000	1.3000	1.3000	1.3000	0.6000	0.4000	0.3000	0.2000	1.5000	1.4000	1.3000
50. *	0.0000	0.0000	0.0000	0.0000	1.3000	1.3000	1.3000	1.3000	0.6000	0.4000	0.3000	0.1000	1.6000	1.3000	1.3000
55. *	0.0000	0.0000	0.0000	0.0000	1.3000	1.2000	1.2000	1.2000	0.6000	0.4000	0.3000	0.1000	1.5000	1.3000	1.3000
60. *	0.1000	0.0000	0.0000	0.0000	1.2000	1.2000	1.2000	1.2000	0.5000	0.4000	0.3000	0.1000	1.5000	1.3000	1.2000

```
  65.  *  0.1000  0.0000  0.0000  0.0000  1.2000  1.2000  1.2000  1.2000  0.5000
0.3000  0.2000  0.0000  1.6000  1.3000  1.2000
  70.  *  0.1000  0.0000  0.0000  0.0000  1.3000  1.1000  1.1000  1.1000  0.6000
0.3000  0.2000  0.0000  1.6000  1.2000  1.2000
  75.  *  0.2000  0.0000  0.0000  0.0000  1.3000  1.1000  1.1000  1.1000  0.6000
0.3000  0.2000  0.0000  1.6000  1.2000  1.1000
  80.  *  0.3000  0.0000  0.0000  0.0000  1.4000  1.2000  1.2000  1.2000  0.6000
0.2000  0.1000  0.0000  1.6000  1.1000  1.0000
  85.  *  0.4000  0.1000  0.0000  0.0000  1.6000  1.3000  1.2000  1.2000  0.5000
0.2000  0.0000  0.0000  1.5000  1.1000  1.0000
  90.  *  0.6000  0.1000  0.0000  0.0000  1.8000  1.3000  1.2000  1.2000  0.4000
0.2000  0.0000  0.0000  1.6000  1.3000  1.1000
  95.  *  0.7000  0.2000  0.1000  0.0000  1.8000  1.4000  1.3000  1.2000  0.3000
0.0000  0.0000  0.0000  1.2000  1.0000  1.0000
 100.  *  0.7000  0.3000  0.1000  0.0000  1.7000  1.5000  1.3000  1.2000  0.2000
0.0000  0.0000  0.0000  1.2000  0.9000  0.9000
 105.  *  0.7000  0.3000  0.1000  0.0000  1.8000  1.4000  1.2000  1.1000  0.1000
0.0000  0.0000  0.0000  1.2000  1.0000  1.0000
 110.  *  0.7000  0.3000  0.2000  0.0000  1.7000  1.4000  1.3000  1.1000  0.1000
0.0000  0.0000  0.0000  1.0000  1.0000  1.0000
 115.  *  0.6000  0.3000  0.2000  0.0000  1.8000  1.5000  1.5000  1.2000  0.0000
0.0000  0.0000  0.0000  1.0000  1.0000  1.0000
 120.  *  0.6000  0.3000  0.2000  0.0000  1.7000  1.5000  1.5000  1.2000  0.1000
0.1000  0.1000  0.1000  1.0000  1.0000  1.0000
 125.  *  0.6000  0.3000  0.2000  0.0000  1.9000  1.6000  1.4000  1.3000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 130.  *  0.5000  0.3000  0.2000  0.1000  1.9000  1.7000  1.5000  1.4000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 135.  *  0.5000  0.3000  0.2000  0.1000  1.9000  1.6000  1.5000  1.4000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 140.  *  0.5000  0.3000  0.2000  0.1000  2.1000  1.7000  1.7000  1.5000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 145.  *  0.5000  0.3000  0.3000  0.2000  1.8000  1.9000  1.6000  1.6000  0.1000
0.1000  0.1000  0.1000  1.3000  1.3000  1.3000
 150.  *  0.5000  0.4000  0.3000  0.2000  1.9000  1.8000  1.7000  1.6000  0.1000
0.1000  0.1000  0.1000  1.3000  1.3000  1.3000
 155.  *  0.5000  0.4000  0.2000  0.2000  2.1000  2.1000  1.9000  1.7000  0.2000
0.2000  0.2000  0.2000  1.3000  1.3000  1.3000
 160.  *  0.6000  0.5000  0.3000  0.2000  2.1000  2.1000  2.0000  1.8000  0.3000
0.3000  0.3000  0.2000  1.4000  1.4000  1.4000
 165.  *  0.8000  0.6000  0.3000  0.4000  2.2000  2.1000  2.1000  1.9000  0.4000
0.4000  0.4000  0.4000  1.4000  1.4000  1.4000
 170.  *  1.2000  0.9000  0.7000  0.6000  2.1000  2.0000  2.0000  2.0000  0.7000
0.6000  0.6000  0.6000  1.4000  1.4000  1.4000
 175.  *  1.4000  1.1000  0.9000  0.8000  1.9000  1.9000  2.0000  1.9000  1.0000
1.0000  1.0000  0.9000  1.2000  1.2000  1.2000
 180.  *  1.8000  1.5000  1.2000  1.0000  1.6000  1.6000  1.7000  1.6000  1.4000
1.4000  1.3000  1.2000  1.0000  1.0000  1.0000
```

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 185.  *  1.9000  1.5000  1.3000  1.2000  1.3000  1.3000  1.3000  1.2000  1.6000
1.6000  1.6000  1.4000  0.7000  0.7000  0.7000
 190.  *  2.1000  1.7000  1.4000  1.5000  0.9000  0.9000  0.9000  0.9000  1.8000
1.8000  1.8000  1.5000  0.4000  0.4000  0.4000
 195.  *  1.9000  1.7000  1.4000  1.4000  0.8000  0.7000  0.7000  0.4000  1.8000
1.8000  1.8000  1.6000  0.3000  0.2000  0.2000
 200.  *  1.8000  1.5000  1.5000  1.3000  0.6000  0.4000  0.4000  0.3000  1.7000
1.7000  1.6000  1.6000  0.1000  0.1000  0.1000
 205.  *  1.7000  1.4000  1.3000  1.2000  0.5000  0.3000  0.4000  0.2000  1.6000
1.6000  1.6000  1.5000  0.1000  0.1000  0.1000
 210.  *  1.7000  1.3000  1.2000  1.2000  0.5000  0.3000  0.3000  0.1000  1.5000
1.5000  1.5000  1.5000  0.1000  0.1000  0.1000

                             PAGE  4
     JOB: FredEx AQ Analysis                                   RUN: 2022 NO BUILD -
I95 and US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  1.8000  1.2000  1.3000  1.1000  0.5000  0.3000  0.3000  0.1000  1.4000
1.4000  1.4000  1.4000  0.1000  0.1000  0.1000
 220.  *  1.6000  1.4000  1.2000  1.1000  0.5000  0.3000  0.3000  0.1000  1.3000
1.3000  1.3000  1.3000  0.0000  0.0000  0.0000
 225.  *  1.6000  1.3000  1.2000  1.1000  0.5000  0.3000  0.3000  0.1000  1.3000
1.3000  1.3000  1.3000  0.0000  0.0000  0.0000
 230.  *  1.6000  1.1000  1.1000  0.9000  0.5000  0.4000  0.3000  0.1000  1.2000
1.2000  1.2000  1.2000  0.0000  0.0000  0.0000
 235.  *  1.5000  1.2000  1.1000  0.9000  0.5000  0.4000  0.3000  0.1000  1.2000
1.2000  1.2000  1.2000  0.0000  0.0000  0.0000
 240.  *  1.5000  1.2000  1.1000  0.9000  0.6000  0.4000  0.3000  0.1000  1.1000
1.0000  1.0000  1.0000  0.1000  0.0000  0.0000
 245.  *  1.5000  1.2000  1.1000  0.9000  0.6000  0.3000  0.2000  0.0000  1.0000
1.0000  1.0000  1.0000  0.1000  0.0000  0.0000
 250.  *  1.6000  1.2000  1.1000  0.9000  0.6000  0.3000  0.2000  0.0000  1.1000
1.0000  1.0000  1.0000  0.1000  0.0000  0.0000
 255.  *  1.6000  1.2000  1.1000  0.9000  0.6000  0.2000  0.2000  0.0000  1.1000
1.0000  1.0000  1.0000  0.2000  0.0000  0.0000
 260.  *  1.5000  1.1000  1.1000  0.9000  0.5000  0.2000  0.1000  0.0000  1.2000
1.0000  1.0000  1.0000  0.3000  0.0000  0.0000
 265.  *  1.5000  1.1000  0.9000  0.9000  0.5000  0.2000  0.0000  0.0000  1.6000
1.2000  1.1000  1.1000  0.4000  0.1000  0.0000
```

```
 270.  *  1.5000  1.1000  0.9000  0.9000  0.4000  0.2000  0.0000  0.0000  1.6000
1.2000  1.1000  1.1000  0.6000  0.1000  0.0000
 275.  *  1.2000  0.9000  0.9000  0.9000  0.3000  0.0000  0.0000  0.0000  1.7000
1.4000  1.2000  1.1000  0.7000  0.1000  0.1000
 280.  *  1.2000  0.9000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  1.6000
1.3000  1.1000  1.0000  0.7000  0.3000  0.1000
 285.  *  1.1000  0.9000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  1.6000
1.3000  1.2000  1.0000  0.7000  0.3000  0.1000
 290.  *  1.0000  0.9000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  1.6000
1.3000  1.2000  1.0000  0.6000  0.3000  0.2000
 295.  *  1.0000  0.9000  0.9000  0.9000  0.0000  0.0000  0.0000  0.0000  1.6000
1.3000  1.2000  1.0000  0.6000  0.3000  0.2000
 300.  *  0.9000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.6000
1.3000  1.2000  1.0000  0.6000  0.3000  0.2000
 305.  *  0.9000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.8000
1.5000  1.3000  1.2000  0.5000  0.3000  0.2000
 310.  *  0.9000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.8000
1.5000  1.3000  1.3000  0.5000  0.3000  0.2000
 315.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.9000
1.6000  1.5000  1.4000  0.5000  0.3000  0.2000
 320.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.7000
1.6000  1.5000  1.4000  0.5000  0.3000  0.2000
 325.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.8000
1.7000  1.6000  1.5000  0.5000  0.4000  0.3000
 330.  *  1.2000  1.2000  1.2000  1.2000  0.1000  0.1000  0.1000  0.1000  1.9000
1.9000  1.6000  1.6000  0.4000  0.4000  0.3000
 335.  *  1.2000  1.2000  1.2000  1.2000  0.2000  0.2000  0.2000  0.2000  1.9000
2.0000  1.8000  1.5000  0.6000  0.4000  0.3000
 340.  *  1.2000  1.2000  1.2000  1.2000  0.3000  0.3000  0.3000  0.3000  1.9000
1.9000  1.8000  1.7000  0.7000  0.5000  0.4000
 345.  *  1.3000  1.3000  1.3000  1.2000  0.5000  0.5000  0.5000  0.4000  2.0000
2.0000  2.0000  1.8000  0.8000  0.6000  0.6000
 350.  *  1.3000  1.3000  1.2000  1.0000  0.8000  0.8000  0.8000  0.6000  2.0000
1.9000  1.9000  1.9000  1.1000  1.0000  0.8000
 355.  *  1.2000  1.2000  1.1000  0.9000  1.1000  1.1000  1.1000  1.0000  1.8000
1.8000  1.8000  1.8000  1.4000  1.2000  0.9000
 360.  *  0.9000  0.9000  0.9000  0.7000  1.5000  1.5000  1.5000  1.3000  1.5000
1.4000  1.5000  1.5000  1.8000  1.5000  1.3000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  2.1000  1.7000  1.5000  1.5000  2.2000  2.1000  2.1000  2.0000  2.0000
2.0000  2.0000  1.9000  2.1000  1.8000  1.7000
 DEGR. *    190     190     200     190     165     155     165     170     345
335     345     350      10      10      15
```

JOB: FredEx AQ Analysis RUN: 2022 NO BUILD - I95 and US17 (Exit 133)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	1.4000	0.2000	0.0000	0.0000	0.5000	0.3000	0.0000	0.6000	0.4000	0.4000	0.9000	0.7000	0.4000
10.	1.5000	0.0000	0.0000	0.0000	0.7000	0.4000	0.0000	0.4000	0.4000	0.4000	1.1000	0.8000	0.4000
15.	1.5000	0.0000	0.0000	0.0000	0.8000	0.4000	0.0000	0.4000	0.4000	0.4000	1.2000	0.8000	0.4000
20.	1.4000	0.0000	0.0000	0.0000	0.8000	0.5000	0.0000	0.4000	0.4000	0.4000	1.2000	0.9000	0.4000
25.	1.4000	0.0000	0.0000	0.0000	0.8000	0.5000	0.1000	0.4000	0.4000	0.4000	1.2000	0.9000	0.5000
30.	1.4000	0.0000	0.0000	0.0000	0.8000	0.5000	0.1000	0.4000	0.4000	0.4000	1.2000	1.0000	0.5000
35.	1.4000	0.0000	0.0000	0.0000	0.7000	0.5000	0.1000	0.4000	0.4000	0.4000	1.1000	1.0000	0.7000
40.	1.2000	0.0000	0.0000	0.0000	0.7000	0.5000	0.2000	0.4000	0.4000	0.4000	1.2000	1.0000	0.7000
45.	1.2000	0.0000	0.0000	0.0000	0.7000	0.4000	0.2000	0.5000	0.5000	0.5000	1.2000	0.9000	0.7000
50.	1.2000	0.0000	0.0000	0.0000	0.7000	0.4000	0.2000	0.5000	0.5000	0.5000	1.2000	0.9000	0.7000
55.	1.1000	0.0000	0.0000	0.0000	0.7000	0.4000	0.2000	0.5000	0.5000	0.5000	1.2000	0.9000	0.7000
60.	1.0000	0.1000	0.1000	0.1000	0.7000	0.4000	0.2000	0.5000	0.5000	0.5000	1.1000	1.0000	0.8000
65.	1.0000	0.1000	0.1000	0.1000	0.7000	0.4000	0.2000	0.5000	0.5000	0.5000	1.2000	1.1000	0.8000
70.	1.0000	0.1000	0.1000	0.1000	0.7000	0.4000	0.3000	0.6000	0.6000	0.6000	1.3000	1.2000	0.8000

```
  75.  *  1.0000  0.2000  0.2000  0.2000  0.9000  0.6000  0.3000  0.6000  0.6000
0.5000  1.3000  1.3000  1.0000
  80.  *  0.9000  0.3000  0.3000  0.3000  0.9000  0.6000  0.3000  0.6000  0.6000
0.5000  1.2000  1.2000  0.9000
  85.  *  1.0000  0.4000  0.4000  0.4000  1.0000  0.7000  0.5000  0.5000  0.5000
0.4000  1.1000  1.1000  0.9000
  90.  *  1.1000  0.6000  0.6000  0.5000  1.2000  0.9000  0.5000  0.4000  0.3000
0.3000  1.1000  0.8000  0.8000
  95.  *  1.0000  0.7000  0.7000  0.7000  1.3000  1.0000  0.8000  0.3000  0.3000
0.3000  1.0000  0.8000  0.7000
 100.  *  0.9000  0.7000  0.7000  0.7000  1.2000  1.0000  0.7000  0.2000  0.1000
0.1000  0.9000  0.8000  0.4000
 105.  *  1.0000  0.7000  0.7000  0.7000  1.1000  1.1000  0.7000  0.1000  0.1000
0.1000  0.7000  0.5000  0.4000
 110.  *  1.0000  0.7000  0.7000  0.7000  1.3000  0.9000  0.7000  0.1000  0.1000
0.1000  0.7000  0.5000  0.3000
 115.  *  1.0000  0.6000  0.6000  0.6000  1.2000  0.9000  0.8000  0.0000  0.0000
0.0000  0.7000  0.6000  0.3000
 120.  *  1.0000  0.6000  0.6000  0.6000  1.1000  0.8000  0.7000  0.0000  0.0000
0.0000  0.6000  0.5000  0.3000
 125.  *  1.1000  0.6000  0.6000  0.6000  1.0000  0.8000  0.6000  0.0000  0.0000
0.0000  0.6000  0.5000  0.2000
 130.  *  1.1000  0.5000  0.5000  0.5000  1.0000  0.9000  0.6000  0.0000  0.0000
0.0000  0.6000  0.5000  0.2000
 135.  *  1.1000  0.5000  0.5000  0.5000  1.1000  0.9000  0.6000  0.0000  0.0000
0.0000  0.6000  0.5000  0.2000
 140.  *  1.1000  0.5000  0.5000  0.5000  1.1000  0.9000  0.6000  0.0000  0.0000
0.0000  0.7000  0.5000  0.2000
 145.  *  1.2000  0.5000  0.5000  0.5000  1.0000  0.9000  0.6000  0.0000  0.0000
0.0000  0.7000  0.5000  0.2000
 150.  *  1.3000  0.5000  0.5000  0.5000  1.1000  0.9000  0.5000  0.0000  0.0000
0.0000  0.7000  0.5000  0.1000
 155.  *  1.3000  0.4000  0.4000  0.4000  1.1000  0.9000  0.5000  0.0000  0.0000
0.0000  0.7000  0.5000  0.0000
 160.  *  1.3000  0.4000  0.4000  0.4000  1.1000  0.9000  0.4000  0.0000  0.0000
0.0000  0.7000  0.5000  0.0000
 165.  *  1.3000  0.4000  0.4000  0.4000  1.1000  0.9000  0.4000  0.0000  0.0000
0.0000  0.7000  0.4000  0.0000
 170.  *  1.2000  0.6000  0.5000  0.5000  0.9000  0.7000  0.4000  0.1000  0.0000
0.0000  0.5000  0.3000  0.0000
 175.  *  1.1000  0.7000  0.6000  0.5000  0.9000  0.6000  0.4000  0.2000  0.0000
0.0000  0.4000  0.2000  0.0000
 180.  *  0.8000  0.9000  0.6000  0.5000  0.7000  0.6000  0.4000  0.4000  0.1000
0.0000  0.2000  0.1000  0.0000
 185.  *  0.5000  1.0000  0.8000  0.5000  0.6000  0.4000  0.4000  0.5000  0.2000
0.0000  0.2000  0.0000  0.0000
 190.  *  0.4000  1.2000  0.9000  0.5000  0.4000  0.4000  0.4000  0.6000  0.3000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.2000  1.2000  0.8000  0.4000  0.4000  0.4000  0.4000  0.8000  0.4000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  1.2000  0.9000  0.4000  0.4000  0.4000  0.4000  0.8000  0.5000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.1000  1.2000  0.9000  0.5000  0.4000  0.4000  0.4000  0.8000  0.5000
0.1000  0.0000  0.0000  0.0000
 210.  *  0.1000  1.2000  1.0000  0.6000  0.4000  0.4000  0.4000  0.8000  0.5000
0.1000  0.0000  0.0000  0.0000

                           PAGE   6
      JOB: FredEx AQ Analysis                                  RUN: 2022 NO BUILD -
I95 and US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  1.2000  1.0000  0.7000  0.4000  0.4000  0.4000  0.7000  0.5000
0.1000  0.0000  0.0000  0.0000
 220.  *  0.0000  1.2000  1.0000  0.7000  0.4000  0.4000  0.4000  0.7000  0.5000
0.2000  0.0000  0.0000  0.0000
 225.  *  0.0000  1.1000  0.9000  0.7000  0.4000  0.4000  0.4000  0.7000  0.4000
0.2000  0.0000  0.0000  0.0000
 230.  *  0.0000  1.3000  0.9000  0.7000  0.4000  0.4000  0.4000  0.7000  0.4000
0.2000  0.0000  0.0000  0.0000
 235.  *  0.0000  1.1000  1.0000  0.8000  0.4000  0.4000  0.4000  0.7000  0.4000
0.2000  0.0000  0.0000  0.0000
 240.  *  0.0000  1.3000  1.1000  0.8000  0.5000  0.5000  0.4000  0.7000  0.4000
0.2000  0.1000  0.1000  0.1000
 245.  *  0.0000  1.3000  1.0000  0.8000  0.6000  0.6000  0.5000  0.7000  0.4000
0.2000  0.1000  0.1000  0.1000
 250.  *  0.0000  1.4000  1.2000  0.9000  0.6000  0.6000  0.5000  0.7000  0.4000
0.3000  0.1000  0.1000  0.1000
 255.  *  0.0000  1.3000  1.3000  0.8000  0.6000  0.6000  0.5000  0.9000  0.6000
0.3000  0.2000  0.2000  0.2000
 260.  *  0.0000  1.3000  1.2000  0.9000  0.5000  0.5000  0.5000  0.9000  0.6000
0.3000  0.3000  0.3000  0.2000
 265.  *  0.0000  1.1000  1.1000  1.0000  0.5000  0.5000  0.4000  1.1000  0.6000
0.5000  0.4000  0.4000  0.3000
 270.  *  0.0000  1.1000  0.9000  0.8000  0.4000  0.4000  0.3000  1.1000  0.9000
0.5000  0.6000  0.6000  0.5000
 275.  *  0.0000  0.9000  0.8000  0.7000  0.3000  0.3000  0.3000  1.2000  1.1000
0.8000  0.7000  0.7000  0.6000
```

```
 280.  *  0.0000  0.9000  0.7000  0.5000  0.1000  0.1000  0.1000  1.1000  1.0000
0.7000  0.7000  0.7000  0.6000
 285.  *  0.0000  0.6000  0.5000  0.4000  0.1000  0.1000  0.1000  1.3000  1.0000
0.8000  0.7000  0.7000  0.7000
 290.  *  0.0000  0.6000  0.4000  0.3000  0.1000  0.1000  0.1000  1.2000  1.0000
0.8000  0.6000  0.6000  0.6000
 295.  *  0.0000  0.6000  0.6000  0.3000  0.0000  0.0000  0.0000  1.2000  0.9000
0.7000  0.6000  0.6000  0.6000
 300.  *  0.0000  0.5000  0.6000  0.3000  0.0000  0.0000  0.0000  1.1000  0.8000
0.7000  0.6000  0.6000  0.6000
 305.  *  0.0000  0.6000  0.5000  0.2000  0.0000  0.0000  0.0000  1.0000  0.8000
0.7000  0.5000  0.5000  0.5000
 310.  *  0.0000  0.6000  0.5000  0.2000  0.0000  0.0000  0.0000  1.0000  0.9000
0.7000  0.5000  0.5000  0.5000
 315.  *  0.1000  0.6000  0.5000  0.2000  0.0000  0.0000  0.0000  1.1000  0.9000
0.7000  0.5000  0.5000  0.5000
 320.  *  0.1000  0.7000  0.5000  0.2000  0.0000  0.0000  0.0000  1.0000  0.9000
0.6000  0.5000  0.5000  0.5000
 325.  *  0.2000  0.7000  0.5000  0.2000  0.0000  0.0000  0.0000  1.0000  0.9000
0.6000  0.5000  0.5000  0.5000
 330.  *  0.2000  0.7000  0.5000  0.1000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.4000  0.4000  0.4000
 335.  *  0.2000  0.7000  0.5000  0.0000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.4000  0.4000  0.4000
 340.  *  0.1000  0.7000  0.5000  0.0000  0.0000  0.0000  0.0000  1.1000  0.9000
0.4000  0.4000  0.4000  0.4000
 345.  *  0.3000  0.7000  0.4000  0.0000  0.0000  0.0000  0.0000  1.1000  0.8000
0.4000  0.4000  0.4000  0.4000
 350.  *  0.5000  0.5000  0.3000  0.0000  0.1000  0.0000  0.0000  0.9000  0.7000
0.4000  0.5000  0.4000  0.4000
 355.  *  0.9000  0.4000  0.2000  0.0000  0.2000  0.0000  0.0000  0.8000  0.6000
0.4000  0.6000  0.5000  0.4000
 360.  *  1.2000  0.2000  0.0000  0.0000  0.4000  0.1000  0.0000  0.6000  0.6000
0.4000  0.9000  0.6000  0.5000

------*--------------------------------------------------------------------------------
---------------------------
 MAX   *  1.5000  1.4000  1.3000  1.0000  1.3000  1.1000  0.8000  1.3000  1.1000
0.8000  1.3000  1.3000  1.0000
 DEGR. *     10     250     255     265      95     105      95     285     275
275      70      75      75

 THE HIGHEST CONCENTRATION OF   2.2000 PPM OCCURRED AT RECEPTOR     5.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
5,7,4,4,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-94.0,58.0,5.9
'N Leg, W Side - 25 m',-94.0,130.0,5.9
'N Leg, W Side - 50 m',-94.0,212.0,5.9
'N Leg, W Side-Midblk',-94.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-58.0,5.9
'S Leg, E Side - 25 m',70.0,-130.0,5.9
'S Leg, E Side - 50 m',70.0,-212.0,5.9
'S Leg, E Side-Midblk',70.0,-648.0,5.9
'S Leg, W Side-Corner',-94.0,-58.0,5.9
'S Leg, W Side - 25 m',-94.0,-130.0,5.9
'S Leg, W Side - 50 m',-94.0,-212.0,5.9
'S Leg, W Side-Midblk',-94.0,-648.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-166.0,58.0,5.9
'W Leg, N Side - 50 m',-248.0,58.0,5.9
'W Leg, N Side-Midblk',-684.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-58.0,5.9
'E Leg, S Side - 50 m',224.0,-58.0,5.9
'E Leg, S Side-Midblk',660.0,-58.0,5.9
'W Leg, S Side - 25 m',-166.0,-58.0,5.9
'W Leg, S Side - 50 m',-248.0,-58.0,5.9
'W Leg, S Side-Midblk',-684.0,-58.0,5.9
'2022 - I95 and US17 (Exit 133)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-42,0,-42,1200,16800,6.01,0.0,103.7
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,12000,2.87,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,12000,6.01,0.0,79.7
1
'S Leg Dep - FreeFlow','AG',-42,0,-42,-1200,16800,2.87,0.0,103.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,9600,5.40,0.0,67.7
1
'E Leg Dep - FreeFlow','AG',0,-24,1200,-24,9600,2.65,0.0,67.7
1
```

```
'W Leg App - FreeFlow','AG',0,-24,-1200,-24,9600,5.40,0.0,67.7
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,9600,2.65,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
                              2022 I95 and US 17 OUT
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
^                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: FredEx AQ Analysis                                   RUN: 2022 - I95 and
US17 (Exit 133)

      DATE :  8/15/17
      TIME : 11:25: 2

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -42.0       0.0     -42.0    1200.0 *    1200.
360. AG  16800.   6.0   0.0 ****
       2. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG  12000.   2.9   0.0 79.7
       3. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG  12000.   6.0   0.0 79.7
       4. S Leg Dep - FreeFlow*    -42.0       0.0     -42.0   -1200.0 *    1200.
180. AG  16800.   2.9   0.0 ****
       5. E Leg App - FreeFlow*      0.0      24.0    1200.0      24.0 *    1200.
90. AG   9600.   5.4   0.0 67.7
       6. E Leg Dep - FreeFlow*      0.0     -24.0    1200.0     -24.0 *    1200.
90. AG   9600.   2.7   0.0 67.7
       7. W Leg App - FreeFlow*      0.0     -24.0   -1200.0     -24.0 *    1200.
270. AG   9600.   5.4   0.0 67.7
       8. W Leg Dep - FreeFlow*      0.0      24.0   -1200.0      24.0 *    1200.
270. AG   9600.   2.7   0.0 67.7
^
                             PAGE  2
      JOB: FredEx AQ Analysis                                   RUN: 2022 - I95 and
```

DATE : 8/15/17
TIME : 11:25: 2

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	70.0	58.0	5.9
2. N Leg, E Side - 25 m	70.0	130.0	5.9
3. N Leg, E Side - 50 m	70.0	212.0	5.9
4. N Leg, E Side-Midblk	70.0	648.0	5.9
5. N Leg, W Side-Corner	-94.0	58.0	5.9
6. N Leg, W Side - 25 m	-94.0	130.0	5.9
7. N Leg, W Side - 50 m	-94.0	212.0	5.9
8. N Leg, W Side-Midblk	-94.0	648.0	5.9
9. S Leg, E Side-Corner	70.0	-58.0	5.9
10. S Leg, E Side - 25 m	70.0	-130.0	5.9
11. S Leg, E Side - 50 m	70.0	-212.0	5.9
12. S Leg, E Side-Midblk	70.0	-648.0	5.9
13. S Leg, W Side-Corner	-94.0	-58.0	5.9
14. S Leg, W Side - 25 m	-94.0	-130.0	5.9
15. S Leg, W Side - 50 m	-94.0	-212.0	5.9
16. S Leg, W Side-Midblk	-94.0	-648.0	5.9
17. E Leg, N Side - 25 m	142.0	58.0	5.9
18. E Leg, N Side - 50 m	224.0	58.0	5.9
19. E Leg, N Side-Midblk	660.0	58.0	5.9
20. W Leg, N Side - 25 m	-166.0	58.0	5.9
21. W Leg, N Side - 50 m	-248.0	58.0	5.9
22. W Leg, N Side-Midblk	-684.0	58.0	5.9
23. E Leg, S Side - 25 m	142.0	-58.0	5.9
24. E Leg, S Side - 50 m	224.0	-58.0	5.9
25. E Leg, S Side-Midblk	660.0	-58.0	5.9
26. W Leg, S Side - 25 m	-166.0	-58.0	5.9

```
     27. W Leg, S Side - 50 m *      -248.0      -58.0        5.9   *
     28. W Leg, S Side-Midblk *      -684.0      -58.0        5.9   *
```



```
      JOB: FredEx AQ Analysis                                   RUN: 2022 - I95 and
US17 (Exit 133)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
---------------------------------------
   5.  *  1.7000  1.6000  1.5000  1.2000  4.5000  4.4000  4.4000  3.7000  3.8000
3.3000  3.2000  3.1000  6.0000  4.8000  4.0000
  10.  *  1.0000  1.0000  0.9000  0.7000  4.8000  4.8000  4.7000  4.1000  2.9000
2.5000  2.3000  2.1000  6.3000  5.0000  4.4000
  15.  *  0.6000  0.6000  0.6000  0.4000  4.9000  4.9000  4.8000  4.3000  2.3000
1.8000  1.7000  1.4000  6.2000  5.0000  4.3000
  20.  *  0.3000  0.3000  0.3000  0.3000  4.6000  4.6000  4.6000  4.3000  2.2000
1.5000  1.2000  0.9000  5.9000  4.6000  4.1000
  25.  *  0.3000  0.2000  0.2000  0.2000  4.3000  4.3000  4.3000  4.1000  2.0000
1.3000  1.2000  0.7000  5.7000  4.3000  3.9000
  30.  *  0.2000  0.1000  0.1000  0.1000  4.2000  4.1000  4.1000  4.0000  1.9000
1.3000  1.1000  0.6000  5.4000  4.2000  3.7000
  35.  *  0.2000  0.1000  0.1000  0.1000  4.0000  3.9000  3.9000  3.9000  2.0000
1.2000  1.0000  0.6000  5.2000  3.9000  3.5000
  40.  *  0.2000  0.1000  0.1000  0.1000  3.8000  3.7000  3.7000  3.6000  2.0000
1.2000  1.0000  0.5000  5.3000  3.8000  3.2000
  45.  *  0.3000  0.1000  0.1000  0.1000  3.5000  3.4000  3.4000  3.4000  2.2000
1.3000  1.0000  0.5000  5.2000  3.6000  3.4000
  50.  *  0.3000  0.1000  0.1000  0.1000  3.4000  3.3000  3.3000  3.3000  2.1000
1.3000  1.0000  0.5000  5.2000  3.6000  3.1000
  55.  *  0.3000  0.1000  0.1000  0.1000  3.3000  3.2000  3.2000  3.2000  2.2000
1.4000  1.0000  0.5000  5.2000  3.6000  3.1000
  60.  *  0.3000  0.1000  0.1000  0.1000  3.2000  3.0000  3.0000  3.0000  2.3000
1.3000  0.9000  0.3000  5.3000  3.5000  3.0000
```

```
  65.  *  0.4000  0.1000  0.1000  0.1000  3.2000  2.9000  2.9000  2.9000  2.4000
1.3000  0.9000  0.2000  5.2000  3.3000  2.9000
  70.  *  0.5000  0.0000  0.0000  0.0000  3.2000  2.9000  2.9000  2.9000  2.4000
1.3000  0.9000  0.1000  5.5000  3.3000  2.9000
  75.  *  0.8000  0.0000  0.0000  0.0000  3.5000  3.0000  2.9000  2.9000  2.5000
1.2000  0.7000  0.0000  5.3000  3.3000  2.8000
  80.  *  1.3000  0.1000  0.0000  0.0000  4.1000  3.1000  3.0000  3.0000  2.4000
1.0000  0.5000  0.0000  5.3000  3.2000  2.7000
  85.  *  2.0000  0.4000  0.1000  0.0000  4.8000  3.5000  3.2000  3.1000  2.2000
0.7000  0.3000  0.0000  5.0000  3.0000  2.6000
  90.  *  2.6000  0.6000  0.2000  0.0000  5.3000  3.8000  3.5000  3.2000  1.8000
0.5000  0.2000  0.0000  4.7000  2.8000  2.5000
  95.  *  3.0000  0.9000  0.4000  0.0000  5.8000  4.0000  3.5000  3.1000  1.3000
0.2000  0.0000  0.0000  3.8000  2.5000  2.3000
 100.  *  3.2000  1.1000  0.5000  0.0000  5.8000  4.2000  3.7000  3.0000  0.8000
0.2000  0.0000  0.0000  3.3000  2.4000  2.2000
 105.  *  3.3000  1.3000  0.7000  0.0000  5.9000  4.2000  3.7000  2.9000  0.5000
0.0000  0.0000  0.0000  2.9000  2.1000  2.1000
 110.  *  3.0000  1.4000  0.8000  0.1000  5.6000  4.3000  3.7000  3.0000  0.3000
0.1000  0.1000  0.1000  2.6000  2.1000  2.1000
 115.  *  2.9000  1.5000  1.0000  0.2000  5.7000  4.3000  3.8000  3.1000  0.3000
0.1000  0.1000  0.1000  2.5000  2.2000  2.2000
 120.  *  2.8000  1.5000  1.0000  0.3000  5.4000  4.3000  3.9000  3.3000  0.2000
0.1000  0.1000  0.1000  2.5000  2.2000  2.2000
 125.  *  2.6000  1.3000  1.0000  0.4000  5.4000  4.3000  4.0000  3.5000  0.3000
0.2000  0.2000  0.2000  2.6000  2.3000  2.3000
 130.  *  2.5000  1.3000  0.9000  0.4000  5.4000  4.7000  4.2000  3.6000  0.3000
0.2000  0.2000  0.2000  2.6000  2.4000  2.4000
 135.  *  2.4000  1.3000  0.9000  0.4000  5.4000  4.7000  4.3000  3.7000  0.3000
0.2000  0.2000  0.2000  2.7000  2.5000  2.5000
 140.  *  2.3000  1.2000  0.9000  0.4000  5.4000  4.9000  4.5000  3.9000  0.3000
0.2000  0.2000  0.2000  2.8000  2.7000  2.7000
 145.  *  2.2000  1.2000  0.9000  0.4000  5.4000  5.1000  4.8000  4.2000  0.4000
0.3000  0.3000  0.3000  2.9000  2.8000  2.8000
 150.  *  2.2000  1.2000  0.8000  0.4000  5.5000  5.2000  5.0000  4.5000  0.4000
0.3000  0.3000  0.3000  3.0000  2.9000  2.9000
 155.  *  2.3000  1.3000  1.0000  0.5000  5.5000  5.3000  5.0000  4.7000  0.4000
0.4000  0.4000  0.4000  3.2000  3.1000  3.0000
 160.  *  2.3000  1.5000  1.1000  0.7000  5.6000  5.5000  5.5000  4.9000  0.6000
0.6000  0.6000  0.6000  3.2000  3.1000  3.1000
 165.  *  2.8000  2.0000  1.4000  0.9000  5.6000  5.3000  5.5000  5.5000  1.1000
1.0000  1.0000  0.9000  3.2000  3.2000  3.2000
 170.  *  3.4000  2.4000  1.9000  1.6000  5.4000  5.2000  5.3000  5.4000  1.6000
1.6000  1.6000  1.4000  3.1000  3.0000  3.0000
 175.  *  4.2000  3.1000  2.5000  2.2000  5.1000  4.8000  4.7000  4.9000  2.5000
2.5000  2.4000  2.0000  2.7000  2.7000  2.6000
 180.  *  5.1000  3.9000  3.4000  3.1000  4.6000  4.1000  4.1000  4.3000  3.4000
3.3000  3.2000  2.8000  2.2000  2.2000  2.1000
```

```
 185.  *  5.6000  4.3000  3.9000  3.6000  3.7000  3.2000  3.2000  3.3000  4.0000
3.9000  3.9000  3.3000  1.6000  1.5000  1.5000
 190.  *  5.8000  4.6000  4.1000  3.9000  2.9000  2.5000  2.4000  2.2000  4.3000
4.3000  4.3000  3.8000  1.0000  0.9000  0.9000
 195.  *  5.8000  4.5000  4.1000  3.9000  2.4000  2.0000  1.7000  1.5000  4.4000
4.3000  4.3000  3.9000  0.5000  0.5000  0.5000
 200.  *  5.5000  4.4000  3.8000  3.8000  2.2000  1.5000  1.2000  1.0000  4.2000
4.2000  4.2000  3.9000  0.3000  0.3000  0.3000
 205.  *  5.2000  4.3000  3.9000  3.8000  2.0000  1.5000  1.2000  0.8000  4.0000
4.0000  4.0000  3.8000  0.3000  0.2000  0.2000
 210.  *  5.2000  4.0000  3.7000  3.5000  1.9000  1.3000  1.1000  0.7000  3.9000
3.7000  3.7000  3.7000  0.3000  0.2000  0.2000

                              PAGE  4
     JOB: FredEx AQ Analysis                                   RUN: 2022 - I95 and
US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  5.0000  3.9000  3.7000  3.4000  1.9000  1.3000  1.1000  0.6000  3.6000
3.5000  3.5000  3.5000  0.3000  0.2000  0.2000
 220.  *  4.9000  3.8000  3.8000  3.4000  1.9000  1.3000  1.1000  0.6000  3.4000
3.4000  3.4000  3.4000  0.2000  0.1000  0.1000
 225.  *  4.9000  3.8000  3.7000  3.2000  2.1000  1.4000  1.1000  0.6000  3.3000
3.2000  3.2000  3.2000  0.3000  0.1000  0.1000
 230.  *  5.1000  3.9000  3.7000  3.1000  2.1000  1.4000  1.1000  0.6000  3.1000
3.0000  3.0000  3.0000  0.3000  0.1000  0.1000
 235.  *  5.1000  3.8000  3.5000  3.0000  2.2000  1.4000  1.0000  0.5000  3.0000
2.9000  2.9000  2.9000  0.3000  0.1000  0.1000
 240.  *  5.2000  3.7000  3.5000  3.0000  2.3000  1.4000  1.0000  0.4000  3.0000
2.8000  2.8000  2.8000  0.3000  0.1000  0.1000
 245.  *  5.4000  3.7000  3.4000  2.8000  2.4000  1.4000  1.0000  0.3000  2.9000
2.7000  2.7000  2.7000  0.4000  0.1000  0.1000
 250.  *  5.4000  3.7000  3.3000  2.7000  2.4000  1.3000  0.9000  0.1000  3.0000
2.7000  2.7000  2.7000  0.6000  0.1000  0.1000
 255.  *  5.5000  3.7000  3.2000  2.5000  2.5000  1.3000  0.8000  0.1000  3.4000
2.8000  2.7000  2.7000  0.8000  0.0000  0.0000
 260.  *  5.4000  3.5000  3.0000  2.5000  2.4000  0.9000  0.5000  0.0000  3.9000
2.8000  2.7000  2.7000  1.3000  0.1000  0.0000
 265.  *  5.2000  3.3000  3.0000  2.6000  2.2000  0.7000  0.3000  0.0000  4.5000
3.2000  2.9000  2.8000  2.0000  0.4000  0.1000
```

```
 270.  *  4.8000  3.1000  2.8000  2.6000  1.8000  0.4000  0.2000  0.0000  5.1000
3.5000  3.2000  2.9000  2.6000  0.6000  0.2000
 275.  *  4.2000  2.8000  2.6000  2.6000  1.3000  0.2000  0.0000  0.0000  5.6000
3.7000  3.2000  2.8000  3.0000  0.9000  0.4000
 280.  *  3.5000  2.7000  2.5000  2.5000  0.8000  0.2000  0.0000  0.0000  5.7000
3.9000  3.4000  2.7000  3.2000  1.1000  0.5000
 285.  *  3.1000  2.5000  2.5000  2.5000  0.6000  0.1000  0.1000  0.1000  5.6000
4.0000  3.5000  2.7000  3.2000  1.3000  0.7000
 290.  *  3.0000  2.6000  2.6000  2.6000  0.3000  0.1000  0.1000  0.1000  5.5000
4.2000  3.5000  2.8000  3.0000  1.5000  0.9000
 295.  *  2.9000  2.6000  2.6000  2.6000  0.4000  0.2000  0.2000  0.2000  5.4000
4.2000  3.6000  2.9000  2.9000  1.5000  0.9000
 300.  *  2.9000  2.7000  2.7000  2.7000  0.3000  0.2000  0.2000  0.2000  5.4000
4.3000  3.7000  3.1000  2.8000  1.5000  1.0000
 305.  *  2.9000  2.7000  2.7000  2.7000  0.3000  0.2000  0.2000  0.2000  5.4000
4.2000  3.8000  3.2000  2.6000  1.3000  1.0000
 310.  *  3.0000  2.8000  2.8000  2.8000  0.4000  0.3000  0.3000  0.3000  5.2000
4.4000  3.9000  3.3000  2.5000  1.3000  0.9000
 315.  *  3.1000  2.9000  2.9000  2.9000  0.4000  0.3000  0.3000  0.3000  5.5000
4.6000  4.1000  3.5000  2.4000  1.3000  0.9000
 320.  *  3.2000  3.1000  3.1000  3.1000  0.4000  0.3000  0.3000  0.3000  5.5000
4.9000  4.3000  3.7000  2.3000  1.2000  0.9000
 325.  *  3.2000  3.1000  3.1000  3.1000  0.4000  0.3000  0.3000  0.3000  5.6000
5.1000  4.6000  3.8000  2.2000  1.2000  0.9000
 330.  *  3.4000  3.3000  3.3000  3.2000  0.5000  0.4000  0.4000  0.4000  5.6000
5.2000  4.9000  4.1000  2.2000  1.3000  0.9000
 335.  *  3.5000  3.4000  3.4000  3.3000  0.5000  0.5000  0.5000  0.5000  5.8000
5.4000  5.1000  4.3000  2.3000  1.4000  1.0000
 340.  *  3.5000  3.5000  3.5000  3.2000  0.7000  0.7000  0.7000  0.7000  5.9000
5.5000  5.2000  4.7000  2.4000  1.6000  1.1000
 345.  *  3.6000  3.6000  3.5000  3.0000  1.1000  1.1000  1.1000  1.0000  5.9000
5.7000  5.6000  5.0000  2.8000  1.9000  1.4000
 350.  *  3.5000  3.4000  3.3000  2.7000  1.9000  1.9000  1.8000  1.5000  5.7000
5.5000  5.4000  5.1000  3.6000  2.6000  2.1000
 355.  *  3.0000  2.9000  2.9000  2.2000  2.7000  2.7000  2.7000  2.3000  5.4000
5.0000  4.9000  4.7000  4.6000  3.5000  2.8000
 360.  *  2.4000  2.3000  2.3000  1.7000  3.8000  3.7000  3.6000  3.1000  4.6000
4.2000  4.0000  4.0000  5.6000  4.2000  3.6000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  5.8000  4.6000  4.1000  3.9000  5.9000  5.5000  5.5000  5.5000  5.9000
5.7000  5.6000  5.1000  6.3000  5.0000  4.4000
 DEGR. *    190     190     190     195     105     160     160     165     345
345     345     350      10      10      10
```

JOB: FredEx AQ Analysis RUN: 2022 - I95 and US17 (Exit 133)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	3.4000	0.4000	0.2000	0.0000	1.4000	0.6000	0.0000	2.1000	1.9000	1.7000	3.5000	2.7000	2.0000
10.	3.7000	0.2000	0.0000	0.0000	1.9000	0.9000	0.0000	1.8000	1.6000	1.6000	3.9000	3.0000	2.0000
15.	3.9000	0.0000	0.0000	0.0000	2.1000	1.2000	0.0000	1.6000	1.6000	1.6000	4.1000	3.2000	2.0000
20.	3.5000	0.0000	0.0000	0.0000	2.3000	1.5000	0.1000	1.7000	1.7000	1.7000	4.2000	3.4000	2.0000
25.	3.4000	0.1000	0.1000	0.1000	2.3000	1.5000	0.2000	1.7000	1.7000	1.7000	4.2000	3.5000	2.3000
30.	3.1000	0.1000	0.1000	0.1000	2.3000	1.6000	0.5000	1.7000	1.7000	1.7000	4.2000	3.5000	2.4000
35.	3.1000	0.1000	0.1000	0.1000	2.3000	1.6000	0.6000	1.8000	1.8000	1.8000	4.1000	3.6000	2.6000
40.	3.0000	0.1000	0.1000	0.1000	2.2000	1.6000	0.6000	1.8000	1.8000	1.8000	4.3000	3.7000	2.8000
45.	2.8000	0.2000	0.2000	0.2000	2.2000	1.6000	0.7000	2.0000	2.0000	1.9000	4.2000	3.7000	2.9000
50.	2.7000	0.2000	0.2000	0.2000	2.1000	1.5000	0.7000	2.0000	2.0000	2.0000	4.2000	3.8000	3.0000
55.	2.6000	0.2000	0.2000	0.2000	2.1000	1.5000	0.7000	2.1000	2.1000	2.1000	4.4000	3.8000	3.1000
60.	2.5000	0.2000	0.2000	0.2000	2.1000	1.5000	0.7000	2.2000	2.1000	2.1000	4.4000	4.0000	3.3000
65.	2.4000	0.3000	0.3000	0.3000	2.2000	1.5000	0.8000	2.3000	2.3000	2.2000	4.7000	4.2000	3.5000
70.	2.2000	0.5000	0.5000	0.5000	2.3000	1.7000	0.8000	2.4000	2.4000	2.3000	4.8000	4.4000	3.6000

75. * 2.1000 0.8000 0.8000 0.7000 2.4000 1.9000 1.1000 2.5000 2.5000
2.2000 5.0000 4.6000 3.9000
80. * 2.2000 1.3000 1.3000 1.2000 2.9000 2.2000 1.5000 2.4000 2.4000
2.0000 4.6000 4.5000 4.1000
85. * 2.2000 1.9000 1.9000 1.6000 3.3000 2.8000 2.1000 2.2000 2.1000
1.7000 4.6000 4.2000 3.8000
90. * 2.3000 2.6000 2.5000 2.2000 3.9000 3.3000 2.5000 1.7000 1.7000
1.4000 4.0000 3.7000 3.2000
95. * 2.2000 3.0000 2.9000 2.6000 4.3000 3.7000 2.9000 1.3000 1.2000
0.9000 3.2000 3.0000 2.5000
100. * 2.2000 3.2000 3.2000 2.9000 4.4000 3.9000 3.0000 0.8000 0.8000
0.6000 2.6000 2.3000 1.9000
105. * 2.1000 3.2000 3.2000 3.0000 4.4000 3.7000 3.2000 0.5000 0.5000
0.3000 2.1000 1.9000 1.3000
110. * 2.1000 3.0000 3.0000 2.9000 4.1000 3.5000 3.0000 0.2000 0.2000
0.2000 1.9000 1.5000 1.0000
115. * 2.2000 2.9000 2.9000 2.8000 4.0000 3.5000 2.8000 0.2000 0.2000
0.2000 1.8000 1.4000 0.8000
120. * 2.2000 2.7000 2.7000 2.7000 3.7000 3.3000 2.6000 0.1000 0.1000
0.1000 1.8000 1.3000 0.7000
125. * 2.3000 2.5000 2.5000 2.5000 3.6000 3.3000 2.6000 0.1000 0.1000
0.1000 1.8000 1.3000 0.7000
130. * 2.4000 2.4000 2.4000 2.4000 3.7000 3.0000 2.5000 0.1000 0.1000
0.1000 1.8000 1.3000 0.7000
135. * 2.5000 2.3000 2.3000 2.3000 3.7000 3.0000 2.4000 0.1000 0.1000
0.1000 1.8000 1.4000 0.7000
140. * 2.6000 2.2000 2.2000 2.2000 3.4000 3.0000 2.3000 0.1000 0.1000
0.1000 1.7000 1.3000 0.6000
145. * 2.8000 2.1000 2.1000 2.1000 3.6000 3.1000 2.2000 0.1000 0.1000
0.1000 1.8000 1.4000 0.5000
150. * 2.8000 2.0000 2.0000 2.0000 3.4000 3.0000 2.1000 0.1000 0.1000
0.1000 1.9000 1.4000 0.3000
155. * 2.8000 2.0000 2.0000 2.0000 3.5000 2.9000 1.9000 0.0000 0.0000
0.0000 1.9000 1.3000 0.3000
160. * 2.8000 1.9000 1.9000 1.9000 3.4000 2.9000 1.9000 0.0000 0.0000
0.0000 1.7000 1.2000 0.0000
165. * 2.8000 2.0000 1.9000 1.9000 3.3000 2.6000 1.6000 0.1000 0.0000
0.0000 1.6000 0.9000 0.0000
170. * 2.5000 2.2000 2.0000 2.0000 3.0000 2.3000 1.6000 0.2000 0.0000
0.0000 1.3000 0.7000 0.0000
175. * 2.1000 2.5000 2.1000 2.0000 2.7000 2.2000 1.7000 0.5000 0.1000
0.0000 1.0000 0.5000 0.0000
180. * 1.7000 3.0000 2.5000 2.1000 2.4000 2.0000 1.7000 0.8000 0.3000
0.0000 0.6000 0.2000 0.0000
185. * 1.1000 3.3000 2.6000 2.0000 2.0000 1.8000 1.7000 1.2000 0.5000
0.0000 0.3000 0.1000 0.0000
190. * 0.7000 3.7000 2.9000 2.0000 1.7000 1.6000 1.6000 1.6000 0.8000
0.0000 0.1000 0.0000 0.0000

```
 195.  *  0.5000  3.9000  3.1000  2.0000  1.6000  1.6000  1.6000  1.9000  1.0000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.3000  3.9000  3.2000  2.0000  1.7000  1.7000  1.7000  2.0000  1.2000
0.1000  0.0000  0.0000  0.0000
 205.  *  0.2000  4.0000  3.4000  2.3000  1.7000  1.7000  1.7000  2.0000  1.4000
0.2000  0.1000  0.1000  0.1000
 210.  *  0.2000  3.9000  3.4000  2.3000  1.7000  1.7000  1.7000  2.0000  1.5000
0.4000  0.1000  0.1000  0.1000
```

PAGE 6

JOB: FredEx AQ Analysis RUN: 2022 - I95 and US17 (Exit 133)

```
 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*---------------------------------------------------------------------------------
---------------------------
 215.  *  0.2000  3.9000  3.5000  2.6000  1.8000  1.8000  1.8000  2.0000  1.5000
0.6000  0.1000  0.1000  0.1000
 220.  *  0.1000  4.1000  3.5000  2.7000  1.8000  1.8000  1.8000  1.9000  1.4000
0.6000  0.1000  0.1000  0.1000
 225.  *  0.1000  4.0000  3.5000  2.8000  2.0000  2.0000  1.9000  1.9000  1.4000
0.6000  0.2000  0.2000  0.2000
 230.  *  0.1000  4.0000  3.6000  2.9000  2.0000  2.0000  2.0000  1.8000  1.3000
0.6000  0.2000  0.2000  0.2000
 235.  *  0.1000  4.3000  3.7000  3.0000  2.1000  2.1000  2.1000  1.8000  1.3000
0.6000  0.2000  0.2000  0.2000
 240.  *  0.1000  4.2000  4.1000  3.2000  2.2000  2.1000  2.1000  1.8000  1.3000
0.6000  0.2000  0.2000  0.2000
 245.  *  0.1000  4.6000  4.0000  3.4000  2.3000  2.3000  2.2000  1.9000  1.2000
0.7000  0.3000  0.3000  0.3000
 250.  *  0.1000  4.8000  4.2000  3.6000  2.4000  2.4000  2.3000  2.1000  1.4000
0.7000  0.5000  0.5000  0.5000
 255.  *  0.0000  4.8000  4.4000  3.9000  2.5000  2.5000  2.2000  2.2000  1.7000
1.1000  0.8000  0.8000  0.7000
 260.  *  0.0000  4.9000  4.5000  3.9000  2.4000  2.4000  2.0000  2.6000  2.1000
1.4000  1.3000  1.3000  1.2000
 265.  *  0.0000  4.6000  4.2000  3.9000  2.2000  2.1000  1.7000  3.2000  2.8000
2.1000  1.9000  1.9000  1.6000
 270.  *  0.0000  4.0000  3.8000  3.4000  1.7000  1.7000  1.4000  3.7000  3.1000
2.4000  2.5000  2.5000  2.2000
 275.  *  0.0000  3.3000  2.9000  2.5000  1.3000  1.2000  0.9000  4.1000  3.7000
3.0000  3.0000  2.9000  2.6000
```

```
 280.  *  0.0000  2.8000  2.5000  1.9000  0.8000  0.8000  0.6000  4.4000  3.8000
3.1000  3.2000  3.2000  2.8000
 285.  *  0.0000  2.5000  2.1000  1.3000  0.5000  0.5000  0.3000  4.3000  3.8000
3.2000  3.2000  3.2000  3.0000
 290.  *  0.1000  2.1000  1.6000  1.1000  0.2000  0.2000  0.2000  4.2000  3.6000
3.0000  3.0000  3.0000  2.8000
 295.  *  0.2000  2.0000  1.6000  0.9000  0.2000  0.2000  0.2000  4.0000  3.5000
2.8000  2.9000  2.9000  2.7000
 300.  *  0.3000  1.9000  1.5000  0.8000  0.1000  0.1000  0.1000  3.9000  3.3000
2.7000  2.7000  2.7000  2.6000
 305.  *  0.4000  1.9000  1.5000  0.8000  0.1000  0.1000  0.1000  3.8000  3.5000
2.7000  2.5000  2.5000  2.5000
 310.  *  0.4000  1.9000  1.5000  0.9000  0.1000  0.1000  0.1000  3.7000  3.2000
2.7000  2.4000  2.4000  2.4000
 315.  *  0.4000  2.1000  1.6000  0.8000  0.1000  0.1000  0.1000  3.8000  3.3000
2.5000  2.3000  2.3000  2.3000
 320.  *  0.4000  2.0000  1.5000  0.6000  0.1000  0.1000  0.1000  3.7000  3.2000
2.4000  2.2000  2.2000  2.2000
 325.  *  0.5000  2.0000  1.5000  0.5000  0.1000  0.1000  0.1000  3.8000  3.2000
2.3000  2.1000  2.1000  2.1000
 330.  *  0.5000  2.0000  1.5000  0.4000  0.1000  0.1000  0.1000  3.7000  3.1000
2.1000  2.0000  2.0000  2.0000
 335.  *  0.5000  2.1000  1.5000  0.3000  0.0000  0.0000  0.0000  3.7000  3.1000
2.0000  2.0000  2.0000  2.0000
 340.  *  0.7000  2.0000  1.3000  0.1000  0.0000  0.0000  0.0000  3.6000  2.9000
1.9000  1.9000  1.9000  1.9000
 345.  *  1.0000  1.8000  1.1000  0.0000  0.1000  0.0000  0.0000  3.4000  2.8000
1.6000  2.0000  1.9000  1.9000
 350.  *  1.6000  1.5000  0.8000  0.0000  0.2000  0.0000  0.0000  3.2000  2.5000
1.6000  2.2000  2.1000  2.0000
 355.  *  2.2000  1.1000  0.5000  0.0000  0.5000  0.1000  0.0000  2.9000  2.2000
1.7000  2.6000  2.2000  2.0000
 360.  *  3.1000  0.7000  0.2000  0.0000  0.9000  0.3000  0.0000  2.4000  2.0000
1.7000  3.1000  2.4000  2.1000

------*--------------------------------------------------------------------------
--------------------------
 MAX   *  3.9000  4.9000  4.5000  3.9000  4.4000  3.9000  3.2000  4.4000  3.8000
3.2000  5.0000  4.6000  4.1000
 DEGR. *     15     260     260     265     100     100     105     280     285
285      75      75      80

 THE HIGHEST CONCENTRATION OF   6.3000 PPM OCCURRED AT RECEPTOR    13.
```

2022 NoBuild I95 and SR610 IN

```
Q,EPA,,F,,0,T,T,F,F,0.78,
4,6,5,3,1300,1100,588,733.333333333333,1300,1100,588,733.333333333333,1036.8,1036.8,
1036.8,1036.8,1036.8,1036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0
,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0,0,0,-15,0,10,10,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',58.0,36.5,5.9
'N Leg, E Side - 25 m',58.0,108.5,5.9
'N Leg, E Side - 50 m',58.0,190.5,5.9
'N Leg, E Side-Midblk',58.0,626.5,5.9
'N Leg, W Side-Corner',-82.0,61.2,5.9
'N Leg, W Side - 25 m',-82.0,133.2,5.9
'N Leg, W Side - 50 m',-82.0,215.2,5.9
'N Leg, W Side-Midblk',-82.0,651.2,5.9
'S Leg, E Side-Corner',83.0,-85.7,5.9
'S Leg, E Side - 25 m',101.7,-155.3,5.9
'S Leg, E Side - 50 m',122.9,-234.5,5.9
'S Leg, E Side-Midblk',235.7,-655.6,5.9
'S Leg, W Side-Corner',-69.1,-58.9,5.9
'S Leg, W Side - 25 m',-50.5,-128.5,5.9
'S Leg, W Side - 50 m',-29.2,-207.7,5.9
'S Leg, W Side-Midblk',83.6,-628.8,5.9
'E Leg, N Side - 25 m',128.9,24.0,5.9
'E Leg, N Side - 50 m',209.7,9.7,5.9
'E Leg, N Side-Midblk',639.0,-66.0,5.9
'W Leg, N Side - 25 m',-152.9,73.7,5.9
'W Leg, N Side - 50 m',-233.7,87.9,5.9
'W Leg, N Side-Midblk',-663.0,163.6,5.9
'E Leg, S Side - 25 m',153.9,-98.2,5.9
'E Leg, S Side - 50 m',234.7,-112.5,5.9
'E Leg, S Side-Midblk',664.1,-188.2,5.9
'W Leg, S Side - 25 m',-140.0,-46.4,5.9
'W Leg, S Side - 50 m',-220.8,-32.1,5.9
'W Leg, S Side-Midblk',-650.1,43.6,5.9
'2022 NO BUILD-I95 and SR 610 (Exit 143)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-36,-5,-36,1200,6600,6.01,0.0,91.7
1
'N Leg Dep - FreeFlow','AG',24,3,24,1200,5200,2.87,0.0,67.7
1
'S Leg App - FreeFlow','AG',24,3,334,-1153,5200,6.01,0.0,67.7
1
'S Leg Dep - FreeFlow','AG',-36,-5,276,-1168,6600,2.87,0.0,91.7
1
'E Leg App - FreeFlow','AG',3,18,1185,-191,2200,5.57,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',-5,-30,1177,-238,2940,2.83,0.0,79.7
1
```

'W Leg App - FreeFlow','AG',-5,-30,-1187,179,2940,5.57,0.0,79.7
1
'W Leg Dep - FreeFlow','AG',3,18,-1179,226,2200,2.83,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72

2022 NoBuild I95 and SR610 OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface
↑ CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: FredEx AQ Analysis RUN: 2022 NO BUILD-I95 and SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11:19: 6

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-36.0	-5.0	-36.0	1200.0	1205.	360.	AG	6600.	6.0	0.0	91.7		
2. N Leg Dep - FreeFlow	24.0	3.0	24.0	1200.0	1197.	360.	AG	5200.	2.9	0.0	67.7		
3. S Leg App - FreeFlow	24.0	3.0	334.0	-1153.0	1197.	165.	AG	5200.	6.0	0.0	67.7		
4. S Leg Dep - FreeFlow	-36.0	-5.0	276.0	-1168.0	1204.	165.	AG	6600.	2.9	0.0	91.7		
5. E Leg App - FreeFlow	3.0	18.0	1185.0	-191.0	1200.	100.	AG	2200.	5.6	0.0	55.7		
6. E Leg Dep - FreeFlow	-5.0	-30.0	1177.0	-238.0	1200.	100.	AG	2940.	2.8	0.0	79.7		
7. W Leg App - FreeFlow	-5.0	-30.0	-1187.0	179.0	1200.	280.	AG	2940.	5.6	0.0	79.7		
8. W Leg Dep - FreeFlow	3.0	18.0	-1179.0	226.0	1200.	280.	AG	2200.	2.8	0.0	55.7		

↑
PAGE 2
JOB: FredEx AQ Analysis RUN: 2022 NO

2022 NoBuild I95 and SR610 OUT
BUILD-I95 and SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11:19: 6

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. N Leg, E Side-Corner	*	58.0	36.5	5.9	*
2. N Leg, E Side - 25 m	*	58.0	108.5	5.9	*
3. N Leg, E Side - 50 m	*	58.0	190.5	5.9	*
4. N Leg, E Side-Midblk	*	58.0	626.5	5.9	*
5. N Leg, W Side-Corner	*	-82.0	61.2	5.9	*
6. N Leg, W Side - 25 m	*	-82.0	133.2	5.9	*
7. N Leg, W Side - 50 m	*	-82.0	215.2	5.9	*
8. N Leg, W Side-Midblk	*	-82.0	651.2	5.9	*
9. S Leg, E Side-Corner	*	83.0	-85.7	5.9	*
10. S Leg, E Side - 25 m	*	101.7	-155.3	5.9	*
11. S Leg, E Side - 50 m	*	122.9	-234.5	5.9	*
12. S Leg, E Side-Midblk	*	235.7	-655.6	5.9	*
13. S Leg, W Side-Corner	*	-69.1	-58.9	5.9	*
14. S Leg, W Side - 25 m	*	-50.5	-128.5	5.9	*
15. S Leg, W Side - 50 m	*	-29.2	-207.7	5.9	*
16. S Leg, W Side-Midblk	*	83.6	-628.8	5.9	*
17. E Leg, N Side - 25 m	*	128.9	24.0	5.9	*
18. E Leg, N Side - 50 m	*	209.7	9.7	5.9	*
19. E Leg, N Side-Midblk	*	639.0	-66.0	5.9	*
20. W Leg, N Side - 25 m	*	-152.9	73.7	5.9	*
21. W Leg, N Side - 50 m	*	-233.7	87.9	5.9	*
22. W Leg, N Side-Midblk	*	-663.0	163.6	5.9	*
23. E Leg, S Side - 25 m	*	153.9	-98.2	5.9	*
24. E Leg, S Side - 50 m	*	234.7	-112.5	5.9	*
25. E Leg, S Side-Midblk	*	664.1	-188.2	5.9	*
26. W Leg, S Side - 25 m	*	-140.0	-46.4	5.9	*

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     27. W Leg, S Side - 50 m *      -220.8      -32.1        5.9   *
     28. W Leg, S Side-Midblk *      -650.1       43.6        5.9   *
```


