

TRAFFIC AND TRANSPORTATION TECHNICAL REPORT



TRAFFIC AND TRANSPORTATION TECHNICAL REPORT

INTERSTATE 95 EXPRESS LANES FREDERICKSBURG EXTENSION STUDY



Prepared in support of the Revised Environmental Assessment

VDOT Project #: 0095-969-739

UPC#: 110527

August 2017

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 Project Description.....	1
1.1.1 Purpose and Need	1
1.1.2 Alternatives	2
2. METHODOLOGY	2
2.1 Data Collection.....	2
2.2 Development of Balanced Existing Traffic Volumes	6
2.2.1 Peak Period Volumes	6
2.2.2 Daily Volumes.....	6
2.3 Capacity Analyses.....	14
2.4 Forecasting Process.....	14
2.4.1 Travel Demand Model.....	14
2.4.2 Post-Processing	15
2.4.3 Toll Facilities and Managed Lanes.....	18
3. EXISTING CONDITIONS	18
3.1 Limited Access Highways	19
3.2 Connecting Arterial Roads	19
3.3 Transit Routes and Facilities	19
3.4 Intercity Passenger Rail Service (Amtrak)	20
3.5 Park and Ride Facilities & Ridesharing	20
3.6 Bicycle and Pedestrian Network	21
3.7 Existing Traffic Volumes	21
3.8 Crash Analysis	21
3.8.1 I-95 Northbound Crash Analysis.....	21
3.8.2 I-95 Southbound Crash Analysis.....	22
3.8.3 I-95 Express Lanes Crash Analysis	22
3.9 Assessment of Vehicle Speeds & Travel Times	25
3.9.1 Vehicle Speeds	25
3.9.2 Travel Times	30
3.10 Capacity Analysis.....	32
4. ALTERNATIVES CONSIDERED	34
5. DESIGN YEAR 2042 FORECASTS AND ANALYSES	35

5.1	Summary	35
5.2	2042 No-Build Alternative.....	40
5.2.1	Operational Analysis	40
5.3	2042 Build Alternative	48
5.3.1	Operational Analysis	56
6.	OPENING YEAR FORECASTS AND ANALYSES.....	56
6.1	Summary	56
7.	REFERENCES	59

LIST OF TABLES

Table 2-1:	Mainline & Ramp Count Locations	4
Table 2-2:	Intersection Turning Movement Count Locations	5
Table 2-2:	Intersection Turning Movement Count Locations	5
Table 2-3:	Peak Period to Hourly Factors.....	17
Table 3-1:	Limited Access Highways	19
Table 3-2:	Connecting Arterial Roads	19
Table 3-3:	Park and Ride Facilities in Study Area	20
Table 3-4:	2016 Average Corridor Travel Times.....	30
Table 3-5:	2013 Average Corridor Travel Times.....	30
Table 3-6:	2016 HCS Freeway Facilities Results	33
Table 3-7:	2016 Intersection Analysis Results.....	33
Table 5-1:	I-95 Daily Volumes by Segment	35
Table 5-2:	I-95 Peak Period Volumes by Segment	36
Table 5-3:	I-95 AM Peak Hour Volumes by Segment	37
Table 5-4:	I-95 PM Peak Hour Volumes by Segment	37
Table 5-5:	HCS Freeway Facilities Results	38
Table 5-6:	Intersection Analysis Results	39
Table 6-1:	2022 Daily Volumes by Segment	56
Table 6-2:	Opening Year 2022 Intersection Analysis Results.....	58

LIST OF FIGURES

Figure 2-1:	Study Area.....	3
Figure 2-2:	2016 Daily Volumes (Sheets 1-7)	7-13
Figure 3-1:	I-95 Northbound Crash Analysis	23
Figure 3-2:	I-95 Southbound Crash Analysis	24
Figure 3-3:	2016 I-95 Northbound General Purpose Lane Travel Speeds	26
Figure 3-4:	2016 I-95 Southbound General Purpose Lane Travel Speeds	27
Figure 3-5:	2013 I-95 Northbound General Purpose Lane Travel Speeds	28
Figure 3-6:	2013 I-95 Southbound General Purpose Lane Travel Speeds	29
Figure 3-7:	2016 I-95 Northbound General Purpose Lane AM Peak Hour Travel Times	31
Figure 3-8:	2016 I-95 Southbound General Purpose Lanes PM Peak Hour Travel Times	32
Figure 5-1:	2042 No-Build Daily Volumes (Sheets 1-7)	41-47

Figure 5-2: 2042 Build Daily Volumes (Sheets 1-7)49-55

LIST OF ACRONYMS

ADT	Average Daily Traffic
EA	Environmental Assessment
FBG	Fredericksburg Station
FHWA	Federal Highway Administration
FRED	Fredericksburg Regional Transit
GP	General Purpose
HCS	Highway Capacity Software
HOT	High-Occupancy Toll
I-95	Interstate 95
IPF	Iterative Proportional Fitting
LOS	Level of Service
MCBQ	Marine Corps Base Quantico
MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MVMT	Million Vehicle Miles Traveled
MWCOG	Metropolitan Washington Council of Governments
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
TRB	Transportation Research Board
VDOT	Virginia Department of Transportation
VRE	Virginia Railway Express

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA) as the lead federal agency, is preparing a Revised Environmental Assessment (Revised EA) for the Interstate 95 (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 I-95 Express Lanes Fredericksburg Extension Study (or the “Fredericksburg Extension Study”), presents improvements identified in a portion of the 2011 FONSI-selected Alternative, 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 includes new access points along this portion of the 2011 FONSI-selected Alternative. As part of the current study, environmental resources along the corridor were updated according to the latest available data and information.

The purpose of this Transportation and Traffic Technical report is to document the data collection, traffic forecasting, and analysis efforts performed to assess potential operational improvements for the study area corridors. Information in this report, described below, will support discussions presented in the Revised EA.

- **Section 1** provides an overview of the study.
- **Section 2** outlines the methods used to assess traffic operations.
- **Section 3** describes existing conditions including an inventory of multimodal transportation infrastructure, as well as peak hour and daily traffic volumes, crash trends, vehicle speeds, and traffic operations along the Study Corridor.
- **Section 4** provides an overview of alternatives considered for the study.
- **Section 5** outlines potential impacts to traffic operations in the design year (2042) associated with each of the alternatives presented in the EA.
- **Section 6** outlines potential impacts to traffic operations in the opening year (2022) associated with each of the alternatives presented in the EA.
- **Section 7** includes the references cited.

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 proposed limits of the Build Alternative and areas identified for access improvements are shown on **Figure 2-1**. Additional information on the alternatives is included in the *Fredericksburg Extension Study Alternatives Technical Report* (VDOT, 2017b), and in the Revised EA (VDOT, 2017a).

No-Build Alternative

Under the No-Build Alternative, the Express Lanes would not be extended beyond the southern terminus of the Southern Extension project, which is currently under construction 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 reversible Express Lanes in the median of I-95 from the vicinity 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) to tie into the Southern Extension Project. It would also provide Express Lane access in the vicinity of the I-95 / US 17 North Interchange at Warrenton Road (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 2011 FONSI-selected alternative.

2. METHODOLOGY

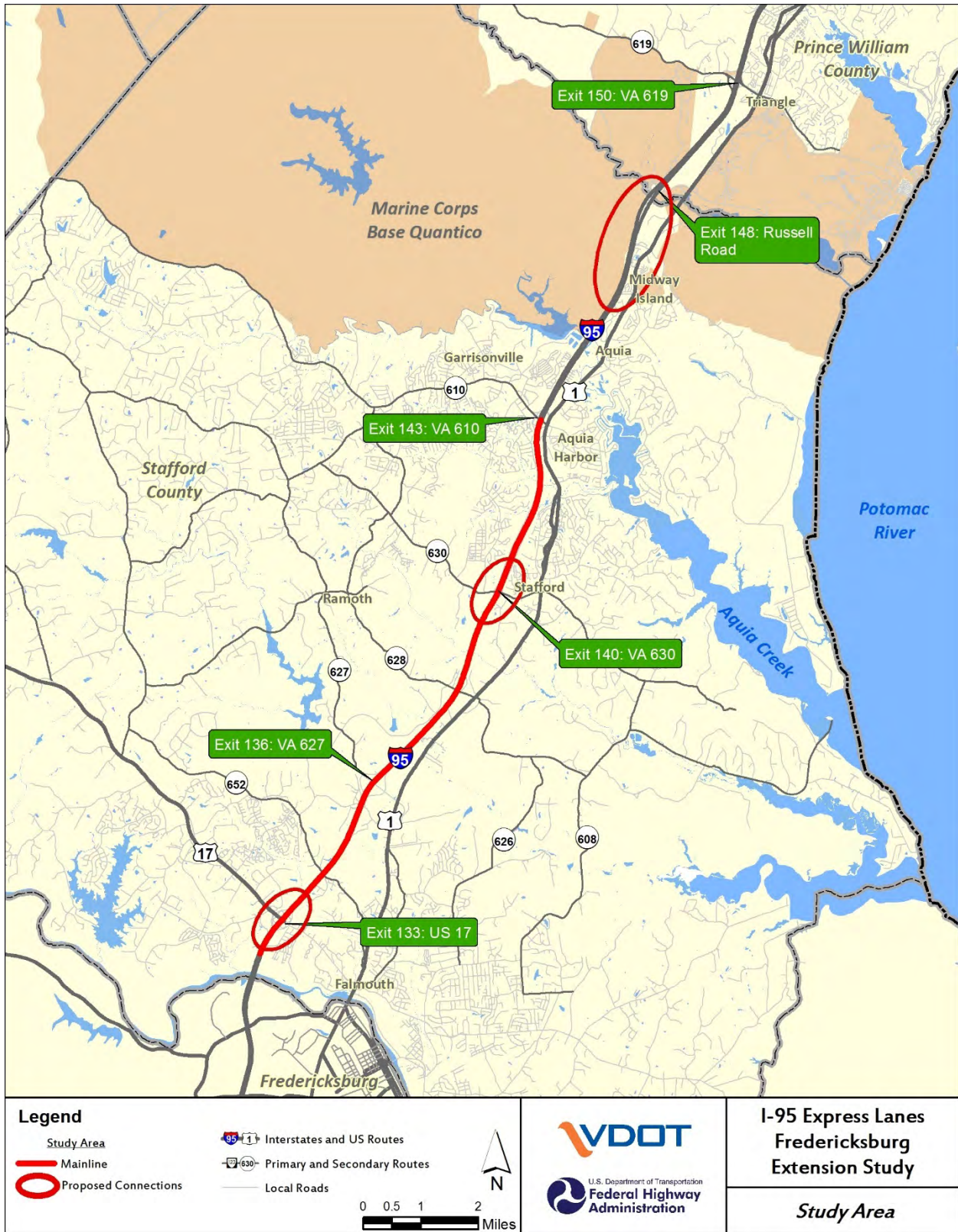
The traffic analysis study area extends along the mainline roadway segments, and includes interchange ramps and signalized and unsignalized intersections within the interchanges at Exit 133, Exit 136, Exit 140, Exit 143, and Exit 148. Travel forecasting and analysis efforts undertaken to support the EA process include data collection, development of balanced peak hour and daily volume forecasts, and capacity analyses for the peak periods, as described in the following subsections.

2.1 DATA COLLECTION

An extensive data collection effort was undertaken in September 2016 to establish baseline traffic conditions for the study area. To support the evaluation of future enhancements to the corridor, data collection was conducted for an extended corridor on I-95, from automatic ramp counts and manual intersection turning movement counts, to the data reviewed from VDOT's permanent count stations.

Ramp counts, including existing access points to the I-95 Express Lanes and mainline vehicle classification counts, were conducted for a minimum of 48 consecutive hours on non-holiday Tuesdays, Wednesdays, and Thursdays, and during typical school and non-holiday periods. Ramp and mainline counts were performed using tube and video count equipment. All turning movement counts were conducted on a typical, non-holiday Tuesday, Wednesday, or Thursday when schools were in session. Twelve-hour turning movement counts were performed manually by using video count equipment.

Figure 2-1: Study Area



Ramp and mainline vehicle classification counts, along with intersection turning movement counts within the study area, were conducted between September 27 and 29, 2016. Supplemental ramp classification counts and turning movements counts were obtained at I-95 Exit 130 (Plank Road) in November 2016. Supplemental ramp classification counts were obtained at I-95 Exit 161 (US 1) in December 2016.

Table 2-1 provides the locations of the mainline and ramp vehicle classification counts and **Table 2-2** provides the locations of the intersection turning movement counts conducted within the study area for the Fredericksburg Extension Study. Additional data collection locations outside the proposed project limits are summarized in **Appendix A**.

Table 2-1: Mainline & Ramp Count Locations

Exit	Mainline / Ramp Movement			
	From		To	
133	I-95	SB	US 17	NB
133	I-95	SB	US 17 Bus	SB
133	US 17	SB	I-95	SB
133	US 17 Bus	NB	I-95	SB
133	I-95	NB	US 17 Bus	SB
133	I-95	NB	US 17	NB
133	US 17	SB	I-95	NB
133	US 17 Bus	NB	I-95	NB
I-95 Mainline	Centreport Pkwy	SB	US 17	
I-95 Mainline	US 17	NB	Centreport Pkwy	
136	I-95	SB	Centreport Pkwy	
136	Centreport Pkwy		I-95	SB
136	I-95	NB	Centreport Pkwy	
136	Centreport Pkwy		I-95	NB
140	I-95	SB	Courthouse Rd	
140	Courthouse Rd		I-95	SB
140	I-95	NB	Courthouse Rd	
140	Courthouse Rd		I-95	NB
143	I-95	SB	Garrisonville Rd	WB
143	I-95	SB	Garrisonville Rd	EB
143	Garrisonville Rd	WB	I-95	SB
143	Garrisonville Rd	EB	I-95	SB
143	I-95	NB	US 1	
143	I-95	NB	Garrisonville Rd	WB

Exit	Mainline / Ramp Movement			
	From		To	
143	US 1	NB	I-95	NB
143	Garrisonville Rd	EB	I-95	NB
I-95 Express	I-95	NB	I-95 Express Lanes (Slip)	
I-95 Express	I-95 Express Lanes (Flyover)		I-95	SB
148	I-95	SB	Russell Rd	
148	Russell Rd		I-95	SB
148	I-95	NB	Russell Rd	
148	Russell Rd		I-95	NB

Table 2-2: Intersection Turning Movement Count Locations

Exit	Location		
133	US 17	at	South Gateway Dr
133	US 17 Bus	at	Short St
136	I-95 NB Ramps	at	Centreport Pkwy
136	I-95 SB Ramps	at	Centreport Pkwy
136	US 1	at	Centreport Pkwy
140	I-95 NB Ramps	at	Courthouse Rd
140	I-95 SB Ramps	at	Courthouse Rd
143	I-95 NB Off-Ramp	at	US 1
143	Garrisonville Rd	at	US 1
143	US 1	at	I-95 NB On-Ramp
143	I-95 SB Off-Ramp	at	Garrisonville Rd
148	I-95 NB Off-Ramp	at	Russell Rd
148	Russell Rd	at	I-95 NB On-Ramp
148	I-95 SB Ramps	at	Russell Rd

Permanent count data were obtained from VDOT permanent count stations along I-95 within the study area for 2016. The ramp, mainline, and intersection turning movement counts and data from VDOT's permanent count stations were analyzed to determine heavy vehicle percentages used in the capacity analyses.

INRIX data were used to develop speed profiles of I-95 over the course of an average day to help identify recurring areas of congestion and quantify the level of congestion. The 2016 data were compared with 2013 data to evaluate whether traffic operations and congestion have changed over the past several years, particularly after the opening of the I-95 Express Lanes in late 2014.

Finally, crash data from VDOT's Tableau Crash Tool for the Study segment of I-95 were obtained to identify crash trends and crash hotspots, and to compare with crash rates on similar facilities within the state.

2.2 DEVELOPMENT OF BALANCED EXISTING TRAFFIC VOLUMES

To support the traffic analysis of alternatives for the Fredericksburg Extension Study, peak period and weekday Average Daily Traffic (ADT) volumes were developed for each alternative to provide a comprehensive assessment of operations during both the highest volume peak period conditions and over the course of a typical weekday.

2.2.1 Peak Period Volumes

Given the existing recurring congestion within the study segment, it was determined that multiple hours within the AM and PM peak periods should be evaluated to understand the operations of the corridor. Raw traffic counts were reviewed to identify the peak periods at each data collection location (mainline segments, ramps, intersections, and VDOT mainline permanent count stations). After reviewing the peak periods for the individual data collection locations, common peak periods for I-95 within the study segment were selected. The AM peak period was determined to be between 6:00 – 9:00 AM and the PM peak period was determined to be between 3:00 – 7:00 PM.

The hourly traffic volumes for each hour within the peak periods were then extracted from the raw count data at each location. Heavy vehicle percentages were reviewed along the corridor and minimal variation was found within each hour within the peak periods. Therefore, a peak period heavy vehicle percentage was selected for each direction of I-95 for both the AM and PM peaks and applied during each hour of the analysis period.

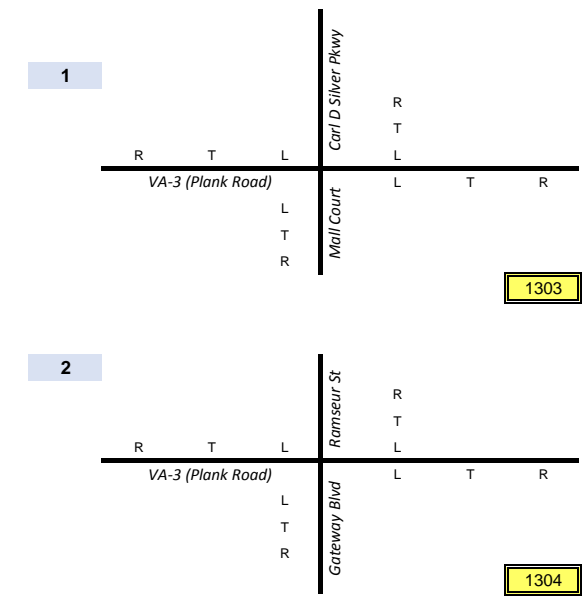
Hourly volumes within each peak period were manually adjusted for balance between interchanges and intersections by holding the volumes at key mainline locations constant, then adding and subtracting ramp volumes between these locations. The balanced 2016 peak hour volumes for each hour within the peak periods (6 – 9 AM and 3 – 7 PM) are provided in **Figures A-1.1** through **A-7.7** in **Appendix A**.

2.2.2 Daily Volumes

Development of the daily volumes followed the same approach as the development of peak hour volumes. The balanced daily volumes represent average weekday conditions, although higher weekend and seasonal volumes have been observed along I-95.

Two key reasonableness checks were performed on the final balanced peak hour and daily volumes. First, k-factors were re-computed using the balanced daily and peak hour volumes. These factors were then reviewed to ensure that there were no ramps or intersections where the ratio of peak-to-daily volume is beyond typical values, and that k-factors reflect existing traffic patterns. Second, the daily volumes were compared to the latest available (2015) traffic data published by VDOT to ensure 2016 volumes are generally consistent with the established 2014 average weekday traffic volumes.

The balanced 2015 weekday daily volumes are provided in **Figure 2-2**.



Legend

xx,xxx Weekday Daily Volume

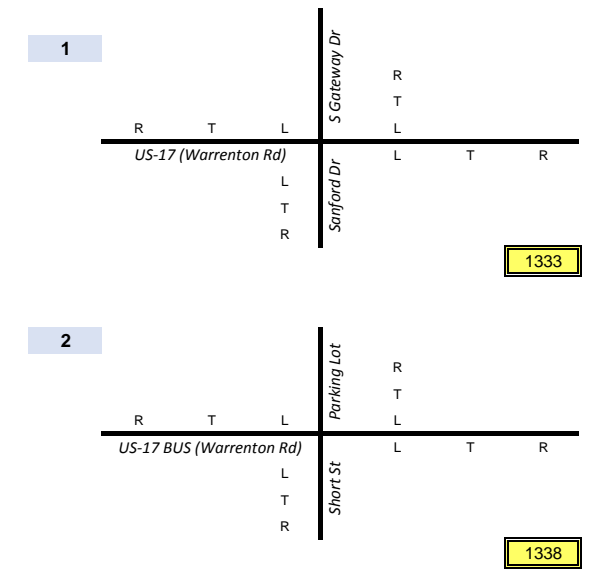
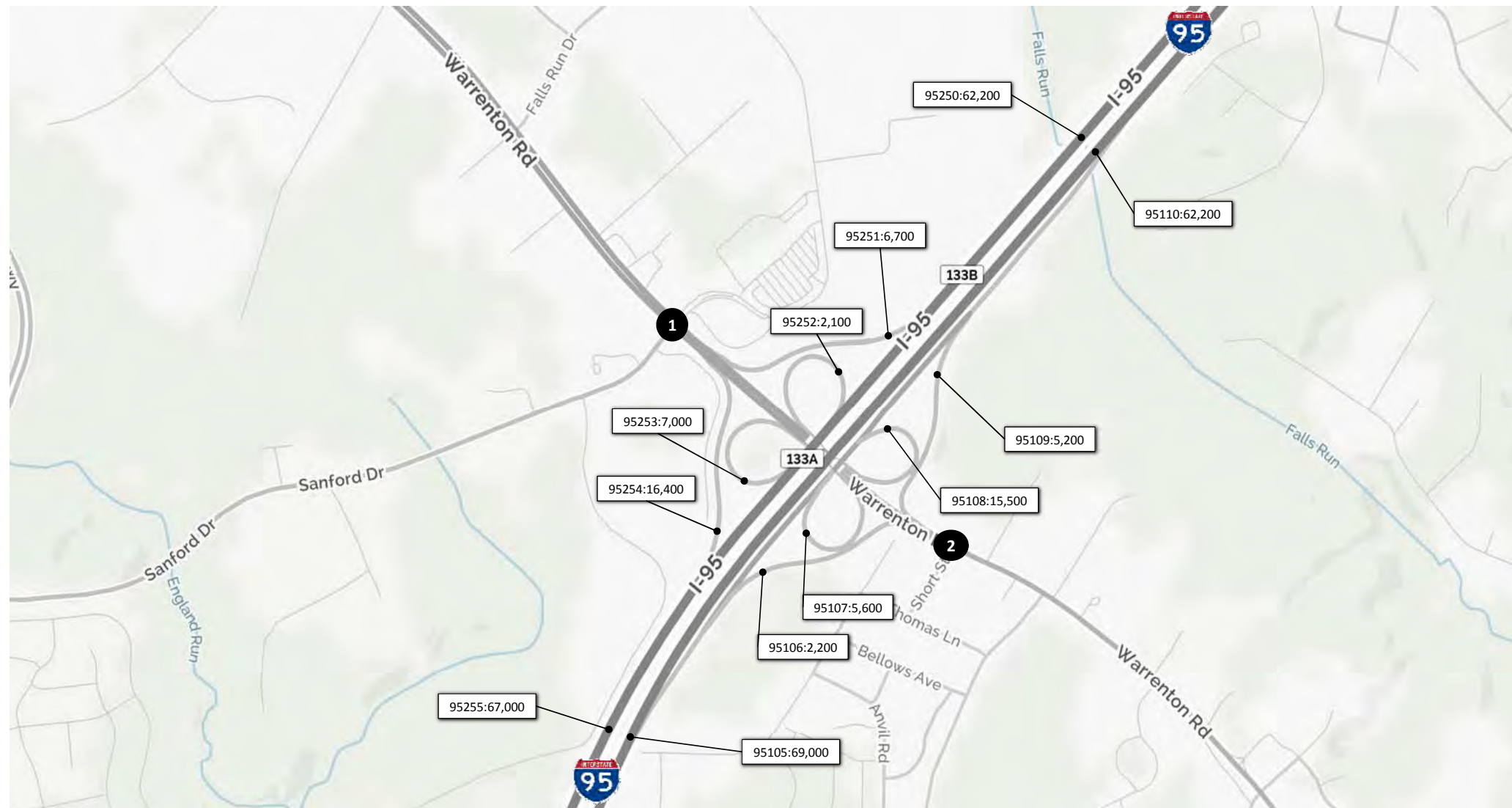
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 2.2-1



Legend

xx,xxx Weekday Daily Volume

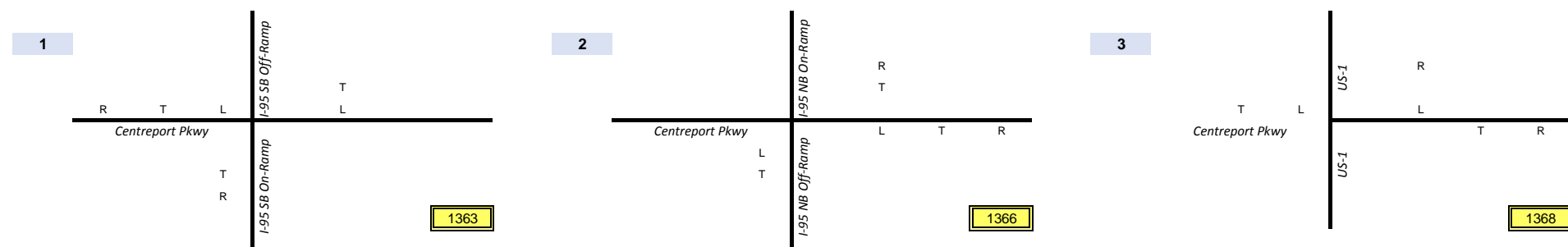
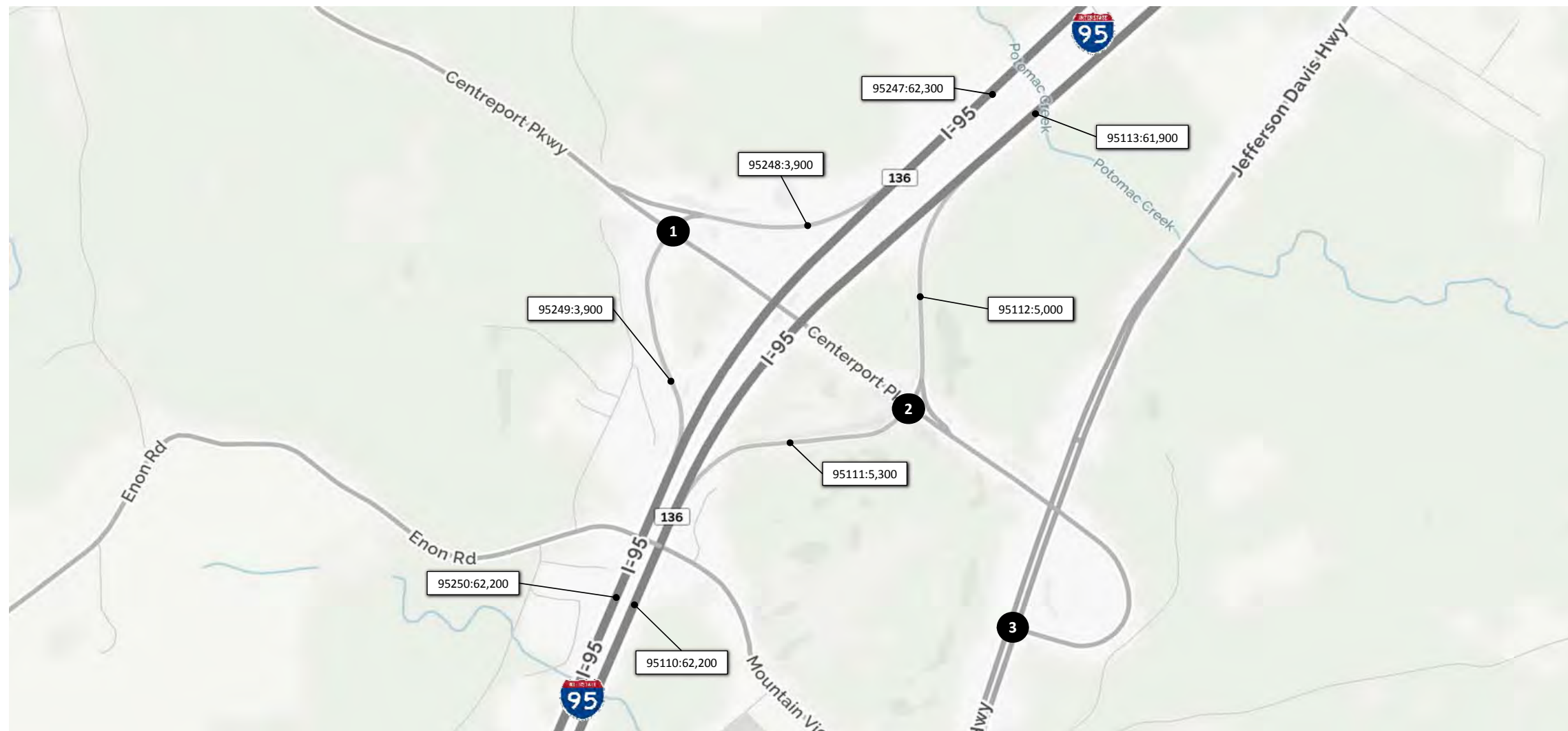
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 2.2-2



Legend

xx,xxx Weekday Daily Volume

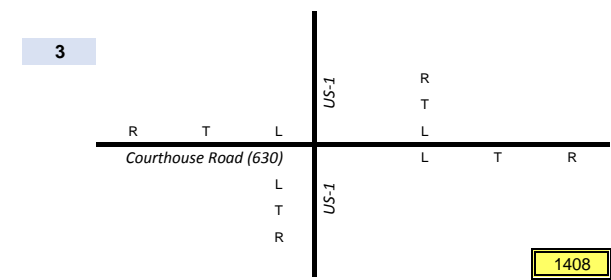
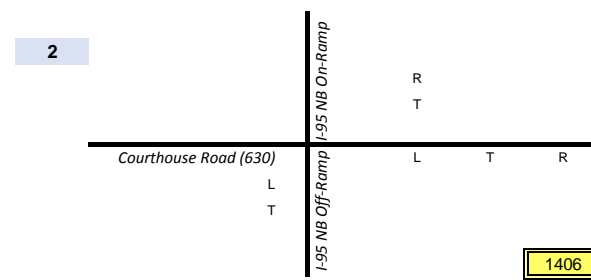
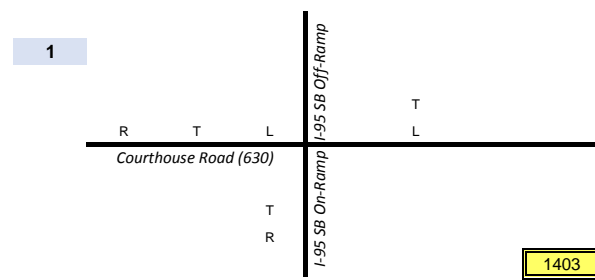
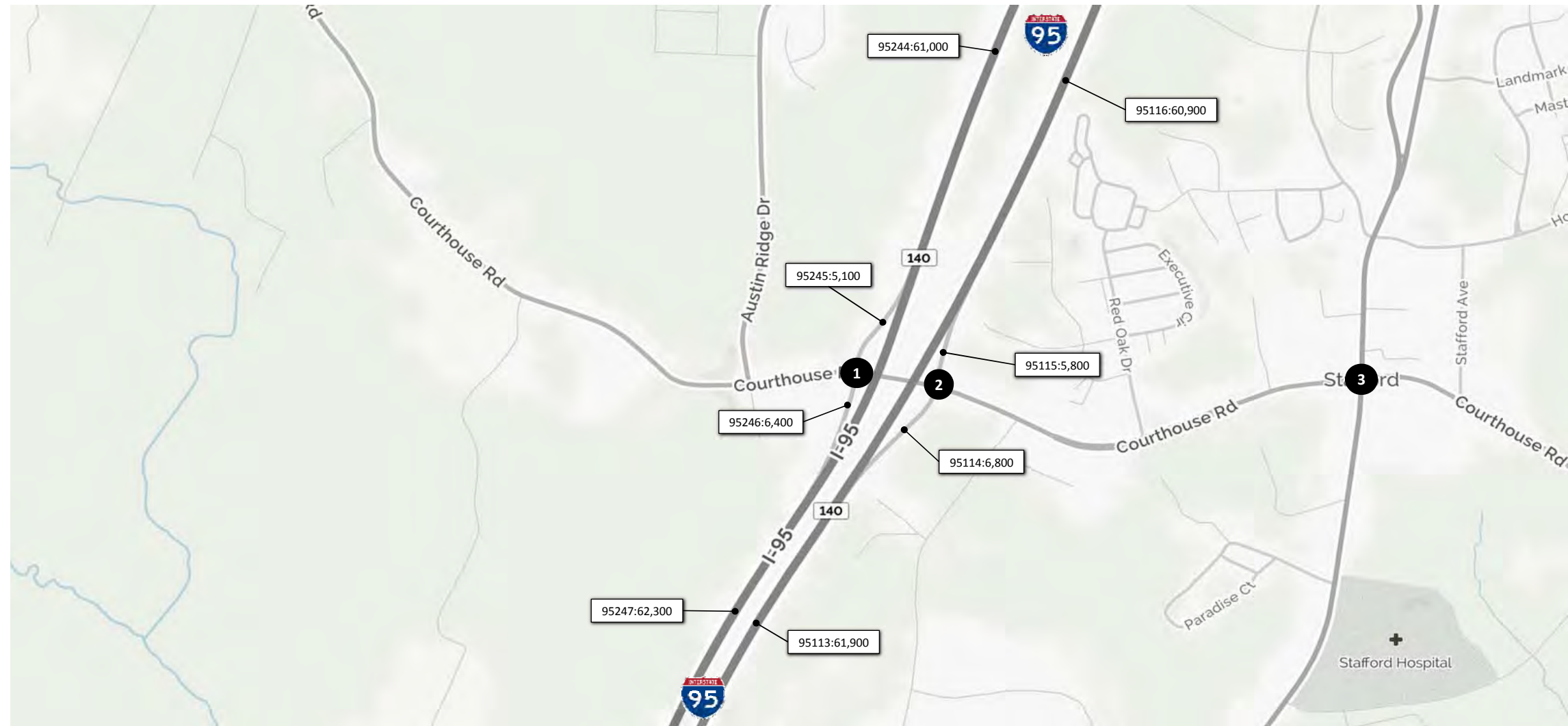
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 2.2-3