JOB: FredEx AQ Analysis RUN: 2022 NO BUILD-I95 and SR 610 (Exit 143)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5.	0.8000	0.8000	0.8000	0.6000	1.9000	1.9000	1.9000	1.6000	1.0000	0.7000	0.6000	0.4000	2.4000	2.1000	1.9000
10.	0.6000	0.5000	0.4000	0.4000	2.0000	2.0000	2.0000	1.8000	0.7000	0.6000	0.5000	0.3000	2.6000	2.1000	1.9000
15.	0.3000	0.3000	0.3000	0.2000	2.1000	2.1000	2.1000	1.9000	0.6000	0.3000	0.3000	0.2000	2.5000	1.8000	1.7000
20.	0.1000	0.1000	0.1000	0.1000	2.0000	2.0000	1.9000	1.8000	0.5000	0.3000	0.3000	0.2000	2.3000	1.9000	1.5000
25.	0.1000	0.1000	0.1000	0.1000	1.8000	1.8000	1.8000	1.8000	0.5000	0.3000	0.3000	0.2000	2.0000	1.5000	1.4000
30.	0.1000	0.1000	0.1000	0.1000	1.7000	1.7000	1.7000	1.7000	0.5000	0.3000	0.3000	0.2000	1.9000	1.5000	1.4000
35.	0.1000	0.1000	0.1000	0.1000	1.7000	1.7000	1.7000	1.7000	0.5000	0.3000	0.3000	0.2000	1.9000	1.3000	1.2000
40.	0.0000	0.0000	0.0000	0.0000	1.6000	1.6000	1.6000	1.6000	0.5000	0.3000	0.3000	0.2000	1.8000	1.3000	1.2000
45.	0.0000	0.0000	0.0000	0.0000	1.5000	1.5000	1.5000	1.5000	0.5000	0.3000	0.3000	0.2000	1.7000	1.2000	1.2000
50.	0.0000	0.0000	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	0.5000	0.2000	0.2000	0.0000	1.7000	1.2000	1.2000
55.	0.0000	0.0000	0.0000	0.0000	1.3000	1.3000	1.3000	1.3000	0.5000	0.3000	0.2000	0.0000	1.7000	1.3000	1.2000
60.	0.0000	0.0000	0.0000	0.0000	1.3000	1.2000	1.2000	1.2000	0.5000	0.4000	0.2000	0.0000	1.7000	1.3000	1.2000

```
  65.  *  0.1000  0.0000  0.0000  0.0000  1.2000  1.2000  1.2000  1.2000  0.5000
0.4000  0.2000  0.0000  1.7000  1.4000  1.2000
  70.  *  0.1000  0.0000  0.0000  0.0000  1.2000  1.2000  1.2000  1.2000  0.5000
0.4000  0.2000  0.0000  1.6000  1.4000  1.2000
  75.  *  0.1000  0.0000  0.0000  0.0000  1.2000  1.2000  1.2000  1.2000  0.6000
0.4000  0.2000  0.0000  1.6000  1.4000  1.2000
  80.  *  0.1000  0.0000  0.0000  0.0000  1.3000  1.2000  1.2000  1.2000  0.7000
0.4000  0.2000  0.0000  1.8000  1.4000  1.2000
  85.  *  0.2000  0.0000  0.0000  0.0000  1.5000  1.3000  1.3000  1.3000  0.7000
0.3000  0.2000  0.0000  1.9000  1.4000  1.2000
  90.  *  0.3000  0.0000  0.0000  0.0000  1.6000  1.3000  1.3000  1.3000  0.6000
0.2000  0.2000  0.0000  1.8000  1.2000  1.2000
  95.  *  0.6000  0.1000  0.0000  0.0000  1.8000  1.4000  1.3000  1.3000  0.6000
0.2000  0.0000  0.0000  1.7000  1.2000  1.1000
 100.  *  0.7000  0.1000  0.0000  0.0000  1.8000  1.4000  1.2000  1.2000  0.4000
0.2000  0.0000  0.0000  1.5000  1.2000  1.0000
 105.  *  0.9000  0.3000  0.1000  0.0000  2.1000  1.5000  1.3000  1.2000  0.5000
0.1000  0.1000  0.1000  1.5000  1.0000  1.0000
 110.  *  0.9000  0.3000  0.2000  0.0000  2.1000  1.5000  1.4000  1.2000  0.3000
0.1000  0.1000  0.1000  1.2000  1.0000  1.0000
 115.  *  0.9000  0.3000  0.2000  0.0000  2.1000  1.5000  1.4000  1.2000  0.2000
0.1000  0.1000  0.1000  1.3000  1.0000  1.0000
 120.  *  0.8000  0.3000  0.2000  0.0000  2.2000  1.6000  1.4000  1.2000  0.2000
0.1000  0.1000  0.1000  1.2000  1.1000  1.1000
 125.  *  0.8000  0.3000  0.2000  0.0000  2.3000  1.7000  1.5000  1.3000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 130.  *  0.7000  0.3000  0.2000  0.0000  2.4000  1.8000  1.5000  1.4000  0.1000
0.1000  0.1000  0.1000  1.2000  1.2000  1.2000
 135.  *  0.7000  0.3000  0.2000  0.0000  2.2000  2.1000  1.7000  1.6000  0.1000
0.1000  0.1000  0.1000  1.3000  1.3000  1.3000
 140.  *  0.8000  0.3000  0.2000  0.1000  2.3000  2.0000  1.9000  1.7000  0.2000
0.2000  0.2000  0.2000  1.3000  1.3000  1.3000
 145.  *  0.7000  0.4000  0.3000  0.2000  2.5000  2.4000  2.1000  1.8000  0.3000
0.3000  0.3000  0.3000  1.4000  1.4000  1.4000
 150.  *  0.8000  0.5000  0.4000  0.2000  2.5000  2.6000  2.2000  1.8000  0.5000
0.5000  0.5000  0.4000  1.5000  1.5000  1.4000
 155.  *  1.2000  0.6000  0.4000  0.2000  2.4000  2.6000  2.3000  1.9000  0.8000
0.8000  0.8000  0.6000  1.4000  1.4000  1.4000
 160.  *  1.4000  0.9000  0.7000  0.3000  2.3000  2.3000  2.4000  2.1000  1.2000
1.1000  1.1000  1.0000  1.2000  1.2000  1.2000
 165.  *  1.8000  1.2000  0.8000  0.5000  2.1000  2.3000  2.3000  2.2000  1.6000
1.5000  1.5000  1.3000  1.0000  1.0000  1.0000
 170.  *  2.2000  1.4000  1.1000  0.7000  1.8000  1.9000  2.1000  2.2000  1.9000
1.8000  1.8000  1.6000  0.7000  0.7000  0.7000
 175.  *  2.3000  1.6000  1.4000  1.0000  1.5000  1.6000  1.8000  1.9000  2.0000
2.0000  2.0000  1.8000  0.5000  0.5000  0.5000
 180.  *  2.3000  1.7000  1.5000  1.2000  1.3000  1.3000  1.4000  1.7000  2.0000
2.0000  2.0000  1.8000  0.2000  0.2000  0.2000
```

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 185.  *  2.3000  1.8000  1.5000  1.5000  1.0000  0.9000  1.1000  1.3000  1.9000
1.9000  1.9000  1.8000  0.2000  0.1000  0.1000
 190.  *  2.2000  1.6000  1.5000  1.5000  0.9000  0.8000  0.8000  0.8000  1.8000
1.8000  1.8000  1.7000  0.1000  0.1000  0.1000
 195.  *  2.1000  1.7000  1.5000  1.8000  0.7000  0.6000  0.6000  0.5000  1.7000
1.7000  1.7000  1.7000  0.1000  0.1000  0.1000
 200.  *  2.0000  1.5000  1.6000  1.6000  0.6000  0.5000  0.5000  0.4000  1.6000
1.6000  1.6000  1.6000  0.1000  0.1000  0.1000
 205.  *  1.8000  1.5000  1.4000  1.6000  0.6000  0.5000  0.4000  0.3000  1.5000
1.5000  1.5000  1.5000  0.1000  0.1000  0.1000
 210.  *  1.8000  1.4000  1.6000  1.6000  0.6000  0.4000  0.3000  0.3000  1.5000
1.5000  1.5000  1.5000  0.1000  0.1000  0.1000

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      JOB: FredEx AQ Analysis                                   RUN: 2022 NO
BUILD-I95 and SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
 215.  *  1.8000  1.6000  1.5000  1.5000  0.6000  0.4000  0.4000  0.2000  1.4000
1.4000  1.4000  1.4000  0.1000  0.1000  0.1000
 220.  *  1.8000  1.6000  1.4000  1.4000  0.6000  0.4000  0.4000  0.2000  1.4000
1.4000  1.4000  1.4000  0.0000  0.0000  0.0000
 225.  *  1.8000  1.5000  1.5000  1.4000  0.6000  0.4000  0.4000  0.2000  1.3000
1.3000  1.3000  1.3000  0.0000  0.0000  0.0000
 230.  *  1.9000  1.5000  1.6000  1.4000  0.7000  0.4000  0.4000  0.2000  1.2000
1.2000  1.2000  1.2000  0.0000  0.0000  0.0000
 235.  *  1.7000  1.5000  1.6000  1.3000  0.7000  0.4000  0.4000  0.2000  1.2000
1.2000  1.2000  1.2000  0.1000  0.0000  0.0000
 240.  *  1.9000  1.4000  1.4000  1.2000  0.7000  0.4000  0.4000  0.2000  1.2000
1.2000  1.2000  1.2000  0.1000  0.0000  0.0000
 245.  *  1.7000  1.4000  1.4000  1.2000  0.7000  0.4000  0.4000  0.1000  1.2000
1.2000  1.2000  1.2000  0.1000  0.0000  0.0000
 250.  *  1.7000  1.4000  1.4000  1.1000  0.7000  0.3000  0.3000  0.0000  1.2000
1.2000  1.2000  1.2000  0.1000  0.0000  0.0000
 255.  *  1.8000  1.5000  1.4000  1.1000  0.7000  0.3000  0.3000  0.0000  1.3000
1.3000  1.3000  1.3000  0.1000  0.0000  0.0000
 260.  *  2.0000  1.4000  1.4000  1.1000  0.7000  0.3000  0.3000  0.0000  1.3000
1.2000  1.2000  1.2000  0.1000  0.0000  0.0000
 265.  *  1.9000  1.4000  1.3000  1.1000  0.7000  0.3000  0.2000  0.0000  1.4000
1.2000  1.2000  1.2000  0.2000  0.0000  0.0000
```

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 270.  *  2.0000  1.5000  1.4000  1.2000  0.8000  0.3000  0.1000  0.0000  1.5000
1.3000  1.2000  1.2000  0.4000  0.0000  0.0000
 275.  *  1.8000  1.4000  1.2000  1.1000  0.6000  0.2000  0.1000  0.0000  1.6000
1.3000  1.2000  1.2000  0.5000  0.1000  0.0000
 280.  *  1.8000  1.3000  1.1000  1.1000  0.5000  0.2000  0.0000  0.0000  1.8000
1.4000  1.3000  1.2000  0.8000  0.2000  0.1000
 285.  *  1.6000  1.2000  1.1000  1.1000  0.4000  0.0000  0.0000  0.0000  2.1000
1.6000  1.4000  1.3000  0.9000  0.2000  0.1000
 290.  *  1.4000  1.1000  1.1000  1.1000  0.3000  0.0000  0.0000  0.0000  2.1000
1.8000  1.6000  1.4000  0.9000  0.4000  0.2000
 295.  *  1.3000  1.1000  1.1000  1.1000  0.2000  0.1000  0.1000  0.1000  2.2000
1.8000  1.7000  1.4000  0.9000  0.5000  0.3000
 300.  *  1.2000  1.1000  1.1000  1.1000  0.2000  0.1000  0.1000  0.1000  2.1000
1.8000  1.8000  1.5000  0.8000  0.5000  0.4000
 305.  *  1.4000  1.2000  1.2000  1.2000  0.1000  0.1000  0.1000  0.1000  2.0000
1.9000  1.8000  1.6000  0.8000  0.5000  0.4000
 310.  *  1.3000  1.3000  1.3000  1.3000  0.1000  0.1000  0.1000  0.1000  2.4000
1.9000  2.0000  1.7000  0.7000  0.5000  0.4000
 315.  *  1.3000  1.3000  1.3000  1.3000  0.1000  0.1000  0.1000  0.1000  2.2000
2.1000  1.9000  1.8000  0.7000  0.5000  0.4000
 320.  *  1.3000  1.3000  1.3000  1.3000  0.1000  0.1000  0.1000  0.1000  2.2000
2.1000  2.0000  1.9000  0.7000  0.5000  0.4000
 325.  *  1.4000  1.4000  1.4000  1.4000  0.1000  0.1000  0.1000  0.1000  2.2000
2.2000  2.1000  2.1000  0.6000  0.5000  0.4000
 330.  *  1.5000  1.5000  1.5000  1.4000  0.2000  0.2000  0.2000  0.2000  2.2000
2.1000  2.1000  2.1000  0.8000  0.6000  0.5000
 335.  *  1.6000  1.6000  1.6000  1.4000  0.2000  0.2000  0.2000  0.2000  2.2000
2.2000  2.1000  2.1000  0.9000  0.8000  0.6000
 340.  *  1.6000  1.6000  1.6000  1.5000  0.3000  0.3000  0.3000  0.3000  2.1000
2.0000  2.1000  2.0000  1.0000  0.9000  0.8000
 345.  *  1.7000  1.7000  1.7000  1.4000  0.5000  0.5000  0.5000  0.4000  2.1000
1.9000  1.9000  1.8000  1.2000  1.2000  1.2000
 350.  *  1.6000  1.6000  1.6000  1.3000  0.8000  0.8000  0.7000  0.7000  2.0000
1.7000  1.6000  1.4000  1.6000  1.6000  1.4000
 355.  *  1.4000  1.3000  1.3000  1.1000  1.2000  1.2000  1.2000  0.9000  1.6000
1.3000  1.3000  1.0000  1.9000  1.8000  1.6000
 360.  *  1.2000  1.2000  1.0000  0.9000  1.6000  1.6000  1.5000  1.4000  1.3000
1.0000  0.8000  0.6000  2.2000  2.0000  1.8000

------*-----------------------------------------------------------------------------
-------------------------------------------
 MAX   *  2.3000  1.8000  1.7000  1.8000  2.5000  2.6000  2.4000  2.2000  2.4000
2.2000  2.1000  2.1000  2.6000  2.1000  1.9000
 DEGR. *    175     185     345     195     145     155     160     165     310
325     325     325      10       5       5

                             PAGE   5
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JOB: FredEx AQ Analysis RUN: 2022 NO BUILD-I95 and SR 610 (Exit 143)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	1.6000	0.2000	0.0000	0.0000	0.6000	0.2000	0.0000	0.6000	0.4000	0.4000	1.3000	1.0000	0.6000
10.	1.4000	0.0000	0.0000	0.0000	0.7000	0.4000	0.0000	0.4000	0.4000	0.4000	1.5000	1.1000	0.6000
15.	1.4000	0.0000	0.0000	0.0000	0.9000	0.5000	0.0000	0.4000	0.4000	0.4000	1.6000	1.2000	0.6000
20.	1.2000	0.0000	0.0000	0.0000	0.9000	0.6000	0.0000	0.4000	0.4000	0.4000	1.5000	1.1000	0.6000
25.	1.2000	0.0000	0.0000	0.0000	0.9000	0.6000	0.1000	0.4000	0.4000	0.4000	1.5000	1.1000	0.6000
30.	1.2000	0.0000	0.0000	0.0000	0.9000	0.6000	0.1000	0.4000	0.4000	0.4000	1.5000	1.1000	0.6000
35.	1.1000	0.0000	0.0000	0.0000	0.9000	0.6000	0.1000	0.4000	0.4000	0.4000	1.4000	1.1000	0.7000
40.	1.1000	0.0000	0.0000	0.0000	0.9000	0.6000	0.3000	0.4000	0.4000	0.4000	1.4000	1.2000	0.9000
45.	1.1000	0.0000	0.0000	0.0000	0.9000	0.6000	0.3000	0.4000	0.4000	0.4000	1.4000	1.2000	0.9000
50.	1.1000	0.0000	0.0000	0.0000	0.8000	0.5000	0.3000	0.5000	0.5000	0.5000	1.4000	1.1000	0.9000
55.	1.1000	0.0000	0.0000	0.0000	0.8000	0.5000	0.3000	0.5000	0.5000	0.5000	1.5000	1.1000	0.9000
60.	1.0000	0.0000	0.0000	0.0000	0.8000	0.5000	0.3000	0.5000	0.5000	0.5000	1.5000	1.1000	1.0000
65.	1.0000	0.1000	0.1000	0.0000	0.8000	0.5000	0.3000	0.5000	0.5000	0.5000	1.4000	1.2000	1.0000
70.	1.0000	0.1000	0.1000	0.1000	0.8000	0.5000	0.3000	0.5000	0.5000	0.5000	1.5000	1.2000	1.0000

```
  75.  *  1.0000  0.1000  0.1000  0.1000  0.8000  0.5000  0.3000  0.6000  0.6000
0.5000  1.5000  1.4000  1.1000
  80.  *  1.0000  0.1000  0.1000  0.1000  0.8000  0.6000  0.4000  0.7000  0.7000
0.6000  1.5000  1.4000  1.1000
  85.  *  1.0000  0.2000  0.2000  0.2000  1.0000  0.7000  0.4000  0.6000  0.6000
0.6000  1.6000  1.5000  1.0000
  90.  *  1.0000  0.3000  0.3000  0.3000  1.0000  0.7000  0.6000  0.6000  0.6000
0.6000  1.4000  1.3000  1.1000
  95.  *  1.0000  0.6000  0.6000  0.5000  1.1000  1.0000  0.5000  0.6000  0.6000
0.4000  1.4000  1.3000  1.2000
 100.  *  1.0000  0.7000  0.7000  0.6000  1.3000  1.2000  0.9000  0.4000  0.4000
0.4000  1.2000  1.0000  1.1000
 105.  *  1.0000  0.9000  0.9000  0.7000  1.4000  1.3000  1.0000  0.4000  0.4000
0.2000  1.0000  1.0000  0.8000
 110.  *  1.0000  0.9000  0.9000  0.8000  1.6000  1.5000  1.0000  0.2000  0.2000
0.2000  1.0000  0.8000  0.5000
 115.  *  1.0000  0.9000  0.9000  0.8000  1.7000  1.2000  0.9000  0.1000  0.1000
0.1000  0.9000  0.7000  0.4000
 120.  *  1.1000  0.8000  0.8000  0.8000  1.5000  1.4000  0.9000  0.1000  0.1000
0.1000  0.8000  0.6000  0.3000
 125.  *  1.1000  0.8000  0.8000  0.8000  1.5000  1.3000  0.9000  0.0000  0.0000
0.0000  0.8000  0.6000  0.3000
 130.  *  1.1000  0.7000  0.7000  0.7000  1.6000  1.2000  0.9000  0.0000  0.0000
0.0000  0.9000  0.6000  0.3000
 135.  *  1.3000  0.7000  0.7000  0.7000  1.4000  1.2000  0.9000  0.0000  0.0000
0.0000  0.9000  0.6000  0.3000
 140.  *  1.2000  0.7000  0.7000  0.7000  1.3000  1.2000  0.8000  0.0000  0.0000
0.0000  0.9000  0.6000  0.3000
 145.  *  1.3000  0.6000  0.6000  0.6000  1.5000  1.2000  0.8000  0.0000  0.0000
0.0000  0.9000  0.6000  0.2000
 150.  *  1.3000  0.6000  0.6000  0.6000  1.3000  1.2000  0.6000  0.0000  0.0000
0.0000  0.8000  0.4000  0.0000
 155.  *  1.2000  0.7000  0.6000  0.6000  1.3000  0.9000  0.5000  0.1000  0.0000
0.0000  0.6000  0.4000  0.0000
 160.  *  1.0000  0.8000  0.7000  0.6000  1.1000  0.8000  0.5000  0.2000  0.1000
0.0000  0.5000  0.2000  0.0000
 165.  *  0.8000  1.0000  0.7000  0.6000  0.9000  0.7000  0.5000  0.4000  0.1000
0.0000  0.3000  0.2000  0.0000
 170.  *  0.6000  1.1000  0.9000  0.6000  0.8000  0.6000  0.5000  0.5000  0.3000
0.0000  0.2000  0.0000  0.0000
 175.  *  0.3000  1.3000  1.0000  0.6000  0.6000  0.5000  0.5000  0.7000  0.4000
0.0000  0.1000  0.0000  0.0000
 180.  *  0.2000  1.4000  1.1000  0.6000  0.5000  0.5000  0.5000  0.8000  0.4000
0.0000  0.0000  0.0000  0.0000
 185.  *  0.1000  1.5000  1.2000  0.6000  0.5000  0.5000  0.5000  0.9000  0.6000
0.0000  0.0000  0.0000  0.0000
 190.  *  0.1000  1.5000  1.2000  0.7000  0.5000  0.5000  0.5000  0.9000  0.6000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.1000  1.5000  1.2000  0.7000  0.5000  0.5000  0.5000  0.9000  0.6000
0.1000  0.0000  0.0000  0.0000
 200.  *  0.1000  1.5000  1.2000  0.8000  0.5000  0.5000  0.5000  0.9000  0.6000
0.1000  0.0000  0.0000  0.0000
 205.  *  0.1000  1.4000  1.2000  0.8000  0.5000  0.5000  0.5000  0.9000  0.6000
0.2000  0.0000  0.0000  0.0000
 210.  *  0.1000  1.3000  1.2000  0.8000  0.5000  0.5000  0.5000  0.9000  0.6000
0.2000  0.0000  0.0000  0.0000
```

```
                          PAGE   6
      JOB: FredEx AQ Analysis                                   RUN: 2022 NO
BUILD-I95 and SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  1.3000  1.2000  0.8000  0.5000  0.5000  0.5000  0.7000  0.6000
0.2000  0.0000  0.0000  0.0000
 220.  *  0.0000  1.3000  1.1000  0.8000  0.5000  0.5000  0.5000  0.7000  0.6000
0.2000  0.0000  0.0000  0.0000
 225.  *  0.0000  1.3000  1.1000  0.8000  0.5000  0.5000  0.5000  0.7000  0.5000
0.2000  0.0000  0.0000  0.0000
 230.  *  0.0000  1.3000  1.1000  0.8000  0.6000  0.6000  0.6000  0.7000  0.5000
0.2000  0.0000  0.0000  0.0000
 235.  *  0.0000  1.4000  1.1000  0.8000  0.6000  0.6000  0.6000  0.7000  0.5000
0.2000  0.1000  0.1000  0.1000
 240.  *  0.0000  1.3000  1.2000  0.9000  0.6000  0.6000  0.6000  0.7000  0.5000
0.2000  0.1000  0.1000  0.1000
 245.  *  0.0000  1.5000  1.3000  0.9000  0.7000  0.7000  0.7000  0.7000  0.5000
0.2000  0.1000  0.1000  0.1000
 250.  *  0.0000  1.5000  1.3000  0.9000  0.7000  0.7000  0.7000  0.7000  0.5000
0.2000  0.1000  0.1000  0.1000
 255.  *  0.0000  1.7000  1.2000  1.0000  0.7000  0.7000  0.7000  0.7000  0.5000
0.2000  0.1000  0.1000  0.1000
 260.  *  0.0000  1.6000  1.2000  1.0000  0.7000  0.7000  0.7000  0.8000  0.6000
0.3000  0.1000  0.1000  0.1000
 265.  *  0.0000  1.7000  1.6000  1.1000  0.7000  0.7000  0.7000  0.9000  0.7000
0.3000  0.2000  0.2000  0.2000
 270.  *  0.0000  1.7000  1.5000  1.3000  0.7000  0.7000  0.6000  1.0000  0.7000
0.5000  0.4000  0.3000  0.3000
 275.  *  0.0000  1.6000  1.4000  1.0000  0.6000  0.6000  0.5000  1.0000  0.9000
0.6000  0.5000  0.5000  0.4000
```

```
 280.  *  0.0000  1.2000  1.2000  0.9000  0.5000  0.5000  0.5000  1.4000  1.0000
0.8000  0.8000  0.8000  0.6000
 285.  *  0.0000  1.2000  0.9000  0.8000  0.4000  0.3000  0.3000  1.4000  1.2000
0.8000  0.9000  0.9000  0.8000
 290.  *  0.0000  1.1000  0.8000  0.6000  0.3000  0.3000  0.1000  1.4000  1.2000
0.9000  0.9000  0.9000  0.8000
 295.  *  0.1000  0.8000  0.8000  0.5000  0.1000  0.1000  0.1000  1.6000  1.3000
0.8000  0.9000  0.9000  0.8000
 300.  *  0.1000  0.8000  0.7000  0.4000  0.1000  0.1000  0.1000  1.5000  1.3000
0.9000  0.8000  0.8000  0.8000
 305.  *  0.2000  0.8000  0.7000  0.4000  0.0000  0.0000  0.0000  1.4000  1.1000
0.8000  0.8000  0.8000  0.8000
 310.  *  0.2000  0.8000  0.7000  0.4000  0.0000  0.0000  0.0000  1.4000  1.0000
0.8000  0.7000  0.7000  0.7000
 315.  *  0.2000  0.8000  0.6000  0.3000  0.0000  0.0000  0.0000  1.2000  0.9000
0.8000  0.7000  0.7000  0.7000
 320.  *  0.2000  0.8000  0.6000  0.3000  0.0000  0.0000  0.0000  1.3000  1.0000
0.8000  0.7000  0.7000  0.7000
 325.  *  0.2000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.3000  1.1000
0.8000  0.6000  0.6000  0.6000
 330.  *  0.3000  0.9000  0.6000  0.2000  0.0000  0.0000  0.0000  1.3000  1.1000
0.7000  0.6000  0.6000  0.6000
 335.  *  0.5000  0.9000  0.6000  0.1000  0.0000  0.0000  0.0000  1.1000  1.0000
0.5000  0.6000  0.6000  0.6000
 340.  *  0.8000  0.9000  0.6000  0.0000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.6000  0.6000  0.6000
 345.  *  1.2000  0.8000  0.5000  0.0000  0.0000  0.0000  0.0000  1.1000  0.8000
0.4000  0.6000  0.5000  0.5000
 350.  *  1.4000  0.7000  0.3000  0.0000  0.1000  0.0000  0.0000  1.0000  0.7000
0.4000  0.6000  0.5000  0.5000
 355.  *  1.6000  0.5000  0.2000  0.0000  0.2000  0.1000  0.0000  0.9000  0.6000
0.4000  0.8000  0.6000  0.5000
 360.  *  1.6000  0.3000  0.2000  0.0000  0.4000  0.1000  0.0000  0.7000  0.5000
0.4000  1.0000  0.7000  0.5000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  1.6000  1.7000  1.6000  1.3000  1.7000  1.5000  1.0000  1.6000  1.3000
0.9000  1.6000  1.5000  1.2000
 DEGR. *      5     255     265     270     115     110     105     295     300
290      15      85      95

 THE HIGHEST CONCENTRATION OF   2.6000 PPM OCCURRED AT RECEPTOR    13.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
4,6,5,3,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,-15,0,10,10,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',58.0,36.5,5.9
'N Leg, E Side - 25 m',58.0,108.5,5.9
'N Leg, E Side - 50 m',58.0,190.5,5.9
'N Leg, E Side-Midblk',58.0,626.5,5.9
'N Leg, W Side-Corner',-82.0,61.2,5.9
'N Leg, W Side - 25 m',-82.0,133.2,5.9
'N Leg, W Side - 50 m',-82.0,215.2,5.9
'N Leg, W Side-Midblk',-82.0,651.2,5.9
'S Leg, E Side-Corner',83.0,-85.7,5.9
'S Leg, E Side - 25 m',101.7,-155.3,5.9
'S Leg, E Side - 50 m',122.9,-234.5,5.9
'S Leg, E Side-Midblk',235.7,-655.6,5.9
'S Leg, W Side-Corner',-69.1,-58.9,5.9
'S Leg, W Side - 25 m',-50.5,-128.5,5.9
'S Leg, W Side - 50 m',-29.2,-207.7,5.9
'S Leg, W Side-Midblk',83.6,-628.8,5.9
'E Leg, N Side - 25 m',128.9,24.0,5.9
'E Leg, N Side - 50 m',209.7,9.7,5.9
'E Leg, N Side-Midblk',639.0,-66.0,5.9
'W Leg, N Side - 25 m',-152.9,73.7,5.9
'W Leg, N Side - 50 m',-233.7,87.9,5.9
'W Leg, N Side-Midblk',-663.0,163.6,5.9
'E Leg, S Side - 25 m',153.9,-98.2,5.9
'E Leg, S Side - 50 m',234.7,-112.5,5.9
'E Leg, S Side-Midblk',664.1,-188.2,5.9
'W Leg, S Side - 25 m',-140.0,-46.4,5.9
'W Leg, S Side - 50 m',-220.8,-32.1,5.9
'W Leg, S Side-Midblk',-650.1,43.6,5.9
'2022 - I95 and SR 610 (Exit 143)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-36,-5,-36,1200,14400,6.01,0.0,91.7
1
'N Leg Dep - FreeFlow','AG',24,3,24,1200,9600,2.87,0.0,67.7
1
'S Leg App - FreeFlow','AG',24,3,334,-1153,9600,6.01,0.0,67.7
1
'S Leg Dep - FreeFlow','AG',-36,-5,276,-1168,14400,2.87,0.0,91.7
1
'E Leg App - FreeFlow','AG',3,18,1185,-191,7200,5.57,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',-5,-30,1177,-238,12000,2.83,0.0,79.7
1
```

```
'W Leg App - FreeFlow','AG',-5,-30,-1187,179,12000,5.57,0.0,79.7
1
'W Leg Dep - FreeFlow','AG',3,18,-1179,226,7200,2.83,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2022 I95 and SR610 OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface
CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: FredEx AQ Analysis RUN: 2022 - I95 and SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11:29:55

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

```
VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
 U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH = 1000. M   AMB =  0.0 PPM
```

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-36.0	-5.0	-36.0	1200.0	1205.	360.	AG	14400.	6.0	0.0	91.7		
2. N Leg Dep - FreeFlow	24.0	3.0	24.0	1200.0	1197.	360.	AG	9600.	2.9	0.0	67.7		
3. S Leg App - FreeFlow	24.0	3.0	334.0	-1153.0	1197.	165.	AG	9600.	6.0	0.0	67.7		
4. S Leg Dep - FreeFlow	-36.0	-5.0	276.0	-1168.0	1204.	165.	AG	14400.	2.9	0.0	91.7		
5. E Leg App - FreeFlow	3.0	18.0	1185.0	-191.0	1200.	100.	AG	7200.	5.6	0.0	55.7		
6. E Leg Dep - FreeFlow	-5.0	-30.0	1177.0	-238.0	1200.	100.	AG	12000.	2.8	0.0	79.7		
7. W Leg App - FreeFlow	-5.0	-30.0	-1187.0	179.0	1200.	280.	AG	12000.	5.6	0.0	79.7		
8. W Leg Dep - FreeFlow	3.0	18.0	-1179.0	226.0	1200.	280.	AG	7200.	2.8	0.0	55.7		

PAGE 2
JOB: FredEx AQ Analysis RUN: 2022 - I95 and

2022 I95 and SR610 OUT

SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11:29:55

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. N Leg, E Side-Corner	58.0	36.5	5.9
2. N Leg, E Side - 25 m	58.0	108.5	5.9
3. N Leg, E Side - 50 m	58.0	190.5	5.9
4. N Leg, E Side-Midblk	58.0	626.5	5.9
5. N Leg, W Side-Corner	-82.0	61.2	5.9
6. N Leg, W Side - 25 m	-82.0	133.2	5.9
7. N Leg, W Side - 50 m	-82.0	215.2	5.9
8. N Leg, W Side-Midblk	-82.0	651.2	5.9
9. S Leg, E Side-Corner	83.0	-85.7	5.9
10. S Leg, E Side - 25 m	101.7	-155.3	5.9
11. S Leg, E Side - 50 m	122.9	-234.5	5.9
12. S Leg, E Side-Midblk	235.7	-655.6	5.9
13. S Leg, W Side-Corner	-69.1	-58.9	5.9
14. S Leg, W Side - 25 m	-50.5	-128.5	5.9
15. S Leg, W Side - 50 m	-29.2	-207.7	5.9
16. S Leg, W Side-Midblk	83.6	-628.8	5.9
17. E Leg, N Side - 25 m	128.9	24.0	5.9
18. E Leg, N Side - 50 m	209.7	9.7	5.9
19. E Leg, N Side-Midblk	639.0	-66.0	5.9
20. W Leg, N Side - 25 m	-152.9	73.7	5.9
21. W Leg, N Side - 50 m	-233.7	87.9	5.9
22. W Leg, N Side-Midblk	-663.0	163.6	5.9
23. E Leg, S Side - 25 m	153.9	-98.2	5.9
24. E Leg, S Side - 50 m	234.7	-112.5	5.9
25. E Leg, S Side-Midblk	664.1	-188.2	5.9
26. W Leg, S Side - 25 m	-140.0	-46.4	5.9

```
     27. W Leg, S Side - 50 m *      -220.8      -32.1        5.9   *
     28. W Leg, S Side-Midblk *      -650.1       43.6        5.9   *
↑
                              PAGE  3
      JOB: FredEx AQ Analysis                                   RUN: 2022 - I95 and
SR 610 (Exit 143)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
   5.  *  1.5000  1.5000  1.5000  1.2000  4.1000  4.0000  4.0000  3.4000  2.9000
1.9000  1.6000  1.1000  6.3000  5.2000  4.4000
  10.  *  1.0000  0.9000  0.9000  0.8000  4.4000  4.3000  4.3000  3.8000  2.4000
1.5000  1.2000  0.8000  6.5000  5.1000  4.4000
  15.  *  0.5000  0.5000  0.5000  0.5000  4.4000  4.4000  4.4000  4.0000  2.1000
1.4000  0.9000  0.7000  6.2000  4.7000  4.0000
  20.  *  0.4000  0.4000  0.3000  0.2000  4.1000  4.1000  4.1000  3.9000  1.8000
1.1000  0.9000  0.6000  5.7000  4.3000  3.4000
  25.  *  0.2000  0.2000  0.2000  0.2000  3.9000  3.9000  3.9000  3.8000  1.8000
1.1000  0.9000  0.6000  5.5000  3.9000  3.2000
  30.  *  0.1000  0.1000  0.1000  0.1000  3.6000  3.6000  3.6000  3.6000  1.8000
1.1000  0.9000  0.6000  5.1000  3.5000  3.0000
  35.  *  0.2000  0.1000  0.1000  0.1000  3.4000  3.5000  3.5000  3.5000  1.8000
1.3000  0.9000  0.6000  5.1000  3.2000  2.9000
  40.  *  0.2000  0.1000  0.1000  0.1000  3.3000  3.3000  3.3000  3.3000  1.7000
1.2000  0.9000  0.5000  4.8000  3.0000  2.7000
  45.  *  0.2000  0.1000  0.1000  0.1000  3.2000  3.1000  3.1000  3.1000  1.8000
1.2000  0.9000  0.5000  4.8000  3.2000  2.8000
  50.  *  0.2000  0.1000  0.1000  0.1000  3.0000  2.9000  2.9000  2.9000  1.8000
1.2000  0.9000  0.5000  4.6000  3.0000  2.7000
  55.  *  0.2000  0.1000  0.1000  0.1000  2.9000  2.8000  2.8000  2.8000  1.9000
1.2000  0.9000  0.4000  4.7000  3.0000  2.7000
  60.  *  0.2000  0.1000  0.1000  0.1000  2.8000  2.7000  2.7000  2.7000  1.9000
1.1000  0.8000  0.2000  4.8000  3.0000  2.7000
```

```
  65.  *  0.2000  0.0000  0.0000  0.0000  2.7000  2.6000  2.6000  2.6000  2.0000
1.1000  0.8000  0.2000  4.6000  3.1000  2.8000
  70.  *  0.2000  0.0000  0.0000  0.0000  2.7000  2.6000  2.6000  2.6000  2.1000
1.2000  0.8000  0.2000  4.8000  3.2000  2.8000
  75.  *  0.3000  0.0000  0.0000  0.0000  2.8000  2.6000  2.6000  2.6000  2.2000
1.2000  0.8000  0.0000  5.0000  3.3000  2.9000
  80.  *  0.4000  0.0000  0.0000  0.0000  2.9000  2.6000  2.6000  2.6000  2.4000
1.2000  0.8000  0.0000  4.9000  3.2000  2.8000
  85.  *  0.8000  0.0000  0.0000  0.0000  3.4000  2.7000  2.7000  2.7000  2.4000
1.2000  0.7000  0.0000  5.0000  3.2000  2.7000
  90.  *  1.3000  0.1000  0.0000  0.0000  3.9000  2.9000  2.8000  2.8000  2.4000
1.0000  0.5000  0.0000  5.0000  2.9000  2.4000
  95.  *  1.8000  0.3000  0.1000  0.0000  4.4000  3.0000  2.8000  2.7000  2.3000
0.9000  0.4000  0.1000  4.6000  2.7000  2.3000
 100.  *  2.4000  0.6000  0.2000  0.0000  4.9000  3.2000  2.9000  2.6000  1.9000
0.6000  0.3000  0.1000  4.4000  2.4000  2.1000
 105.  *  2.9000  0.8000  0.3000  0.0000  5.1000  3.4000  3.0000  2.6000  1.5000
0.4000  0.2000  0.1000  3.8000  2.3000  2.1000
 110.  *  3.1000  1.1000  0.5000  0.0000  5.5000  3.6000  3.1000  2.6000  0.9000
0.2000  0.1000  0.1000  3.2000  2.1000  2.0000
 115.  *  3.1000  1.3000  0.7000  0.0000  5.6000  4.0000  3.3000  2.6000  0.8000
0.2000  0.2000  0.2000  2.8000  2.1000  2.1000
 120.  *  3.0000  1.4000  0.9000  0.2000  5.7000  3.9000  3.6000  2.9000  0.5000
0.2000  0.2000  0.2000  2.7000  2.3000  2.3000
 125.  *  2.8000  1.4000  1.0000  0.3000  5.6000  4.1000  3.7000  3.0000  0.4000
0.2000  0.2000  0.2000  2.6000  2.3000  2.3000
 130.  *  2.5000  1.3000  1.0000  0.3000  5.6000  4.4000  3.9000  3.2000  0.4000
0.2000  0.2000  0.2000  2.6000  2.4000  2.4000
 135.  *  2.4000  1.3000  1.0000  0.4000  5.7000  4.5000  4.0000  3.4000  0.4000
0.3000  0.3000  0.3000  2.8000  2.6000  2.6000
 140.  *  2.4000  1.3000  1.0000  0.4000  5.7000  4.9000  4.2000  3.7000  0.5000
0.4000  0.4000  0.4000  2.9000  2.7000  2.7000
 145.  *  2.4000  1.4000  0.8000  0.5000  6.0000  5.2000  4.6000  3.9000  0.6000
0.5000  0.5000  0.5000  3.0000  2.9000  2.9000
 150.  *  2.7000  1.4000  0.9000  0.4000  6.1000  5.5000  5.0000  4.0000  1.1000
1.0000  1.0000  0.8000  3.1000  3.0000  2.8000
 155.  *  2.9000  1.6000  1.2000  0.7000  6.1000  5.7000  5.3000  4.4000  1.7000
1.4000  1.4000  1.3000  3.0000  2.8000  2.8000
 160.  *  3.7000  2.1000  1.6000  0.8000  5.8000  5.8000  5.4000  4.7000  2.3000
2.2000  2.2000  1.9000  2.7000  2.5000  2.5000
 165.  *  4.3000  2.7000  2.0000  1.1000  5.3000  5.2000  5.2000  5.0000  3.1000
3.0000  2.9000  2.5000  2.2000  2.0000  2.0000
 170.  *  4.7000  3.1000  2.4000  1.6000  4.7000  4.6000  4.9000  4.9000  3.6000
3.5000  3.4000  2.9000  1.5000  1.5000  1.4000
 175.  *  5.2000  3.6000  3.0000  2.1000  4.1000  3.9000  4.1000  4.8000  3.8000
3.8000  3.8000  3.3000  0.9000  0.9000  0.9000
 180.  *  5.4000  3.8000  3.2000  2.8000  3.5000  3.3000  3.4000  3.8000  3.8000
3.8000  3.8000  3.5000  0.6000  0.6000  0.5000
```

```
 185.  *  5.3000  3.8000  3.2000  3.2000  3.0000  2.7000  2.6000  2.8000  3.6000
3.6000  3.6000  3.4000  0.3000  0.3000  0.3000
 190.  *  5.1000  3.6000  3.4000  3.6000  2.7000  2.1000  1.9000  2.1000  3.4000
3.4000  3.4000  3.4000  0.2000  0.2000  0.2000
 195.  *  4.9000  3.5000  3.3000  3.5000  2.4000  1.8000  1.6000  1.4000  3.3000
3.3000  3.3000  3.2000  0.2000  0.2000  0.2000
 200.  *  4.6000  3.5000  3.4000  3.6000  2.2000  1.6000  1.3000  1.0000  3.1000
3.1000  3.1000  3.1000  0.1000  0.1000  0.1000
 205.  *  4.6000  3.5000  3.5000  3.5000  2.1000  1.5000  1.2000  0.8000  3.0000
3.0000  3.0000  2.9000  0.1000  0.1000  0.1000
 210.  *  4.4000  3.5000  3.4000  3.4000  2.1000  1.4000  1.1000  0.7000  2.8000
2.8000  2.8000  2.8000  0.2000  0.1000  0.1000

                              PAGE  4
      JOB: FredEx AQ Analysis                                   RUN: 2022 - I95 and
SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*-------------------------------------------------------------------------------------
--------------------------------------------
 215.  *  4.5000  3.6000  3.5000  3.3000  2.1000  1.4000  1.1000  0.7000  2.8000
2.7000  2.7000  2.7000  0.2000  0.1000  0.1000
 220.  *  4.6000  3.6000  3.5000  3.2000  2.2000  1.4000  1.1000  0.7000  2.7000
2.6000  2.6000  2.6000  0.2000  0.1000  0.1000
 225.  *  4.5000  3.5000  3.3000  3.0000  2.3000  1.5000  1.1000  0.7000  2.6000
2.5000  2.5000  2.5000  0.3000  0.1000  0.1000
 230.  *  4.6000  3.6000  3.4000  3.0000  2.3000  1.4000  1.1000  0.6000  2.4000
2.3000  2.3000  2.4000  0.3000  0.1000  0.1000
 235.  *  4.6000  3.5000  3.3000  2.8000  2.4000  1.4000  1.1000  0.6000  2.4000
2.3000  2.3000  2.3000  0.2000  0.0000  0.0000
 240.  *  4.9000  3.6000  3.3000  2.8000  2.4000  1.5000  1.1000  0.5000  2.4000
2.3000  2.3000  2.3000  0.2000  0.0000  0.0000
 245.  *  4.9000  3.7000  3.3000  2.7000  2.5000  1.5000  1.0000  0.4000  2.4000
2.3000  2.3000  2.3000  0.2000  0.0000  0.0000
 250.  *  5.0000  3.7000  3.2000  2.6000  2.7000  1.5000  1.0000  0.2000  2.5000
2.4000  2.4000  2.4000  0.3000  0.0000  0.0000
 255.  *  5.3000  3.7000  3.2000  2.4000  2.7000  1.4000  0.9000  0.1000  2.7000
2.5000  2.5000  2.5000  0.4000  0.0000  0.0000
 260.  *  5.4000  3.7000  3.2000  2.4000  2.9000  1.4000  0.8000  0.0000  2.9000
2.4000  2.4000  2.4000  0.6000  0.0000  0.0000
 265.  *  5.6000  3.7000  3.1000  2.3000  2.9000  1.3000  0.7000  0.0000  3.0000
2.4000  2.3000  2.3000  0.9000  0.1000  0.0000
```

```
 270.  *  5.6000  3.6000  3.0000  2.4000  2.7000  1.1000  0.6000  0.0000  3.6000
2.5000  2.4000  2.3000  1.6000  0.2000  0.1000
 275.  *  5.2000  3.2000  2.7000  2.3000  2.4000  0.9000  0.3000  0.0000  4.1000
2.8000  2.5000  2.3000  2.2000  0.5000  0.1000
 280.  *  4.7000  2.9000  2.6000  2.3000  2.0000  0.6000  0.2000  0.0000  4.9000
3.1000  2.7000  2.4000  2.9000  0.9000  0.4000
 285.  *  4.0000  2.6000  2.4000  2.3000  1.4000  0.3000  0.1000  0.0000  5.4000
3.7000  3.1000  2.5000  3.4000  1.2000  0.6000
 290.  *  3.6000  2.5000  2.3000  2.3000  0.9000  0.3000  0.1000  0.1000  5.6000
4.0000  3.4000  2.7000  3.7000  1.5000  0.8000
 295.  *  3.1000  2.4000  2.4000  2.4000  0.7000  0.1000  0.1000  0.1000  5.7000
4.4000  3.7000  2.8000  3.6000  1.7000  1.1000
 300.  *  2.8000  2.4000  2.4000  2.4000  0.5000  0.2000  0.2000  0.2000  5.8000
4.4000  3.9000  3.0000  3.4000  1.8000  1.2000
 305.  *  2.8000  2.4000  2.4000  2.4000  0.3000  0.2000  0.2000  0.2000  5.5000
4.4000  4.0000  3.4000  3.2000  1.7000  1.2000
 310.  *  2.7000  2.6000  2.6000  2.6000  0.3000  0.2000  0.2000  0.2000  5.4000
4.6000  4.2000  3.5000  3.0000  1.7000  1.2000
 315.  *  2.7000  2.6000  2.6000  2.6000  0.4000  0.3000  0.3000  0.3000  5.5000
4.6000  4.2000  3.7000  2.8000  1.6000  1.1000
 320.  *  2.9000  2.8000  2.8000  2.8000  0.4000  0.3000  0.3000  0.3000  5.2000
4.7000  4.4000  3.9000  2.8000  1.7000  1.2000
 325.  *  2.9000  2.9000  2.9000  2.9000  0.4000  0.3000  0.3000  0.3000  5.2000
4.9000  4.6000  4.1000  2.7000  1.8000  1.3000
 330.  *  3.1000  3.0000  3.0000  3.0000  0.4000  0.3000  0.3000  0.3000  5.3000
4.7000  4.5000  4.3000  2.7000  1.9000  1.4000
 335.  *  3.3000  3.2000  3.2000  3.1000  0.6000  0.5000  0.5000  0.4000  5.4000
4.8000  4.5000  4.5000  2.9000  2.0000  1.7000
 340.  *  3.4000  3.3000  3.3000  3.1000  0.7000  0.7000  0.7000  0.6000  5.0000
4.7000  4.5000  4.2000  3.2000  2.4000  2.1000
 345.  *  3.5000  3.3000  3.3000  2.9000  1.1000  1.0000  1.0000  0.9000  4.9000
4.3000  4.1000  3.7000  3.7000  3.1000  2.8000
 350.  *  3.2000  3.1000  3.1000  2.6000  1.8000  1.8000  1.7000  1.4000  4.6000
3.7000  3.5000  3.0000  4.4000  3.7000  3.6000
 355.  *  2.8000  2.8000  2.8000  2.2000  2.6000  2.5000  2.5000  2.2000  4.0000
3.1000  2.8000  2.2000  5.2000  4.5000  4.1000
 360.  *  2.2000  2.2000  2.2000  1.7000  3.4000  3.4000  3.3000  2.9000  3.3000
2.5000  2.1000  1.5000  5.8000  4.8000  4.4000

------*------------------------------------------------------------------------
-------------------------------------------
 MAX   *  5.6000  3.8000  3.5000  3.6000  6.1000  5.8000  5.4000  5.0000  5.8000
4.9000  4.6000  4.5000  6.5000  5.2000  4.4000
 DEGR. *    270     180     215     190     155     160     160     165     300
325     325     335      10       5      10
```

JOB: FredEx AQ Analysis RUN: 2022 - I95 and SR 610 (Exit 143)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	16	17	18	19	20	21	22	23	24	25	26	27	28
5.	3.3000	0.4000	0.1000	0.0000	1.3000	0.6000	0.0000	2.0000	1.8000	1.7000	3.7000	2.9000	2.2000
10.	3.3000	0.2000	0.0000	0.0000	1.6000	0.8000	0.0000	1.9000	1.7000	1.7000	4.2000	3.3000	2.3000
15.	3.0000	0.0000	0.0000	0.0000	1.9000	1.1000	0.0000	1.7000	1.7000	1.7000	4.3000	3.4000	2.3000
20.	2.8000	0.0000	0.0000	0.0000	1.9000	1.2000	0.1000	1.6000	1.6000	1.6000	4.3000	3.5000	2.2000
25.	2.7000	0.0000	0.0000	0.0000	1.9000	1.3000	0.1000	1.6000	1.6000	1.6000	4.2000	3.4000	2.3000
30.	2.7000	0.0000	0.0000	0.0000	1.9000	1.4000	0.2000	1.6000	1.6000	1.6000	4.1000	3.4000	2.5000
35.	2.5000	0.1000	0.1000	0.1000	1.8000	1.3000	0.4000	1.6000	1.6000	1.6000	4.1000	3.5000	2.6000
40.	2.4000	0.1000	0.1000	0.1000	1.8000	1.3000	0.5000	1.6000	1.6000	1.6000	3.9000	3.6000	2.7000
45.	2.4000	0.1000	0.1000	0.1000	1.9000	1.3000	0.5000	1.7000	1.7000	1.7000	4.0000	3.5000	2.8000
50.	2.3000	0.1000	0.1000	0.1000	1.8000	1.3000	0.6000	1.7000	1.7000	1.7000	4.0000	3.6000	3.0000
55.	2.3000	0.1000	0.1000	0.1000	1.8000	1.2000	0.6000	1.8000	1.8000	1.8000	4.2000	3.6000	3.0000
60.	2.3000	0.1000	0.1000	0.1000	1.8000	1.2000	0.6000	1.9000	1.9000	1.9000	4.5000	3.7000	3.2000
65.	2.2000	0.2000	0.2000	0.2000	1.8000	1.2000	0.6000	2.0000	2.0000	2.0000	4.5000	3.8000	3.3000
70.	2.2000	0.2000	0.2000	0.2000	1.8000	1.2000	0.6000	2.1000	2.1000	2.1000	4.8000	4.1000	3.5000

```
  75.  *  2.3000  0.3000  0.3000  0.3000  1.8000  1.2000  0.6000  2.2000  2.2000
2.2000  4.5000  4.3000  3.6000
  80.  *  2.0000  0.4000  0.4000  0.4000  1.9000  1.4000  0.7000  2.3000  2.3000
2.2000  4.6000  4.4000  4.0000
  85.  *  2.0000  0.8000  0.8000  0.6000  2.2000  1.7000  1.0000  2.4000  2.4000
2.2000  4.8000  4.6000  4.3000
  90.  *  1.9000  1.3000  1.3000  1.0000  2.5000  2.1000  1.5000  2.3000  2.3000
2.0000  4.6000  4.5000  4.3000
  95.  *  1.9000  1.8000  1.8000  1.5000  3.2000  2.6000  2.1000  2.2000  2.1000
1.8000  4.2000  4.3000  4.0000
 100.  *  1.9000  2.4000  2.4000  2.0000  3.6000  3.2000  2.7000  1.8000  1.7000
1.4000  3.8000  3.7000  3.4000
 105.  *  2.0000  2.9000  2.9000  2.5000  4.0000  3.5000  2.9000  1.3000  1.2000
1.0000  3.2000  2.9000  2.9000
 110.  *  2.0000  3.1000  3.0000  2.7000  4.4000  3.8000  3.3000  0.8000  0.8000
0.7000  2.7000  2.3000  1.9000
 115.  *  2.1000  3.1000  3.1000  2.9000  4.3000  4.0000  3.4000  0.6000  0.5000
0.4000  2.2000  1.9000  1.4000
 120.  *  2.3000  3.0000  3.0000  2.8000  4.3000  3.8000  3.4000  0.3000  0.3000
0.3000  1.9000  1.5000  1.0000
 125.  *  2.3000  2.8000  2.8000  2.7000  4.2000  3.6000  3.1000  0.2000  0.2000
0.2000  1.7000  1.3000  0.9000
 130.  *  2.4000  2.6000  2.6000  2.5000  4.2000  3.8000  3.1000  0.2000  0.1000
0.1000  1.7000  1.4000  0.7000
 135.  *  2.5000  2.4000  2.4000  2.4000  4.2000  3.6000  2.8000  0.1000  0.1000
0.1000  1.7000  1.3000  0.6000
 140.  *  2.6000  2.3000  2.3000  2.3000  4.1000  3.5000  2.7000  0.1000  0.1000
0.1000  1.8000  1.3000  0.6000
 145.  *  2.7000  2.2000  2.2000  2.2000  4.0000  3.4000  2.4000  0.1000  0.1000
0.1000  1.7000  1.2000  0.4000
 150.  *  2.5000  2.2000  2.1000  2.1000  3.9000  3.2000  2.4000  0.2000  0.1000
0.1000  1.7000  1.1000  0.4000
 155.  *  2.4000  2.2000  2.0000  2.0000  3.7000  3.0000  2.1000  0.3000  0.1000
0.1000  1.5000  0.9000  0.2000
 160.  *  2.1000  2.3000  2.0000  1.9000  3.2000  2.6000  2.0000  0.5000  0.2000
0.1000  1.1000  0.6000  0.1000
 165.  *  1.6000  2.6000  2.2000  1.9000  2.7000  2.3000  1.9000  0.9000  0.4000
0.1000  0.7000  0.4000  0.1000
 170.  *  1.2000  3.0000  2.5000  1.9000  2.4000  2.1000  1.9000  1.1000  0.4000
0.0000  0.4000  0.2000  0.1000
 175.  *  0.8000  3.3000  2.6000  1.9000  2.2000  1.9000  1.9000  1.4000  0.7000
0.0000  0.1000  0.0000  0.0000
 180.  *  0.4000  3.5000  2.8000  1.9000  2.0000  1.9000  1.9000  1.6000  0.9000
0.0000  0.0000  0.0000  0.0000
 185.  *  0.3000  3.7000  3.1000  2.1000  1.9000  1.9000  1.9000  1.8000  1.1000
0.0000  0.0000  0.0000  0.0000
 190.  *  0.2000  3.7000  3.1000  2.1000  2.0000  2.0000  2.0000  1.7000  1.1000
0.1000  0.0000  0.0000  0.0000
```

```
 195.  *  0.2000  3.7000  3.1000  2.3000  1.9000  1.9000  1.9000  1.7000  1.1000
0.2000  0.0000  0.0000  0.0000
 200.  *  0.1000  3.5000  3.0000  2.2000  1.9000  1.9000  1.9000  1.7000  1.1000
0.3000  0.0000  0.0000  0.0000
 205.  *  0.1000  3.4000  3.0000  2.3000  1.9000  1.9000  1.9000  1.6000  1.1000
0.3000  0.0000  0.0000  0.0000
 210.  *  0.1000  3.4000  3.0000  2.4000  1.9000  1.9000  1.9000  1.6000  1.1000
0.5000  0.1000  0.1000  0.1000
```

```
                             PAGE  6
      JOB: FredEx AQ Analysis                                   RUN: 2022 - I95 and
SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*------------------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  3.3000  2.9000  2.4000  1.9000  1.9000  1.9000  1.6000  1.2000
0.6000  0.1000  0.1000  0.1000
 220.  *  0.1000  3.3000  2.9000  2.4000  2.0000  2.0000  2.0000  1.5000  1.1000
0.6000  0.1000  0.1000  0.1000
 225.  *  0.1000  3.5000  3.0000  2.5000  2.1000  2.1000  2.1000  1.5000  1.1000
0.6000  0.2000  0.2000  0.2000
 230.  *  0.1000  3.7000  3.1000  2.6000  2.1000  2.1000  2.1000  1.5000  1.1000
0.6000  0.2000  0.2000  0.2000
 235.  *  0.0000  3.6000  3.2000  2.7000  2.2000  2.2000  2.2000  1.5000  1.1000
0.6000  0.2000  0.2000  0.2000
 240.  *  0.0000  3.9000  3.3000  2.8000  2.3000  2.3000  2.3000  1.5000  1.1000
0.6000  0.2000  0.2000  0.2000
 245.  *  0.0000  4.1000  3.5000  2.9000  2.4000  2.4000  2.4000  1.5000  1.1000
0.6000  0.2000  0.2000  0.2000
 250.  *  0.0000  4.4000  3.8000  3.0000  2.6000  2.6000  2.5000  1.5000  1.1000
0.6000  0.3000  0.3000  0.3000
 255.  *  0.0000  4.6000  3.9000  3.4000  2.7000  2.7000  2.5000  1.7000  1.3000
0.7000  0.4000  0.4000  0.4000
 260.  *  0.0000  4.6000  4.3000  3.5000  2.8000  2.8000  2.6000  1.8000  1.3000
0.8000  0.6000  0.6000  0.5000
 265.  *  0.0000  5.0000  4.5000  3.8000  2.8000  2.8000  2.6000  2.1000  1.6000
1.0000  0.9000  0.9000  0.8000
 270.  *  0.0000  4.8000  4.6000  3.7000  2.7000  2.6000  2.3000  2.6000  2.1000
1.4000  1.5000  1.5000  1.2000
 275.  *  0.0000  4.6000  4.3000  3.6000  2.4000  2.4000  1.9000  3.2000  2.7000
2.1000  2.2000  2.1000  1.9000
```

```
 280.  *  0.1000  4.0000  3.7000  3.2000  2.0000  1.9000  1.5000  3.8000  3.2000
2.5000  2.9000  2.9000  2.4000
 285.  *  0.1000  3.3000  3.0000  2.5000  1.4000  1.4000  1.1000  4.2000  3.6000
3.1000  3.4000  3.4000  2.9000
 290.  *  0.1000  2.7000  2.2000  1.8000  0.8000  0.8000  0.7000  4.3000  3.8000
3.2000  3.6000  3.6000  3.2000
 295.  *  0.2000  2.3000  1.9000  1.3000  0.5000  0.4000  0.4000  4.3000  3.8000
3.1000  3.6000  3.6000  3.3000
 300.  *  0.3000  1.9000  1.6000  0.9000  0.3000  0.2000  0.2000  4.1000  3.5000
2.8000  3.4000  3.4000  3.3000
 305.  *  0.4000  1.7000  1.3000  0.8000  0.1000  0.1000  0.1000  4.0000  3.4000
2.7000  3.2000  3.2000  3.1000
 310.  *  0.5000  1.7000  1.3000  0.7000  0.1000  0.1000  0.1000  3.8000  3.1000
2.6000  3.0000  3.0000  3.0000
 315.  *  0.6000  1.8000  1.4000  0.7000  0.1000  0.1000  0.1000  3.8000  3.1000
2.5000  2.8000  2.8000  2.8000
 320.  *  0.6000  1.8000  1.3000  0.6000  0.1000  0.1000  0.1000  3.5000  2.9000
2.4000  2.7000  2.7000  2.7000
 325.  *  0.7000  1.8000  1.3000  0.5000  0.1000  0.1000  0.1000  3.5000  2.9000
2.2000  2.5000  2.5000  2.5000
 330.  *  1.0000  1.8000  1.3000  0.5000  0.1000  0.1000  0.1000  3.3000  2.8000
2.1000  2.4000  2.4000  2.3000
 335.  *  1.4000  1.8000  1.3000  0.4000  0.1000  0.1000  0.0000  3.2000  2.8000
2.0000  2.3000  2.3000  2.3000
 340.  *  2.0000  1.8000  1.2000  0.2000  0.0000  0.0000  0.0000  3.1000  2.7000
1.7000  2.2000  2.2000  2.2000
 345.  *  2.6000  1.7000  1.1000  0.1000  0.1000  0.0000  0.0000  3.0000  2.5000
1.7000  2.2000  2.1000  2.1000
 350.  *  3.3000  1.4000  0.7000  0.0000  0.2000  0.0000  0.0000  2.8000  2.3000
1.6000  2.3000  2.1000  2.0000
 355.  *  3.5000  1.1000  0.5000  0.0000  0.4000  0.1000  0.0000  2.5000  2.0000
1.6000  2.8000  2.3000  2.1000
 360.  *  3.7000  0.7000  0.3000  0.0000  0.8000  0.3000  0.0000  2.1000  1.8000
1.6000  3.1000  2.5000  2.1000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  3.7000  5.0000  4.6000  3.8000  4.4000  4.0000  3.4000  4.3000  3.8000
3.2000  4.8000  4.6000  4.3000
 DEGR. *    360     265     270     265     110     115     115     290     290
290      85      85      90

 THE HIGHEST CONCENTRATION OF   6.5000 PPM OCCURRED AT RECEPTOR    13.
```

Q,EPA,,F,,0,T,T,F,F,0.78,
6,4,3,3,866.666666666667,1675,271.666666666667,406.666666666667,866.666666666667,167
5,271.666666666667,406.666666666667,1036.8,1036.8,1036.8,1036.8,1036.8,1036.8,1036.8
,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1
200,0,0,0,0,0,0,-5,0,-25,-25,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',82.0,89.0,5.9
'N Leg, E Side - 25 m',82.0,161.0,5.9
'N Leg, E Side - 50 m',82.0,243.0,5.9
'N Leg, E Side-Midblk',82.0,679.0,5.9
'N Leg, W Side-Corner',-58.0,23.7,5.9
'N Leg, W Side - 25 m',-58.0,95.7,5.9
'N Leg, W Side - 50 m',-58.0,177.8,5.9
'N Leg, W Side-Midblk',-58.0,613.7,5.9
'S Leg, E Side-Corner',83.4,-11.9,5.9
'S Leg, E Side - 25 m',89.6,-83.6,5.9
'S Leg, E Side - 50 m',96.8,-165.3,5.9
'S Leg, E Side-Midblk',134.8,-599.6,5.9
'S Leg, W Side-Corner',-51.7,-74.9,5.9
'S Leg, W Side - 25 m',-45.4,-146.6,5.9
'S Leg, W Side - 50 m',-38.2,-228.3,5.9
'S Leg, W Side-Midblk',-0.3,-662.6,5.9
'E Leg, N Side - 25 m',147.3,119.4,5.9
'E Leg, N Side - 50 m',221.6,154.1,5.9
'E Leg, N Side-Midblk',616.7,338.3,5.9
'W Leg, N Side - 25 m',-123.3,-6.7,5.9
'W Leg, N Side - 50 m',-197.6,-41.4,5.9
'W Leg, N Side-Midblk',-592.7,-225.6,5.9
'E Leg, S Side - 25 m',148.6,18.6,5.9
'E Leg, S Side - 50 m',223.0,53.2,5.9
'E Leg, S Side-Midblk',618.1,237.5,5.9
'W Leg, S Side - 25 m',-116.9,-105.3,5.9
'W Leg, S Side - 50 m',-191.3,-140.0,5.9
'W Leg, S Side-Midblk',-586.4,-324.2,5.9
'2022 NOBUILD - I95_RussellRd (Exit 148)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,-1,-24,1200,6700,2.99,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',36,2,36,1200,5200,8.03,0.0,91.7
1
'S Leg App - FreeFlow','AG',36,2,140,-1192,5200,2.99,0.0,91.7
1
'S Leg Dep - FreeFlow','AG',-24,-1,81,-1198,6700,8.03,0.0,67.7
1
'E Leg App - FreeFlow','AG',-8,16,1080,523,1220,2.72,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',8,-16,1095,491,815,3.55,0.0,55.7

```
1
'W Leg App - FreeFlow','AG',8,-16,-1080,-523,815,3.55,0.0,55.7
1
'W Leg Dep - FreeFlow','AG',-8,16,-1095,-491,1220,2.72,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2022 NoBuild I95 and Russell Rd OUT

```
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                          CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                         PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NOBUILD -
I95_RussellRd (Exit 148)

      DATE :  8/15/17
      TIME : 13:32:28

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*-----------------
----------------------------------------
       1. N Leg App - FreeFlow*    -24.0      -1.0     -24.0    1200.0 *    1201.
360. AG   6700.   3.0   0.0 67.7
       2. N Leg Dep - FreeFlow*     36.0       2.0      36.0    1200.0 *    1198.
360. AG   5200.   8.0   0.0 91.7
       3. S Leg App - FreeFlow*     36.0       2.0     140.0   -1192.0 *    1199.
175. AG   5200.   3.0   0.0 91.7
       4. S Leg Dep - FreeFlow*    -24.0      -1.0      81.0   -1198.0 *    1202.
175. AG   6700.   8.0   0.0 67.7
       5. E Leg App - FreeFlow*     -8.0      16.0    1080.0     523.0 *    1200.
65. AG   1220.   2.7   0.0 55.7
       6. E Leg Dep - FreeFlow*      8.0     -16.0    1095.0     491.0 *    1199.
65. AG    815.   3.5   0.0 55.7
       7. W Leg App - FreeFlow*      8.0     -16.0   -1080.0    -523.0 *    1200.
245. AG    815.   3.5   0.0 55.7
       8. W Leg Dep - FreeFlow*     -8.0      16.0   -1095.0    -491.0 *    1199.
245. AG   1220.   2.7   0.0 55.7
↑
                              PAGE  2
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NOBUILD -
```

2022 NoBuild I95 and Russell Rd OUT
I95_RussellRd (Exit 148)

DATE : 8/15/17
TIME : 13:32:28

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X (FT)	Y (FT)	Z (FT)	*
1. N Leg, E Side-Corner	*	82.0	89.0	5.9	*
2. N Leg, E Side - 25 m	*	82.0	161.0	5.9	*
3. N Leg, E Side - 50 m	*	82.0	243.0	5.9	*
4. N Leg, E Side-Midblk	*	82.0	679.0	5.9	*
5. N Leg, W Side-Corner	*	-58.0	23.7	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	95.7	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	177.8	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	613.7	5.9	*
9. S Leg, E Side-Corner	*	83.4	-11.9	5.9	*
10. S Leg, E Side - 25 m	*	89.6	-83.6	5.9	*
11. S Leg, E Side - 50 m	*	96.8	-165.3	5.9	*
12. S Leg, E Side-Midblk	*	134.8	-599.6	5.9	*
13. S Leg, W Side-Corner	*	-51.7	-74.9	5.9	*
14. S Leg, W Side - 25 m	*	-45.4	-146.6	5.9	*
15. S Leg, W Side - 50 m	*	-38.2	-228.3	5.9	*
16. S Leg, W Side-Midblk	*	-0.3	-662.6	5.9	*
17. E Leg, N Side - 25 m	*	147.3	119.4	5.9	*
18. E Leg, N Side - 50 m	*	221.6	154.1	5.9	*
19. E Leg, N Side-Midblk	*	616.7	338.3	5.9	*
20. W Leg, N Side - 25 m	*	-123.3	-6.7	5.9	*
21. W Leg, N Side - 50 m	*	-197.6	-41.4	5.9	*
22. W Leg, N Side-Midblk	*	-592.7	-225.6	5.9	*
23. E Leg, S Side - 25 m	*	148.6	18.6	5.9	*
24. E Leg, S Side - 50 m	*	223.0	53.2	5.9	*
25. E Leg, S Side-Midblk	*	618.1	237.5	5.9	*
26. W Leg, S Side - 25 m	*	-116.9	-105.3	5.9	*

```
                     2022 NoBuild I95 and Russell Rd OUT
     27. W Leg, S Side - 50 m *      -191.3     -140.0        5.9   *
     28. W Leg, S Side-Midblk *      -586.4     -324.2        5.9   *
↑
                              PAGE  3
      JOB: Fred Ex AQ Analysis                                 RUN: 2022 NOBUILD -
I95_RussellRd (Exit 148)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
   5.  *  1.3000  1.3000  1.2000  1.0000  1.7000  1.7000  1.7000  1.4000  1.4000
0.9000  0.8000  0.7000  2.8000  3.0000  3.1000
  10.  *  0.9000  0.8000  0.8000  0.7000  1.9000  1.8000  1.8000  1.6000  1.0000
0.5000  0.4000  0.3000  2.9000  3.1000  3.3000
  15.  *  0.5000  0.5000  0.5000  0.4000  1.9000  1.9000  1.9000  1.8000  0.6000
0.3000  0.3000  0.1000  3.1000  3.1000  3.2000
  20.  *  0.3000  0.3000  0.3000  0.3000  1.9000  1.9000  1.8000  1.8000  0.4000
0.2000  0.2000  0.1000  2.9000  2.9000  2.8000
  25.  *  0.2000  0.2000  0.2000  0.2000  1.8000  1.8000  1.8000  1.8000  0.3000
0.3000  0.1000  0.1000  2.7000  2.9000  2.8000
  30.  *  0.2000  0.2000  0.2000  0.2000  1.7000  1.7000  1.7000  1.7000  0.3000
0.1000  0.0000  0.1000  2.6000  2.6000  2.5000
  35.  *  0.1000  0.1000  0.1000  0.1000  1.7000  1.7000  1.7000  1.7000  0.3000
0.1000  0.0000  0.0000  2.7000  2.4000  2.3000
  40.  *  0.1000  0.1000  0.1000  0.1000  1.6000  1.6000  1.6000  1.6000  0.2000
0.2000  0.0000  0.0000  2.5000  2.3000  2.2000
  45.  *  0.1000  0.1000  0.1000  0.1000  1.5000  1.5000  1.5000  1.5000  0.2000
0.2000  0.0000  0.0000  2.5000  2.3000  2.0000
  50.  *  0.2000  0.1000  0.1000  0.1000  1.5000  1.4000  1.4000  1.4000  0.3000
0.1000  0.0000  0.0000  2.4000  2.1000  2.0000
  55.  *  0.2000  0.1000  0.1000  0.1000  1.5000  1.4000  1.4000  1.4000  0.3000
0.1000  0.0000  0.0000  2.3000  2.0000  1.9000
  60.  *  0.2000  0.1000  0.1000  0.1000  1.5000  1.4000  1.4000  1.4000  0.3000
0.0000  0.0000  0.0000  2.2000  1.8000  1.8000
```

65. * 0.3000 0.1000 0.1000 0.1000 1.5000 1.4000 1.4000 1.4000 0.2000
0.0000 0.0000 0.0000 2.1000 1.8000 1.8000
70. * 0.3000 0.0000 0.0000 0.0000 1.6000 1.3000 1.3000 1.3000 0.1000
0.0000 0.0000 0.0000 2.0000 1.8000 1.8000
75. * 0.3000 0.1000 0.0000 0.0000 1.6000 1.4000 1.3000 1.3000 0.1000
0.0000 0.0000 0.0000 1.8000 1.8000 1.8000
80. * 0.3000 0.1000 0.0000 0.0000 1.6000 1.4000 1.3000 1.3000 0.0000
0.0000 0.0000 0.0000 1.9000 1.9000 1.9000
85. * 0.3000 0.1000 0.0000 0.0000 1.5000 1.4000 1.3000 1.3000 0.0000
0.0000 0.0000 0.0000 2.0000 2.0000 2.0000
90. * 0.3000 0.1000 0.0000 0.0000 1.6000 1.4000 1.3000 1.3000 0.0000
0.0000 0.0000 0.0000 1.9000 1.9000 1.9000
95. * 0.2000 0.1000 0.0000 0.0000 1.6000 1.4000 1.3000 1.3000 0.0000
0.0000 0.0000 0.0000 1.8000 1.8000 1.8000
100. * 0.2000 0.1000 0.0000 0.0000 1.6000 1.4000 1.3000 1.3000 0.0000
0.0000 0.0000 0.0000 1.8000 1.8000 1.8000
105. * 0.2000 0.1000 0.0000 0.0000 1.5000 1.3000 1.3000 1.3000 0.0000
0.0000 0.0000 0.0000 1.8000 1.8000 1.8000
110. * 0.2000 0.1000 0.0000 0.0000 1.5000 1.3000 1.2000 1.3000 0.0000
0.0000 0.0000 0.0000 1.8000 1.8000 1.8000
115. * 0.3000 0.2000 0.1000 0.1000 1.5000 1.4000 1.4000 1.4000 0.0000
0.0000 0.0000 0.0000 1.9000 1.9000 1.9000
120. * 0.3000 0.2000 0.1000 0.1000 1.5000 1.5000 1.4000 1.4000 0.0000
0.0000 0.0000 0.0000 2.0000 2.0000 2.0000
125. * 0.3000 0.2000 0.1000 0.1000 1.8000 1.3000 1.4000 1.4000 0.0000
0.0000 0.0000 0.0000 2.0000 2.0000 2.0000
130. * 0.3000 0.2000 0.1000 0.1000 1.8000 1.3000 1.4000 1.4000 0.0000
0.0000 0.0000 0.0000 2.1000 2.1000 2.1000
135. * 0.3000 0.2000 0.1000 0.1000 1.9000 1.4000 1.5000 1.5000 0.0000
0.0000 0.0000 0.0000 2.2000 2.2000 2.2000
140. * 0.3000 0.2000 0.1000 0.1000 2.1000 1.6000 1.6000 1.6000 0.1000
0.1000 0.1000 0.1000 2.4000 2.4000 2.4000
145. * 0.3000 0.2000 0.1000 0.1000 2.3000 1.6000 1.6000 1.7000 0.1000
0.1000 0.1000 0.1000 2.5000 2.5000 2.5000
150. * 0.3000 0.2000 0.2000 0.2000 2.5000 1.8000 1.8000 1.7000 0.1000
0.1000 0.1000 0.1000 2.8000 2.8000 2.8000
155. * 0.3000 0.3000 0.2000 0.2000 2.8000 2.0000 1.9000 1.9000 0.1000
0.1000 0.1000 0.1000 3.0000 3.0000 3.0000
160. * 0.5000 0.4000 0.3000 0.3000 3.0000 2.2000 2.1000 2.0000 0.3000
0.3000 0.2000 0.2000 3.1000 3.0000 3.0000
165. * 0.7000 0.6000 0.6000 0.6000 3.1000 2.4000 2.1000 2.1000 0.4000
0.4000 0.4000 0.4000 3.1000 3.1000 3.1000
170. * 1.1000 1.0000 0.9000 0.9000 3.0000 2.4000 2.2000 2.1000 0.7000
0.7000 0.7000 0.5000 3.0000 2.9000 2.8000
175. * 1.5000 1.4000 1.3000 1.5000 2.7000 2.3000 2.0000 1.9000 1.1000
1.1000 1.1000 0.8000 2.6000 2.5000 2.5000
180. * 1.9000 1.8000 1.8000 1.9000 2.0000 1.8000 1.5000 1.6000 1.4000
1.4000 1.4000 1.1000 1.9000 1.9000 1.9000

```
 185.  *  2.2000  2.2000  2.1000  2.2000  1.6000  1.4000  1.2000  1.2000  1.6000
1.6000  1.6000  1.2000  1.4000  1.4000  1.3000
 190.  *  2.3000  2.4000  2.3000  2.5000  1.0000  0.8000  0.7000  0.7000  1.7000
1.7000  1.7000  1.5000  0.8000  0.8000  0.8000
 195.  *  2.4000  2.2000  2.3000  2.3000  0.6000  0.6000  0.4000  0.4000  1.7000
1.7000  1.7000  1.5000  0.5000  0.5000  0.5000
 200.  *  2.3000  2.2000  2.2000  2.1000  0.4000  0.3000  0.2000  0.2000  1.6000
1.6000  1.6000  1.5000  0.3000  0.3000  0.3000
 205.  *  2.2000  2.1000  2.1000  2.1000  0.3000  0.3000  0.1000  0.1000  1.6000
1.6000  1.6000  1.6000  0.2000  0.2000  0.2000
 210.  *  2.1000  2.1000  2.0000  1.9000  0.2000  0.2000  0.1000  0.1000  1.5000
1.5000  1.5000  1.4000  0.2000  0.2000  0.2000

                           PAGE  4
     JOB: Fred Ex AQ Analysis                                  RUN: 2022 NOBUILD -
I95_RussellRd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  2.0000  1.9000  1.9000  1.8000  0.2000  0.2000  0.1000  0.1000  1.4000
1.4000  1.4000  1.4000  0.2000  0.2000  0.2000
 220.  *  2.0000  1.8000  1.7000  1.6000  0.3000  0.2000  0.1000  0.1000  1.4000
1.4000  1.4000  1.4000  0.2000  0.2000  0.2000
 225.  *  2.1000  1.8000  1.6000  1.6000  0.3000  0.2000  0.1000  0.1000  1.3000
1.4000  1.4000  1.4000  0.2000  0.2000  0.2000
 230.  *  2.0000  1.7000  1.5000  1.5000  0.3000  0.2000  0.1000  0.1000  1.2000
1.2000  1.2000  1.2000  0.1000  0.1000  0.1000
 235.  *  1.9000  1.6000  1.5000  1.5000  0.3000  0.1000  0.0000  0.0000  1.2000
1.2000  1.2000  1.2000  0.2000  0.1000  0.1000
 240.  *  1.8000  1.4000  1.4000  1.4000  0.3000  0.0000  0.0000  0.0000  1.3000
1.2000  1.2000  1.2000  0.2000  0.1000  0.1000
 245.  *  1.6000  1.3000  1.3000  1.4000  0.2000  0.0000  0.0000  0.0000  1.5000
1.2000  1.2000  1.2000  0.2000  0.0000  0.0000
 250.  *  1.6000  1.3000  1.3000  1.3000  0.1000  0.0000  0.0000  0.0000  1.5000
1.2000  1.2000  1.2000  0.3000  0.0000  0.0000
 255.  *  1.3000  1.3000  1.3000  1.3000  0.1000  0.0000  0.0000  0.0000  1.5000
1.3000  1.2000  1.2000  0.3000  0.0000  0.0000
 260.  *  1.4000  1.4000  1.4000  1.4000  0.1000  0.0000  0.0000  0.0000  1.5000
1.3000  1.2000  1.2000  0.3000  0.1000  0.0000
 265.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.5000
1.4000  1.2000  1.2000  0.2000  0.2000  0.0000
```

```
 270.  *  1.5000  1.5000  1.5000  1.5000  0.0000  0.0000  0.0000  0.0000  1.5000
1.4000  1.2000  1.2000  0.2000  0.2000  0.0000
 275.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.3000
1.3000  1.2000  1.2000  0.2000  0.1000  0.0000
 280.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.3000
1.3000  1.2000  1.2000  0.2000  0.1000  0.0000
 285.  *  1.3000  1.3000  1.3000  1.3000  0.0000  0.0000  0.0000  0.0000  1.2000
1.2000  1.2000  1.2000  0.2000  0.1000  0.0000
 290.  *  1.3000  1.3000  1.3000  1.3000  0.0000  0.0000  0.0000  0.0000  1.3000
1.1000  1.2000  1.2000  0.3000  0.1000  0.1000
 295.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.5000
1.2000  1.2000  1.2000  0.3000  0.1000  0.1000
 300.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.5000
1.2000  1.2000  1.2000  0.3000  0.1000  0.1000
 305.  *  1.5000  1.5000  1.5000  1.5000  0.0000  0.0000  0.0000  0.0000  1.4000
1.1000  1.2000  1.4000  0.4000  0.2000  0.2000
 310.  *  1.5000  1.5000  1.5000  1.5000  0.1000  0.1000  0.1000  0.1000  1.5000
1.2000  1.4000  1.4000  0.4000  0.2000  0.2000
 315.  *  1.6000  1.6000  1.6000  1.6000  0.1000  0.1000  0.1000  0.1000  1.6000
1.2000  1.4000  1.4000  0.4000  0.2000  0.2000
 320.  *  1.6000  1.6000  1.6000  1.6000  0.1000  0.1000  0.1000  0.1000  1.7000
1.3000  1.3000  1.4000  0.4000  0.2000  0.2000
 325.  *  1.8000  1.8000  1.8000  1.7000  0.1000  0.1000  0.1000  0.1000  1.9000
1.3000  1.4000  1.6000  0.4000  0.2000  0.2000
 330.  *  1.9000  1.9000  1.9000  1.9000  0.1000  0.1000  0.1000  0.1000  2.0000
1.3000  1.4000  1.6000  0.4000  0.3000  0.3000
 335.  *  2.0000  2.0000  2.0000  1.9000  0.1000  0.1000  0.1000  0.1000  2.1000
1.4000  1.4000  1.6000  0.6000  0.3000  0.4000
 340.  *  2.1000  2.1000  2.1000  2.0000  0.2000  0.2000  0.2000  0.2000  2.2000
1.6000  1.5000  1.7000  0.6000  0.6000  0.7000
 345.  *  2.3000  2.3000  2.3000  2.0000  0.4000  0.4000  0.4000  0.3000  2.4000
1.8000  1.6000  1.5000  1.0000  1.0000  1.0000
 350.  *  2.2000  2.2000  2.2000  1.9000  0.7000  0.7000  0.6000  0.5000  2.3000
1.8000  1.5000  1.5000  1.4000  1.5000  1.6000
 355.  *  2.1000  2.0000  2.0000  1.6000  1.0000  1.0000  1.0000  0.8000  2.1000
1.6000  1.3000  1.2000  1.9000  2.1000  2.3000
 360.  *  1.8000  1.7000  1.7000  1.4000  1.4000  1.4000  1.4000  1.1000  1.8000
1.3000  1.1000  1.0000  2.4000  2.6000  2.8000

------*--------------------------------------------------------------------------
-----------------------------------------
 MAX   *  2.4000  2.4000  2.3000  2.5000  3.1000  2.4000  2.2000  2.1000  2.4000
1.8000  1.7000  1.7000  3.1000  3.1000  3.3000
 DEGR. *    195     190     195     190     165     165     170     170     345
345     190     340      15      10      10
```

JOB: Fred Ex AQ Analysis RUN: 2022 NOBUILD - I95_RussellRd (Exit 148)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	3.3000	0.2000	0.1000	0.0000	0.6000	0.3000	0.0000	0.4000	0.3000	0.2000	0.9000	0.6000	0.2000
10.	3.2000	0.1000	0.0000	0.0000	0.9000	0.5000	0.0000	0.3000	0.2000	0.2000	1.1000	0.7000	0.2000
15.	2.9000	0.0000	0.0000	0.0000	1.0000	0.6000	0.0000	0.2000	0.2000	0.2000	1.2000	0.8000	0.3000
20.	2.7000	0.0000	0.0000	0.0000	1.0000	0.7000	0.2000	0.2000	0.2000	0.2000	1.3000	0.9000	0.4000
25.	2.5000	0.0000	0.0000	0.0000	1.0000	0.7000	0.2000	0.2000	0.2000	0.2000	1.3000	1.0000	0.4000
30.	2.4000	0.0000	0.0000	0.0000	1.0000	0.8000	0.3000	0.2000	0.2000	0.2000	1.3000	0.9000	0.5000
35.	2.2000	0.0000	0.0000	0.0000	1.0000	0.7000	0.3000	0.2000	0.2000	0.2000	1.2000	0.9000	0.5000
40.	2.1000	0.0000	0.0000	0.0000	1.0000	0.6000	0.3000	0.2000	0.2000	0.2000	1.4000	0.9000	0.5000
45.	2.0000	0.0000	0.0000	0.0000	0.9000	0.6000	0.3000	0.2000	0.2000	0.2000	1.3000	1.0000	0.5000
50.	2.0000	0.1000	0.1000	0.0000	0.8000	0.6000	0.4000	0.3000	0.3000	0.3000	1.4000	0.8000	0.6000
55.	1.9000	0.1000	0.1000	0.1000	0.8000	0.7000	0.4000	0.3000	0.3000	0.2000	1.5000	0.9000	0.6000
60.	1.8000	0.1000	0.1000	0.1000	1.0000	0.8000	0.5000	0.3000	0.3000	0.2000	1.4000	1.0000	0.4000
65.	1.8000	0.2000	0.2000	0.1000	1.1000	0.8000	0.4000	0.2000	0.2000	0.1000	1.3000	0.8000	0.4000
70.	1.8000	0.3000	0.3000	0.2000	1.2000	0.8000	0.5000	0.1000	0.1000	0.1000	1.2000	0.8000	0.5000

```
  75.  *  1.8000  0.3000  0.3000  0.3000  1.2000  0.9000  0.6000  0.1000  0.1000
0.1000  1.0000  0.8000  0.4000
  80.  *  1.9000  0.3000  0.3000  0.3000  1.3000  0.8000  0.6000  0.0000  0.0000
0.0000  1.0000  0.7000  0.3000
  85.  *  2.0000  0.3000  0.3000  0.3000  1.3000  0.8000  0.6000  0.0000  0.0000
0.0000  1.0000  0.7000  0.3000
  90.  *  1.9000  0.3000  0.3000  0.3000  1.0000  0.9000  0.6000  0.0000  0.0000
0.0000  1.0000  0.7000  0.3000
  95.  *  1.8000  0.2000  0.2000  0.2000  1.0000  0.8000  0.5000  0.0000  0.0000
0.0000  1.1000  0.7000  0.3000
 100.  *  1.8000  0.2000  0.2000  0.2000  1.2000  0.8000  0.5000  0.0000  0.0000
0.0000  1.1000  0.7000  0.3000
 105.  *  1.8000  0.2000  0.2000  0.2000  1.2000  0.9000  0.5000  0.0000  0.0000
0.0000  1.1000  0.7000  0.3000
 110.  *  1.8000  0.2000  0.2000  0.2000  1.2000  0.9000  0.5000  0.0000  0.0000
0.0000  1.1000  0.7000  0.3000
 115.  *  1.9000  0.2000  0.2000  0.2000  1.2000  0.9000  0.6000  0.0000  0.0000
0.0000  1.1000  0.7000  0.3000
 120.  *  2.0000  0.2000  0.2000  0.2000  1.3000  0.9000  0.6000  0.0000  0.0000
0.0000  1.1000  0.7000  0.3000
 125.  *  2.0000  0.2000  0.2000  0.2000  1.3000  1.0000  0.6000  0.0000  0.0000
0.0000  1.1000  0.8000  0.3000
 130.  *  2.1000  0.2000  0.2000  0.2000  1.3000  1.0000  0.5000  0.0000  0.0000
0.0000  1.1000  0.8000  0.3000
 135.  *  2.2000  0.2000  0.2000  0.2000  1.4000  1.0000  0.5000  0.0000  0.0000
0.0000  1.2000  0.8000  0.3000
 140.  *  2.4000  0.2000  0.2000  0.2000  1.4000  1.1000  0.4000  0.0000  0.0000
0.0000  1.2000  0.9000  0.2000
 145.  *  2.5000  0.2000  0.2000  0.2000  1.4000  1.1000  0.4000  0.0000  0.0000
0.0000  1.2000  0.9000  0.1000
 150.  *  2.6000  0.2000  0.2000  0.2000  1.5000  1.1000  0.3000  0.0000  0.0000
0.0000  1.2000  0.9000  0.1000
 155.  *  2.8000  0.2000  0.2000  0.2000  1.5000  1.1000  0.3000  0.0000  0.0000
0.0000  1.3000  0.7000  0.0000
 160.  *  2.9000  0.2000  0.2000  0.2000  1.5000  0.9000  0.2000  0.0000  0.0000
0.0000  1.2000  0.7000  0.0000
 165.  *  2.7000  0.2000  0.2000  0.2000  1.4000  0.8000  0.2000  0.0000  0.0000
0.0000  1.1000  0.6000  0.0000
 170.  *  2.6000  0.4000  0.2000  0.2000  1.1000  0.6000  0.2000  0.2000  0.0000
0.0000  0.8000  0.4000  0.0000
 175.  *  2.1000  0.5000  0.4000  0.2000  0.8000  0.4000  0.2000  0.3000  0.2000
0.0000  0.6000  0.2000  0.0000
 180.  *  1.7000  0.8000  0.5000  0.2000  0.5000  0.3000  0.2000  0.6000  0.3000
0.0000  0.3000  0.1000  0.0000
 185.  *  1.1000  0.9000  0.6000  0.2000  0.4000  0.2000  0.2000  0.8000  0.4000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.7000  1.1000  0.8000  0.3000  0.3000  0.2000  0.2000  0.9000  0.6000
0.0000  0.1000  0.0000  0.0000
```

```
 195.  *  0.5000  1.2000  0.9000  0.3000  0.2000  0.2000  0.2000  1.0000  0.7000
0.1000  0.0000  0.0000  0.0000
 200.  *  0.3000  1.3000  0.9000  0.4000  0.2000  0.2000  0.2000  1.0000  0.7000
0.2000  0.0000  0.0000  0.0000
 205.  *  0.2000  1.2000  0.9000  0.5000  0.2000  0.2000  0.2000  1.0000  0.7000
0.3000  0.0000  0.0000  0.0000
 210.  *  0.2000  1.2000  0.9000  0.5000  0.2000  0.2000  0.2000  1.0000  0.7000
0.3000  0.0000  0.0000  0.0000

                             PAGE   6
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 NOBUILD -
I95_RussellRd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.2000  1.3000  1.0000  0.5000  0.2000  0.2000  0.2000  1.0000  0.7000
0.3000  0.0000  0.0000  0.0000
 220.  *  0.2000  1.2000  0.8000  0.6000  0.3000  0.3000  0.3000  0.9000  0.7000
0.3000  0.0000  0.0000  0.0000
 225.  *  0.1000  1.1000  1.0000  0.6000  0.3000  0.3000  0.3000  0.9000  0.7000
0.3000  0.0000  0.0000  0.0000
 230.  *  0.1000  1.2000  0.9000  0.6000  0.3000  0.3000  0.3000  0.8000  0.7000
0.3000  0.0000  0.0000  0.0000
 235.  *  0.1000  1.3000  0.9000  0.6000  0.3000  0.3000  0.3000  0.8000  0.7000
0.4000  0.1000  0.1000  0.1000
 240.  *  0.1000  1.1000  0.8000  0.5000  0.3000  0.3000  0.2000  1.1000  0.7000
0.5000  0.1000  0.1000  0.1000
 245.  *  0.0000  1.1000  0.7000  0.4000  0.2000  0.2000  0.1000  1.1000  0.6000
0.3000  0.2000  0.2000  0.1000
 250.  *  0.0000  1.0000  0.7000  0.5000  0.1000  0.1000  0.1000  1.1000  0.8000
0.4000  0.3000  0.3000  0.2000
 255.  *  0.0000  0.9000  0.8000  0.4000  0.1000  0.1000  0.1000  1.2000  0.9000
0.6000  0.3000  0.3000  0.2000
 260.  *  0.0000  0.8000  0.7000  0.4000  0.1000  0.1000  0.1000  1.1000  0.8000
0.6000  0.3000  0.3000  0.2000
 265.  *  0.0000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.8000
0.5000  0.2000  0.2000  0.2000
 270.  *  0.0000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.0000  0.8000
0.5000  0.2000  0.2000  0.2000
 275.  *  0.0000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.0000  0.8000
0.5000  0.2000  0.2000  0.2000
```

```
 280.  *  0.0000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 285.  *  0.0000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.0000  0.9000
0.5000  0.2000  0.2000  0.2000
 290.  *  0.1000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 295.  *  0.1000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 300.  *  0.1000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 305.  *  0.1000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 310.  *  0.2000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 315.  *  0.2000  0.9000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 320.  *  0.2000  1.0000  0.7000  0.3000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.2000  0.2000  0.2000
 325.  *  0.2000  1.1000  0.7000  0.1000  0.0000  0.0000  0.0000  1.3000  0.9000
0.5000  0.2000  0.2000  0.2000
 330.  *  0.3000  1.1000  0.7000  0.1000  0.0000  0.0000  0.0000  1.3000  0.9000
0.3000  0.2000  0.2000  0.2000
 335.  *  0.5000  1.1000  0.7000  0.0000  0.0000  0.0000  0.0000  1.3000  0.9000
0.3000  0.2000  0.2000  0.2000
 340.  *  0.7000  1.0000  0.7000  0.0000  0.0000  0.0000  0.0000  1.3000  0.9000
0.2000  0.2000  0.2000  0.2000
 345.  *  1.3000  1.0000  0.5000  0.0000  0.0000  0.0000  0.0000  1.2000  0.8000
0.2000  0.2000  0.2000  0.2000
 350.  *  2.0000  0.9000  0.4000  0.0000  0.1000  0.0000  0.0000  1.1000  0.7000
0.2000  0.4000  0.2000  0.2000
 355.  *  2.5000  0.6000  0.3000  0.0000  0.2000  0.0000  0.0000  0.9000  0.6000
0.2000  0.4000  0.4000  0.2000
 360.  *  3.1000  0.5000  0.1000  0.0000  0.4000  0.2000  0.0000  0.7000  0.3000
0.2000  0.7000  0.4000  0.2000

------*-------------------------------------------------------------------------
---------------------------
 MAX   *  3.3000  1.3000  1.0000  0.6000  1.5000  1.1000  0.6000  1.3000  0.9000
0.6000  1.5000  1.0000  0.6000
 DEGR. *      5     200     215     220     150     140      75     325     255
255      55      25      50

 THE HIGHEST CONCENTRATION OF   3.3000 PPM OCCURRED AT RECEPTOR    15.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
6,4,3,3,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,-5,0,-25,-25,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',82.0,89.0,5.9
'N Leg, E Side - 25 m',82.0,161.0,5.9
'N Leg, E Side - 50 m',82.0,243.0,5.9
'N Leg, E Side-Midblk',82.0,679.0,5.9
'N Leg, W Side-Corner',-58.0,23.7,5.9
'N Leg, W Side - 25 m',-58.0,95.7,5.9
'N Leg, W Side - 50 m',-58.0,177.8,5.9
'N Leg, W Side-Midblk',-58.0,613.7,5.9
'S Leg, E Side-Corner',83.4,-11.9,5.9
'S Leg, E Side - 25 m',89.6,-83.6,5.9
'S Leg, E Side - 50 m',96.8,-165.3,5.9
'S Leg, E Side-Midblk',134.8,-599.6,5.9
'S Leg, W Side-Corner',-51.7,-74.9,5.9
'S Leg, W Side - 25 m',-45.4,-146.6,5.9
'S Leg, W Side - 50 m',-38.2,-228.3,5.9
'S Leg, W Side-Midblk',-0.3,-662.6,5.9
'E Leg, N Side - 25 m',147.3,119.4,5.9
'E Leg, N Side - 50 m',221.6,154.1,5.9
'E Leg, N Side-Midblk',616.7,338.3,5.9
'W Leg, N Side - 25 m',-123.3,-6.7,5.9
'W Leg, N Side - 50 m',-197.6,-41.4,5.9
'W Leg, N Side-Midblk',-592.7,-225.6,5.9
'E Leg, S Side - 25 m',148.6,18.6,5.9
'E Leg, S Side - 50 m',223.0,53.2,5.9
'E Leg, S Side-Midblk',618.1,237.5,5.9
'W Leg, S Side - 25 m',-116.9,-105.3,5.9
'W Leg, S Side - 50 m',-191.3,-140.0,5.9
'W Leg, S Side-Midblk',-586.4,-324.2,5.9
'2022 - I95 and Russell Rd (Exit 148)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,-1,-24,1200,9600,2.99,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',36,2,36,1200,14400,8.03,0.0,91.7
1
'S Leg App - FreeFlow','AG',36,2,140,-1192,14400,2.99,0.0,91.7
1
'S Leg Dep - FreeFlow','AG',-24,-1,81,-1198,9600,8.03,0.0,67.7
1
'E Leg App - FreeFlow','AG',-8,16,1080,523,7200,2.72,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',8,-16,1095,491,7200,3.55,0.0,55.7
1
```

```
'W Leg App - FreeFlow','AG',8,-16,-1080,-523,7200,3.55,0.0,55.7
1
'W Leg Dep - FreeFlow','AG',-8,16,-1095,-491,7200,2.72,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2022 I95 and Russell Rd OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: Fred Ex AQ Analysis RUN: 2022 - I95 and Russell Rd (Exit 148)

DATE : 8/15/17
TIME : 13:28:17

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-24.0	-1.0	-24.0	1200.0	1201.	360.	AG	9600.	3.0	0.0	67.7		
2. N Leg Dep - FreeFlow	36.0	2.0	36.0	1200.0	1198.	360.	AG	14400.	8.0	0.0	91.7		
3. S Leg App - FreeFlow	36.0	2.0	140.0	-1192.0	1199.	175.	AG	14400.	3.0	0.0	91.7		
4. S Leg Dep - FreeFlow	-24.0	-1.0	81.0	-1198.0	1202.	175.	AG	9600.	8.0	0.0	67.7		
5. E Leg App - FreeFlow	-8.0	16.0	1080.0	523.0	1200.	65.	AG	7200.	2.7	0.0	55.7		
6. E Leg Dep - FreeFlow	8.0	-16.0	1095.0	491.0	1199.	65.	AG	7200.	3.5	0.0	55.7		
7. W Leg App - FreeFlow	8.0	-16.0	-1080.0	-523.0	1200.	245.	AG	7200.	3.5	0.0	55.7		
8. W Leg Dep - FreeFlow	-8.0	16.0	-1095.0	-491.0	1199.	245.	AG	7200.	2.7	0.0	55.7		

PAGE 2

JOB: Fred Ex AQ Analysis RUN: 2022 - I95 and

DATE : 8/15/17
TIME : 13:28:17

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X (FT)	Y (FT)	Z (FT)	*
1. N Leg, E Side-Corner	*	82.0	89.0	5.9	*
2. N Leg, E Side - 25 m	*	82.0	161.0	5.9	*
3. N Leg, E Side - 50 m	*	82.0	243.0	5.9	*
4. N Leg, E Side-Midblk	*	82.0	679.0	5.9	*
5. N Leg, W Side-Corner	*	-58.0	23.7	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	95.7	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	177.8	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	613.7	5.9	*
9. S Leg, E Side-Corner	*	83.4	-11.9	5.9	*
10. S Leg, E Side - 25 m	*	89.6	-83.6	5.9	*
11. S Leg, E Side - 50 m	*	96.8	-165.3	5.9	*
12. S Leg, E Side-Midblk	*	134.8	-599.6	5.9	*
13. S Leg, W Side-Corner	*	-51.7	-74.9	5.9	*
14. S Leg, W Side - 25 m	*	-45.4	-146.6	5.9	*
15. S Leg, W Side - 50 m	*	-38.2	-228.3	5.9	*
16. S Leg, W Side-Midblk	*	-0.3	-662.6	5.9	*
17. E Leg, N Side - 25 m	*	147.3	119.4	5.9	*
18. E Leg, N Side - 50 m	*	221.6	154.1	5.9	*
19. E Leg, N Side-Midblk	*	616.7	338.3	5.9	*
20. W Leg, N Side - 25 m	*	-123.3	-6.7	5.9	*
21. W Leg, N Side - 50 m	*	-197.6	-41.4	5.9	*
22. W Leg, N Side-Midblk	*	-592.7	-225.6	5.9	*
23. E Leg, S Side - 25 m	*	148.6	18.6	5.9	*
24. E Leg, S Side - 50 m	*	223.0	53.2	5.9	*
25. E Leg, S Side-Midblk	*	618.1	237.5	5.9	*
26. W Leg, S Side - 25 m	*	-116.9	-105.3	5.9	*

27. W Leg, S Side - 50 m * -191.3 -140.0 5.9 *
28. W Leg, S Side-Midblk * -586.4 -324.2 5.9 *

PAGE 3

JOB: Fred Ex AQ Analysis RUN: 2022 - I95 and Russell Rd (Exit 148)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR) *	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5. *	3.4000	3.3000	3.3000	2.8000	3.3000	3.3000	3.2000	2.6000	4.4000	2.9000	2.5000	1.6000	6.0000	6.1000	5.9000
10. *	2.3000	2.3000	2.3000	1.9000	3.9000	3.8000	3.8000	3.2000	3.3000	2.2000	1.8000	1.0000	6.5000	6.4000	6.3000
15. *	1.5000	1.4000	1.4000	1.2000	4.1000	4.1000	4.1000	3.6000	2.5000	1.5000	1.1000	0.6000	6.5000	6.3000	6.1000
20. *	1.0000	0.9000	0.9000	0.8000	4.0000	4.0000	3.9000	3.7000	2.0000	1.2000	0.9000	0.4000	6.8000	6.1000	5.6000
25. *	0.7000	0.6000	0.6000	0.6000	3.9000	3.9000	3.9000	3.7000	1.9000	0.9000	0.7000	0.4000	6.6000	5.8000	5.1000
30. *	0.6000	0.5000	0.5000	0.5000	3.7000	3.7000	3.7000	3.7000	1.7000	1.0000	0.6000	0.3000	6.4000	5.3000	4.7000
35. *	0.5000	0.4000	0.4000	0.4000	3.7000	3.6000	3.6000	3.5000	1.8000	0.9000	0.6000	0.3000	6.1000	5.1000	4.3000
40. *	0.5000	0.4000	0.4000	0.4000	3.6000	3.4000	3.4000	3.4000	1.8000	0.9000	0.6000	0.3000	6.0000	4.7000	4.1000
45. *	0.5000	0.3000	0.3000	0.3000	3.5000	3.3000	3.3000	3.3000	1.9000	0.9000	0.6000	0.2000	5.9000	4.5000	3.9000
50. *	0.7000	0.3000	0.3000	0.3000	3.5000	3.1000	3.1000	3.1000	2.0000	0.9000	0.6000	0.1000	5.7000	4.2000	3.7000
55. *	1.0000	0.4000	0.3000	0.3000	3.8000	3.2000	3.1000	3.1000	1.9000	0.7000	0.4000	0.1000	5.4000	3.9000	3.4000
60. *	1.2000	0.4000	0.2000	0.2000	4.1000	3.2000	3.0000	3.0000	1.8000	0.7000	0.4000	0.1000	5.0000	3.5000	3.3000

65. * 1.5000 0.6000 0.4000 0.2000 4.3000 3.3000 3.1000 2.9000 1.5000
0.4000 0.2000 0.0000 4.7000 3.2000 3.1000
70. * 1.7000 0.6000 0.3000 0.1000 4.5000 3.5000 3.1000 2.9000 1.2000
0.3000 0.0000 0.0000 4.2000 3.1000 2.9000
75. * 1.8000 0.7000 0.5000 0.1000 4.6000 3.5000 3.2000 2.8000 0.8000
0.1000 0.0000 0.0000 3.8000 3.0000 2.9000
80. * 1.8000 0.8000 0.4000 0.0000 4.5000 3.6000 3.2000 2.8000 0.5000
0.0000 0.0000 0.0000 3.6000 3.1000 3.1000
85. * 1.7000 0.8000 0.5000 0.0000 4.5000 3.7000 3.4000 2.9000 0.3000
0.0000 0.0000 0.0000 3.4000 3.2000 3.2000
90. * 1.6000 0.8000 0.5000 0.0000 4.3000 3.8000 3.5000 3.0000 0.2000
0.0000 0.0000 0.0000 3.3000 3.1000 3.1000
95. * 1.5000 0.8000 0.5000 0.0000 4.1000 3.7000 3.4000 3.1000 0.1000
0.0000 0.0000 0.0000 3.1000 3.0000 3.0000
100. * 1.4000 0.8000 0.5000 0.2000 3.9000 3.6000 3.3000 3.0000 0.1000
0.0000 0.0000 0.0000 3.0000 2.9000 2.9000
105. * 1.5000 0.8000 0.6000 0.3000 3.8000 3.5000 3.3000 3.0000 0.1000
0.0000 0.0000 0.0000 3.0000 2.9000 2.9000
110. * 1.4000 0.8000 0.6000 0.3000 3.8000 3.5000 3.3000 3.1000 0.2000
0.1000 0.1000 0.1000 3.1000 3.0000 3.0000
115. * 1.5000 0.8000 0.6000 0.4000 3.8000 3.4000 3.3000 3.1000 0.2000
0.1000 0.1000 0.1000 3.2000 3.1000 3.1000
120. * 1.3000 0.8000 0.6000 0.4000 3.8000 3.3000 3.3000 3.2000 0.2000
0.1000 0.1000 0.1000 3.3000 3.2000 3.2000
125. * 1.4000 0.9000 0.7000 0.5000 3.8000 3.5000 3.5000 3.3000 0.1000
0.1000 0.1000 0.1000 3.3000 3.3000 3.3000
130. * 1.4000 0.9000 0.7000 0.5000 4.1000 3.4000 3.6000 3.3000 0.1000
0.1000 0.1000 0.1000 3.5000 3.5000 3.5000
135. * 1.4000 0.9000 0.7000 0.5000 4.1000 3.5000 3.6000 3.5000 0.1000
0.1000 0.1000 0.1000 3.7000 3.7000 3.7000
140. * 1.4000 0.9000 0.8000 0.6000 4.5000 3.5000 3.7000 3.6000 0.1000
0.1000 0.1000 0.1000 3.9000 3.9000 3.9000
145. * 1.4000 1.0000 0.8000 0.6000 4.6000 3.8000 3.8000 3.7000 0.2000
0.2000 0.2000 0.2000 4.0000 4.0000 4.0000
150. * 1.6000 1.0000 0.8000 0.7000 5.0000 4.0000 3.9000 3.9000 0.2000
0.2000 0.2000 0.2000 4.4000 4.4000 4.4000
155. * 1.6000 1.2000 1.0000 0.8000 5.3000 4.3000 4.1000 4.1000 0.3000
0.3000 0.3000 0.3000 4.7000 4.7000 4.7000
160. * 1.9000 1.5000 1.3000 1.1000 5.6000 4.5000 4.2000 4.3000 0.6000
0.6000 0.6000 0.5000 4.9000 4.9000 4.8000
165. * 2.4000 1.9000 1.9000 1.7000 5.7000 4.5000 4.3000 4.3000 1.0000
1.0000 1.0000 0.8000 4.9000 4.9000 4.8000
170. * 3.1000 2.7000 2.5000 2.6000 5.5000 4.3000 4.1000 4.2000 1.6000
1.6000 1.6000 1.2000 4.5000 4.5000 4.5000
175. * 4.0000 3.7000 3.6000 3.7000 4.9000 3.9000 3.6000 3.7000 2.3000
2.3000 2.3000 1.8000 3.9000 3.8000 3.8000
180. * 4.9000 4.6000 4.6000 5.0000 4.0000 3.3000 3.0000 3.0000 2.9000
2.9000 2.8000 2.2000 2.9000 2.9000 2.9000

```
 185.  *  5.3000  5.2000  5.5000  5.8000  3.1000  2.4000  2.1000  2.2000  3.3000
3.3000  3.1000  2.7000  2.0000  2.0000  1.9000
 190.  *  5.7000  5.8000  5.8000  6.1000  2.3000  1.8000  1.5000  1.4000  3.4000
3.3000  3.3000  2.9000  1.4000  1.3000  1.2000
 195.  *  5.9000  5.8000  5.9000  6.1000  1.9000  1.2000  1.0000  0.8000  3.5000
3.3000  3.3000  3.1000  0.8000  0.7000  0.7000
 200.  *  5.8000  5.8000  5.7000  5.7000  1.6000  1.1000  0.8000  0.5000  3.3000
3.2000  3.2000  3.0000  0.6000  0.5000  0.5000
 205.  *  5.9000  5.7000  5.6000  5.2000  1.4000  1.0000  0.8000  0.4000  3.1000
3.0000  3.0000  2.9000  0.5000  0.4000  0.4000
 210.  *  5.8000  5.6000  5.3000  4.9000  1.5000  0.9000  0.6000  0.3000  3.0000
2.9000  2.9000  2.8000  0.4000  0.3000  0.3000
```



```
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - I95 and
Russell Rd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  5.8000  5.4000  4.9000  4.7000  1.4000  0.9000  0.6000  0.3000  2.8000
2.7000  2.7000  2.7000  0.4000  0.3000  0.3000
 220.  *  5.8000  5.2000  4.7000  4.4000  1.6000  0.9000  0.6000  0.3000  2.8000
2.6000  2.6000  2.6000  0.4000  0.2000  0.2000
 225.  *  5.8000  4.8000  4.6000  4.2000  1.7000  0.9000  0.6000  0.2000  2.7000
2.5000  2.4000  2.4000  0.5000  0.2000  0.2000
 230.  *  5.7000  4.6000  4.2000  3.9000  1.8000  0.9000  0.5000  0.1000  3.0000
2.4000  2.4000  2.4000  0.7000  0.2000  0.2000
 235.  *  5.6000  4.3000  4.0000  3.6000  1.7000  0.8000  0.5000  0.1000  3.2000
2.4000  2.3000  2.3000  1.0000  0.3000  0.2000
 240.  *  5.2000  4.0000  3.6000  3.4000  1.7000  0.7000  0.3000  0.1000  3.6000
2.6000  2.4000  2.3000  1.2000  0.3000  0.1000
 245.  *  4.9000  3.7000  3.5000  3.3000  1.3000  0.4000  0.2000  0.0000  4.0000
2.7000  2.5000  2.3000  1.6000  0.4000  0.2000
 250.  *  4.5000  3.4000  3.2000  3.3000  1.0000  0.2000  0.0000  0.0000  4.1000
2.9000  2.6000  2.3000  1.8000  0.6000  0.2000
 255.  *  4.2000  3.4000  3.3000  3.3000  0.7000  0.1000  0.0000  0.0000  4.2000
3.1000  2.6000  2.3000  1.9000  0.6000  0.3000
 260.  *  3.9000  3.4000  3.4000  3.4000  0.4000  0.0000  0.0000  0.0000  4.3000
3.2000  2.9000  2.4000  1.9000  0.8000  0.5000
 265.  *  3.7000  3.5000  3.5000  3.5000  0.2000  0.0000  0.0000  0.0000  4.3000
3.2000  2.9000  2.4000  1.8000  0.8000  0.5000
```

270. * 3.7000 3.6000 3.6000 3.6000 0.1000 0.0000 0.0000 0.0000 4.3000
3.2000 2.9000 2.5000 1.7000 0.8000 0.5000
275. * 3.6000 3.5000 3.5000 3.5000 0.1000 0.0000 0.0000 0.0000 4.1000
3.1000 2.8000 2.4000 1.6000 0.8000 0.5000
280. * 3.5000 3.4000 3.4000 3.4000 0.1000 0.0000 0.0000 0.0000 4.1000
2.9000 2.8000 2.5000 1.5000 0.8000 0.5000
285. * 3.4000 3.3000 3.3000 3.3000 0.1000 0.0000 0.0000 0.0000 4.0000
2.9000 2.8000 2.5000 1.6000 0.8000 0.6000
290. * 3.4000 3.3000 3.3000 3.3000 0.1000 0.0000 0.0000 0.0000 4.1000
3.2000 2.8000 2.5000 1.4000 0.8000 0.6000
295. * 3.4000 3.3000 3.3000 3.3000 0.1000 0.0000 0.0000 0.0000 4.2000
2.9000 2.8000 2.5000 1.5000 0.9000 0.7000
300. * 3.4000 3.4000 3.4000 3.4000 0.1000 0.1000 0.1000 0.1000 4.2000
2.9000 2.9000 2.6000 1.4000 0.9000 0.7000
305. * 3.6000 3.6000 3.6000 3.6000 0.1000 0.1000 0.1000 0.1000 4.4000
3.0000 2.8000 2.7000 1.4000 0.8000 0.7000
310. * 3.9000 3.9000 3.9000 3.9000 0.1000 0.1000 0.1000 0.1000 4.4000
3.2000 3.0000 2.8000 1.4000 0.8000 0.7000
315. * 4.0000 4.0000 4.0000 4.0000 0.1000 0.1000 0.1000 0.1000 4.8000
3.1000 2.9000 2.9000 1.3000 0.9000 0.8000
320. * 4.2000 4.2000 4.2000 4.2000 0.1000 0.1000 0.1000 0.1000 4.9000
3.5000 3.2000 3.1000 1.4000 0.9000 0.8000
325. * 4.5000 4.5000 4.5000 4.4000 0.1000 0.1000 0.1000 0.1000 5.3000
3.6000 3.3000 3.1000 1.5000 0.9000 0.8000
330. * 4.7000 4.7000 4.7000 4.7000 0.1000 0.1000 0.1000 0.1000 5.6000
3.9000 3.4000 3.3000 1.5000 1.0000 0.9000
335. * 5.0000 5.0000 5.0000 4.9000 0.2000 0.2000 0.2000 0.2000 5.9000
4.1000 3.7000 3.5000 1.7000 1.2000 1.1000
340. * 5.3000 5.3000 5.3000 5.1000 0.4000 0.4000 0.4000 0.3000 6.2000
4.5000 3.8000 3.7000 2.0000 1.5000 1.5000
345. * 5.7000 5.7000 5.6000 5.2000 0.6000 0.6000 0.6000 0.5000 6.6000
5.0000 4.2000 3.6000 2.4000 2.1000 2.2000
350. * 5.7000 5.7000 5.6000 4.9000 1.1000 1.1000 1.1000 0.8000 6.6000
5.0000 4.2000 3.5000 3.0000 3.0000 3.1000
355. * 5.4000 5.3000 5.2000 4.5000 1.9000 1.8000 1.8000 1.4000 6.1000
4.7000 4.0000 3.1000 4.0000 4.0000 4.1000
360. * 4.6000 4.5000 4.4000 3.7000 2.7000 2.7000 2.5000 2.0000 5.5000
3.9000 3.2000 2.3000 5.0000 5.0000 5.3000