Legend

xx,xxx Weekday Daily Volume

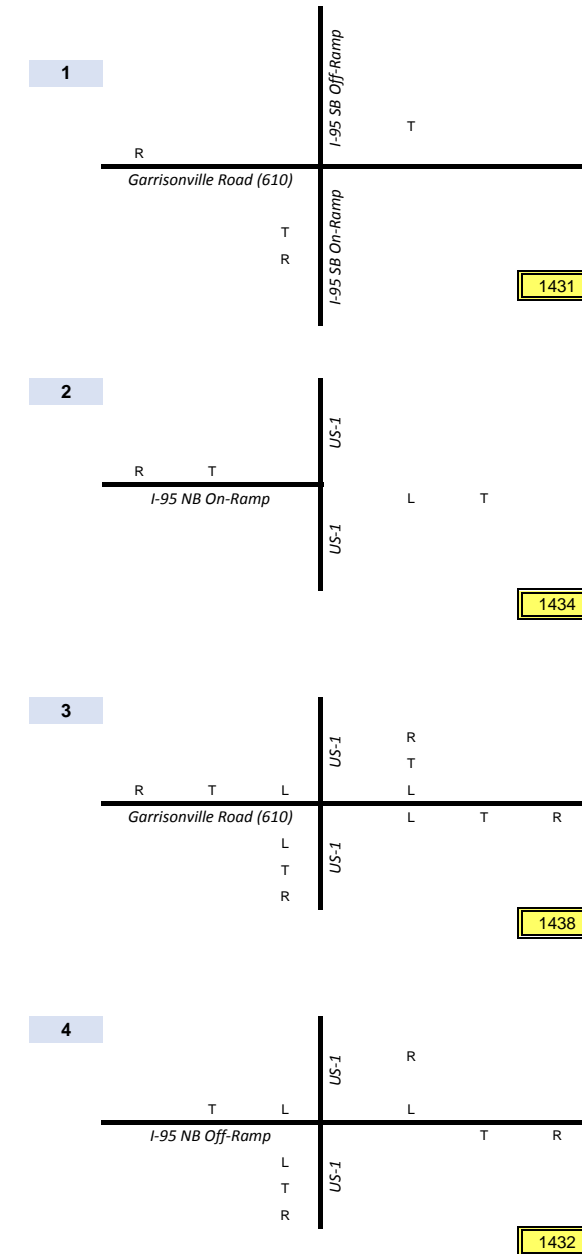
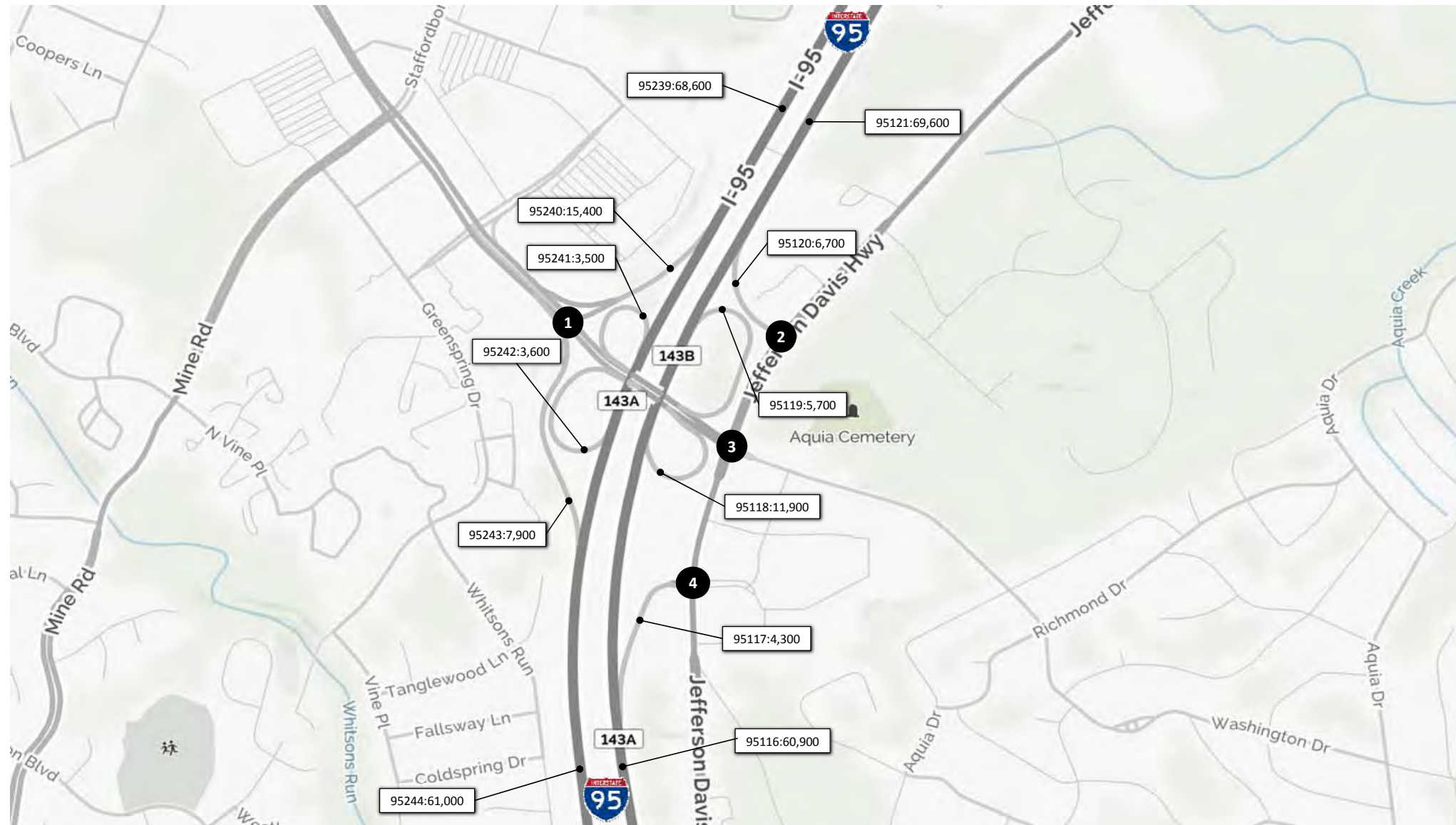
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 2.2-4



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 2.2-5



Legend

xx,xxx Weekday Daily Volume

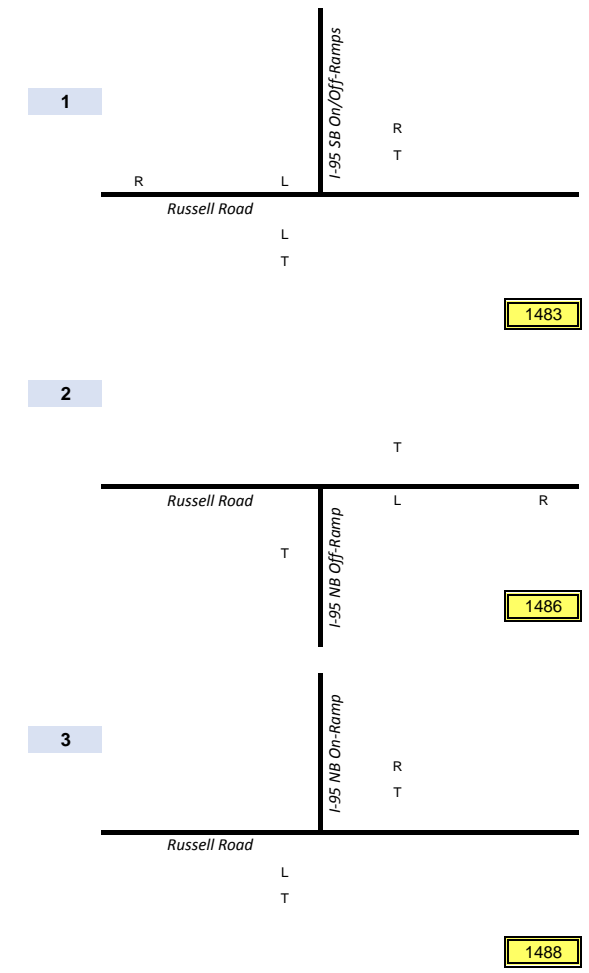
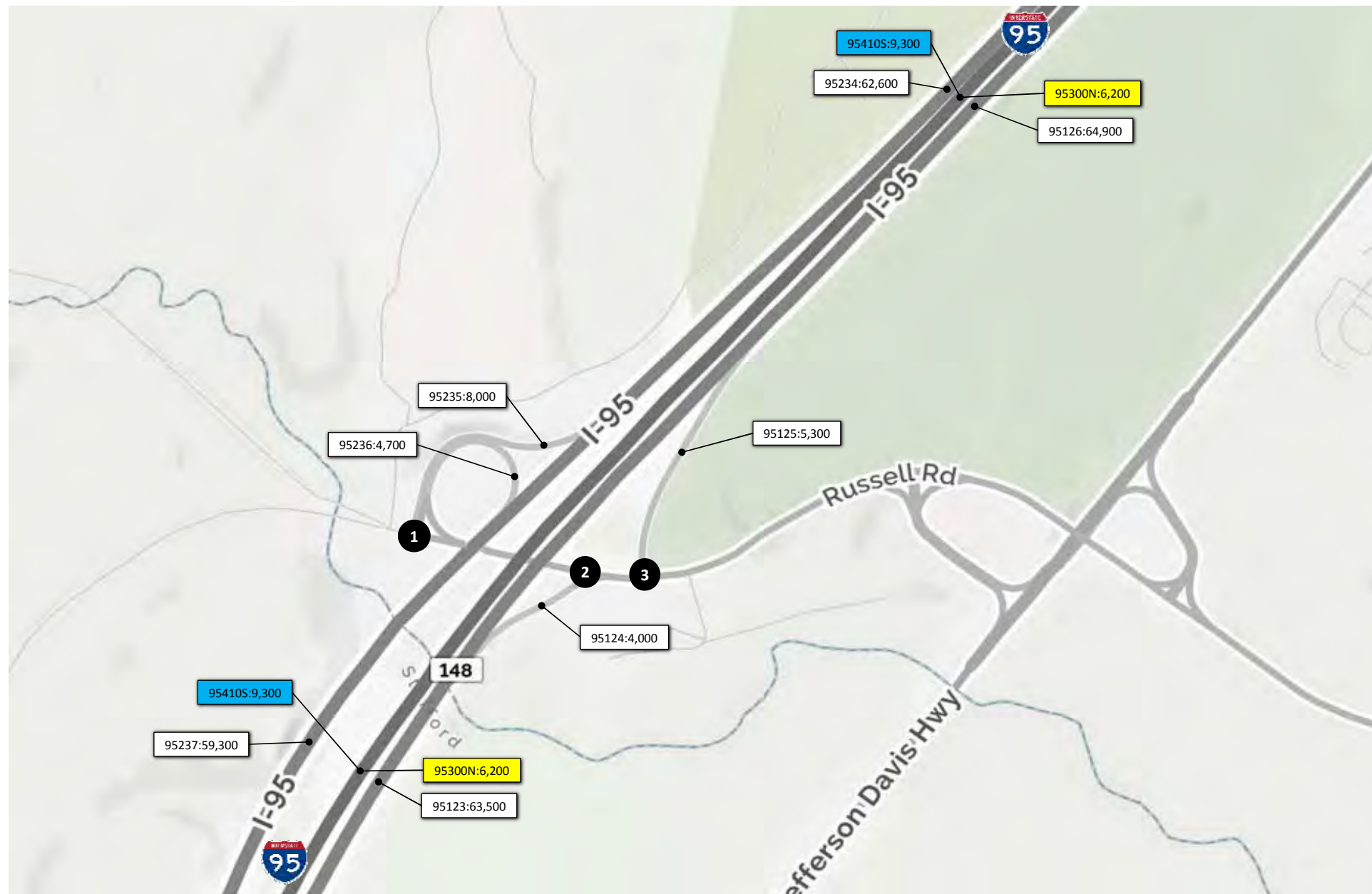
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 2.2-6



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 2.2-7

2.3 CAPACITY ANALYSES

Capacity analyses along I-95 were conducted for weekday AM and PM peak period conditions under Existing, 2042 No-Build, and 2042 Build Alternative scenarios using the latest version of the Highway Capacity Software (HCS 7 Version 7.1), which was developed based on the methodologies presented in the *Highway Capacity Manual, 6th Edition* (TRB, 2016). The Freeway Facilities module was used to conduct the mainline capacity analyses.

The I-95 corridor was divided into segments, representing either a mainline basic freeway segment, a weaving segment, or a ramp junction (merge or diverge segment). Segments were then evaluated to determine the Level of Service (LOS) for AM and PM peak period conditions based on existing (2016) and future (2042) volumes developed for this study.

Level of Service is a letter-grade description of the quality of traffic flow, ranging from A (best) to F (worst). LOS A represents free-flow conditions where vehicles can travel unimpeded, and where incidents can generally be absorbed. LOS E represents operations near the roadway's capacity, with very unstable flow in which even minor incidents lead to significant queueing. LOS F represents a breakdown in traffic flow with demand exceeding capacity.

Capacity analyses at intersections within the interchanges were conducted for weekday AM and PM peak hour conditions under Existing, 2022 No-Build, 2022 Build Alternative, 2042 No-Build, and 2042 Build Alternative scenarios using the latest version of Synchro with SimTraffic (Version 9.1), which implements the methodologies presented in the *2010 Highway Capacity Manual*. Intersections were evaluated to determine the AM and PM peak hour delay (in seconds) and LOS based on existing (2016) and future (2022 and 2042) volumes developed for this study. Intersection analyses were conducted for the worst-case hour during the individual peak periods.

2.4 FORECASTING PROCESS

2.4.1 Travel Demand Model

Year 2022 and 2042 travel demand forecasts were developed for both No-Build conditions and the Build Alternative using the latest adopted regional Travel Demand Forecast Model maintained by the Metropolitan Washington Council of Governments [Version 2.3.57a Travel Demand Model (MWCOG Model) with Round 8.4 Cooperative Land Use Forecasts]. A travel demand forecast model is a set of computer-based mathematical relationships that attempts to capture the interaction of travel activities and choices made by a population in a specific region given a proposed network (e.g., highway, transit, etc.) and demographic or land use inputs (e.g., population, employment, etc.). The latest approved model version was provided by MWCOG on October 11, 2016. The main inputs to the travel demand model are:

- Demographic and economic changes in the region, specifically the location of employment and housing; and
- Characteristics of the region's transportation system, including proposed changes in the transportation facilities and operating policies.

The Existing and Future Year (2040) No-Build models were verified to assure that all current planned projects were accounted for. This verification was completed noting that no projects had been omitted and the base geometry was acceptable for this project. Upon completion of the geometric verification, the Existing (2015) model was run and the outputs were compared with existing field data to determine how the model was performing in relation to existing conditions. It was determined that the model was performing within acceptable tolerance for the existing conditions in most locations and therefore a re-

calibration of the model was not deemed necessary. The locations at the far southern end of the study area were the worst performing when compared to the 2015 model, however, these locations are at the southern extents a very large regional network where the traffic analysis zone and link network is less robust than in the model's core. Thus, these differences were evaluated and accounted for as part of the post-processing.

The most recently validated 2040 model with corresponding model networks is the last year for which MWCOG had forecasted land use data available at the time of this study. The 2040 MWCOG model was used to develop 2040 traffic forecasts which were then extrapolated to Year 2042 forecasts. The growth rate used to project 2042 daily volumes to 2040 daily volumes were based on the calculated annual linear growth rate from 2016 to 2040. The growth of 0.75 percent was applied to all study area roadways. The Interim Year (2022) volumes were produced using straight-line linear interpolation between 2016 and 2040.

2.4.2 Post-Processing

Post-processing refers to analyses performed after execution of the travel demand forecast model run. Post-processing activities are applied to the travel demand forecast model results to compensate for the limitations of the model. The model used for the study produced raw daily link volumes and raw AM (6:00 – 9:00 AM) and PM (4:00 – 7:00 PM) peak period link volumes. To develop daily and hourly volumes for the peak travel periods, the link-level model outputs were refined for the segments of interest. The freeway system included all mainline links, collector/distributor roads, and ramps. The arterial links included the approaches to each interchange within the study area.

For this study, all post-processing activities for refining the highway link volumes and developing turning movement volumes involved procedures outlined in the National Cooperative Highway Research Program (NCHRP), Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design* (Pedersen et al., 1982) and NCHRP Report 765, *Analytical Travel Forecasting Approaches for Project-Level Planning and Design* (Horowitz et al., 2014). These technical reports provide a set of procedures for refining “raw” link volumes output directly from the model.

The procedure outlined below was followed for both the daily and peak period volumes, for both the Future Year (2042) No-Build and Build scenarios:

Step 1. Determine 2015 Comparative Ratio

The existing (2016) volumes were compared to the 2015 model output to determine a comparative ratio. This ratio was calculated as follows:

$$2015_Ratio = 2015_NoBuildModel \div 2016_Count$$

This ratio was used to see where the 2016 counts (based on field data) varied the most from the 2015 model data. This comparison was used to select the appropriate fitting method for developing the future year estimates at each location.

Step 2. Compute Ratio and Difference Values

The 2040 volumes were then calculated using two different methodologies. First, they were estimated using a “ratio” methodology, by multiplying the 2016 volumes by the ratio of growth between the 2015 and 2040 No-Build models. These were computed using the following formula:

$$2040_r = 2016_Count * (2040_Model \div 2015_NoBuildModel)$$

**Build or No-Build Model depending on scenario*

Second, they were calculated using a “difference” methodology. These were computed using the following formula:

$$2040_d = 2016_Count + (2040_Model* - 2015_NoBuildModel)$$

**Build or No-Build Model depending on scenario*

Step 3. Determine Unbalanced 2040 Volumes

To determine the 2040 volumes a three-tiered system was utilized based on the 2015_Ratio computed in Step 1:

- If *2015_Ratio* was between 0.5 and 2.0, then the 2040 volume was computed by averaging the two volumes calculated in Step 2.
- If *2015_Ratio* was less than 0.5 or between 2.0 and 5.0, then the 2040 volume was computed by using the *2040_d* value.
- If *2015_Ratio* was greater than 5.0, then the 2040 volume was computed by using the *2040_r* value.

These three different methods were used to normalize the inconsistencies of the model with respect to the actual counts. In the majority of locations, the *2015_Ratio* value fell between 0.5 and 2.0, meaning that the model was assessing the existing conditions between 50% and 200% of the actual field collected count, therefore the 2040 volumes were based on the average of the ratio and difference fields. However, in some locations, it was found that the model output was either exceedingly high or exceedingly low – outside the 50% - 200% range - in comparison with the field collected counts. Therefore, to assure that unreasonably high or low growth rates were not applied at these locations, either the ratio or difference method was utilized to lessen the impact of the gap between the 2016 counts and modeled link volumes.

The specific thresholds identified above were selected using engineering judgment based on past experience on traffic forecasting projects, particularly with the MWCOG model. Using these values, growth rates on facilities (typically low volume facilities) where the Base Year model assignments vary substantially from the field collected data can be moderated to produce more realistic projected volumes. To better illustrate, consider the following examples. If the 2015 model assigned 100 vehicles and 2040 model assigned 200 vehicles to a certain location but the field count showed a volume of 500 (*2015_Ratio* of 0.2), simply using the model projected growth rate would create a volume in that location of 1,000 vehicles (500 x 100 percent) which would be unreasonably high for that specific corridor. Therefore, to account for such differences, the difference method was utilized to create a more reasonable estimated volume of 600 vehicles (500 + 100). In another example, if the 2015 model assigned 600 vehicles to a certain location and the 2040 model assigned 1,200 vehicles to the same location, but the field count showed a volume of 100 vehicles, the difference method would create a total volume of 700 vehicles on that link, which would be an unreasonably high growth rate of 700 percent. The ratio method would create a more reasonable estimated volume of 200 vehicles (100 x 200 percent). Averaging the two methods, would also result in an unreasonably high growth rate of 350 percent.

The post-processing methodology produced unbalanced daily and AM and PM peak period ramp and mainline volumes and total inflows and outflows at intersections. To account for the turning movement volumes, iterative proportional fitting (IPF) methods outlined in NCHRP 765 and Transportation Research Record 1287, *Model of Turning Movement Propensity* (Furth, 1990) were used. The existing (2016) volumes were used as the seed for the IPF procedure, and the post-processed 2040 link volumes were used as the target inflows and outflows. The IPF routine iteratively adjusted the existing turning movement volumes to balance the turns given the forecasted approach inbound and outbound link volumes.

The 2040 daily link volumes were manually adjusted as necessary to achieve volume balance between interchanges by holding volumes at key mainline I-95 locations constant and then proportionally adding and subtracting ramp volumes between these locations.

The 2040 peak period link and turning movement volumes were manually adjusted as necessary to achieve volume balance between interchanges and intersections by holding volumes at key locations constant and then proportionally adding and subtracting ramp volumes, similar to the process completed for the 2040 daily link volumes. As previously noted, the southern extents of the model were not performing as strong when compared to existing data; therefore, to further smooth the future year forecasts for Exits 130 and 133, the Fredericksburg Area Metropolitan Planning Organization (MPO) Model, version 3.0—as directed by the MPO—was used to provide a more detailed understanding of the projected growth at the southern interchanges within the corridor. This data was used to make manual adjustments to the 2040 volumes which better reflected the anticipated growth by the locality at these locations.

Once the balanced 2040 peak period volumes were finalized, hourly factors were applied to the AM and PM peak period volumes at each location to generate volumes for each hour within the peak periods. **Table 2-3** summarizes the factors applied to estimate hourly future volumes within the peak period. These factors were based on guidance provided with the MWCOG model and verified based on existing count data within the study area.

Table 2-3: Peak Period to Hourly Factors

AM Peak Period		PM Peak Period	
Hour	Factor	Hour	Factor
-	-	3:00 – 4:00 PM	0.30 (90% of 4:00-5:00 PM volume)
6:00 – 7:00 AM	0.33	4:00 – 5:00 PM	0.33
7:00 – 8:00 AM	0.34	5:00 – 6:00 PM	0.34
8:00 – 9:00 AM	0.33	6:00 – 7:00 PM	0.33

To generate volumes for the Future Year (2042), RK&K evaluated the growth rates of the balanced 2040 network from the 2016 balanced network and found a relatively consistent 0.75 percent per year rate. This rate was applied to the 2040 networks to develop the Future Year (2042) volumes. In a review of the projects within the model, it was found that within our study area the projects completed in the 2020, 2025, and 2040 networks were the same. As a result, the Interim Year (2022) volumes were produced using straight-line linear interpolation.

2.4.3 Toll Facilities and Managed Lanes

The study corridor along I-95 currently includes High-Occupancy Toll (HOT) Lanes (branded as the I-95 Express Lanes). North of Garrisonville Road (Exit 143), there are two reversible HOT lanes located in the median of I-95, which operate in the northbound direction in the AM and the southbound direction in the PM. The existing I-95 Express Lane system extends approximately 27 miles north to I-495 (Capital Beltway). The only access points within the study area for the Fredericksburg Extension Study are located between Exits 143 and 148; there is a left-hand slip ramp to enter the I-95 Express Lanes from the I-95 general purpose (GP) lanes in the northbound direction and a flyover which allows vehicles to exit the I-95 Express Lanes and enter the I-95 GP lanes in the southbound direction. The I-95 Express Lanes are a managed facility; managed facilities apply strategies, such as tolling, to balance demand and available capacity on the system. On the I-95 Express Lanes, dynamically-priced tolling is used to manage demand for the facility and maintain free-flow operations.

The No-Build condition would retain the current I-95 Express Lanes system, with an extension of a single reversible lane from north of Exit 143 to south of Exit 143.

The Build alternative would extend two reversible Express Lanes from Exit 143 to Exit 133 and provide access points at Exit 140 (Courthouse Road) and Exit 133 (US 17). New access points would also be provided in the vicinity of Exit 148 (Russell Road).

For existing conditions, weekday demand was estimated for I-95 Express Lanes based on existing field collected traffic counts and a VDOT permanent count station. Forty-eight-hour traffic counts were obtained in September 2016 for each of the access points to the I-95 Express Lanes between Exit 143 and Exit 160. Hourly volumes from a permanent VDOT count station located at the Occoquan River (just north of Exit 160) were also obtained for September and October 2016. The total entering/exiting volumes from the I-95 Express Lane ramps for the September 2016 ground counts and were compared to the total throughput volumes from VDOT's permanent count station. The existing ramp volumes were manually adjusted to reflect the total throughput at Exit 160. The refined Express Lane volumes were then incorporated into the overall volume balancing effort for the I-95 GP lanes.

For future conditions, the MWCOG model explicitly models managed lane / HOT facilities within the region. A subroutine within the traffic assignment step is used to iteratively load volumes to each managed lane / HOT facility within the model; toll rate structures are assumed and the demand is optimized to approximate minimum operating speeds within each facility. Similar to any other facility in the study area, the daily and peak period raw link volumes from the 2040 MWCOG model runs were extracted and post-processed based on the methodologies presented in **Section 2.4.2**. The hourly volumes for each access point and the total hourly demand within the HOT lanes was checked for reasonableness based on existing facilities and assumed maximum capacities of 1,700 to 1,800 vehicles per lane per hour to maintain acceptable operating speeds.

3. EXISTING CONDITIONS

Transportation facilities in the Fredericksburg region comprise all modes of surface and air transportation. In addition to the highway network, the region is also served by intercity passenger rail service provided by Amtrak as well as the Virginia Railway Express (VRE) commuter rail service. Local bus transit is provided within the study area by Fredericksburg Regional Transit (FRED). The region contains a number of general aviation airports, including the Stafford Regional Airport, located just west of I-95 between Exit 136 and 140. International air service is available from two locations in the neighboring Northern Virginia region and one location in the neighboring Richmond region.

Environmental consequences to transportation facilities are described in Revised EA.

3.1 LIMITED ACCESS HIGHWAYS

Interstate-95 is the only limited-access highway within the study area and is summarized in **Table 3-1**. This highway serves a critical transportation function for commuters, interstate and intrastate freight movement, national defense, and commercial activities.

Table 3-1: Limited Access Highways

Highway	Functional Classification	Description	Number of Lanes	Speed Limit
I-95	Interstate	Within the study area, I-95 extends from the US 17 (Warrenton Road) interchange (Exit 133) to just north of the Russell Road interchange (Exit 148), a distance of approximately 15 miles.	3 NB, 3 SB	65 MPH
I-95 Express Lanes	-	Within the study area, the I-95 Express Lanes extend from approximately 1 mile north of the Garrisonville Road interchange (Exit 143) to just north of the Russell Road interchange, a distance of approximately 5 miles.	2 (Reversible)	65 MPH

3.2 CONNECTING ARTERIAL ROADS

Arterial roads, including state primary and secondary roads and facilities maintained by Marine Corps Base Quantico (MCBQ) which link to I-95, are summarized in **Table 3-2**.

Table 3-2: Connecting Arterial Roads

Numerical Designation	Roadway Name	Functional Classification	Interchange/ Exit Number	Number of Lanes	Maintained By
US 17	Warrenton Road	Other Principal Arterial	133	6	VDOT
SR 8900	Centreport Parkway	Major Collector	136	2	VDOT
SR 630	Courthouse Road	Major Collector	140	2	VDOT
SR 610	Garrisonville Road	Major Collector	143	6	VDOT
-	Russell Road	Minor Arterial	148	4	MCBQ

3.3 TRANSIT ROUTES AND FACILITIES

Public transportation in the region is provided by FRED. FRED serves Caroline, Spotsylvania, and Stafford Counties, as well as the City of Fredericksburg and Mary Washington University. FRED operates a total of 21 local fixed bus routes, including shuttle service to the Fredericksburg and Spotsylvania County VRE stations. Accessible transportation is provided through deviated fixed route service. Based on 2009 data, annual ridership was approximately 550,000.

Commuter rail service within the Fredericksburg Region is provided by VRE. The Fredericksburg Line originates at the Spotsylvania Station with four additional stops in the region at the Fredericksburg, Leeland Road, Brooke, and Quantico stations. During the morning, only northbound service is provided, with a total of eight trains departing. During the afternoon and evening, only southbound service is provided, with eight trains arriving in the region. Daily passenger boardings at the Spotsylvania, Fredericksburg, Leeland Road, and Brooke stations were approximately 3,300 per day in 2016.

3.4 INTERCITY PASSENGER RAIL SERVICE (AMTRAK)

Intercity passenger rail service in the Fredericksburg region is provided by the National Railroad Passenger Corporation (Amtrak). Amtrak operates three routes with service to the Fredericksburg station (FBG): Northeast Regional, Carolinian/Piedmont, and Silver Service / Palmetto. The Northeast Regional route provides service north to Washington, DC; New York City; and Boston, Massachusetts; and south to Richmond, Newport News, and Norfolk, Virginia. Weekday service on the Northeast Regional route includes seven southbound trains and five northbound trains. Annual Amtrak ridership at the Fredericksburg station was approximately 120,275 passengers in 2016.

3.5 PARK AND RIDE FACILITIES & RIDESHARING

Carpooling and ridesharing is an important component of the transportation system in Fredericksburg. There are publicly owned and maintained park-and-ride facilities dispersed throughout the Fredericksburg Region. **Table 3-3** summarizes major commuter park and ride facilities in the vicinity of the study area.

Table 3-3: Park and Ride Facilities in Study Area

Name	Location	Jurisdiction	Capacity (Spaces)	Transit Service
Old Salem Church	Route 3 & Route 649	Spotsylvania County	672	FRED
Route 3 West	Route 3 & Route 627	Spotsylvania County	250	FRED
Fredericksburg VRE Commuter Lot	Fredericksburg VRE Station	City of Fredericksburg	631	FRED/VRE/Amtrak
Falmouth	US 17 & Route 618	County of Stafford	1024	FRED
Leeland Road VRE	Route 626 & Route 624	County of Stafford	825	FRED/VRE
Brook Road VRE	Route 608 & Route 629	County of Stafford	505	FRED/VRE
Courthouse Road	Route 630 & I-95	County of Stafford	534	FRED
South Commuter Lot	Route 684 & Route 679	County of Stafford	740	FRED
Garrisonville	Route 684 & Route 1413	County of Stafford	890	FRED

Source: <http://www.virginiadot.org/travel/parkride/home.asp>

GW RideConnect provides free ridesharing services for commuters within the Fredericksburg region and between the Fredericksburg region and major employment centers in Washington, DC, Northern Virginia, Richmond, and Dahlgren.

“Instant” or “Casual” carpooling, also known as “slugging” is also a feature of the transportation system in the Fredericksburg region. This unique mode allows travelers to instantly form carpools to satisfy the two-person and three-person high occupancy requirements for the I-95 Express Lanes and other facilities. Slugging is available for destinations in Northern Virginia and Washington, DC at the Mine Road, Route

610, Route 630, Route 3 (Cordon Rd), Route 17, and Route 208 park-and-ride lots in Stafford County and the City of Fredericksburg.

3.6 BICYCLE AND PEDESTRIAN NETWORK

There are no bicycle or pedestrian facilities along the study corridor of I-95. State law generally do not permit bicyclists to ride on interstate and certain controlled access highways, unless the operation is limited to bicycle or pedestrian facilities that are barrier separated from the roadway and automobile traffic.

Pedestrian or bicycle facilities currently exist along any of the intersecting arterial streets within their interchanges with I-95. A shared-use path, crossing over I-95 on the same structure as relocated Courthouse Road, is proposed as part of the interchange improvements at Exit 140.

3.7 EXISTING TRAFFIC VOLUMES

Existing 2016 Average Daily Traffic volumes were provided in **Figure 2-2: 2016 Daily Volumes**. Existing balanced hourly volumes are provided in **Appendix A: Figures A.1.1 through A.7.7**. The balanced daily and hourly volumes represent typical weekday conditions, although higher weekend and seasonal volumes have been observed on I-95.

3.8 CRASH ANALYSIS

Crash data for the period from January 1, 2011 through December 31, 2016 were obtained from VDOT's Tableau Crash Tool for the following roadway segments:

- I-95 Northbound, from milepost 132.5 to 149
- I-95 Southbound, from milepost 149 to 132.75
- I-95 Express Lanes, from milepost 13 to 17.5

Crash data were analyzed by quarter-mile segments. Crash data were tabulated by crash type, severity, pavement condition and time of day. Crash rates (calculated per 100 Million Vehicle Miles Traveled) were calculated for each quarter-mile segment. The analysis summaries for each section are presented in **Figure 3-1** through **Figure 3-2**.

The overall crash rates on I-95 northbound and I-95 southbound within the study area during the study period were 81 and 90 crashes per 100 Million Vehicle Miles Traveled (MVMT), respectively. The 2014 statewide average crash rate on the Interstate system was 72 crashes per 100 MVMT.

The overall injury and fatality rates on I-95 northbound were 29 injuries and 0.51 fatalities per 100 MVMT, respectively. The overall injury and fatality rates on I-95 southbound were 31 injuries and 0.12 fatalities per 100 MVMT, respectively. The 2014 statewide average injury and fatality rates on the Interstate system were 30 injuries and 0.35 fatalities per 100 MVMT.

Rear-end crashes are most prevalent along both directions of I-95, representing 60 percent of all crashes within the study area. Additional details on the crash analyses are provided below.

3.8.1 I-95 Northbound Crash Analysis

A total of 2,050 crashes were reported along northbound I-95 during the six-year study period. As shown in **Figure 3-1: I-95 Northbound Crash Analysis**, crashes were predominantly rear-end crashes (60 percent), with fixed object off-road (17 percent), and sideswipe collisions (11 percent) being the next most frequent types.

A total of 488 crashes (24 percent) resulted in 742 injuries with 11 crashes resulting in 13 fatalities. The remaining 1,551 crashes resulted in property damage only.

Approximately 21 percent of all crashes occurred during the AM peak period for northbound travel between 6 AM – 9 AM. Approximately 77 percent of all crashes occurred on dry pavement.

The average crash rate along northbound I-95 is 81 crashes per 100 Million Vehicle Miles Traveled; there are ten quarter-mile segments along northbound I-95 that experience a crash rate more than 50 percent higher than the average crash rate. The critical segments are for the most part located in the vicinity of Exit 143 (Garrisonville Road) and near Exit 136 (Centreport Parkway). In the northbound direction, congestion typically begins near Garrisonville Road with queues propagating upstream towards Courthouse Road and Centreport Parkway.

3.8.2 I-95 Southbound Crash Analysis

A total of 2,227 crashes were reported along southbound I-95 during the six-year study period. As shown in **Figure 3-2**, crashes were predominantly rear-end crashes (60 percent), with fixed object off-road (17 percent), and sideswipe collisions (14 percent) being the next most frequent types.

A total of 484 crashes (22 percent) resulted in 777 injuries with three crashes resulting in three fatalities. The remaining 1,740 crashes resulted in property damage only.

Approximately 29 percent of all crashes occurred during the PM peak period for southbound travel between 3 PM – 6 PM. An additional 23 percent of all crashes occurred between 12 PM – 3 PM. Approximately 79 percent of all crashes occurred on dry pavement.

The average crash rate along southbound I-95 is 89 crashes per 100 Million Vehicle Miles Traveled; there are six quarter-mile segments along southbound I-95 that experience a crash rate more than 50 percent higher than the average crash rate. The critical segments are for the most part located in the vicinity of Exit 148 (Russell Road). In the southbound direction, congestion typically begins just north of Garrisonville Road with queues propagating upstream towards Russell Road during PM peak periods.

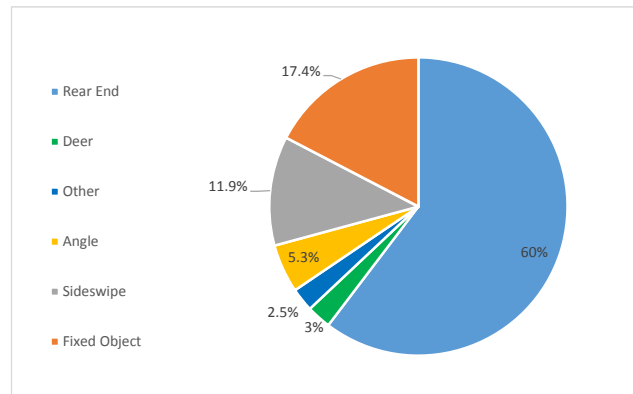
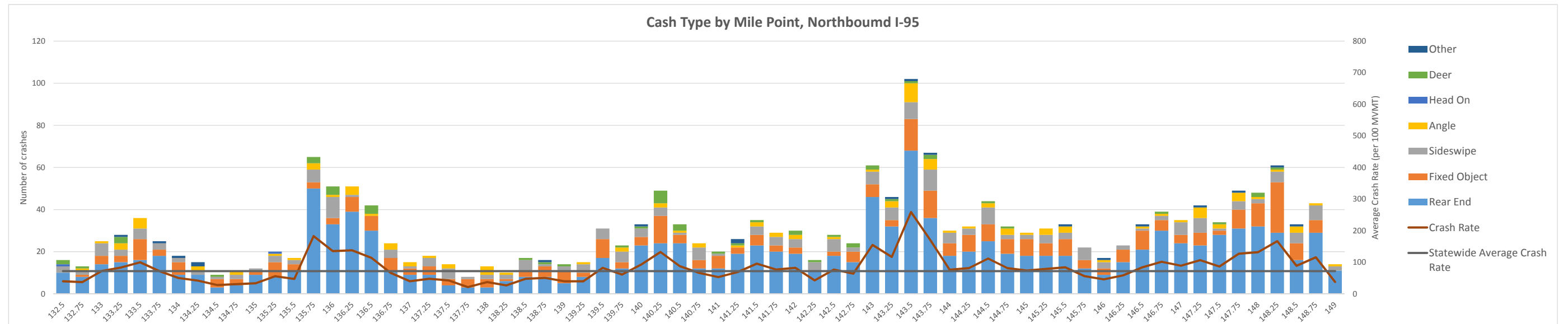
3.8.3 I-95 Express Lanes Crash Analysis

The I-95 Express Lanes opened to traffic in December 2014 for a two-week toll-free period and then tolling operations began just prior to the start of 2015. Therefore, crash data for I-95 Express Lanes segment within the study area, approximately 4.5 miles, is limited to a two-year period from January 1, 2015 through December 31, 2016.

A total of 17 crashes were reported during this time period. Crashes were predominantly rear-end crashes (58 percent), with fixed object off-road (11 percent) and sideswipe collisions (11 percent) being the next most frequent types.

A total of three crashes resulted in three injuries and no fatalities were reported during the two-year study period. Thirteen of the crashes, including all ten rear-end crashes, involved vehicles travelling in the southbound direction. Approximately 53 percent of the southbound crashes occurred between 3 PM – 6 PM, during the peak period for southbound travel.

Crashes were dispersed throughout the 4.5 study segment. The average crash rate was 54.99 crashes per 100 Million Vehicles Miles Traveled. There was one quarter-mile segment with a crash rate more than 50 percent higher than the average crash rate; that segment experienced a total of three crashes during the two-year study period.



Severity By Crash Type				
	Fatal	Injury	PDO	Total
Rear End	1	301	935	1,237
Deer		3	51	54
Other Animal	1	3	4	4
Backed Into		0	2	2
Other		3	10	13
Angle		37	71	108
Head On	1	0	1	2
Sideswipe	2	43	198	243
Fixed Object	6	87	263	356
Non-Collision	1	13	17	31
Grand Total	11	488	1,551	2,050

Time of Day by Crash Type									
	0AM TO 3AM	3AM TO 6AM	6AM TO 9AM	9AM TO 12PM	12PM TO 3PM	3PM TO 6PM	6PM TO 9PM	9PM TO 12AM	Total
Rear End	20	83	306	187	266	229	108	38	1,237
Deer	6	9	6	5	5	4	8	11	54
Other Animal	1	2	1						4
Backed Into			1				1		2
Other		1		2	4	3	1	2	13
Angle	5	14	13	17	23	18	11	7	108
Head On		1		1					2
Sideswipe	19	26	46	36	44	28	20	24	243
Fixed Object	28	37	53	58	53	54	42	31	356
Non-Collision		5	5	3	4	6	5	3	31
Grand Total	79	178	431	309	399	342	196	116	2,050

Severity by Pavement Condition				
	Fatal	Injury	PDO	Total
Dry	9	380	1,190	1,579
Fog		5	1	6
Mist	1	6	28	35
Rain	1	89	284	374
Snow		8	43	51
Sleet/Hail			5	5
Grand Total	3	173	412	2,050

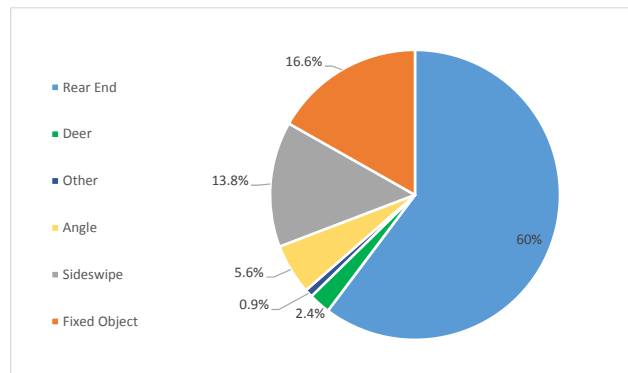
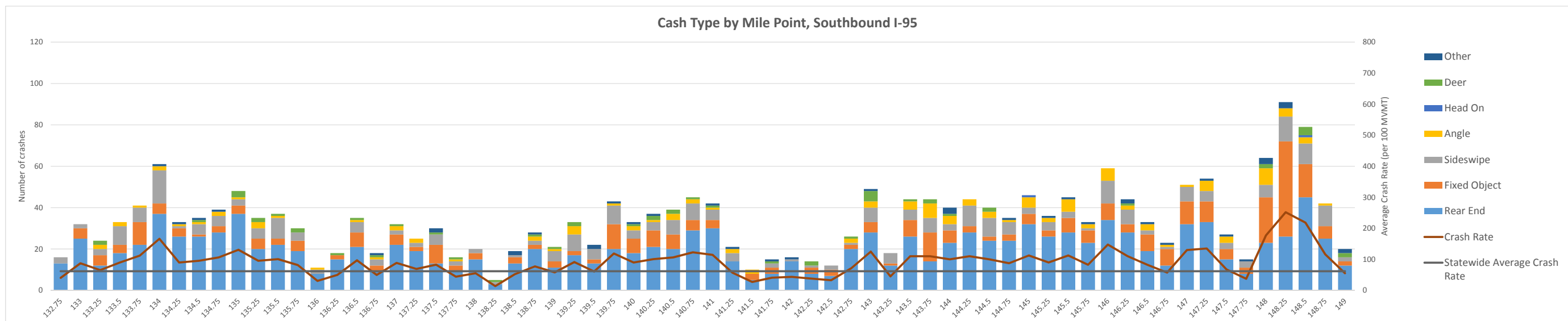


I-95 Express Lanes Fredericksburg Extension Study

Crash Summary
2011 - 2016
Northbound I-95

August 2017

Figure 3.1



	Fatal	Injury	PDO	Total
Rear End		286	1,041	1,327
Deer		1	52	53
Ped		2	1	3
Backed Into			5	5
Other	1	2	8	11
Angle	1	37	86	124
Head On		1		1
Sideswipe		43	265	308
Fixed Object	1	94	275	370
Non-Collision		18	7	25
Grand Total	3	484	1,740	2,227

	0AM TO 3AM	3AM TO 6AM	6AM TO 9AM	9AM TO 12PM	12PM TO 3PM	3PM TO 6PM	6PM TO 9PM	9PM TO 12AM	Total
Rear End	26	17	45	169	373	492	174	31	1,327
Deer	12	6	11	5	4	1	4	10	53
Other Animal		1							1
Ped				1	1	1			3
Backed Into	2		1			1	1		5
Other		1	2	2	1	2	1	1	10
Angle	9	2	18	14	26	26	23	6	124
Head On		1							1
Sideswipe	18	19	25	48	60	77	44	17	308
Fixed Object	54	39	63	55	48	36	27	48	370
Non-Collision	2	2	3	3	3	5	4	3	25
Grand Total	123	88	168	296	516	641	279	116	2,227

	Fatal	Injury	PDO	Total
Dry		371	1,386	1,757
Fog		1	2	3
Mist	1	12	25	38
Rain	2	92	292	386
Snow		5	27	32
Sleet/Hail		1	8	9
Other		2		2
Grand Total	3	484	1,740	2,227



I-95 Express Lanes Fredericksburg Extension Study

Crash Summary
2011 - 2016
Southbound I-95

August 2017

Figure 3.2

3.9 ASSESSMENT OF VEHICLE SPEEDS & TRAVEL TIMES

3.9.1 Vehicle Speeds

As part of the Fredericksburg Extension Study, INRIX speed data for the I-95 corridor within the study area was analyzed. INRIX provides average speed data for individual segments (generally between consecutive ramp terminals) in 15-minute increments. Corridor data from September and October 2016 were analyzed. The 16.1-mile northbound study segment extends from the Rappahannock River to the northbound on-ramp at Russell Road. The 17.8 southbound study segment extends from the southbound on-ramp at Joplin Road to the Rappahannock River. Speeds for each segment and each 15-minute period were averaged and cross-tabulated by mile point and time period. The results for northbound and southbound I-95 are shown in **Figure 3-3** and **Figure 3-4**, respectively. These figures show the average speed on Tuesdays, Wednesdays, and Thursdays along the I-95 corridor between 5:00 AM and 10:00 AM and 2:00 PM and 8:00 PM. In these figures, segments are shown on the vertical axis, and time of day is shown along the horizontal axis. The color gradations indicate average speed, with green being the highest and red being the lowest speed.

Additionally, INRIX data was analyzed for weekday periods in 2013, prior to the opening of the I-95 Express Lanes system. Speeds for each segment and each 15-minute period were averaged and cross-tabulated by mile point and time period. The results are shown in **Figure 3-5** and **Figure 3-6**.

As shown in **Figure 3-3**, there is a pronounced period of reduced speeds (below 40 MPH) along northbound I-95 during the AM peak period. Congestion (indicated by red and orange colors) begins to form along northbound I-95 beginning at Exit 143 (Garrisonville Road) in the early morning hours (approximately 5:15 AM) and extends upstream towards Exit 133 (US 17), peaking between 6-7 AM, before queues begin to dissipate between 8:30 and 9:30 AM. No notable periods of reduced speeds occur during the PM peak periods along northbound I-95. Comparing the 2013 and 2016 speeds along northbound I-95, the periods of low speeds (red and yellow areas) span a longer period of time and impact a longer portion of the corridor in 2016 during the AM period.

As shown in **Figure 3-4**, there is pronounced period of reduced speeds (below 40 MPH) along southbound I-95 during the PM peak period. Two different areas are noted. Beginning at approximately 3:30 PM, congestion begins to form along southbound I-95 beginning north of Exit 143 (Garrisonville Road) and extends upstream towards Exit 148 (Russell Road), peaking between 4:30 – 5:30 PM, before queues begin to dissipate between 6:00 and 6:30 PM. Further south, congestion begins to form along southbound I-95 at Exit 133 (US 17) at approximately 4:30 PM and extends upstream towards Exit 143, peaking between 5:00 – 6:00 PM, before queues begin to dissipate between 6:30 and 7:30 PM.

No notable periods of reduced speeds occur during the AM peak periods along southbound I-95. Comparing the 2013 and 2016 speeds along southbound I-95 during the PM peak, the location and duration of congestion differs. In 2013, congestion was primarily limited to the area north of Exit 148 (Russell Road), with pronounced reductions in speeds between 3:30 and 6:30 PM in this area. There was a reduction in speeds (below 50 MPH) between Exits 148 and 143, but the intensity was less than observed in 2016. Further south, speeds reduced to below 40 MPH at Exit 133 (US 17) between 5:00 and 6:00 PM with reduced speeds (below 50 MPH) extending upstream towards Exit 140. The intensity and duration of the congestion in this area was less than that observed in 2016.

Figure 3-3: 2016 I-95 Northbound General Purpose Lane Travel Speeds

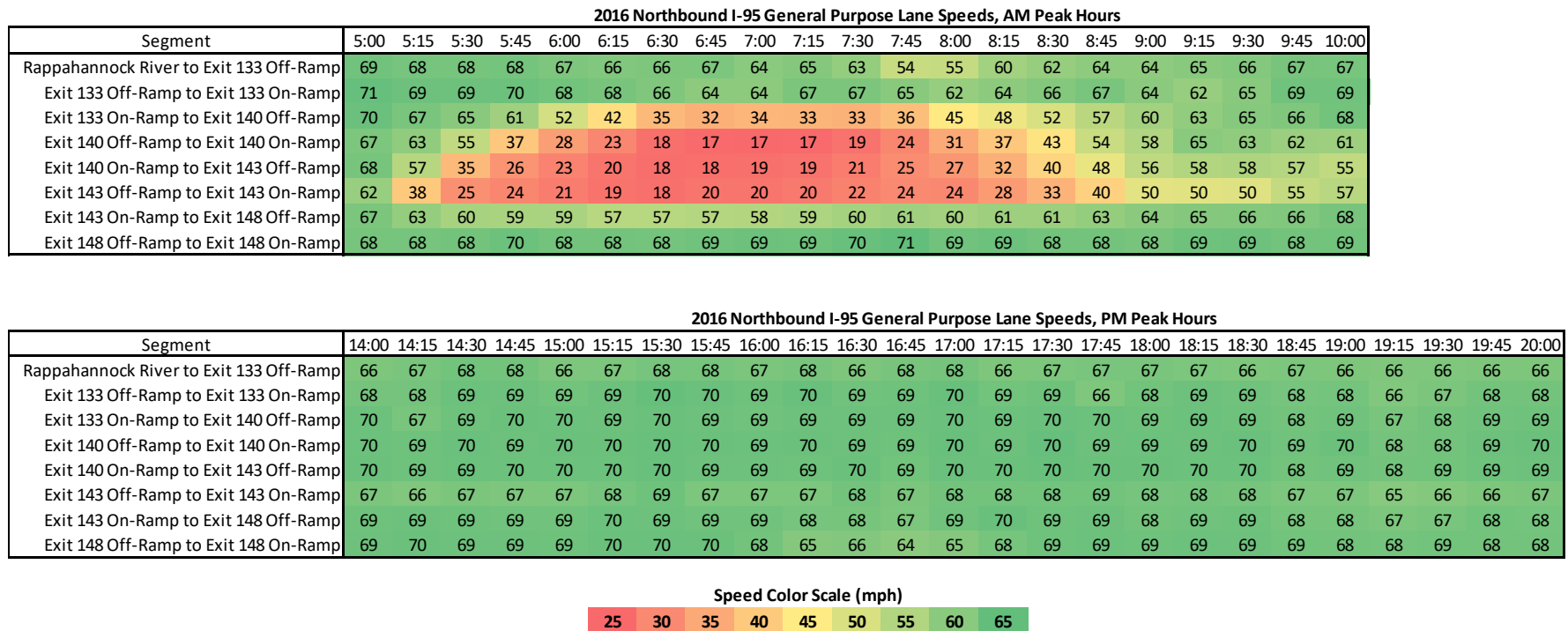


Figure 3-4: 2016 I-95 Southbound General Purpose Lane Travel Speeds

2016 Southbound I-95 General Purpose Lane Speeds, AM Peak Hours

Segment	5:00	5:15	5:30	5:45	6:00	6:15	6:30	6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00
Exit 150 On-Ramp to Exit 148 Off-Ramp	68	69	70	70	69	69	68	68	68	69	69	68	69	69	69	69	69	69	70	69	68
Exit 148 Off-Ramp to Exit 148 On-Ramp	68	69	71	70	69	70	70	70	68	70	69	69	69	69	71	69	70	70	70	70	69
Exit 148 On-Ramp to Exit 143 Off-Ramp	67	68	69	68	68	68	68	68	67	69	69	68	68	68	69	69	69	69	69	69	69
Exit 143 Off-Ramp to Exit 143 On-Ramp	66	67	68	68	67	67	68	67	66	67	67	67	67	67	68	67	68	69	67	67	68
Exit 143 On-Ramp to Exit 140 Off-Ramp	67	68	69	69	69	69	69	68	68	68	69	68	68	68	69	68	69	70	68	69	69
Exit 140 Off-Ramp to Exit 140 On-Ramp	66	67	68	68	68	68	69	67	67	67	68	68	68	67	68	68	68	68	67	67	67
Exit 140 On-Ramp to Exit 133 Off-Ramp	66	67	68	68	67	68	69	68	67	67	69	68	67	67	68	68	69	68	68	68	68
Exit 133 Off-Ramp to Exit 133 On-Ramp	66	66	66	68	67	68	69	67	66	66	68	67	67	67	66	67	68	67	66	61	61
Exit 133 On-Ramp to Rappahannock River	66	66	68	69	68	68	69	68	66	67	68	67	66	67	68	68	68	66	63	60	60

2016 Southbound I-95 General Purpose Lane Speeds, PM Peak Hours

Segment	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00
Exit 150 On-Ramp to Exit 148 Off-Ramp	70	69	66	64	65	61	55	47	44	40	35	32	29	38	40	48	56	63	62	67	68	68	67	67	64
Exit 148 Off-Ramp to Exit 148 On-Ramp	70	71	69	64	63	58	50	37	37	30	28	25	27	32	35	44	55	59	63	68	68	69	68	66	66
Exit 148 On-Ramp to Exit 143 Off-Ramp	66	66	63	60	55	52	43	38	34	31	30	29	32	32	34	34	38	49	60	64	66	66	66	65	66
Exit 143 Off-Ramp to Exit 143 On-Ramp	66	64	61	59	54	52	46	46	40	39	35	43	39	42	43	45	50	59	59	62	64	65	65	65	65
Exit 143 On-Ramp to Exit 140 Off-Ramp	65	62	60	57	56	51	51	47	43	41	42	42	40	38	39	39	48	53	60	61	64	67	67	66	67
Exit 140 Off-Ramp to Exit 140 On-Ramp	60	59	57	56	55	50	52	47	46	45	47	40	40	40	38	39	45	44	50	59	65	66	67	66	65
Exit 140 On-Ramp to Exit 133 Off-Ramp	59	59	56	57	55	55	54	50	50	50	48	42	40	37	35	34	34	36	43	53	60	65	67	66	66
Exit 133 Off-Ramp to Exit 133 On-Ramp	57	56	58	59	61	60	56	49	50	43	37	38	32	31	27	25	24	29	34	40	49	60	66	66	66
Exit 133 On-Ramp to Rappahannock River	57	57	59	60	63	61	56	52	50	46	42	42	38	37	33	30	30	34	35	39	48	58	66	67	67

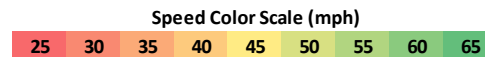


Figure 3-5: 2013 I-95 Northbound General Purpose Lane Travel Speeds

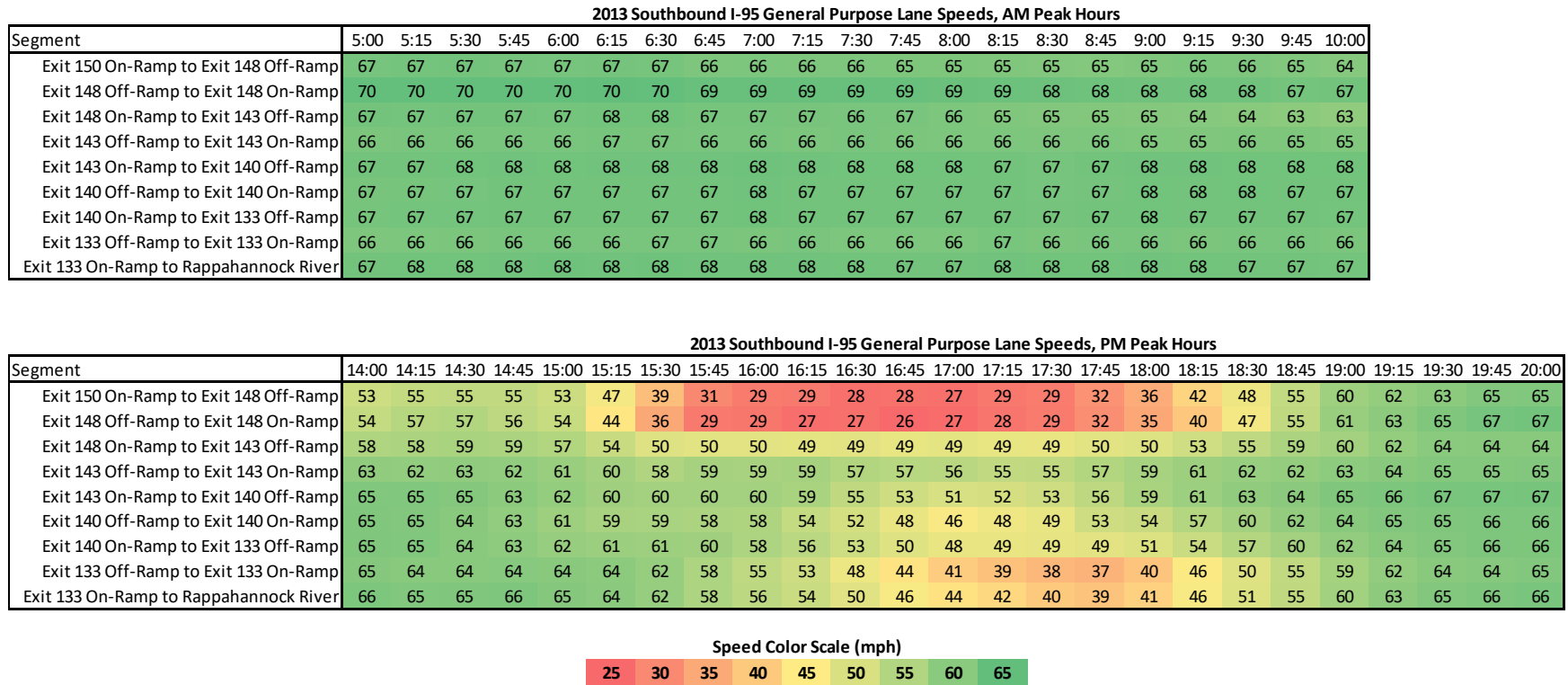
2013 Northbound I-95 General Purpose Lane Speeds, AM Peak Hours																						
Segment	5:00	5:15	5:30	5:45	6:00	6:15	6:30	6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	
Rappahannock River to Exit 133 Off-Ramp	69	69	69	68	68	67	67	67	67	66	62	54	60	65	66	66	67	67	67	68	67	
Exit 133 Off-Ramp to Exit 133 On-Ramp	70	70	70	69	69	69	69	69	69	67	65	64	66	67	68	68	68	69	69	69	68	
Exit 133 On-Ramp to Exit 140 Off-Ramp	70	70	70	69	69	69	68	65	63	60	59	59	62	63	65	66	67	68	69	68	68	
Exit 140 Off-Ramp to Exit 140 On-Ramp	71	70	70	70	70	69	65	58	56	53	49	49	55	59	61	64	67	67	68	68	69	
Exit 140 On-Ramp to Exit 143 Off-Ramp	70	69	66	67	67	66	60	53	49	46	42	44	50	54	58	62	63	64	66	67	67	
Exit 143 Off-Ramp to Exit 143 On-Ramp	67	57	48	55	56	54	47	40	37	34	33	34	38	42	47	52	56	57	58	59	57	
Exit 143 On-Ramp to Exit 148 Off-Ramp	67	61	55	56	60	60	59	57	57	55	55	54	55	56	58	59	60	60	60	57	55	
Exit 148 Off-Ramp to Exit 148 On-Ramp	67	63	58	59	63	65	65	66	66	66	66	65	65	65	65	65	64	64	64	62	61	

2013 Northbound I-95 General Purpose Lane Speeds, PM Peak Hours																									
Segment	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00
Rappahannock River to Exit 133 Off-Ramp	67	67	67	67	67	67	67	68	68	68	68	68	68	68	68	67	68	68	68	68	68	68	68	68	68
Exit 133 Off-Ramp to Exit 133 On-Ramp	69	69	69	68	68	68	69	69	69	69	69	69	69	69	69	69	69	69	68	69	68	69	69	69	69
Exit 133 On-Ramp to Exit 140 Off-Ramp	68	68	68	68	68	68	69	69	69	69	70	70	69	69	69	69	68	68	68	69	69	69	69	69	69
Exit 140 Off-Ramp to Exit 140 On-Ramp	69	69	69	69	68	69	69	69	69	69	69	70	70	69	69	69	69	69	69	69	70	70	70	69	69
Exit 140 On-Ramp to Exit 143 Off-Ramp	68	68	67	67	67	68	69	68	69	68	69	69	69	68	68	68	68	68	69	69	69	69	69	69	69
Exit 143 Off-Ramp to Exit 143 On-Ramp	61	60	60	61	62	63	64	65	66	66	67	66	66	66	66	65	65	66	66	67	67	66	66	67	66
Exit 143 On-Ramp to Exit 148 Off-Ramp	58	58	58	59	60	60	62	64	64	65	65	66	65	65	65	65	66	66	66	67	67	68	67	67	67
Exit 148 Off-Ramp to Exit 148 On-Ramp	61	61	60	60	60	60	61	61	62	62	63	63	62	62	61	63	64	65	65	66	67	67	67	67	67

Speed Color Scale (mph)



Figure 3-6: 2013 I-95 Southbound General Purpose Lane Travel Speeds



3.9.2 Travel Times

Corridor and segment travel times were also analyzed using the available INRIX data. The 2016 weekday corridor travel times for each hour during the peak periods for both northbound and southbound I-95 are summarized in **Table 3-4**. The 2013 weekday corridor travel times for the same time periods are summarized in **Table 3-5**.

Table 3-4: 2016 Average Corridor Travel Times

I-95 Northbound				I-95 Southbound			
Distance (miles)	Time Period	Average Travel Time (minutes)	Average Speed (mph)	Distance (miles)	Time Period	Average Travel Time (minutes)	Average Speed (mph)
16.1	5-6AM	17.1	56	17.8	5-6AM	15.8	68
	6-7AM	26.8	36		6-7AM	15.6	68
	7-8AM	27.6	35		7-8AM	15.7	68
	8-9AM	19.8	49		8-9AM	15.7	68
	9-10AM	15.4	63		9-10AM	15.6	68
	2-3PM	14.0	69		2-3PM	17.6	61
	3-4PM	13.9	69		3-4PM	20.8	51
	4-5PM	14.1	69		4-5PM	27.0	40
	5-6PM	13.9	69		5-6PM	29.9	36
	6-7PM	14.0	69		6-7PM	23.4	46
7-8PM	14.2	68	7-8PM	16.5	65		

Table 3-5: 2013 Average Corridor Travel Times

I-95 Northbound				I-95 Southbound			
Distance (miles)	Time Period	Average Travel Time (minutes)	Average Speed (mph)	Distance (miles)	Time Period	Average Travel Time (minutes)	Average Speed (mph)
16.1	5-6AM	14.7	66	17.8	5-6AM	15.9	67
	6-7AM	15.3	63		6-7AM	15.9	67
	7-8AM	17.7	54		7-8AM	15.9	67
	8-9AM	16.2	60		8-9AM	16.0	67
	9-10AM	15.0	65		9-10AM	16.1	66
	2-3PM	14.9	65		2-3PM	17.3	62
	3-4PM	14.7	66		3-4PM	19.3	55
	4-5PM	14.3	68		4-5PM	22.3	48

I-95 Northbound				I-95 Southbound			
Distance (miles)	Time Period	Average Travel Time (minutes)	Average Speed (mph)	Distance (miles)	Time Period	Average Travel Time (minutes)	Average Speed (mph)
	5-6PM	14.3	68		5-6PM	23.7	45
	6-7PM	14.3	68		6-7PM	19.9	54
	7-8PM	14.1	68		7-8PM	16.7	64

Segment and cumulative travel times for the peak hour within each peak period are summarized in **Figure 3-7** for 2016 conditions and in **Figure 3-8** for 2013 conditions.

Figure 3-7: 2016 I-95 Northbound General Purpose Lane AM Peak Hour Travel Times

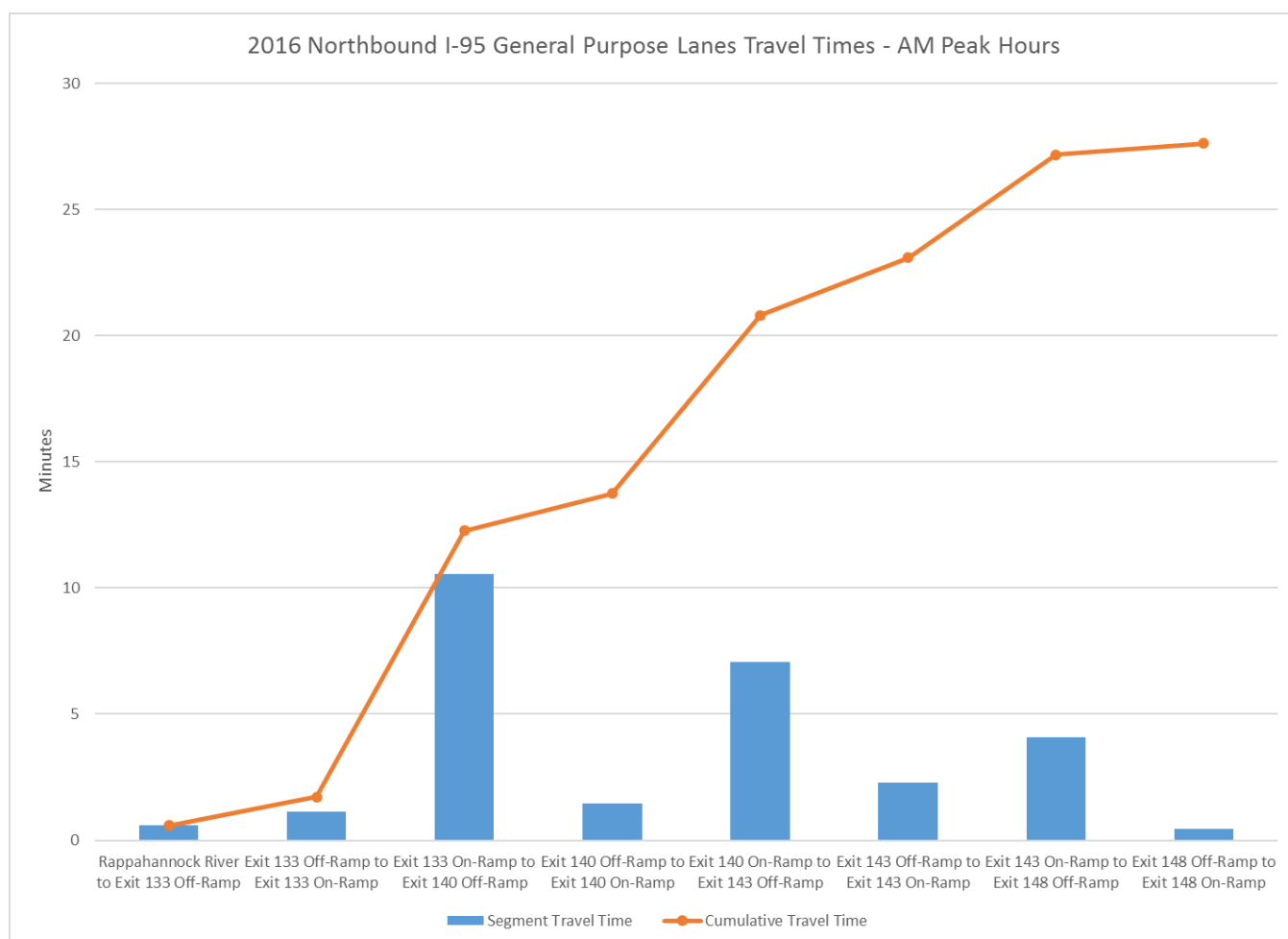
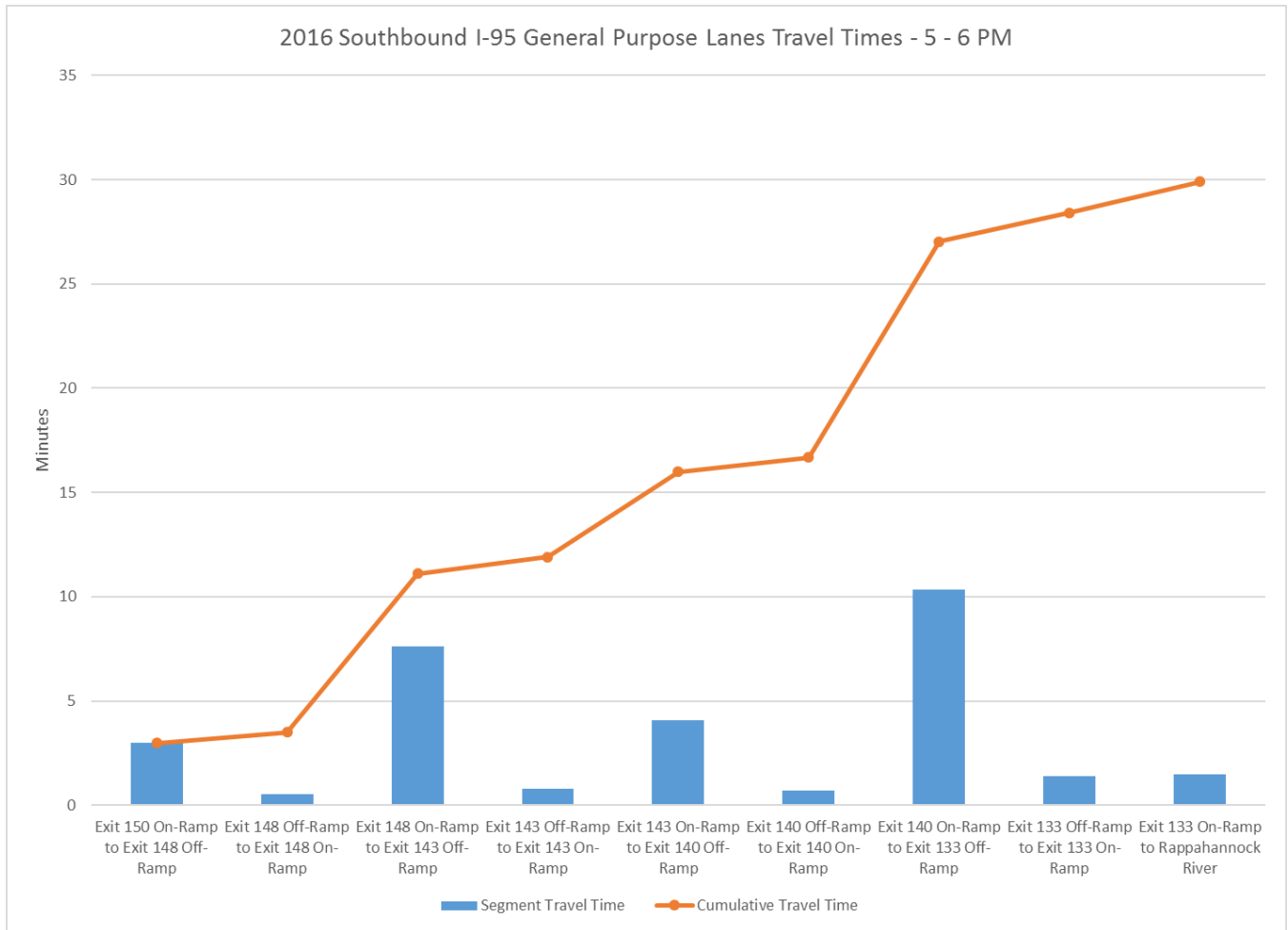


Figure 3-8: 2016 I-95 Southbound General Purpose Lanes PM Peak Hour Travel Times



3.10 CAPACITY ANALYSIS

The 2016 peak period volumes shown in **Appendix A** were analyzed using the methodologies outlined in **Section 2.3**. The results of these mainline capacity analyses are provided in **Table 3-6**; the mainline freeway facility analyzed in each direction extended from the Rappahannock River to north of Exit 148. Capacity adjustments were made for the northbound weaving segment at Exit 143 during the AM peak period to better match the field observed capacity at this location.

The intersections identified in **Table 2-2** were also analyzed for existing conditions. The results of the intersection analyses are provided in **Table 3-7**.

Table 3-6: 2016 HCS Freeway Facilities Results

	NB		SB	
	LOS	Travel Time (min)	LOS	Travel Time (min)
6 – 7 AM	F	26	A	17
7 – 8 AM	F		B	
8 – 9 AM	F		B	
3 – 4 PM	C	17	F	30
4 – 5 PM	C		F	
5 – 6 PM	C		F	
6 – 7 PM	C		F	

Table 3-7: 2016 Intersection Analysis Results

Intersection			AM (7 – 8 AM)		PM (5 – 6 PM)	
			LOS	Delay	LOS	Delay
US 17	at	South Gateway Dr	C	32.0	C	30.4
US 17 Bus	at	Short St	B	15.3	C	27.4
I-95 NB Ramps	at	Centreport Pkwy	B	10.7	C	29
I-95 SB Ramps	at	Centreport Pkwy	E	62	A	9.6
US 1	at	Centreport Pkwy	F	174.3	C	34.3
I-95 NB Ramps	at	Courthouse Rd	B	11.8	B	19.2
I-95 SB Ramps	at	Courthouse Rd	C	21.4	C	23.7
I-95 NB Off-Ramp	at	US 1	A	3.4	A	8.5
Garrisonville Rd	at	US 1	B	13.7	A	6.2
US 1	at	I-95 NB On-Ramp	E	70	F	85.6
I-95 SB Off-Ramp	at	Garrisonville Rd	B	18.9	B	13.7
I-95 NB Off-Ramp	at	Russell Rd	D	36.9	B	17.2
Russell Rd	at	I-95 NB On-Ramp	C	26.8	A	6.1
I-95 SB Ramps	at	Russell Rd	A	1.9	B	13.7

4. ALTERNATIVES CONSIDERED

A detailed discussion on alternatives development is included in **Chapter 2** of the Revised EA and the accompanying I-95 Express Lanes Fredericksburg Extension Study Alternatives Analysis Technical Report. One Build Alternative was identified for inclusion in the Revised EA.

The Build Alternative would extend two reversible Express Lanes in the median of I-95 from south of Exit 143 to the vicinity of the I-95 / US 17 North Interchange at Warrenton Road (Exit 133). It would also provide Express Lane access at several locations including Exit 133, the I-95 / VA 630 Interchange at Courthouse Road (Exit 140), and in the vicinity of the I-95 / Russell Road Interchange at Marine Corps Base Quantico (Exit 148). The Courthouse Road / I-95 Interchange is currently being reconstructed by the Department as a diverging diamond interchange on a new alignment immediately south of existing Courthouse Road. The Build Alternative, including mainline and access improvements, is shown in Appendix B of the Revised EA. The Build Alternative is consistent with the selected alternative identified in the 2011 EA and subsequent FONSI.

Because the access points to and from the Express Lanes will vary for NB and SB travel, the Build Alternative description is provided for each direction below. The Express Lanes would operate as reversible HOT lanes based on peak traffic flow.

Northbound Travel

Northbound access to the Express Lanes would begin south of the I-95 / US 17 North Interchange (Exit 133) and tie into the proposed Express Lanes approximately two miles north of VA 610 / Garrisonville Road (Exit 143). Access to and from the NB Express Lanes would occur as follows:

- North of the I-95/US 17 North Interchange (Exit 133), vehicles could enter the Express Lanes from the left lane (west side) of I-95 via a new slip ramp or from a new flyover entrance from the right lane (east side) of NB I-95.
- At VA 630 / Courthouse Road (Exit 140), an entrance to the Express Lanes would come directly from Courthouse Road (this ramp is reversible and will serve both NB and SB travel).
- South of Russell Road (Exit 148), a new flyover ramp would provide an exit from the Express Lanes to the GP lanes.

Southbound Travel

Southbound access to the Express Lanes would begin approximately one mile south of VA 610 / Garrisonville Road (Exit 143) where the current Express Lanes end and would continue to the proposed terminus of the Express Lanes which is just north of US 17 (Exit 133). Access to and from the SB Express Lanes would occur as follows:

- South of Russell Road (Exit 148), users in the GP lanes could enter the Express Lanes just south of VA 637 via a new flyover from the right lane (west side) of SB I-95 or via new slip ramp from the left lane (east side) of SB I-95.
- At VA 630 / Courthouse Road (Exit 140), a new exit from the Express Lanes would connect directly to existing Courthouse Road (VA 630, Exit 140); this ramp is reversible and will serve both NB and SB travel.
- North of US 17 North (Exit 133), a new flyover ramp would provide an exit from the Express Lanes to access the GP lanes or to access US 17, or SB travelers could access GP lanes via a new slip ramp.