------*--
MAX * 5.9000 5.8000 5.9000 6.1000 5.7000 4.5000 4.3000 4.3000 6.6000
5.0000 4.2000 3.7000 6.8000 6.4000 6.3000
DEGR. * 195 190 195 190 165 165 165 160 345
345 345 340 20 10 10

```
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - I95 and
Russell Rd (Exit 148)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
   5.  *  5.7000  0.7000  0.2000  0.0000  1.4000  0.7000  0.0000  1.9000  1.4000
1.2000  2.8000  2.0000  1.2000
  10.  *  5.5000  0.3000  0.1000  0.0000  1.8000  1.1000  0.1000  1.5000  1.3000
1.2000  3.1000  2.4000  1.3000
  15.  *  5.1000  0.2000  0.1000  0.1000  2.3000  1.4000  0.2000  1.4000  1.3000
1.3000  3.7000  2.8000  1.6000
  20.  *  4.6000  0.1000  0.1000  0.1000  2.4000  1.7000  0.4000  1.3000  1.3000
1.3000  3.6000  2.9000  1.7000
  25.  *  4.3000  0.1000  0.1000  0.1000  2.4000  1.7000  0.6000  1.5000  1.5000
1.5000  3.9000  3.1000  2.0000
  30.  *  4.0000  0.1000  0.1000  0.1000  2.4000  1.8000  0.7000  1.5000  1.5000
1.5000  3.9000  3.1000  2.1000
  35.  *  3.9000  0.1000  0.1000  0.1000  2.2000  1.7000  0.7000  1.6000  1.6000
1.6000  4.0000  3.2000  2.3000
  40.  *  3.7000  0.1000  0.1000  0.1000  2.2000  1.6000  0.8000  1.7000  1.7000
1.7000  4.1000  3.3000  2.4000
  45.  *  3.4000  0.2000  0.2000  0.2000  2.2000  1.8000  0.9000  1.8000  1.8000
1.8000  4.1000  3.5000  2.4000
  50.  *  3.2000  0.4000  0.4000  0.3000  2.5000  1.8000  0.9000  1.9000  1.9000
1.8000  4.2000  3.6000  2.7000
  55.  *  3.1000  0.6000  0.6000  0.5000  2.7000  2.0000  1.4000  1.9000  1.9000
1.7000  4.1000  3.5000  2.7000
  60.  *  3.0000  1.0000  1.0000  0.8000  2.9000  2.4000  1.7000  1.8000  1.8000
1.5000  4.0000  3.3000  2.7000
  65.  *  2.9000  1.3000  1.3000  1.1000  3.2000  2.8000  2.2000  1.5000  1.5000
1.3000  3.4000  3.0000  2.2000
  70.  *  2.9000  1.5000  1.5000  1.3000  3.7000  3.1000  2.4000  1.1000  1.1000
0.9000  3.0000  2.6000  1.8000
```

```
  75.  *  3.0000  1.7000  1.7000  1.5000  3.8000  3.1000  2.4000  0.8000  0.8000
0.7000  2.6000  2.1000  1.5000
  80.  *  3.1000  1.8000  1.8000  1.6000  3.7000  3.0000  2.4000  0.5000  0.4000
0.4000  2.4000  1.7000  0.9000
  85.  *  3.2000  1.7000  1.7000  1.6000  3.5000  3.1000  2.3000  0.3000  0.3000
0.3000  2.0000  1.5000  0.8000
  90.  *  3.1000  1.6000  1.6000  1.5000  3.4000  2.9000  2.1000  0.2000  0.2000
0.2000  1.8000  1.4000  0.7000
  95.  *  3.0000  1.5000  1.4000  1.4000  3.3000  2.7000  1.9000  0.1000  0.1000
0.1000  1.8000  1.3000  0.6000
 100.  *  2.9000  1.4000  1.4000  1.4000  3.2000  2.8000  2.0000  0.1000  0.1000
0.1000  1.8000  1.3000  0.6000
 105.  *  2.9000  1.4000  1.4000  1.3000  3.1000  2.5000  1.9000  0.1000  0.1000
0.1000  1.8000  1.3000  0.7000
 110.  *  3.0000  1.3000  1.3000  1.3000  3.1000  2.5000  1.9000  0.1000  0.1000
0.1000  1.8000  1.3000  0.7000
 115.  *  3.1000  1.3000  1.3000  1.3000  3.0000  2.5000  1.9000  0.1000  0.1000
0.1000  1.8000  1.3000  0.7000
 120.  *  3.2000  1.1000  1.1000  1.1000  2.8000  2.4000  1.7000  0.1000  0.1000
0.1000  1.8000  1.4000  0.7000
 125.  *  3.3000  1.1000  1.1000  1.1000  2.9000  2.4000  1.7000  0.0000  0.0000
0.0000  1.8000  1.3000  0.6000
 130.  *  3.5000  1.1000  1.1000  1.1000  3.0000  2.4000  1.7000  0.0000  0.0000
0.0000  1.9000  1.3000  0.5000
 135.  *  3.7000  1.1000  1.1000  1.1000  3.1000  2.4000  1.6000  0.0000  0.0000
0.0000  2.0000  1.3000  0.4000
 140.  *  3.8000  1.1000  1.1000  1.1000  3.1000  2.6000  1.5000  0.0000  0.0000
0.0000  2.0000  1.3000  0.3000
 145.  *  4.0000  1.1000  1.1000  1.1000  3.2000  2.6000  1.4000  0.0000  0.0000
0.0000  2.1000  1.5000  0.3000
 150.  *  4.2000  1.1000  1.1000  1.1000  3.2000  2.6000  1.3000  0.0000  0.0000
0.0000  2.1000  1.4000  0.1000
 155.  *  4.5000  1.1000  1.1000  1.1000  3.3000  2.5000  1.2000  0.0000  0.0000
0.0000  2.1000  1.3000  0.0000
 160.  *  4.5000  1.1000  1.1000  1.1000  3.2000  2.4000  1.1000  0.0000  0.0000
0.0000  2.1000  1.1000  0.0000
 165.  *  4.3000  1.3000  1.1000  1.1000  3.0000  2.1000  1.1000  0.2000  0.0000
0.0000  1.8000  0.8000  0.0000
 170.  *  3.9000  1.5000  1.3000  1.1000  2.6000  1.8000  1.1000  0.4000  0.2000
0.0000  1.3000  0.5000  0.0000
 175.  *  3.2000  1.8000  1.4000  1.1000  2.1000  1.5000  1.1000  0.7000  0.3000
0.0000  0.9000  0.4000  0.0000
 180.  *  2.4000  2.1000  1.7000  1.1000  1.7000  1.2000  1.1000  1.1000  0.6000
0.0000  0.5000  0.1000  0.0000
 185.  *  1.7000  2.5000  1.9000  1.1000  1.3000  1.2000  1.1000  1.4000  0.8000
0.0000  0.2000  0.0000  0.0000
 190.  *  1.0000  2.8000  2.2000  1.3000  1.2000  1.1000  1.1000  1.8000  1.2000
0.3000  0.2000  0.1000  0.1000
```

```
 195.  *  0.7000  3.2000  2.5000  1.5000  1.3000  1.3000  1.3000  2.0000  1.3000
0.3000  0.1000  0.1000  0.1000
 200.  *  0.5000  3.2000  2.5000  1.7000  1.3000  1.3000  1.3000  1.9000  1.3000
0.4000  0.1000  0.1000  0.1000
 205.  *  0.3000  3.2000  2.5000  1.8000  1.4000  1.4000  1.3000  1.9000  1.3000
0.6000  0.1000  0.1000  0.1000
 210.  *  0.3000  3.4000  2.7000  1.9000  1.4000  1.4000  1.4000  1.9000  1.3000
0.6000  0.1000  0.1000  0.1000
```



```
      JOB: Fred Ex AQ Analysis                                  RUN: 2022 - I95 and
Russell Rd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------------
---------------------------
 215.  *  0.3000  3.6000  2.8000  1.9000  1.5000  1.5000  1.4000  1.8000  1.3000
0.6000  0.1000  0.1000  0.1000
 220.  *  0.2000  3.8000  3.0000  2.1000  1.6000  1.6000  1.5000  1.7000  1.4000
0.7000  0.2000  0.2000  0.2000
 225.  *  0.2000  3.9000  3.0000  2.3000  1.7000  1.7000  1.6000  1.9000  1.5000
0.8000  0.3000  0.3000  0.3000
 230.  *  0.2000  4.0000  3.3000  2.4000  1.8000  1.8000  1.6000  2.2000  1.6000
0.9000  0.5000  0.4000  0.4000
 235.  *  0.1000  4.1000  3.3000  2.3000  1.7000  1.7000  1.5000  2.4000  1.9000
1.5000  0.8000  0.8000  0.7000
 240.  *  0.1000  3.9000  3.2000  2.5000  1.6000  1.5000  1.4000  2.7000  2.3000
1.9000  1.1000  1.1000  0.9000
 245.  *  0.1000  3.8000  3.1000  2.1000  1.3000  1.3000  1.1000  3.1000  2.7000
2.2000  1.5000  1.5000  1.3000
 250.  *  0.0000  3.3000  2.5000  1.8000  1.0000  1.0000  0.8000  3.6000  3.1000
2.7000  1.8000  1.8000  1.5000
 255.  *  0.0000  2.8000  2.3000  1.4000  0.7000  0.6000  0.6000  3.6000  3.4000
2.7000  1.9000  1.9000  1.7000
 260.  *  0.0000  2.5000  2.0000  1.0000  0.4000  0.4000  0.3000  3.8000  3.4000
2.8000  1.9000  1.9000  1.8000
 265.  *  0.0000  2.4000  1.7000  0.9000  0.2000  0.2000  0.2000  3.8000  3.4000
2.4000  1.8000  1.8000  1.8000
 270.  *  0.0000  2.2000  1.6000  0.8000  0.1000  0.1000  0.1000  3.7000  3.2000
2.3000  1.7000  1.7000  1.7000
 275.  *  0.1000  2.2000  1.6000  0.8000  0.1000  0.1000  0.1000  3.6000  3.1000
2.3000  1.6000  1.6000  1.6000
```

```
 280.  *  0.2000  2.2000  1.6000  0.7000  0.1000  0.1000  0.1000  3.7000  2.9000
2.1000  1.5000  1.5000  1.5000
 285.  *  0.3000  2.2000  1.6000  0.7000  0.1000  0.1000  0.1000  3.5000  2.9000
2.1000  1.5000  1.5000  1.5000
 290.  *  0.3000  2.3000  1.6000  0.8000  0.1000  0.1000  0.1000  3.4000  2.8000
2.0000  1.3000  1.3000  1.3000
 295.  *  0.3000  2.3000  1.6000  0.8000  0.1000  0.1000  0.1000  3.5000  2.8000
2.0000  1.3000  1.3000  1.3000
 300.  *  0.4000  2.2000  1.6000  0.7000  0.0000  0.0000  0.0000  3.4000  2.7000
1.9000  1.2000  1.2000  1.2000
 305.  *  0.4000  2.2000  1.6000  0.7000  0.0000  0.0000  0.0000  3.4000  2.8000
1.9000  1.2000  1.2000  1.2000
 310.  *  0.4000  2.2000  1.6000  0.7000  0.0000  0.0000  0.0000  3.4000  2.8000
1.9000  1.2000  1.2000  1.2000
 315.  *  0.5000  2.3000  1.7000  0.6000  0.0000  0.0000  0.0000  3.4000  2.8000
1.8000  1.1000  1.1000  1.1000
 320.  *  0.5000  2.5000  1.7000  0.6000  0.0000  0.0000  0.0000  3.6000  2.8000
1.7000  1.1000  1.1000  1.1000
 325.  *  0.5000  2.5000  1.8000  0.5000  0.0000  0.0000  0.0000  3.7000  3.0000
1.7000  1.2000  1.2000  1.2000
 330.  *  0.7000  2.6000  1.8000  0.2000  0.0000  0.0000  0.0000  3.8000  3.0000
1.6000  1.2000  1.2000  1.2000
 335.  *  0.9000  2.7000  1.8000  0.1000  0.0000  0.0000  0.0000  3.8000  3.0000
1.4000  1.2000  1.2000  1.2000
 340.  *  1.4000  2.7000  1.6000  0.1000  0.0000  0.0000  0.0000  3.9000  2.9000
1.3000  1.2000  1.2000  1.2000
 345.  *  2.2000  2.5000  1.4000  0.0000  0.0000  0.0000  0.0000  3.7000  2.7000
1.2000  1.3000  1.2000  1.2000
 350.  *  3.3000  2.2000  1.1000  0.0000  0.2000  0.0000  0.0000  3.4000  2.2000
1.1000  1.4000  1.2000  1.1000
 355.  *  4.5000  1.7000  0.8000  0.0000  0.5000  0.2000  0.0000  2.9000  1.9000
1.1000  1.7000  1.3000  1.1000
 360.  *  5.2000  1.1000  0.4000  0.0000  0.9000  0.4000  0.0000  2.4000  1.6000
1.2000  2.2000  1.6000  1.2000

------*----------------------------------------------------------------------
---------------------------
 MAX   *  5.7000  4.1000  3.3000  2.5000  3.8000  3.1000  2.4000  3.9000  3.4000
2.8000  4.2000  3.6000  2.7000
 DEGR. *      5     235     230     240      75      70      70     340     255
260      50      50      55

 THE HIGHEST CONCENTRATION OF   6.8000 PPM OCCURRED AT RECEPTOR    13.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
5,4,4,4,1240,1750,717.5,677.5,1240,1750,717.5,677.5,1036.8,1036.8,1036.8,1036.8,1036
.8,1036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,
1200,0,0,1200,-1200,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-58.0,58.0,5.9
'N Leg, W Side - 25 m',-58.0,130.0,5.9
'N Leg, W Side - 50 m',-58.0,212.0,5.9
'N Leg, W Side-Midblk',-58.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-58.0,5.9
'S Leg, E Side - 25 m',70.0,-130.0,5.9
'S Leg, E Side - 50 m',70.0,-212.0,5.9
'S Leg, E Side-Midblk',70.0,-648.0,5.9
'S Leg, W Side-Corner',-58.0,-58.0,5.9
'S Leg, W Side - 25 m',-58.0,-130.0,5.9
'S Leg, W Side - 50 m',-58.0,-212.0,5.9
'S Leg, W Side-Midblk',-58.0,-648.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-130.0,58.0,5.9
'W Leg, N Side - 50 m',-212.0,58.0,5.9
'W Leg, N Side-Midblk',-648.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-58.0,5.9
'E Leg, S Side - 50 m',224.0,-58.0,5.9
'E Leg, S Side-Midblk',660.0,-58.0,5.9
'W Leg, S Side - 25 m',-130.0,-58.0,5.9
'W Leg, S Side - 50 m',-212.0,-58.0,5.9
'W Leg, S Side-Midblk',-648.0,-58.0,5.9
'2042 NO BUILD - I95 and US17 (Exit 133)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,0,-24,1200,7000,2.27,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,6200,1.02,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,6200,2.27,0.0,79.7
1
'S Leg Dep - FreeFlow','AG',-24,0,-24,-1200,7000,1.05,0.0,67.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,2710,2.05,0.0,67.7
1
'E Leg Dep - FreeFlow','AG',0,-24,1200,-24,2870,0.87,0.0,67.7
1
```

```
'W Leg App - FreeFlow','AG',0,-24,-1200,-24,2870,2.05,0.0,67.7
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,2710,0.87,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2042 NoBuild I95 and US 17 OUT

```
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
                         CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                        PAGE  1

      JOB: FredEx AQ Analysis                                   RUN: 2042 NO BUILD -
I95 and US17 (Exit 133)

      DATE :  8/15/17
      TIME : 11:32:38

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -24.0       0.0     -24.0    1200.0 *    1200.
360. AG   7000.   2.3   0.0 67.7
       2. N Leg Dep - FreeFlow*     30.0       0.0      30.0    1200.0 *    1200.
360. AG   6200.   1.0   0.0 79.7
       3. S Leg App - FreeFlow*     30.0       0.0      30.0   -1200.0 *    1200.
180. AG   6200.   2.3   0.0 79.7
       4. S Leg Dep - FreeFlow*    -24.0       0.0     -24.0   -1200.0 *    1200.
180. AG   7000.   1.0   0.0 67.7
       5. E Leg App - FreeFlow*      0.0      24.0    1200.0      24.0 *    1200.
90. AG   2710.   2.0   0.0 67.7
       6. E Leg Dep - FreeFlow*      0.0     -24.0    1200.0     -24.0 *    1200.
90. AG   2870.   0.9   0.0 67.7
       7. W Leg App - FreeFlow*      0.0     -24.0   -1200.0     -24.0 *    1200.
270. AG   2870.   2.0   0.0 67.7
       8. W Leg Dep - FreeFlow*      0.0      24.0   -1200.0      24.0 *    1200.
270. AG   2710.   0.9   0.0 67.7

                             PAGE  2
      JOB: FredEx AQ Analysis                                   RUN: 2042 NO BUILD -
```

2042 NoBuild I95 and US 17 OUT

I95 and US17 (Exit 133)

DATE : 8/15/17
TIME : 11:32:38

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X (FT)	Y (FT)	Z (FT)	*
1. N Leg, E Side-Corner	*	70.0	58.0	5.9	*
2. N Leg, E Side - 25 m	*	70.0	130.0	5.9	*
3. N Leg, E Side - 50 m	*	70.0	212.0	5.9	*
4. N Leg, E Side-Midblk	*	70.0	648.0	5.9	*
5. N Leg, W Side-Corner	*	-58.0	58.0	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	130.0	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	212.0	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	648.0	5.9	*
9. S Leg, E Side-Corner	*	70.0	-58.0	5.9	*
10. S Leg, E Side - 25 m	*	70.0	-130.0	5.9	*
11. S Leg, E Side - 50 m	*	70.0	-212.0	5.9	*
12. S Leg, E Side-Midblk	*	70.0	-648.0	5.9	*
13. S Leg, W Side-Corner	*	-58.0	-58.0	5.9	*
14. S Leg, W Side - 25 m	*	-58.0	-130.0	5.9	*
15. S Leg, W Side - 50 m	*	-58.0	-212.0	5.9	*
16. S Leg, W Side-Midblk	*	-58.0	-648.0	5.9	*
17. E Leg, N Side - 25 m	*	142.0	58.0	5.9	*
18. E Leg, N Side - 50 m	*	224.0	58.0	5.9	*
19. E Leg, N Side-Midblk	*	660.0	58.0	5.9	*
20. W Leg, N Side - 25 m	*	-130.0	58.0	5.9	*
21. W Leg, N Side - 50 m	*	-212.0	58.0	5.9	*
22. W Leg, N Side-Midblk	*	-648.0	58.0	5.9	*
23. E Leg, S Side - 25 m	*	142.0	-58.0	5.9	*
24. E Leg, S Side - 50 m	*	224.0	-58.0	5.9	*
25. E Leg, S Side-Midblk	*	660.0	-58.0	5.9	*
26. W Leg, S Side - 25 m	*	-130.0	-58.0	5.9	*

```
     27. W Leg, S Side - 50 m *      -212.0      -58.0        5.9   *
     28. W Leg, S Side-Midblk *      -648.0      -58.0        5.9   *

                              PAGE  3
      JOB: FredEx AQ Analysis                                   RUN: 2042 NO BUILD -
I95 and US17 (Exit 133)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-----------------------------------------
   5.  *  0.3000  0.3000  0.3000  0.3000  0.9000  0.9000  0.9000  0.8000  0.5000
0.5000  0.5000  0.5000  1.0000  0.8000  0.6000
  10.  *  0.2000  0.1000  0.1000  0.1000  0.9000  0.9000  0.9000  0.9000  0.5000
0.4000  0.4000  0.3000  1.0000  0.8000  0.8000
  15.  *  0.1000  0.1000  0.1000  0.1000  0.9000  0.9000  0.9000  0.9000  0.4000
0.2000  0.1000  0.2000  0.9000  0.7000  0.7000
  20.  *  0.1000  0.1000  0.1000  0.1000  0.8000  0.8000  0.8000  0.8000  0.3000
0.2000  0.1000  0.1000  0.9000  0.8000  0.7000
  25.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.2000
0.2000  0.1000  0.1000  0.8000  0.8000  0.7000
  30.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.1000  0.1000  0.1000  0.8000  0.6000  0.5000
  35.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.1000  0.1000  0.0000  0.7000  0.8000  0.6000
  40.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.1000  0.1000  0.0000  0.9000  0.6000  0.6000
  45.  *  0.0000  0.0000  0.0000  0.0000  0.6000  0.6000  0.6000  0.6000  0.2000
0.1000  0.1000  0.0000  0.8000  0.5000  0.6000
  50.  *  0.0000  0.0000  0.0000  0.0000  0.6000  0.6000  0.6000  0.6000  0.2000
0.1000  0.1000  0.0000  0.8000  0.5000  0.6000
  55.  *  0.0000  0.0000  0.0000  0.0000  0.6000  0.6000  0.6000  0.6000  0.2000
0.1000  0.1000  0.0000  0.7000  0.6000  0.6000
  60.  *  0.0000  0.0000  0.0000  0.0000  0.6000  0.6000  0.6000  0.6000  0.2000
0.1000  0.1000  0.0000  0.6000  0.6000  0.6000
```

```
  65.  *  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000  0.5000  0.5000  0.2000
0.1000  0.1000  0.0000  0.7000  0.6000  0.6000
  70.  *  0.1000  0.0000  0.0000  0.0000  0.5000  0.5000  0.5000  0.5000  0.2000
0.1000  0.1000  0.0000  0.7000  0.5000  0.6000
  75.  *  0.1000  0.0000  0.0000  0.0000  0.6000  0.5000  0.5000  0.5000  0.2000
0.1000  0.0000  0.0000  0.7000  0.5000  0.4000
  80.  *  0.1000  0.0000  0.0000  0.0000  0.7000  0.6000  0.6000  0.6000  0.2000
0.1000  0.0000  0.0000  0.7000  0.5000  0.4000
  85.  *  0.2000  0.0000  0.0000  0.0000  0.7000  0.6000  0.6000  0.6000  0.2000
0.0000  0.0000  0.0000  0.7000  0.5000  0.5000
  90.  *  0.2000  0.0000  0.0000  0.0000  0.8000  0.7000  0.6000  0.6000  0.2000
0.0000  0.0000  0.0000  0.8000  0.5000  0.5000
  95.  *  0.3000  0.1000  0.0000  0.0000  0.8000  0.7000  0.6000  0.6000  0.1000
0.0000  0.0000  0.0000  0.7000  0.5000  0.5000
 100.  *  0.4000  0.1000  0.0000  0.0000  0.9000  0.7000  0.6000  0.6000  0.1000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 105.  *  0.4000  0.1000  0.1000  0.0000  0.8000  0.6000  0.6000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 110.  *  0.4000  0.1000  0.1000  0.0000  0.8000  0.6000  0.6000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 115.  *  0.3000  0.1000  0.1000  0.0000  0.9000  0.6000  0.6000  0.5000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 120.  *  0.3000  0.1000  0.1000  0.0000  0.8000  0.7000  0.7000  0.6000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 125.  *  0.3000  0.1000  0.1000  0.0000  0.8000  0.7000  0.7000  0.6000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 130.  *  0.3000  0.1000  0.1000  0.0000  0.8000  0.7000  0.7000  0.6000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 135.  *  0.3000  0.1000  0.1000  0.0000  0.8000  0.8000  0.7000  0.6000  0.0000
0.0000  0.0000  0.0000  0.5000  0.5000  0.5000
 140.  *  0.2000  0.1000  0.1000  0.0000  0.9000  0.9000  0.8000  0.7000  0.0000
0.0000  0.0000  0.0000  0.6000  0.6000  0.6000
 145.  *  0.2000  0.1000  0.1000  0.0000  0.9000  0.9000  0.9000  0.7000  0.0000
0.0000  0.0000  0.0000  0.6000  0.6000  0.6000
 150.  *  0.2000  0.1000  0.1000  0.0000  1.0000  0.9000  0.8000  0.7000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 155.  *  0.2000  0.1000  0.1000  0.0000  1.1000  0.9000  0.8000  0.8000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 160.  *  0.3000  0.1000  0.1000  0.1000  1.0000  0.9000  1.0000  0.8000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 165.  *  0.3000  0.2000  0.3000  0.1000  1.0000  0.9000  1.0000  1.0000  0.2000
0.2000  0.2000  0.2000  0.7000  0.7000  0.7000
 170.  *  0.4000  0.4000  0.3000  0.2000  1.1000  1.1000  0.9000  1.0000  0.3000
0.3000  0.3000  0.3000  0.7000  0.7000  0.7000
 175.  *  0.7000  0.5000  0.5000  0.4000  1.1000  0.9000  0.8000  0.9000  0.4000
0.4000  0.4000  0.4000  0.6000  0.6000  0.6000
 180.  *  0.8000  0.6000  0.6000  0.4000  0.8000  0.9000  0.8000  0.8000  0.7000
0.7000  0.7000  0.5000  0.5000  0.5000  0.5000
```

```
 185.  *  0.9000  0.6000  0.6000  0.6000  0.7000  0.6000  0.5000  0.6000  0.8000
0.7000  0.7000  0.7000  0.3000  0.3000  0.3000
 190.  *  0.9000  0.7000  0.6000  0.6000  0.5000  0.5000  0.4000  0.3000  0.8000
0.8000  0.8000  0.7000  0.3000  0.3000  0.3000
 195.  *  1.0000  0.7000  0.6000  0.6000  0.4000  0.2000  0.2000  0.2000  0.9000
0.9000  0.8000  0.7000  0.1000  0.1000  0.1000
 200.  *  0.9000  0.7000  0.5000  0.6000  0.3000  0.2000  0.1000  0.1000  0.8000
0.8000  0.8000  0.7000  0.1000  0.1000  0.1000
 205.  *  0.7000  0.7000  0.6000  0.6000  0.3000  0.2000  0.2000  0.1000  0.8000
0.8000  0.8000  0.7000  0.0000  0.0000  0.0000
 210.  *  0.7000  0.6000  0.4000  0.5000  0.2000  0.2000  0.2000  0.1000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
```

```
                           PAGE  4
     JOB: FredEx AQ Analysis                                   RUN: 2042 NO BUILD -
I95 and US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
 215.  *  0.6000  0.7000  0.4000  0.5000  0.2000  0.2000  0.2000  0.1000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 220.  *  0.6000  0.6000  0.6000  0.5000  0.2000  0.2000  0.2000  0.1000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 225.  *  0.8000  0.5000  0.6000  0.5000  0.2000  0.2000  0.2000  0.1000  0.5000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 230.  *  0.8000  0.5000  0.6000  0.5000  0.2000  0.1000  0.1000  0.0000  0.5000
0.5000  0.5000  0.5000  0.0000  0.0000  0.0000
 235.  *  0.8000  0.6000  0.6000  0.5000  0.2000  0.1000  0.1000  0.0000  0.5000
0.5000  0.5000  0.5000  0.0000  0.0000  0.0000
 240.  *  0.7000  0.6000  0.6000  0.5000  0.2000  0.1000  0.1000  0.0000  0.5000
0.5000  0.5000  0.5000  0.0000  0.0000  0.0000
 245.  *  0.6000  0.6000  0.6000  0.5000  0.2000  0.1000  0.1000  0.0000  0.5000
0.5000  0.5000  0.5000  0.0000  0.0000  0.0000
 250.  *  0.7000  0.6000  0.6000  0.5000  0.2000  0.1000  0.1000  0.0000  0.5000
0.5000  0.5000  0.5000  0.1000  0.0000  0.0000
 255.  *  0.7000  0.6000  0.5000  0.5000  0.2000  0.1000  0.0000  0.0000  0.6000
0.5000  0.5000  0.5000  0.1000  0.0000  0.0000
 260.  *  0.7000  0.6000  0.5000  0.5000  0.2000  0.1000  0.0000  0.0000  0.6000
0.5000  0.5000  0.5000  0.1000  0.0000  0.0000
 265.  *  0.8000  0.5000  0.5000  0.5000  0.2000  0.0000  0.0000  0.0000  0.6000
0.5000  0.5000  0.5000  0.2000  0.0000  0.0000
```

```
 270.  *  0.8000  0.5000  0.5000  0.5000  0.2000  0.0000  0.0000  0.0000  0.7000
0.6000  0.5000  0.5000  0.3000  0.1000  0.0000
 275.  *  0.8000  0.5000  0.5000  0.5000  0.1000  0.0000  0.0000  0.0000  0.7000
0.6000  0.5000  0.5000  0.3000  0.1000  0.0000
 280.  *  0.5000  0.5000  0.5000  0.5000  0.1000  0.0000  0.0000  0.0000  0.9000
0.6000  0.6000  0.5000  0.4000  0.1000  0.0000
 285.  *  0.5000  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.9000
0.6000  0.6000  0.5000  0.4000  0.1000  0.1000
 290.  *  0.5000  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.9000
0.6000  0.6000  0.5000  0.4000  0.1000  0.1000
 295.  *  0.5000  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.8000
0.6000  0.6000  0.5000  0.4000  0.1000  0.1000
 300.  *  0.5000  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.8000
0.6000  0.6000  0.5000  0.3000  0.1000  0.1000
 305.  *  0.5000  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.8000
0.6000  0.6000  0.5000  0.3000  0.1000  0.1000
 310.  *  0.5000  0.5000  0.5000  0.5000  0.0000  0.0000  0.0000  0.0000  0.7000
0.7000  0.6000  0.5000  0.2000  0.1000  0.1000
 315.  *  0.5000  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.8000
0.7000  0.6000  0.6000  0.2000  0.1000  0.1000
 320.  *  0.5000  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.8000
0.8000  0.7000  0.6000  0.2000  0.1000  0.1000
 325.  *  0.5000  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.9000
0.8000  0.8000  0.6000  0.2000  0.1000  0.1000
 330.  *  0.5000  0.5000  0.5000  0.5000  0.1000  0.1000  0.1000  0.1000  0.9000
0.8000  0.7000  0.6000  0.2000  0.1000  0.1000
 335.  *  0.6000  0.6000  0.6000  0.6000  0.1000  0.1000  0.1000  0.1000  0.9000
0.7000  0.7000  0.7000  0.2000  0.1000  0.1000
 340.  *  0.6000  0.6000  0.6000  0.6000  0.2000  0.2000  0.2000  0.1000  1.0000
0.8000  0.9000  0.7000  0.3000  0.2000  0.2000
 345.  *  0.6000  0.6000  0.6000  0.6000  0.2000  0.2000  0.2000  0.2000  0.9000
0.8000  0.8000  0.8000  0.4000  0.3000  0.3000
 350.  *  0.6000  0.6000  0.6000  0.5000  0.4000  0.4000  0.4000  0.3000  0.9000
0.9000  0.8000  0.8000  0.6000  0.4000  0.3000
 355.  *  0.5000  0.5000  0.5000  0.5000  0.5000  0.5000  0.5000  0.5000  0.8000
0.8000  0.7000  0.8000  0.8000  0.6000  0.5000
 360.  *  0.5000  0.5000  0.4000  0.3000  0.8000  0.8000  0.8000  0.6000  0.8000
0.7000  0.7000  0.7000  0.9000  0.8000  0.7000

------*--------------------------------------------------------------------------
------------------------------------------
 MAX   *  1.0000  0.7000  0.6000  0.6000  1.1000  1.1000  1.0000  1.0000  1.0000
0.9000  0.9000  0.8000  1.0000  0.8000  0.8000
 DEGR. *    195     190     180     185     155     170     160     165     340
350     340     345       5      20      10
```

JOB: FredEx AQ Analysis RUN: 2042 NO BUILD - I95 and US17 (Exit 133)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	0.6000	0.0000	0.0000	0.0000	0.2000	0.1000	0.0000	0.2000	0.2000	0.2000	0.5000	0.3000	0.2000
10.	0.7000	0.0000	0.0000	0.0000	0.4000	0.1000	0.0000	0.2000	0.2000	0.2000	0.6000	0.3000	0.2000
15.	0.8000	0.0000	0.0000	0.0000	0.4000	0.2000	0.0000	0.2000	0.2000	0.2000	0.6000	0.5000	0.2000
20.	0.6000	0.0000	0.0000	0.0000	0.4000	0.3000	0.0000	0.2000	0.2000	0.2000	0.6000	0.5000	0.2000
25.	0.6000	0.0000	0.0000	0.0000	0.4000	0.3000	0.0000	0.2000	0.2000	0.2000	0.6000	0.5000	0.2000
30.	0.6000	0.0000	0.0000	0.0000	0.4000	0.3000	0.0000	0.2000	0.2000	0.2000	0.6000	0.5000	0.3000
35.	0.6000	0.0000	0.0000	0.0000	0.4000	0.3000	0.1000	0.2000	0.2000	0.2000	0.6000	0.5000	0.3000
40.	0.6000	0.0000	0.0000	0.0000	0.4000	0.3000	0.1000	0.2000	0.2000	0.2000	0.5000	0.5000	0.3000
45.	0.5000	0.0000	0.0000	0.0000	0.4000	0.3000	0.1000	0.2000	0.2000	0.2000	0.5000	0.5000	0.3000
50.	0.5000	0.0000	0.0000	0.0000	0.4000	0.3000	0.1000	0.2000	0.2000	0.2000	0.5000	0.5000	0.3000
55.	0.5000	0.0000	0.0000	0.0000	0.3000	0.3000	0.1000	0.2000	0.2000	0.2000	0.5000	0.5000	0.4000
60.	0.5000	0.0000	0.0000	0.0000	0.3000	0.3000	0.1000	0.2000	0.2000	0.2000	0.6000	0.4000	0.4000
65.	0.5000	0.0000	0.0000	0.0000	0.3000	0.3000	0.1000	0.2000	0.2000	0.2000	0.6000	0.3000	0.5000
70.	0.5000	0.1000	0.1000	0.0000	0.3000	0.3000	0.1000	0.2000	0.2000	0.2000	0.6000	0.4000	0.5000

```
  75.  *  0.5000  0.1000  0.1000  0.1000  0.3000  0.3000  0.1000  0.2000  0.2000
0.2000  0.5000  0.5000  0.4000
  80.  *  0.5000  0.1000  0.1000  0.1000  0.4000  0.4000  0.2000  0.2000  0.2000
0.2000  0.6000  0.5000  0.3000
  85.  *  0.5000  0.2000  0.2000  0.2000  0.4000  0.5000  0.2000  0.2000  0.2000
0.2000  0.6000  0.5000  0.3000
  90.  *  0.5000  0.2000  0.2000  0.2000  0.5000  0.3000  0.2000  0.2000  0.2000
0.1000  0.6000  0.5000  0.2000
  95.  *  0.5000  0.3000  0.3000  0.2000  0.5000  0.3000  0.2000  0.1000  0.1000
0.1000  0.4000  0.3000  0.2000
 100.  *  0.5000  0.4000  0.4000  0.3000  0.5000  0.3000  0.2000  0.1000  0.1000
0.1000  0.4000  0.3000  0.2000
 105.  *  0.5000  0.4000  0.4000  0.3000  0.6000  0.5000  0.2000  0.0000  0.0000
0.0000  0.4000  0.3000  0.2000
 110.  *  0.5000  0.4000  0.4000  0.4000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.2000
 115.  *  0.5000  0.3000  0.3000  0.3000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 120.  *  0.5000  0.3000  0.3000  0.3000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 125.  *  0.5000  0.3000  0.3000  0.3000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 130.  *  0.5000  0.3000  0.3000  0.3000  0.6000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 135.  *  0.5000  0.3000  0.3000  0.3000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 140.  *  0.6000  0.2000  0.2000  0.2000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.1000
 145.  *  0.6000  0.2000  0.2000  0.2000  0.5000  0.4000  0.3000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 150.  *  0.6000  0.2000  0.2000  0.2000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 155.  *  0.6000  0.2000  0.2000  0.2000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 160.  *  0.6000  0.2000  0.2000  0.2000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 165.  *  0.7000  0.2000  0.2000  0.2000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.3000  0.2000  0.0000
 170.  *  0.6000  0.2000  0.2000  0.2000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.2000  0.2000  0.0000
 175.  *  0.5000  0.3000  0.2000  0.2000  0.4000  0.3000  0.2000  0.1000  0.0000
0.0000  0.2000  0.0000  0.0000
 180.  *  0.4000  0.3000  0.3000  0.2000  0.4000  0.2000  0.2000  0.1000  0.0000
0.0000  0.2000  0.0000  0.0000
 185.  *  0.3000  0.5000  0.3000  0.2000  0.2000  0.2000  0.2000  0.3000  0.1000
0.0000  0.0000  0.0000  0.0000
 190.  *  0.2000  0.5000  0.3000  0.2000  0.2000  0.2000  0.2000  0.3000  0.1000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.1000  0.6000  0.5000  0.2000  0.2000  0.2000  0.2000  0.4000  0.2000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  0.6000  0.5000  0.2000  0.2000  0.2000  0.2000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.0000  0.6000  0.5000  0.2000  0.2000  0.2000  0.2000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 210.  *  0.0000  0.6000  0.5000  0.2000  0.2000  0.2000  0.2000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
↑
                              PAGE   6
      JOB: FredEx AQ Analysis                                   RUN: 2042 NO BUILD -
I95 and US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.0000  0.5000  0.5000  0.3000  0.2000  0.2000  0.2000  0.3000  0.3000
0.1000  0.0000  0.0000  0.0000
 220.  *  0.0000  0.5000  0.5000  0.3000  0.2000  0.2000  0.2000  0.3000  0.3000
0.1000  0.0000  0.0000  0.0000
 225.  *  0.0000  0.5000  0.5000  0.4000  0.2000  0.2000  0.2000  0.3000  0.3000
0.1000  0.0000  0.0000  0.0000
 230.  *  0.0000  0.5000  0.4000  0.4000  0.2000  0.2000  0.2000  0.3000  0.3000
0.1000  0.0000  0.0000  0.0000
 235.  *  0.0000  0.4000  0.4000  0.4000  0.2000  0.2000  0.2000  0.3000  0.3000
0.1000  0.0000  0.0000  0.0000
 240.  *  0.0000  0.5000  0.4000  0.4000  0.2000  0.2000  0.2000  0.3000  0.2000
0.1000  0.0000  0.0000  0.0000
 245.  *  0.0000  0.7000  0.4000  0.4000  0.2000  0.2000  0.2000  0.3000  0.2000
0.1000  0.0000  0.0000  0.0000
 250.  *  0.0000  0.6000  0.4000  0.5000  0.2000  0.2000  0.2000  0.3000  0.2000
0.1000  0.1000  0.1000  0.1000
 255.  *  0.0000  0.5000  0.5000  0.5000  0.2000  0.2000  0.2000  0.3000  0.2000
0.1000  0.1000  0.1000  0.1000
 260.  *  0.0000  0.6000  0.4000  0.3000  0.2000  0.2000  0.2000  0.4000  0.3000
0.2000  0.1000  0.1000  0.1000
 265.  *  0.0000  0.7000  0.5000  0.3000  0.2000  0.2000  0.2000  0.4000  0.4000
0.2000  0.2000  0.2000  0.2000
 270.  *  0.0000  0.6000  0.5000  0.2000  0.2000  0.2000  0.1000  0.5000  0.4000
0.2000  0.3000  0.3000  0.2000
 275.  *  0.0000  0.5000  0.3000  0.3000  0.1000  0.1000  0.1000  0.5000  0.3000
0.2000  0.3000  0.3000  0.3000
```

```
 280.  *  0.0000  0.4000  0.3000  0.2000  0.1000  0.1000  0.0000  0.5000  0.4000
0.2000  0.3000  0.3000  0.3000
 285.  *  0.0000  0.4000  0.3000  0.2000  0.0000  0.0000  0.0000  0.6000  0.5000
0.3000  0.4000  0.4000  0.3000
 290.  *  0.0000  0.3000  0.2000  0.2000  0.0000  0.0000  0.0000  0.5000  0.4000
0.3000  0.4000  0.4000  0.3000
 295.  *  0.0000  0.3000  0.2000  0.1000  0.0000  0.0000  0.0000  0.5000  0.3000
0.3000  0.4000  0.4000  0.4000
 300.  *  0.0000  0.3000  0.2000  0.1000  0.0000  0.0000  0.0000  0.5000  0.4000
0.3000  0.3000  0.3000  0.3000
 305.  *  0.0000  0.3000  0.2000  0.1000  0.0000  0.0000  0.0000  0.6000  0.4000
0.3000  0.3000  0.3000  0.3000
 310.  *  0.0000  0.3000  0.2000  0.1000  0.0000  0.0000  0.0000  0.6000  0.4000
0.3000  0.2000  0.2000  0.2000
 315.  *  0.0000  0.3000  0.2000  0.1000  0.0000  0.0000  0.0000  0.5000  0.4000
0.3000  0.2000  0.2000  0.2000
 320.  *  0.0000  0.3000  0.2000  0.1000  0.0000  0.0000  0.0000  0.5000  0.4000
0.3000  0.2000  0.2000  0.2000
 325.  *  0.0000  0.3000  0.3000  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000
0.3000  0.2000  0.2000  0.2000
 330.  *  0.0000  0.3000  0.3000  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000
0.2000  0.2000  0.2000  0.2000
 335.  *  0.0000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.5000  0.5000
0.2000  0.2000  0.2000  0.2000
 340.  *  0.1000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.5000  0.4000
0.2000  0.2000  0.2000  0.2000
 345.  *  0.1000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.5000  0.4000
0.2000  0.2000  0.2000  0.2000
 350.  *  0.3000  0.3000  0.2000  0.0000  0.0000  0.0000  0.0000  0.5000  0.4000
0.2000  0.2000  0.2000  0.2000
 355.  *  0.4000  0.2000  0.1000  0.0000  0.1000  0.0000  0.0000  0.4000  0.3000
0.2000  0.3000  0.2000  0.2000
 360.  *  0.5000  0.2000  0.0000  0.0000  0.1000  0.1000  0.0000  0.4000  0.2000
0.2000  0.4000  0.3000  0.2000

------*--------------------------------------------------------------------------
--------------------------
 MAX   *  0.8000  0.7000  0.5000  0.5000  0.6000  0.5000  0.3000  0.6000  0.5000
0.3000  0.6000  0.5000  0.5000
 DEGR. *     15     245     195     250     105      85     110     285     285
285      10      15      65

 THE HIGHEST CONCENTRATION OF   1.1000 PPM OCCURRED AT RECEPTOR     5.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
5,7,4,4,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',70.0,58.0,5.9
'N Leg, E Side - 25 m',70.0,130.0,5.9
'N Leg, E Side - 50 m',70.0,212.0,5.9
'N Leg, E Side-Midblk',70.0,648.0,5.9
'N Leg, W Side-Corner',-94.0,58.0,5.9
'N Leg, W Side - 25 m',-94.0,130.0,5.9
'N Leg, W Side - 50 m',-94.0,212.0,5.9
'N Leg, W Side-Midblk',-94.0,648.0,5.9
'S Leg, E Side-Corner',70.0,-58.0,5.9
'S Leg, E Side - 25 m',70.0,-130.0,5.9
'S Leg, E Side - 50 m',70.0,-212.0,5.9
'S Leg, E Side-Midblk',70.0,-648.0,5.9
'S Leg, W Side-Corner',-94.0,-58.0,5.9
'S Leg, W Side - 25 m',-94.0,-130.0,5.9
'S Leg, W Side - 50 m',-94.0,-212.0,5.9
'S Leg, W Side-Midblk',-94.0,-648.0,5.9
'E Leg, N Side - 25 m',142.0,58.0,5.9
'E Leg, N Side - 50 m',224.0,58.0,5.9
'E Leg, N Side-Midblk',660.0,58.0,5.9
'W Leg, N Side - 25 m',-166.0,58.0,5.9
'W Leg, N Side - 50 m',-248.0,58.0,5.9
'W Leg, N Side-Midblk',-684.0,58.0,5.9
'E Leg, S Side - 25 m',142.0,-58.0,5.9
'E Leg, S Side - 50 m',224.0,-58.0,5.9
'E Leg, S Side-Midblk',660.0,-58.0,5.9
'W Leg, S Side - 25 m',-166.0,-58.0,5.9
'W Leg, S Side - 50 m',-248.0,-58.0,5.9
'W Leg, S Side-Midblk',-684.0,-58.0,5.9
'2042 - I95 and US17 (Exit 133)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-42,0,-42,1200,16800,2.27,0.0,103.7
1
'N Leg Dep - FreeFlow','AG',30,0,30,1200,12000,1.02,0.0,79.7
1
'S Leg App - FreeFlow','AG',30,0,30,-1200,12000,2.27,0.0,79.7
1
'S Leg Dep - FreeFlow','AG',-42,0,-42,-1200,16800,1.02,0.0,103.7
1
'E Leg App - FreeFlow','AG',0,24,1200,24,9600,2.05,0.0,67.7
1
'E Leg Dep - FreeFlow','AG',0,-24,1200,-24,9600,.87,0.0,67.7
1
```

'W Leg App - FreeFlow','AG',0,-24,-1200,-24,9600,2.05,0.0,67.7
1
'W Leg Dep - FreeFlow','AG',0,24,-1200,24,9600,.87,0.0,67.7
1.0,0,4,1000,0.0,'Y',5,1,72

2042 I95 and US 17 OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: FredEx AQ Analysis RUN: 2042 - I95 and US17 (Exit 133)

DATE : 8/15/17
TIME : 11:40:15

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-42.0	0.0	-42.0	1200.0	1200.	360.	AG	16800.	2.3	0.0	****		
2. N Leg Dep - FreeFlow	30.0	0.0	30.0	1200.0	1200.	360.	AG	12000.	1.0	0.0	79.7		
3. S Leg App - FreeFlow	30.0	0.0	30.0	-1200.0	1200.	180.	AG	12000.	2.3	0.0	79.7		
4. S Leg Dep - FreeFlow	-42.0	0.0	-42.0	-1200.0	1200.	180.	AG	16800.	1.0	0.0	****		
5. E Leg App - FreeFlow	0.0	24.0	1200.0	24.0	1200.	90.	AG	9600.	2.0	0.0	67.7		
6. E Leg Dep - FreeFlow	0.0	-24.0	1200.0	-24.0	1200.	90.	AG	9600.	0.9	0.0	67.7		
7. W Leg App - FreeFlow	0.0	-24.0	-1200.0	-24.0	1200.	270.	AG	9600.	2.0	0.0	67.7		
8. W Leg Dep - FreeFlow	0.0	24.0	-1200.0	24.0	1200.	270.	AG	9600.	0.9	0.0	67.7		

PAGE 2
JOB: FredEx AQ Analysis RUN: 2042 - I95 and

US17 (Exit 133)

DATE : 8/15/17
TIME : 11:40:15

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. N Leg, E Side-Corner	*	70.0	58.0	5.9	*
2. N Leg, E Side - 25 m	*	70.0	130.0	5.9	*
3. N Leg, E Side - 50 m	*	70.0	212.0	5.9	*
4. N Leg, E Side-Midblk	*	70.0	648.0	5.9	*
5. N Leg, W Side-Corner	*	-94.0	58.0	5.9	*
6. N Leg, W Side - 25 m	*	-94.0	130.0	5.9	*
7. N Leg, W Side - 50 m	*	-94.0	212.0	5.9	*
8. N Leg, W Side-Midblk	*	-94.0	648.0	5.9	*
9. S Leg, E Side-Corner	*	70.0	-58.0	5.9	*
10. S Leg, E Side - 25 m	*	70.0	-130.0	5.9	*
11. S Leg, E Side - 50 m	*	70.0	-212.0	5.9	*
12. S Leg, E Side-Midblk	*	70.0	-648.0	5.9	*
13. S Leg, W Side-Corner	*	-94.0	-58.0	5.9	*
14. S Leg, W Side - 25 m	*	-94.0	-130.0	5.9	*
15. S Leg, W Side - 50 m	*	-94.0	-212.0	5.9	*
16. S Leg, W Side-Midblk	*	-94.0	-648.0	5.9	*
17. E Leg, N Side - 25 m	*	142.0	58.0	5.9	*
18. E Leg, N Side - 50 m	*	224.0	58.0	5.9	*
19. E Leg, N Side-Midblk	*	660.0	58.0	5.9	*
20. W Leg, N Side - 25 m	*	-166.0	58.0	5.9	*
21. W Leg, N Side - 50 m	*	-248.0	58.0	5.9	*
22. W Leg, N Side-Midblk	*	-684.0	58.0	5.9	*
23. E Leg, S Side - 25 m	*	142.0	-58.0	5.9	*
24. E Leg, S Side - 50 m	*	224.0	-58.0	5.9	*
25. E Leg, S Side-Midblk	*	660.0	-58.0	5.9	*
26. W Leg, S Side - 25 m	*	-166.0	-58.0	5.9	*

2042 I95 and US 17 OUT

27. W Leg, S Side - 50 m * -248.0 -58.0 5.9 *
28. W Leg, S Side-Midblk * -684.0 -58.0 5.9 *

JOB: FredEx AQ Analysis RUN: 2042 - I95 and US17 (Exit 133)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5.	0.6000	0.6000	0.6000	0.4000	1.6000	1.6000	1.6000	1.4000	1.4000	1.1000	1.2000	1.3000	2.3000	1.7000	1.5000
10.	0.4000	0.4000	0.4000	0.2000	1.8000	1.8000	1.8000	1.5000	1.1000	0.8000	0.9000	0.7000	2.3000	1.8000	1.7000
15.	0.2000	0.2000	0.2000	0.1000	1.8000	1.8000	1.8000	1.6000	0.8000	0.6000	0.6000	0.4000	2.2000	1.8000	1.7000
20.	0.1000	0.1000	0.1000	0.1000	1.7000	1.7000	1.7000	1.6000	0.8000	0.4000	0.5000	0.3000	2.0000	1.6000	1.4000
25.	0.1000	0.1000	0.1000	0.1000	1.6000	1.6000	1.6000	1.6000	0.7000	0.4000	0.4000	0.3000	2.0000	1.7000	1.3000
30.	0.1000	0.1000	0.1000	0.1000	1.5000	1.5000	1.5000	1.5000	0.7000	0.4000	0.4000	0.2000	2.0000	1.7000	1.3000
35.	0.0000	0.0000	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	0.8000	0.4000	0.4000	0.2000	2.0000	1.2000	1.3000
40.	0.1000	0.0000	0.0000	0.0000	1.4000	1.4000	1.4000	1.4000	0.8000	0.4000	0.4000	0.2000	1.9000	1.5000	1.1000
45.	0.1000	0.0000	0.0000	0.0000	1.3000	1.3000	1.3000	1.3000	0.8000	0.5000	0.4000	0.2000	1.9000	1.3000	1.2000
50.	0.1000	0.0000	0.0000	0.0000	1.3000	1.3000	1.3000	1.3000	0.8000	0.5000	0.4000	0.2000	1.8000	1.4000	1.2000
55.	0.1000	0.0000	0.0000	0.0000	1.2000	1.2000	1.2000	1.2000	0.8000	0.5000	0.4000	0.2000	2.0000	1.2000	1.1000
60.	0.1000	0.0000	0.0000	0.0000	1.2000	1.2000	1.2000	1.2000	0.7000	0.6000	0.4000	0.1000	2.0000	1.2000	1.1000

```
  65.  *  0.1000  0.0000  0.0000  0.0000  1.1000  1.1000  1.1000  1.1000  0.9000
0.5000  0.3000  0.0000  1.9000  1.2000  1.1000
  70.  *  0.2000  0.0000  0.0000  0.0000  1.2000  1.1000  1.1000  1.1000  0.9000
0.5000  0.3000  0.0000  2.1000  1.3000  1.1000
  75.  *  0.3000  0.0000  0.0000  0.0000  1.4000  1.1000  1.1000  1.1000  0.9000
0.5000  0.2000  0.0000  1.8000  1.3000  1.1000
  80.  *  0.5000  0.0000  0.0000  0.0000  1.5000  1.2000  1.1000  1.1000  0.8000
0.3000  0.2000  0.0000  1.8000  1.1000  1.0000
  85.  *  0.8000  0.1000  0.0000  0.0000  1.8000  1.3000  1.2000  1.2000  0.7000
0.3000  0.1000  0.0000  1.8000  1.1000  1.0000
  90.  *  1.0000  0.2000  0.1000  0.0000  2.0000  1.4000  1.3000  1.2000  0.7000
0.2000  0.0000  0.0000  1.8000  1.1000  0.9000
  95.  *  1.1000  0.4000  0.1000  0.0000  2.2000  1.6000  1.3000  1.2000  0.5000
0.0000  0.0000  0.0000  1.5000  0.9000  0.8000
 100.  *  1.2000  0.4000  0.2000  0.0000  2.2000  1.5000  1.4000  1.1000  0.3000
0.0000  0.0000  0.0000  1.2000  0.8000  0.8000
 105.  *  1.2000  0.5000  0.3000  0.0000  2.0000  1.6000  1.4000  1.1000  0.1000
0.0000  0.0000  0.0000  1.0000  0.8000  0.8000
 110.  *  1.1000  0.5000  0.3000  0.0000  2.0000  1.6000  1.4000  1.1000  0.1000
0.0000  0.0000  0.0000  0.9000  0.8000  0.8000
 115.  *  1.1000  0.5000  0.3000  0.0000  2.2000  1.5000  1.4000  1.2000  0.1000
0.0000  0.0000  0.0000  0.9000  0.8000  0.8000
 120.  *  1.0000  0.5000  0.3000  0.1000  2.0000  1.6000  1.4000  1.3000  0.1000
0.1000  0.1000  0.1000  0.9000  0.8000  0.8000
 125.  *  1.0000  0.4000  0.3000  0.1000  2.0000  1.7000  1.5000  1.3000  0.1000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
 130.  *  0.9000  0.4000  0.3000  0.1000  2.0000  1.5000  1.5000  1.4000  0.1000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
 135.  *  0.9000  0.4000  0.3000  0.1000  2.1000  1.7000  1.7000  1.4000  0.1000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
 140.  *  0.8000  0.4000  0.3000  0.1000  1.9000  1.9000  1.7000  1.5000  0.1000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
 145.  *  0.8000  0.4000  0.3000  0.1000  1.8000  1.9000  1.8000  1.5000  0.1000
0.1000  0.1000  0.1000  1.0000  1.0000  1.0000
 150.  *  0.8000  0.4000  0.3000  0.2000  1.9000  1.9000  1.8000  1.6000  0.1000
0.1000  0.1000  0.1000  1.1000  1.1000  1.1000
 155.  *  0.9000  0.5000  0.4000  0.2000  2.0000  1.9000  1.9000  1.7000  0.2000
0.2000  0.2000  0.2000  1.1000  1.1000  1.1000
 160.  *  0.8000  0.6000  0.5000  0.2000  2.0000  1.9000  2.2000  1.9000  0.2000
0.2000  0.2000  0.2000  1.2000  1.2000  1.2000
 165.  *  1.0000  0.7000  0.5000  0.3000  2.0000  2.0000  1.9000  2.0000  0.4000
0.4000  0.4000  0.3000  1.2000  1.1000  1.1000
 170.  *  1.4000  0.9000  0.8000  0.5000  2.1000  1.9000  1.9000  1.9000  0.6000
0.6000  0.6000  0.5000  1.1000  1.1000  1.1000
 175.  *  1.6000  1.2000  1.0000  0.7000  1.8000  1.7000  1.8000  1.8000  0.9000
0.9000  0.9000  0.7000  1.0000  1.0000  1.0000
 180.  *  2.0000  1.4000  1.3000  1.0000  1.8000  1.4000  1.6000  1.6000  1.3000
1.3000  1.3000  1.1000  0.8000  0.8000  0.8000
```

185. * 2.0000 1.6000 1.5000 1.2000 1.3000 1.1000 1.2000 1.2000 1.5000
1.5000 1.4000 1.2000 0.5000 0.5000 0.5000
190. * 2.1000 1.6000 1.6000 1.4000 1.1000 0.9000 0.9000 0.9000 1.6000
1.6000 1.6000 1.4000 0.4000 0.3000 0.3000
195. * 2.0000 1.8000 1.5000 1.5000 0.8000 0.6000 0.7000 0.5000 1.6000
1.6000 1.6000 1.5000 0.2000 0.2000 0.2000
200. * 1.8000 1.6000 1.3000 1.4000 0.8000 0.5000 0.5000 0.4000 1.5000
1.5000 1.5000 1.5000 0.1000 0.1000 0.1000
205. * 1.8000 1.6000 1.4000 1.3000 0.7000 0.4000 0.5000 0.3000 1.4000
1.4000 1.4000 1.4000 0.1000 0.1000 0.1000
210. * 1.9000 1.3000 1.4000 1.3000 0.7000 0.4000 0.4000 0.2000 1.3000
1.3000 1.3000 1.3000 0.1000 0.1000 0.1000

PAGE 4
JOB: FredEx AQ Analysis RUN: 2042 - I95 and
US17 (Exit 133)

WIND ANGLE RANGE: 5.-360.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15

------*--

215. * 1.9000 1.5000 1.3000 1.2000 0.8000 0.4000 0.4000 0.2000 1.3000
1.3000 1.3000 1.3000 0.1000 0.1000 0.1000
220. * 1.9000 1.4000 1.4000 1.2000 0.7000 0.4000 0.4000 0.2000 1.2000
1.2000 1.2000 1.2000 0.2000 0.1000 0.1000
225. * 1.8000 1.4000 1.3000 1.2000 0.7000 0.5000 0.4000 0.2000 1.2000
1.2000 1.2000 1.2000 0.1000 0.0000 0.0000
230. * 2.0000 1.5000 1.4000 1.2000 0.7000 0.5000 0.4000 0.2000 1.1000
1.1000 1.1000 1.1000 0.1000 0.0000 0.0000
235. * 1.8000 1.4000 1.4000 1.2000 0.7000 0.5000 0.4000 0.2000 1.1000
1.1000 1.1000 1.1000 0.1000 0.0000 0.0000
240. * 1.9000 1.3000 1.2000 1.0000 0.7000 0.6000 0.4000 0.1000 1.1000
1.1000 1.1000 1.1000 0.1000 0.0000 0.0000
245. * 1.9000 1.4000 1.2000 0.9000 0.9000 0.6000 0.4000 0.1000 1.0000
1.0000 1.0000 1.0000 0.1000 0.0000 0.0000
250. * 1.9000 1.4000 1.2000 0.9000 0.9000 0.5000 0.3000 0.0000 1.1000
1.0000 1.0000 1.0000 0.2000 0.0000 0.0000
255. * 2.0000 1.4000 1.2000 0.9000 0.9000 0.5000 0.2000 0.0000 1.3000
1.0000 1.0000 1.0000 0.3000 0.0000 0.0000
260. * 1.9000 1.2000 1.1000 0.9000 0.8000 0.3000 0.2000 0.0000 1.4000
1.1000 1.0000 1.0000 0.5000 0.0000 0.0000
265. * 2.0000 1.2000 1.1000 0.9000 0.7000 0.3000 0.1000 0.0000 1.7000
1.2000 1.1000 1.1000 0.8000 0.1000 0.0000

```
 270.  *  1.8000  1.2000  1.0000  1.0000  0.7000  0.2000  0.0000  0.0000  1.9000
1.3000  1.2000  1.1000  1.0000  0.2000  0.1000
 275.  *  1.5000  1.0000  0.9000  0.9000  0.5000  0.0000  0.0000  0.0000  2.1000
1.5000  1.2000  1.1000  1.1000  0.4000  0.1000
 280.  *  1.3000  0.9000  0.9000  0.9000  0.3000  0.0000  0.0000  0.0000  2.0000
1.4000  1.3000  1.0000  1.2000  0.4000  0.2000
 285.  *  1.1000  0.9000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  2.0000
1.5000  1.3000  1.0000  1.2000  0.5000  0.3000
 290.  *  1.0000  0.9000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  2.0000
1.5000  1.3000  1.0000  1.1000  0.5000  0.3000
 295.  *  1.0000  0.9000  0.9000  0.9000  0.2000  0.1000  0.1000  0.1000  2.0000
1.5000  1.3000  1.0000  1.1000  0.5000  0.3000
 300.  *  1.1000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.9000
1.5000  1.4000  1.2000  1.0000  0.5000  0.3000
 305.  *  1.2000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.9000
1.6000  1.4000  1.2000  1.0000  0.4000  0.3000
 310.  *  1.2000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.9000
1.6000  1.4000  1.2000  0.9000  0.4000  0.3000
 315.  *  1.2000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  2.0000
1.5000  1.6000  1.3000  0.9000  0.4000  0.3000
 320.  *  1.2000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  2.0000
1.8000  1.6000  1.3000  0.8000  0.4000  0.3000
 325.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  2.0000
2.0000  1.6000  1.4000  0.8000  0.5000  0.4000
 330.  *  1.3000  1.3000  1.2000  1.2000  0.1000  0.1000  0.1000  0.1000  2.0000
2.0000  1.8000  1.4000  0.8000  0.5000  0.4000
 335.  *  1.3000  1.3000  1.3000  1.2000  0.2000  0.2000  0.2000  0.2000  2.0000
2.0000  1.9000  1.6000  0.9000  0.5000  0.4000
 340.  *  1.3000  1.3000  1.3000  1.2000  0.3000  0.3000  0.3000  0.3000  2.1000
2.0000  1.9000  1.7000  0.8000  0.6000  0.5000
 345.  *  1.3000  1.3000  1.3000  1.1000  0.4000  0.4000  0.4000  0.4000  2.2000
2.1000  2.2000  1.8000  1.1000  0.7000  0.6000
 350.  *  1.3000  1.2000  1.2000  0.9000  0.7000  0.7000  0.7000  0.6000  2.0000
2.0000  2.0000  1.8000  1.4000  0.9000  0.8000
 355.  *  1.1000  1.1000  1.1000  0.8000  1.1000  1.0000  1.0000  0.8000  2.0000
1.8000  1.7000  1.8000  1.8000  1.3000  1.2000
 360.  *  0.9000  0.9000  0.8000  0.6000  1.4000  1.4000  1.4000  1.1000  1.8000
1.5000  1.6000  1.5000  2.1000  1.6000  1.3000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  2.1000  1.8000  1.6000  1.5000  2.2000  2.0000  2.2000  2.0000  2.2000
2.1000  2.2000  1.8000  2.3000  1.8000  1.7000
 DEGR. *    190     195     190     195     115     165     160     165     345
345     345     345       5      10      10
```

JOB: FredEx AQ Analysis RUN: 2042 - I95 and US17 (Exit 133)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	1.3000	0.2000	0.0000	0.0000	0.6000	0.2000	0.0000	0.8000	0.6000	0.6000	1.4000	1.0000	0.8000
10.	1.3000	0.0000	0.0000	0.0000	0.7000	0.4000	0.0000	0.6000	0.6000	0.6000	1.4000	1.2000	0.8000
15.	1.4000	0.0000	0.0000	0.0000	0.8000	0.5000	0.0000	0.6000	0.6000	0.6000	1.4000	1.2000	0.7000
20.	1.3000	0.0000	0.0000	0.0000	0.8000	0.5000	0.0000	0.6000	0.6000	0.6000	1.5000	1.3000	0.8000
25.	1.1000	0.0000	0.0000	0.0000	0.8000	0.6000	0.1000	0.6000	0.6000	0.6000	1.5000	1.4000	0.9000
30.	1.1000	0.0000	0.0000	0.0000	0.8000	0.6000	0.1000	0.6000	0.6000	0.6000	1.6000	1.4000	0.9000
35.	1.1000	0.0000	0.0000	0.0000	0.8000	0.6000	0.1000	0.7000	0.7000	0.7000	1.5000	1.4000	1.0000
40.	1.0000	0.1000	0.1000	0.1000	0.8000	0.5000	0.2000	0.7000	0.7000	0.7000	1.5000	1.3000	1.0000
45.	1.0000	0.1000	0.1000	0.1000	0.7000	0.5000	0.2000	0.7000	0.7000	0.7000	1.5000	1.4000	1.2000
50.	1.0000	0.1000	0.1000	0.1000	0.7000	0.5000	0.2000	0.7000	0.7000	0.7000	1.6000	1.4000	1.2000
55.	1.0000	0.1000	0.1000	0.1000	0.7000	0.5000	0.3000	0.7000	0.7000	0.7000	1.5000	1.4000	1.3000
60.	0.9000	0.1000	0.1000	0.1000	0.7000	0.5000	0.3000	0.7000	0.7000	0.7000	1.6000	1.5000	1.3000
65.	0.8000	0.1000	0.1000	0.1000	0.7000	0.5000	0.4000	0.9000	0.8000	0.8000	1.7000	1.4000	1.3000
70.	0.8000	0.2000	0.2000	0.2000	0.9000	0.6000	0.3000	0.9000	0.9000	0.8000	1.8000	1.7000	1.3000

```
  75.  * 0.8000  0.3000  0.3000  0.3000  0.9000  0.7000  0.3000  0.9000  0.8000
0.8000  1.9000  1.8000  1.4000
  80.  * 0.8000  0.5000  0.5000  0.4000  1.0000  0.8000  0.6000  0.8000  0.8000
0.7000  1.8000  1.6000  1.4000
  85.  * 0.8000  0.8000  0.8000  0.6000  1.3000  1.0000  0.6000  0.7000  0.7000
0.6000  1.5000  1.5000  1.4000
  90.  * 0.9000  1.0000  0.9000  0.9000  1.4000  1.3000  0.7000  0.6000  0.6000
0.5000  1.6000  1.3000  1.4000
  95.  * 0.8000  1.1000  1.1000  1.0000  1.5000  1.3000  1.1000  0.5000  0.4000
0.3000  1.3000  1.2000  0.9000
 100.  * 0.8000  1.2000  1.2000  1.0000  1.7000  1.5000  1.2000  0.3000  0.3000
0.2000  1.1000  0.9000  0.6000
 105.  * 0.8000  1.2000  1.2000  1.1000  1.5000  1.2000  1.1000  0.1000  0.1000
0.1000  0.8000  0.6000  0.5000
 110.  * 0.8000  1.1000  1.1000  1.1000  1.6000  1.2000  1.0000  0.1000  0.1000
0.1000  0.7000  0.6000  0.4000
 115.  * 0.8000  1.1000  1.1000  1.0000  1.3000  1.2000  1.0000  0.1000  0.1000
0.1000  0.7000  0.5000  0.3000
 120.  * 0.8000  1.0000  1.0000  1.0000  1.4000  1.1000  0.9000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 125.  * 0.9000  1.0000  1.0000  1.0000  1.3000  1.1000  0.9000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 130.  * 0.9000  0.9000  0.9000  0.9000  1.2000  1.1000  0.9000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 135.  * 0.9000  0.9000  0.9000  0.9000  1.3000  1.1000  0.9000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 140.  * 0.9000  0.8000  0.8000  0.8000  1.4000  1.1000  0.9000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 145.  * 1.0000  0.8000  0.8000  0.8000  1.3000  1.1000  0.9000  0.0000  0.0000
0.0000  0.6000  0.4000  0.2000
 150.  * 1.0000  0.8000  0.8000  0.8000  1.2000  1.1000  0.8000  0.0000  0.0000
0.0000  0.6000  0.4000  0.1000
 155.  * 1.0000  0.8000  0.8000  0.8000  1.2000  1.0000  0.6000  0.0000  0.0000
0.0000  0.6000  0.4000  0.0000
 160.  * 1.0000  0.7000  0.7000  0.7000  1.2000  1.0000  0.6000  0.0000  0.0000
0.0000  0.6000  0.4000  0.0000
 165.  * 1.0000  0.7000  0.7000  0.7000  1.2000  1.0000  0.6000  0.0000  0.0000
0.0000  0.6000  0.4000  0.0000
 170.  * 0.8000  0.9000  0.8000  0.8000  1.1000  0.8000  0.6000  0.1000  0.0000
0.0000  0.5000  0.2000  0.0000
 175.  * 0.8000  0.9000  0.8000  0.8000  1.0000  0.8000  0.6000  0.1000  0.0000
0.0000  0.3000  0.2000  0.0000
 180.  * 0.6000  1.2000  0.9000  0.8000  0.9000  0.8000  0.7000  0.3000  0.1000
0.0000  0.2000  0.1000  0.0000
 185.  * 0.4000  1.3000  1.1000  0.8000  0.7000  0.6000  0.6000  0.4000  0.3000
0.0000  0.1000  0.0000  0.0000
 190.  * 0.3000  1.4000  1.1000  0.8000  0.6000  0.6000  0.6000  0.6000  0.3000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.2000  1.3000  1.1000  0.7000  0.6000  0.6000  0.6000  0.7000  0.4000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.1000  1.4000  1.2000  0.7000  0.6000  0.6000  0.6000  0.7000  0.4000
0.0000  0.0000  0.0000  0.0000
 205.  *  0.1000  1.4000  1.3000  0.9000  0.6000  0.6000  0.6000  0.7000  0.5000
0.1000  0.0000  0.0000  0.0000
 210.  *  0.1000  1.5000  1.3000  0.9000  0.6000  0.6000  0.6000  0.7000  0.5000
0.1000  0.0000  0.0000  0.0000
```

PAGE 6