In order to accommodate the Express Lane improvements and associated entrance and exit ramps, the existing GP lanes of I-95 would be widened or realigned in several locations. Specifically, the NB GP lanes would be widened to include an auxiliary lane between 0.9 miles north (0.5 miles north of US 17 North), and 0.5 miles north of VA 652 / Truslow Road. The SB GP lanes would be realigned between 0.3 miles north of Route 628 and 0.4 miles south of Route 628, and between 0.6 miles north of VA 652 / Truslow Road and the I-95 / US 17 North Interchange. Details regarding these proposed revised access points are provided in the *Alternatives Technical Report*.

5. DESIGN YEAR 2042 FORECASTS AND ANALYSES

5.1 SUMMARY

A summary of daily traffic volumes for each major segment of I-95 (defined as segments between interchanges) within the study area is provided in **Table 5-1**. A summary of projected total AM (6-9 AM) and PM (4-7 PM) peak period volumes is provided in **Table 5-2**. A summary of projected AM (7-8 AM) and PM (5-6 PM) peak hour volumes are provided in **Table 5-3** and **Table 5-4**, respectively.

A summary of projected LOS and travel times for the I-95 corridor for 2042 No-Build and 2042 Build conditions are provided in **Table 5-5**.

. It should be noted that the travel time estimates were developed from planning-level capacity analysis output and are intended only to indicate relative changes in travel time between alternatives.

A summary of projected LOS for the signalized intersections in the study area for 2042 No-Build and 2042 Build conditions are provided in **Table 5-6**.

The traffic impacts of each alternative are discussed in more detail in **Sections 5.2** and **5.3** below.

Table 5-1: I-95 Daily Volumes by Segment

Location on I-95	Direction	2016 Daily Volumes			2042 No-Build Daily Volumes			2042 Build Daily Volumes		
		GP	Express	Total	GP	Express	Total	GP	Express	Total
North of Jefferson Davis Highway (US 1, Exit 126)	NB	52,000	-	105,100	75,500	-	151,400	77,400	-	156,000
	SB	53,100	-		75,900	-		78,600	-	
North of Plank Road (Route 3, Exit 130)	NB	69,000	-	136,000	88,300	-	173,800	91,100	-	180,100
	SB	67,000	-		85,500	-		89,000	-	
North of Warrenton Road (US 17, Exit 133)	NB	62,200	-	124,400	80,700	-	157,800	76,200	13,300	171,100
	SB	62,200	-		77,100	-		68,400	13,200	
North of Centreport Parkway (Route 8900, Exit 136)	NB	61,900	-	124,200	78,200	-	154,400	76,000	13,300	170,000
	SB	62,300	-		76,200	-		67,500	13,200	
North of Courthouse Road (Route 630, Exit 140)	NB	60,900	-	121,900	81,400	-	158,000	76,400	15,300	175,500
	SB	61,000	-		76,600	-		67,900	15,900	

Location on I-95	Direction	2016 Daily Volumes			2042 No-Build Daily Volumes			2042 Build Daily Volumes		
		GP	Express	Total	GP	Express	Total	GP	Express	Total
North of Garrisonville Road (Route 610, Exit 143)	NB	69,600	6,200	153,700	85,300	12,500	188,800	81,500	20,500	199,800
	SB	68,600	9,300		75,000	16,000		75,500	22,300	
North of Russell Road (Exit 148)	NB	64,900	6,200	143,000	77,600	12,500	175,400	76,100	20,500	183,100
	SB	62,600	9,300		69,300	16,000		70,200	16,300	

Table 5-2: I-95 Peak Period Volumes by Segment

Location on I-95		2016 Peak Period Volumes			2042 No-Build Peak Period Volumes			2042 Build Peak Period Volumes		
		SB	NB	Express Lanes	SB	NB	Express Lanes	SB	NB	Express Lanes
North of Russell Road (Exit 148)	AM	9,350	10,260	2,675 NB	9,915	14,150	3,200 NB	9,585	11,470	4,775 NB
	PM	12,110	13,605	4,508 SB	18,980	13,440	4,665 SB	18,660	13,325	5,405 SB
North of Garrisonville Road (Route 610, Exit 143)	AM	6,120	11,370	2,675 NB	7,170	18,160	3,200 NB	6,935	17,275	4,775 NB
	PM	12,820	10,325	3,925 SB	21,925	12,025	4,665 SB	21,595	12,720	5,405 SB
North of Courthouse Road (Route 630, Exit 140)	AM	6,570	9,790	-	7,515	20,655	-	8,350	15,950	3,695 NB
	PM	14,130	10,020	-	25,155	11,790	-	23,525	15,950	6,840 SB
North of Centreport Parkway (Route 8900, Exit 136)	AM	7,200	9,450	-	8,185	16,865	-	8,435	16,500	3,155 NB
	PM	14,080	10,530	-	20,315	11,510	-	21,825	11,575	5,925 SB
North of Warrenton Road (US 17, Exit 133)	AM	7,590	10,530	-	8,705	15,865	-	9,105	15,255	3,155 NB
	PM	14,025	10,420	-	18,785	11,505	-	20,655	11,785	5,925 SB
North of Plank Road (Route 3, Exit 130)	AM	8,085	13,100	-	10,215	18,220	-	10,200	18,790	-
	PM	14,705	11,400	-	20,365	13,250	-	25,435	13,430	-

Table 5-3: I-95 AM Peak Hour Volumes by Segment

Location on I-95	2016 7-8 AM Volumes ¹			2042 No-Build 7-8 AM Volumes ¹			2042 Build 7-8 AM Volumes ¹		
	SB	NB	Express Lanes	SB	NB	Express Lanes	SB	NB	Express Lanes
North of Russell Road (Exit 148)	3,470	3,305	760 NB	3,400	4,400	1,100 NB	3,300	4,600	1,700 NB
North of Garrisonville Road (Route 610, Exit 143)	2,095	3,670	760 NB	2,500	6,200	1,100 NB	2,400	5,700	1,900 NB
North of Courthouse Road (Route 630, Exit 140)	2,500	3,155	-	2,600	7,100	-	2,900	6,900	1,300 NB
North of Centreport Parkway (Route 8900, Exit 136)	2,750	3,035	-	2,800	5,800	-	2,900	5,700	1,100 NB
North of Warrenton Road (US 17, Exit 133)	2,915	3,575	-	3,000	5,400	-	3,100	5,200	1,100 NB
North of Plank Road (Route 3, Exit 130)	3,705	4,680	-	3,500	6,200	-	3,500	6,400	-

Table 5-4: I-95 PM Peak Hour Volumes by Segment

Location on I-95	2016 5-6 PM Volumes			2042 No-Build 5-6 PM Volumes			2042 Build 5-6 PM Volumes		
	SB	NB	Express Lanes	SB	NB	Express Lanes	SB	NB	Express Lanes
North of Russell Road (Exit 148)	3,930	4,120	1,230 SB	6,500	4,600	1,600 SB	6,400	4,800	1,900 SB
North of Garrisonville Road (Route 610, Exit 143)	4,530	3,500	1,230 SB	7,500	4,200	7,500 SB	7,400	4,400	2,500 SB
North of Courthouse Road (Route 630, Exit 140)	4,850	3,385	-	8,600	4,100	-	8,300	4,200	2,300 SB
North of Centreport Parkway (Route 8900, Exit 136)	4,790	3,645	-	7,000	4,000	-	7,500	4,000	2,000 SB
North of Warrenton Road (US 17, Exit 133)	4,705	3,595	-	6,400	4,000	-	7,000	4,100	2,000 SB
North of Plank Road (Route 3, Exit 130)	4,975	3,875	-	7,000	4,600	-	8,700	4,600	-

Table 5-5: HCS Freeway Facilities Results

	Existing				2042 No-Build				2042 Build			
	NB		SB		NB		SB		NB		SB	
	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)
6 – 7 AM	F	26	A	17	F	37	B	17	F	32	B	17
7 – 8 AM	F		B		F		B		F		B	
8 – 9 AM	F		B		F		B		F		B	
3 – 4 PM	C	17	F	30	C	17	F	32	C	17	F	25
4 – 5 PM	C		F		C		F		C		F	
5 – 6 PM	C		F		C		F		C		F	
6 – 7 PM	C		F		C		F		C		F	

Table 5-6: Intersection Analysis Results

Intersection			Existing				2042 No-Build				2042 Build			
			AM (7 – 8 AM)		PM (5 – 6 PM)		AM (7 – 8 AM)		PM (5 – 6 PM)		AM (7 – 8 AM)		PM (5 – 6 PM)	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
US 17	at	South Gateway Dr	C	32.0	C	30.4	D	35.4	D	47.9	D	41.7	E	78.5
US 17 Bus	at	Short St	B	15.3	C	27.4	C	22.9	F	96.0	C	23	F	87.3
I-95 NB Ramps	at	Centreport Pkwy	B	10.7	C	29	B	10.2	D	45.0	B	11.3	D	43.6
I-95 SB Ramps	at	Centreport Pkwy	E	62	A	9.6	E	56.0	C	26.1	C	24.0	C	29.7
US 1	at	Centreport Pkwy	F	174.3	C	34.3	F	102.2	D	53.9	E	62.6	D	51.8
I-95 NB Ramps	at	Courthouse Rd	B	11.8	B	19.2	B	16.5	C	30.3	B	17.6	B	13.5
I-95 SB Ramps	at	Courthouse Rd	C	21.4	C	23.7	D	51.1	B	17.9	A	9.2	B	13.1
I-95 NB Off-Ramp	at	US 1	A	3.4	A	8.5	A	3.1	B	10.2	A	1.3	C	24.3
Garrisonville Rd	at	US 1	B	13.7	A		B	15.7	F	160.9	B	10.4	F	118.7
US 1	at	I-95 NB On-Ramp	E	70	F	85.6	F	131.7	F	258.9	F	127.1	F	221.4
I-95 SB Off-Ramp	at	Garrisonville Rd	B	18.9	B	13.7	C	32.7	C	30.9	E	58.7	C	25.2
I-95 NB Off-Ramp	at	Russell Rd	D	36.9	B	17.2	C	23.1	C	31.9	B	18.4	C	32.6
Russell Rd	at	I-95 NB On-Ramp	C	26.8	A	6.1	C	27.7	C	21.4	C	25.8	B	14.8
I-95 SB Ramps	at	Russell Rd	A	1.9	B	13.7	A	0.8	B	11.8	C	23.5	B	11

5.2 2042 NO-BUILD ALTERNATIVE

As described in **Section 1.1.2**, the No-Build Alternative assumes the following improvements along the I-95 Corridor:

- I-95 Express Lanes Southern Terminus Extension – A two-mile extension of a single, reversible Express Lane (High Occupancy Toll – 3 Persons Per Vehicle) from the existing terminus of the system north of Garrisonville Road (Exit 143) to south of Garrisonville Road.
- I-95 Exit 140 (Courthouse Road) – Relocation and reconstruction of the existing diamond interchange as a diverging diamond interchange with increased park-and-ride lot capacity.

All other projects that are contained in the region’s Constrained Long-Range Transportation Plan are assumed to be in place. These roadway network modifications were retained for all modeling scenarios.

The 2042 No-Build forecast shows continuing growth in traffic volumes along the I-95 corridor. Daily traffic volumes on I-95 are projected to increase by approximately 25 to 30 percent (from approximately 122,000 to 158,000 vehicles per day) between 2016 and 2042 for the segments between Exit 133 and Exit 143. North of Exit 143, daily traffic volumes are projected to increase by approximately 23 percent (from approximately 154,000 to 189,000 vehicles per day).

The three-hour peak period and peak hourly demand volumes also show continuing growth along the I-95 corridor. During the AM peak period, northbound I-95 volumes are projected to increase by approximately 50 percent between Exit 133 and Exit 143 and by approximately 59 percent north of Exit 143.

During the PM peak period, southbound I-95 volumes are projected to increase by approximately 34 percent between Exit 140 and Exit, 78 percent between Exit 143 and Exit 140, and by approximately 71 percent north of Exit 143.

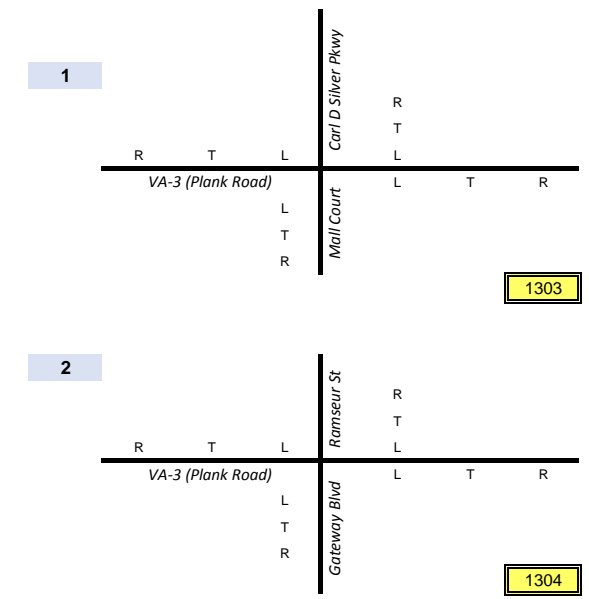
Detailed daily volumes for 2042 No-Build conditions are provided in **Figure 5-1-1** through **5-1-7**.

Detailed AM and PM peak period hourly volumes for 2042 No-Build conditions, including turning movement volumes at the ramp terminal intersections, are provided in **Appendix B** in **Figures B-1-1** through **B-7-7**.

5.2.1 Operational Analysis

Table 5-5 presents the LOS for the I-95 corridor for the AM and PM peak periods for 2042 No-Build conditions. **Table 5-6** presents the intersection LOS for all ramp terminal intersections for the AM and PM peak hours under 2042 No-Build conditions.

Overall, under 2042 No-Build conditions, the I-95 GP lanes are projected to continue to operate at LOS F in the northbound direction during the AM peak period and at LOS F in the southbound direction during the PM peak period. Compared to existing conditions, travel times within the GP lanes within the study segment are projected to increase by 11 minutes in the northbound direction during the AM peak period and two minutes in the southbound direction during the PM peak period. It should be noted that in the southbound direction, the congested segment extends beyond the Study Limits in 2042, so the overall increase in SB travel times may be larger if a larger study limit were selected.



Legend

xx,xxx Weekday Daily Volume

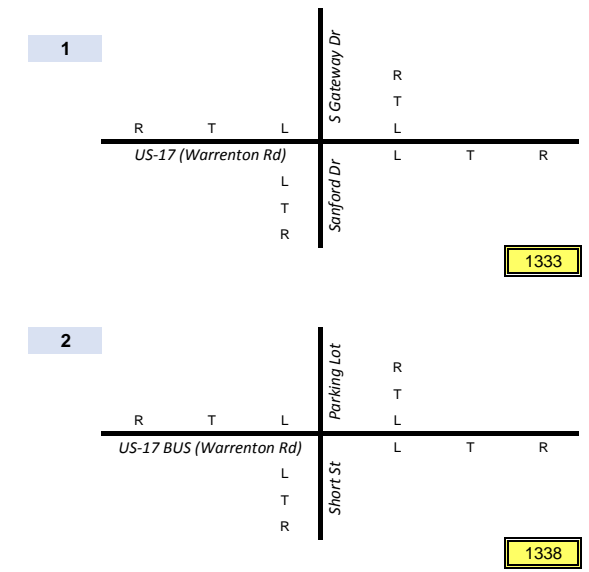
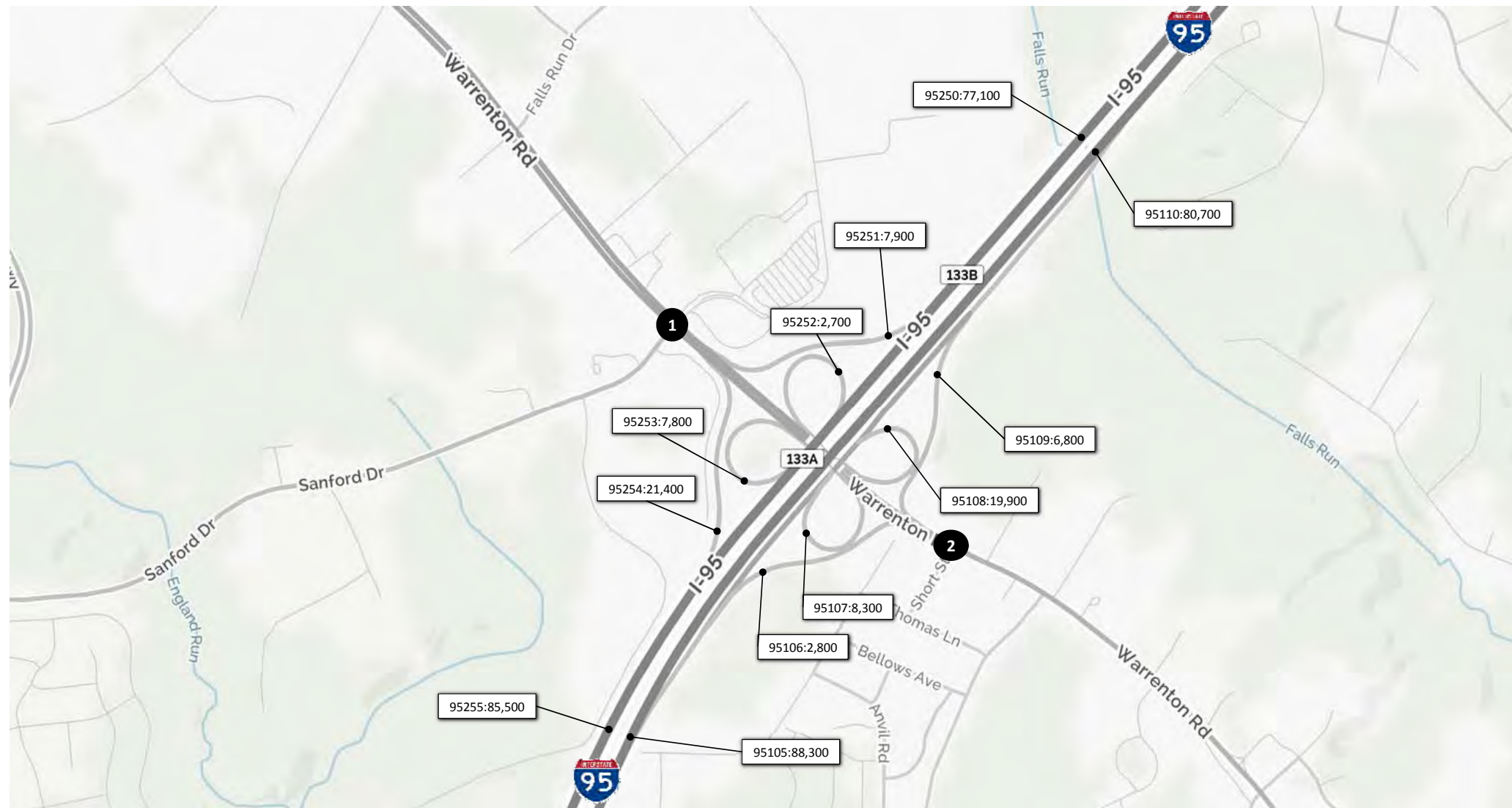
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure 5.1-1



Legend

xx,xxx Weekday Daily Volume

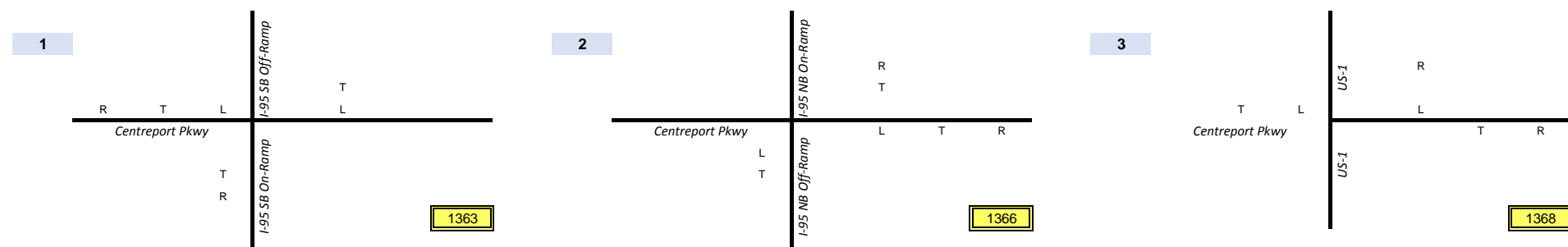
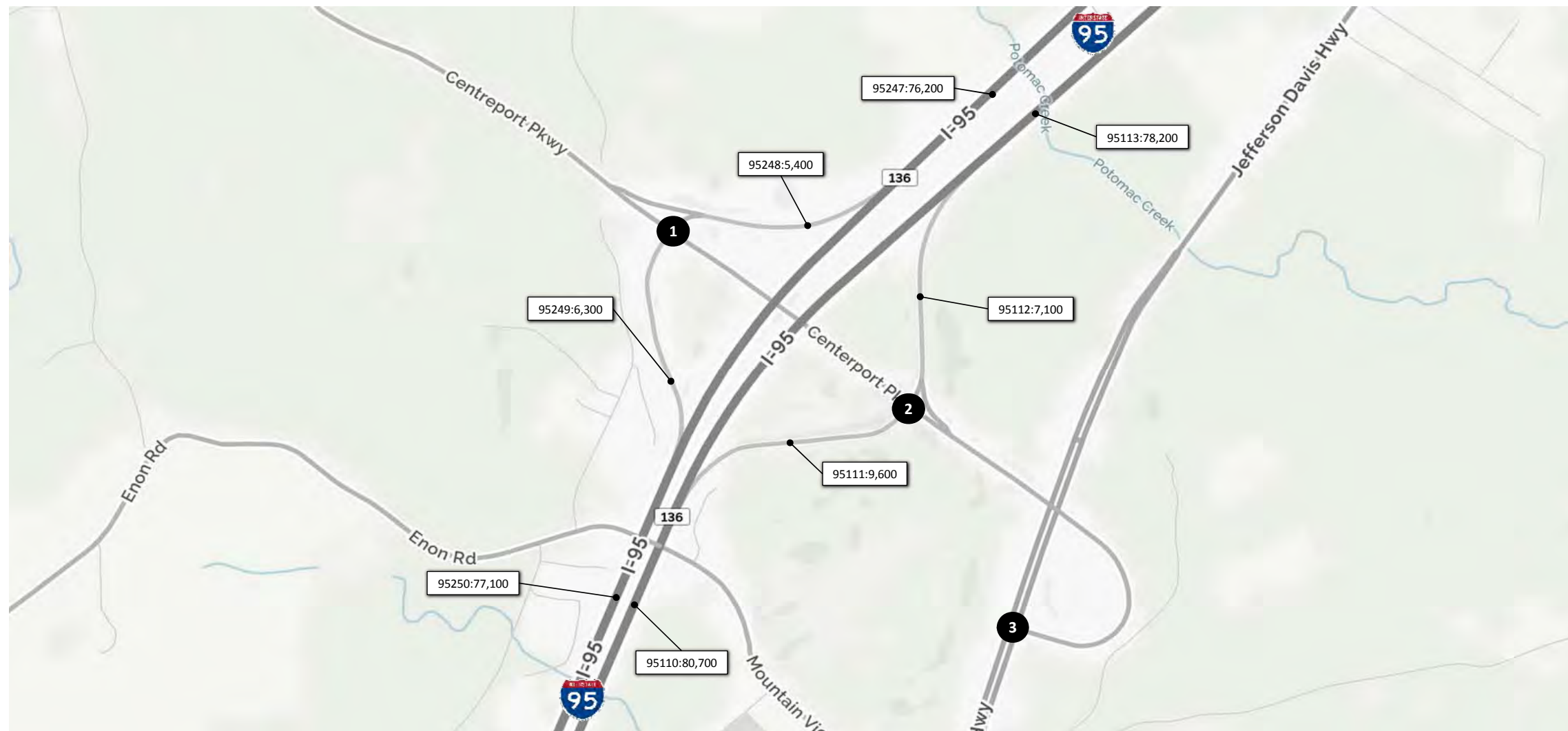
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure 5.1-2



Legend

xx,xxx Weekday Daily Volume

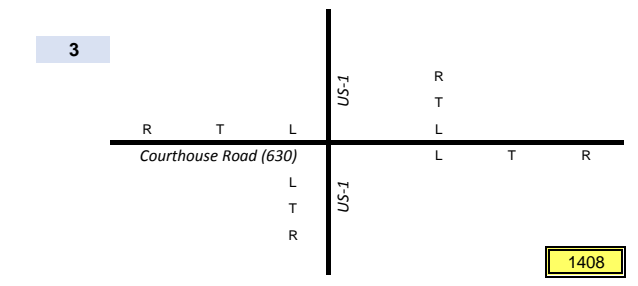
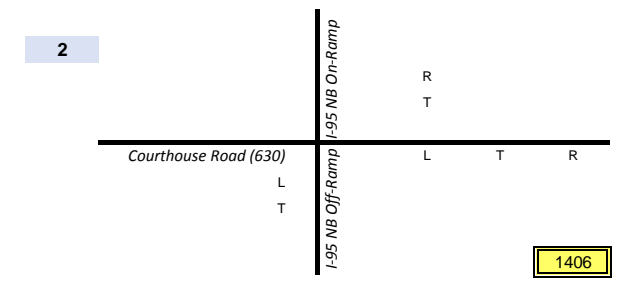
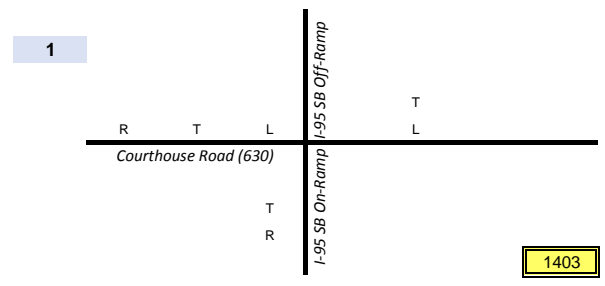
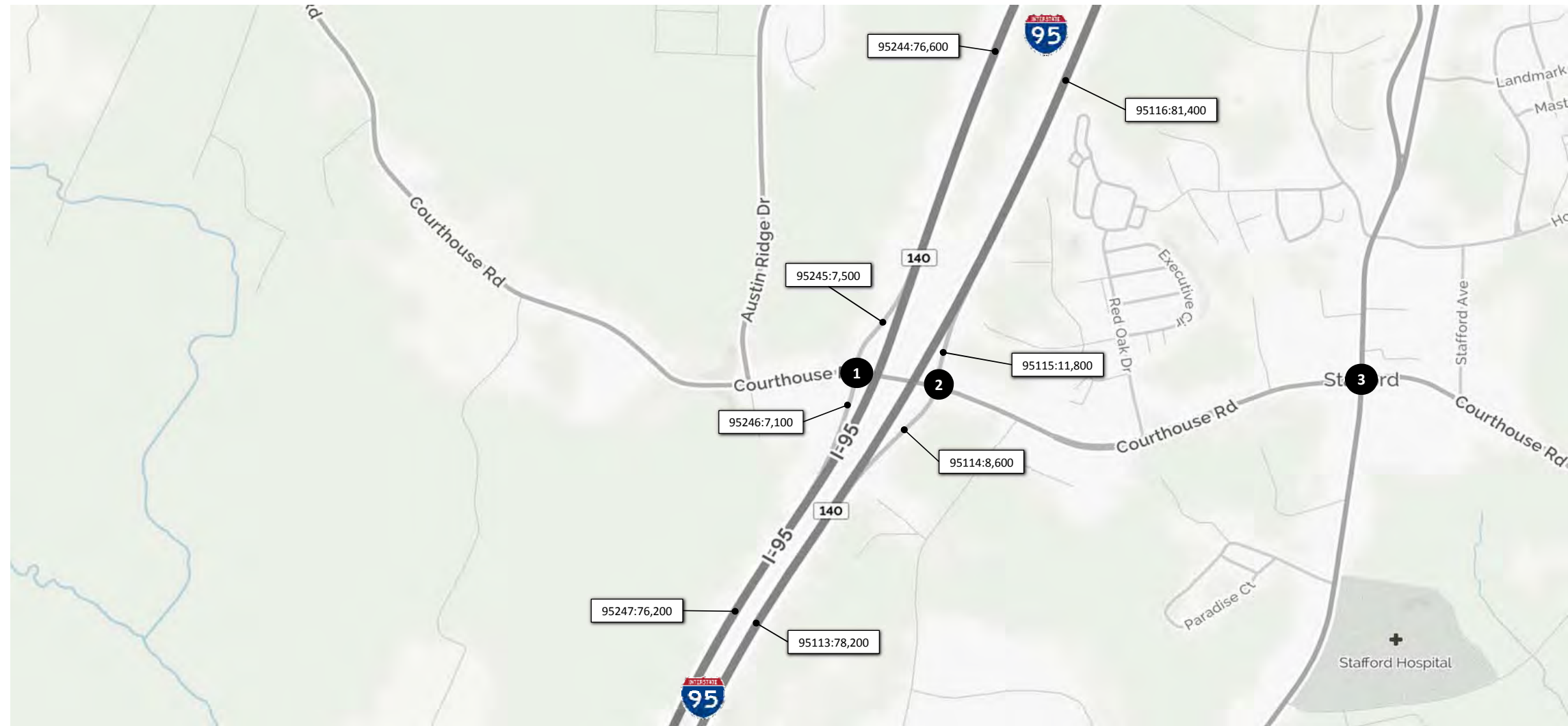
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 5.1-3



Legend

xx,xxx Weekday Daily Volume

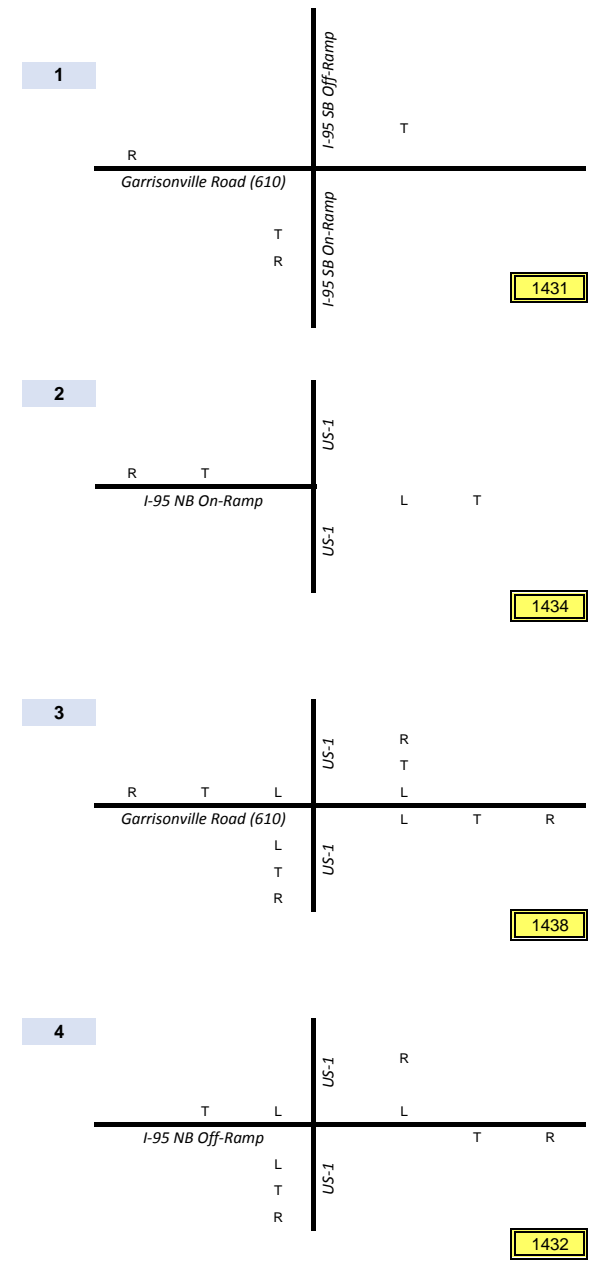
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 5.1-4



Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure 5.1-5



Legend

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

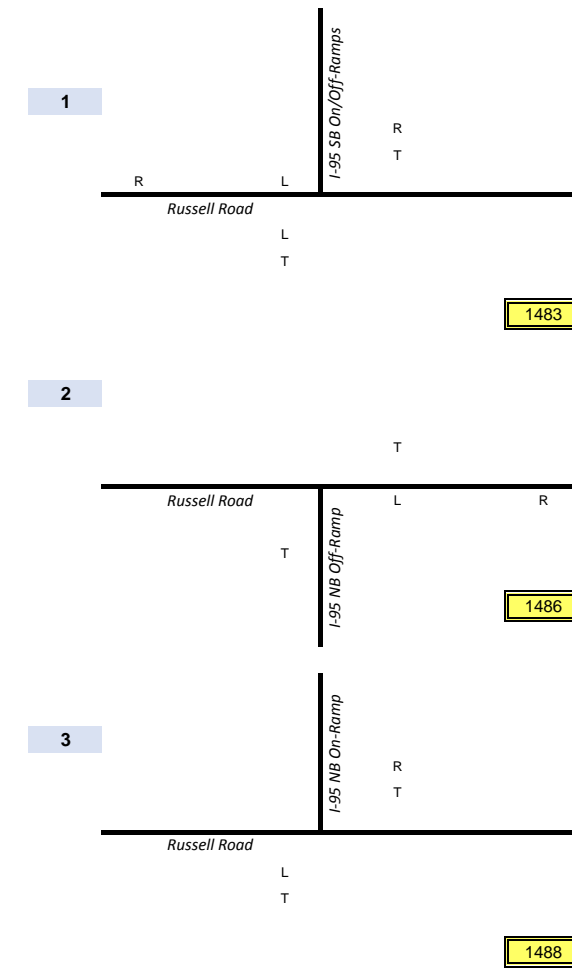
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure 5.1-6



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure 5.1-7

5.3 2042 BUILD ALTERNATIVE

As described in **Section 1.1.2**, the Build Alternative would extend the I-95 Express Lanes from the current terminus at Garrisonville Road (Exit 143) to Route 17 (Exit 133) in Stafford County north of Fredericksburg. It would also provide Express Lane Access Points near US 17 (Exit 133), VA 630 (Exit 140 at Courthouse Road), and Marine Corps Base Quantico (Exit 148 at Russell Road). The Build Alternative would provide a direct connection with the Southbound and Northbound Rappahannock River Crossing Projects.

The proposed new segments of the I-95 Express Lanes, along with the proposed connections to the I-95 GP lanes near Exit 133 and Exit 148 and the proposed direction connection to Old Courthouse Road, were coded into the MWCOG travel demand model, and the raw model output was processed as described in Section 2.4. The resulting daily, peak period, and AM and PM peak hourly volumes are summarized in **Table 5-1**, **Table 5-2**, **Table 5-3**, and **Table 5-4**, respectively.

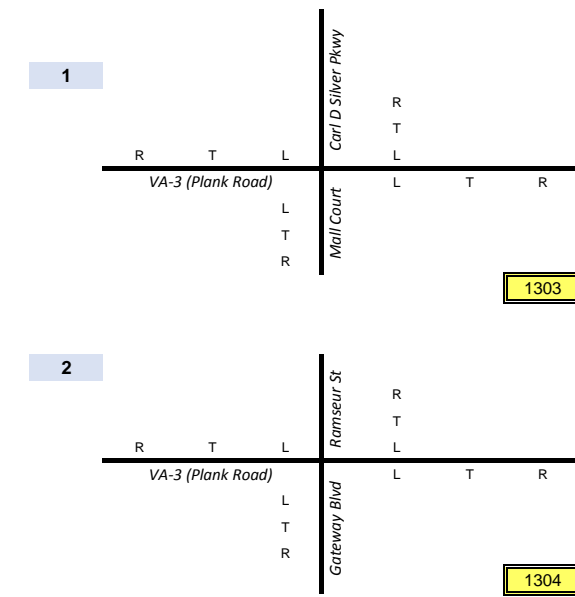
As shown in **Table 5-1** compared to 2042 No-Build conditions, the proposed I-95 Express Lane extension would increase the total daily volumes along the I-95 within the study corridor. Projected daily traffic volumes would increase by approximately six percent (8,000 to 11,000 vehicles per day) north of Exit 143 and approximately eight to ten percent (15,000 to 17,000 vehicles per day) between Exits 133 and 143. North of Exit 143, the daily volumes in the I-95 GP lanes would decrease by approximately 4,000 vehicles per day, while the Express Lane volumes would increase by approximately 14,000 vehicles per day. Between Exits 133 and 143, the daily I-95 GP volumes would decrease by approximately 14,000 vehicles per day and the proposed I-95 Express Lanes would carry approximately 26,000 vehicles per day.

The three-hour peak period and peak hourly demand volumes also show increased traffic volume along I-95 compared to 2042 No-Build conditions. During the AM peak period (6 – 9 AM), north of Exit 143, total northbound I-95 volumes are projected to increase by approximately three percent (700 vehicles); the I-95 Express Lanes volume would increase by approximately 1,500 vehicles and the GP volume would decrease by approximately 800 vehicles. Between Exits 133 and 140, total northbound I-95 volumes are projected to increase by approximately 16 percent; the GP lane volumes would essentially remain unchanged, but an additional 3,200 vehicles would be served by the proposed I-95 Express Lanes.

During the PM peak period (4 – 7 PM), north of Exit 143, total southbound volumes are projected to increase by approximately two percent (500 vehicles); the GP lane volumes would decrease by approximately 300 vehicles, but the I-95 Express Lanes would carry an additional 800 vehicles. Between Exits 140 and 133, total southbound volumes are projected to increase by approximately 7,500 vehicles; the I-95 GP lane volume would increase by approximately 1,500 vehicles and the proposed I-95 Express Lanes would carry approximately 6,000 vehicles in this segment.

Detailed daily volumes for 2042 Build conditions are provided in **Figures 5-2-1** through **5-2-7**.

Detailed AM and PM peak period hourly volumes for 2042 Build conditions, including turning movement volumes at the ramp terminal intersections, are provided in **Appendix C** in **Figures C-1-1** through **C-7-7**.



Legend

xx,xxx Weekday Daily Volume

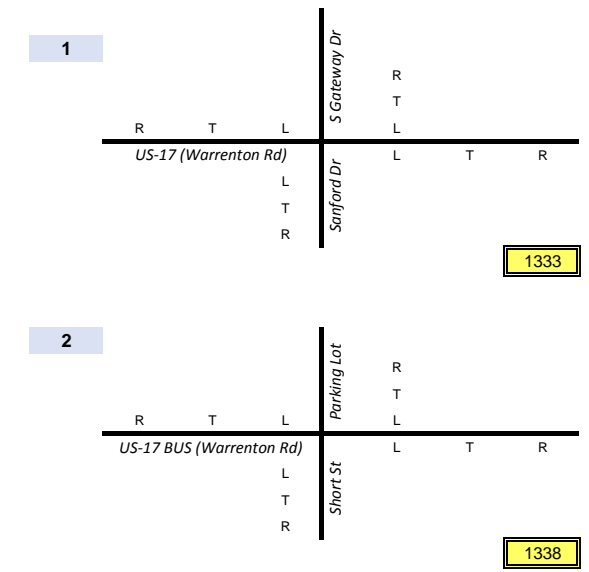
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 5.2-1



Legend

xx,xxx Weekday Daily Volume

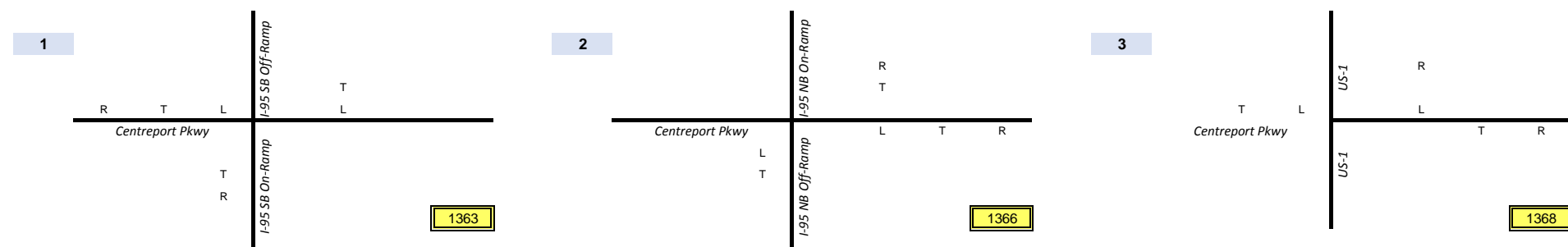
■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday Daily Volumes
I-95 Corridor

August 2017 Figure 5.2-2



Legend

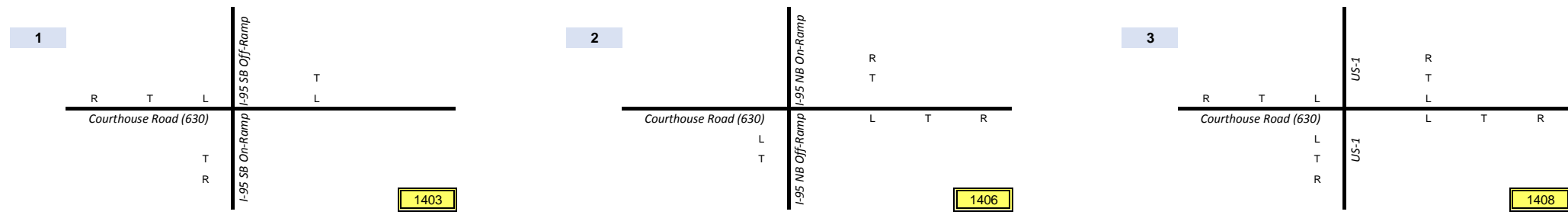
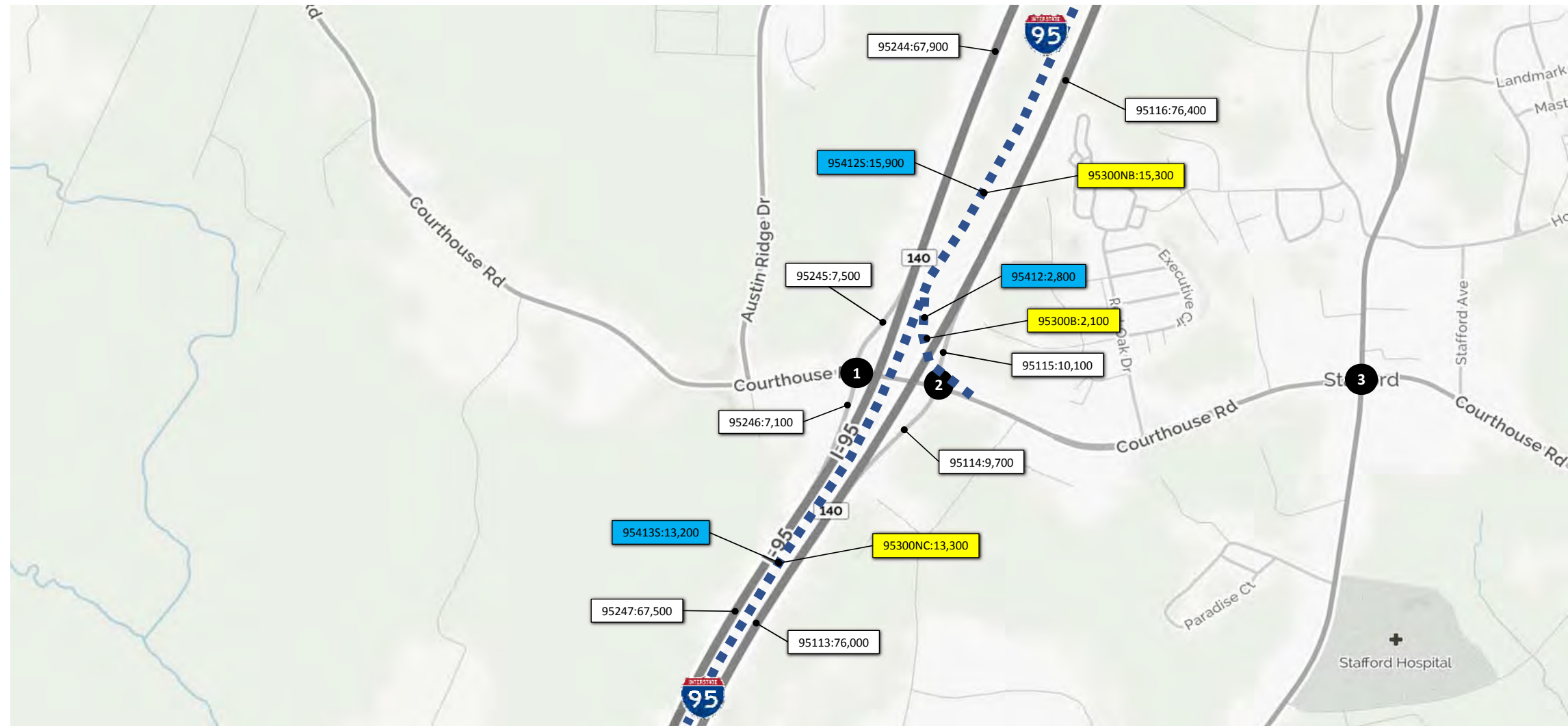
xx,xxx Weekday Daily Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension
 NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure 5.2-3



Legend

xx,xxx Weekday Daily Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

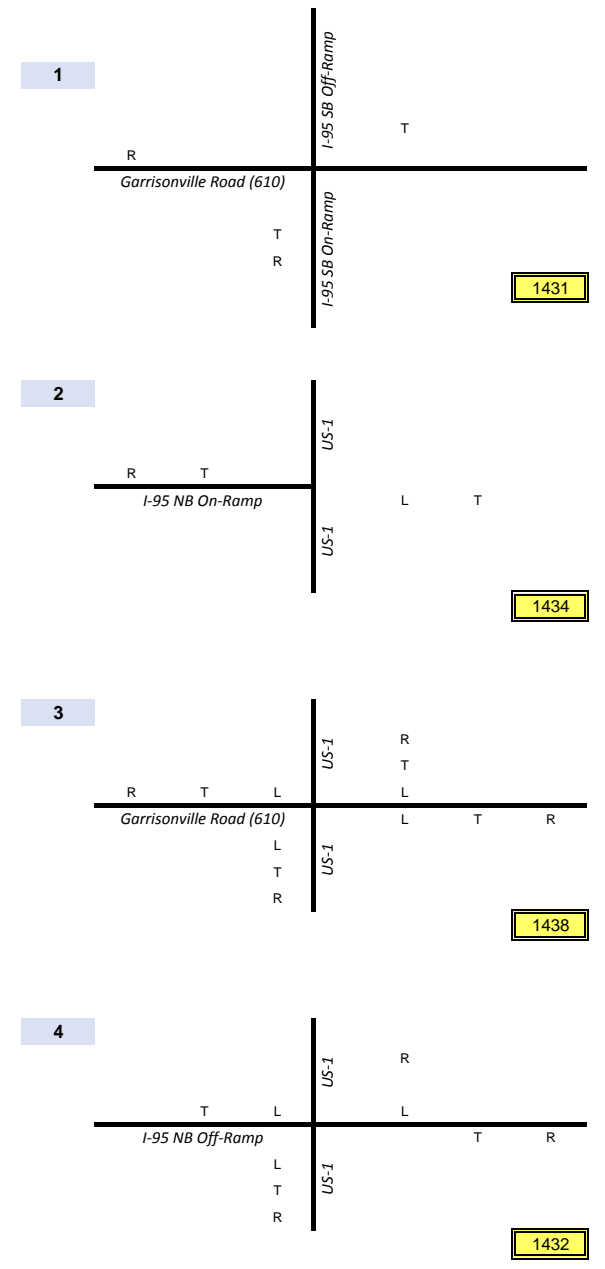
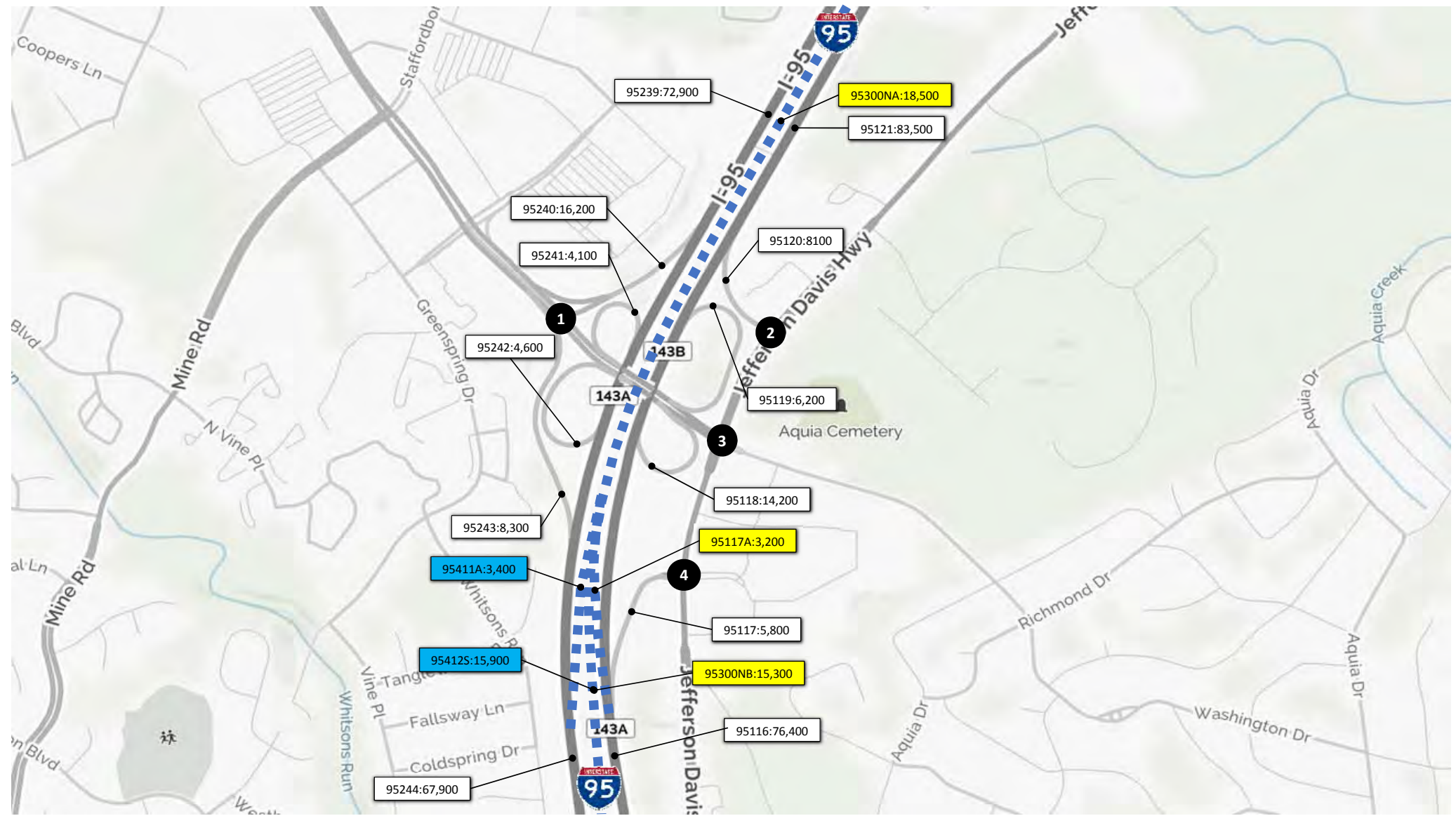
2042 Build

Weekday Daily Volumes

I-95 Corridor

August 2017

Figure 5.2-4



Legend

xx,xxx Weekday Daily Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 5.2-5



Legend

xx,xxx Weekday Daily Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

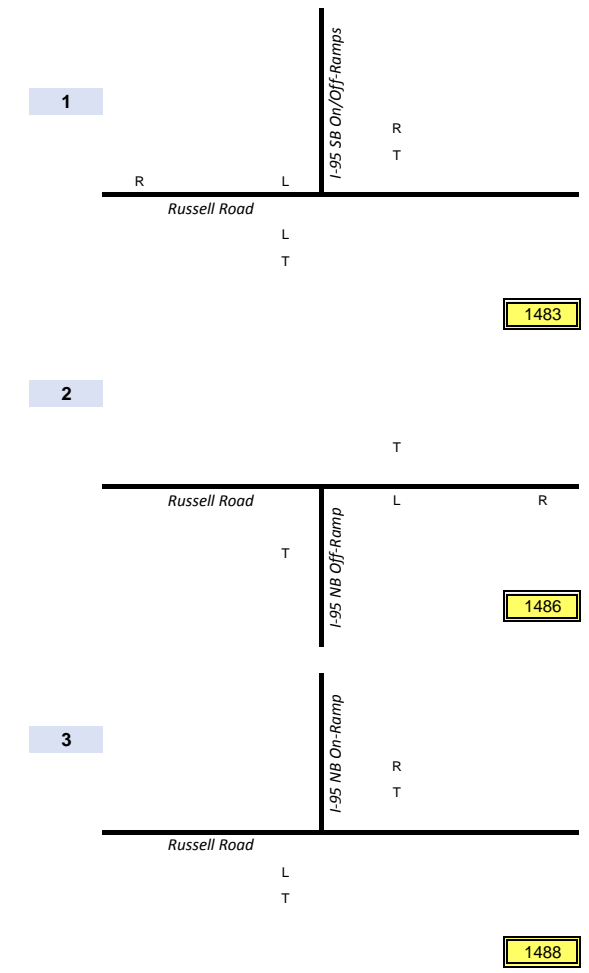
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure 5.2-6



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2042 Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure 5.2-7

5.3.1 Operational Analysis

Table 5-5 presents the LOS for the I-95 corridor for the AM and PM peak periods for 2042 Build conditions. **Table 5-6** presents the intersection LOS for all ramp terminal intersections for the AM and PM peak hours under 2042 Build conditions.

Overall, the I-95 general purpose lanes are projected to continue to operate at LOS F in the northbound direction during the AM peak period and at LOS F in the southbound direction during the PM peak period. Compared to 2042 No-Build conditions, travel times within the GP lanes within the study segment are projected to decrease by five minutes in the northbound direction during the AM peak period and seven minutes in the southbound direction during the PM peak period. It should be noted that in the southbound direction, the congested segment extends beyond the study limits in 2042, so the overall change in SB travel times may be larger if a larger study limit were selected.

Travel times within the I-95 Express Lanes within the Study limits are projected to be 16 minutes with free-flow conditions throughout the Express Lanes based on the forecasted demand, offering a travel time savings of nine to 16 minutes compared to the I-95 GP lanes in the peak periods.

6. OPENING YEAR FORECASTS AND ANALYSES

6.1 SUMMARY

A summary of daily traffic volumes on key roadway links for 2022 No-Build and Build within the study area is provided in **Table 6-1**.

Table 6-1: 2022 Daily Volumes by Segment

Location on I-95	Direction	2016 Daily Volumes			2042 No-Build Daily Volumes			2042 Build Daily Volumes		
		GP	Express	Total	GP	Express	Total	GP	Express	Total
North of Jefferson Davis Highway (US 1, Exit 126)	NB	52,000	-	105,100	75,500	-	151,400	77,400	-	156,000
	SB	53,100	-		75,900	-		78,600	-	
North of Plank Road (Route 3, Exit 130)	NB	69,000	-	136,000	88,300	-	173,800	91,100	-	180,100
	SB	67,000	-		85,500	-		89,000	-	
North of Warrenton Road (US 17, Exit 133)	NB	62,200	-	124,400	80,700	-	157,800	76,200	13,300	171,100
	SB	62,200	-		77,100	-		68,400	13,200	
North of Centreport Parkway (Route 8900, Exit 136)	NB	61,900	-	124,200	78,200	-	154,400	76,000	13,300	170,000
	SB	62,300	-		76,200	-		67,500	13,200	
North of Courthouse Road (Route 630, Exit 140)	NB	60,900	-	121,900	81,400	-	158,000	76,400	15,300	175,500
	SB	61,000	-		76,600	-		67,900	15,900	

Location on I-95	Direction	2016 Daily Volumes			2042 No-Build Daily Volumes			2042 Build Daily Volumes		
		GP	Express	Total	GP	Express	Total	GP	Express	Total
North of Garrisonville Road (Route 610, Exit 143)	NB	69,600	6,200	153,700	85,300	12,500	188,800	81,500	20,500	199,800
	SB	68,600	9,300		75,000	16,000		75,500	22,300	
North of Russell Road (Exit 148)	NB	64,900	6,200	143,000	77,600	12,500	175,400	76,100	20,500	183,100
	SB	62,600	9,300		69,300	16,000		70,200	16,300	

For purposes of environmental analyses, capacity analyses for ramp terminal intersections were performed using 2022 opening year volumes, as discussed in **Section 2.3**. Mainline capacity analyses were not performed for opening year conditions.

Table 6-2 presents the intersection LOS for all ramp terminal intersections for the Existing, 2022 No-Build, and 2022 Build Alternatives.

Detailed daily volumes for 2022 No-Build conditions are provided in **Appendix D** in **Figures D-1-1** through **D-1-7**.

Detailed AM and PM peak period hourly volumes for 2022 No-Build conditions, including turning movement volumes at the ramp terminal intersections, are provided in **Appendix D** in **Figures D-2-1** through **D-8-7**.

Detailed daily volumes for 2022 Build conditions are provided in **Appendix E** in **Figures E-1-1** through **E-1-7**.

Detailed AM and PM peak period hourly volumes for 2022 Build conditions, including turning movement volumes at the ramp terminal intersections, are provided in **Appendix E** in **Figures E-2-1** through **E-8-7**.

Table 6-2: Opening Year 2022 Intersection Analysis Results

Intersection			Existing				2022 No-Build				2022 Build			
			AM (7 – 8 AM)		PM (5 – 6 PM)		AM (7 – 8 AM)		PM (5 – 6 PM)		AM (7 – 8 AM)		PM (5 – 6 PM)	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
US 17	at	South Gateway Dr	C	32.0	C	30.4	C	30.7	C	32.3	C	32.9	D	41.8
US 17 Bus	at	Short St	B	15.3	C	27.4	B	15.1	C	27.4	C	16.6	D	36.2
I-95 NB Ramps	at	Centreport Pkwy	B	10.7	C	29	B	10.6	C	30.7	C	10.2	C	29.9
I-95 SB Ramps	at	Centreport Pkwy	E	62	A	9.6	D	36.1	B	13.9	B	18.2	B	19.7
US 1	at	Centreport Pkwy	F	174.3	C	34.3	E	62.7	C	34.2	B	38.6	D	38.4
I-95 NB Ramps	at	Courthouse Rd	B	11.8	B	19.2	B	18.4	B	19.5	B	18.5	B	11.6
I-95 SB Ramps	at	Courthouse Rd	C	21.4	C	23.7	B	11.8	C	29.8	D	8.8	B	11.5
I-95 NB Off-Ramp	at	US 1	A	3.4	A	8.5	A	1.4	A	3.1	B	1.2	A	4.9
Garrisonville Rd	at	US 1	B	13.7	A		B	10.8	B	15.3	A	5.4	E	64.2
US 1	at	I-95 NB On-Ramp	E	70	F	85.6	F	93.3	F	107	A	87	F	153.1
I-95 SB Off-Ramp	at	Garrisonville Rd	B	18.9	B	13.7	C	29.6	C	23	A	29.1	B	19.1
I-95 NB Off-Ramp	at	Russell Rd	D	36.9	B	17.2	B	18.2	C	30.4	F	22.4	C	24.0
Russell Rd	at	I-95 NB On-Ramp	C	26.8	A	6.1	C	29.9	B	13.7	C	24.8	C	20
I-95 SB Ramps	at	Russell Rd	A	1.9	B	13.7	A	1.5	B	11.5	C	12.6	B	10.3

7. REFERENCES

- Furth, Peter G. 1990. *Model of Turning Movement Propensity*. Transportation Research Record, Issue 1287, Transportation Research Board.
- Horowitz, Alan; Creasey, Tom; Pendyala, Ram; Chen, Mei. 2014. *Analytical Travel Forecasting Approaches for Project-Level Planning and Design*. NCHRP Report, CDM Smith, Issue 765.
- Pedersen, N J; Samdahl, D R. 1982. *Highway Traffic Data for Urbanized Area Project Planning and Design*. NCHRP Report, Transportation Research Board, Issue 255.
- Transportation Research Board. 2010. *Highway Capacity Manual 2010*.
- Virginia Department of Transportation. June 2014. *Travel Demand Modeling Policies and Procedures, Version 2.00*.
- Virginia Department of Transportation (VDOT). 2017a. Interstate 95 Express Lanes Fredericksburg Extension Study Revised Environmental Assessment. Richmond, Virginia: Virginia Department of Transportation. Unpublished Report.
- Virginia Department of Transportation (VDOT). 2017b. Interstate 95 Express Lanes Fredericksburg Extension Study Alternatives Technical Report. Richmond, Virginia: Virginia Department of Transportation. Unpublished Report.
- <http://www.greatamericanstations.com/stations/fredericksburg-va-fbg/>
- <http://www.slug-lines.com/Index.htm>

**APPENDIX A:
2016 EXISTING
TRAFFIC VOLUMES**



1			Carl D Silver Pkwy			
R	T	L		R	T	R
30	2	276			346	
					1,056	
					8	
VA-3 (Plank Road)			Mall Court	L	T	R
128						
2,832			8	0	10	
4						
1303						

2			Ramseur St			
R	T	L		R	T	R
12	0	0			0	
					892	
					86	
VA-3 (Plank Road)			Gateway Blvd	L	T	R
72						
1,219			290	0	112	
208						
1304						

Legend

x,xxx Weekday 6-7 AM Volume

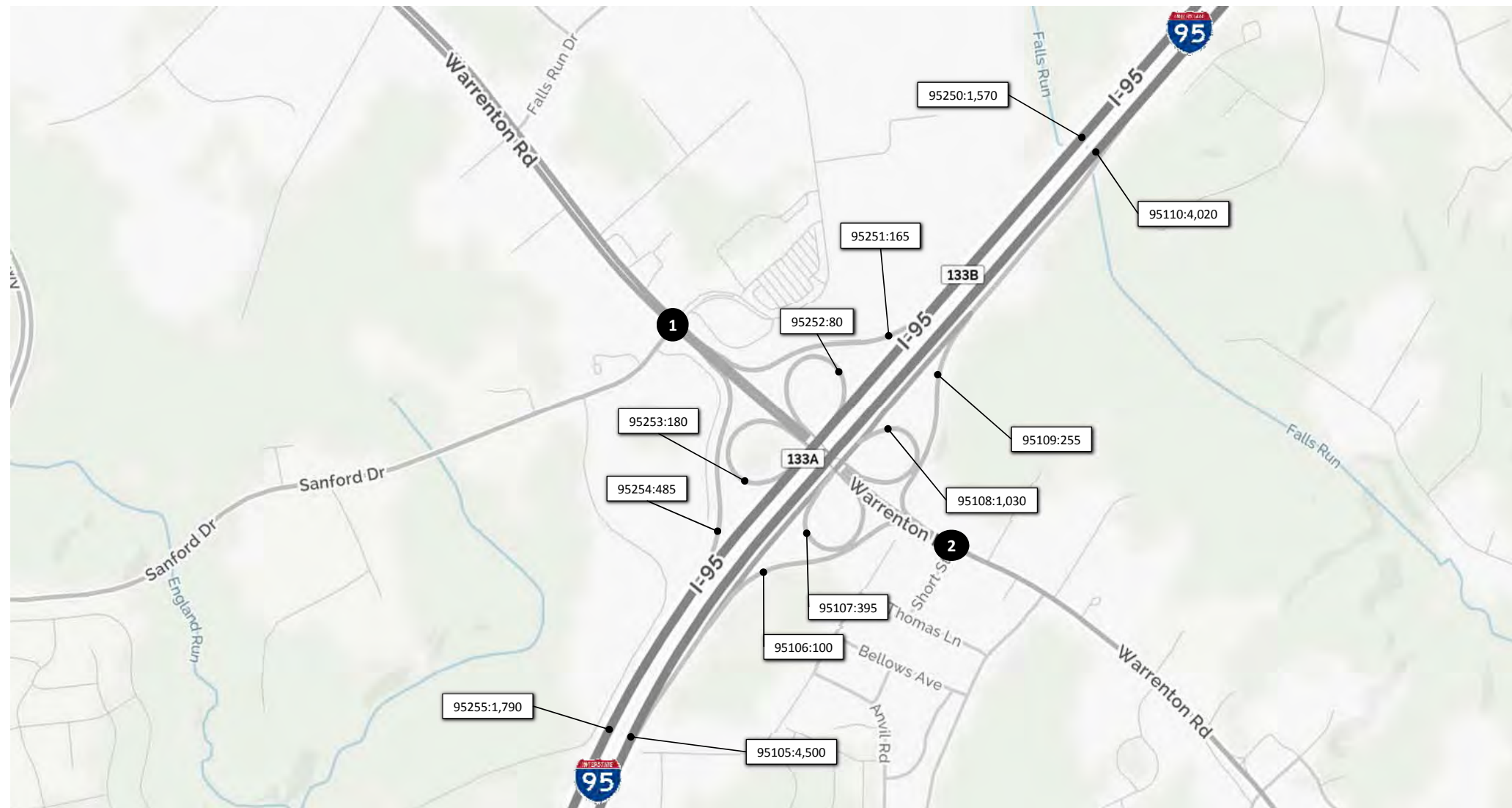
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017

Figure A.1-1



1	15	0	172	S Gateway Dr			R	165	
				L	T	R		1,549	
				US-17 (Warrenton Rd)			L	T	R
				20					
				1,006			10	10	58
				10					
				Sanford Dr					1333

2	0	2	2	Parking Lot			R	0	
				L	T	R		838	
				US-17 BUS (Warrenton Rd)			L	T	R
				0					
				595			82	0	10
				43					
				Short St					1338

Legend

x,xxx Weekday 6-7 AM Volume

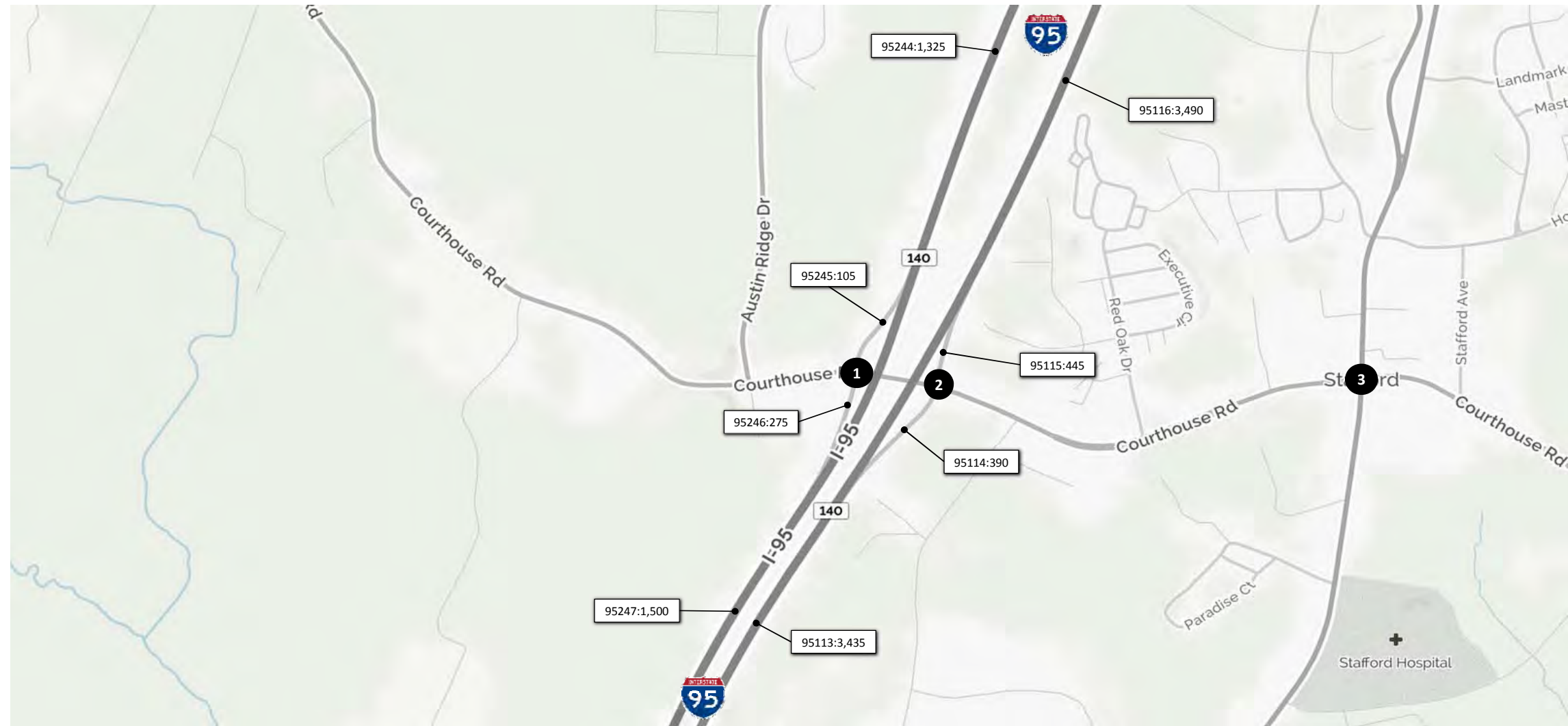
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure A.1-2



1							
36	0	69					
R	T	L	I-95 SB Off-Ramp	T	707		
Courthouse Road (630)			I-95 NB On-Ramp	L	99		
	251	T					
	179	R					
							1403

2							
				R	328		
				T	544		
Courthouse Road (630)			I-95 NB Off-Ramp	L	T	R	
	104	L		262	15	115	
	216	T					
							1406

3							
304	105	65					
R	T	L	US-1	R	155		
Courthouse Road (630)			US-1	T	209		
	120	L		L	15		
	105	T					
	105	R					
							1408

Legend

x,xxx Weekday 6-7 AM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure A.1-4



1	0	I-95 SB Off-Ramp		T	671		
	R						
Garrisonville Road (610)		1,921	T				
		188	R				
		I-95 SB On-Ramp					
				1431			
2	60	646	US-1				
	R	T					
I-95 NB On-Ramp				L	T		
				988	1,387		
				1434			
3	440	190	15	US-1	R	298	
					T	187	
Garrisonville Road (610)				L	T	R	
		910	L				
		14	T	168	1,169	0	
		114	R				
				1438			
4			327	44	US-1	R	119
					L		
I-95 NB Off-Ramp				L	19		
		163	L				
		81	T				
		5	R				
				1432			

Legend

x,xxx Weekday 6-7 AM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017

Figure A.1-5



Legend

x,xxx Weekday 6-7 AM Volume

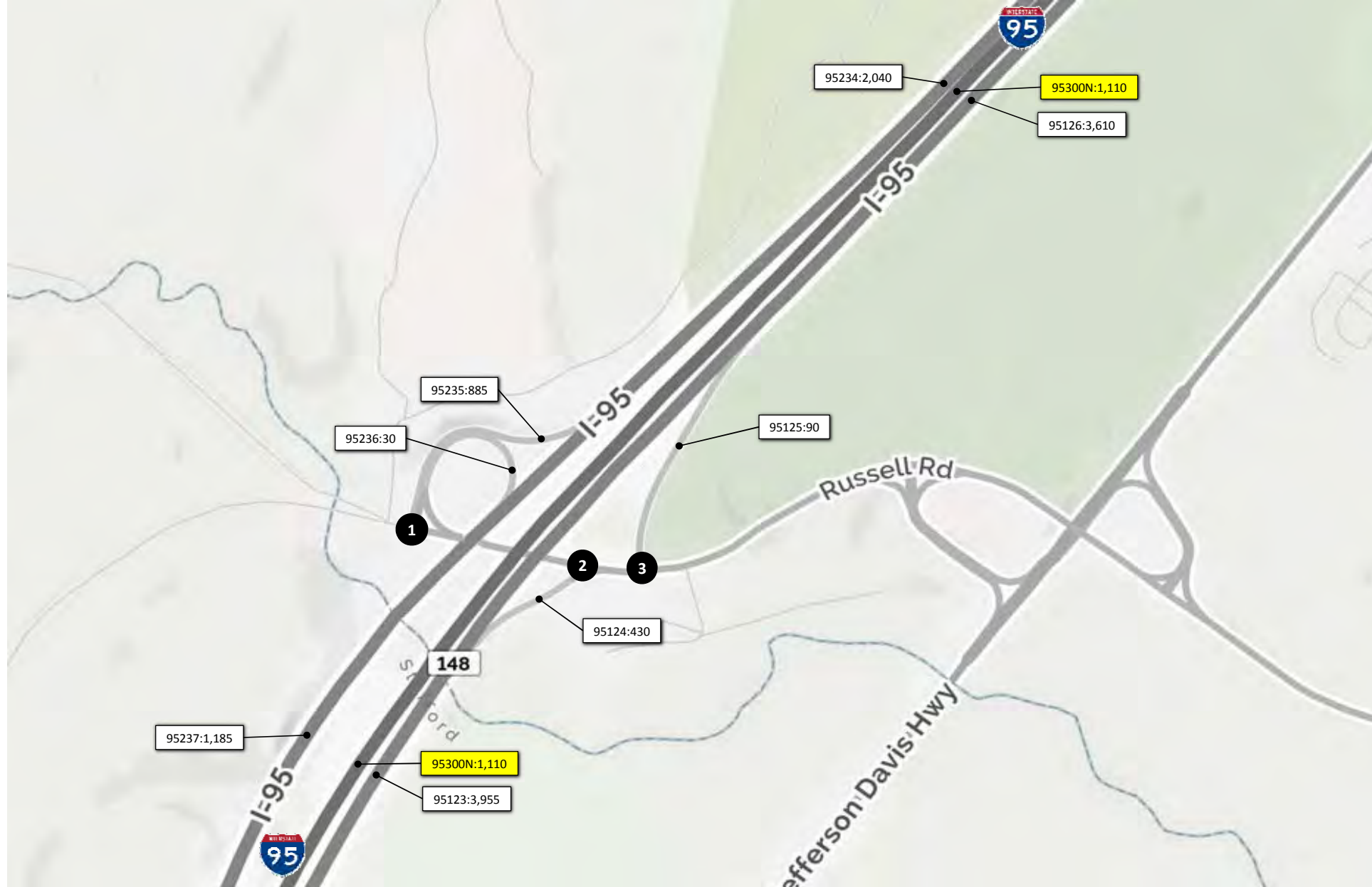
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure A.1-6