```
      JOB: FredEx AQ Analysis                                    RUN: 2042 - I95 and
US17 (Exit 133)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  1.5000  1.3000  1.0000  0.7000  0.7000  0.7000  0.7000  0.5000
0.2000  0.0000  0.0000  0.0000
 220.  *  0.1000  1.4000  1.3000  1.0000  0.7000  0.7000  0.7000  0.7000  0.5000
0.2000  0.1000  0.1000  0.1000
 225.  *  0.0000  1.5000  1.4000  1.1000  0.7000  0.7000  0.7000  0.7000  0.5000
0.2000  0.1000  0.1000  0.1000
 230.  *  0.0000  1.4000  1.4000  1.1000  0.7000  0.7000  0.7000  0.6000  0.5000
0.2000  0.1000  0.1000  0.1000
 235.  *  0.0000  1.6000  1.4000  1.2000  0.7000  0.7000  0.7000  0.6000  0.5000
0.2000  0.1000  0.1000  0.1000
 240.  *  0.0000  1.6000  1.3000  1.2000  0.7000  0.7000  0.7000  0.6000  0.5000
0.2000  0.1000  0.1000  0.1000
 245.  *  0.0000  1.7000  1.5000  1.3000  0.9000  0.8000  0.8000  0.6000  0.4000
0.3000  0.1000  0.1000  0.1000
 250.  *  0.0000  1.7000  1.7000  1.3000  0.9000  0.9000  0.8000  0.8000  0.5000
0.3000  0.2000  0.2000  0.2000
 255.  *  0.0000  2.0000  1.7000  1.5000  0.9000  0.8000  0.8000  0.8000  0.6000
0.3000  0.3000  0.3000  0.3000
 260.  *  0.0000  1.9000  1.7000  1.4000  0.8000  0.8000  0.7000  0.9000  0.7000
0.6000  0.5000  0.5000  0.4000
 265.  *  0.0000  1.6000  1.5000  1.4000  0.7000  0.7000  0.6000  1.1000  1.0000
0.7000  0.8000  0.7000  0.6000
 270.  *  0.0000  1.6000  1.3000  1.2000  0.6000  0.6000  0.5000  1.3000  1.1000
0.8000  1.0000  0.9000  0.8000
 275.  *  0.0000  1.3000  1.1000  0.8000  0.5000  0.4000  0.3000  1.5000  1.2000
1.1000  1.1000  1.1000  1.0000
```

```
 280.  *  0.0000  1.1000  0.9000  0.6000  0.3000  0.3000  0.2000  1.6000  1.2000
0.9000  1.2000  1.2000  1.0000
 285.  *  0.0000  0.9000  0.6000  0.6000  0.1000  0.1000  0.1000  1.6000  1.4000
1.0000  1.2000  1.2000  1.1000
 290.  *  0.0000  0.7000  0.5000  0.5000  0.1000  0.1000  0.1000  1.5000  1.2000
1.1000  1.1000  1.1000  1.1000
 295.  *  0.0000  0.7000  0.5000  0.4000  0.1000  0.1000  0.1000  1.5000  1.3000
1.1000  1.1000  1.1000  1.0000
 300.  *  0.1000  0.7000  0.5000  0.4000  0.0000  0.0000  0.0000  1.3000  1.0000
1.0000  1.0000  1.0000  1.0000
 305.  *  0.1000  0.7000  0.5000  0.4000  0.0000  0.0000  0.0000  1.4000  1.1000
1.0000  1.0000  1.0000  1.0000
 310.  *  0.1000  0.7000  0.6000  0.4000  0.0000  0.0000  0.0000  1.2000  1.1000
1.0000  0.9000  0.9000  0.9000
 315.  *  0.1000  0.8000  0.6000  0.4000  0.0000  0.0000  0.0000  1.4000  1.2000
1.0000  0.9000  0.9000  0.9000
 320.  *  0.2000  0.8000  0.6000  0.3000  0.0000  0.0000  0.0000  1.4000  1.2000
1.0000  0.8000  0.8000  0.8000
 325.  *  0.2000  0.7000  0.5000  0.1000  0.0000  0.0000  0.0000  1.4000  1.2000
0.9000  0.8000  0.8000  0.8000
 330.  *  0.2000  0.7000  0.5000  0.1000  0.0000  0.0000  0.0000  1.3000  1.1000
0.7000  0.8000  0.8000  0.8000
 335.  *  0.2000  0.7000  0.5000  0.1000  0.0000  0.0000  0.0000  1.3000  1.2000
0.7000  0.8000  0.8000  0.8000
 340.  *  0.2000  0.7000  0.4000  0.0000  0.0000  0.0000  0.0000  1.3000  1.0000
0.6000  0.7000  0.7000  0.7000
 345.  *  0.4000  0.6000  0.4000  0.0000  0.0000  0.0000  0.0000  1.3000  1.0000
0.6000  0.7000  0.7000  0.7000
 350.  *  0.5000  0.6000  0.3000  0.0000  0.1000  0.0000  0.0000  1.2000  0.9000
0.6000  0.9000  0.8000  0.8000
 355.  *  0.8000  0.4000  0.2000  0.0000  0.2000  0.1000  0.0000  1.1000  0.8000
0.6000  1.0000  0.9000  0.8000
 360.  *  1.1000  0.2000  0.1000  0.0000  0.3000  0.1000  0.0000  1.0000  0.8000
0.7000  1.1000  0.9000  0.8000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  1.4000  2.0000  1.7000  1.5000  1.7000  1.5000  1.2000  1.6000  1.4000
1.1000  1.9000  1.8000  1.4000
 DEGR. *     15     255     255     255     100     100     100     280     285
275      75      75      75

 THE HIGHEST CONCENTRATION OF   2.3000 PPM OCCURRED AT RECEPTOR    13.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
4,6,5,3,1975,1650,679,936.666666666667,1975,1650,679,936.666666666667,1036.8,1036.8,
1036.8,1036.8,1036.8,1036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0
,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0,0,0,-15,0,10,10,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',58.0,36.5,5.9
'N Leg, E Side - 25 m',58.0,108.5,5.9
'N Leg, E Side - 50 m',58.0,190.5,5.9
'N Leg, E Side-Midblk',58.0,626.5,5.9
'N Leg, W Side-Corner',-82.0,61.2,5.9
'N Leg, W Side - 25 m',-82.0,133.2,5.9
'N Leg, W Side - 50 m',-82.0,215.2,5.9
'N Leg, W Side-Midblk',-82.0,651.2,5.9
'S Leg, E Side-Corner',83.0,-85.7,5.9
'S Leg, E Side - 25 m',101.7,-155.3,5.9
'S Leg, E Side - 50 m',122.9,-234.5,5.9
'S Leg, E Side-Midblk',235.7,-655.6,5.9
'S Leg, W Side-Corner',-69.1,-58.9,5.9
'S Leg, W Side - 25 m',-50.5,-128.5,5.9
'S Leg, W Side - 50 m',-29.2,-207.7,5.9
'S Leg, W Side-Midblk',83.6,-628.8,5.9
'E Leg, N Side - 25 m',128.9,24.0,5.9
'E Leg, N Side - 50 m',209.7,9.7,5.9
'E Leg, N Side-Midblk',639.0,-66.0,5.9
'W Leg, N Side - 25 m',-152.9,73.7,5.9
'W Leg, N Side - 50 m',-233.7,87.9,5.9
'W Leg, N Side-Midblk',-663.0,163.6,5.9
'E Leg, S Side - 25 m',153.9,-98.2,5.9
'E Leg, S Side - 50 m',234.7,-112.5,5.9
'E Leg, S Side-Midblk',664.1,-188.2,5.9
'W Leg, S Side - 25 m',-140.0,-46.4,5.9
'W Leg, S Side - 50 m',-220.8,-32.1,5.9
'W Leg, S Side-Midblk',-650.1,43.6,5.9
'2042 NO BUILD-I95 and SR 610 (Exit 143)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-36,-5,-36,1200,9900,2.27,0.0,91.7
1
'N Leg Dep - FreeFlow','AG',24,3,24,1200,7900,1.02,0.0,67.7
1
'S Leg App - FreeFlow','AG',24,3,334,-1153,7900,2.27,0.0,67.7
1
'S Leg Dep - FreeFlow','AG',-36,-5,276,-1168,9900,1.02,0.0,91.7
1
'E Leg App - FreeFlow','AG',3,18,1185,-191,2810,2.15,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',-5,-30,1177,-238,3395,0.90,0.0,79.7
1
```

```
'W Leg App - FreeFlow','AG',-5,-30,-1187,179,3395,2.15,0.0,79.7
1
'W Leg Dep - FreeFlow','AG',3,18,-1179,226,2810,0.90,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

```
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
                          CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                         PAGE  1

      JOB: FredEx AQ Analysis                                  RUN: 2042 NO
BUILD-I95 and SR 610 (Exit 143)

      DATE :  8/15/17
      TIME : 11:36:52

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -36.0      -5.0     -36.0    1200.0 *    1205.
360. AG   9900.   2.3   0.0 91.7
       2. N Leg Dep - FreeFlow*     24.0       3.0      24.0    1200.0 *    1197.
360. AG   7900.   1.0   0.0 67.7
       3. S Leg App - FreeFlow*     24.0       3.0     334.0   -1153.0 *    1197.
165. AG   7900.   2.3   0.0 67.7
       4. S Leg Dep - FreeFlow*    -36.0      -5.0     276.0   -1168.0 *    1204.
165. AG   9900.   1.0   0.0 91.7
       5. E Leg App - FreeFlow*      3.0      18.0    1185.0    -191.0 *    1200.
100. AG   2810.   2.2   0.0 55.7
       6. E Leg Dep - FreeFlow*     -5.0     -30.0    1177.0    -238.0 *    1200.
100. AG   3395.   0.9   0.0 79.7
       7. W Leg App - FreeFlow*     -5.0     -30.0   -1187.0     179.0 *    1200.
280. AG   3395.   2.2   0.0 79.7
       8. W Leg Dep - FreeFlow*      3.0      18.0   -1179.0     226.0 *    1200.
280. AG   2810.   0.9   0.0 55.7

                              PAGE  2
      JOB: FredEx AQ Analysis                                  RUN: 2042 NO
```

2042 NoBuild I95 and SR610 OUT
BUILD-I95 and SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11:36:52

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z	*
1. N Leg, E Side-Corner	*	58.0	36.5	5.9	*
2. N Leg, E Side - 25 m	*	58.0	108.5	5.9	*
3. N Leg, E Side - 50 m	*	58.0	190.5	5.9	*
4. N Leg, E Side-Midblk	*	58.0	626.5	5.9	*
5. N Leg, W Side-Corner	*	-82.0	61.2	5.9	*
6. N Leg, W Side - 25 m	*	-82.0	133.2	5.9	*
7. N Leg, W Side - 50 m	*	-82.0	215.2	5.9	*
8. N Leg, W Side-Midblk	*	-82.0	651.2	5.9	*
9. S Leg, E Side-Corner	*	83.0	-85.7	5.9	*
10. S Leg, E Side - 25 m	*	101.7	-155.3	5.9	*
11. S Leg, E Side - 50 m	*	122.9	-234.5	5.9	*
12. S Leg, E Side-Midblk	*	235.7	-655.6	5.9	*
13. S Leg, W Side-Corner	*	-69.1	-58.9	5.9	*
14. S Leg, W Side - 25 m	*	-50.5	-128.5	5.9	*
15. S Leg, W Side - 50 m	*	-29.2	-207.7	5.9	*
16. S Leg, W Side-Midblk	*	83.6	-628.8	5.9	*
17. E Leg, N Side - 25 m	*	128.9	24.0	5.9	*
18. E Leg, N Side - 50 m	*	209.7	9.7	5.9	*
19. E Leg, N Side-Midblk	*	639.0	-66.0	5.9	*
20. W Leg, N Side - 25 m	*	-152.9	73.7	5.9	*
21. W Leg, N Side - 50 m	*	-233.7	87.9	5.9	*
22. W Leg, N Side-Midblk	*	-663.0	163.6	5.9	*
23. E Leg, S Side - 25 m	*	153.9	-98.2	5.9	*
24. E Leg, S Side - 50 m	*	234.7	-112.5	5.9	*
25. E Leg, S Side-Midblk	*	664.1	-188.2	5.9	*
26. W Leg, S Side - 25 m	*	-140.0	-46.4	5.9	*

```
     27. W Leg, S Side - 50 m *      -220.8      -32.1        5.9   *
     28. W Leg, S Side-Midblk *      -650.1       43.6        5.9   *

                              PAGE  3
      JOB: FredEx AQ Analysis                                  RUN: 2042 NO
BUILD-I95 and SR 610 (Exit 143)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
--------------------------------------------
   5.  *  0.5000  0.5000  0.5000  0.3000  1.1000  1.1000  1.0000  0.9000  0.5000
0.4000  0.4000  0.2000  1.2000  1.1000  0.9000
  10.  *  0.3000  0.3000  0.3000  0.2000  1.1000  1.1000  1.1000  1.0000  0.5000
0.2000  0.2000  0.1000  1.3000  1.1000  0.8000
  15.  *  0.1000  0.1000  0.1000  0.1000  1.1000  1.1000  1.1000  1.0000  0.3000
0.2000  0.2000  0.1000  1.2000  1.1000  0.8000
  20.  *  0.1000  0.1000  0.1000  0.1000  1.1000  1.1000  1.1000  1.0000  0.3000
0.2000  0.2000  0.1000  1.2000  0.9000  0.7000
  25.  *  0.1000  0.1000  0.1000  0.0000  1.1000  1.1000  1.1000  1.0000  0.3000
0.2000  0.1000  0.1000  1.1000  0.8000  0.7000
  30.  *  0.0000  0.0000  0.0000  0.0000  0.9000  0.9000  0.9000  0.9000  0.3000
0.2000  0.1000  0.1000  1.0000  0.7000  0.6000
  35.  *  0.0000  0.0000  0.0000  0.0000  0.9000  0.9000  0.9000  0.9000  0.3000
0.3000  0.2000  0.1000  0.9000  0.8000  0.7000
  40.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.2000
0.2000  0.1000  0.0000  0.8000  0.6000  0.7000
  45.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.2000
0.2000  0.1000  0.0000  0.9000  0.7000  0.7000
  50.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.8000  0.8000  0.8000  0.2000
0.2000  0.1000  0.0000  0.9000  0.7000  0.7000
  55.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.2000  0.1000  0.0000  0.8000  0.7000  0.6000
  60.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.2000  0.1000  0.0000  1.0000  0.8000  0.7000
```

```
  65.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.2000  0.1000  0.0000  0.8000  0.8000  0.7000
  70.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.2000  0.1000  0.0000  0.9000  0.8000  0.7000
  75.  *  0.0000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.2000  0.1000  0.0000  0.8000  0.8000  0.7000
  80.  *  0.1000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.2000
0.2000  0.1000  0.0000  0.9000  0.8000  0.7000
  85.  *  0.1000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  0.2000
0.2000  0.0000  0.0000  0.9000  0.8000  0.6000
  90.  *  0.2000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  0.2000
0.2000  0.0000  0.0000  0.9000  0.8000  0.6000
  95.  *  0.2000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  0.2000
0.0000  0.0000  0.0000  0.9000  0.5000  0.5000
 100.  *  0.3000  0.1000  0.0000  0.0000  1.0000  0.8000  0.7000  0.7000  0.2000
0.0000  0.0000  0.0000  0.9000  0.6000  0.6000
 105.  *  0.4000  0.1000  0.0000  0.0000  1.2000  0.8000  0.7000  0.7000  0.1000
0.0000  0.0000  0.0000  0.8000  0.6000  0.6000
 110.  *  0.4000  0.1000  0.1000  0.0000  1.2000  0.8000  0.8000  0.7000  0.1000
0.0000  0.0000  0.0000  0.7000  0.6000  0.6000
 115.  *  0.4000  0.1000  0.1000  0.0000  1.1000  0.8000  0.8000  0.7000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 120.  *  0.4000  0.1000  0.1000  0.0000  1.2000  0.8000  0.8000  0.7000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 125.  *  0.4000  0.1000  0.1000  0.0000  1.3000  0.9000  0.8000  0.7000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 130.  *  0.4000  0.1000  0.1000  0.0000  1.2000  0.9000  0.8000  0.8000  0.1000
0.1000  0.1000  0.1000  0.6000  0.6000  0.6000
 135.  *  0.3000  0.1000  0.1000  0.0000  1.1000  1.0000  0.9000  0.8000  0.1000
0.1000  0.1000  0.1000  0.7000  0.7000  0.7000
 140.  *  0.3000  0.1000  0.1000  0.0000  1.2000  1.2000  1.0000  0.8000  0.1000
0.1000  0.1000  0.1000  0.7000  0.7000  0.7000
 145.  *  0.4000  0.1000  0.1000  0.0000  1.3000  1.2000  1.1000  0.9000  0.2000
0.2000  0.2000  0.2000  0.7000  0.7000  0.7000
 150.  *  0.4000  0.2000  0.1000  0.0000  1.3000  1.1000  1.1000  0.9000  0.3000
0.3000  0.3000  0.2000  0.8000  0.8000  0.8000
 155.  *  0.6000  0.2000  0.2000  0.1000  1.3000  1.4000  1.3000  1.1000  0.4000
0.4000  0.4000  0.4000  0.8000  0.8000  0.8000
 160.  *  0.8000  0.4000  0.4000  0.1000  1.2000  1.2000  1.3000  1.1000  0.7000
0.7000  0.7000  0.5000  0.6000  0.6000  0.6000
 165.  *  1.0000  0.6000  0.5000  0.2000  1.1000  1.2000  1.2000  1.3000  0.9000
0.9000  0.9000  0.8000  0.6000  0.6000  0.5000
 170.  *  1.2000  0.7000  0.6000  0.4000  0.9000  1.0000  1.1000  1.2000  1.1000
1.1000  1.1000  0.9000  0.4000  0.4000  0.4000
 175.  *  1.3000  0.9000  0.7000  0.5000  0.8000  0.9000  0.9000  1.2000  1.1000
1.1000  1.1000  0.9000  0.2000  0.2000  0.2000
 180.  *  1.3000  0.9000  0.8000  0.7000  0.6000  0.6000  0.8000  1.0000  1.1000
1.1000  1.1000  1.1000  0.1000  0.1000  0.1000
```

```
 185.  *  1.2000  0.9000  0.9000  0.9000  0.5000  0.5000  0.6000  0.6000  1.0000
1.0000  1.0000  1.0000  0.1000  0.1000  0.1000
 190.  *  1.2000  0.8000  0.7000  0.9000  0.3000  0.3000  0.4000  0.4000  1.0000
1.0000  1.0000  1.0000  0.1000  0.1000  0.1000
 195.  *  1.1000  0.8000  0.7000  0.8000  0.3000  0.3000  0.3000  0.3000  0.9000
0.9000  0.9000  0.9000  0.0000  0.0000  0.0000
 200.  *  1.1000  0.7000  0.7000  0.9000  0.3000  0.2000  0.2000  0.2000  0.9000
0.9000  0.9000  0.9000  0.0000  0.0000  0.0000
 205.  *  1.0000  0.7000  0.8000  0.8000  0.3000  0.2000  0.2000  0.1000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 210.  *  0.9000  0.8000  0.8000  0.8000  0.3000  0.2000  0.2000  0.1000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
```

PAGE 4

```
     JOB: FredEx AQ Analysis                                    RUN: 2042 NO
BUILD-I95 and SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
 215.  *  0.8000  0.8000  0.8000  0.8000  0.2000  0.2000  0.2000  0.1000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 220.  *  0.9000  0.8000  0.8000  0.8000  0.3000  0.2000  0.2000  0.1000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 225.  *  1.1000  0.8000  0.8000  0.7000  0.3000  0.2000  0.2000  0.1000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 230.  *  0.9000  0.7000  0.8000  0.7000  0.3000  0.2000  0.2000  0.1000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 235.  *  0.9000  0.7000  0.7000  0.6000  0.3000  0.2000  0.2000  0.1000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 240.  *  0.9000  0.7000  0.7000  0.6000  0.3000  0.1000  0.1000  0.0000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 245.  *  0.9000  0.7000  0.7000  0.6000  0.3000  0.1000  0.1000  0.0000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 250.  *  0.9000  0.7000  0.7000  0.6000  0.3000  0.1000  0.1000  0.0000  0.7000
0.7000  0.7000  0.7000  0.0000  0.0000  0.0000
 255.  *  0.9000  0.7000  0.7000  0.6000  0.3000  0.1000  0.1000  0.0000  0.8000
0.8000  0.8000  0.8000  0.0000  0.0000  0.0000
 260.  *  0.9000  0.7000  0.7000  0.6000  0.3000  0.1000  0.1000  0.0000  0.7000
0.7000  0.7000  0.7000  0.1000  0.0000  0.0000
 265.  *  1.0000  0.7000  0.7000  0.6000  0.3000  0.1000  0.1000  0.0000  0.8000
0.7000  0.7000  0.7000  0.1000  0.0000  0.0000
```

```
 270.  *  1.0000  0.7000  0.6000  0.6000  0.3000  0.1000  0.0000  0.0000  0.8000
0.7000  0.7000  0.7000  0.2000  0.0000  0.0000
 275.  *  1.0000  0.7000  0.6000  0.6000  0.2000  0.1000  0.0000  0.0000  0.8000
0.7000  0.7000  0.7000  0.2000  0.0000  0.0000
 280.  *  0.9000  0.6000  0.6000  0.6000  0.2000  0.0000  0.0000  0.0000  1.0000
0.8000  0.7000  0.7000  0.3000  0.1000  0.0000
 285.  *  0.9000  0.6000  0.6000  0.6000  0.2000  0.0000  0.0000  0.0000  1.0000
0.8000  0.8000  0.7000  0.3000  0.1000  0.0000
 290.  *  0.7000  0.6000  0.6000  0.6000  0.1000  0.0000  0.0000  0.0000  1.1000
0.9000  0.9000  0.8000  0.4000  0.1000  0.1000
 295.  *  0.6000  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  1.3000
0.9000  0.9000  0.8000  0.5000  0.1000  0.1000
 300.  *  0.6000  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  1.1000
0.9000  0.9000  0.8000  0.4000  0.1000  0.1000
 305.  *  0.7000  0.6000  0.6000  0.6000  0.1000  0.1000  0.1000  0.1000  1.1000
1.0000  0.9000  0.8000  0.4000  0.1000  0.1000
 310.  *  0.7000  0.7000  0.7000  0.7000  0.1000  0.1000  0.1000  0.1000  1.1000
1.1000  1.0000  0.9000  0.4000  0.1000  0.1000
 315.  *  0.7000  0.7000  0.7000  0.7000  0.1000  0.1000  0.1000  0.1000  1.2000
1.0000  1.1000  0.9000  0.3000  0.1000  0.1000
 320.  *  0.8000  0.8000  0.8000  0.8000  0.1000  0.1000  0.1000  0.1000  1.3000
1.1000  1.1000  1.0000  0.2000  0.1000  0.1000
 325.  *  0.8000  0.8000  0.8000  0.8000  0.1000  0.1000  0.1000  0.1000  1.1000
1.0000  1.0000  1.1000  0.2000  0.1000  0.2000
 330.  *  0.8000  0.8000  0.8000  0.8000  0.1000  0.1000  0.1000  0.1000  1.2000
1.2000  1.0000  1.2000  0.2000  0.2000  0.2000
 335.  *  0.9000  0.9000  0.9000  0.8000  0.1000  0.1000  0.1000  0.1000  1.3000
1.0000  1.1000  1.2000  0.3000  0.3000  0.3000
 340.  *  0.9000  0.9000  0.9000  0.9000  0.2000  0.2000  0.2000  0.2000  1.2000
1.1000  1.0000  1.0000  0.5000  0.4000  0.4000
 345.  *  0.9000  0.9000  0.9000  0.8000  0.3000  0.3000  0.3000  0.2000  1.2000
1.1000  0.9000  0.9000  0.6000  0.6000  0.5000
 350.  *  0.9000  0.8000  0.8000  0.7000  0.4000  0.4000  0.4000  0.4000  1.1000
1.0000  0.8000  0.8000  0.8000  0.7000  0.8000
 355.  *  0.8000  0.8000  0.8000  0.7000  0.6000  0.6000  0.6000  0.5000  0.9000
0.7000  0.6000  0.5000  1.0000  0.9000  0.9000
 360.  *  0.7000  0.7000  0.6000  0.5000  0.9000  0.9000  0.9000  0.7000  0.7000
0.6000  0.4000  0.4000  1.2000  1.0000  1.0000

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *  1.3000  0.9000  0.9000  0.9000  1.3000  1.4000  1.3000  1.3000  1.3000
1.2000  1.1000  1.2000  1.3000  1.1000  1.0000
 DEGR. *    175     175     185     185     125     155     155     165     295
330     170     330      10       5     360
```

JOB: FredEx AQ Analysis RUN: 2042 NO BUILD-I95 and SR 610 (Exit 143)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	0.8000	0.1000	0.0000	0.0000	0.3000	0.1000	0.0000	0.2000	0.2000	0.2000	0.6000	0.3000	0.2000
10.	0.7000	0.0000	0.0000	0.0000	0.5000	0.2000	0.0000	0.2000	0.2000	0.2000	0.7000	0.4000	0.2000
15.	0.7000	0.0000	0.0000	0.0000	0.5000	0.3000	0.0000	0.2000	0.2000	0.2000	0.8000	0.6000	0.2000
20.	0.6000	0.0000	0.0000	0.0000	0.5000	0.4000	0.0000	0.2000	0.2000	0.2000	0.8000	0.6000	0.2000
25.	0.6000	0.0000	0.0000	0.0000	0.5000	0.4000	0.0000	0.2000	0.2000	0.2000	0.8000	0.6000	0.3000
30.	0.6000	0.0000	0.0000	0.0000	0.5000	0.4000	0.1000	0.2000	0.2000	0.2000	0.7000	0.6000	0.3000
35.	0.6000	0.0000	0.0000	0.0000	0.5000	0.4000	0.1000	0.2000	0.2000	0.2000	0.7000	0.6000	0.3000
40.	0.6000	0.0000	0.0000	0.0000	0.5000	0.4000	0.1000	0.2000	0.2000	0.2000	0.7000	0.6000	0.3000
45.	0.6000	0.0000	0.0000	0.0000	0.5000	0.4000	0.1000	0.2000	0.2000	0.2000	0.7000	0.6000	0.3000
50.	0.6000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.2000	0.2000	0.2000	0.6000	0.6000	0.3000
55.	0.6000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.2000	0.2000	0.2000	0.6000	0.5000	0.3000
60.	0.6000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.2000	0.2000	0.2000	0.6000	0.5000	0.3000
65.	0.6000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.2000	0.2000	0.2000	0.8000	0.6000	0.4000
70.	0.6000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.2000	0.2000	0.2000	0.7000	0.6000	0.4000

```
  75.  *  0.6000  0.0000  0.0000  0.0000  0.4000  0.3000  0.1000  0.2000  0.2000
0.2000  0.6000  0.6000  0.5000
  80.  *  0.6000  0.1000  0.1000  0.1000  0.4000  0.3000  0.1000  0.2000  0.2000
0.2000  0.6000  0.7000  0.4000
  85.  *  0.6000  0.1000  0.1000  0.1000  0.4000  0.3000  0.1000  0.2000  0.2000
0.2000  0.7000  0.7000  0.4000
  90.  *  0.6000  0.2000  0.2000  0.1000  0.5000  0.4000  0.2000  0.2000  0.2000
0.2000  0.7000  0.7000  0.4000
  95.  *  0.5000  0.2000  0.2000  0.2000  0.6000  0.5000  0.3000  0.2000  0.2000
0.2000  0.8000  0.6000  0.4000
 100.  *  0.6000  0.3000  0.3000  0.3000  0.6000  0.4000  0.3000  0.2000  0.2000
0.1000  0.7000  0.6000  0.4000
 105.  *  0.6000  0.4000  0.4000  0.3000  0.8000  0.5000  0.3000  0.1000  0.1000
0.1000  0.6000  0.4000  0.3000
 110.  *  0.6000  0.4000  0.4000  0.4000  0.7000  0.6000  0.4000  0.1000  0.1000
0.1000  0.5000  0.4000  0.2000
 115.  *  0.6000  0.4000  0.4000  0.4000  0.9000  0.6000  0.4000  0.0000  0.0000
0.0000  0.5000  0.4000  0.2000
 120.  *  0.6000  0.4000  0.4000  0.4000  0.8000  0.5000  0.4000  0.0000  0.0000
0.0000  0.4000  0.3000  0.3000
 125.  *  0.6000  0.4000  0.4000  0.4000  0.7000  0.6000  0.5000  0.0000  0.0000
0.0000  0.4000  0.3000  0.2000
 130.  *  0.6000  0.4000  0.4000  0.4000  0.6000  0.6000  0.5000  0.0000  0.0000
0.0000  0.4000  0.3000  0.2000
 135.  *  0.7000  0.3000  0.3000  0.3000  0.7000  0.6000  0.5000  0.0000  0.0000
0.0000  0.4000  0.3000  0.1000
 140.  *  0.7000  0.3000  0.3000  0.3000  0.8000  0.6000  0.4000  0.0000  0.0000
0.0000  0.4000  0.3000  0.1000
 145.  *  0.7000  0.3000  0.3000  0.3000  0.9000  0.6000  0.3000  0.0000  0.0000
0.0000  0.4000  0.3000  0.0000
 150.  *  0.7000  0.3000  0.3000  0.3000  0.7000  0.6000  0.3000  0.0000  0.0000
0.0000  0.4000  0.2000  0.0000
 155.  *  0.6000  0.3000  0.3000  0.3000  0.7000  0.5000  0.3000  0.0000  0.0000
0.0000  0.4000  0.2000  0.0000
 160.  *  0.5000  0.4000  0.3000  0.3000  0.6000  0.5000  0.3000  0.1000  0.0000
0.0000  0.2000  0.2000  0.0000
 165.  *  0.4000  0.5000  0.4000  0.3000  0.4000  0.3000  0.2000  0.2000  0.1000
0.0000  0.2000  0.0000  0.0000
 170.  *  0.2000  0.6000  0.4000  0.3000  0.4000  0.2000  0.2000  0.3000  0.1000
0.0000  0.1000  0.0000  0.0000
 175.  *  0.2000  0.7000  0.6000  0.3000  0.2000  0.2000  0.2000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 180.  *  0.1000  0.7000  0.6000  0.3000  0.2000  0.2000  0.2000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 185.  *  0.1000  0.7000  0.6000  0.3000  0.2000  0.2000  0.2000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
 190.  *  0.1000  0.7000  0.6000  0.3000  0.2000  0.2000  0.2000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.0000  0.7000  0.6000  0.3000  0.2000  0.2000  0.2000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.0000  0.7000  0.6000  0.4000  0.2000  0.2000  0.2000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 205.  *  0.0000  0.7000  0.6000  0.4000  0.2000  0.2000  0.2000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 210.  *  0.0000  0.7000  0.6000  0.4000  0.2000  0.2000  0.2000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
```

PAGE 6
```
      JOB: FredEx AQ Analysis                                   RUN: 2042 NO
BUILD-I95 and SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.0000  0.7000  0.6000  0.4000  0.2000  0.2000  0.2000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 220.  *  0.0000  0.7000  0.6000  0.4000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 225.  *  0.0000  0.7000  0.6000  0.4000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 230.  *  0.0000  0.7000  0.6000  0.4000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 235.  *  0.0000  0.7000  0.6000  0.4000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 240.  *  0.0000  0.6000  0.6000  0.4000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 245.  *  0.0000  0.6000  0.6000  0.4000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 250.  *  0.0000  0.7000  0.7000  0.5000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 255.  *  0.0000  0.8000  0.8000  0.5000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 260.  *  0.0000  0.7000  0.7000  0.5000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.1000  0.1000  0.1000
 265.  *  0.0000  0.8000  0.7000  0.5000  0.3000  0.3000  0.3000  0.4000  0.3000
0.1000  0.1000  0.1000  0.1000
 270.  *  0.0000  0.9000  0.6000  0.5000  0.3000  0.3000  0.2000  0.5000  0.4000
0.2000  0.2000  0.2000  0.1000
 275.  *  0.0000  0.7000  0.7000  0.4000  0.2000  0.2000  0.2000  0.6000  0.5000
0.2000  0.2000  0.2000  0.2000
```

```
 280.  *  0.0000  0.8000  0.6000  0.4000  0.2000  0.2000  0.2000  0.6000  0.5000
0.2000  0.3000  0.3000  0.3000
 285.  *  0.0000  0.6000  0.6000  0.3000  0.2000  0.2000  0.1000  0.7000  0.6000
0.2000  0.3000  0.3000  0.3000
 290.  *  0.0000  0.5000  0.4000  0.2000  0.1000  0.1000  0.1000  0.7000  0.6000
0.3000  0.4000  0.4000  0.3000
 295.  *  0.0000  0.5000  0.4000  0.2000  0.0000  0.0000  0.0000  0.7000  0.5000
0.3000  0.5000  0.4000  0.3000
 300.  *  0.0000  0.4000  0.4000  0.2000  0.0000  0.0000  0.0000  0.6000  0.5000
0.3000  0.4000  0.4000  0.3000
 305.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.7000  0.6000
0.3000  0.4000  0.4000  0.3000
 310.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.7000  0.5000
0.3000  0.4000  0.4000  0.3000
 315.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.6000  0.5000
0.3000  0.3000  0.3000  0.3000
 320.  *  0.1000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.7000  0.5000
0.3000  0.3000  0.3000  0.2000
 325.  *  0.1000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.7000  0.5000
0.3000  0.2000  0.2000  0.2000
 330.  *  0.1000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.6000  0.5000
0.3000  0.2000  0.2000  0.2000
 335.  *  0.2000  0.5000  0.3000  0.0000  0.0000  0.0000  0.0000  0.6000  0.5000
0.3000  0.2000  0.2000  0.2000
 340.  *  0.5000  0.5000  0.3000  0.0000  0.0000  0.0000  0.0000  0.6000  0.5000
0.2000  0.2000  0.2000  0.2000
 345.  *  0.5000  0.5000  0.3000  0.0000  0.0000  0.0000  0.0000  0.6000  0.5000
0.2000  0.2000  0.2000  0.2000
 350.  *  0.8000  0.3000  0.2000  0.0000  0.1000  0.0000  0.0000  0.5000  0.4000
0.2000  0.3000  0.2000  0.2000
 355.  *  0.9000  0.3000  0.1000  0.0000  0.1000  0.0000  0.0000  0.4000  0.3000
0.2000  0.3000  0.2000  0.2000
 360.  *  0.9000  0.2000  0.0000  0.0000  0.2000  0.1000  0.0000  0.4000  0.2000
0.2000  0.4000  0.3000  0.2000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  0.9000  0.9000  0.8000  0.5000  0.9000  0.6000  0.5000  0.7000  0.6000
0.3000  0.8000  0.7000  0.5000
 DEGR. *    355     270     255     250     115     110     125     290     285
290      15      80      75

 THE HIGHEST CONCENTRATION OF   1.4000 PPM OCCURRED AT RECEPTOR     6.
```

```
Q,EPA,,F,,0,T,T,F,F,0.78,
4,6,5,3,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,-15,0,10,10,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'FredEx AQ Analysis',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',58.0,36.5,5.9
'N Leg, E Side - 25 m',58.0,108.5,5.9
'N Leg, E Side - 50 m',58.0,190.5,5.9
'N Leg, E Side-Midblk',58.0,626.5,5.9
'N Leg, W Side-Corner',-82.0,61.2,5.9
'N Leg, W Side - 25 m',-82.0,133.2,5.9
'N Leg, W Side - 50 m',-82.0,215.2,5.9
'N Leg, W Side-Midblk',-82.0,651.2,5.9
'S Leg, E Side-Corner',83.0,-85.7,5.9
'S Leg, E Side - 25 m',101.7,-155.3,5.9
'S Leg, E Side - 50 m',122.9,-234.5,5.9
'S Leg, E Side-Midblk',235.7,-655.6,5.9
'S Leg, W Side-Corner',-69.1,-58.9,5.9
'S Leg, W Side - 25 m',-50.5,-128.5,5.9
'S Leg, W Side - 50 m',-29.2,-207.7,5.9
'S Leg, W Side-Midblk',83.6,-628.8,5.9
'E Leg, N Side - 25 m',128.9,24.0,5.9
'E Leg, N Side - 50 m',209.7,9.7,5.9
'E Leg, N Side-Midblk',639.0,-66.0,5.9
'W Leg, N Side - 25 m',-152.9,73.7,5.9
'W Leg, N Side - 50 m',-233.7,87.9,5.9
'W Leg, N Side-Midblk',-663.0,163.6,5.9
'E Leg, S Side - 25 m',153.9,-98.2,5.9
'E Leg, S Side - 50 m',234.7,-112.5,5.9
'E Leg, S Side-Midblk',664.1,-188.2,5.9
'W Leg, S Side - 25 m',-140.0,-46.4,5.9
'W Leg, S Side - 50 m',-220.8,-32.1,5.9
'W Leg, S Side-Midblk',-650.1,43.6,5.9
'2042 - I95 and SR 610 (Exit 143)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-36,-5,-36,1200,14400,2.27,0.0,91.7
1
'N Leg Dep - FreeFlow','AG',24,3,24,1200,9600,1.02,0.0,67.7
1
'S Leg App - FreeFlow','AG',24,3,334,-1153,9600,2.27,0.0,67.7
1
'S Leg Dep - FreeFlow','AG',-36,-5,276,-1168,14400,1.02,0.0,91.7
1
'E Leg App - FreeFlow','AG',3,18,1185,-191,7200,2.15,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',-5,-30,1177,-238,12000,0.90,0.0,79.7
1
```

'W Leg App - FreeFlow','AG',-5,-30,-1187,179,12000,2.15,0.0,79.7
1
'W Leg Dep - FreeFlow','AG',3,18,-1179,226,7200,0.90,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72

2042 I95 and SR610 OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: FredEx AQ Analysis RUN: 2042 - I95 and SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11:46:59

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-36.0	-5.0	-36.0	1200.0	1205.	360.	AG	14400.	2.3	0.0	91.7		
2. N Leg Dep - FreeFlow	24.0	3.0	24.0	1200.0	1197.	360.	AG	9600.	1.0	0.0	67.7		
3. S Leg App - FreeFlow	24.0	3.0	334.0	-1153.0	1197.	165.	AG	9600.	2.3	0.0	67.7		
4. S Leg Dep - FreeFlow	-36.0	-5.0	276.0	-1168.0	1204.	165.	AG	14400.	1.0	0.0	91.7		
5. E Leg App - FreeFlow	3.0	18.0	1185.0	-191.0	1200.	100.	AG	7200.	2.2	0.0	55.7		
6. E Leg Dep - FreeFlow	-5.0	-30.0	1177.0	-238.0	1200.	100.	AG	12000.	0.9	0.0	79.7		
7. W Leg App - FreeFlow	-5.0	-30.0	-1187.0	179.0	1200.	280.	AG	12000.	2.2	0.0	79.7		
8. W Leg Dep - FreeFlow	3.0	18.0	-1179.0	226.0	1200.	280.	AG	7200.	0.9	0.0	55.7		

PAGE 2
JOB: FredEx AQ Analysis RUN: 2042 - I95 and

SR 610 (Exit 143)

DATE : 8/15/17
TIME : 11:46:59

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. N Leg, E Side-Corner	58.0	36.5	5.9
2. N Leg, E Side - 25 m	58.0	108.5	5.9
3. N Leg, E Side - 50 m	58.0	190.5	5.9
4. N Leg, E Side-Midblk	58.0	626.5	5.9
5. N Leg, W Side-Corner	-82.0	61.2	5.9
6. N Leg, W Side - 25 m	-82.0	133.2	5.9
7. N Leg, W Side - 50 m	-82.0	215.2	5.9
8. N Leg, W Side-Midblk	-82.0	651.2	5.9
9. S Leg, E Side-Corner	83.0	-85.7	5.9
10. S Leg, E Side - 25 m	101.7	-155.3	5.9
11. S Leg, E Side - 50 m	122.9	-234.5	5.9
12. S Leg, E Side-Midblk	235.7	-655.6	5.9
13. S Leg, W Side-Corner	-69.1	-58.9	5.9
14. S Leg, W Side - 25 m	-50.5	-128.5	5.9
15. S Leg, W Side - 50 m	-29.2	-207.7	5.9
16. S Leg, W Side-Midblk	83.6	-628.8	5.9
17. E Leg, N Side - 25 m	128.9	24.0	5.9
18. E Leg, N Side - 50 m	209.7	9.7	5.9
19. E Leg, N Side-Midblk	639.0	-66.0	5.9
20. W Leg, N Side - 25 m	-152.9	73.7	5.9
21. W Leg, N Side - 50 m	-233.7	87.9	5.9
22. W Leg, N Side-Midblk	-663.0	163.6	5.9
23. E Leg, S Side - 25 m	153.9	-98.2	5.9
24. E Leg, S Side - 50 m	234.7	-112.5	5.9
25. E Leg, S Side-Midblk	664.1	-188.2	5.9
26. W Leg, S Side - 25 m	-140.0	-46.4	5.9

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     27. W Leg, S Side - 50 m *      -220.8      -32.1        5.9   *
     28. W Leg, S Side-Midblk *      -650.1       43.6        5.9   *
```



```
      JOB: FredEx AQ Analysis                                   RUN: 2042 - I95 and
SR 610 (Exit 143)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*------------------------------------------------------------------------------
-----------------------------------------
   5.  *  0.5000  0.5000  0.5000  0.4000  1.5000  1.5000  1.5000  1.3000  1.0000
0.8000  0.6000  0.4000  2.4000  2.0000  1.8000
  10.  *  0.3000  0.3000  0.3000  0.3000  1.7000  1.7000  1.7000  1.4000  0.9000
0.6000  0.3000  0.3000  2.5000  1.8000  1.6000
  15.  *  0.2000  0.1000  0.1000  0.1000  1.7000  1.7000  1.7000  1.5000  0.7000
0.5000  0.3000  0.3000  2.3000  1.7000  1.4000
  20.  *  0.1000  0.1000  0.1000  0.1000  1.6000  1.6000  1.6000  1.5000  0.7000
0.5000  0.3000  0.3000  2.1000  1.6000  1.4000
  25.  *  0.1000  0.1000  0.1000  0.1000  1.5000  1.5000  1.5000  1.4000  0.7000
0.5000  0.3000  0.3000  2.0000  1.4000  1.2000
  30.  *  0.0000  0.0000  0.0000  0.0000  1.4000  1.4000  1.4000  1.4000  0.7000
0.5000  0.3000  0.3000  1.9000  1.3000  0.9000
  35.  *  0.0000  0.0000  0.0000  0.0000  1.3000  1.3000  1.3000  1.3000  0.7000
0.5000  0.3000  0.3000  1.9000  1.1000  0.9000
  40.  *  0.0000  0.0000  0.0000  0.0000  1.2000  1.3000  1.3000  1.3000  0.7000
0.5000  0.3000  0.3000  1.8000  1.2000  0.9000
  45.  *  0.0000  0.0000  0.0000  0.0000  1.2000  1.2000  1.2000  1.2000  0.6000
0.4000  0.2000  0.2000  1.8000  1.1000  0.9000
  50.  *  0.0000  0.0000  0.0000  0.0000  1.2000  1.1000  1.1000  1.1000  0.6000
0.4000  0.2000  0.2000  1.8000  1.1000  0.9000
  55.  *  0.1000  0.0000  0.0000  0.0000  1.1000  1.1000  1.1000  1.1000  0.6000
0.4000  0.2000  0.1000  1.8000  1.1000  0.9000
  60.  *  0.1000  0.0000  0.0000  0.0000  1.1000  1.1000  1.1000  1.1000  0.7000
0.4000  0.2000  0.0000  1.7000  1.1000  0.9000
```

```
  65.  *  0.1000  0.0000  0.0000  0.0000  1.0000  1.0000  1.0000  1.0000  0.7000
0.4000  0.3000  0.0000  1.8000  1.1000  1.0000
  70.  *  0.1000  0.0000  0.0000  0.0000  1.0000  1.0000  1.0000  1.0000  0.7000
0.4000  0.3000  0.0000  1.7000  1.1000  1.0000
  75.  *  0.1000  0.0000  0.0000  0.0000  1.0000  1.0000  1.0000  1.0000  0.7000
0.4000  0.2000  0.0000  1.7000  1.1000  1.0000
  80.  *  0.2000  0.0000  0.0000  0.0000  1.1000  1.0000  1.0000  1.0000  0.8000
0.4000  0.2000  0.0000  1.8000  1.1000  0.9000
  85.  *  0.3000  0.0000  0.0000  0.0000  1.2000  1.0000  1.0000  1.0000  0.8000
0.4000  0.2000  0.0000  1.7000  1.1000  0.9000
  90.  *  0.5000  0.0000  0.0000  0.0000  1.4000  1.0000  1.0000  1.0000  0.8000
0.4000  0.2000  0.0000  1.8000  1.1000  0.9000
  95.  *  0.7000  0.1000  0.0000  0.0000  1.5000  1.1000  1.0000  1.0000  0.7000
0.2000  0.2000  0.0000  1.7000  1.0000  0.9000
 100.  *  0.9000  0.2000  0.1000  0.0000  1.7000  1.2000  1.0000  1.0000  0.6000
0.2000  0.0000  0.0000  1.5000  0.9000  0.7000
 105.  *  1.0000  0.3000  0.1000  0.0000  1.9000  1.2000  1.2000  1.0000  0.4000
0.1000  0.0000  0.0000  1.3000  0.8000  0.7000
 110.  *  1.2000  0.4000  0.2000  0.0000  1.8000  1.4000  1.2000  1.0000  0.4000
0.1000  0.1000  0.1000  1.2000  0.7000  0.7000
 115.  *  1.2000  0.5000  0.3000  0.0000  2.1000  1.4000  1.3000  1.0000  0.2000
0.1000  0.1000  0.1000  1.0000  0.8000  0.8000
 120.  *  1.1000  0.5000  0.3000  0.0000  2.0000  1.4000  1.4000  1.1000  0.2000
0.1000  0.1000  0.1000  1.0000  0.8000  0.8000
 125.  *  1.0000  0.5000  0.3000  0.0000  2.1000  1.6000  1.3000  1.1000  0.2000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
 130.  *  1.0000  0.5000  0.3000  0.1000  1.9000  1.5000  1.3000  1.2000  0.1000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
 135.  *  0.9000  0.5000  0.3000  0.1000  2.1000  1.6000  1.6000  1.3000  0.1000
0.1000  0.1000  0.1000  1.0000  0.9000  0.9000
 140.  *  0.8000  0.5000  0.3000  0.1000  2.0000  1.9000  1.5000  1.4000  0.1000
0.1000  0.1000  0.1000  1.1000  1.0000  1.0000
 145.  *  0.9000  0.4000  0.3000  0.1000  2.2000  1.9000  1.7000  1.4000  0.2000
0.2000  0.2000  0.2000  1.1000  1.0000  1.0000
 150.  *  0.9000  0.5000  0.3000  0.1000  2.2000  2.1000  1.8000  1.5000  0.3000
0.3000  0.3000  0.3000  1.2000  1.1000  1.1000
 155.  *  1.0000  0.5000  0.5000  0.2000  2.2000  2.1000  2.0000  1.7000  0.6000
0.6000  0.5000  0.4000  1.2000  1.1000  1.0000
 160.  *  1.3000  0.8000  0.7000  0.2000  2.2000  1.9000  2.1000  1.8000  0.8000
0.8000  0.8000  0.7000  0.9000  0.9000  0.9000
 165.  *  1.6000  0.9000  0.8000  0.3000  2.0000  1.9000  1.8000  1.8000  1.2000
1.1000  1.1000  0.9000  0.8000  0.7000  0.7000
 170.  *  1.7000  1.1000  1.0000  0.6000  1.8000  1.7000  1.8000  1.7000  1.3000
1.3000  1.3000  1.2000  0.5000  0.5000  0.5000
 175.  *  2.0000  1.2000  1.0000  0.8000  1.5000  1.4000  1.6000  1.7000  1.4000
1.4000  1.4000  1.2000  0.4000  0.4000  0.3000
 180.  *  2.0000  1.3000  1.1000  0.9000  1.3000  1.3000  1.2000  1.5000  1.4000
1.4000  1.4000  1.3000  0.2000  0.2000  0.2000
```

```
 185.  *  1.9000  1.3000  1.1000  1.1000  1.1000  0.9000  1.0000  0.9000  1.3000
1.3000  1.3000  1.3000  0.1000  0.1000  0.1000
 190.  *  1.8000  1.3000  1.1000  1.3000  1.0000  0.8000  0.7000  0.7000  1.3000
1.3000  1.3000  1.2000  0.1000  0.1000  0.1000
 195.  *  1.7000  1.3000  1.3000  1.2000  0.8000  0.6000  0.6000  0.5000  1.2000
1.2000  1.2000  1.2000  0.1000  0.1000  0.1000
 200.  *  1.7000  1.2000  1.1000  1.2000  0.8000  0.6000  0.5000  0.3000  1.1000
1.1000  1.1000  1.1000  0.0000  0.0000  0.0000
 205.  *  1.7000  1.4000  1.2000  1.2000  0.8000  0.5000  0.4000  0.3000  1.1000
1.1000  1.1000  1.1000  0.0000  0.0000  0.0000
 210.  *  1.7000  1.2000  1.3000  1.2000  0.8000  0.5000  0.4000  0.2000  1.0000
1.0000  1.0000  1.0000  0.0000  0.0000  0.0000

                              PAGE  4
     JOB: FredEx AQ Analysis                                   RUN: 2042 - I95 and
SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------------
-------------------------------------------
 215.  *  1.7000  1.2000  1.3000  1.2000  0.8000  0.5000  0.4000  0.2000  1.0000
1.0000  1.0000  1.0000  0.0000  0.0000  0.0000
 220.  *  1.7000  1.3000  1.2000  1.2000  0.8000  0.5000  0.4000  0.2000  1.0000
1.0000  1.0000  1.0000  0.1000  0.0000  0.0000
 225.  *  1.7000  1.3000  1.2000  1.1000  0.8000  0.5000  0.4000  0.2000  0.9000
0.9000  0.9000  0.9000  0.1000  0.0000  0.0000
 230.  *  1.6000  1.3000  1.3000  1.0000  0.9000  0.5000  0.5000  0.2000  0.9000
0.9000  0.9000  0.9000  0.1000  0.0000  0.0000
 235.  *  1.8000  1.2000  1.3000  1.0000  0.9000  0.6000  0.5000  0.2000  0.9000
0.9000  0.9000  0.9000  0.1000  0.0000  0.0000
 240.  *  1.7000  1.4000  1.3000  1.0000  0.9000  0.6000  0.5000  0.2000  0.9000
0.9000  0.9000  0.9000  0.1000  0.0000  0.0000
 245.  *  1.8000  1.4000  1.3000  1.0000  0.9000  0.6000  0.5000  0.2000  0.9000
0.9000  0.9000  0.9000  0.1000  0.0000  0.0000
 250.  *  1.8000  1.4000  1.3000  1.0000  0.9000  0.5000  0.4000  0.1000  0.9000
0.9000  0.9000  0.9000  0.1000  0.0000  0.0000
 255.  *  1.9000  1.4000  1.3000  0.9000  1.0000  0.5000  0.4000  0.0000  1.0000
1.0000  1.0000  1.0000  0.2000  0.0000  0.0000
 260.  *  2.0000  1.4000  1.3000  0.9000  1.0000  0.5000  0.3000  0.0000  1.1000
0.9000  0.9000  0.9000  0.2000  0.0000  0.0000
 265.  *  2.0000  1.4000  1.2000  0.9000  1.1000  0.5000  0.3000  0.0000  1.2000
0.9000  0.9000  0.9000  0.4000  0.0000  0.0000
```

```
 270.  *  2.0000  1.3000  1.2000  0.9000  1.0000  0.4000  0.3000  0.0000  1.3000
1.0000  0.9000  0.9000  0.6000  0.1000  0.0000
 275.  *  1.9000  1.2000  1.0000  0.9000  0.9000  0.3000  0.1000  0.0000  1.5000
1.1000  1.0000  0.9000  0.8000  0.1000  0.1000
 280.  *  1.7000  1.2000  1.0000  0.9000  0.7000  0.2000  0.1000  0.0000  1.8000
1.2000  1.0000  0.9000  1.2000  0.3000  0.1000
 285.  *  1.6000  1.0000  0.9000  0.9000  0.4000  0.1000  0.0000  0.0000  1.9000
1.4000  1.1000  0.9000  1.3000  0.4000  0.2000
 290.  *  1.2000  0.9000  0.9000  0.9000  0.3000  0.0000  0.0000  0.0000  2.0000
1.6000  1.3000  1.0000  1.4000  0.6000  0.2000
 295.  *  1.2000  0.9000  0.9000  0.9000  0.3000  0.1000  0.1000  0.1000  2.0000
1.6000  1.4000  1.0000  1.3000  0.6000  0.4000
 300.  *  1.0000  0.9000  0.9000  0.9000  0.2000  0.1000  0.1000  0.1000  2.0000
1.7000  1.4000  1.1000  1.3000  0.6000  0.4000
 305.  *  1.0000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.9000
1.7000  1.5000  1.2000  1.2000  0.6000  0.4000
 310.  *  1.0000  0.9000  0.9000  0.9000  0.1000  0.1000  0.1000  0.1000  1.9000
1.6000  1.6000  1.2000  1.1000  0.6000  0.4000
 315.  *  1.1000  1.0000  1.0000  1.0000  0.1000  0.1000  0.1000  0.1000  2.0000
1.7000  1.7000  1.3000  1.0000  0.6000  0.5000
 320.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.9000
1.7000  1.5000  1.3000  1.0000  0.7000  0.5000
 325.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.9000
1.8000  1.6000  1.4000  0.9000  0.7000  0.5000
 330.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.7000
1.8000  1.8000  1.6000  1.0000  0.7000  0.6000
 335.  *  1.1000  1.1000  1.1000  1.1000  0.2000  0.2000  0.2000  0.2000  1.9000
1.8000  1.8000  1.5000  1.1000  0.7000  0.7000
 340.  *  1.2000  1.2000  1.2000  1.1000  0.3000  0.3000  0.3000  0.2000  1.8000
1.6000  1.7000  1.5000  1.2000  0.9000  0.8000
 345.  *  1.2000  1.2000  1.2000  1.1000  0.4000  0.4000  0.4000  0.4000  1.7000
1.7000  1.4000  1.3000  1.3000  1.1000  1.0000
 350.  *  1.2000  1.2000  1.1000  1.0000  0.6000  0.6000  0.6000  0.5000  1.7000
1.5000  1.2000  1.2000  1.7000  1.5000  1.3000
 355.  *  1.0000  1.0000  1.0000  0.8000  1.0000  0.9000  0.9000  0.8000  1.4000
1.3000  1.0000  0.8000  2.0000  1.7000  1.3000
 360.  *  0.8000  0.8000  0.8000  0.6000  1.3000  1.3000  1.3000  1.0000  1.3000
0.9000  0.7000  0.5000  2.2000  1.8000  1.5000

------*-------------------------------------------------------------------------
-------------------------------------------
 MAX   *  2.0000  1.4000  1.3000  1.3000  2.2000  2.1000  2.1000  1.8000  2.0000
1.8000  1.8000  1.6000  2.5000  2.0000  1.8000
 DEGR. *    175     205     195     190     145     150     160     160     290
325     330     330      10       5       5
```

```
      JOB: FredEx AQ Analysis                                   RUN: 2042 - I95 and
SR 610 (Exit 143)

       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------------
---------------------------
   5.  *  1.2000  0.2000  0.0000  0.0000  0.5000  0.2000  0.0000  0.7000  0.6000
0.6000  1.4000  1.0000  0.8000
  10.  *  1.2000  0.0000  0.0000  0.0000  0.6000  0.3000  0.0000  0.6000  0.6000
0.6000  1.6000  1.3000  0.9000
  15.  *  1.1000  0.0000  0.0000  0.0000  0.7000  0.4000  0.0000  0.6000  0.6000
0.6000  1.6000  1.3000  0.8000
  20.  *  1.1000  0.0000  0.0000  0.0000  0.7000  0.5000  0.0000  0.6000  0.6000
0.6000  1.6000  1.3000  0.8000
  25.  *  1.1000  0.0000  0.0000  0.0000  0.7000  0.5000  0.1000  0.6000  0.6000
0.6000  1.6000  1.3000  0.9000
  30.  *  1.0000  0.0000  0.0000  0.0000  0.7000  0.5000  0.1000  0.6000  0.6000
0.6000  1.5000  1.3000  0.9000
  35.  *  0.9000  0.0000  0.0000  0.0000  0.7000  0.5000  0.1000  0.6000  0.6000
0.6000  1.5000  1.3000  0.9000
  40.  *  0.9000  0.0000  0.0000  0.0000  0.7000  0.5000  0.1000  0.6000  0.6000
0.6000  1.5000  1.3000  0.9000
  45.  *  0.9000  0.0000  0.0000  0.0000  0.7000  0.5000  0.1000  0.6000  0.6000
0.6000  1.4000  1.4000  1.1000
  50.  *  0.9000  0.0000  0.0000  0.0000  0.6000  0.5000  0.2000  0.6000  0.6000
0.6000  1.5000  1.4000  1.1000
  55.  *  0.9000  0.1000  0.1000  0.1000  0.6000  0.5000  0.2000  0.6000  0.6000
0.6000  1.5000  1.4000  1.1000
  60.  *  0.8000  0.1000  0.1000  0.1000  0.6000  0.4000  0.2000  0.7000  0.7000
0.7000  1.6000  1.4000  1.2000
  65.  *  0.7000  0.1000  0.1000  0.1000  0.6000  0.4000  0.1000  0.7000  0.7000
0.7000  1.8000  1.5000  1.2000
  70.  *  0.7000  0.1000  0.1000  0.1000  0.6000  0.4000  0.1000  0.7000  0.7000
0.7000  1.8000  1.5000  1.3000
```

```
  75.  *  0.7000  0.1000  0.1000  0.1000  0.6000  0.4000  0.1000  0.7000  0.7000
0.7000  1.6000  1.7000  1.3000
  80.  *  0.7000  0.2000  0.2000  0.2000  0.7000  0.5000  0.2000  0.8000  0.8000
0.8000  1.8000  1.7000  1.3000
  85.  *  0.7000  0.3000  0.3000  0.2000  0.8000  0.6000  0.2000  0.8000  0.8000
0.8000  1.7000  1.5000  1.5000
  90.  *  0.7000  0.5000  0.5000  0.4000  1.0000  0.7000  0.5000  0.8000  0.8000
0.7000  1.7000  1.6000  1.6000
  95.  *  0.7000  0.7000  0.7000  0.6000  1.0000  1.0000  0.6000  0.7000  0.7000
0.5000  1.5000  1.6000  1.6000
 100.  *  0.7000  0.9000  0.9000  0.8000  1.4000  1.1000  0.9000  0.6000  0.6000
0.5000  1.3000  1.4000  1.2000
 105.  *  0.7000  1.0000  1.0000  1.0000  1.5000  1.3000  1.1000  0.4000  0.4000
0.4000  1.1000  1.1000  1.1000
 110.  *  0.7000  1.2000  1.2000  1.0000  1.4000  1.4000  1.1000  0.2000  0.2000
0.2000  0.9000  1.0000  0.7000
 115.  *  0.8000  1.2000  1.1000  1.0000  1.6000  1.3000  1.1000  0.1000  0.1000
0.1000  0.9000  0.7000  0.5000
 120.  *  0.8000  1.1000  1.1000  1.1000  1.6000  1.3000  1.2000  0.1000  0.1000
0.1000  0.7000  0.6000  0.4000
 125.  *  0.9000  1.0000  1.0000  1.0000  1.5000  1.3000  1.2000  0.1000  0.1000
0.1000  0.7000  0.5000  0.3000
 130.  *  0.9000  1.0000  1.0000  1.0000  1.6000  1.4000  1.1000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 135.  *  0.9000  0.9000  0.9000  0.9000  1.6000  1.3000  1.1000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 140.  *  1.0000  0.8000  0.9000  0.8000  1.4000  1.2000  1.0000  0.0000  0.0000
0.0000  0.7000  0.5000  0.3000
 145.  *  1.0000  0.8000  0.8000  0.8000  1.4000  1.2000  0.9000  0.0000  0.0000
0.0000  0.7000  0.5000  0.1000
 150.  *  0.9000  0.7000  0.7000  0.7000  1.3000  1.2000  0.8000  0.0000  0.0000
0.0000  0.7000  0.5000  0.1000
 155.  *  0.8000  0.8000  0.7000  0.7000  1.3000  1.1000  0.7000  0.1000  0.0000
0.0000  0.6000  0.3000  0.1000
 160.  *  0.8000  0.8000  0.7000  0.7000  1.2000  0.9000  0.7000  0.1000  0.0000
0.0000  0.4000  0.3000  0.1000
 165.  *  0.6000  1.0000  0.8000  0.7000  1.0000  0.9000  0.7000  0.3000  0.1000
0.0000  0.2000  0.1000  0.0000
 170.  *  0.5000  1.0000  0.8000  0.6000  0.9000  0.7000  0.7000  0.4000  0.1000
0.0000  0.1000  0.0000  0.0000
 175.  *  0.2000  1.3000  1.0000  0.7000  0.8000  0.7000  0.7000  0.6000  0.3000
0.0000  0.0000  0.0000  0.0000
 180.  *  0.2000  1.3000  1.0000  0.7000  0.7000  0.7000  0.7000  0.6000  0.3000
0.0000  0.0000  0.0000  0.0000
 185.  *  0.1000  1.3000  1.1000  0.7000  0.7000  0.7000  0.7000  0.6000  0.4000
0.0000  0.0000  0.0000  0.0000
 190.  *  0.1000  1.3000  1.2000  0.7000  0.7000  0.7000  0.7000  0.6000  0.5000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.1000  1.3000  1.2000  0.8000  0.7000  0.7000  0.7000  0.6000  0.5000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.0000  1.3000  1.2000  0.8000  0.7000  0.7000  0.7000  0.6000  0.5000
0.1000  0.0000  0.0000  0.0000
 205.  *  0.0000  1.2000  1.1000  0.9000  0.7000  0.7000  0.7000  0.6000  0.5000
0.1000  0.0000  0.0000  0.0000
 210.  *  0.0000  1.2000  1.1000  0.9000  0.7000  0.7000  0.7000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
```

PAGE 6