1	417	469	I-95 SB On/Off-Ramps		24
	R	L	R	T	180
Russell Road					
	2	L			
	134	T			1483
2				T	143
	Russell Road				
	604	T	L	R	
			61	369	1486
3			I-95 NB Off-Ramp		
			R	T	69
Russell Road					
	19	L			
	954	T			1488

Legend

x,xxx Weekday 6-7 AM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure A.1-7



1			Carl D Silver Pkwy				
41	2	313	R			410	
			T			1,385	
			L			13	
VA-3 (Plank Road)				L	T	R	
156			L				
2,849			T		1	3	9
4			R				
			Mall Court				
					1303		

2			Ramseur St				
15	2	5	R			7	
			T			1,044	
			L			104	
VA-3 (Plank Road)				L	T	R	
73			L				
1,614			T		263	1	140
271			R				
			Gateway Blvd				
					1304		

Legend

x,xxx Weekday 7-8 AM Volume

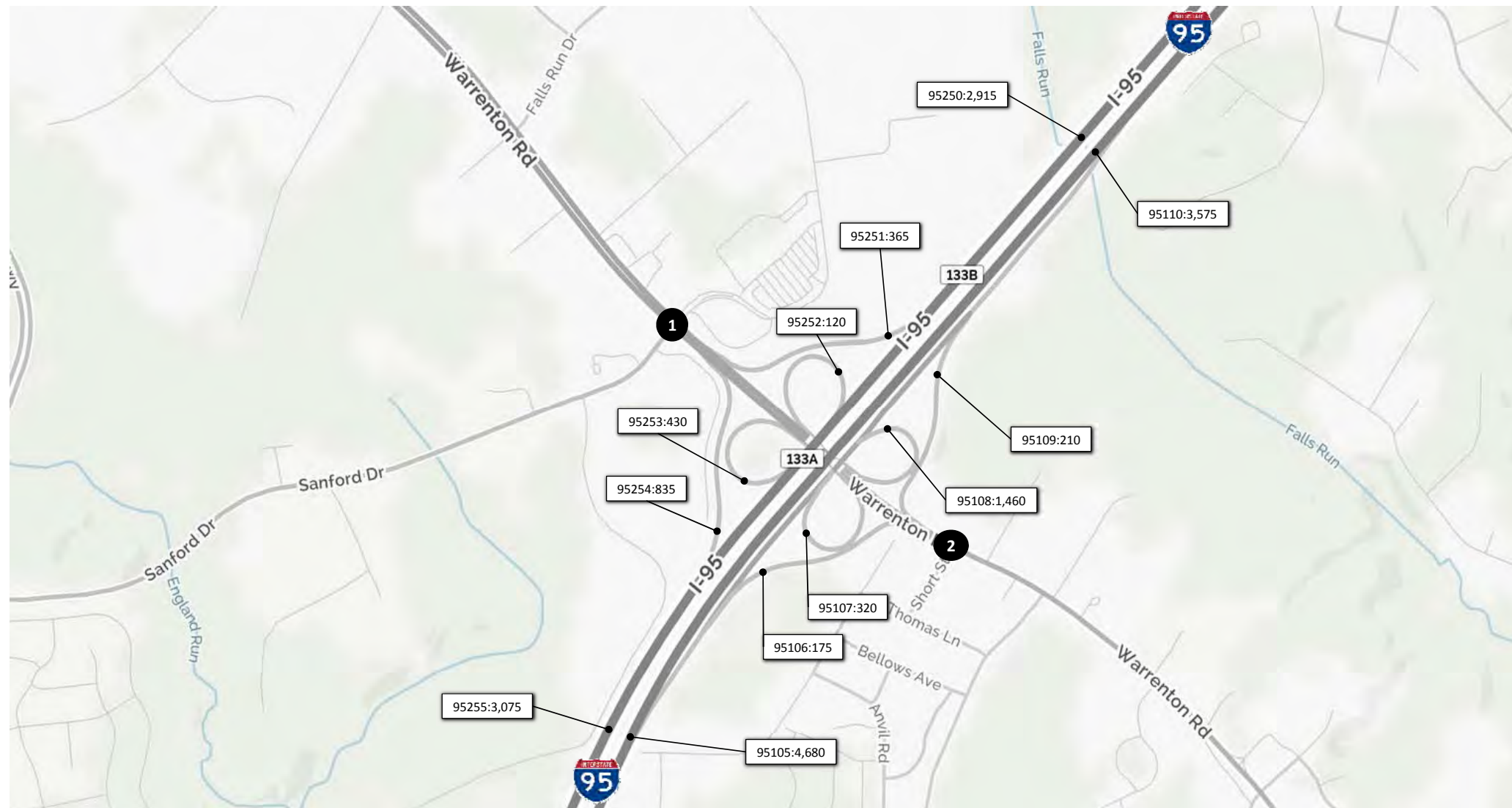
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure A.2-1



1	36	27	286	S Gateway Dr	R	337
					T	2,174
	R	T	L	Sanford Dr	L	289
	US-17 (Warrenton Rd)				L	T
	53	L				
	1,380	T		29	19	114
	28	R				1333
2	6	0	3	Parking Lot	R	2
					T	1,200
	R	T	L	Short St	L	5
	US-17 BUS (Warrenton Rd)				L	T
		4	L			
		1,167	T		100	3
	60	R				1338

Legend

x,xxx Weekday 7-8 AM Volume

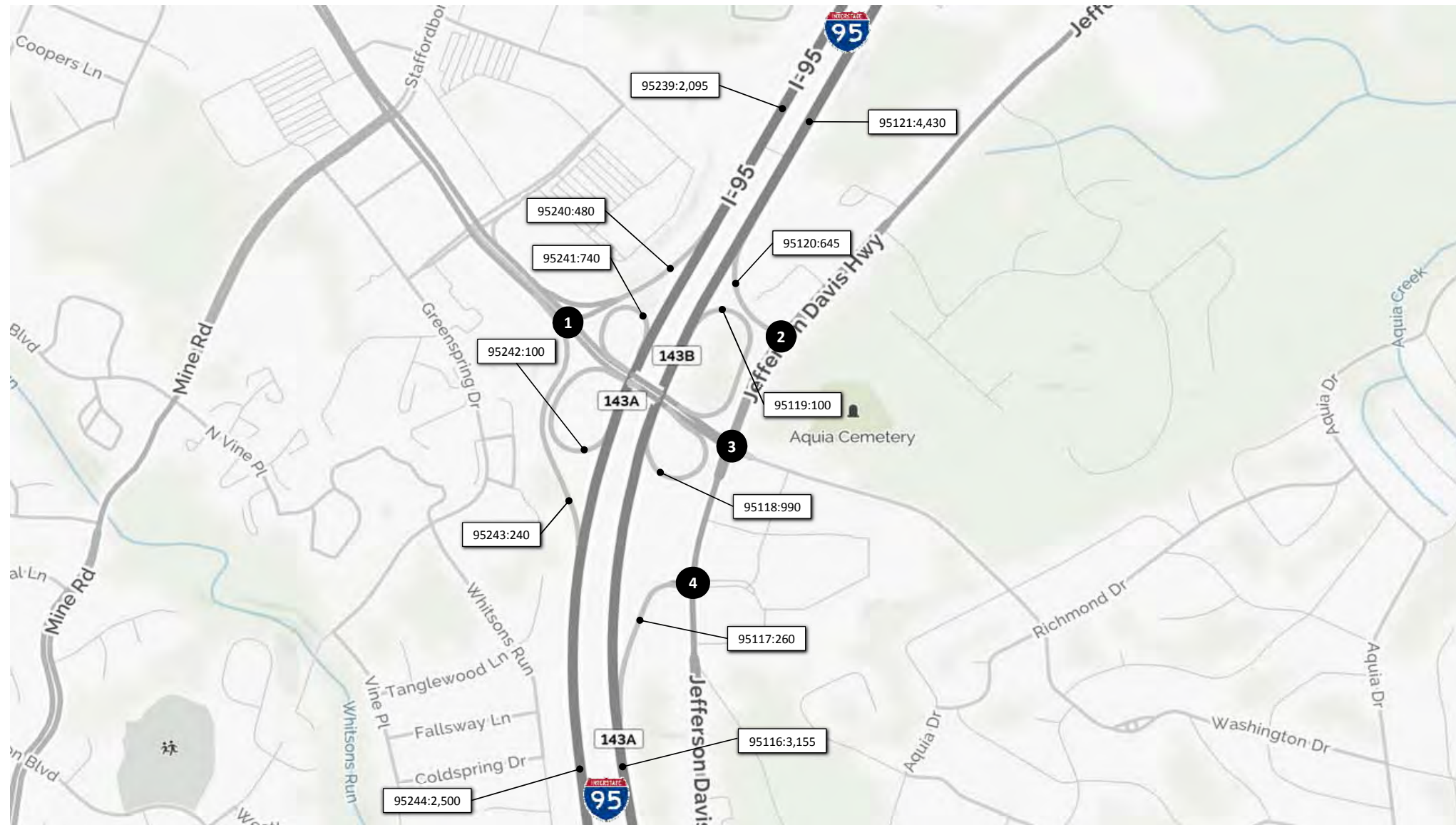
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure A.2-2



1	20	I-95 SB Off-Ramp		T	872
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
2,200	T				
241	R				
		1431			
2	101	1,454	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
				546	1,808
		1434			
3	1,029	365	60	US-1	
	R	T	L	R	402
Garrisonville Road (610)		US-1		T	313
				L	94
1,053		L		L	T
57	T			173	899
199	R				4
		1438			
4	612		46	US-1	
	T		L	R	136
I-95 NB Off-Ramp		US-1		L	33
				T	R
102	L				
139	T				838
17	R				82
		1432			

Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure A.2-5



Legend

x,xxx Weekday 7-8 AM Volume

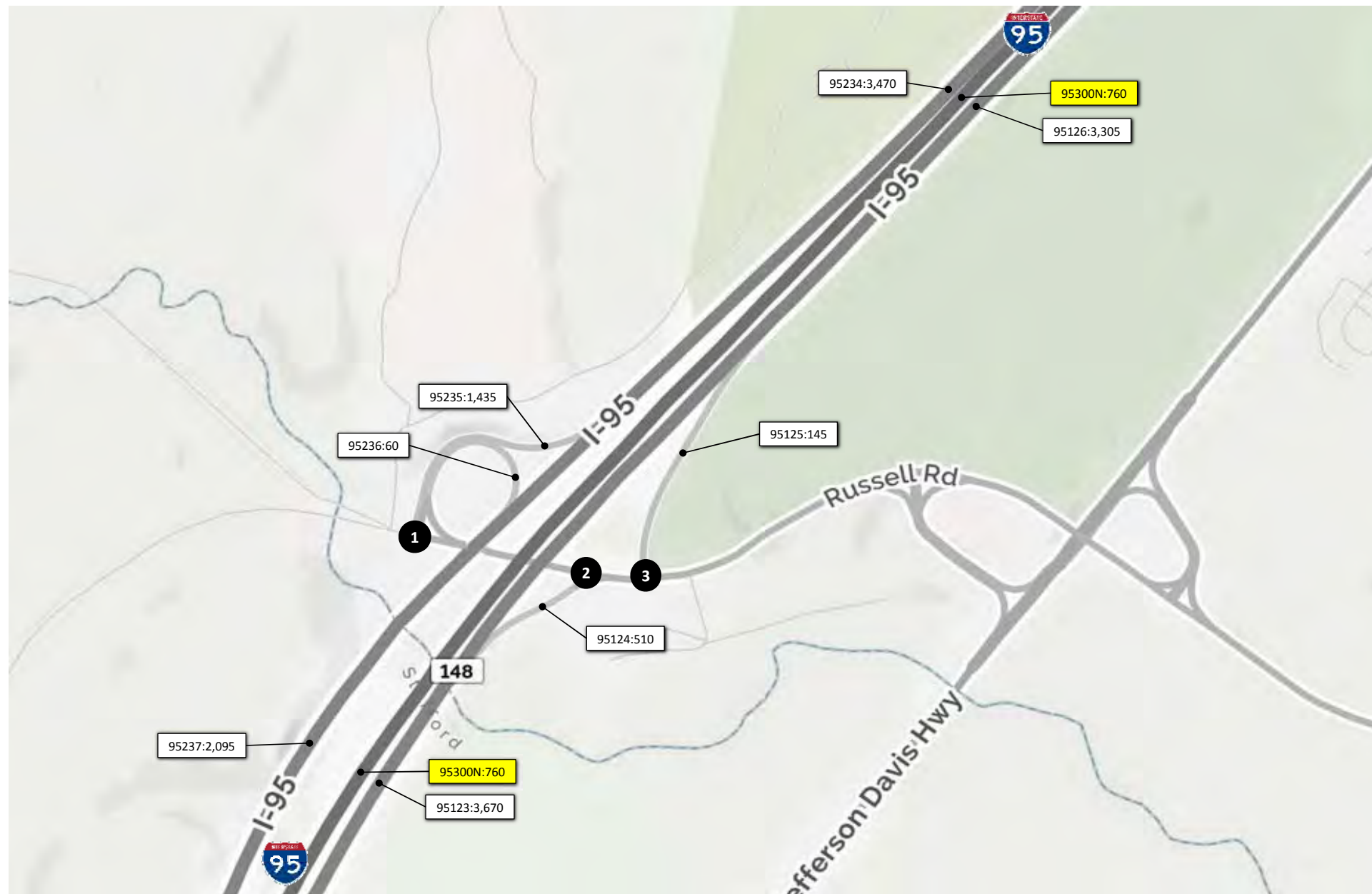
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure A.2-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	798	635		51	
	248			382	
	1483				
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	883		93	415	
	1486				
3	Russell Road		I-95 NB On-Ramp		
		L		R	T
	57			86	
	1,241			340	
	1488				

Legend

x,xxx Weekday 7-8 AM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure A.2-7



1			Carl D Silver Pkwy			
R	T	L		R	T	R
82	10	308			609	
					1,383	
					19	
VA-3 (Plank Road)			Mall Court			
R	T	L		L	T	R
210						
2,302			7	6	12	
2						
1303						

2			Ramseur St			
R	T	L		R	T	R
16	7	4			15	
					1,032	
					132	
VA-3 (Plank Road)			Gateway Blvd			
R	T	L		L	T	R
27						
1,427			253	1	173	
299						
1304						

Legend

x,xxx Weekday 8-9 AM Volume

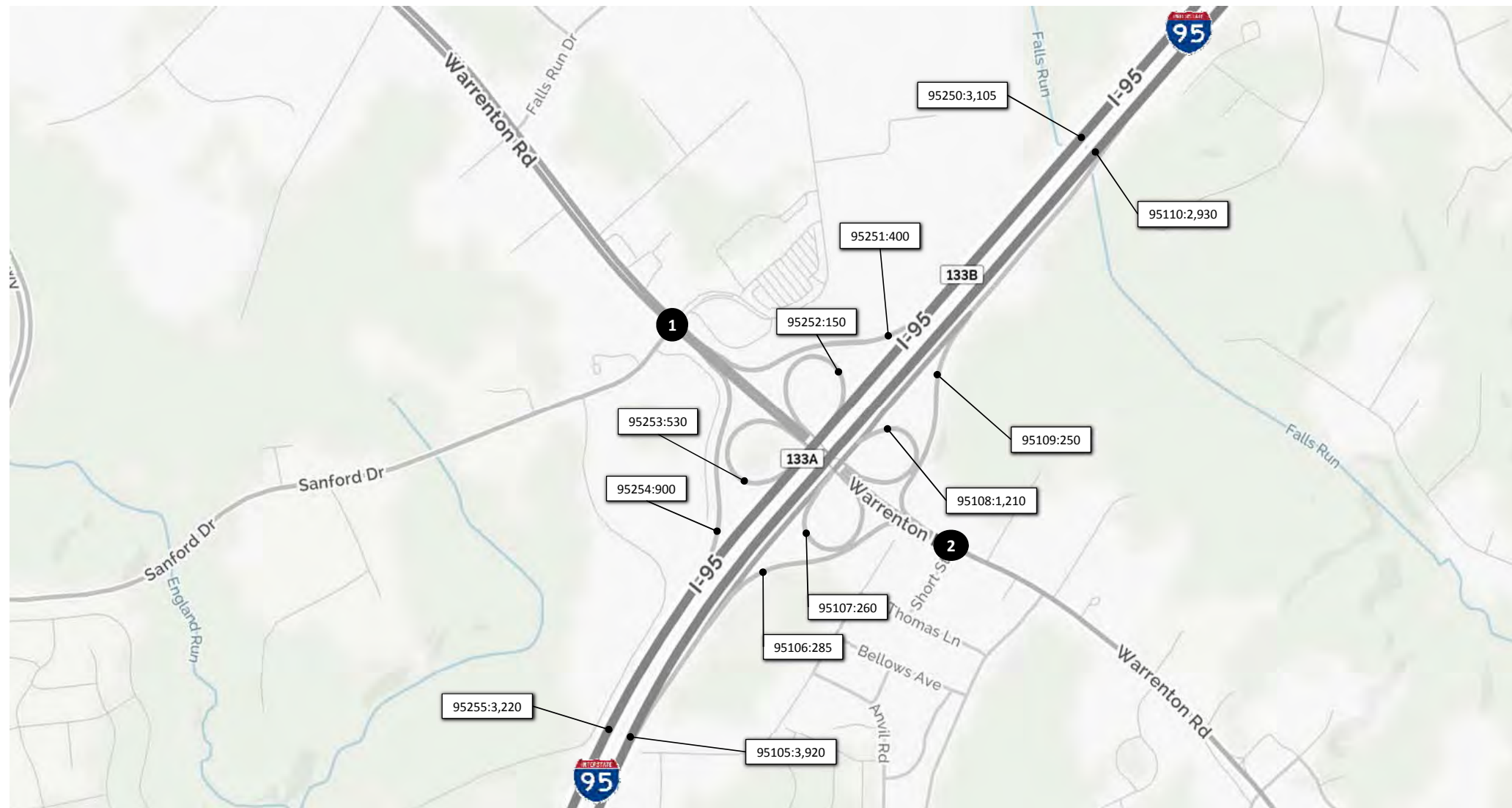
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure A.3-1



1	83	59	273	S Gateway Dr			R	354	
							T	1,913	
	R	T	L				L	168	
US-17 (Warrenton Rd)						L	T	R	
	77								
	1,448		T	Sanford Dr			28	12	137
	28		R						1333

2	7	0	5	Parking Lot			R	2	
							T	1,108	
	R	T	L				L	13	
US-17 BUS (Warrenton Rd)						L	T	R	
	5		L						
	1,438		T	Short St			104	2	25
	70		R						1338

Legend

x,xxx Weekday 8-9 AM Volume

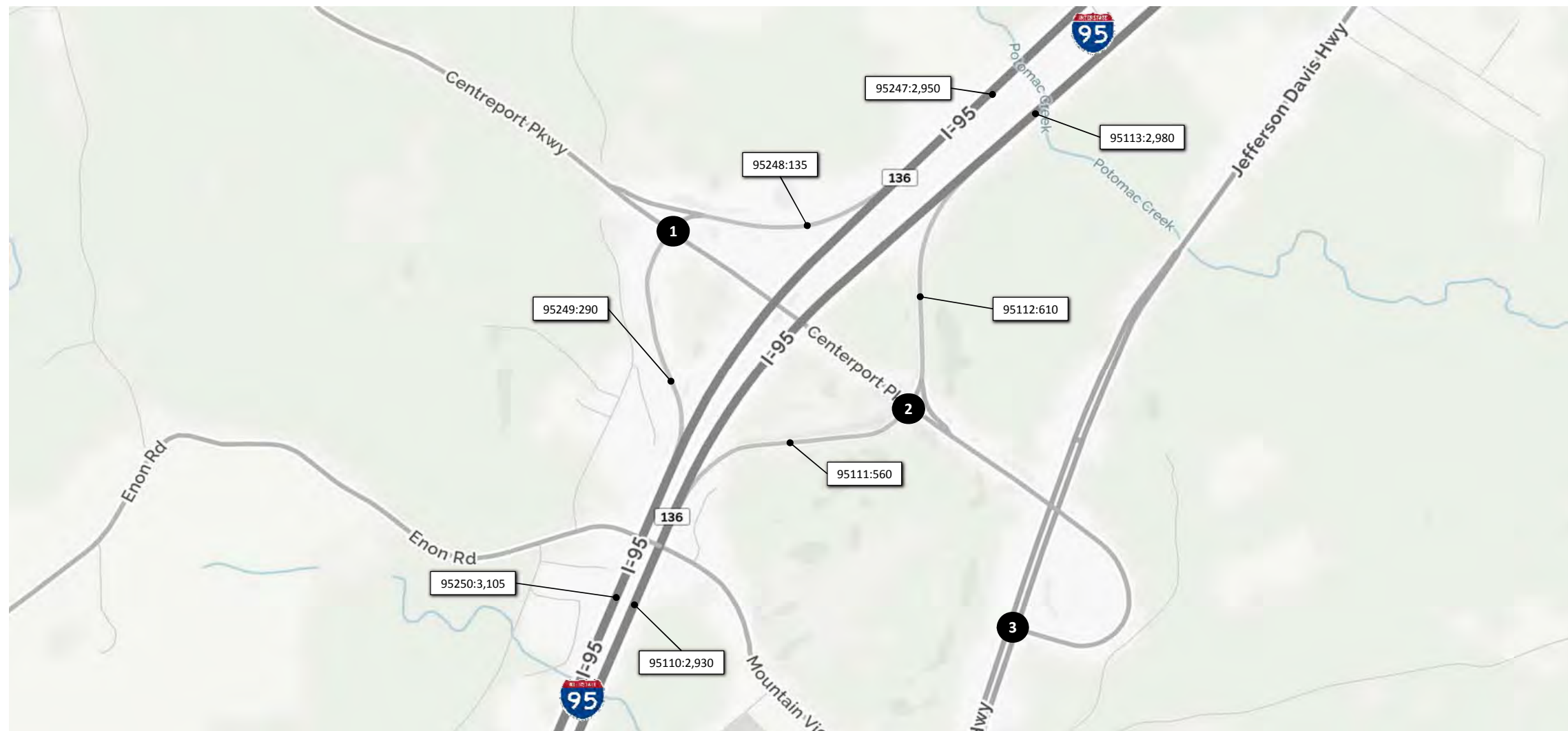
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure A.3-2



Location	Volume
Location 1: I-95 SB Off-Ramp	387
Location 1: I-95 SB On-Ramp	123
Location 1: Total	1363
Location 2: I-95 NB On-Ramp	577
Location 2: I-95 NB Off-Ramp	276
Location 2: Total	1366
Location 3: I-95 NB On-Ramp	428
Location 3: I-95 NB Off-Ramp	135
Location 3: Total	1368

Legend

x,xxx Weekday 8-9 AM Volume

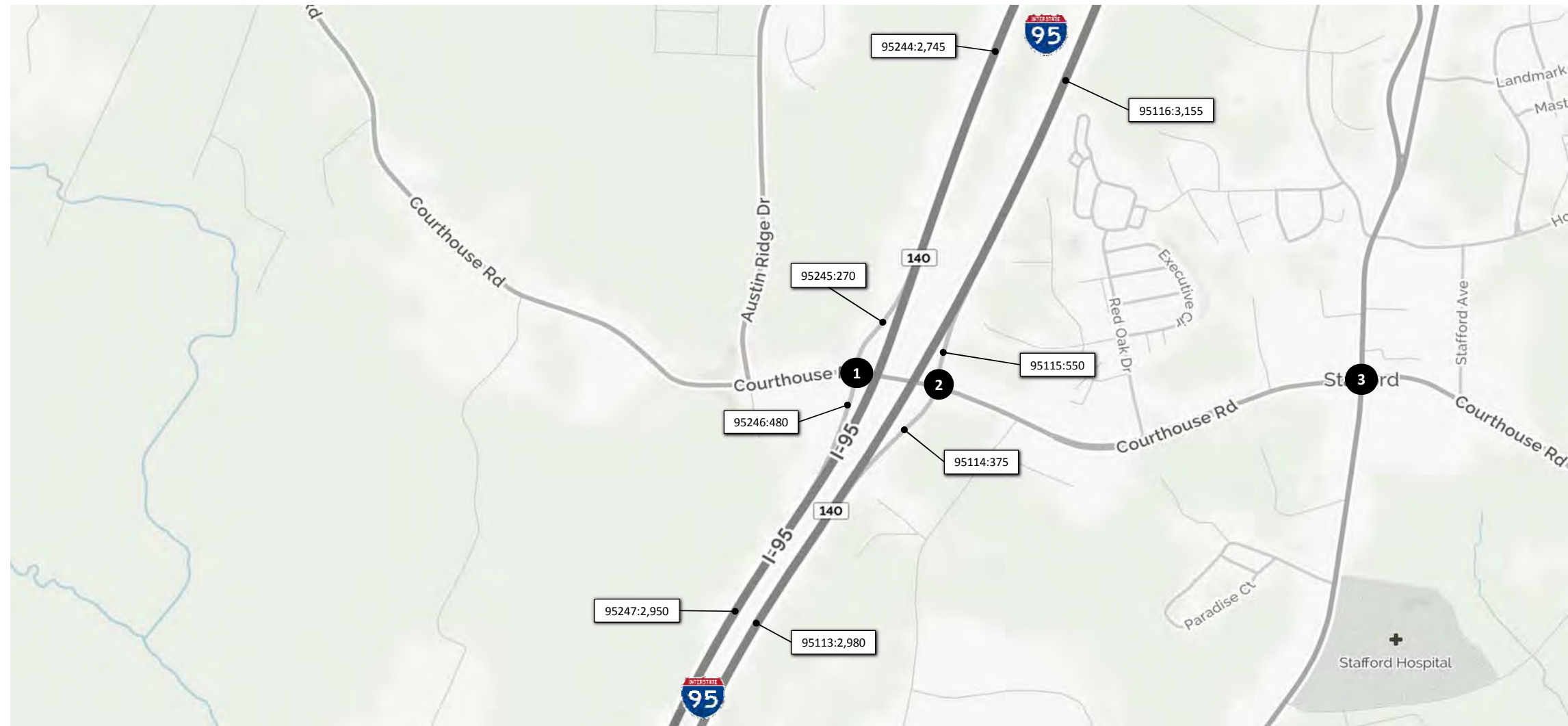
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure A.3-3



1							
90	2	180					
R	T	L	I-95 SB Off-Ramp	T	663		
Courthouse Road (630)			I-95 SB On-Ramp	L	116		
	538	T					
	360	R					
							1403

2							
				R	358		
			I-95 NB On-Ramp	T	591		
Courthouse Road (630)			I-95 NB Off-Ramp	L	T	R	
	181	L					
	537	T		188	10	178	
							1406

3							
				R	313		
			US-1	T	287		
316	258	69	US-1	L	T	R	
Courthouse Road (630)			US-1	L	T	R	
	256	L					
	67	T		346	312	16	
	392	R					
							1408

Legend

x,xxx Weekday 8-9 AM Volume

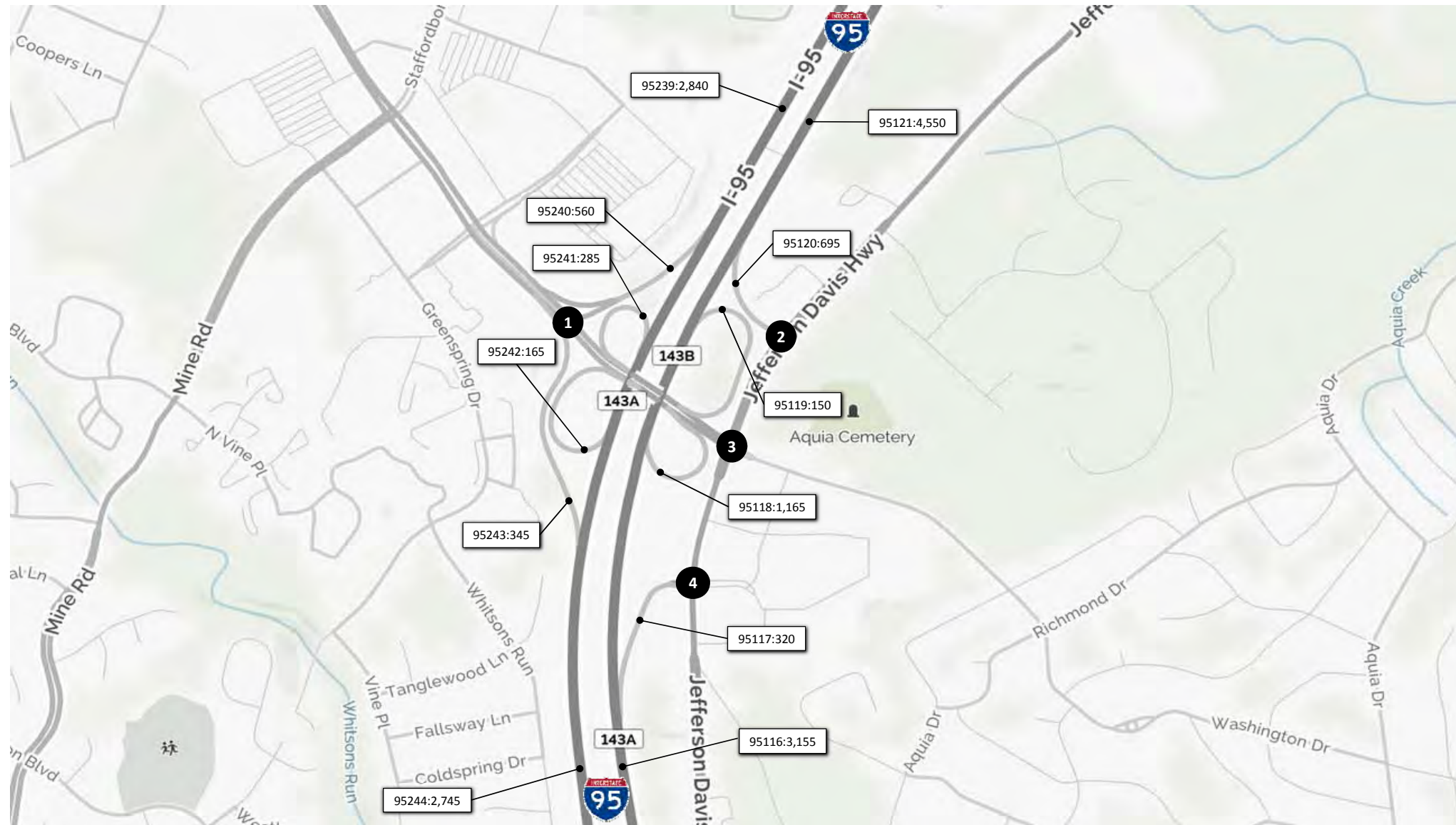
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure A.3-4



1	78	I-95 SB Off-Ramp		T	1,013
	R				
Garrisonville Road (610)					
	2,695	T			
	346	R			
		I-95 SB On-Ramp			
				1431	
2	44	836	US-1		
	R	T			
I-95 NB On-Ramp				L	T
				652	1,927
				1434	
3	581	189	66	US-1	
	R	T	L	R	260
Garrisonville Road (610)				T	325
				L	55
	1,141	L			
	208	T			
	345	R			
		US-1		L	T
				243	1,178
				R	10
				1438	
4		525	64	US-1	
		T	L	R	147
I-95 NB Off-Ramp				L	35
	185	L			
	92	T			
	41	R			
		US-1		T	R
				1,099	131
				1432	

Legend

x,xxx Weekday 8-9 AM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure A.3-5



Legend

x,xxx Weekday 8-9 AM Volume

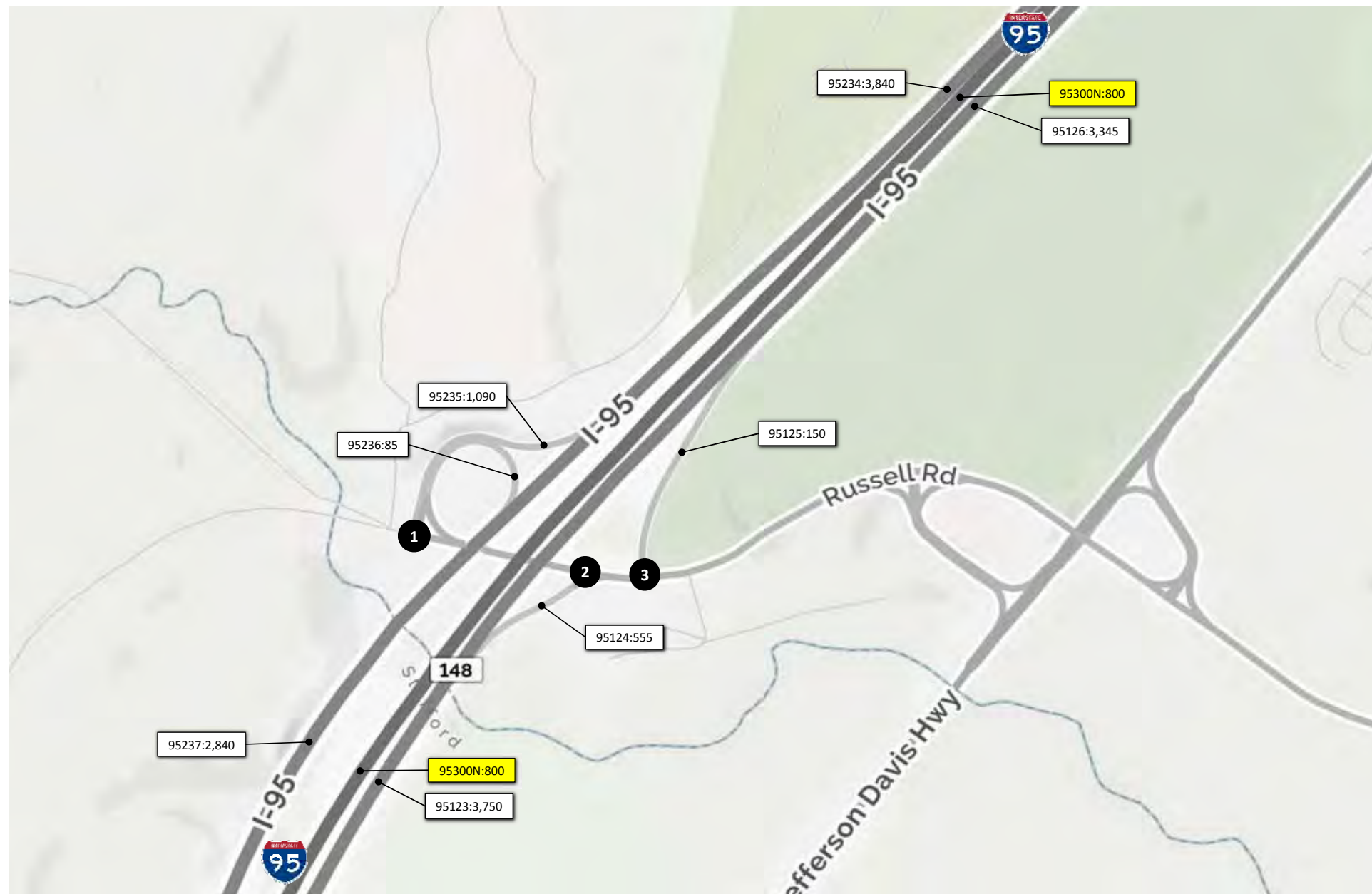
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure A.3-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	578	510		76	
	324			251	
				1483	
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	834		115	440	
				1486	
3	Russell Road		I-95 NB On-Ramp		
		L		R	T
	75			77	
	1,199			212	
				1488	

Legend

x,xxx Weekday 8-9 AM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2016 Existing
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure A.3-7



1	285	8	784	Carl D Silver Pkwy			R	847
							T	2,409
	R	T	L				L	18
	VA-3 (Plank Road)			L	T	R		
	235					L	16	
	1,928			T		8	9	
	3			R				
				Mall Court				1303
2	28	2	10	Ramseur St			R	4
							T	1,477
	R	T	L				L	152
	VA-3 (Plank Road)			L	T	R		
	35					L	180	
	1,550			T		269	0	
	367			R				
				Gateway Blvd				1304