```
      JOB: FredEx AQ Analysis                                   RUN: 2042 - I95 and
SR 610 (Exit 143)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*---------------------------------------------------------------------------
---------------------------
 215.  *  0.0000  1.2000  1.0000  0.9000  0.7000  0.7000  0.7000  0.6000  0.4000
0.2000  0.0000  0.0000  0.0000
 220.  *  0.0000  1.2000  1.0000  0.9000  0.7000  0.7000  0.7000  0.6000  0.3000
0.2000  0.1000  0.1000  0.1000
 225.  *  0.0000  1.2000  1.0000  0.9000  0.7000  0.7000  0.7000  0.6000  0.3000
0.2000  0.1000  0.1000  0.1000
 230.  *  0.0000  1.3000  1.0000  0.9000  0.8000  0.8000  0.8000  0.6000  0.3000
0.2000  0.1000  0.1000  0.1000
 235.  *  0.0000  1.4000  1.1000  1.0000  0.8000  0.8000  0.8000  0.6000  0.3000
0.2000  0.1000  0.1000  0.1000
 240.  *  0.0000  1.5000  1.1000  1.1000  0.8000  0.8000  0.8000  0.6000  0.3000
0.2000  0.1000  0.1000  0.1000
 245.  *  0.0000  1.6000  1.2000  1.1000  0.9000  0.9000  0.9000  0.6000  0.3000
0.2000  0.1000  0.1000  0.1000
 250.  *  0.0000  1.4000  1.2000  1.2000  0.9000  0.9000  0.9000  0.5000  0.3000
0.2000  0.1000  0.1000  0.1000
 255.  *  0.0000  1.7000  1.5000  1.2000  1.0000  1.0000  0.9000  0.6000  0.4000
0.3000  0.2000  0.2000  0.1000
 260.  *  0.0000  1.9000  1.6000  1.4000  1.0000  1.0000  0.9000  0.7000  0.5000
0.3000  0.2000  0.2000  0.2000
 265.  *  0.0000  2.0000  1.6000  1.4000  1.1000  1.1000  0.9000  0.7000  0.5000
0.3000  0.4000  0.4000  0.3000
 270.  *  0.0000  1.8000  1.7000  1.3000  1.0000  1.0000  0.8000  0.9000  0.7000
0.5000  0.6000  0.5000  0.5000
 275.  *  0.0000  1.6000  1.6000  1.4000  0.8000  0.8000  0.7000  1.1000  0.8000
0.7000  0.8000  0.8000  0.7000
```

```
 280.  *  0.0000  1.5000  1.3000  1.1000  0.7000  0.7000  0.6000  1.4000  1.1000
0.8000  1.1000  1.1000  0.9000
 285.  *  0.0000  1.2000  1.1000  0.8000  0.4000  0.4000  0.4000  1.5000  1.3000
1.1000  1.3000  1.3000  1.2000
 290.  *  0.0000  1.0000  0.9000  0.6000  0.3000  0.3000  0.3000  1.4000  1.4000
0.9000  1.4000  1.3000  1.2000
 295.  *  0.0000  0.9000  0.7000  0.3000  0.2000  0.2000  0.1000  1.5000  1.4000
1.0000  1.3000  1.3000  1.3000
 300.  *  0.1000  0.7000  0.5000  0.3000  0.1000  0.1000  0.1000  1.5000  1.3000
0.9000  1.3000  1.3000  1.2000
 305.  *  0.1000  0.7000  0.5000  0.2000  0.0000  0.0000  0.0000  1.5000  1.1000
0.8000  1.2000  1.2000  1.1000
 310.  *  0.1000  0.7000  0.5000  0.2000  0.0000  0.0000  0.0000  1.4000  1.2000
0.8000  1.1000  1.1000  1.1000
 315.  *  0.2000  0.7000  0.5000  0.2000  0.0000  0.0000  0.0000  1.2000  1.1000
0.8000  1.0000  1.0000  1.0000
 320.  *  0.2000  0.7000  0.5000  0.2000  0.0000  0.0000  0.0000  1.2000  1.1000
0.8000  1.0000  1.0000  1.0000
 325.  *  0.2000  0.8000  0.5000  0.2000  0.0000  0.0000  0.0000  1.2000  1.0000
0.7000  0.9000  0.9000  0.9000
 330.  *  0.3000  0.7000  0.4000  0.1000  0.0000  0.0000  0.0000  1.1000  1.0000
0.7000  0.9000  0.9000  0.9000
 335.  *  0.5000  0.7000  0.4000  0.1000  0.0000  0.0000  0.0000  1.2000  1.0000
0.7000  0.9000  0.9000  0.9000
 340.  *  0.7000  0.7000  0.4000  0.0000  0.0000  0.0000  0.0000  1.2000  1.0000
0.6000  0.8000  0.8000  0.8000
 345.  *  0.9000  0.6000  0.4000  0.0000  0.0000  0.0000  0.0000  1.2000  0.9000
0.6000  0.8000  0.8000  0.8000
 350.  *  1.2000  0.5000  0.3000  0.0000  0.1000  0.0000  0.0000  1.0000  0.9000
0.6000  0.9000  0.8000  0.8000
 355.  *  1.2000  0.4000  0.2000  0.0000  0.2000  0.0000  0.0000  0.9000  0.8000
0.6000  1.0000  0.9000  0.8000
 360.  *  1.2000  0.3000  0.1000  0.0000  0.3000  0.1000  0.0000  0.8000  0.7000
0.6000  1.2000  0.9000  0.8000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  1.2000  2.0000  1.7000  1.4000  1.6000  1.4000  1.2000  1.5000  1.4000
1.1000  1.8000  1.7000  1.6000
 DEGR. *      5     265     270     275     115     110     120     285     290
285      65      75      90

 THE HIGHEST CONCENTRATION OF   2.5000 PPM OCCURRED AT RECEPTOR    13.
```

2042 NoBuild I95 and Russell Rd IN

```
Q,EPA,,F,,0,T,T,F,F,0.78,
6,4,3,3,1216.66666666667,2275,246.666666666667,525,1216.66666666667,2275,246.6666666
66667,525,1036.8,1036.8,1036.8,1036.8,1036.8,1036.8,1036.8,1036.8,12,12,12,12,10,10,
10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200,0,0,1200,-1200,0,0,0,0,0,0,-5,0,-25,-
25,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',82.0,89.0,5.9
'N Leg, E Side - 25 m',82.0,161.0,5.9
'N Leg, E Side - 50 m',82.0,243.0,5.9
'N Leg, E Side-Midblk',82.0,679.0,5.9
'N Leg, W Side-Corner',-58.0,23.7,5.9
'N Leg, W Side - 25 m',-58.0,95.7,5.9
'N Leg, W Side - 50 m',-58.0,177.8,5.9
'N Leg, W Side-Midblk',-58.0,613.7,5.9
'S Leg, E Side-Corner',83.4,-11.9,5.9
'S Leg, E Side - 25 m',89.6,-83.6,5.9
'S Leg, E Side - 50 m',96.8,-165.3,5.9
'S Leg, E Side-Midblk',134.8,-599.6,5.9
'S Leg, W Side-Corner',-51.7,-74.9,5.9
'S Leg, W Side - 25 m',-45.4,-146.6,5.9
'S Leg, W Side - 50 m',-38.2,-228.3,5.9
'S Leg, W Side-Midblk',-0.3,-662.6,5.9
'E Leg, N Side - 25 m',147.3,119.4,5.9
'E Leg, N Side - 50 m',221.6,154.1,5.9
'E Leg, N Side-Midblk',616.7,338.3,5.9
'W Leg, N Side - 25 m',-123.3,-6.7,5.9
'W Leg, N Side - 50 m',-197.6,-41.4,5.9
'W Leg, N Side-Midblk',-592.7,-225.6,5.9
'E Leg, S Side - 25 m',148.6,18.6,5.9
'E Leg, S Side - 50 m',223.0,53.2,5.9
'E Leg, S Side-Midblk',618.1,237.5,5.9
'W Leg, S Side - 25 m',-116.9,-105.3,5.9
'W Leg, S Side - 50 m',-191.3,-140.0,5.9
'W Leg, S Side-Midblk',-586.4,-324.2,5.9
'2042 NOBUILD - I95_RussellRd (Exit 148)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,-1,-24,1200,9100,1.06,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',36,2,36,1200,7300,2.98,0.0,91.7
1
'S Leg App - FreeFlow','AG',36,2,140,-1192,7300,1.06,0.0,91.7
1
'S Leg Dep - FreeFlow','AG',-24,-1,81,-1198,9100,2.98,0.0,67.7
1
'E Leg App - FreeFlow','AG',-8,16,1080,523,1575,0.94,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',8,-16,1095,491,740,1.17,0.0,55.7
```

```
1
'W Leg App - FreeFlow','AG',8,-16,-1080,-523,740,1.17,0.0,55.7
1
'W Leg Dep - FreeFlow','AG',-8,16,-1095,-491,1575,0.94,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2042 NoBuild I95 and Russell Rd OUT

```
 *** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i
graphical user interface
↑                          CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
13045                           PAGE  1

      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NOBUILD -
I95_RussellRd (Exit 148)

      DATE :  8/15/17
      TIME : 13:36:42

         The MODE flag has been set for calculating concentrations for POLLUTANT:
CO

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*------------------
----------------------------------------
       1. N Leg App - FreeFlow*    -24.0      -1.0     -24.0    1200.0 *    1201.
360. AG   9100.   1.1   0.0 67.7
       2. N Leg Dep - FreeFlow*     36.0       2.0      36.0    1200.0 *    1198.
360. AG   7300.   3.0   0.0 91.7
       3. S Leg App - FreeFlow*     36.0       2.0     140.0   -1192.0 *    1199.
175. AG   7300.   1.1   0.0 91.7
       4. S Leg Dep - FreeFlow*    -24.0      -1.0      81.0   -1198.0 *    1202.
175. AG   9100.   3.0   0.0 67.7
       5. E Leg App - FreeFlow*     -8.0      16.0    1080.0     523.0 *    1200.
65. AG   1575.   0.9   0.0 55.7
       6. E Leg Dep - FreeFlow*      8.0     -16.0    1095.0     491.0 *    1199.
65. AG    740.   1.2   0.0 55.7
       7. W Leg App - FreeFlow*      8.0     -16.0   -1080.0    -523.0 *    1200.
245. AG    740.   1.2   0.0 55.7
       8. W Leg Dep - FreeFlow*     -8.0      16.0   -1095.0    -491.0 *    1199.
245. AG   1575.   0.9   0.0 55.7
↑
                                PAGE  2
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NOBUILD -
```

I95_RussellRd (Exit 148)

DATE : 8/15/17
TIME : 13:36:42

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	*	X (FT)	Y (FT)	Z (FT)	*
1. N Leg, E Side-Corner	*	82.0	89.0	5.9	*
2. N Leg, E Side - 25 m	*	82.0	161.0	5.9	*
3. N Leg, E Side - 50 m	*	82.0	243.0	5.9	*
4. N Leg, E Side-Midblk	*	82.0	679.0	5.9	*
5. N Leg, W Side-Corner	*	-58.0	23.7	5.9	*
6. N Leg, W Side - 25 m	*	-58.0	95.7	5.9	*
7. N Leg, W Side - 50 m	*	-58.0	177.8	5.9	*
8. N Leg, W Side-Midblk	*	-58.0	613.7	5.9	*
9. S Leg, E Side-Corner	*	83.4	-11.9	5.9	*
10. S Leg, E Side - 25 m	*	89.6	-83.6	5.9	*
11. S Leg, E Side - 50 m	*	96.8	-165.3	5.9	*
12. S Leg, E Side-Midblk	*	134.8	-599.6	5.9	*
13. S Leg, W Side-Corner	*	-51.7	-74.9	5.9	*
14. S Leg, W Side - 25 m	*	-45.4	-146.6	5.9	*
15. S Leg, W Side - 50 m	*	-38.2	-228.3	5.9	*
16. S Leg, W Side-Midblk	*	-0.3	-662.6	5.9	*
17. E Leg, N Side - 25 m	*	147.3	119.4	5.9	*
18. E Leg, N Side - 50 m	*	221.6	154.1	5.9	*
19. E Leg, N Side-Midblk	*	616.7	338.3	5.9	*
20. W Leg, N Side - 25 m	*	-123.3	-6.7	5.9	*
21. W Leg, N Side - 50 m	*	-197.6	-41.4	5.9	*
22. W Leg, N Side-Midblk	*	-592.7	-225.6	5.9	*
23. E Leg, S Side - 25 m	*	148.6	18.6	5.9	*
24. E Leg, S Side - 50 m	*	223.0	53.2	5.9	*
25. E Leg, S Side-Midblk	*	618.1	237.5	5.9	*
26. W Leg, S Side - 25 m	*	-116.9	-105.3	5.9	*

2042 NoBuild I95 and Russell Rd OUT

27. W Leg, S Side - 50 m * -191.3 -140.0 5.9 *
28. W Leg, S Side-Midblk * -586.4 -324.2 5.9 *

↑

JOB: Fred Ex AQ Analysis RUN: 2042 NOBUILD - I95_RussellRd (Exit 148)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5.	0.7000	0.6000	0.6000	0.5000	0.9000	0.9000	0.8000	0.7000	0.7000	0.5000	0.4000	0.2000	1.3000	1.4000	1.5000
10.	0.4000	0.4000	0.4000	0.4000	0.9000	0.9000	0.9000	0.8000	0.4000	0.2000	0.3000	0.2000	1.4000	1.5000	1.6000
15.	0.3000	0.3000	0.3000	0.2000	1.0000	1.0000	1.0000	0.9000	0.2000	0.1000	0.1000	0.1000	1.4000	1.6000	1.6000
20.	0.2000	0.2000	0.2000	0.2000	1.0000	1.0000	1.0000	0.8000	0.1000	0.1000	0.0000	0.0000	1.4000	1.6000	1.5000
25.	0.1000	0.1000	0.1000	0.1000	0.9000	0.9000	0.9000	0.9000	0.1000	0.0000	0.0000	0.0000	1.3000	1.5000	1.4000
30.	0.1000	0.1000	0.1000	0.1000	0.9000	0.9000	0.9000	0.9000	0.0000	0.0000	0.0000	0.0000	1.3000	1.3000	1.2000
35.	0.1000	0.1000	0.1000	0.1000	0.9000	0.9000	0.9000	0.9000	0.0000	0.0000	0.0000	0.0000	1.2000	1.3000	1.2000
40.	0.1000	0.1000	0.1000	0.1000	0.7000	0.7000	0.7000	0.7000	0.0000	0.0000	0.0000	0.0000	1.3000	1.1000	1.0000
45.	0.1000	0.1000	0.1000	0.1000	0.7000	0.7000	0.7000	0.7000	0.0000	0.0000	0.0000	0.0000	1.1000	1.1000	1.0000
50.	0.1000	0.1000	0.1000	0.1000	0.7000	0.7000	0.7000	0.7000	0.0000	0.0000	0.0000	0.0000	1.1000	0.9000	0.9000
55.	0.1000	0.1000	0.1000	0.1000	0.7000	0.7000	0.7000	0.7000	0.0000	0.0000	0.0000	0.0000	1.0000	0.9000	0.9000
60.	0.1000	0.0000	0.0000	0.0000	0.7000	0.7000	0.7000	0.7000	0.0000	0.0000	0.0000	0.0000	0.9000	0.9000	0.9000

```
  65.  *  0.1000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.8000  0.8000
  70.  *  0.1000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.8000
  75.  *  0.1000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
  80.  *  0.1000  0.0000  0.0000  0.0000  0.8000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
  85.  *  0.1000  0.0000  0.0000  0.0000  0.6000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
  90.  *  0.1000  0.0000  0.0000  0.0000  0.6000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
  95.  *  0.1000  0.0000  0.0000  0.0000  0.6000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
 100.  *  0.1000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.8000
 105.  *  0.1000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.8000  0.8000  0.8000
 110.  *  0.1000  0.0000  0.0000  0.0000  0.6000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
 115.  *  0.1000  0.0000  0.0000  0.0000  0.7000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
 120.  *  0.0000  0.0000  0.0000  0.0000  0.8000  0.6000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  0.9000  0.9000  0.9000
 125.  *  0.0000  0.1000  0.1000  0.1000  0.7000  0.6000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  1.0000  1.0000  1.0000
 130.  *  0.1000  0.1000  0.1000  0.1000  0.8000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  1.1000  1.1000  1.1000
 135.  *  0.1000  0.1000  0.1000  0.1000  0.9000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  1.2000  1.2000  1.2000
 140.  *  0.1000  0.1000  0.1000  0.1000  1.0000  0.7000  0.7000  0.7000  0.0000
0.0000  0.0000  0.0000  1.2000  1.2000  1.2000
 145.  *  0.1000  0.1000  0.1000  0.1000  1.1000  0.8000  0.9000  0.9000  0.0000
0.0000  0.0000  0.0000  1.3000  1.3000  1.3000
 150.  *  0.1000  0.1000  0.1000  0.1000  1.2000  0.8000  0.9000  0.9000  0.0000
0.0000  0.0000  0.0000  1.4000  1.4000  1.4000
 155.  *  0.1000  0.1000  0.1000  0.1000  1.3000  1.1000  0.9000  0.9000  0.1000
0.1000  0.1000  0.1000  1.5000  1.5000  1.5000
 160.  *  0.1000  0.1000  0.1000  0.2000  1.4000  1.2000  1.0000  1.0000  0.1000
0.1000  0.1000  0.1000  1.6000  1.6000  1.6000
 165.  *  0.3000  0.4000  0.3000  0.2000  1.5000  1.2000  1.1000  1.0000  0.3000
0.2000  0.2000  0.1000  1.6000  1.6000  1.5000
 170.  *  0.4000  0.4000  0.5000  0.5000  1.4000  1.1000  1.0000  1.1000  0.3000
0.3000  0.3000  0.3000  1.5000  1.4000  1.4000
 175.  *  0.6000  0.6000  0.7000  0.7000  1.2000  1.0000  0.9000  1.0000  0.6000
0.5000  0.5000  0.3000  1.3000  1.3000  1.3000
 180.  *  0.8000  0.9000  0.9000  1.1000  1.0000  0.9000  0.9000  0.8000  0.7000
0.6000  0.6000  0.5000  1.0000  1.0000  1.0000
```

```
 185.  *  0.9000  1.1000  1.1000  1.2000  0.6000  0.5000  0.5000  0.5000  0.9000
0.8000  0.7000  0.6000  0.6000  0.6000  0.6000
 190.  *  1.1000  1.1000  1.2000  1.1000  0.4000  0.4000  0.3000  0.3000  0.8000
0.8000  0.8000  0.7000  0.4000  0.4000  0.4000
 195.  *  1.2000  1.1000  1.2000  1.2000  0.3000  0.2000  0.2000  0.1000  0.8000
0.8000  0.8000  0.8000  0.3000  0.3000  0.3000
 200.  *  1.1000  1.1000  1.2000  1.2000  0.2000  0.2000  0.1000  0.1000  0.8000
0.8000  0.8000  0.8000  0.2000  0.2000  0.2000
 205.  *  1.1000  1.2000  1.0000  1.0000  0.1000  0.0000  0.1000  0.1000  0.8000
0.8000  0.8000  0.8000  0.1000  0.1000  0.1000
 210.  *  1.1000  1.0000  0.9000  1.0000  0.1000  0.0000  0.0000  0.0000  0.8000
0.8000  0.8000  0.8000  0.1000  0.1000  0.1000

                         PAGE  4
     JOB: Fred Ex AQ Analysis                                   RUN: 2042 NOBUILD -
I95_RussellRd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*--------------------------------------------------------------------------
-------------------------------------------
 215.  *  1.1000  1.0000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  0.7000
0.8000  0.8000  0.7000  0.1000  0.1000  0.1000
 220.  *  1.1000  0.9000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  0.7000
0.7000  0.7000  0.7000  0.1000  0.1000  0.1000
 225.  *  1.0000  0.8000  0.9000  0.9000  0.1000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.1000  0.1000  0.1000
 230.  *  1.0000  0.8000  0.7000  0.8000  0.1000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.1000  0.1000  0.1000
 235.  *  0.8000  0.7000  0.7000  0.8000  0.1000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.1000  0.1000  0.1000
 240.  *  0.8000  0.7000  0.7000  0.7000  0.1000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 245.  *  0.7000  0.6000  0.6000  0.6000  0.1000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 250.  *  0.6000  0.6000  0.6000  0.6000  0.1000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 255.  *  0.6000  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 260.  *  0.7000  0.7000  0.7000  0.7000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 265.  *  0.7000  0.7000  0.7000  0.7000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
```

```
 270.  *  0.7000  0.7000  0.7000  0.7000  0.0000  0.0000  0.0000  0.0000  0.7000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 275.  *  0.7000  0.7000  0.7000  0.7000  0.0000  0.0000  0.0000  0.0000  0.7000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 280.  *  0.7000  0.7000  0.7000  0.7000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 285.  *  0.6000  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 290.  *  0.6000  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  0.6000
0.6000  0.6000  0.6000  0.0000  0.0000  0.0000
 295.  *  0.6000  0.6000  0.6000  0.6000  0.0000  0.0000  0.0000  0.0000  0.6000
0.5000  0.6000  0.6000  0.1000  0.1000  0.1000
 300.  *  0.7000  0.7000  0.7000  0.7000  0.0000  0.0000  0.0000  0.0000  0.6000
0.5000  0.6000  0.6000  0.1000  0.1000  0.1000
 305.  *  0.8000  0.8000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  0.6000
0.7000  0.6000  0.6000  0.1000  0.1000  0.1000
 310.  *  0.8000  0.8000  0.8000  0.8000  0.0000  0.0000  0.0000  0.0000  0.7000
0.6000  0.6000  0.7000  0.1000  0.1000  0.1000
 315.  *  0.9000  0.9000  0.9000  0.9000  0.0000  0.0000  0.0000  0.0000  0.8000
0.5000  0.5000  0.7000  0.1000  0.1000  0.1000
 320.  *  0.9000  0.9000  0.9000  0.9000  0.0000  0.0000  0.0000  0.0000  0.9000
0.6000  0.7000  0.8000  0.1000  0.1000  0.1000
 325.  *  0.9000  0.9000  0.9000  0.9000  0.0000  0.0000  0.0000  0.0000  0.9000
0.6000  0.6000  0.8000  0.1000  0.1000  0.1000
 330.  *  1.0000  1.0000  1.0000  1.0000  0.0000  0.0000  0.0000  0.0000  1.0000
0.7000  0.7000  0.8000  0.1000  0.1000  0.1000
 335.  *  1.0000  1.0000  1.0000  1.0000  0.1000  0.1000  0.1000  0.1000  0.9000
0.8000  0.6000  0.8000  0.1000  0.2000  0.2000
 340.  *  1.1000  1.1000  1.1000  1.1000  0.1000  0.1000  0.1000  0.1000  1.0000
0.8000  0.7000  0.8000  0.3000  0.2000  0.3000
 345.  *  1.2000  1.2000  1.2000  1.0000  0.1000  0.1000  0.1000  0.1000  1.1000
0.9000  0.8000  0.8000  0.3000  0.4000  0.6000
 350.  *  1.2000  1.2000  1.1000  1.0000  0.3000  0.3000  0.3000  0.2000  1.1000
0.9000  0.7000  0.7000  0.6000  0.7000  0.8000
 355.  *  1.0000  1.0000  1.0000  0.9000  0.5000  0.5000  0.4000  0.4000  1.0000
0.8000  0.7000  0.7000  0.8000  1.0000  1.1000
 360.  *  0.9000  0.9000  0.9000  0.7000  0.7000  0.7000  0.6000  0.6000  0.8000
0.7000  0.6000  0.4000  1.1000  1.3000  1.4000

------*-------------------------------------------------------------------------
-------------------------------------------
 MAX   *  1.2000  1.2000  1.2000  1.2000  1.5000  1.2000  1.1000  1.1000  1.1000
0.9000  0.8000  0.8000  1.6000  1.6000  1.6000
 DEGR. *    195     205     190     185     165     160     165     170     345
345     190     195     160      15      10
```

JOB: Fred Ex AQ Analysis RUN: 2042 NOBUILD - I95_RussellRd (Exit 148)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	1.6000	0.1000	0.0000	0.0000	0.3000	0.2000	0.0000	0.1000	0.0000	0.0000	0.4000	0.2000	0.0000
10.	1.6000	0.1000	0.0000	0.0000	0.4000	0.2000	0.0000	0.1000	0.0000	0.0000	0.5000	0.3000	0.0000
15.	1.5000	0.0000	0.0000	0.0000	0.5000	0.3000	0.0000	0.0000	0.0000	0.0000	0.5000	0.3000	0.0000
20.	1.4000	0.0000	0.0000	0.0000	0.5000	0.3000	0.0000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000
25.	1.3000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.0000	0.0000	0.0000	0.6000	0.3000	0.1000
30.	1.2000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000
35.	1.2000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.0000	0.0000	0.0000	0.6000	0.3000	0.1000
40.	1.1000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.0000	0.0000	0.0000	0.6000	0.4000	0.1000
45.	1.1000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.0000	0.0000	0.0000	0.6000	0.4000	0.1000
50.	0.9000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.0000	0.0000	0.0000	0.5000	0.5000	0.1000
55.	0.9000	0.0000	0.0000	0.0000	0.5000	0.3000	0.1000	0.0000	0.0000	0.0000	0.6000	0.3000	0.1000
60.	0.9000	0.1000	0.1000	0.0000	0.4000	0.3000	0.2000	0.0000	0.0000	0.0000	0.6000	0.3000	0.2000
65.	0.8000	0.1000	0.1000	0.1000	0.4000	0.4000	0.2000	0.0000	0.0000	0.0000	0.6000	0.5000	0.1000
70.	0.8000	0.1000	0.1000	0.1000	0.4000	0.4000	0.3000	0.0000	0.0000	0.0000	0.5000	0.4000	0.1000

```
  75.  *  0.9000  0.1000  0.1000  0.1000  0.4000  0.4000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
  80.  *  0.9000  0.1000  0.1000  0.1000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
  85.  *  0.9000  0.1000  0.1000  0.1000  0.5000  0.4000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
  90.  *  0.9000  0.1000  0.1000  0.1000  0.7000  0.4000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
  95.  *  0.9000  0.1000  0.1000  0.1000  0.6000  0.5000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
 100.  *  0.8000  0.1000  0.1000  0.1000  0.6000  0.5000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
 105.  *  0.8000  0.1000  0.1000  0.1000  0.6000  0.5000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
 110.  *  0.9000  0.1000  0.1000  0.1000  0.6000  0.5000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
 115.  *  0.9000  0.1000  0.1000  0.1000  0.6000  0.5000  0.2000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
 120.  *  0.9000  0.0000  0.0000  0.0000  0.5000  0.4000  0.1000  0.0000  0.0000
0.0000  0.5000  0.4000  0.1000
 125.  *  1.0000  0.0000  0.0000  0.0000  0.6000  0.4000  0.1000  0.0000  0.0000
0.0000  0.6000  0.4000  0.1000
 130.  *  1.1000  0.0000  0.0000  0.0000  0.6000  0.4000  0.1000  0.0000  0.0000
0.0000  0.6000  0.4000  0.1000
 135.  *  1.2000  0.0000  0.0000  0.0000  0.6000  0.4000  0.1000  0.0000  0.0000
0.0000  0.6000  0.4000  0.1000
 140.  *  1.2000  0.0000  0.0000  0.0000  0.6000  0.4000  0.1000  0.0000  0.0000
0.0000  0.6000  0.4000  0.1000
 145.  *  1.3000  0.0000  0.0000  0.0000  0.6000  0.4000  0.1000  0.0000  0.0000
0.0000  0.6000  0.4000  0.1000
 150.  *  1.4000  0.0000  0.0000  0.0000  0.6000  0.4000  0.0000  0.0000  0.0000
0.0000  0.6000  0.4000  0.0000
 155.  *  1.5000  0.0000  0.0000  0.0000  0.7000  0.4000  0.0000  0.0000  0.0000
0.0000  0.6000  0.4000  0.0000
 160.  *  1.4000  0.0000  0.0000  0.0000  0.6000  0.4000  0.0000  0.0000  0.0000
0.0000  0.6000  0.4000  0.0000
 165.  *  1.4000  0.0000  0.0000  0.0000  0.6000  0.2000  0.0000  0.0000  0.0000
0.0000  0.6000  0.2000  0.0000
 170.  *  1.3000  0.1000  0.0000  0.0000  0.5000  0.2000  0.0000  0.1000  0.0000
0.0000  0.5000  0.2000  0.0000
 175.  *  1.1000  0.2000  0.1000  0.0000  0.3000  0.1000  0.0000  0.2000  0.0000
0.0000  0.3000  0.1000  0.0000
 180.  *  0.8000  0.3000  0.1000  0.0000  0.2000  0.1000  0.0000  0.3000  0.1000
0.0000  0.2000  0.0000  0.0000
 185.  *  0.6000  0.4000  0.3000  0.0000  0.1000  0.0000  0.0000  0.4000  0.2000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.4000  0.4000  0.3000  0.0000  0.0000  0.0000  0.0000  0.4000  0.3000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.2000  0.5000  0.4000  0.1000  0.1000  0.1000  0.1000  0.5000  0.3000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.2000  0.5000  0.5000  0.2000  0.1000  0.1000  0.1000  0.5000  0.4000
0.1000  0.0000  0.0000  0.0000
 205.  *  0.1000  0.6000  0.5000  0.2000  0.1000  0.1000  0.1000  0.4000  0.4000
0.1000  0.0000  0.0000  0.0000
 210.  *  0.1000  0.6000  0.5000  0.2000  0.1000  0.1000  0.1000  0.4000  0.4000
0.1000  0.0000  0.0000  0.0000

                             PAGE  6
      JOB: Fred Ex AQ Analysis                                  RUN: 2042 NOBUILD -
I95_RussellRd (Exit 148)

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  0.6000  0.4000  0.2000  0.1000  0.1000  0.1000  0.4000  0.4000
0.1000  0.0000  0.0000  0.0000
 220.  *  0.1000  0.7000  0.5000  0.2000  0.1000  0.1000  0.1000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 225.  *  0.1000  0.6000  0.5000  0.2000  0.1000  0.1000  0.1000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 230.  *  0.1000  0.6000  0.4000  0.2000  0.1000  0.1000  0.1000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 235.  *  0.1000  0.6000  0.4000  0.2000  0.1000  0.1000  0.1000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 240.  *  0.0000  0.6000  0.4000  0.3000  0.1000  0.1000  0.1000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 245.  *  0.0000  0.5000  0.5000  0.2000  0.1000  0.1000  0.1000  0.4000  0.4000
0.1000  0.0000  0.0000  0.0000
 250.  *  0.0000  0.4000  0.3000  0.2000  0.1000  0.1000  0.0000  0.4000  0.4000
0.2000  0.0000  0.0000  0.0000
 255.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.4000  0.2000
0.1000  0.0000  0.0000  0.0000
 260.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.5000  0.3000
0.1000  0.0000  0.0000  0.0000
 265.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.4000  0.4000
0.1000  0.0000  0.0000  0.0000
 270.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.4000  0.3000
0.1000  0.0000  0.0000  0.0000
 275.  *  0.0000  0.4000  0.3000  0.1000  0.0000  0.0000  0.0000  0.5000  0.3000
0.1000  0.0000  0.0000  0.0000
```

280. * 0.0000 0.4000 0.3000 0.1000 0.0000 0.0000 0.0000 0.4000 0.3000
0.1000 0.0000 0.0000 0.0000
285. * 0.0000 0.4000 0.3000 0.1000 0.0000 0.0000 0.0000 0.4000 0.3000
0.1000 0.0000 0.0000 0.0000
290. * 0.0000 0.5000 0.3000 0.1000 0.0000 0.0000 0.0000 0.4000 0.3000
0.1000 0.0000 0.0000 0.0000
295. * 0.1000 0.5000 0.3000 0.1000 0.0000 0.0000 0.0000 0.4000 0.3000
0.1000 0.0000 0.0000 0.0000
300. * 0.1000 0.5000 0.3000 0.1000 0.0000 0.0000 0.0000 0.5000 0.3000
0.1000 0.0000 0.0000 0.0000
305. * 0.1000 0.5000 0.3000 0.1000 0.0000 0.0000 0.0000 0.5000 0.3000
0.1000 0.0000 0.0000 0.0000
310. * 0.1000 0.5000 0.4000 0.1000 0.0000 0.0000 0.0000 0.5000 0.3000
0.1000 0.0000 0.0000 0.0000
315. * 0.1000 0.5000 0.4000 0.1000 0.0000 0.0000 0.0000 0.5000 0.4000
0.1000 0.0000 0.0000 0.0000
320. * 0.1000 0.5000 0.4000 0.1000 0.0000 0.0000 0.0000 0.5000 0.4000
0.1000 0.0000 0.0000 0.0000
325. * 0.1000 0.5000 0.4000 0.1000 0.0000 0.0000 0.0000 0.5000 0.4000
0.1000 0.0000 0.0000 0.0000
330. * 0.2000 0.5000 0.4000 0.0000 0.0000 0.0000 0.0000 0.5000 0.4000
0.1000 0.0000 0.0000 0.0000
335. * 0.2000 0.5000 0.4000 0.0000 0.0000 0.0000 0.0000 0.5000 0.4000
0.0000 0.0000 0.0000 0.0000
340. * 0.4000 0.5000 0.4000 0.0000 0.0000 0.0000 0.0000 0.5000 0.4000
0.0000 0.0000 0.0000 0.0000
345. * 0.6000 0.5000 0.3000 0.0000 0.0000 0.0000 0.0000 0.5000 0.3000
0.0000 0.0000 0.0000 0.0000
350. * 0.9000 0.5000 0.2000 0.0000 0.0000 0.0000 0.0000 0.5000 0.3000
0.0000 0.0000 0.0000 0.0000
355. * 1.4000 0.4000 0.1000 0.0000 0.2000 0.0000 0.0000 0.4000 0.1000
0.0000 0.2000 0.0000 0.0000
360. * 1.5000 0.2000 0.1000 0.0000 0.2000 0.1000 0.0000 0.2000 0.1000
0.0000 0.2000 0.1000 0.0000

------*--

MAX * 1.6000 0.7000 0.5000 0.3000 0.7000 0.5000 0.3000 0.5000 0.4000
0.2000 0.6000 0.5000 0.2000
DEGR. * 5 220 200 240 90 95 70 195 200
250 25 50 60

THE HIGHEST CONCENTRATION OF 1.6000 PPM OCCURRED AT RECEPTOR 15.

2042 I95 and Russell Rd IN

```
Q,EPA,,F,,0,T,T,F,F,0.78,
6,4,3,3,2400,2400,2400,2400,2400,2400,2400,2400,1036.8,1036.8,1036.8,1036.8,1036.8,1
036.8,1036.8,1036.8,12,12,12,12,10,10,10,10,0,0,-1200,1200,0,0,1200,-1200,-1200,1200
,0,0,1200,-1200,0,0,0,0,0,0,-5,0,-25,-25,0,0,0,0,0,0,0,0
120,120,120,120,62,62,62,62,2,2,2,2,1600,1600,1600,1600,1,1,1,1,3,3,3,3
'Fred Ex AQ Analysis ',60,175,0.0,0.0,28,0.3048,1,0
'N Leg, E Side-Corner',82.0,89.0,5.9
'N Leg, E Side - 25 m',82.0,161.0,5.9
'N Leg, E Side - 50 m',82.0,243.0,5.9
'N Leg, E Side-Midblk',82.0,679.0,5.9
'N Leg, W Side-Corner',-58.0,23.7,5.9
'N Leg, W Side - 25 m',-58.0,95.7,5.9
'N Leg, W Side - 50 m',-58.0,177.8,5.9
'N Leg, W Side-Midblk',-58.0,613.7,5.9
'S Leg, E Side-Corner',83.4,-11.9,5.9
'S Leg, E Side - 25 m',89.6,-83.6,5.9
'S Leg, E Side - 50 m',96.8,-165.3,5.9
'S Leg, E Side-Midblk',134.8,-599.6,5.9
'S Leg, W Side-Corner',-51.7,-74.9,5.9
'S Leg, W Side - 25 m',-45.4,-146.6,5.9
'S Leg, W Side - 50 m',-38.2,-228.3,5.9
'S Leg, W Side-Midblk',-0.3,-662.6,5.9
'E Leg, N Side - 25 m',147.3,119.4,5.9
'E Leg, N Side - 50 m',221.6,154.1,5.9
'E Leg, N Side-Midblk',616.7,338.3,5.9
'W Leg, N Side - 25 m',-123.3,-6.7,5.9
'W Leg, N Side - 50 m',-197.6,-41.4,5.9
'W Leg, N Side-Midblk',-592.7,-225.6,5.9
'E Leg, S Side - 25 m',148.6,18.6,5.9
'E Leg, S Side - 50 m',223.0,53.2,5.9
'E Leg, S Side-Midblk',618.1,237.5,5.9
'W Leg, S Side - 25 m',-116.9,-105.3,5.9
'W Leg, S Side - 50 m',-191.3,-140.0,5.9
'W Leg, S Side-Midblk',-586.4,-324.2,5.9
'2042 - I95 and Russell Rd (Exit 148)',8,1,0,'CO'
1
'N Leg App - FreeFlow','AG',-24,-1,-24,1200,9600,1.06,0.0,67.7
1
'N Leg Dep - FreeFlow','AG',36,2,36,1200,14400,2.98,0.0,91.7
1
'S Leg App - FreeFlow','AG',36,2,140,-1192,14400,1.06,0.0,91.7
1
'S Leg Dep - FreeFlow','AG',-24,-1,81,-1198,9600,2.98,0.0,67.7
1
'E Leg App - FreeFlow','AG',-8,16,1080,523,7200,0.94,0.0,55.7
1
'E Leg Dep - FreeFlow','AG',8,-16,1095,491,7200,1.17,0.0,55.7
1
```

```
'W Leg App - FreeFlow','AG',8,-16,-1080,-523,7200,1.17,0.0,55.7
1
'W Leg Dep - FreeFlow','AG',-8,16,-1095,-491,7200,0.94,0.0,55.7
1.0,0,4,1000,0.0,'Y',5,1,72
```

2042 I95 and Russell Rd OUT
*** EPA CAL3QHC Model Run implemented using the FHWA Resource Center CAL3i graphical user interface

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 13045 PAGE 1

JOB: Fred Ex AQ Analysis RUN: 2042 - I95 and Russell Rd (Exit 148)

DATE : 8/15/17
TIME : 13:40:50

The MODE flag has been set for calculating concentrations for POLLUTANT: CO

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. N Leg App - FreeFlow	-24.0	-1.0	-24.0	1200.0	1201.	360.	AG	9600.	1.1	0.0	67.7		
2. N Leg Dep - FreeFlow	36.0	2.0	36.0	1200.0	1198.	360.	AG	14400.	3.0	0.0	91.7		
3. S Leg App - FreeFlow	36.0	2.0	140.0	-1192.0	1199.	175.	AG	14400.	1.1	0.0	91.7		
4. S Leg Dep - FreeFlow	-24.0	-1.0	81.0	-1198.0	1202.	175.	AG	9600.	3.0	0.0	67.7		
5. E Leg App - FreeFlow	-8.0	16.0	1080.0	523.0	1200.	65.	AG	7200.	0.9	0.0	55.7		
6. E Leg Dep - FreeFlow	8.0	-16.0	1095.0	491.0	1199.	65.	AG	7200.	1.2	0.0	55.7		
7. W Leg App - FreeFlow	8.0	-16.0	-1080.0	-523.0	1200.	245.	AG	7200.	1.2	0.0	55.7		
8. W Leg Dep - FreeFlow	-8.0	16.0	-1095.0	-491.0	1199.	245.	AG	7200.	0.9	0.0	55.7		

PAGE 2
JOB: Fred Ex AQ Analysis RUN: 2042 - I95 and

2042 I95 and Russell Rd OUT

Russell Rd (Exit 148)

DATE : 8/15/17
TIME : 13:40:50

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. N Leg, E Side-Corner	82.0	89.0	5.9
2. N Leg, E Side - 25 m	82.0	161.0	5.9
3. N Leg, E Side - 50 m	82.0	243.0	5.9
4. N Leg, E Side-Midblk	82.0	679.0	5.9
5. N Leg, W Side-Corner	-58.0	23.7	5.9
6. N Leg, W Side - 25 m	-58.0	95.7	5.9
7. N Leg, W Side - 50 m	-58.0	177.8	5.9
8. N Leg, W Side-Midblk	-58.0	613.7	5.9
9. S Leg, E Side-Corner	83.4	-11.9	5.9
10. S Leg, E Side - 25 m	89.6	-83.6	5.9
11. S Leg, E Side - 50 m	96.8	-165.3	5.9
12. S Leg, E Side-Midblk	134.8	-599.6	5.9
13. S Leg, W Side-Corner	-51.7	-74.9	5.9
14. S Leg, W Side - 25 m	-45.4	-146.6	5.9
15. S Leg, W Side - 50 m	-38.2	-228.3	5.9
16. S Leg, W Side-Midblk	-0.3	-662.6	5.9
17. E Leg, N Side - 25 m	147.3	119.4	5.9
18. E Leg, N Side - 50 m	221.6	154.1	5.9
19. E Leg, N Side-Midblk	616.7	338.3	5.9
20. W Leg, N Side - 25 m	-123.3	-6.7	5.9
21. W Leg, N Side - 50 m	-197.6	-41.4	5.9
22. W Leg, N Side-Midblk	-592.7	-225.6	5.9
23. E Leg, S Side - 25 m	148.6	18.6	5.9
24. E Leg, S Side - 50 m	223.0	53.2	5.9
25. E Leg, S Side-Midblk	618.1	237.5	5.9
26. W Leg, S Side - 25 m	-116.9	-105.3	5.9

```
     27. W Leg, S Side - 50 m *      -191.3     -140.0        5.9   *
     28. W Leg, S Side-Midblk *      -586.4     -324.2        5.9   *
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       MODEL RESULTS
       -------------

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

 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*       1       2       3       4       5       6       7       8       9
 10      11      12      13      14      15

------*---------------------------------------------------------------------------------
-------------------------------------------
   5.  *  1.3000  1.3000  1.2000  1.0000  1.2000  1.2000  1.2000  1.0000  1.6000
1.1000  0.9000  0.5000  2.1000  2.1000  2.2000
  10.  *  0.8000  0.8000  0.8000  0.7000  1.4000  1.4000  1.3000  1.2000  1.1000
0.7000  0.6000  0.3000  2.2000  2.4000  2.2000
  15.  *  0.5000  0.5000  0.5000  0.5000  1.5000  1.5000  1.4000  1.3000  0.8000
0.5000  0.5000  0.1000  2.4000  2.2000  2.2000
  20.  *  0.3000  0.3000  0.3000  0.3000  1.5000  1.5000  1.5000  1.4000  0.8000
0.4000  0.4000  0.1000  2.4000  2.2000  2.0000
  25.  *  0.2000  0.2000  0.2000  0.2000  1.4000  1.4000  1.4000  1.3000  0.6000
0.3000  0.3000  0.1000  2.4000  2.2000  1.8000
  30.  *  0.2000  0.2000  0.2000  0.2000  1.3000  1.3000  1.3000  1.3000  0.6000
0.3000  0.2000  0.1000  2.4000  1.8000  1.8000
  35.  *  0.1000  0.1000  0.1000  0.1000  1.3000  1.3000  1.3000  1.3000  0.7000
0.3000  0.2000  0.0000  2.3000  1.7000  1.6000
  40.  *  0.1000  0.1000  0.1000  0.1000  1.3000  1.3000  1.3000  1.3000  0.6000
0.3000  0.2000  0.0000  2.1000  1.7000  1.6000
  45.  *  0.2000  0.1000  0.1000  0.1000  1.2000  1.2000  1.2000  1.2000  0.6000
0.3000  0.2000  0.0000  2.1000  1.6000  1.4000
  50.  *  0.2000  0.1000  0.1000  0.1000  1.2000  1.1000  1.1000  1.1000  0.7000
0.3000  0.2000  0.0000  2.0000  1.6000  1.4000
  55.  *  0.3000  0.1000  0.1000  0.1000  1.3000  1.1000  1.1000  1.1000  0.7000
0.2000  0.1000  0.0000  2.0000  1.3000  1.3000
  60.  *  0.5000  0.1000  0.1000  0.1000  1.5000  1.1000  1.1000  1.1000  0.6000
0.2000  0.1000  0.0000  1.8000  1.3000  1.2000
```

```
  65.  *  0.5000  0.3000  0.1000  0.1000  1.5000  1.3000  1.1000  1.1000  0.5000
0.1000  0.0000  0.0000  1.6000  1.2000  1.1000
  70.  *  0.6000  0.2000  0.0000  0.0000  1.7000  1.3000  1.1000  1.1000  0.4000
0.1000  0.0000  0.0000  1.5000  1.2000  1.1000
  75.  *  0.6000  0.2000  0.2000  0.0000  1.6000  1.3000  1.3000  1.1000  0.2000
0.0000  0.0000  0.0000  1.3000  1.1000  1.1000
  80.  *  0.6000  0.2000  0.2000  0.0000  1.6000  1.3000  1.3000  1.1000  0.1000
0.0000  0.0000  0.0000  1.3000  1.1000  1.1000
  85.  *  0.5000  0.2000  0.2000  0.0000  1.5000  1.3000  1.3000  1.1000  0.1000
0.0000  0.0000  0.0000  1.2000  1.2000  1.2000
  90.  *  0.5000  0.2000  0.2000  0.0000  1.5000  1.3000  1.3000  1.1000  0.1000
0.0000  0.0000  0.0000  1.1000  1.1000  1.1000
  95.  *  0.5000  0.2000  0.2000  0.0000  1.4000  1.3000  1.3000  1.1000  0.0000
0.0000  0.0000  0.0000  1.1000  1.1000  1.1000
 100.  *  0.5000  0.2000  0.2000  0.0000  1.4000  1.2000  1.2000  1.1000  0.0000
0.0000  0.0000  0.0000  1.1000  1.1000  1.1000
 105.  *  0.5000  0.2000  0.2000  0.0000  1.3000  1.2000  1.2000  1.1000  0.0000
0.0000  0.0000  0.0000  1.1000  1.1000  1.1000
 110.  *  0.4000  0.2000  0.2000  0.0000  1.4000  1.2000  1.2000  1.1000  0.0000
0.0000  0.0000  0.0000  1.1000  1.1000  1.1000
 115.  *  0.5000  0.3000  0.3000  0.1000  1.4000  1.2000  1.3000  1.1000  0.0000
0.0000  0.0000  0.0000  1.1000  1.1000  1.1000
 120.  *  0.5000  0.3000  0.3000  0.1000  1.3000  1.3000  1.3000  1.1000  0.0000
0.0000  0.0000  0.0000  1.2000  1.2000  1.2000
 125.  *  0.5000  0.3000  0.3000  0.1000  1.4000  1.2000  1.3000  1.1000  0.0000
0.0000  0.0000  0.0000  1.2000  1.2000  1.2000
 130.  *  0.5000  0.3000  0.3000  0.1000  1.5000  1.2000  1.3000  1.1000  0.0000
0.0000  0.0000  0.0000  1.3000  1.3000  1.3000
 135.  *  0.5000  0.3000  0.3000  0.1000  1.4000  1.2000  1.3000  1.2000  0.0000
0.0000  0.0000  0.0000  1.3000  1.3000  1.3000
 140.  *  0.5000  0.3000  0.3000  0.1000  1.5000  1.2000  1.4000  1.3000  0.1000
0.1000  0.1000  0.1000  1.4000  1.4000  1.4000
 145.  *  0.5000  0.3000  0.3000  0.1000  1.6000  1.2000  1.5000  1.3000  0.1000
0.1000  0.1000  0.1000  1.5000  1.5000  1.5000
 150.  *  0.5000  0.3000  0.4000  0.2000  1.7000  1.4000  1.5000  1.3000  0.1000
0.1000  0.1000  0.1000  1.6000  1.6000  1.6000
 155.  *  0.6000  0.4000  0.4000  0.2000  2.0000  1.5000  1.5000  1.3000  0.1000
0.1000  0.1000  0.1000  1.7000  1.7000  1.7000
 160.  *  0.7000  0.5000  0.5000  0.3000  2.1000  1.6000  1.5000  1.6000  0.2000
0.2000  0.2000  0.2000  1.8000  1.8000  1.8000
 165.  *  0.9000  0.7000  0.8000  0.5000  2.1000  1.7000  1.4000  1.5000  0.4000
0.4000  0.4000  0.3000  1.8000  1.8000  1.8000
 170.  *  1.1000  0.9000  0.9000  0.9000  2.0000  1.6000  1.5000  1.5000  0.6000
0.5000  0.5000  0.5000  1.7000  1.6000  1.6000
 175.  *  1.4000  1.3000  1.4000  1.3000  1.8000  1.4000  1.4000  1.3000  0.9000
0.9000  0.8000  0.6000  1.5000  1.4000  1.4000
 180.  *  1.8000  1.6000  1.7000  1.8000  1.5000  1.1000  1.1000  1.0000  1.1000
1.1000  1.0000  0.8000  1.1000  1.1000  1.0000
```

185. * 2.0000 1.9000 2.0000 2.1000 1.1000 0.9000 0.9000 0.7000 1.2000
1.2000 1.2000 0.9000 0.8000 0.8000 0.8000
190. * 2.0000 2.1000 2.1000 2.2000 0.8000 0.6000 0.5000 0.4000 1.2000
1.2000 1.2000 1.0000 0.4000 0.4000 0.4000
195. * 2.1000 2.0000 2.1000 2.1000 0.6000 0.5000 0.4000 0.1000 1.2000
1.2000 1.2000 1.1000 0.3000 0.3000 0.3000
200. * 2.1000 2.1000 2.1000 2.0000 0.5000 0.4000 0.4000 0.1000 1.1000
1.1000 1.1000 1.1000 0.2000 0.2000 0.2000
205. * 2.1000 2.1000 2.0000 1.8000 0.5000 0.2000 0.3000 0.1000 1.1000
1.1000 1.1000 1.0000 0.1000 0.1000 0.1000
210. * 2.1000 2.2000 1.8000 1.8000 0.5000 0.2000 0.2000 0.0000 1.0000
1.0000 1.0000 1.0000 0.1000 0.1000 0.1000

PAGE 4

JOB: Fred Ex AQ Analysis RUN: 2042 - I95 and Russell Rd (Exit 148)

WIND ANGLE RANGE: 5.-360.