Legend

x,xxx Weekday 3-4 PM Volume

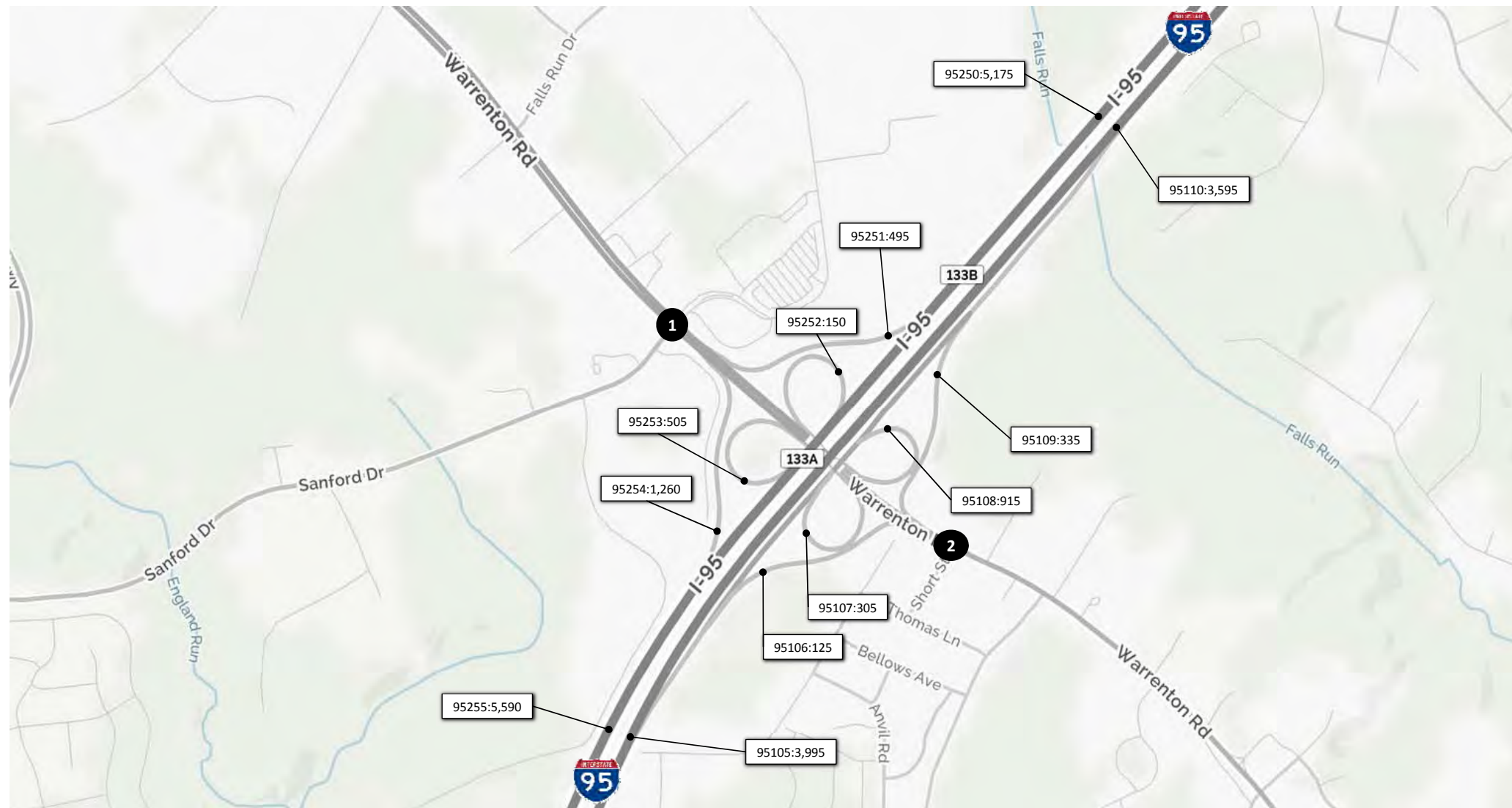
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure A.4-1



1	92	19	423	S Gateway Dr			R	372			
							T	1,590			
	R T L						L	74			
US-17 (Warrenton Rd)							L	T	R		
76							Sanford Dr		20	16	230
1,878											
13											
1333											

2	10	1	7	Parking Lot			R	7			
							T	1,094			
	R T L						L	12			
US-17 BUS (Warrenton Rd)							L	T	R		
6							Short St		92	1	12
1,494											
95											
1338											

Legend

x,xxx Weekday 3-4 PM Volume

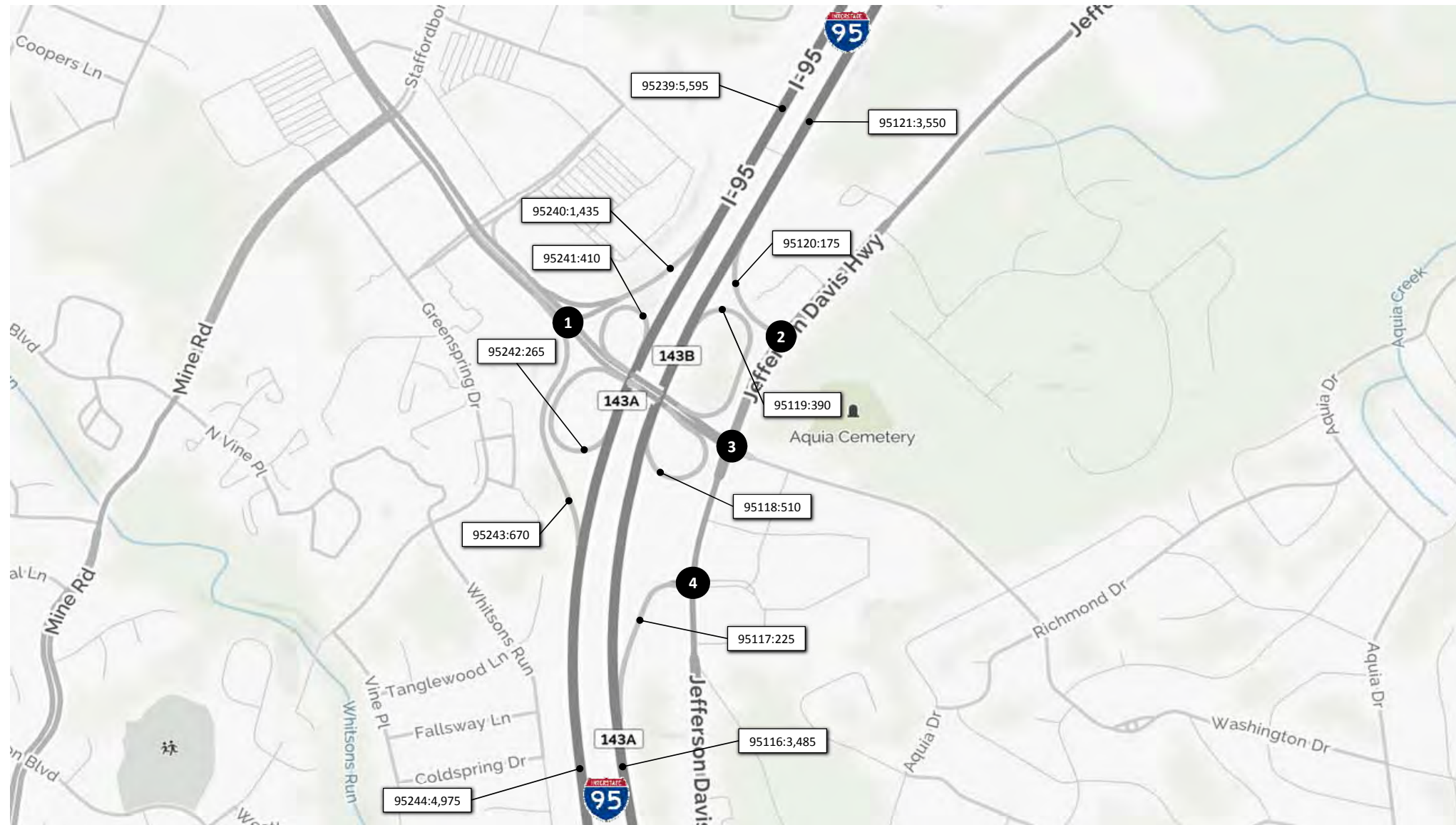
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure A.4-2



1	177			I-95 SB Off-Ramp	T	1,744	
	R			Garrisonville Road (610)			
	1,606	T		I-95 SB On-Ramp			1431
	670		R				
2	18	1,793			US-1	L	T
	R	T			I-95 NB On-Ramp		
				US-1	156	735	1434
3	1,040	632	121	US-1	R	72	
	R	T	L	Garrisonville Road (610)	T	183	
	434			US-1	L	61	
	299				L	T	R
	632		R		540	385	102
							1438
4		1,246	79	US-1	R	135	
		T	L	I-95 NB Off-Ramp	L	83	
	139			US-1	T	R	
	35						
	51		R		753	86	
							1432

Legend

x,xxx Weekday 3-4 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure A.4-5



Legend

x,xxx Weekday 3-4 PM Volume

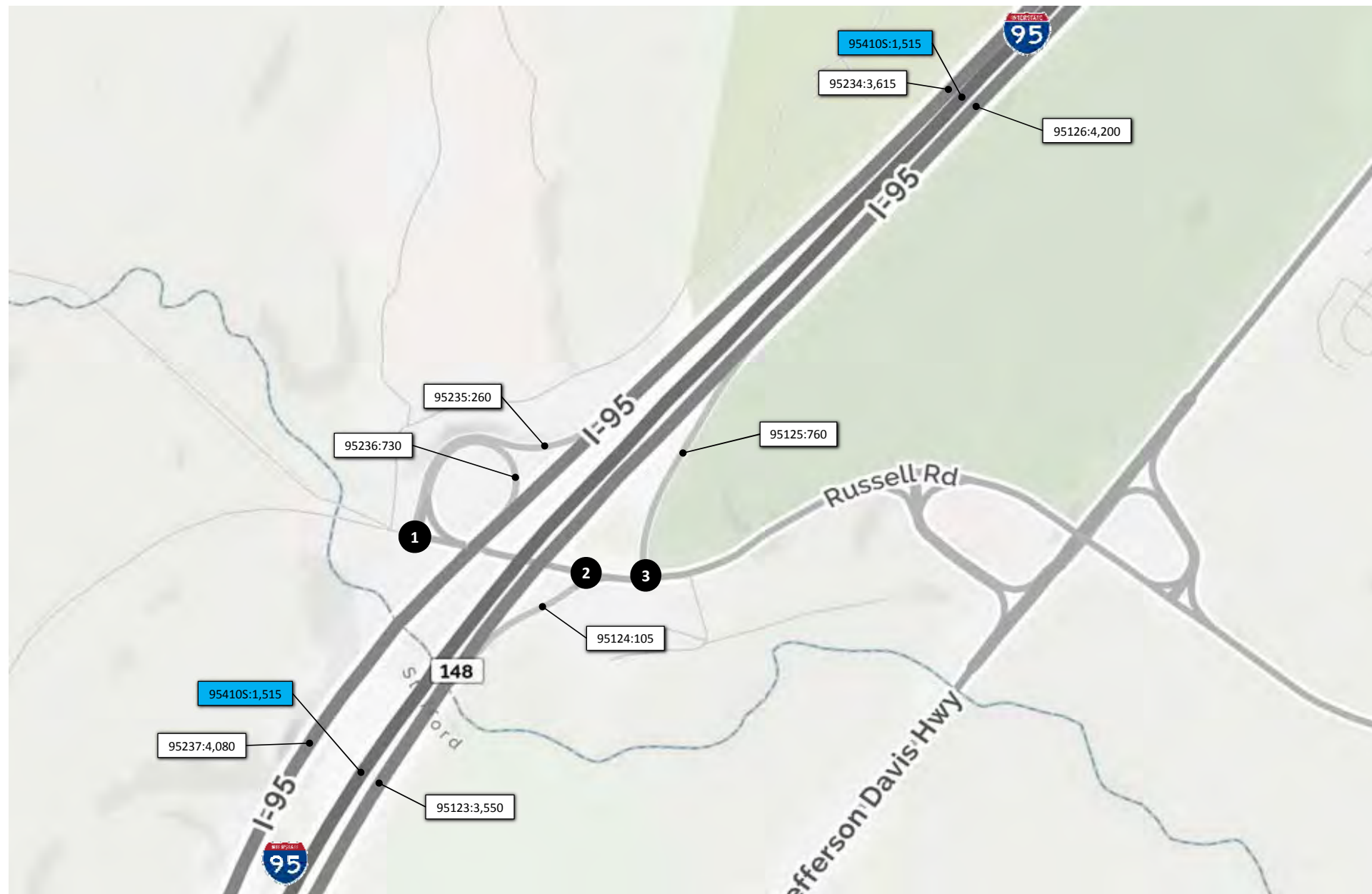
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure A.4-6



1			I-95 SB On/Off-Ramps		
	R	L		R	T
	59	203			
	119			609	
	605			270	
Russell Road					
			L	R	
			20	87	
				1483	
2			I-95 NB Off-Ramp		
				859	
Russell Road					
			L	R	
			20	87	
				1486	
3			I-95 NB On-Ramp		
				R	T
				343	
				859	
Russell Road					
			L	R	
			417		
			478		
				1488	

Legend

x,xxx Weekday 3-4 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure A.4-7



1	290	9	818	Carl D Silver Pkwy			
				R			925
				T			2,040
	R	T	L	L	T	R	17
VA-3 (Plank Road)							
			L				
	251						
	1,996		T			9	12
	5		R				15
							1303
2	22	7	7	Ramseur St			
				R			2
				T			1,580
	R	T	L	L	T	R	160
VA-3 (Plank Road)							
			L				
	33						
	1,432		T			295	2
	385		R				206
							1304

Legend

x,xxx Weekday 4-5 PM Volume

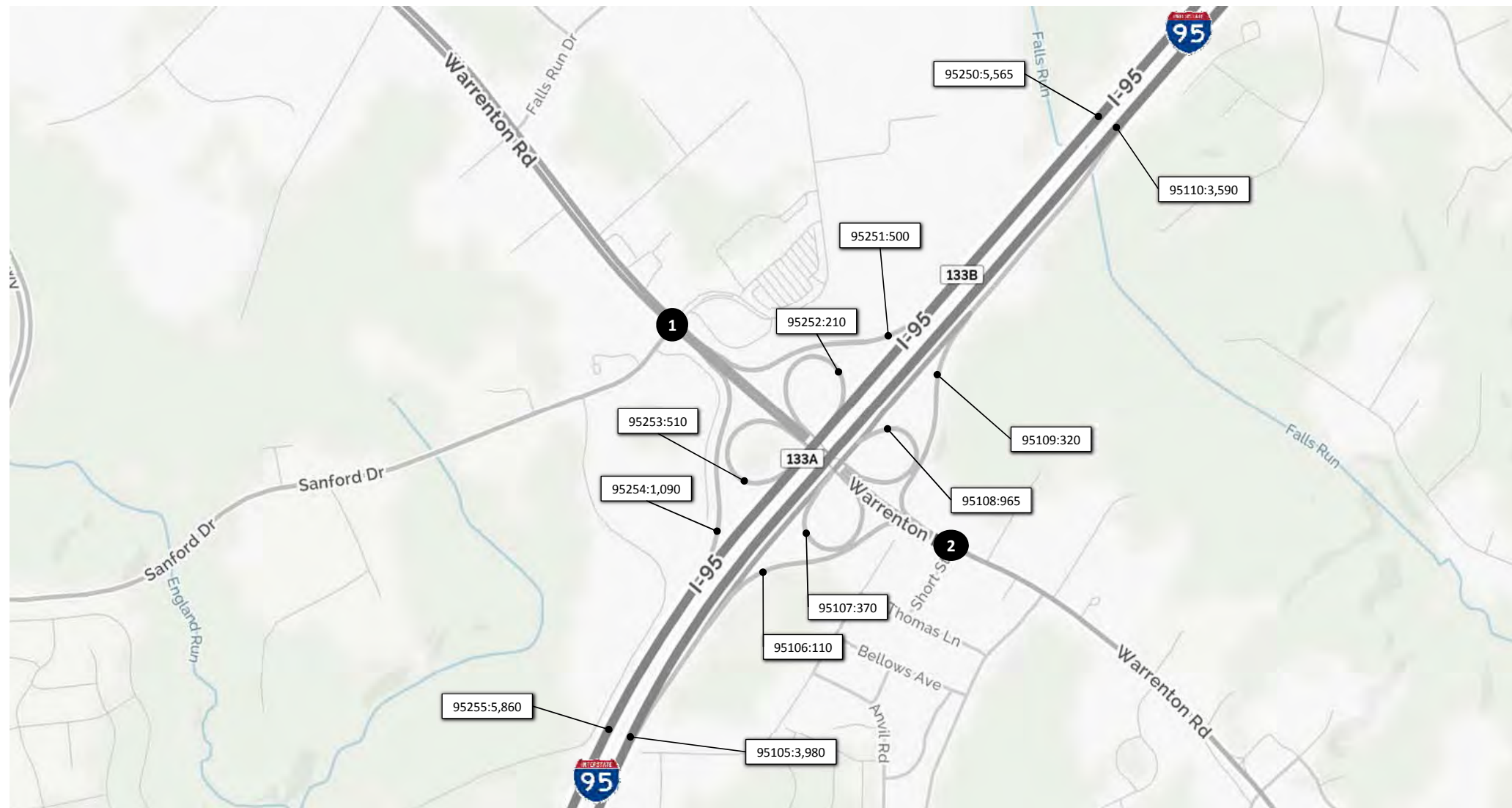
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 4-5 PM Volumes
I-95 Corridor

August 2017

Figure A.5-1



1			S Gateway Dr		
89	23	428	R		360
			T		1,760
R	T	L	L		97
US-17 (Warrenton Rd)			L	T	R
80					
2,006		T	31	21	383
24		R			
1333					

2			Parking Lot		
7	0	9	R		6
			T		1,187
R	T	L	L		14
US-17 BUS (Warrenton Rd)			L	T	R
5					
1,878		T	89	1	20
94		R			
1338					

Legend

x,xxx Weekday 4-5 PM Volume

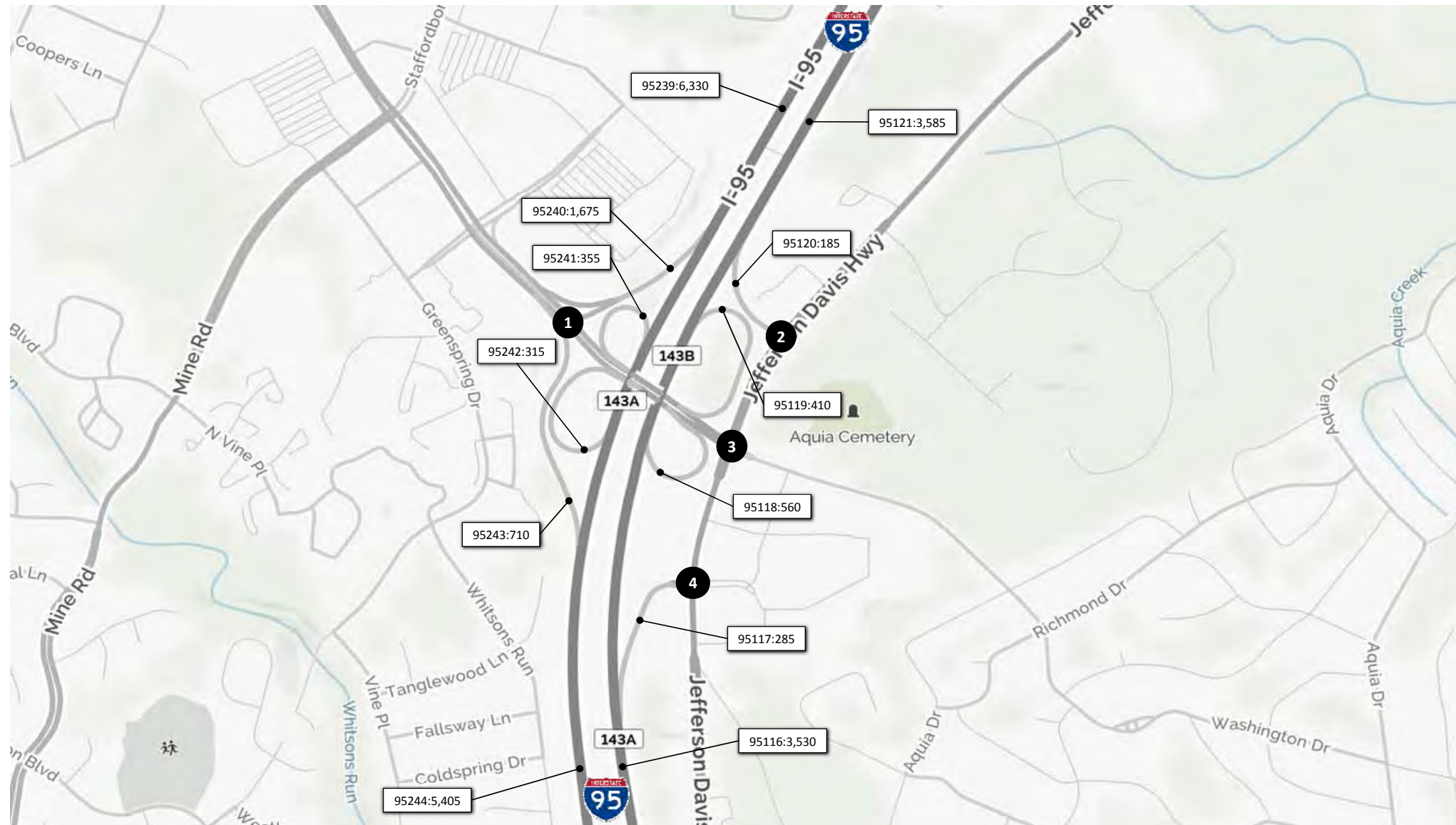
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 4-5 PM Volumes
I-95 Corridor

August 2017

Figure A.5-2



1	280			I-95 SB Off-Ramp	T	1,956	
	R						
Garrisonville Road (610)				I-95 SB On-Ramp			
	1,924	T					
	709	R					1431
2	15	2,098		US-1			
	R	T					
I-95 NB On-Ramp				US-1	L	T	
						171	849
3	1,140	786	172	US-1	R		68
						T	
Garrisonville Road (610)				US-1	L	T	R
	462	L					
	408	T			567	490	120
	810	R					1438
4		1,577	95	US-1	R		126
						L	
I-95 NB Off-Ramp				US-1			
	185	L					
	39	T				866	84
	59	R					1432

Legend

x,xxx Weekday 4-5 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 4-5 PM Volumes
I-95 Corridor

August 2017

Figure A.5-5



Legend

x,xxx Weekday 4-5 PM Volume

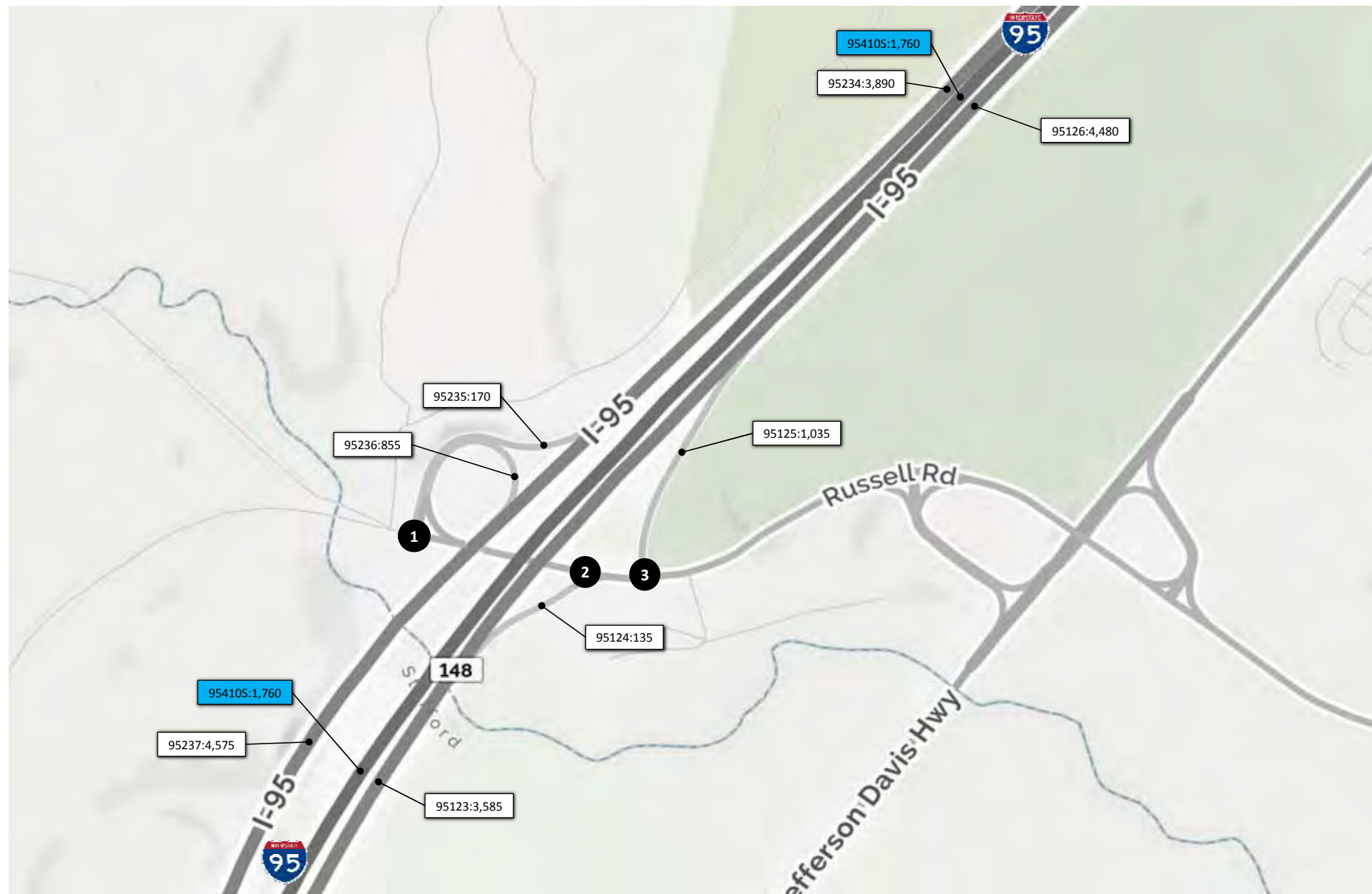
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 4-5 PM Volumes
I-95 Corridor

August 2017

Figure A.5-6



1			I-95 SB On/Off-Ramps			
	57	113	R	714		
			T	262		
	R	L				
Russell Road						
139	L					
899	T				1483	
2			I-95 NB Off-Ramp			
			T	971		
	Russell Road					
	1,012	T	L	5	131	
					1486	
3			I-95 NB On-Ramp			
			R	377		
			T	971		
	R	L				
Russell Road						
656	L					
487	T				1488	

Legend

x,xxx Weekday 4-5 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 4-5 PM Volumes
I-95 Corridor

August 2017

Figure A.5-7



1	276	7	752	Carl D Silver Pkwy	R	980
					T	1,771
	R	T	L	Mall Court	L	16
	VA-3 (Plank Road)				L	T
	245		L			
	2,129		T		11	8
	6		R			6
						1303
2	21	4	14	Ramseur St	R	8
					T	1,518
	R	T	L	Gateway Blvd	L	214
	VA-3 (Plank Road)				L	T
	36		L			
	1,631		T		301	3
	404		R			199
						1304

Legend

x,xxx Weekday 5-6 PM Volume

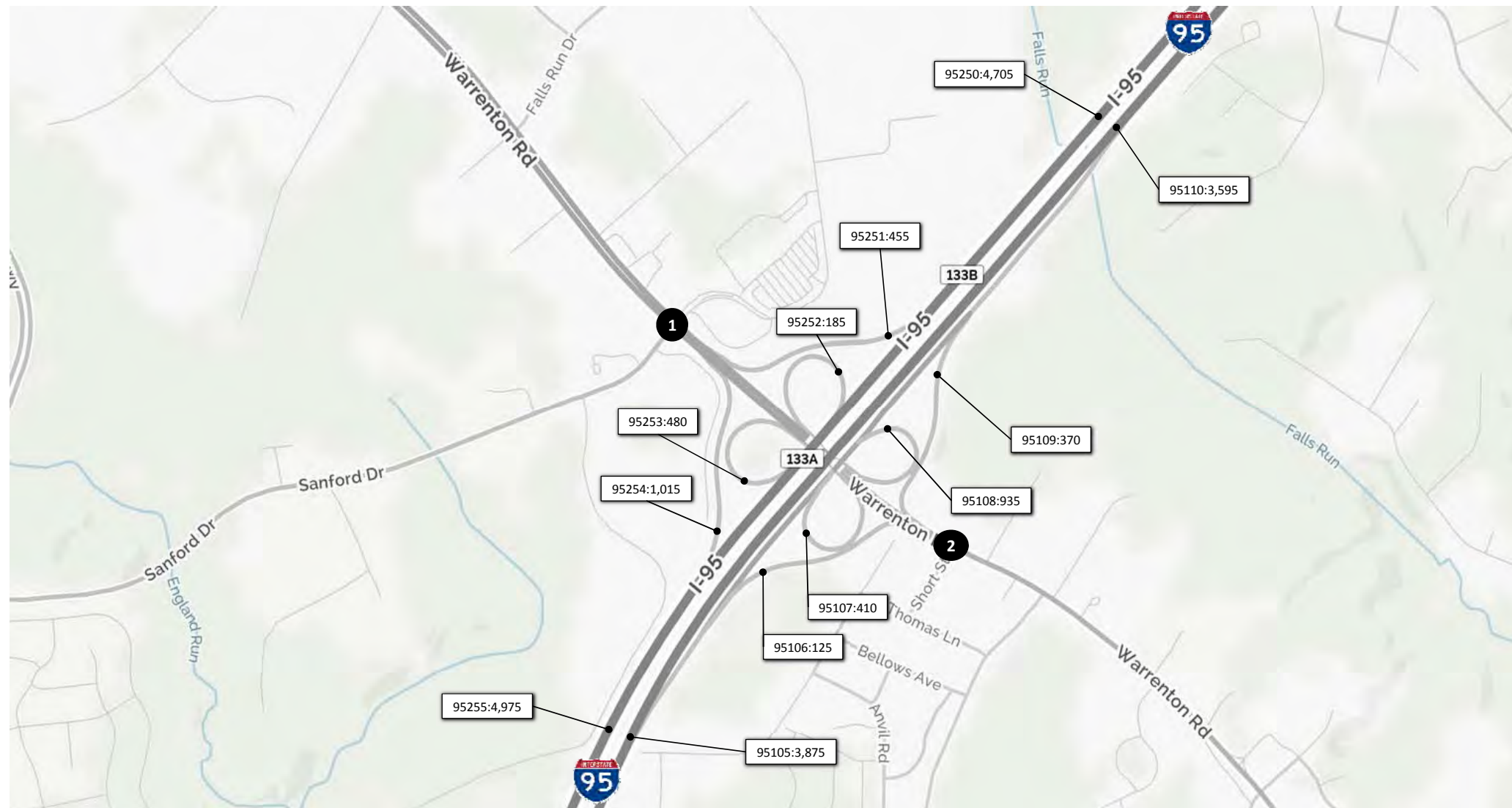
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure A.6-1



1	100	16	471	S Gateway Dr			R	358
							T	1,709
	R T L						L	60
US-17 (Warrenton Rd)						L	T	R
	82			Sanford Dr			L	317
	1,895						T	14
	13						R	30
								1333

2	6	0	6	Parking Lot			R	2
							T	1,197
	R T L						L	21
US-17 BUS (Warrenton Rd)						L	T	R
	7			Short St			L	18
	1,884						T	1
	115						R	89
								1338

Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure A.6-2



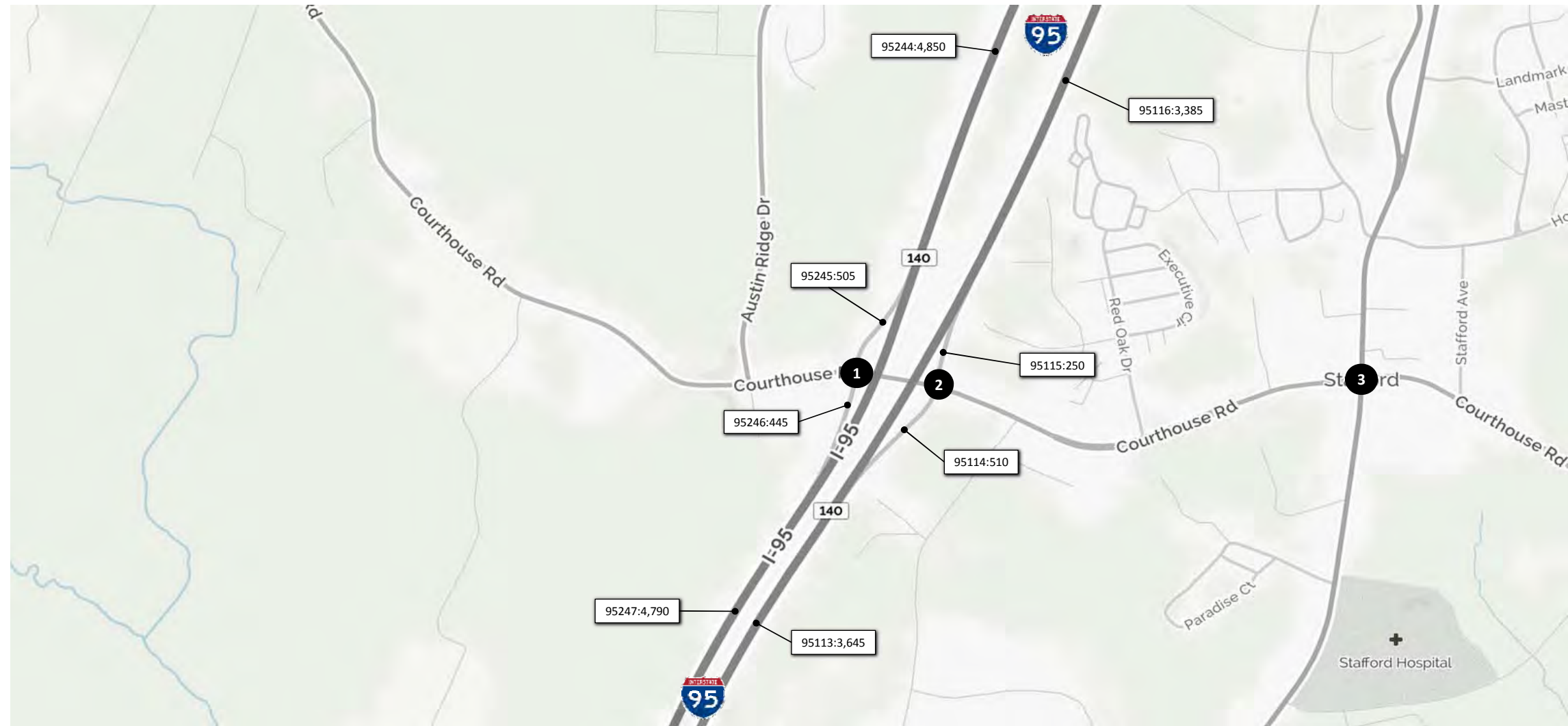
Location	Volume
1 (Centreport Pkwy)	1363
2 (Centreport Pkwy)	1366
3 (Jefferson Davis Hwy)	1368

Legend

x,xxx Weekday 5-6 PM Volume
 NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 5-6 PM Volumes
 I-95 Corridor
 August 2017 Figure A.6-3



1							
	200	0	304				
	R	T	L				
Courthouse Road (630)			I-95 SB Off-Ramp		T		736
					L		113
	592		T				
	332		R				
			I-95 SB On-Ramp				
							1403

2								
				R			146	
				T			509	
Courthouse Road (630)			I-95 NB On-Ramp		L		T	R
	103		L					
	793		T	340	0	169		
			I-95 NB Off-Ramp					
							1406	

3								
	241	722	138					
	R	T	L					
Courthouse Road (630)			US-1		R		124	
						T	203	
	223		L			L	32	
	186		T					
	553		R					
			US-1		L		T	R
					211	258	19	
							1408	