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15

------*--

215. * 2.0000 2.0000 1.8000 1.7000 0.5000 0.2000 0.2000 0.0000 1.0000
1.0000 1.0000 1.0000 0.1000 0.1000 0.1000
220. * 2.2000 1.7000 1.8000 1.6000 0.5000 0.2000 0.2000 0.0000 1.0000
1.0000 1.0000 1.0000 0.2000 0.1000 0.1000
225. * 2.2000 1.7000 1.7000 1.5000 0.5000 0.2000 0.2000 0.0000 0.9000
0.9000 0.9000 0.9000 0.2000 0.1000 0.1000
230. * 1.9000 1.6000 1.6000 1.4000 0.6000 0.2000 0.2000 0.0000 1.0000
0.8000 0.8000 0.8000 0.2000 0.1000 0.1000
235. * 1.9000 1.6000 1.6000 1.4000 0.6000 0.2000 0.2000 0.0000 1.0000
0.8000 0.8000 0.8000 0.3000 0.1000 0.1000
240. * 1.9000 1.5000 1.4000 1.3000 0.6000 0.2000 0.0000 0.0000 1.2000
0.9000 0.8000 0.8000 0.4000 0.0000 0.0000
245. * 1.8000 1.5000 1.3000 1.3000 0.4000 0.2000 0.0000 0.0000 1.4000
0.9000 0.8000 0.8000 0.5000 0.1000 0.0000
250. * 1.5000 1.3000 1.3000 1.3000 0.4000 0.0000 0.0000 0.0000 1.4000
1.0000 0.9000 0.8000 0.6000 0.2000 0.0000
255. * 1.6000 1.3000 1.3000 1.3000 0.3000 0.0000 0.0000 0.0000 1.5000
1.0000 0.9000 0.8000 0.7000 0.2000 0.1000
260. * 1.5000 1.3000 1.3000 1.3000 0.1000 0.0000 0.0000 0.0000 1.5000
1.1000 1.0000 0.8000 0.7000 0.3000 0.2000
265. * 1.4000 1.4000 1.4000 1.4000 0.1000 0.0000 0.0000 0.0000 1.4000
1.1000 1.0000 0.8000 0.6000 0.3000 0.2000

```
 270.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.5000
1.1000  1.0000  0.8000  0.6000  0.3000  0.2000
 275.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.4000
1.1000  1.0000  0.8000  0.6000  0.3000  0.2000
 280.  *  1.3000  1.3000  1.3000  1.3000  0.0000  0.0000  0.0000  0.0000  1.6000
1.0000  1.0000  0.8000  0.5000  0.3000  0.2000
 285.  *  1.3000  1.3000  1.3000  1.3000  0.0000  0.0000  0.0000  0.0000  1.5000
1.0000  1.0000  0.8000  0.5000  0.2000  0.2000
 290.  *  1.3000  1.3000  1.3000  1.3000  0.0000  0.0000  0.0000  0.0000  1.5000
1.0000  1.0000  0.8000  0.5000  0.2000  0.2000
 295.  *  1.3000  1.3000  1.3000  1.3000  0.0000  0.0000  0.0000  0.0000  1.4000
1.0000  1.0000  0.8000  0.5000  0.3000  0.3000
 300.  *  1.3000  1.3000  1.3000  1.3000  0.0000  0.0000  0.0000  0.0000  1.5000
1.0000  1.0000  0.8000  0.5000  0.3000  0.3000
 305.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.6000
1.2000  1.0000  0.9000  0.5000  0.3000  0.3000
 310.  *  1.4000  1.4000  1.4000  1.4000  0.0000  0.0000  0.0000  0.0000  1.5000
1.2000  1.1000  1.0000  0.4000  0.3000  0.3000
 315.  *  1.5000  1.5000  1.5000  1.5000  0.0000  0.0000  0.0000  0.0000  1.6000
1.1000  1.2000  1.0000  0.4000  0.3000  0.3000
 320.  *  1.6000  1.6000  1.6000  1.6000  0.0000  0.0000  0.0000  0.0000  1.7000
1.2000  1.1000  1.0000  0.4000  0.3000  0.3000
 325.  *  1.7000  1.7000  1.7000  1.7000  0.0000  0.0000  0.0000  0.0000  1.9000
1.4000  1.2000  1.0000  0.5000  0.3000  0.3000
 330.  *  1.8000  1.8000  1.8000  1.7000  0.0000  0.0000  0.0000  0.0000  2.0000
1.3000  1.1000  1.1000  0.5000  0.3000  0.4000
 335.  *  1.9000  1.9000  1.9000  1.8000  0.1000  0.1000  0.1000  0.1000  2.1000
1.5000  1.2000  1.2000  0.5000  0.4000  0.4000
 340.  *  2.0000  2.0000  2.0000  1.9000  0.1000  0.1000  0.1000  0.1000  2.3000
1.7000  1.4000  1.1000  0.7000  0.5000  0.5000
 345.  *  2.1000  2.1000  2.1000  1.9000  0.3000  0.3000  0.3000  0.1000  2.4000
1.8000  1.6000  1.2000  0.8000  0.8000  0.8000
 350.  *  2.1000  2.1000  2.1000  1.8000  0.4000  0.4000  0.3000  0.3000  2.4000
1.8000  1.6000  1.2000  1.0000  1.0000  1.1000
 355.  *  1.9000  1.9000  1.9000  1.7000  0.6000  0.6000  0.6000  0.5000  2.1000
1.6000  1.4000  1.1000  1.5000  1.5000  1.5000
 360.  *  1.7000  1.7000  1.7000  1.3000  0.9000  0.9000  0.9000  0.7000  1.8000
1.5000  1.2000  0.8000  1.7000  1.8000  2.0000

------*----------------------------------------------------------------------------
-------------------------------------------
 MAX   *  2.2000  2.2000  2.1000  2.2000  2.1000  1.7000  1.5000  1.6000  2.4000
1.8000  1.6000  1.2000  2.4000  2.4000  2.2000
 DEGR. *    225     210     190     190     160     165     145     160     345
345     345     335      15      10      10
```

JOB: Fred Ex AQ Analysis RUN: 2042 - I95 and Russell Rd (Exit 148)

MODEL RESULTS

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

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) 16	17	18	19	20	21	22	23	24	25	26	27	28
5.	2.1000	0.2000	0.1000	0.0000	0.5000	0.3000	0.0000	0.6000	0.5000	0.4000	1.0000	0.7000	0.4000
10.	1.9000	0.1000	0.0000	0.0000	0.7000	0.4000	0.0000	0.5000	0.4000	0.4000	1.1000	0.8000	0.4000
15.	1.7000	0.0000	0.0000	0.0000	0.8000	0.5000	0.0000	0.4000	0.4000	0.4000	1.2000	0.9000	0.5000
20.	1.6000	0.0000	0.0000	0.0000	0.8000	0.5000	0.1000	0.5000	0.5000	0.5000	1.2000	1.1000	0.6000
25.	1.5000	0.0000	0.0000	0.0000	0.8000	0.6000	0.1000	0.5000	0.5000	0.5000	1.3000	1.1000	0.7000
30.	1.4000	0.0000	0.0000	0.0000	0.8000	0.6000	0.2000	0.5000	0.5000	0.5000	1.3000	1.1000	0.7000
35.	1.3000	0.0000	0.0000	0.0000	0.8000	0.6000	0.2000	0.6000	0.6000	0.6000	1.4000	1.0000	0.9000
40.	1.3000	0.0000	0.0000	0.0000	0.8000	0.5000	0.3000	0.6000	0.6000	0.6000	1.4000	1.1000	0.9000
45.	1.2000	0.1000	0.1000	0.1000	0.8000	0.6000	0.4000	0.6000	0.6000	0.6000	1.5000	1.3000	0.8000
50.	1.2000	0.1000	0.1000	0.1000	0.9000	0.6000	0.3000	0.7000	0.7000	0.6000	1.5000	1.3000	0.8000
55.	1.1000	0.2000	0.2000	0.2000	1.0000	0.7000	0.4000	0.7000	0.7000	0.5000	1.4000	1.2000	0.7000
60.	1.1000	0.3000	0.3000	0.3000	1.0000	0.9000	0.5000	0.6000	0.5000	0.5000	1.3000	1.1000	0.8000
65.	1.1000	0.4000	0.4000	0.4000	1.2000	0.9000	0.6000	0.5000	0.5000	0.5000	1.1000	1.0000	0.8000
70.	1.1000	0.6000	0.6000	0.4000	1.3000	1.1000	0.7000	0.4000	0.4000	0.3000	1.1000	0.9000	0.7000

```
  75.  *  1.1000  0.6000  0.6000  0.5000  1.2000  1.1000  0.8000  0.2000  0.2000
0.2000  0.8000  0.7000  0.4000
  80.  *  1.1000  0.6000  0.6000  0.5000  1.3000  1.1000  0.8000  0.1000  0.1000
0.1000  0.8000  0.5000  0.3000
  85.  *  1.2000  0.5000  0.5000  0.5000  1.3000  1.0000  0.7000  0.1000  0.1000
0.1000  0.7000  0.5000  0.3000
  90.  *  1.1000  0.5000  0.5000  0.5000  1.3000  1.1000  0.7000  0.1000  0.1000
0.1000  0.7000  0.5000  0.3000
  95.  *  1.1000  0.5000  0.5000  0.5000  1.0000  0.9000  0.7000  0.0000  0.0000
0.0000  0.7000  0.4000  0.2000
 100.  *  1.1000  0.5000  0.5000  0.5000  1.2000  0.9000  0.7000  0.0000  0.0000
0.0000  0.7000  0.4000  0.2000
 105.  *  1.1000  0.5000  0.5000  0.5000  1.1000  0.9000  0.7000  0.0000  0.0000
0.0000  0.7000  0.4000  0.2000
 110.  *  1.1000  0.4000  0.4000  0.4000  1.0000  0.8000  0.6000  0.0000  0.0000
0.0000  0.7000  0.4000  0.2000
 115.  *  1.1000  0.4000  0.4000  0.4000  1.1000  0.8000  0.6000  0.0000  0.0000
0.0000  0.7000  0.4000  0.2000
 120.  *  1.2000  0.4000  0.4000  0.4000  1.1000  0.8000  0.6000  0.0000  0.0000
0.0000  0.7000  0.4000  0.2000
 125.  *  1.2000  0.4000  0.4000  0.4000  1.1000  0.9000  0.6000  0.0000  0.0000
0.0000  0.7000  0.4000  0.2000
 130.  *  1.3000  0.4000  0.4000  0.4000  1.1000  0.9000  0.6000  0.0000  0.0000
0.0000  0.7000  0.5000  0.2000
 135.  *  1.3000  0.4000  0.4000  0.4000  1.1000  0.9000  0.6000  0.0000  0.0000
0.0000  0.7000  0.5000  0.2000
 140.  *  1.4000  0.4000  0.4000  0.4000  1.1000  1.0000  0.5000  0.0000  0.0000
0.0000  0.7000  0.5000  0.1000
 145.  *  1.5000  0.4000  0.4000  0.4000  1.2000  1.0000  0.5000  0.0000  0.0000
0.0000  0.7000  0.6000  0.1000
 150.  *  1.5000  0.4000  0.4000  0.4000  1.2000  1.0000  0.5000  0.0000  0.0000
0.0000  0.8000  0.6000  0.0000
 155.  *  1.6000  0.4000  0.4000  0.4000  1.2000  0.9000  0.4000  0.0000  0.0000
0.0000  0.8000  0.4000  0.0000
 160.  *  1.7000  0.4000  0.4000  0.4000  1.2000  0.8000  0.4000  0.0000  0.0000
0.0000  0.7000  0.4000  0.0000
 165.  *  1.6000  0.4000  0.4000  0.4000  1.1000  0.8000  0.4000  0.0000  0.0000
0.0000  0.7000  0.3000  0.0000
 170.  *  1.5000  0.6000  0.4000  0.4000  0.9000  0.7000  0.4000  0.2000  0.0000
0.0000  0.5000  0.3000  0.0000
 175.  *  1.2000  0.6000  0.6000  0.4000  0.8000  0.5000  0.4000  0.2000  0.2000
0.0000  0.4000  0.1000  0.0000
 180.  *  0.9000  0.8000  0.6000  0.4000  0.6000  0.5000  0.4000  0.4000  0.2000
0.0000  0.2000  0.0000  0.0000
 185.  *  0.6000  0.9000  0.7000  0.4000  0.5000  0.4000  0.4000  0.6000  0.3000
0.0000  0.1000  0.0000  0.0000
 190.  *  0.4000  1.0000  0.8000  0.4000  0.4000  0.4000  0.4000  0.6000  0.4000
0.0000  0.0000  0.0000  0.0000
```

```
 195.  *  0.3000  1.1000  0.9000  0.5000  0.4000  0.4000  0.4000  0.7000  0.5000
0.0000  0.0000  0.0000  0.0000
 200.  *  0.2000  1.2000  0.9000  0.6000  0.4000  0.4000  0.4000  0.7000  0.5000
0.2000  0.0000  0.0000  0.0000
 205.  *  0.1000  1.2000  1.0000  0.7000  0.5000  0.5000  0.5000  0.7000  0.5000
0.2000  0.0000  0.0000  0.0000
 210.  *  0.1000  1.2000  1.0000  0.7000  0.5000  0.5000  0.5000  0.7000  0.5000
0.2000  0.0000  0.0000  0.0000
```

PAGE 6
JOB: Fred Ex AQ Analysis   RUN: 2042 - I95 and
Russell Rd (Exit 148)

```
 WIND ANGLE RANGE:   5.-360.

 WIND  * CONCENTRATION
 ANGLE *     (PPM)
 (DEGR)*      16      17      18      19      20      21      22      23      24
 25      26      27      28

------*--------------------------------------------------------------------------
---------------------------
 215.  *  0.1000  1.3000  1.1000  0.7000  0.5000  0.5000  0.5000  0.6000  0.5000
0.2000  0.0000  0.0000  0.0000
 220.  *  0.1000  1.4000  0.9000  0.7000  0.5000  0.5000  0.5000  0.6000  0.6000
0.3000  0.1000  0.1000  0.1000
 225.  *  0.1000  1.4000  1.1000  0.7000  0.5000  0.5000  0.5000  0.7000  0.5000
0.3000  0.1000  0.1000  0.1000
 230.  *  0.1000  1.4000  1.2000  0.8000  0.6000  0.6000  0.6000  0.7000  0.5000
0.3000  0.1000  0.1000  0.1000
 235.  *  0.1000  1.5000  1.1000  0.8000  0.6000  0.6000  0.6000  0.7000  0.6000
0.4000  0.2000  0.2000  0.2000
 240.  *  0.0000  1.2000  1.2000  0.7000  0.6000  0.6000  0.4000  1.0000  0.8000
0.7000  0.4000  0.4000  0.3000
 245.  *  0.0000  1.3000  1.0000  0.5000  0.4000  0.4000  0.4000  1.1000  0.9000
0.8000  0.5000  0.5000  0.5000
 250.  *  0.0000  1.2000  1.0000  0.5000  0.4000  0.3000  0.3000  1.3000  1.1000
0.8000  0.6000  0.5000  0.5000
 255.  *  0.0000  1.0000  0.8000  0.4000  0.2000  0.2000  0.2000  1.2000  1.1000
0.7000  0.7000  0.7000  0.5000
 260.  *  0.0000  0.9000  0.7000  0.3000  0.1000  0.1000  0.1000  1.2000  1.2000
0.8000  0.7000  0.7000  0.6000
 265.  *  0.0000  0.9000  0.7000  0.3000  0.1000  0.1000  0.1000  1.3000  1.3000
0.8000  0.6000  0.6000  0.6000
 270.  *  0.0000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.4000  1.0000
0.8000  0.6000  0.6000  0.6000
 275.  *  0.0000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.2000  1.0000
0.8000  0.6000  0.6000  0.6000
```

```
 280.  *  0.0000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.1000  1.1000
0.7000  0.5000  0.5000  0.5000
 285.  *  0.0000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.1000  1.1000
0.7000  0.5000  0.5000  0.5000
 290.  *  0.0000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.2000  1.1000
0.7000  0.5000  0.5000  0.5000
 295.  *  0.1000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.2000  1.0000
0.7000  0.4000  0.4000  0.4000
 300.  *  0.1000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.2000  1.0000
0.6000  0.4000  0.4000  0.4000
 305.  *  0.1000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.2000  1.0000
0.6000  0.4000  0.4000  0.4000
 310.  *  0.1000  0.8000  0.6000  0.2000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.3000  0.3000  0.3000
 315.  *  0.1000  0.9000  0.6000  0.2000  0.0000  0.0000  0.0000  1.1000  0.9000
0.5000  0.3000  0.3000  0.3000
 320.  *  0.1000  0.9000  0.6000  0.2000  0.0000  0.0000  0.0000  1.2000  0.9000
0.5000  0.3000  0.3000  0.3000
 325.  *  0.1000  0.9000  0.6000  0.1000  0.0000  0.0000  0.0000  1.3000  1.0000
0.6000  0.4000  0.4000  0.4000
 330.  *  0.2000  0.9000  0.7000  0.1000  0.0000  0.0000  0.0000  1.3000  1.1000
0.5000  0.4000  0.4000  0.4000
 335.  *  0.3000  0.9000  0.6000  0.0000  0.0000  0.0000  0.0000  1.3000  1.1000
0.5000  0.4000  0.4000  0.4000
 340.  *  0.4000  0.9000  0.6000  0.0000  0.0000  0.0000  0.0000  1.3000  1.0000
0.4000  0.4000  0.4000  0.4000
 345.  *  0.7000  0.9000  0.6000  0.0000  0.0000  0.0000  0.0000  1.3000  1.0000
0.4000  0.4000  0.4000  0.4000
 350.  *  1.2000  0.8000  0.4000  0.0000  0.0000  0.0000  0.0000  1.1000  0.8000
0.3000  0.4000  0.3000  0.3000
 355.  *  1.5000  0.7000  0.2000  0.0000  0.2000  0.0000  0.0000  1.0000  0.6000
0.3000  0.5000  0.4000  0.3000
 360.  *  1.9000  0.4000  0.1000  0.0000  0.3000  0.1000  0.0000  0.7000  0.5000
0.3000  0.7000  0.4000  0.3000

------*--------------------------------------------------------------------------
---------------------------
 MAX   *  2.1000  1.5000  1.2000  0.8000  1.3000  1.1000  0.8000  1.4000  1.3000
0.8000  1.5000  1.3000  0.9000
 DEGR. *      5     235     230     230      90      70      75     270     265
245      45      45      35

 THE HIGHEST CONCENTRATION OF   2.4000 PPM OCCURRED AT RECEPTOR    14.
```

Appendix E: Peak CAL3QHC Concentration Estimates – All Receptor Locations (Not Including Background Concentrations)

Intersection: US 17 and S Gateway Drive

CAL3QHC CO Concentration Results (ppm) - 1-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	7.1	1.6	5.1	0.7	1.9
2	6.2	1.4	4.2	0.7	1.5
3	5.6	1.3	4	0.6	1.5
4	5.3	1.3	3.7	0.7	1.3
5	7	1.4	4.9	0.6	1.9
6	6.3	1.5	4.3	0.6	1.5
7	6	1.4	4.1	0.6	1.5
8	5.6	1.3	3.8	0.7	1.3
9	7	1.4	4.9	0.6	1.7
10	6.3	1.3	4.2	0.7	1.4
11	5.9	1.4	4	0.6	1.5
12	5.7	1.3	3.8	0.7	1.3
13	7.2	1.6	5.1	0.6	1.7
14	6	1.2	4.1	0.6	1.4
15	5.5	1.2	3.8	0.6	1.5
16	5.4	1.3	3.7	0.7	1.3
17	5.5	0.9	3.9	0.4	1.5
18	5.1	0.7	3.5	0.3	1.3
19	4.6	0.5	3.1	0.1	1.1
20	5.5	0.8	3.8	0.4	1.4
21	4.9	0.7	3.4	0.3	1.3
22	4.3	0.5	3	0.1	1.1
23	5.4	0.9	3.7	0.4	1.5
24	4.9	0.7	3.3	0.3	1.3
25	4.2	0.4	2.9	0.1	1.1
26	5.6	0.8	3.9	0.4	1.5
27	5.1	0.7	3.5	0.3	1.3
28	4.6	0.4	2.9	0.1	1.1

Intersection: US 17 and S Gateway Drive

CAL3QHC CO Concentration Results (ppm) - 8-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	5.538	1.248	3.978	0.546	1.482
2	4.836	1.092	3.276	0.546	1.17
3	4.368	1.014	3.12	0.468	1.17
4	4.134	1.014	2.886	0.546	1.014
5	5.46	1.092	3.822	0.468	1.482
6	4.914	1.17	3.354	0.468	1.17
7	4.68	1.092	3.198	0.468	1.17
8	4.368	1.014	2.964	0.546	1.014
9	5.46	1.092	3.822	0.468	1.326
10	4.914	1.014	3.276	0.546	1.092
11	4.602	1.092	3.12	0.468	1.17
12	4.446	1.014	2.964	0.546	1.014
13	5.616	1.248	3.978	0.468	1.326
14	4.68	0.936	3.198	0.468	1.092
15	4.29	0.936	2.964	0.468	1.17
16	4.212	1.014	2.886	0.546	1.014
17	4.29	0.702	3.042	0.312	1.17
18	3.978	0.546	2.73	0.234	1.014
19	3.588	0.39	2.418	0.078	0.858
20	4.29	0.624	2.964	0.312	1.092
21	3.822	0.546	2.652	0.234	1.014
22	3.354	0.39	2.34	0.078	0.858
23	4.212	0.702	2.886	0.312	1.17
24	3.822	0.546	2.574	0.234	1.014
25	3.276	0.312	2.262	0.078	0.858
26	4.368	0.624	3.042	0.312	1.17
27	3.978	0.546	2.73	0.234	1.014
28	3.588	0.312	2.262	0.078	0.858

Intersection: Garrisonville Road and US 1

CAL3QHC CO Concentration Results (ppm) - 1-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	6.9	1.4	4.9	0.6	1.7
2	5.6	1	4	0.6	1.4
3	5.3	1.1	3.6	0.6	1.4
4	4.8	1	3.3	0.6	1.1
5	7	1.6	4.8	0.8	1.7
6	6	1.6	4.1	0.7	1.5
7	5.6	1.5	3.8	0.7	1.3
8	5	1.3	3.5	0.7	1.1
9	7.4	1.6	5.3	0.8	1.8
10	6	1.4	4.2	0.6	1.5
11	5.6	1.2	3.9	0.6	1.5
12	5.3	1	3.4	0.6	1.3
13	7.2	1.8	4.9	0.8	1.7
14	5.7	1.5	3.9	0.8	1.5
15	5.2	1.5	3.6	0.7	1.5
16	4.8	1.3	3.4	0.7	1.1
17	4.9	0.9	3.3	0.5	1.2
18	4.6	0.7	3.1	0.4	1.2
19	4.6	0.6	3	0.2	1.1
20	5.2	1	3.6	0.6	1.3
21	4.8	0.8	3.4	0.4	1.2
22	4.5	0.6	3	0.3	1.1
23	6	1.2	4.2	0.6	1.7
24	5.6	1.1	3.9	0.4	1.4
25	4.8	1	3.2	0.3	1.2
26	6.3	1.5	4.4	0.5	1.5
27	5.9	1.2	3.9	0.5	1.4
28	5.1	1	3.3	0.3	1.3

Intersection: Garrisonville Road and US 1

CAL3QHC CO Concentration Results (ppm) - 8-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	5.382	1.092	3.822	0.468	1.326
2	4.368	0.78	3.12	0.468	1.092
3	4.134	0.858	2.808	0.468	1.092
4	3.744	0.78	2.574	0.468	0.858
5	5.46	1.248	3.744	0.624	1.326
6	4.68	1.248	3.198	0.546	1.17
7	4.368	1.17	2.964	0.546	1.014
8	3.9	1.014	2.73	0.546	0.858
9	5.772	1.248	4.134	0.624	1.404
10	4.68	1.092	3.276	0.468	1.17
11	4.368	0.936	3.042	0.468	1.17
12	4.134	0.78	2.652	0.468	1.014
13	5.616	1.404	3.822	0.624	1.326
14	4.446	1.17	3.042	0.624	1.17
15	4.056	1.17	2.808	0.546	1.17
16	3.744	1.014	2.652	0.546	0.858
17	3.822	0.702	2.574	0.39	0.936
18	3.588	0.546	2.418	0.312	0.936
19	3.588	0.468	2.34	0.156	0.858
20	4.056	0.78	2.808	0.468	1.014
21	3.744	0.624	2.652	0.312	0.936
22	3.51	0.468	2.34	0.234	0.858
23	4.68	0.936	3.276	0.468	1.326
24	4.368	0.858	3.042	0.312	1.092
25	3.744	0.78	2.496	0.234	0.936
26	4.914	1.17	3.432	0.39	1.17
27	4.602	0.936	3.042	0.39	1.092
28	3.978	0.78	2.574	0.234	1.014

Intersection: US 1 and NB Entrance Ramp

CAL3QHC CO Concentration Results (ppm) - 1-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	3.4	1.5	2.4	0.8	0.9
2	3.4	1.5	2.4	0.8	0.8
3	3.5	1.5	2.3	0.8	0.8
4	3.9	1.4	2.6	0.7	1
5	1.9	0.7	1.4	0.4	0.6
6	1.7	0.6	1.1	0.3	0.4
7	1.3	0.5	0.8	0.1	0.2
8	3.8	1.4	2.6	0.8	0.9
9	1.9	0.7	1.3	0.4	0.6
10	1.6	0.6	1.2	0.3	0.4
11	1.3	0.5	0.9	0.1	0.3
12	3.6	1.5	2.5	0.8	0.8
13	3.6	1.5	2.5	0.8	0.9
14	3.5	1.6	2.4	0.7	0.9
15	3.4	1.4	2.3	0.8	0.8
16	3.3	1.5	2.3	0.8	0.9
17	3.4	1.4	2.3	0.7	0.9
18	3.5	1.3	2.4	0.7	0.9
19	3.4	1.2	2.4	0.6	0.9
20	3.4	1.3	2.3	0.6	0.9
21	3.7	1.4	2.4	0.6	0.9
22	3.5	1.2	2.5	0.6	0.9
23	3.5	1.2	2.4	0.6	0.9

Intersection: US 1 and NB Entrance Ramp

CAL3QHC CO Concentration Results (ppm) - 8-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	2.652	1.17	1.872	0.624	0.702
2	2.652	1.17	1.872	0.624	0.624
3	2.73	1.17	1.794	0.624	0.624
4	3.042	1.092	2.028	0.546	0.78
5	1.482	0.546	1.092	0.312	0.468
6	1.326	0.468	0.858	0.234	0.312
7	1.014	0.39	0.624	0.078	0.156
8	2.964	1.092	2.028	0.624	0.702
9	1.482	0.546	1.014	0.312	0.468
10	1.248	0.468	0.936	0.234	0.312
11	1.014	0.39	0.702	0.078	0.234
12	2.808	1.17	1.95	0.624	0.624
13	2.808	1.17	1.95	0.624	0.702
14	2.73	1.248	1.872	0.546	0.702
15	2.652	1.092	1.794	0.624	0.624
16	2.574	1.17	1.794	0.624	0.702
17	2.652	1.092	1.794	0.546	0.702
18	2.73	1.014	1.872	0.546	0.702
19	2.652	0.936	1.872	0.468	0.702
20	2.652	1.014	1.794	0.468	0.702
21	2.886	1.092	1.872	0.468	0.702
22	2.73	0.936	1.95	0.468	0.702
23	2.73	0.936	1.872	0.468	0.702

Interchange: I-95 and US 17 (Exit 133)

CAL3QHC CO Concentration Results (ppm) - 1-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	8	2.1	5.8	1	2.1
2	6.2	1.7	4.6	0.7	1.8
3	5.4	1.5	4.1	0.6	1.6
4	4.8	1.5	3.9	0.6	1.5
5	7.7	2.2	5.9	1.1	2.2
6	7.2	2.1	5.5	1.1	2
7	6.8	2.1	5.5	1	2.2
8	6.2	2	5.5	1	2
9	7.6	2	5.9	1	2.2
10	7	2	5.7	0.9	2.1
11	6.9	2	5.6	0.9	2.2
12	6.6	1.9	5.1	0.8	1.8
13	7.6	2.1	6.3	1	2.3
14	5.9	1.8	5	0.8	1.8
15	5.4	1.7	4.4	0.8	1.7
16	5.1	1.5	3.9	0.8	1.4
17	6.6	1.4	4.9	0.7	2
18	6.2	1.3	4.5	0.5	1.7
19	5.5	1	3.9	0.5	1.5
20	5.8	1.3	4.4	0.6	1.7
21	5.1	1.1	3.9	0.5	1.5
22	4.3	0.8	3.2	0.3	1.2
23	5.7	1.3	4.4	0.6	1.6
24	5	1.1	3.8	0.5	1.4
25	4.4	0.8	3.2	0.3	1.1
26	6.4	1.3	5	0.6	1.9
27	6.2	1.3	4.6	0.5	1.8
28	5.4	1	4.1	0.5	1.4

Interchange: I-95 and US 17 (Exit 133)

CAL3QHC CO Concentration Results (ppm) - 8-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	6.24	1.638	4.524	0.78	1.638
2	4.836	1.326	3.588	0.546	1.404
3	4.212	1.17	3.198	0.468	1.248
4	3.744	1.17	3.042	0.468	1.17
5	6.006	1.716	4.602	0.858	1.716
6	5.616	1.638	4.29	0.858	1.56
7	5.304	1.638	4.29	0.78	1.716
8	4.836	1.56	4.29	0.78	1.56
9	5.928	1.56	4.602	0.78	1.716
10	5.46	1.56	4.446	0.702	1.638
11	5.382	1.56	4.368	0.702	1.716
12	5.148	1.482	3.978	0.624	1.404
13	5.928	1.638	4.914	0.78	1.794
14	4.602	1.404	3.9	0.624	1.404
15	4.212	1.326	3.432	0.624	1.326
16	3.978	1.17	3.042	0.624	1.092
17	5.148	1.092	3.822	0.546	1.56
18	4.836	1.014	3.51	0.39	1.326
19	4.29	0.78	3.042	0.39	1.17
20	4.524	1.014	3.432	0.468	1.326
21	3.978	0.858	3.042	0.39	1.17
22	3.354	0.624	2.496	0.234	0.936
23	4.446	1.014	3.432	0.468	1.248
24	3.9	0.858	2.964	0.39	1.092
25	3.432	0.624	2.496	0.234	0.858
26	4.992	1.014	3.9	0.468	1.482
27	4.836	1.014	3.588	0.39	1.404
28	4.212	0.78	3.198	0.39	1.092

Interchange: I-95 and SR 610 (Exit 143)

CAL3QHC CO Concentration Results (ppm) - 1-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	7.4	2.3	5.6	1.3	2
2	5.1	1.8	3.8	0.9	1.4
3	4.6	1.7	3.5	0.9	1.3
4	4.4	1.8	3.6	0.9	1.3
5	8.1	2.5	6.1	1.3	2.2
6	7.4	2.6	5.8	1.4	2.1
7	6.9	2.4	5.4	1.3	2.1
8	6.2	2.2	5	1.3	1.8
9	7.8	2.4	5.8	1.3	2
10	6.3	2.2	4.9	1.2	1.8
11	6.1	2.1	4.6	1.1	1.8
12	5.8	2.1	4.5	1.2	1.6
13	8	2.6	6.5	1.3	2.5
14	6.3	2.1	5.2	1.1	2
15	5.7	1.9	4.4	1	1.8
16	4.8	1.6	3.7	0.9	1.2
17	6.6	1.7	5	0.9	2
18	6.2	1.6	4.6	0.8	1.7
19	5.2	1.3	3.8	0.5	1.4
20	5.9	1.7	4.4	0.9	1.6
21	5.2	1.5	4	0.6	1.4
22	4.9	1	3.4	0.5	1.2
23	6.1	1.6	4.3	0.7	1.5
24	5.2	1.3	3.8	0.6	1.4
25	4.5	0.9	3.2	0.3	1.1
26	6.4	1.6	4.8	0.8	1.8
27	6.3	1.5	4.6	0.7	1.7
28	5.8	1.2	4.3	0.5	1.6

Interchange: I-95 and SR 610 (Exit 143)

CAL3QHC CO Concentration Results (ppm) - 8-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	5.772	1.794	4.368	1.014	1.56
2	3.978	1.404	2.964	0.702	1.092
3	3.588	1.326	2.73	0.702	1.014
4	3.432	1.404	2.808	0.702	1.014
5	6.318	1.95	4.758	1.014	1.716
6	5.772	2.028	4.524	1.092	1.638
7	5.382	1.872	4.212	1.014	1.638
8	4.836	1.716	3.9	1.014	1.404
9	6.084	1.872	4.524	1.014	1.56
10	4.914	1.716	3.822	0.936	1.404
11	4.758	1.638	3.588	0.858	1.404
12	4.524	1.638	3.51	0.936	1.248
13	6.24	2.028	5.07	1.014	1.95
14	4.914	1.638	4.056	0.858	1.56
15	4.446	1.482	3.432	0.78	1.404
16	3.744	1.248	2.886	0.702	0.936
17	5.148	1.326	3.9	0.702	1.56
18	4.836	1.248	3.588	0.624	1.326
19	4.056	1.014	2.964	0.39	1.092
20	4.602	1.326	3.432	0.702	1.248
21	4.056	1.17	3.12	0.468	1.092
22	3.822	0.78	2.652	0.39	0.936
23	4.758	1.248	3.354	0.546	1.17
24	4.056	1.014	2.964	0.468	1.092
25	3.51	0.702	2.496	0.234	0.858
26	4.992	1.248	3.744	0.624	1.404
27	4.914	1.17	3.588	0.546	1.326
28	4.524	0.936	3.354	0.39	1.248

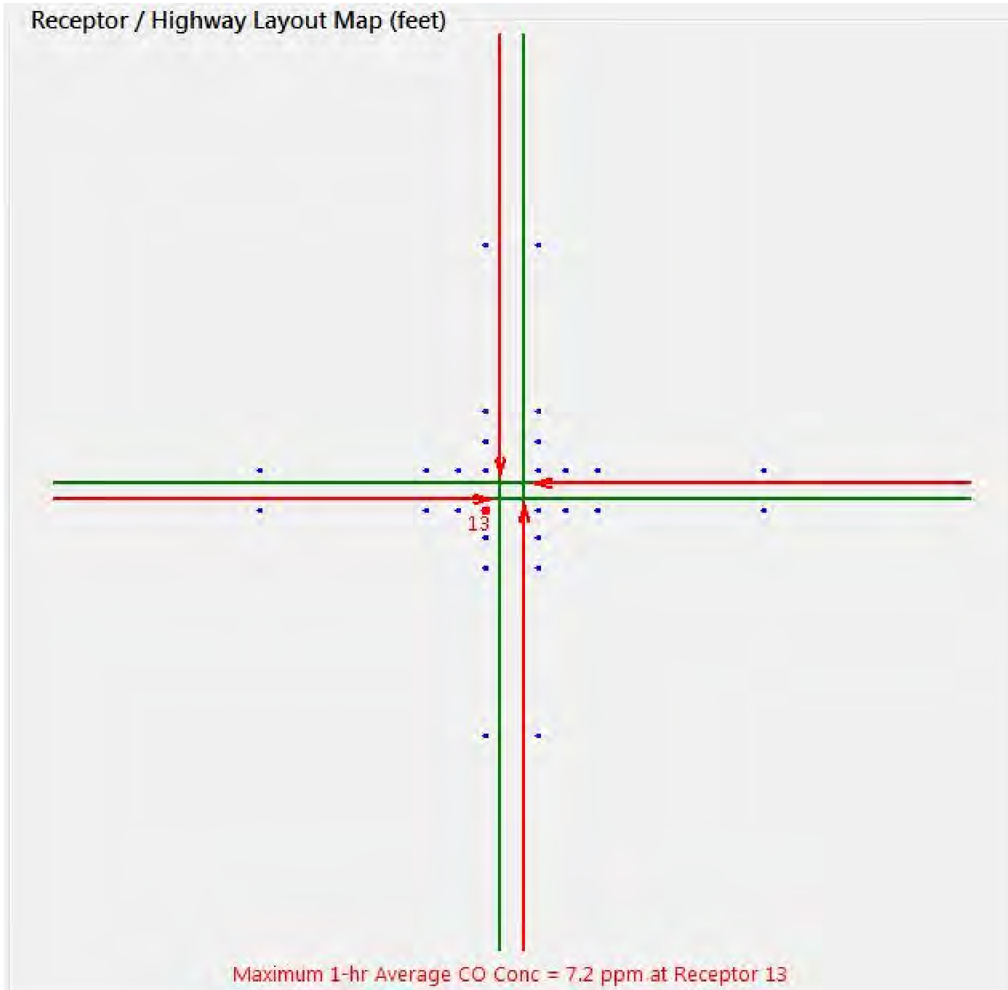
Interchange: I-95 and Russell Road (Exit 148)

CAL3QHC CO Concentration Results (ppm) - 1-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	8	2.4	5.9	1.2	2.2
2	7.9	2.4	5.8	1.2	2.2
3	7.9	2.3	5.9	1.2	2.1
4	8.2	2.5	6.1	1.2	2.2
5	7.6	3.1	5.7	1.5	2.1
6	6.4	2.4	4.5	1.2	1.7
7	5.8	2.2	4.3	1.1	1.5
8	5.7	2.1	4.3	1.1	1.6
9	8.8	2.4	6.6	1.1	2.4
10	6.7	1.8	5	0.9	1.8
11	5.7	1.7	4.2	0.8	1.6
12	4.9	1.7	3.7	0.8	1.2
13	9.1	3.1	6.8	1.6	2.4
14	8.5	3.1	6.4	1.6	2.4
15	8.2	3.3	6.3	1.6	2.2
16	7.4	3.3	5.7	1.6	2.1
17	5.6	1.3	4.1	0.7	1.5
18	4.5	1	3.3	0.5	1.2
19	3.3	0.6	2.5	0.3	0.8
20	5	1.5	3.8	0.7	1.3
21	4.3	1.1	3.1	0.5	1.1
22	3.3	0.6	2.4	0.3	0.8
23	5.2	1.3	3.9	0.5	1.4
24	4.7	0.9	3.4	0.4	1.3
25	3.6	0.6	2.8	0.2	0.8
26	5.7	1.5	4.2	0.6	1.5
27	4.8	1	3.6	0.5	1.3
28	3.7	0.6	2.7	0.2	0.9

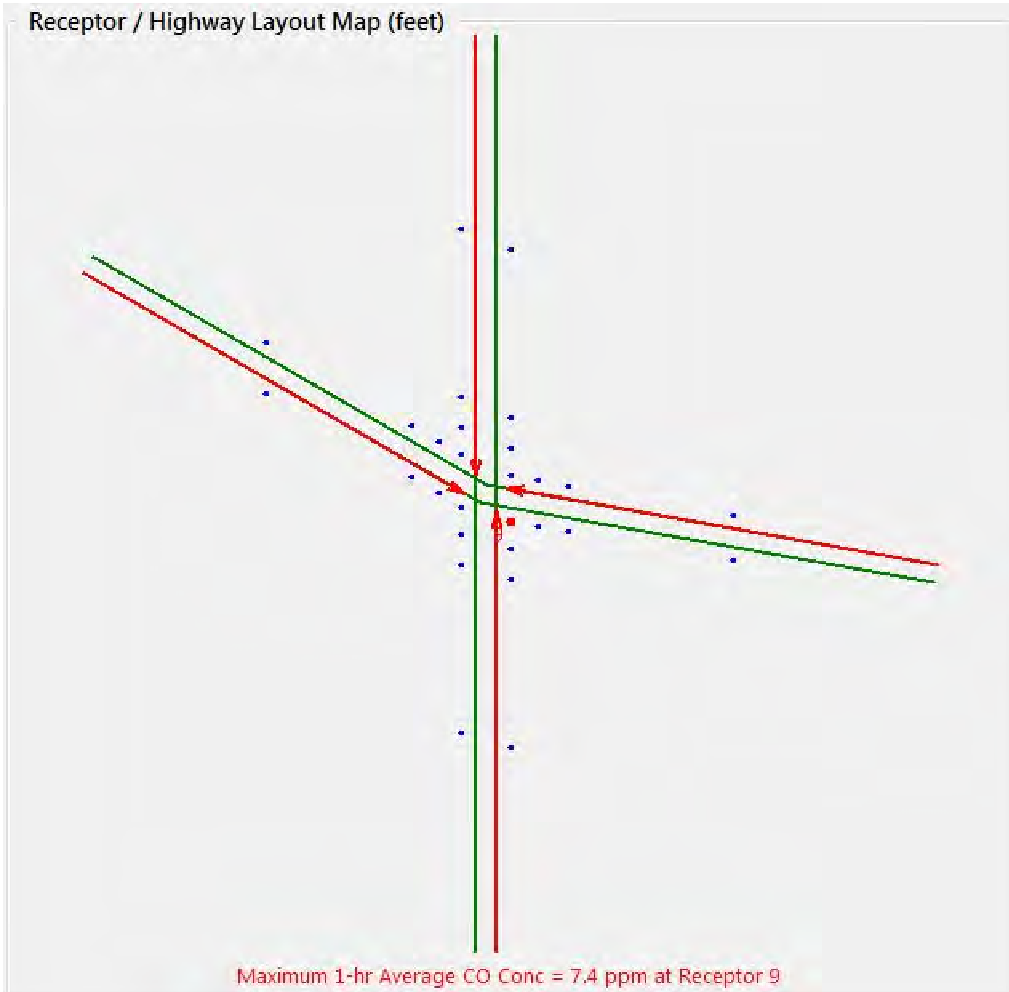
Interchange: I-95 and Russell Road (Exit 148)

CAL3QHC CO Concentration Results (ppm) - 8-Hour					
Receptor	2016	2022		2042	
	Existing	No-Build	Build	No-Build	Build
	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)	Conc. (ppm)
1	6.24	1.872	4.602	0.936	1.716
2	6.162	1.872	4.524	0.936	1.716
3	6.162	1.794	4.602	0.936	1.638
4	6.396	1.95	4.758	0.936	1.716
5	5.928	2.418	4.446	1.17	1.638
6	4.992	1.872	3.51	0.936	1.326
7	4.524	1.716	3.354	0.858	1.17
8	4.446	1.638	3.354	0.858	1.248
9	6.864	1.872	5.148	0.858	1.872
10	5.226	1.404	3.9	0.702	1.404
11	4.446	1.326	3.276	0.624	1.248
12	3.822	1.326	2.886	0.624	0.936
13	7.098	2.418	5.304	1.248	1.872
14	6.63	2.418	4.992	1.248	1.872
15	6.396	2.574	4.914	1.248	1.716
16	5.772	2.574	4.446	1.248	1.638
17	4.368	1.014	3.198	0.546	1.17
18	3.51	0.78	2.574	0.39	0.936
19	2.574	0.468	1.95	0.234	0.624
20	3.9	1.17	2.964	0.546	1.014
21	3.354	0.858	2.418	0.39	0.858
22	2.574	0.468	1.872	0.234	0.624
23	4.056	1.014	3.042	0.39	1.092
24	3.666	0.702	2.652	0.312	1.014
25	2.808	0.468	2.184	0.156	0.624
26	4.446	1.17	3.276	0.468	1.17
27	3.744	0.78	2.808	0.39	1.014
28	2.886	0.468	2.106	0.156	0.702

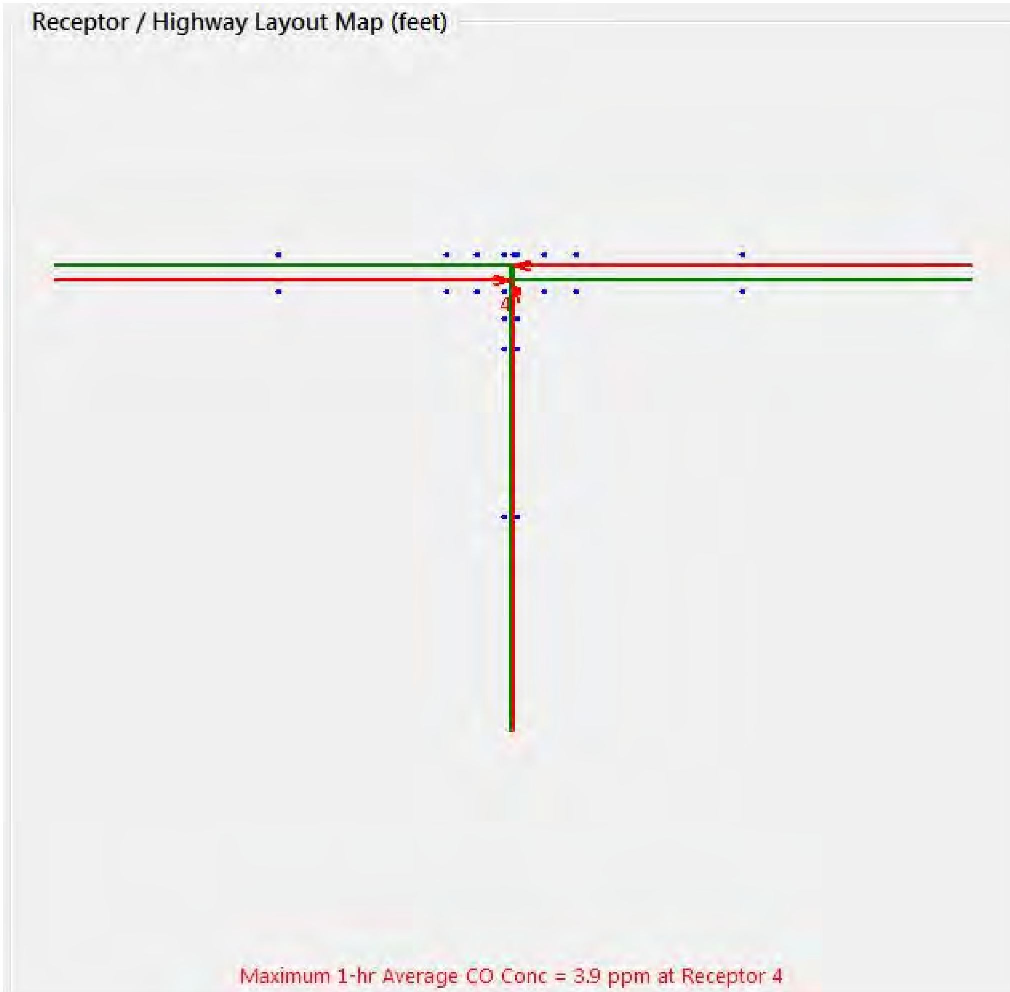
Intersection: 2016 Existing, US 17 and S Gateway Drive



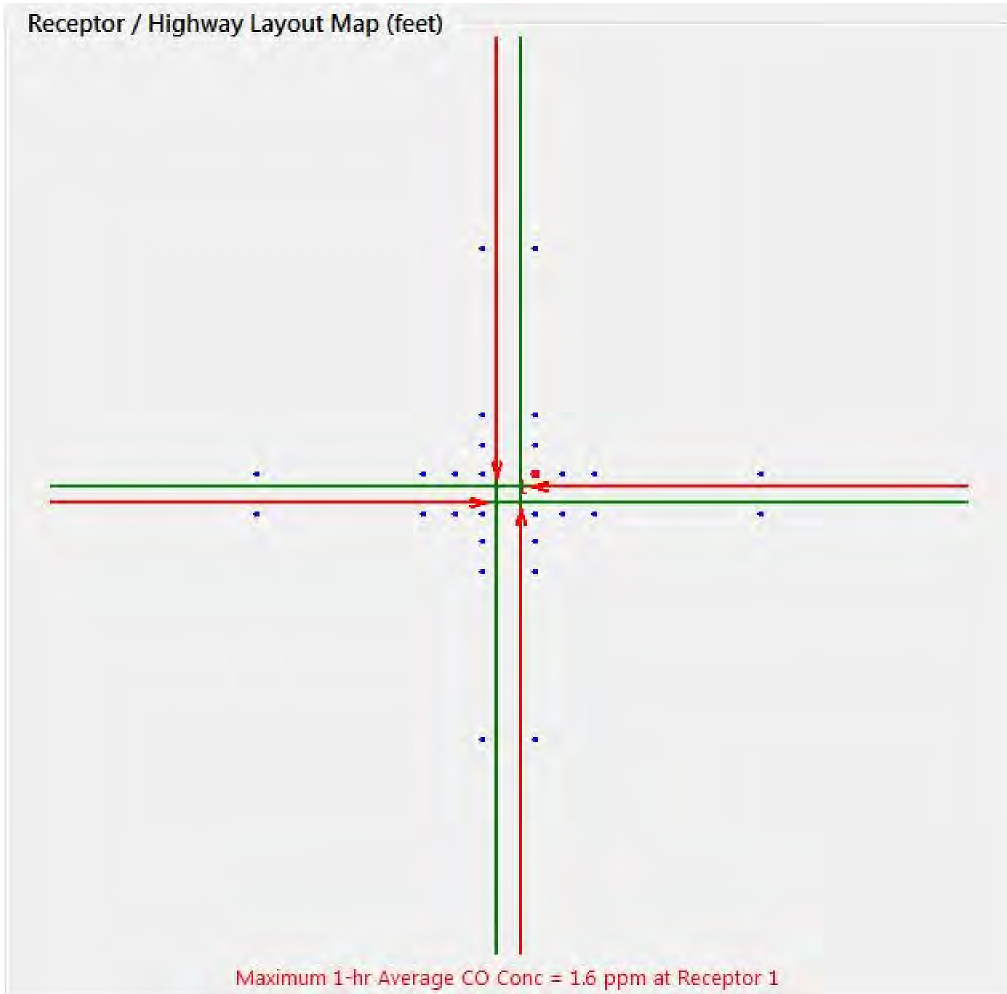
Intersection: 2016 Existing, SR610 and US 1



Intersection: 2016 Existing, US 1 and I95 NB Entrance Ramp



Intersection: 2022 No Build, US 17 and S Gateway Drive



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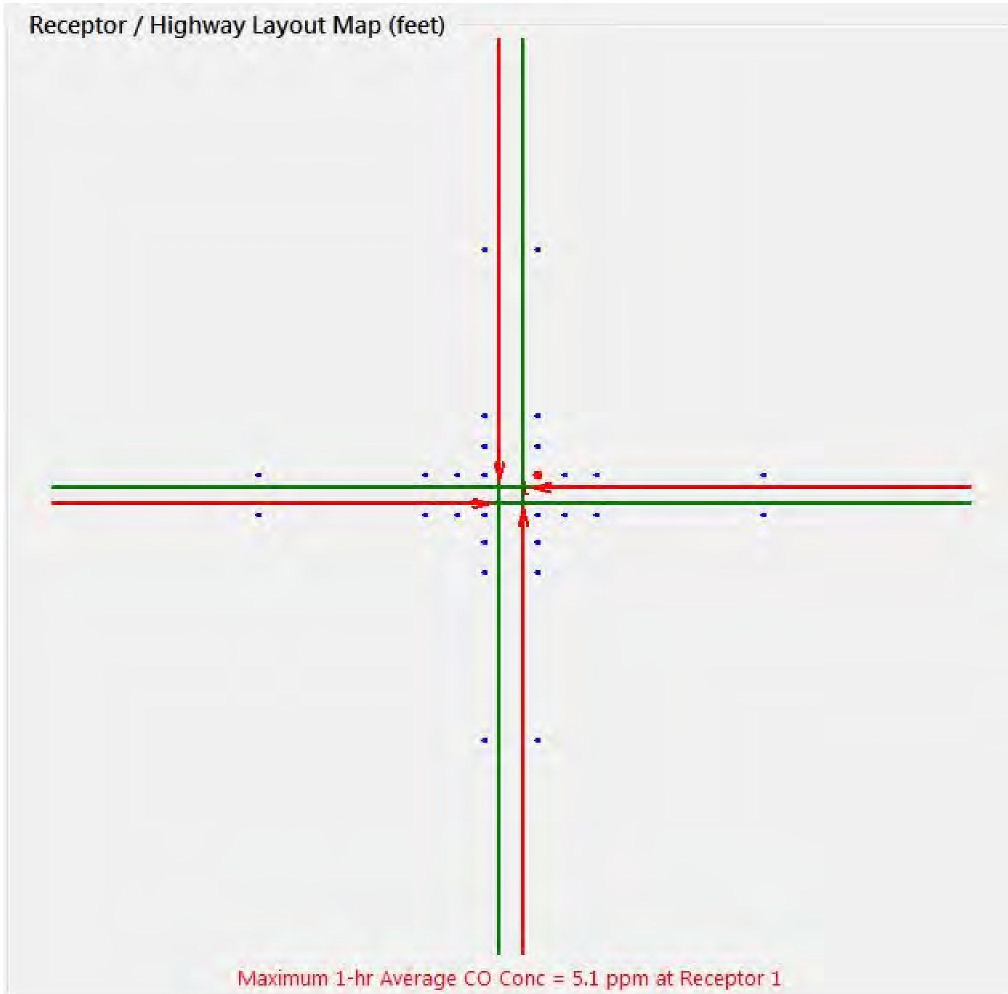

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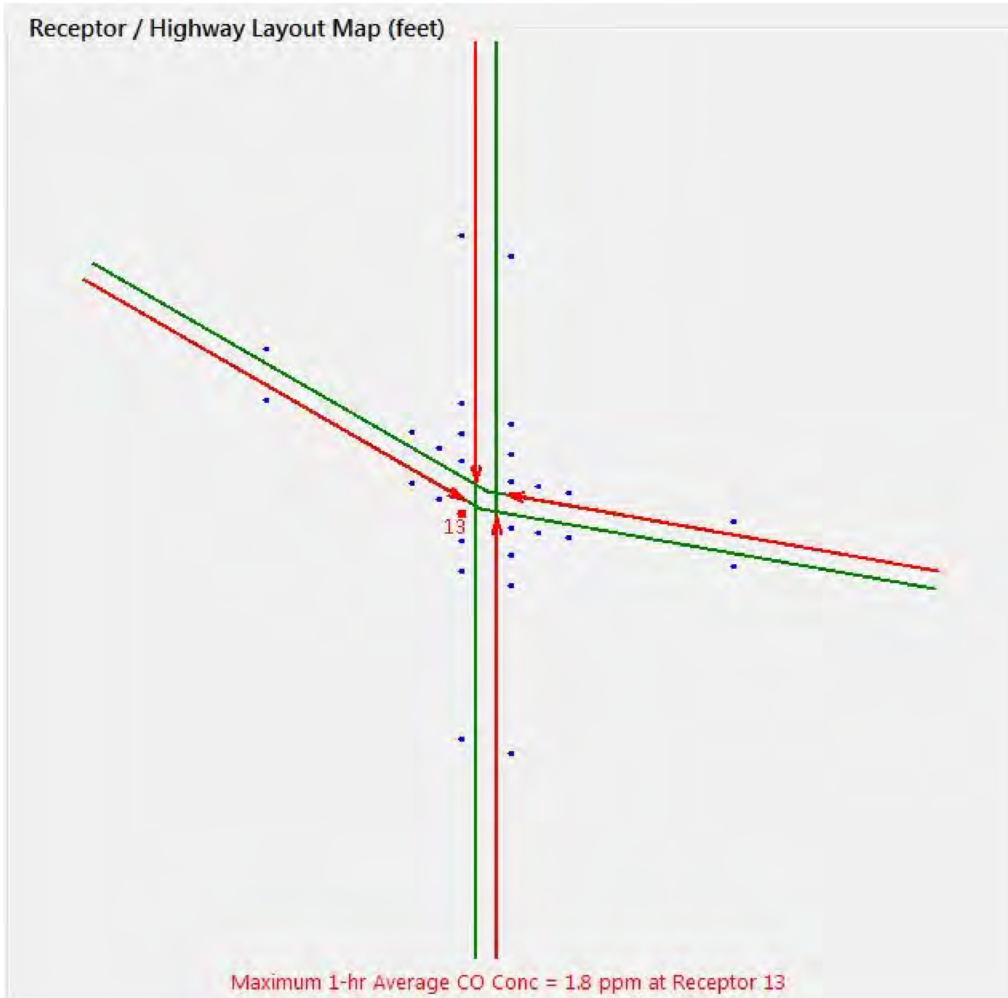

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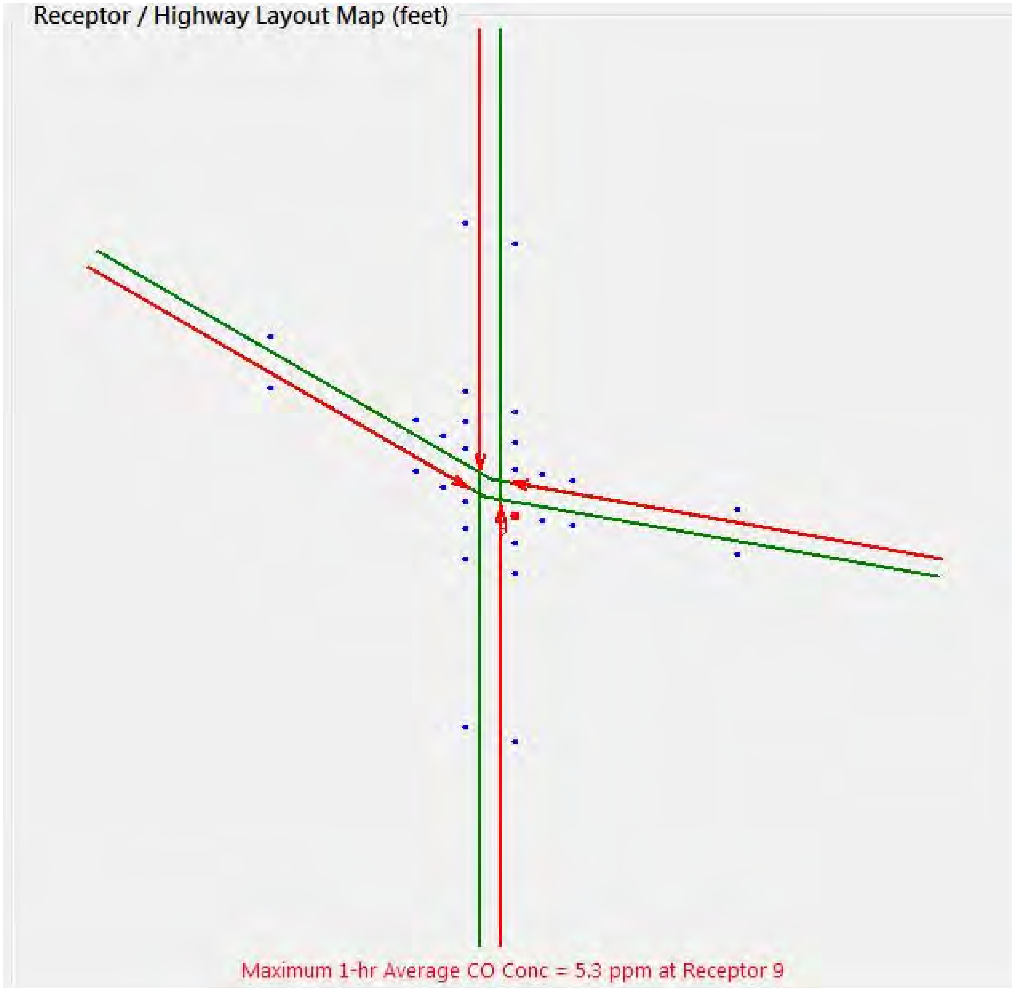
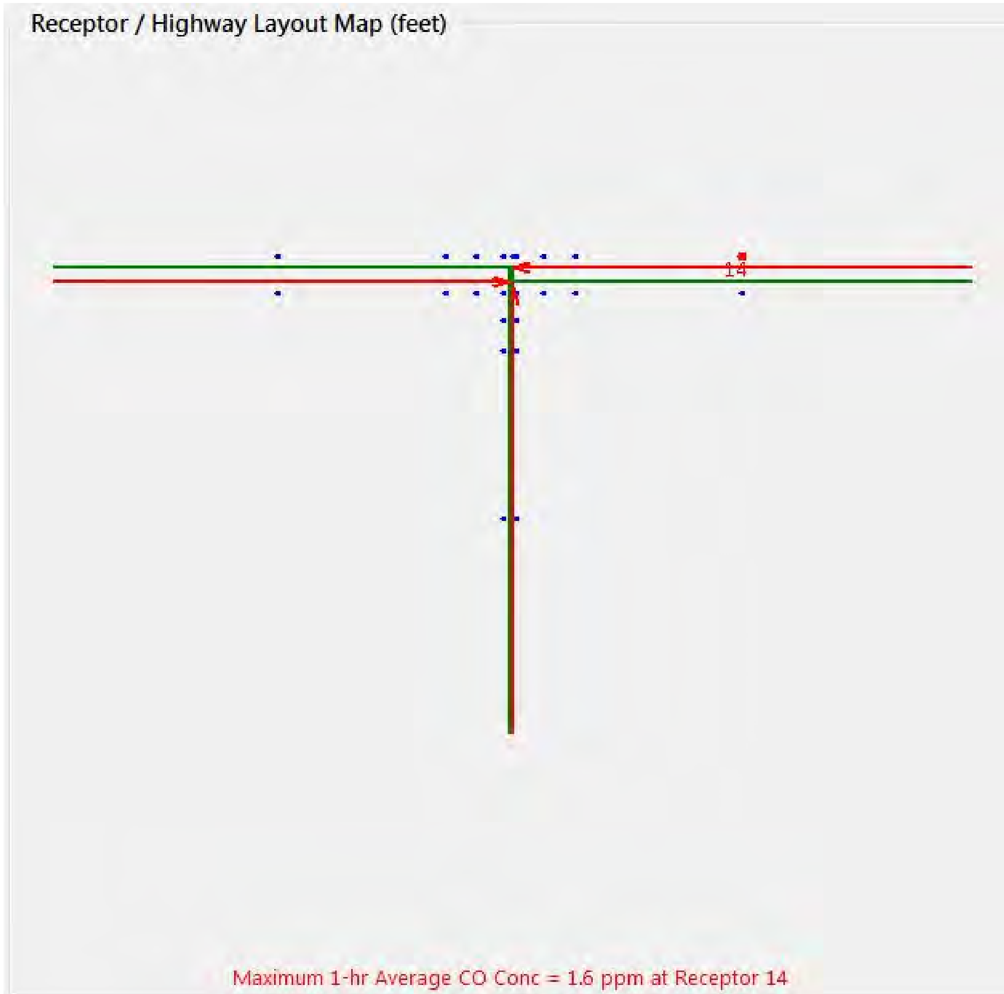
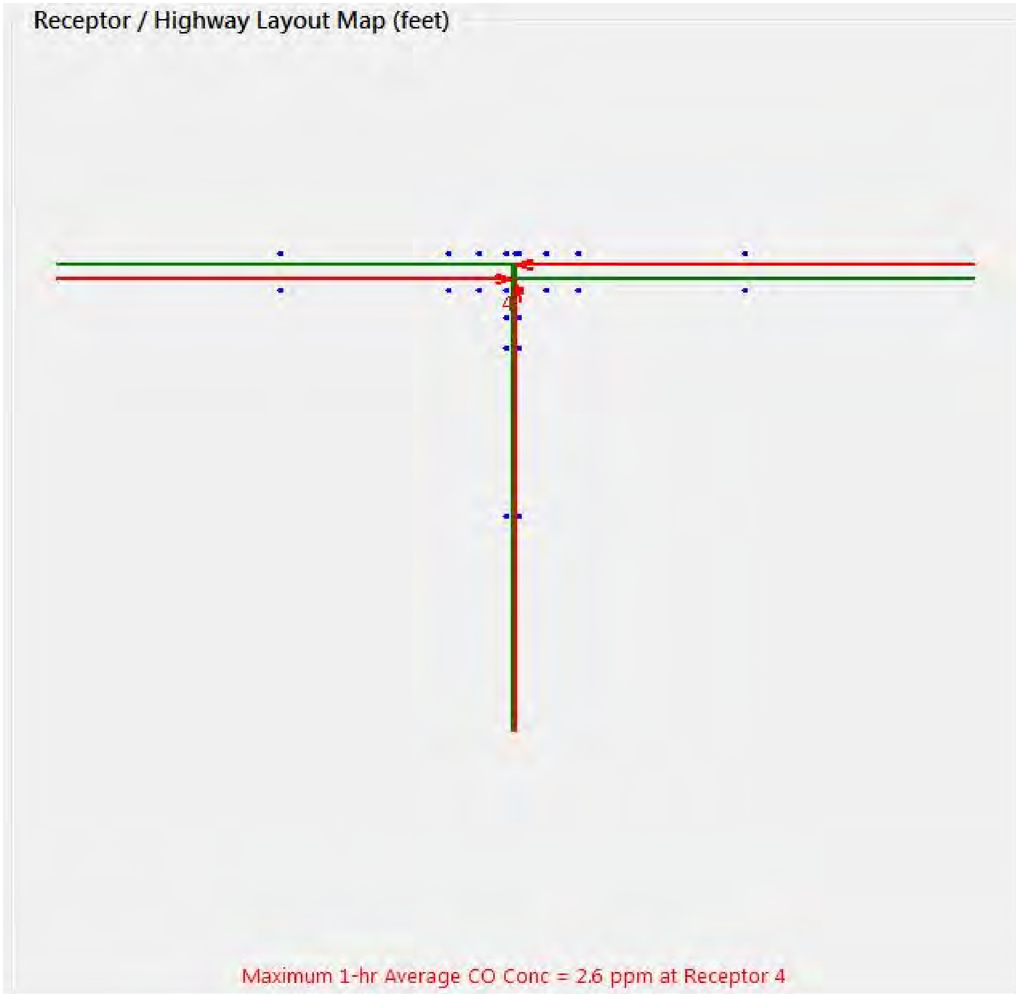


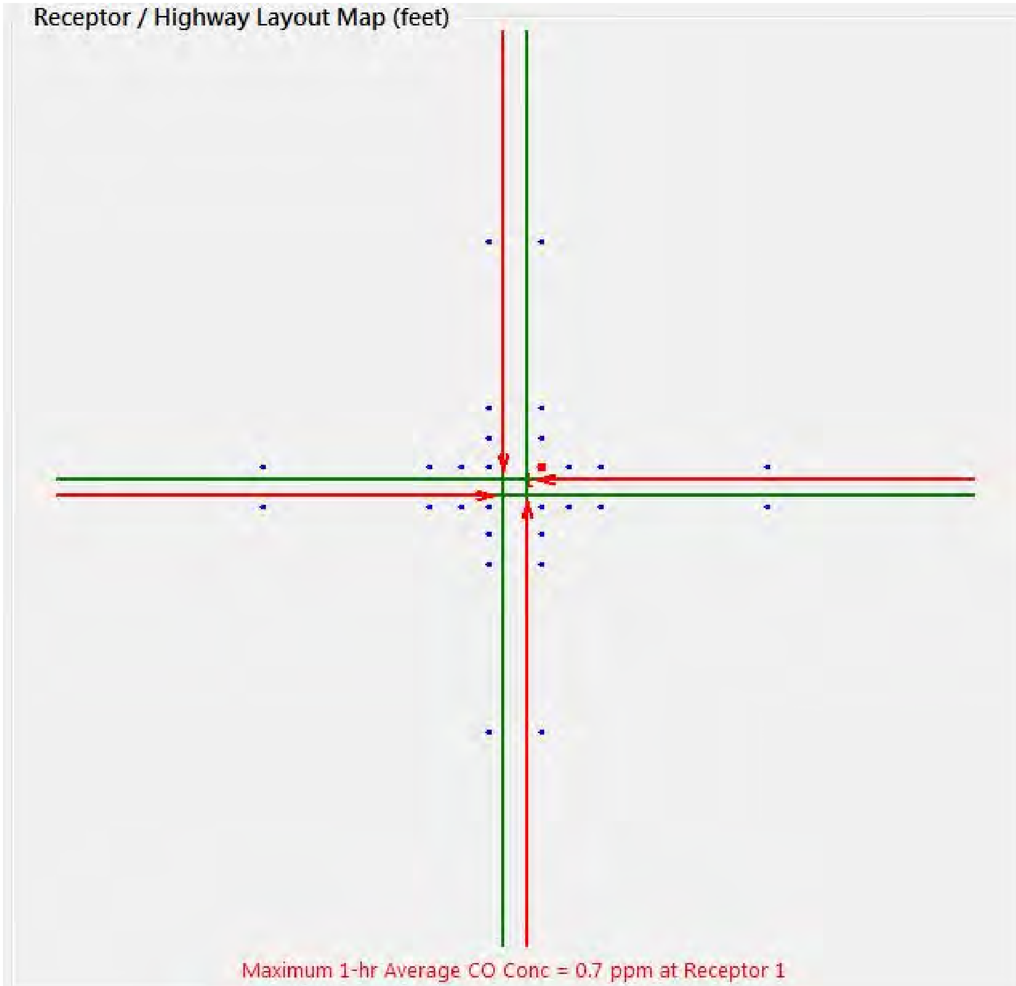
Intersection: 2022 No Build, US 1 and I95 NB Entrance Ramp



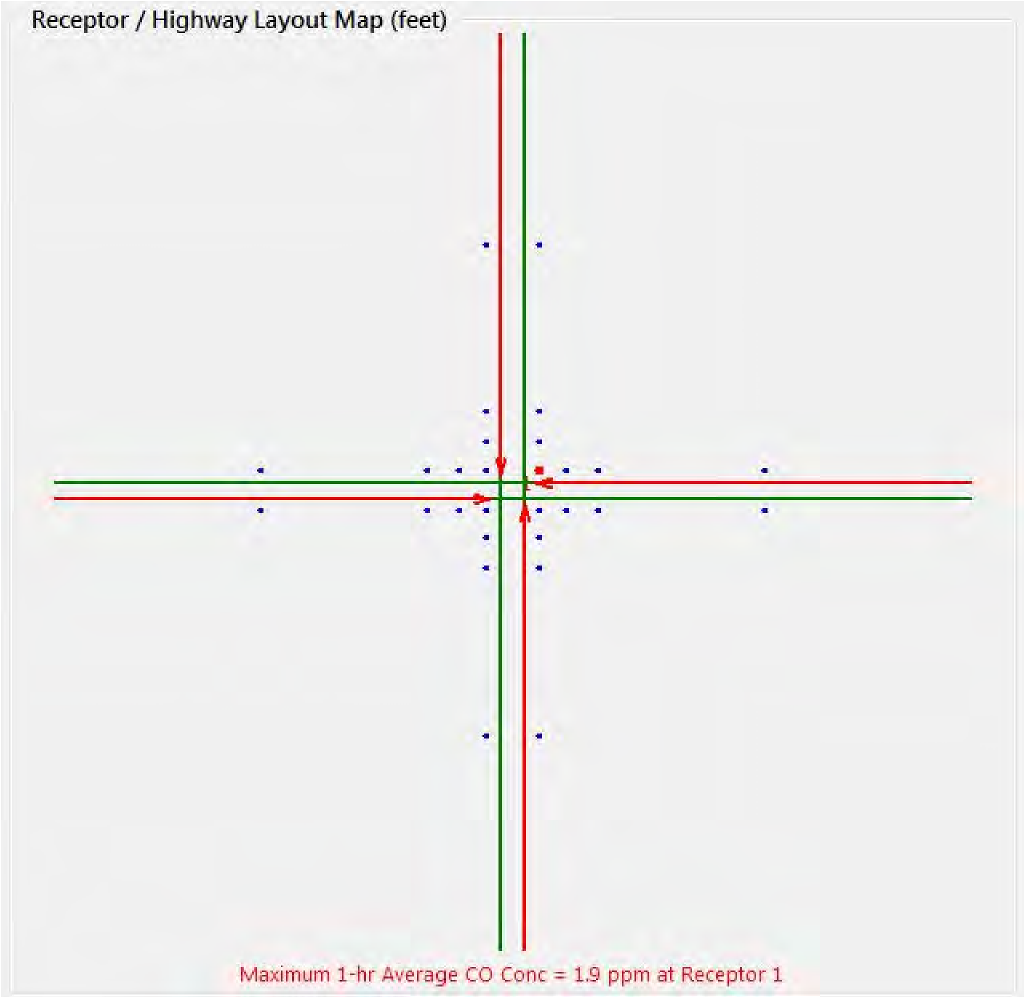
Intersection: 2022 Build, US 1 and I95 NB Entrance Ramp



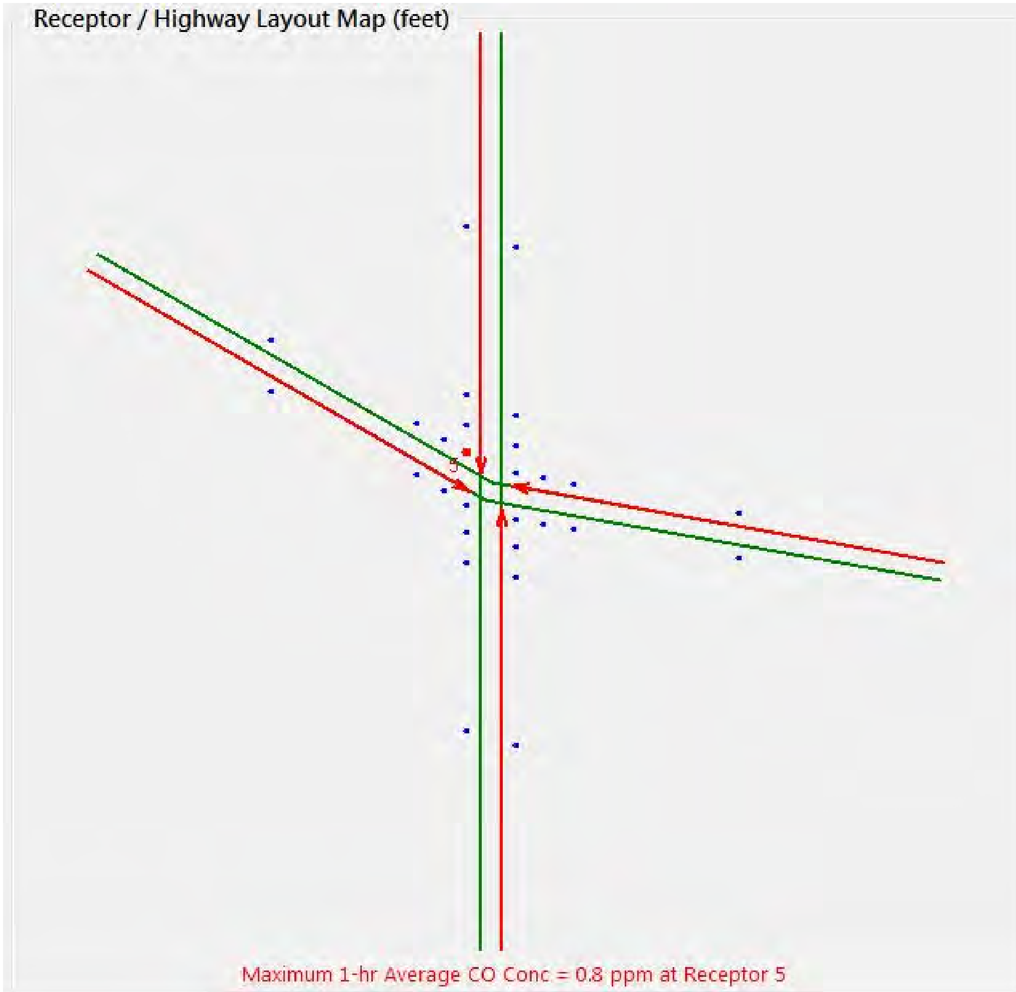
Intersection: 2042 No Build, US 17 and S Gateway Drive



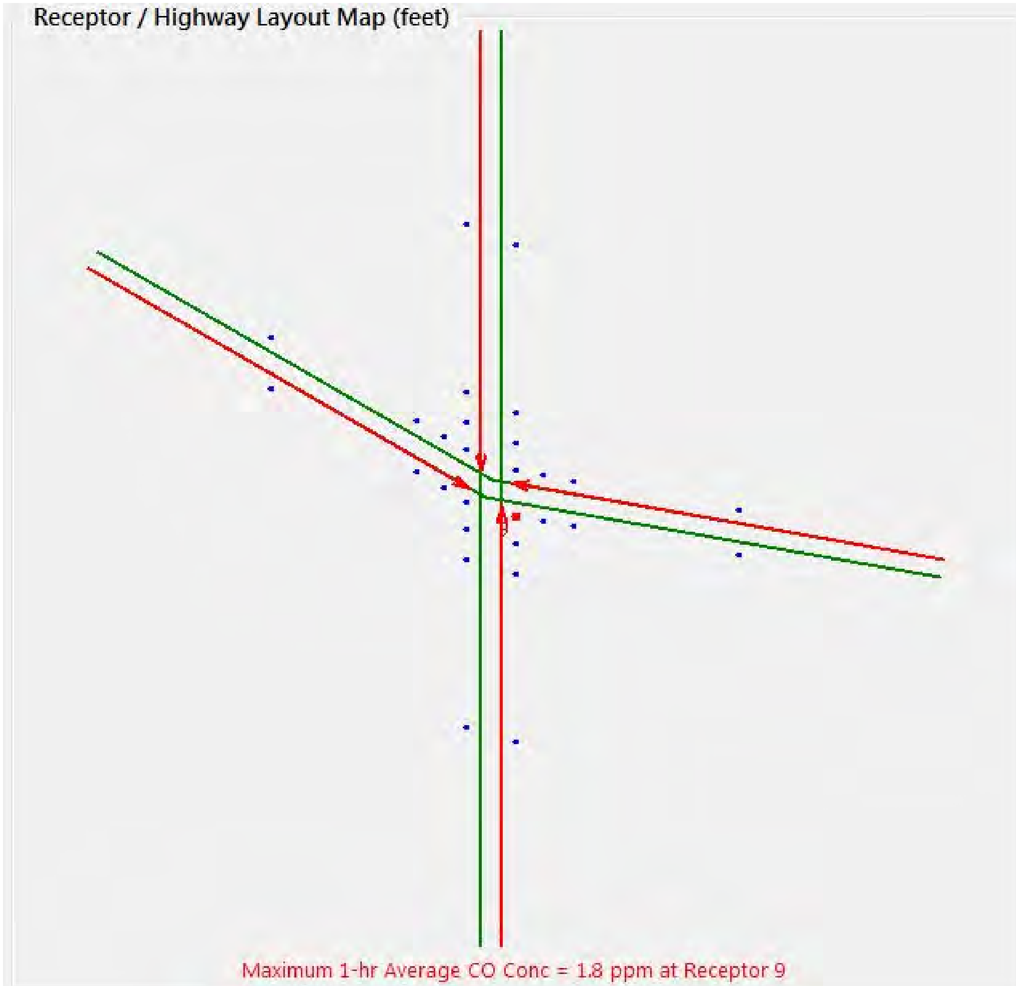
Intersection: 2042 Build, US 17 and S Gateway Drive



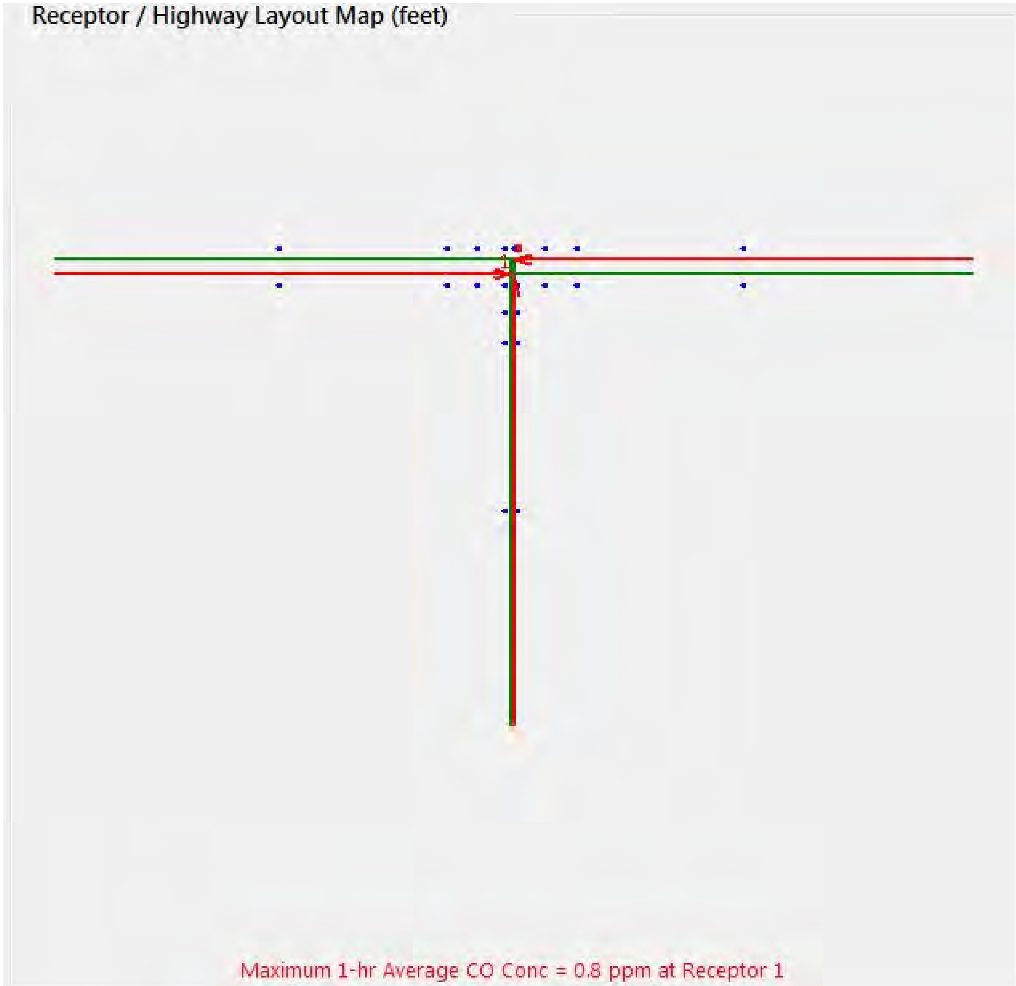
Intersection: 2042 No Build, SR610 and US 1



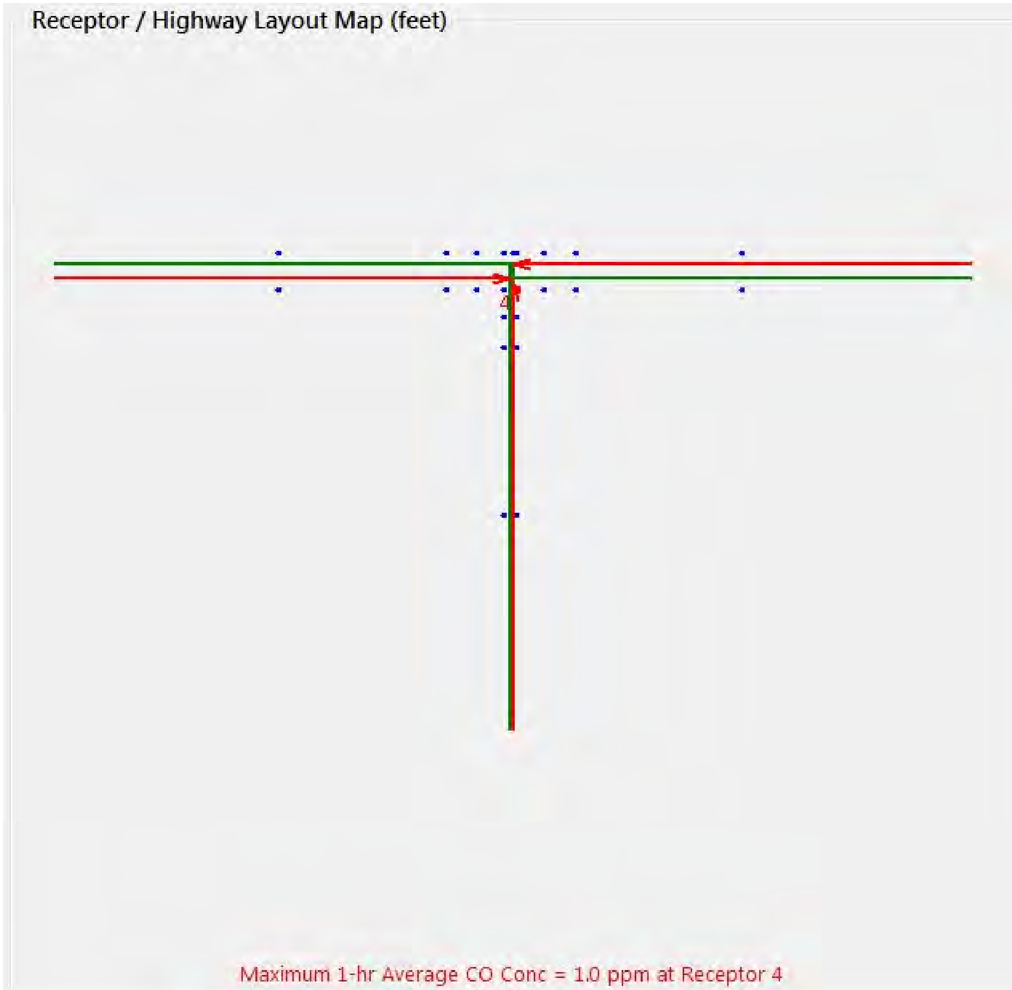
Intersection: 2042 Build, SR610 and US 1



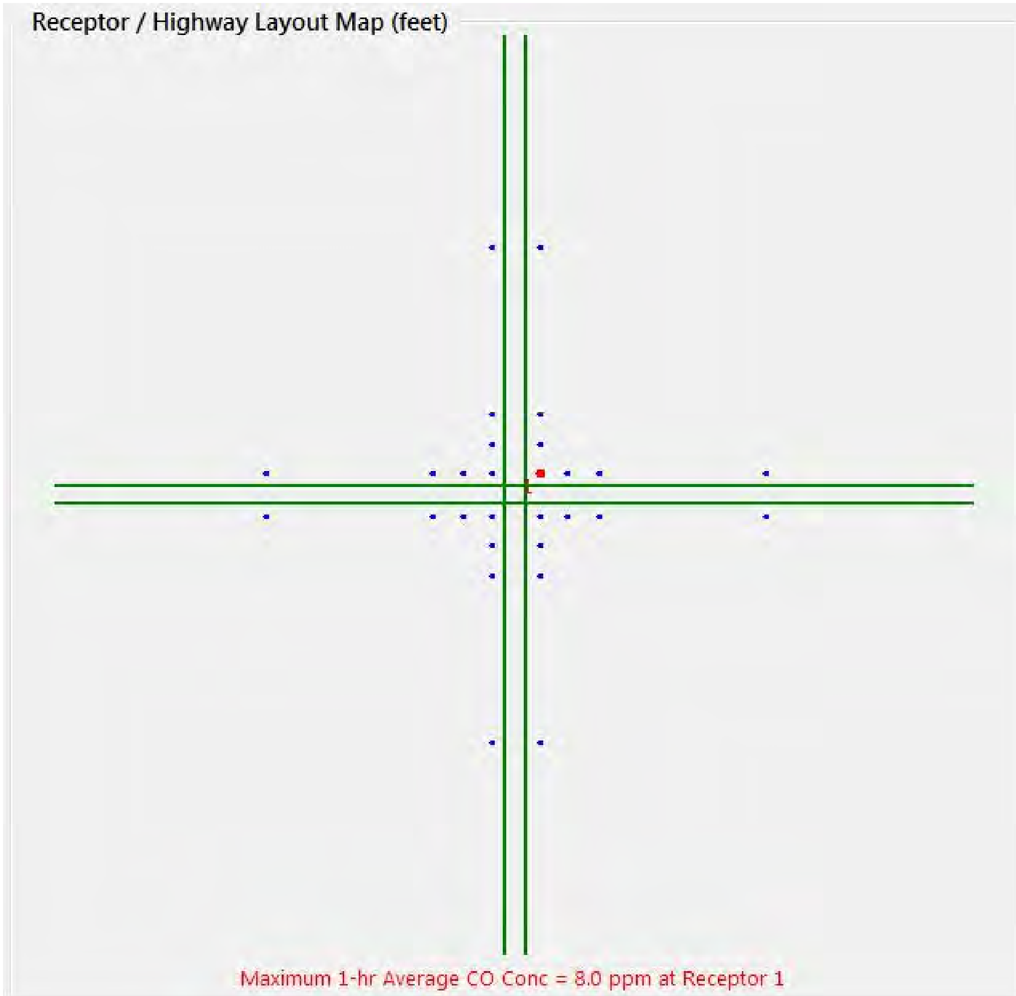
Intersection: 2042 No Build, US 1 and I95 NB Entrance Ramp



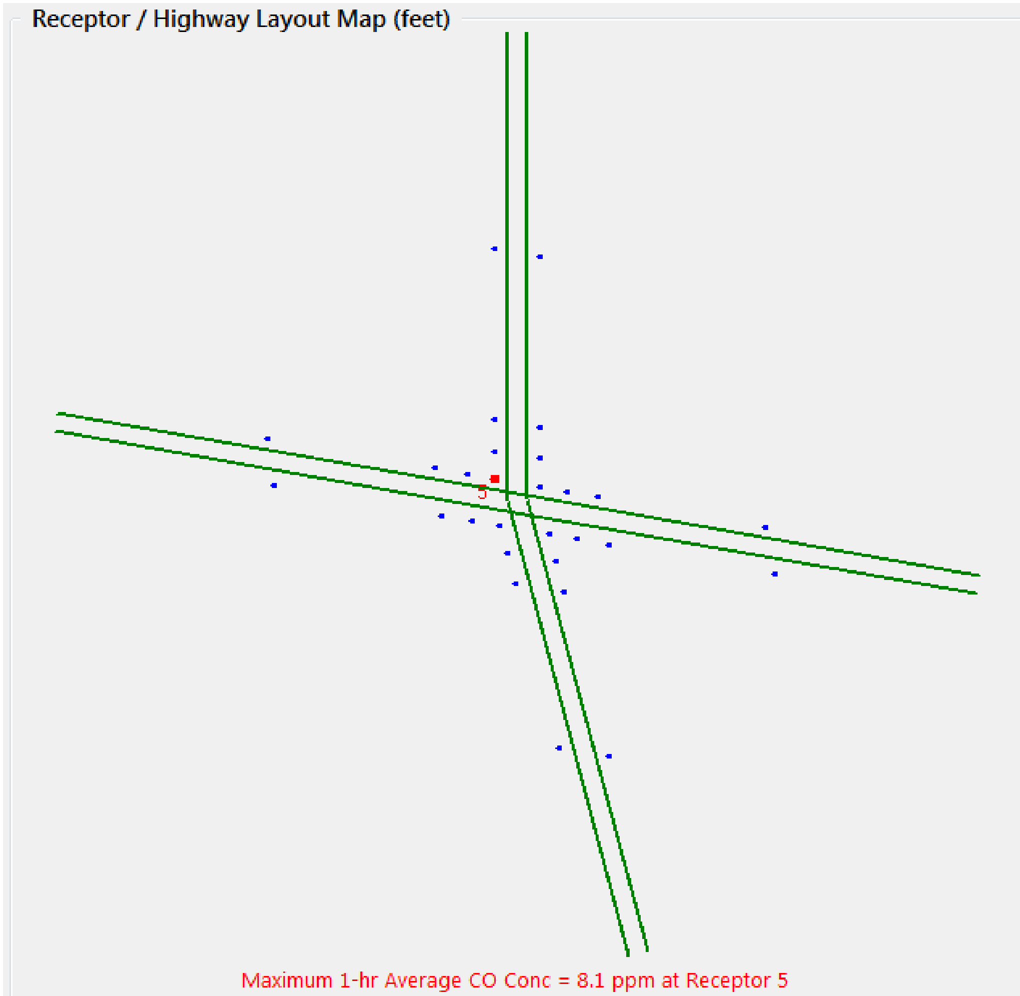
Intersection: 2042 Build, US 1 and I95 NB Entrance Ramp



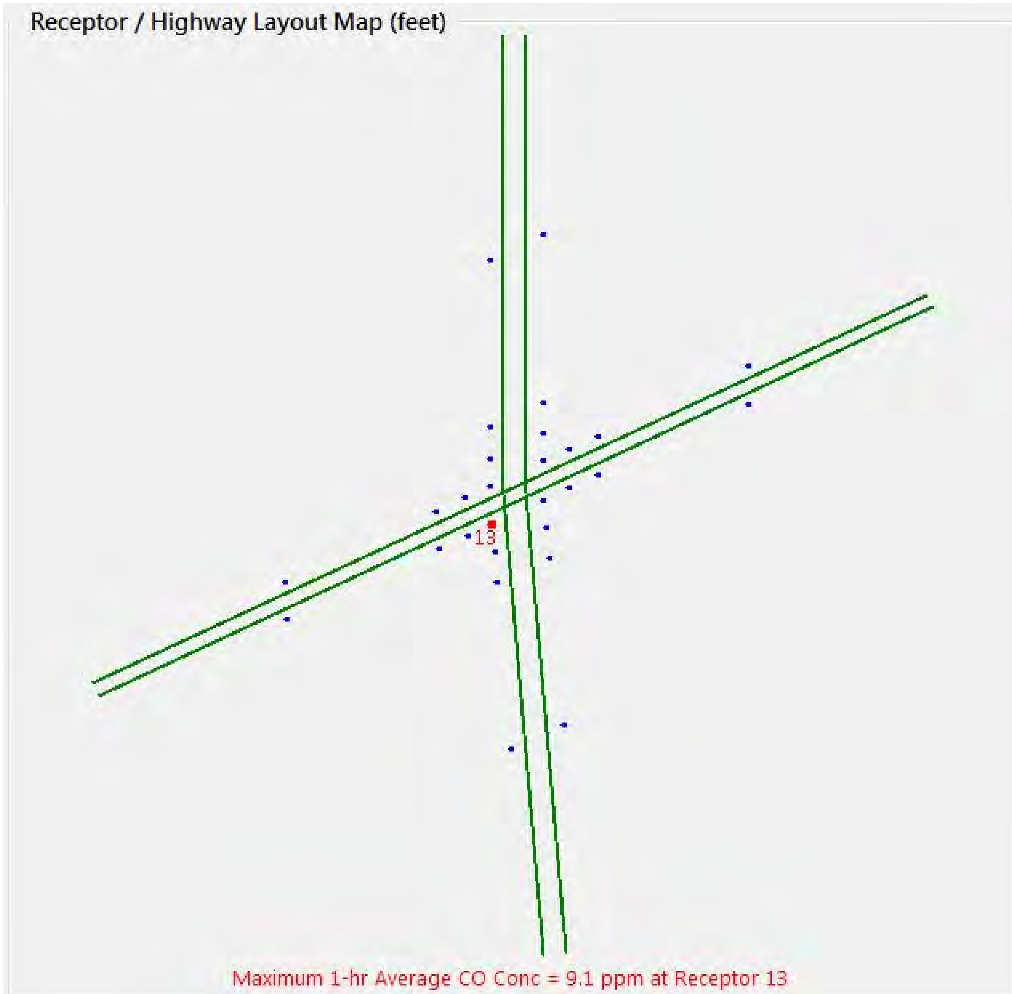
Interchange: 2016 Existing, I95 US 17



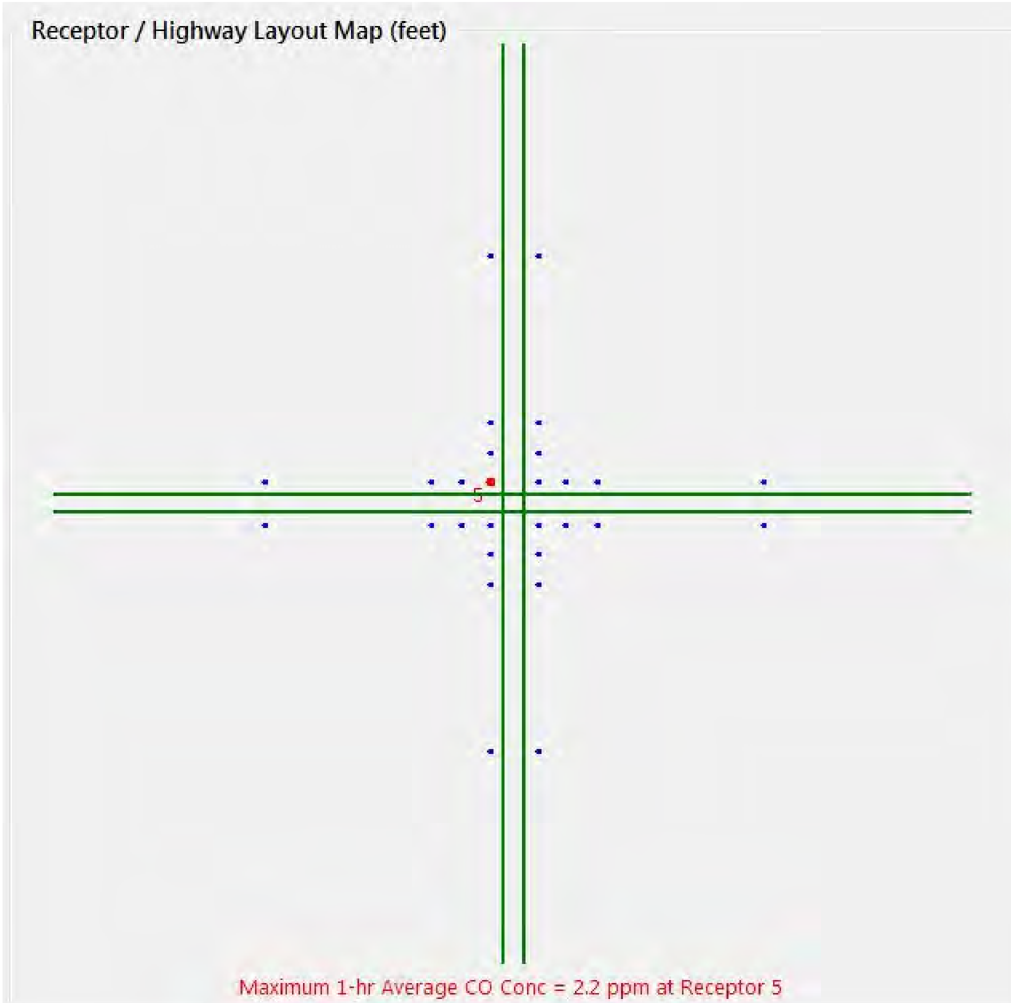
Interchange: 2016 Existing, I95 and SR610



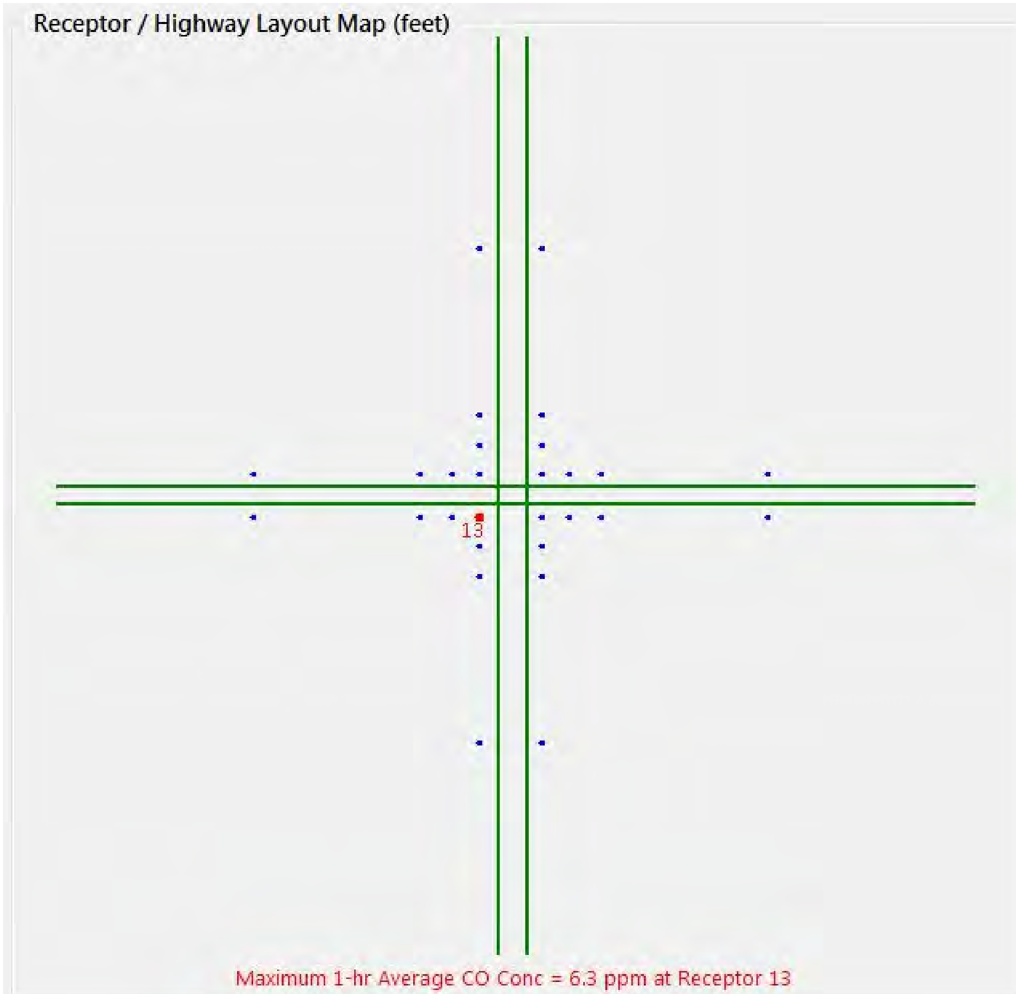
Interchange: 2016 Existing, I95 and Russell Rd



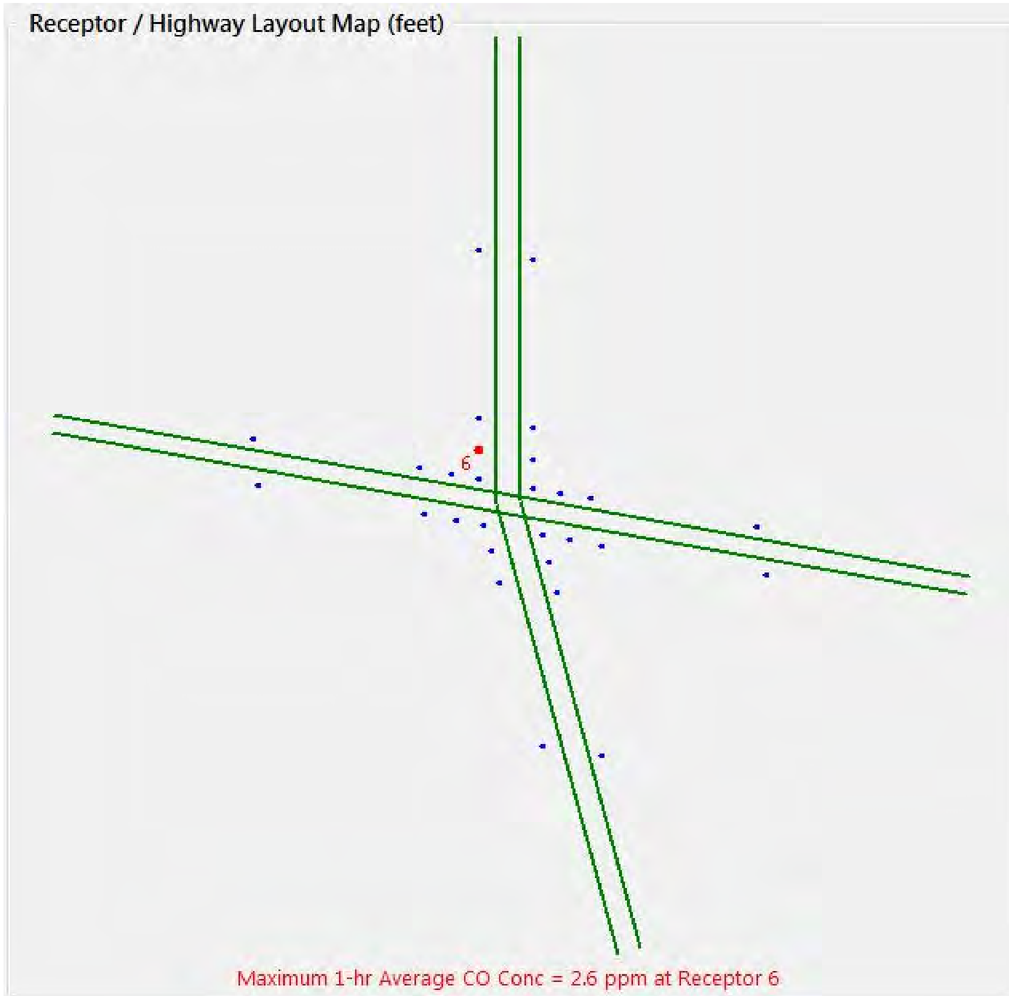
Interchange: 2022 No Build, I95 US 17



Interchange: 2022 Build, I95 US 17



Interchange: 2022 No Build, I95 and SR610



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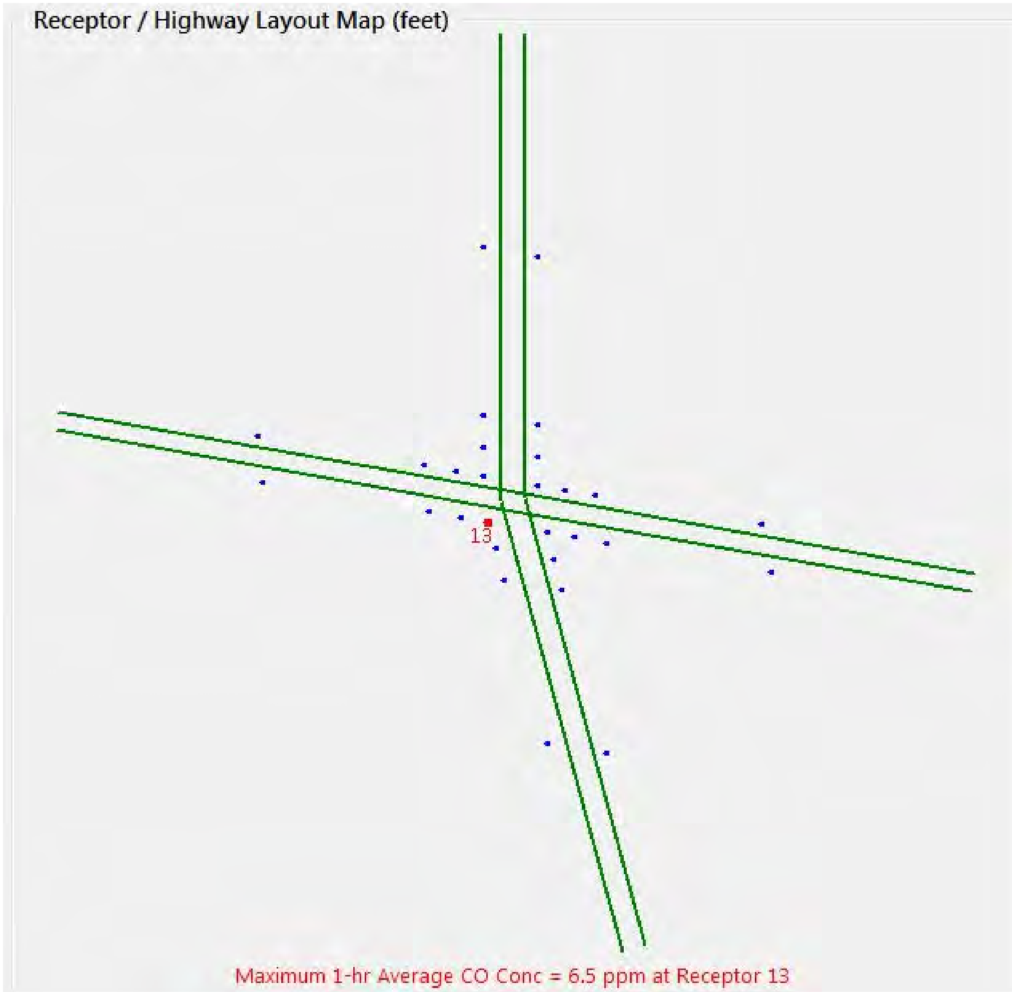
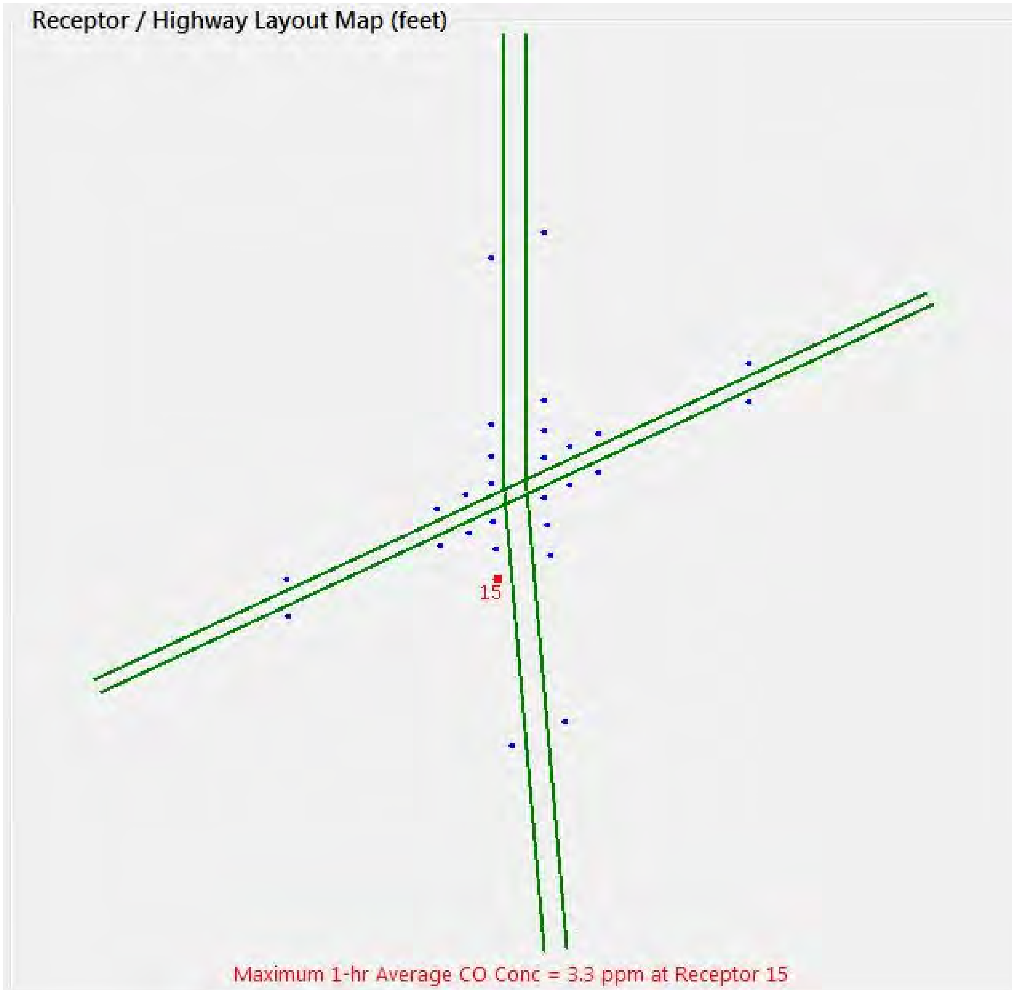
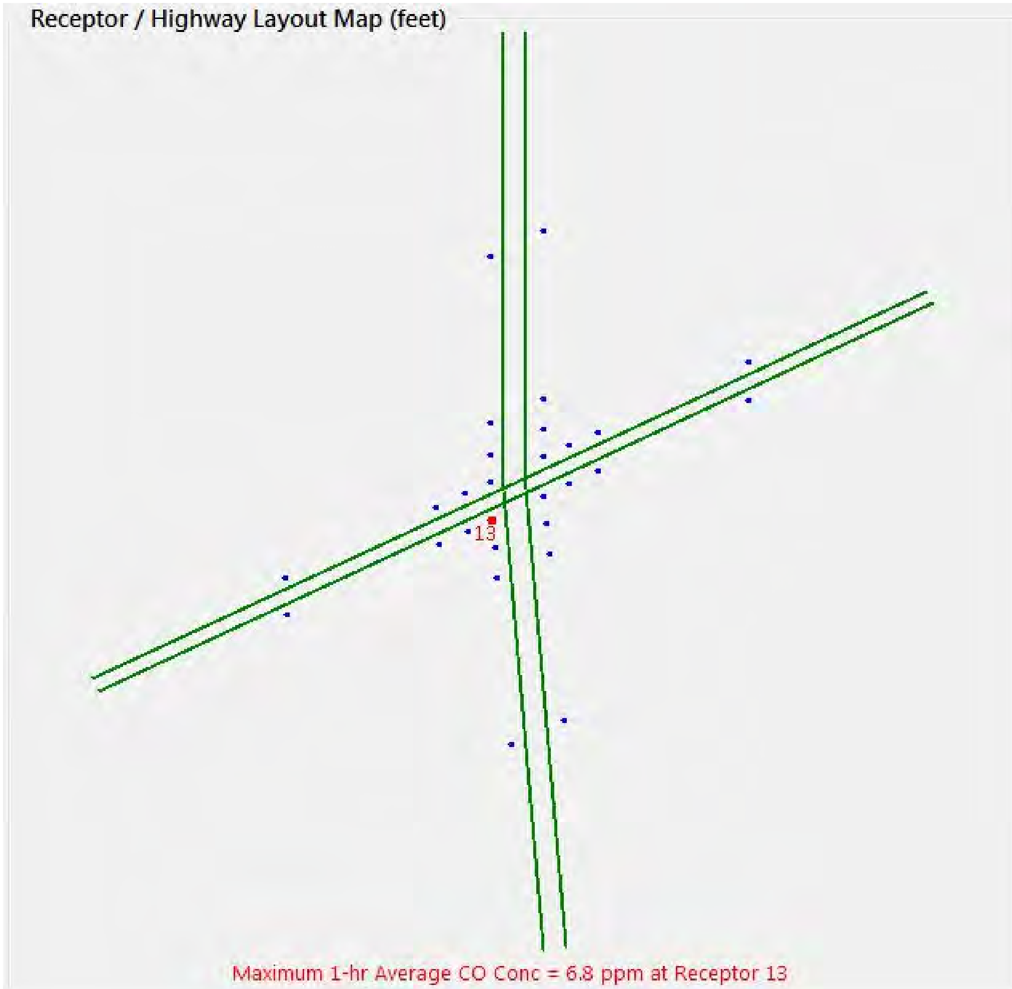


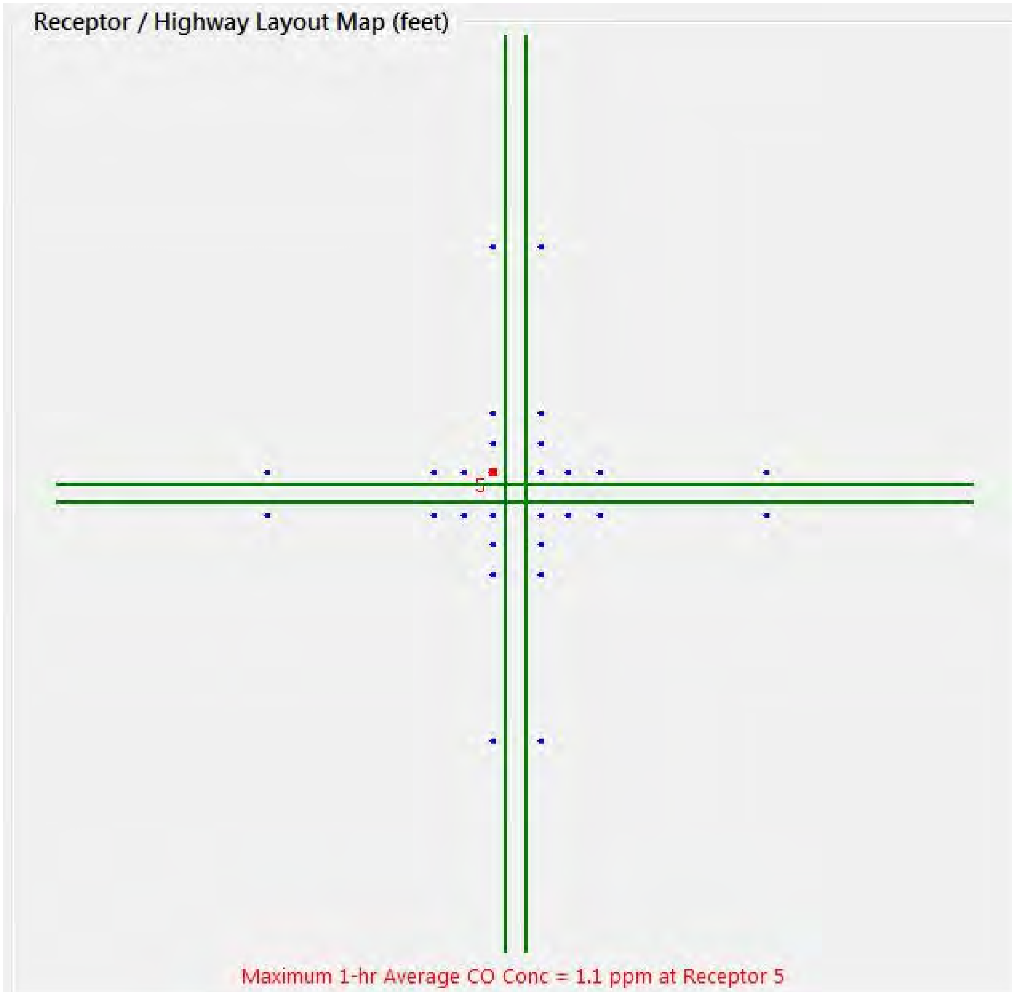
Interchange: 2022 No Build, I95 and Russell Rd



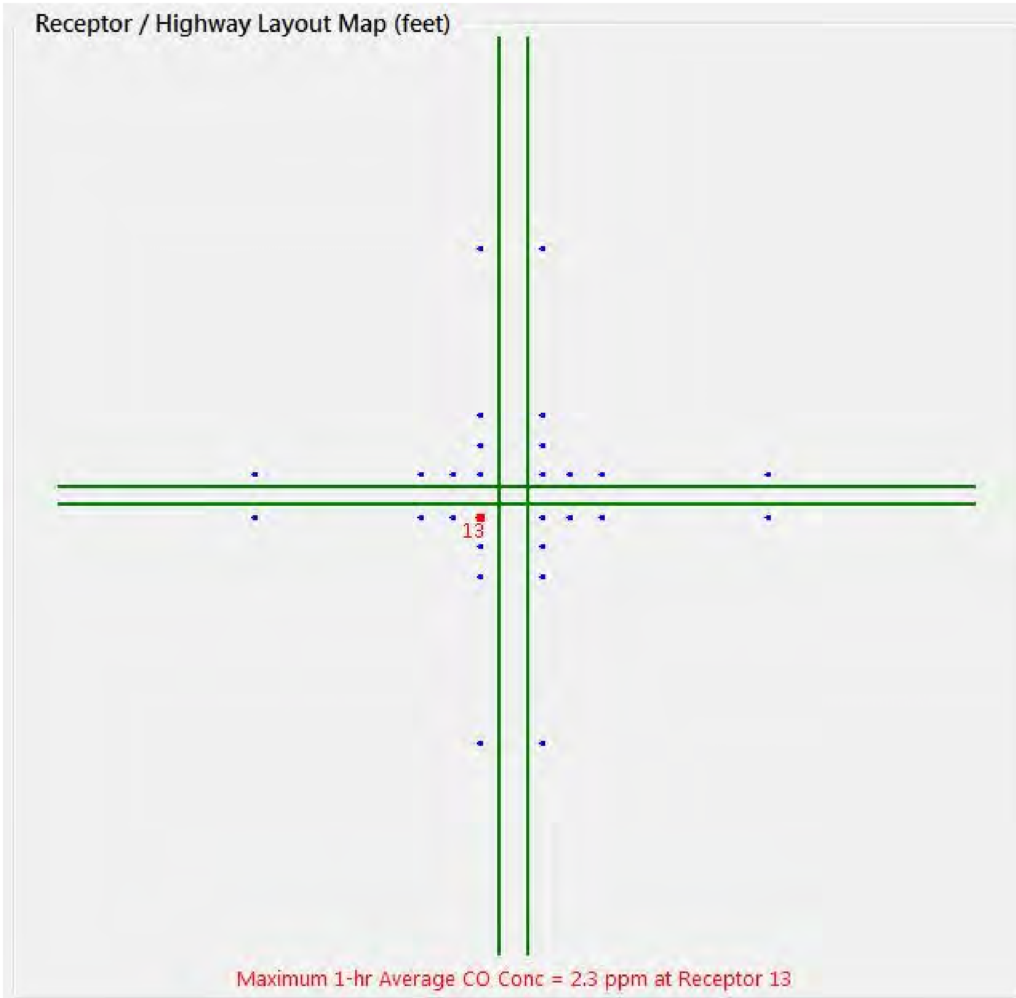
Interchange: 2022 Build, I95 and Russell Rd



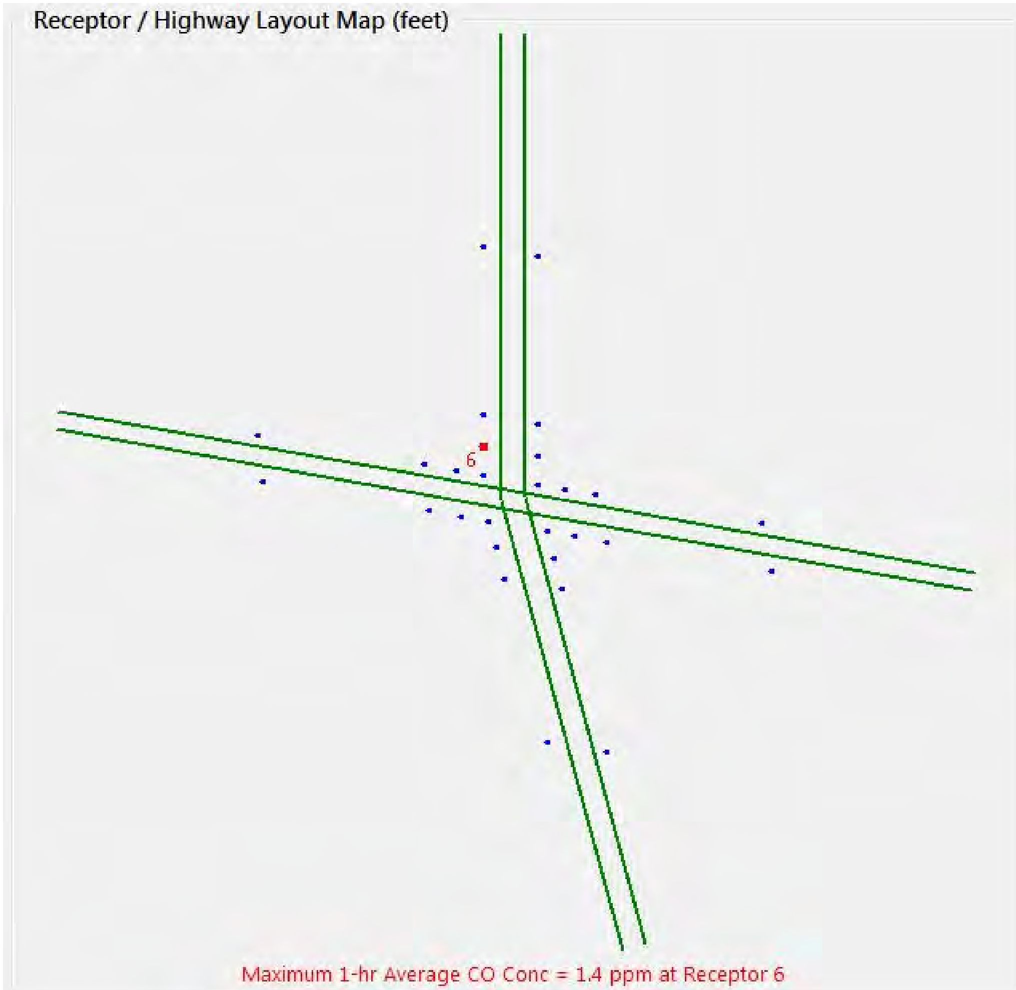
Interchange: 2042 No Build, I95 US 17



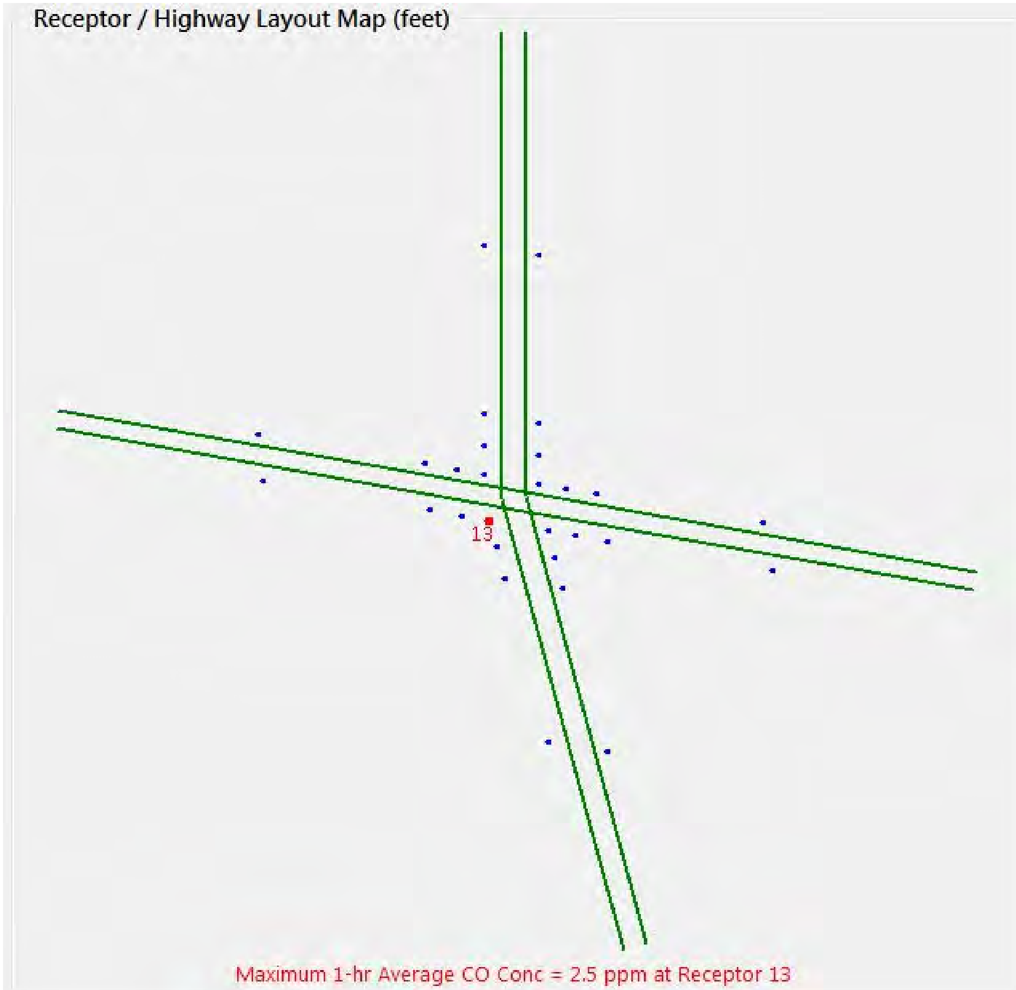
Interchange: 2042 Build, I95 US 17



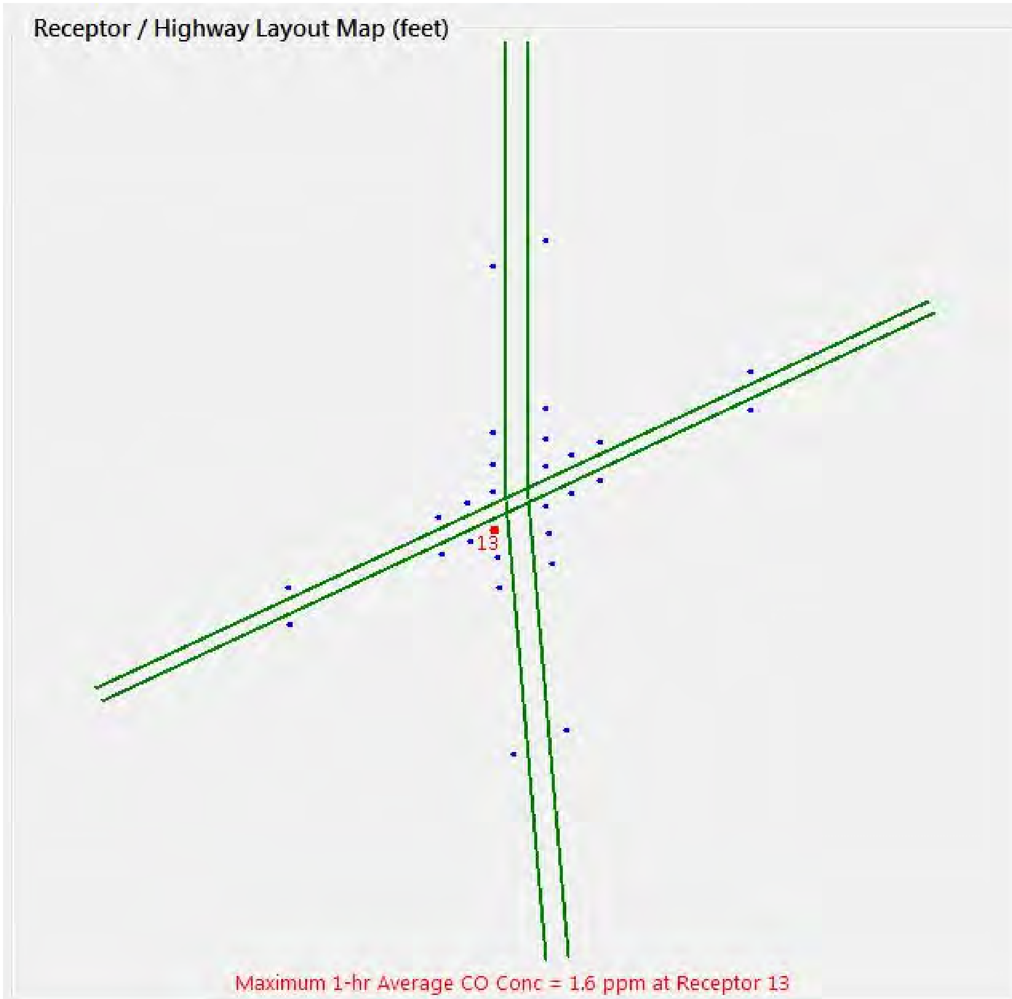
Interchange: 2042 No Build, I95 and SR610



Interchange: 2042 Build, I95 and SR610



Interchange: 2042 No Build, I95 and Russell Rd



Interchange: 2042 Build, I95 and Russell Rd