Legend

x,xxx Weekday 5-6 PM Volume

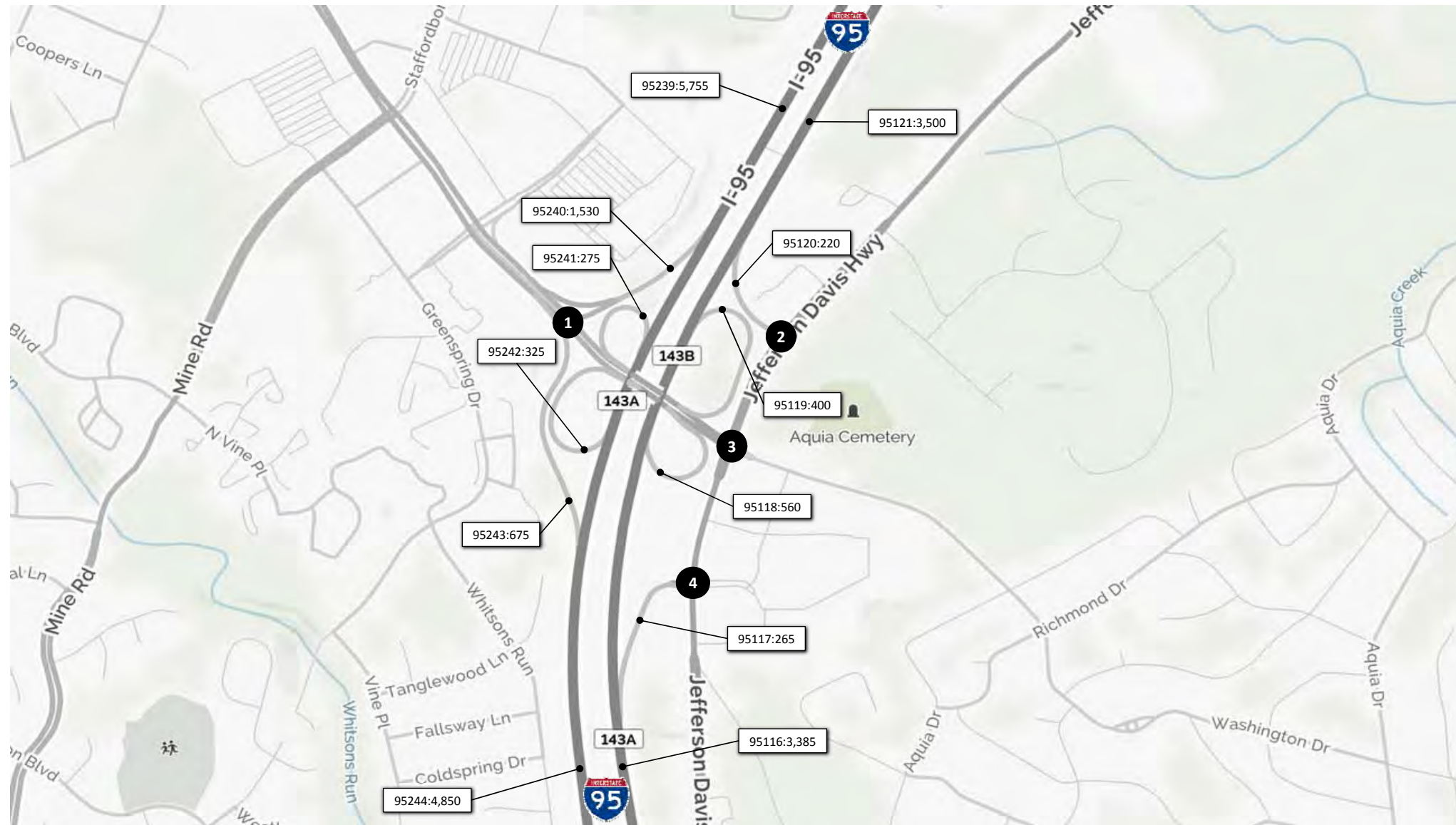
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure A.6-4



1	266	I-95 SB Off-Ramp		T	2,043
	R				
	Garrisonville Road (610)				
	2,128	T			1431
674	R	I-95 SB On-Ramp			
2	23	2,136	US-1		
	R	T			
	I-95 NB On-Ramp		L	T	
			197	900	1434
3	1,085	854	197	US-1	
	R	T	L	R	74
	Garrisonville Road (610)		L	T	225
	509	L	L	T	94
520	T	US-1		608	
864	R			514	
				138	
				1438	
4	1,695	117	US-1		R
	T	L			169
	I-95 NB Off-Ramp		L	T	104
	183	L	US-1		
42	T			908	
41	R			85	
				1432	

Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure A.6-5



Legend

x,xxx Weekday 5-6 PM Volume

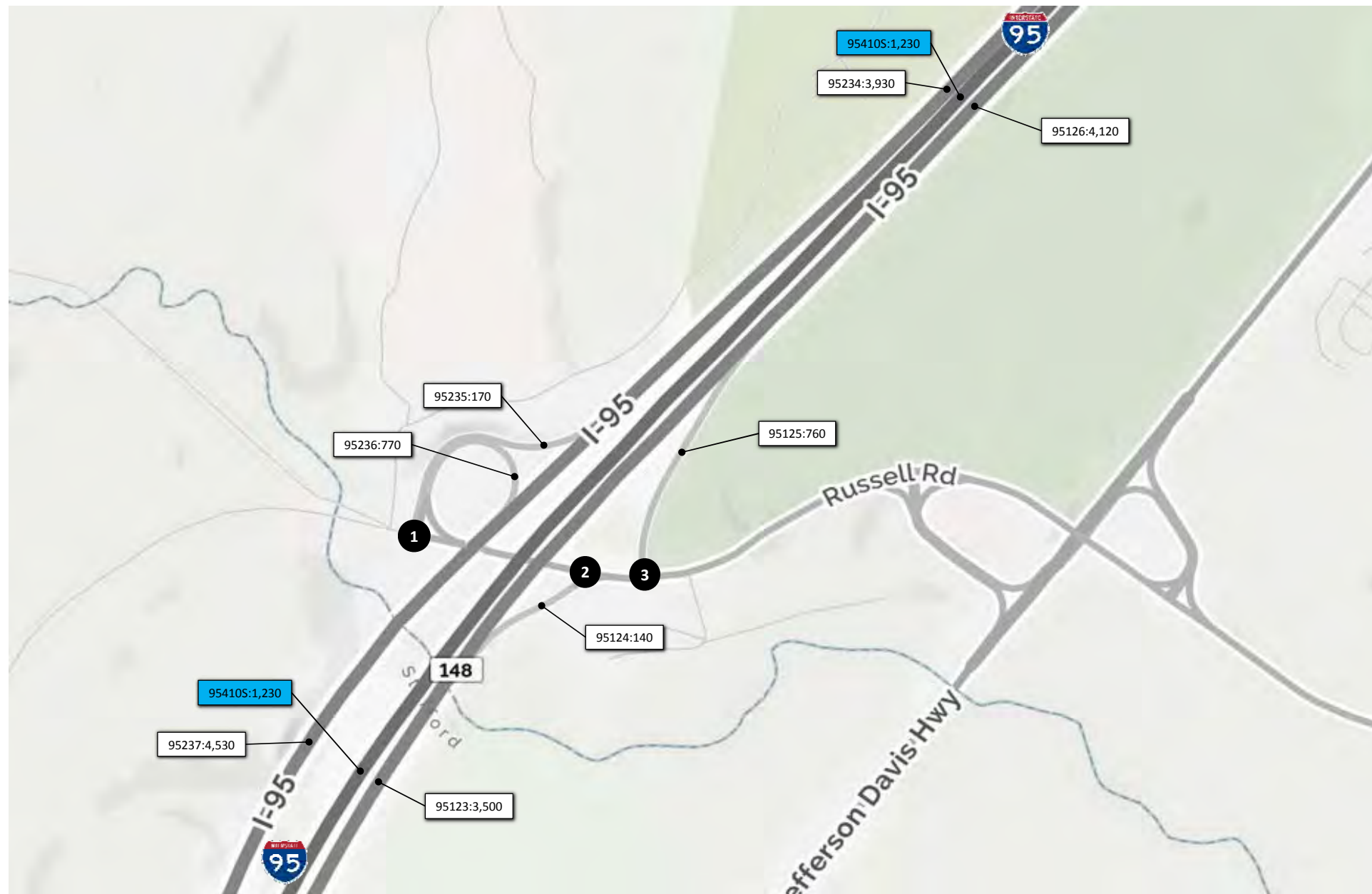
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure A.6-6



1			I-95 SB On/Off-Ramps		
	R	L	R	T	
Russell Road					
67	102			635	
				243	
					1483
2			I-95 NB Off-Ramp		
		T	L	R	
Russell Road					
		13		126	
806					
					1486
3			I-95 NB On-Ramp		
			R	T	
Russell Road					
512				248	
420				865	
					1488

Legend

x,xxx Weekday 5-6 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

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

August 2017

Figure A.6-7



1			Carl D Silver Pkwy			
277	8	722	R		746	
			T		1,910	
R	T	L	L	T	R	27
VA-3 (Plank Road)						
230		L	L	T	R	
1,634		T	13	6	4	
8		R				1303

2			Ramseur St			
8	4	8	R		0	
			T		1,536	
R	T	L	L	T	R	124
VA-3 (Plank Road)						
17		L	L	T	R	
1,148		T	312	0	150	
331		R				1304

Legend

x,xxx Weekday 6-7 PM Volume

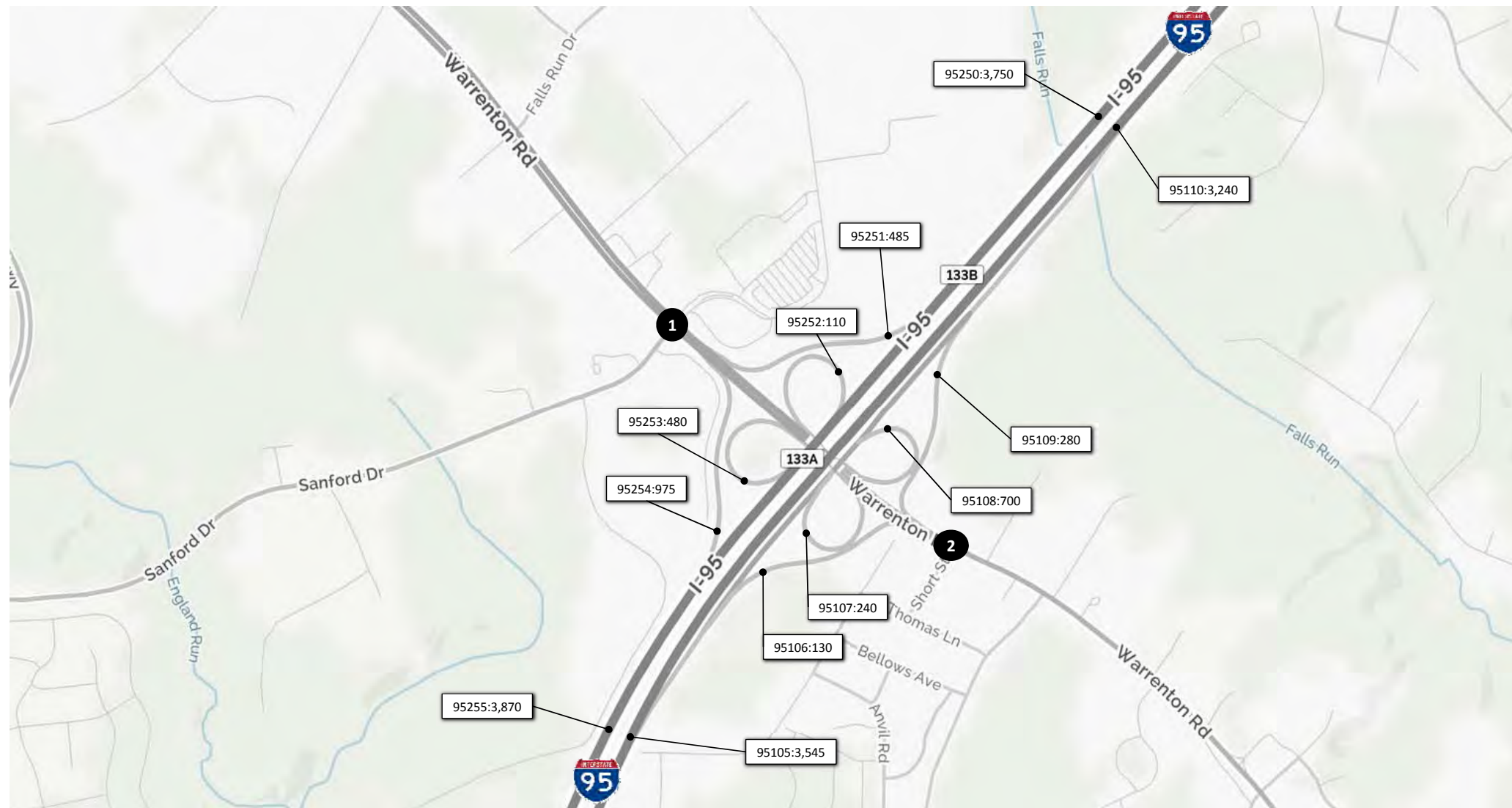
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure A.7-1



1	95	38	367	S Gateway Dr			R	333		
							T	1,528		
	R	T	L				L	63		
US-17 (Warrenton Rd)				Sanford Dr			L	T	R	
	101						L			
	1,616						T	42	0	167
	0						R			
1333										

2	10	0	2	Parking Lot			R	2		
							T	1,039		
	R	T	L				L		11	
US-17 BUS (Warrenton Rd)				Short St			L	T	R	
	6						L			
	1,412						T	78	6	15
	127						R			
1338										

Legend

x,xxx Weekday 6-7 PM Volume

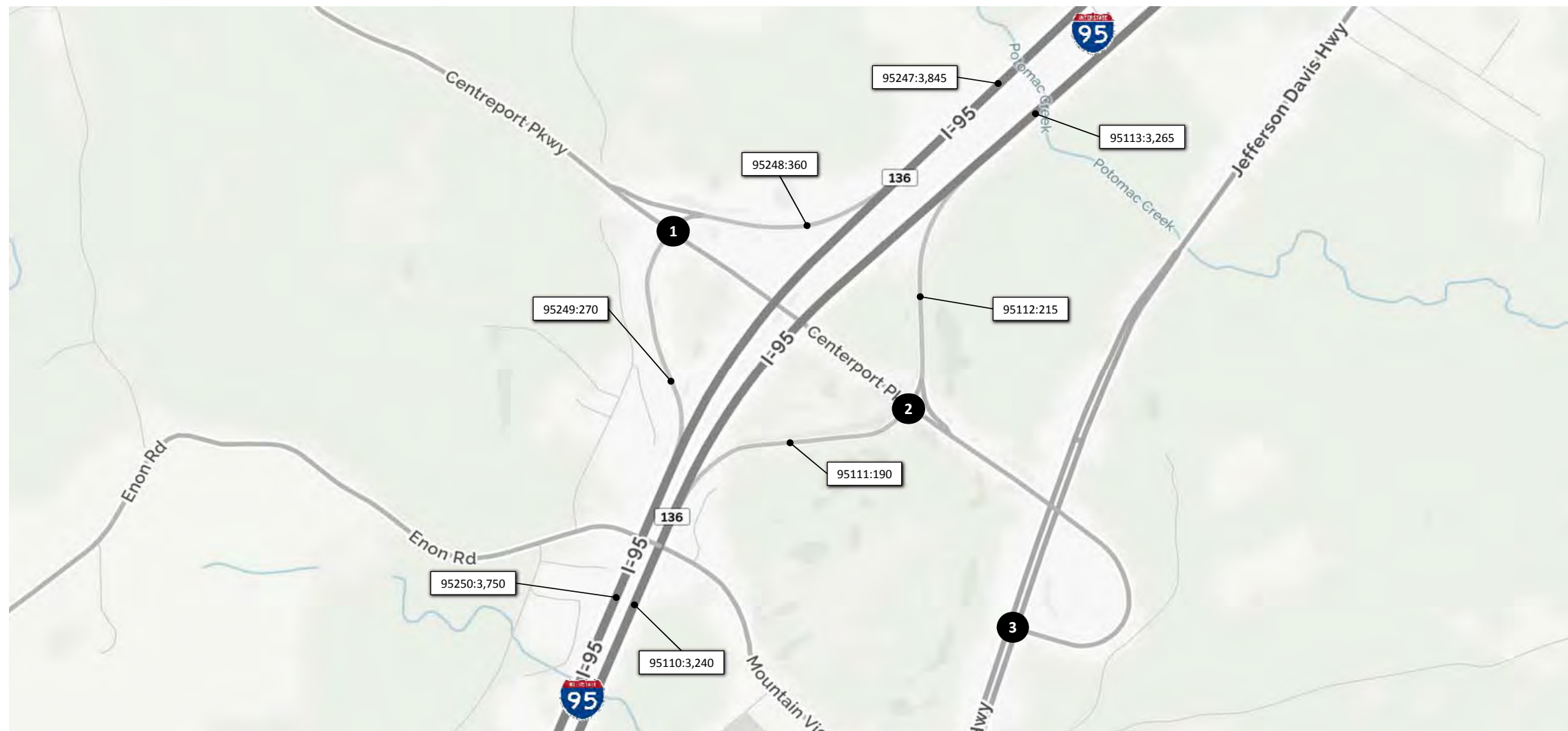
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 6-7 PM Volumes
I-95 Corridor

August 2017

Figure A.7-2



Location	Volume
1	95247:3,845
	95248:360
	95249:270
	95250:3,750
2	95111:190
	95110:3,240
	95112:215
	95113:3,265
3	95114:3,265
	95115:3,265
	95116:3,265
	95117:3,265

Legend

x,xxx Weekday 6-7 PM Volume

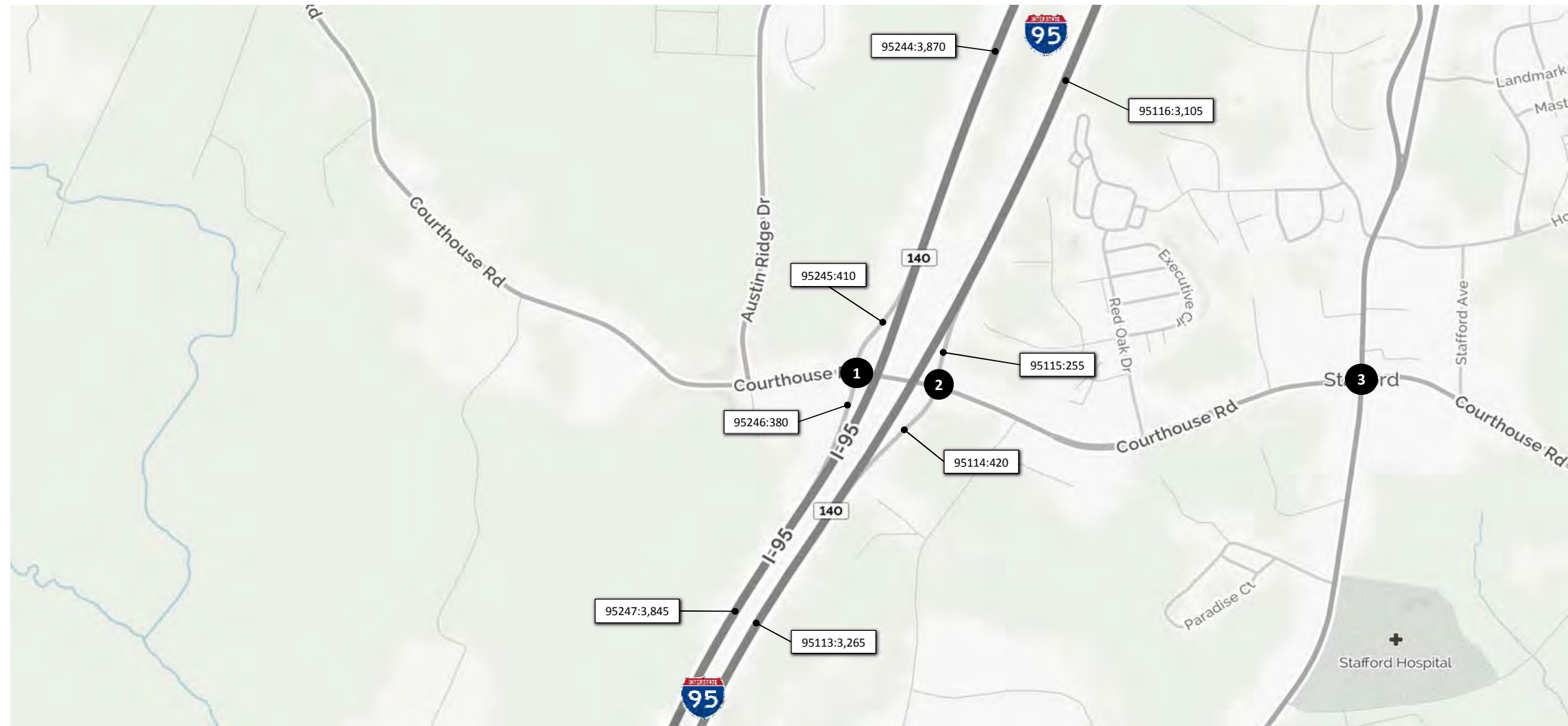
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure A.7-3



1							
	146	0	262				
R		T		L			
Courthouse Road (630)			I-95 SB Off-Ramp		T		640
					L		114
	458		T				
	268		R				
			I-95 SB On-Ramp				
							1403

2							
						R	168
						T	494
Courthouse Road (630)			I-95 NB On-Ramp		L	T	R
	89		L				
	631		T		260	0	158
			I-95 NB Off-Ramp				
							1406

3							
	230	536	84			R	127
						T	201
Courthouse Road (630)			US-1		L	T	R
	205		L				
	214		T		231	219	19
	370		R				
			US-1				
							1408

Legend

x,xxx Weekday 6-7 PM Volume

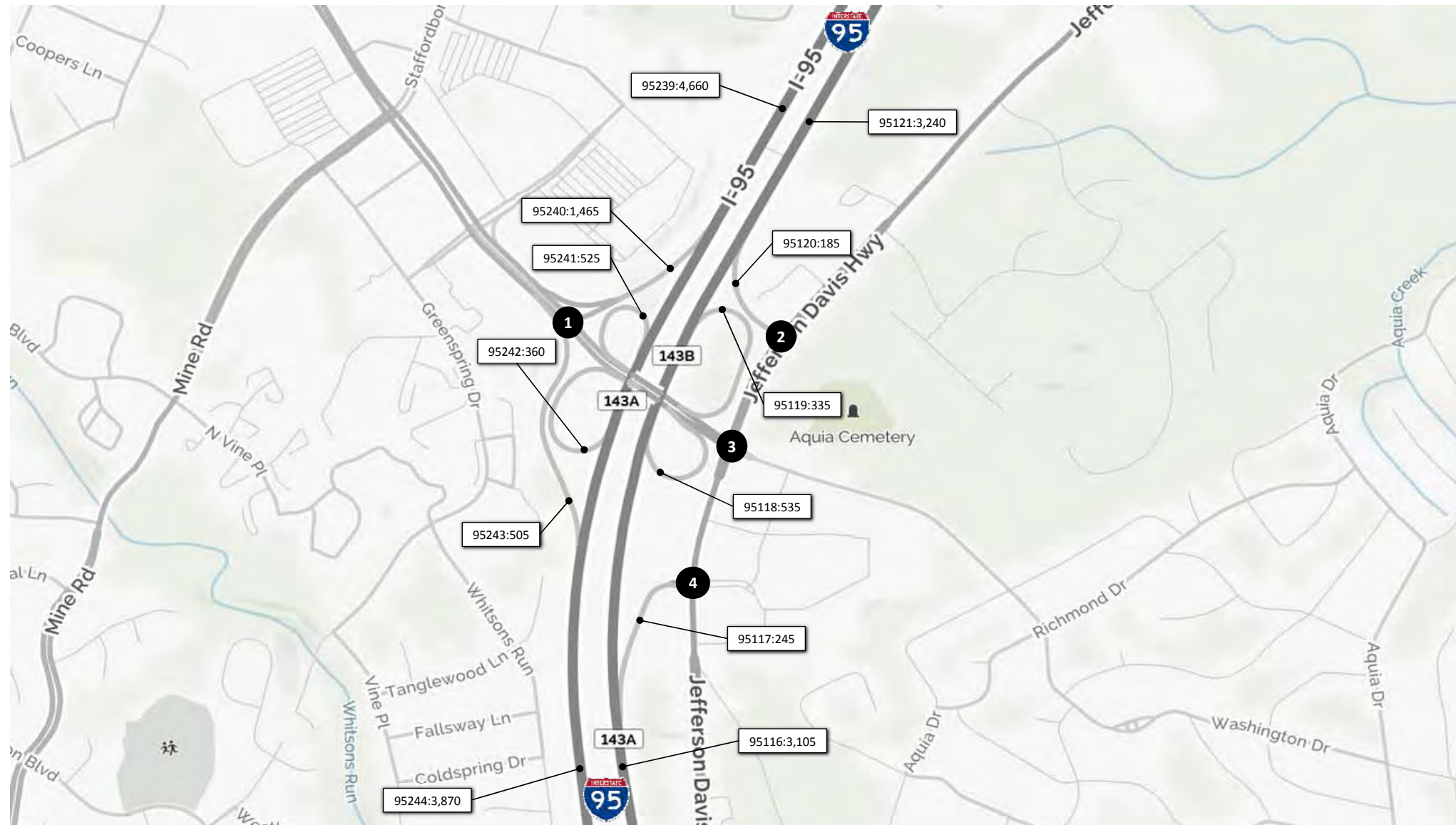
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 6-7 PM Volumes
I-95 Corridor

August 2017

Figure A.7-4



1	219			I-95 SB Off-Ramp	T	1,618	
	R			Garrisonville Road (610)			
	1,925	T		I-95 SB On-Ramp			1431
	506	R					
2	48	1,940			US-1	L	T
	R	T			I-95 NB On-Ramp	139	853
				US-1			
3	1,013	740	188	US-1	R	51	
	R	T	L	Garrisonville Road (610)	T	182	
	486	L		L	T	R	
	445	T		US-1	614	454	143
	817	R					
4	1,505	124			US-1	R	131
	T	L			I-95 NB Off-Ramp	L	89
	179	L		US-1	T	R	
	21	T			901	93	
	48	R					

Legend

x,xxx Weekday 6-7 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2016 Existing
Weekday 6-7 PM Volumes
I-95 Corridor

August 2017

Figure A.7-5



Legend

x,xxx Weekday 6-7 PM Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2016 Existing
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure A.7-6

**APPENDIX B:
2042 NO-BUILD
TRAFFIC VOLUMES**



1			Carl D Silver Pkwy			
61	5	277		R		609
			T		1,635	
R	T	L	L	T	R	
VA-3 (Plank Road)						
		L	L	T	R	
226						
2,681		T	5	3	10	
3		R				
			Mail Court		1303	

2			Ramsour St			
17	3	5		R		15
			T		1,404	
R	T	L	L	T	R	
VA-3 (Plank Road)						
		L	L	T	R	
68						
1,931		T	246	0	215	
269		R				
			Gateway Blvd		1304	

Legend

xx,xxx Weekday Hourly Volume

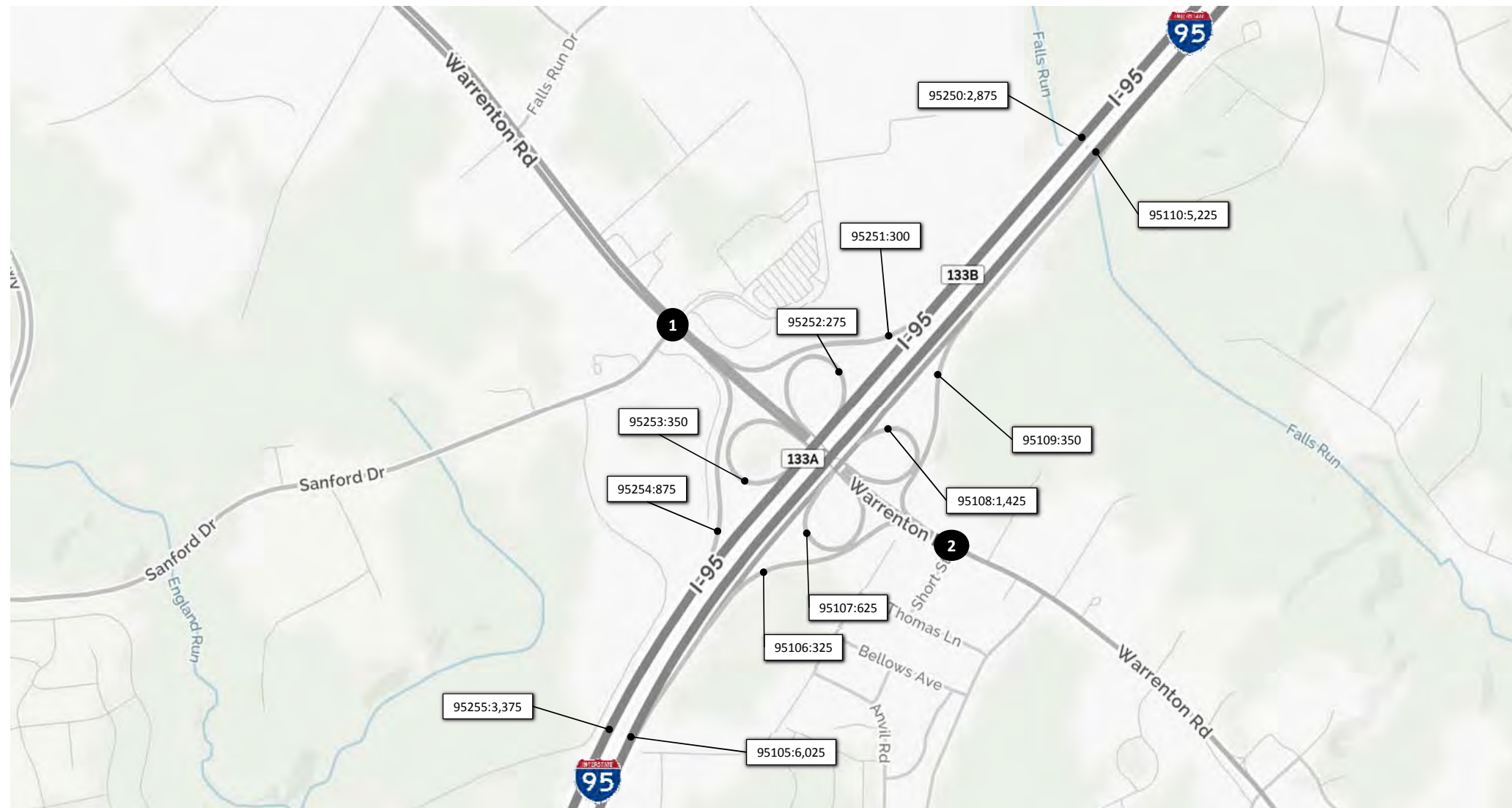
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 6 -7 AM Volumes
 I-95 Corridor

August 2017

Figure B.1-1



1	38	25	261	S Gateway Dr	R	320
					T	2,628
	R	T	L	Sanford Dr	L	231
	US-17 (Warrenton Rd)				L	T
	45					
	1,782			51	23	292
	26					
						1333
2	3	2	3	Parking Lot	R	2
					T	1,942
	R	T	L	Short St	L	18
	US-17 BUS (Warrenton Rd)				L	T
	3					
	1,403			125	2	28
	99					
						1338

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 6 - 7 AM Volumes
 I-95 Corridor

August 2017

Figure B.1-2



1	0		I-95 SB Off-Ramp		T		1,097	
	R		Garrisonville Road (610)		T		1,431	
2,815		T		I-95 SB On-Ramp		1431		
208		R						
2	64		1,323		US-1			
	R		T		I-95 NB On-Ramp		L T	
				US-1		576 2,841		
						1434		
3	645		584		94		US-1	
	R		T		L		R T	
						297		
						125		
						81		
						Garrisonville Road (610)		
1,548		L		US-1		L T R		
145		T				139 1,572 7		
399		R				1438		
4			957		107		US-1	
			T		L		R	
						149		
						7		
						I-95 NB Off-Ramp		
530		L		US-1		T R		
109		T				1,040 30		
17		R				1432		

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 6 - 7 AM Volumes
 I-95 Corridor

August 2017

Figure B.1-5



Legend

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

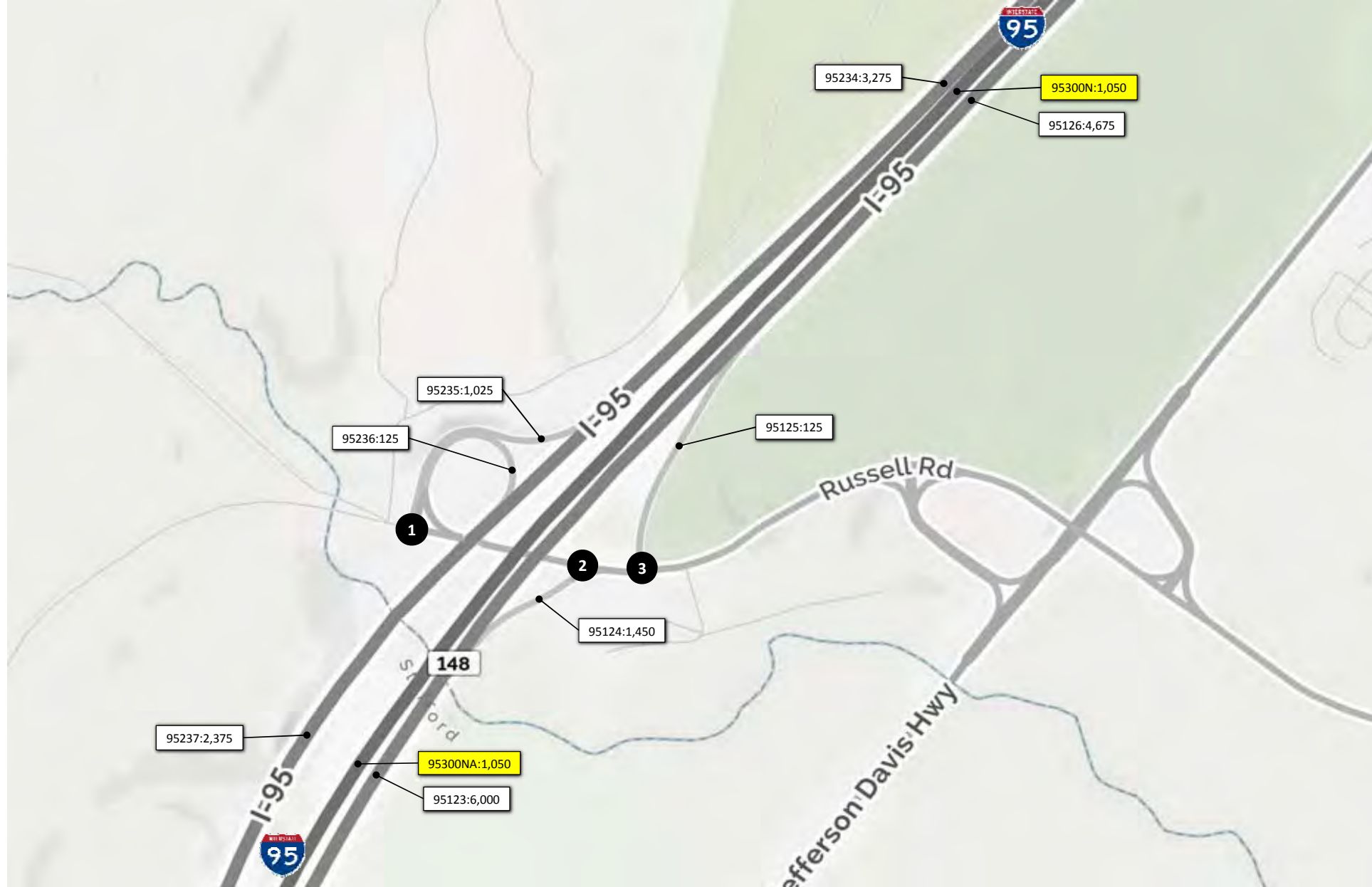
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 6 -7 AM Volumes
 I-95 Corridor

August 2017

Figure B.1-6



1			I-95 SB On/Off-Ramps			
	543	488	R	107		
	R	L	T	299		
	Russell Road					
18		L				
259		T			1483	
2					T	248
	Russell Road					
	747		T		L	1,295
					I-95 NB Off-Ramp	R
					158	
					1,295	
					1486	
3						
	Russell Road					
	30		L		R	101
	2,013		T		I-95 NB On-Ramp	T
					248	
					1488	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 6 -7 AM Volumes
I-95 Corridor

August 2017

Figure B.1-7



1			Carl D Silver Pkwy			
63	5	286		R	627	
			T	1,685		
R	T	L	L	15		
VA-3 (Plank Road)			L	T	R	
233		L				
2,763		T	5	3	10	
3		R				
			Mall Court			
					1303	

2			Ramseur St			
17	3	5		R	15	
			T	1,447		
R	T	L	L	189		
VA-3 (Plank Road)			L	T	R	
70		L				
1,989		T	253	0	221	
277		R				
			Gateway Blvd			
					1304	

Legend

xx,xxx Weekday Hourly Volume

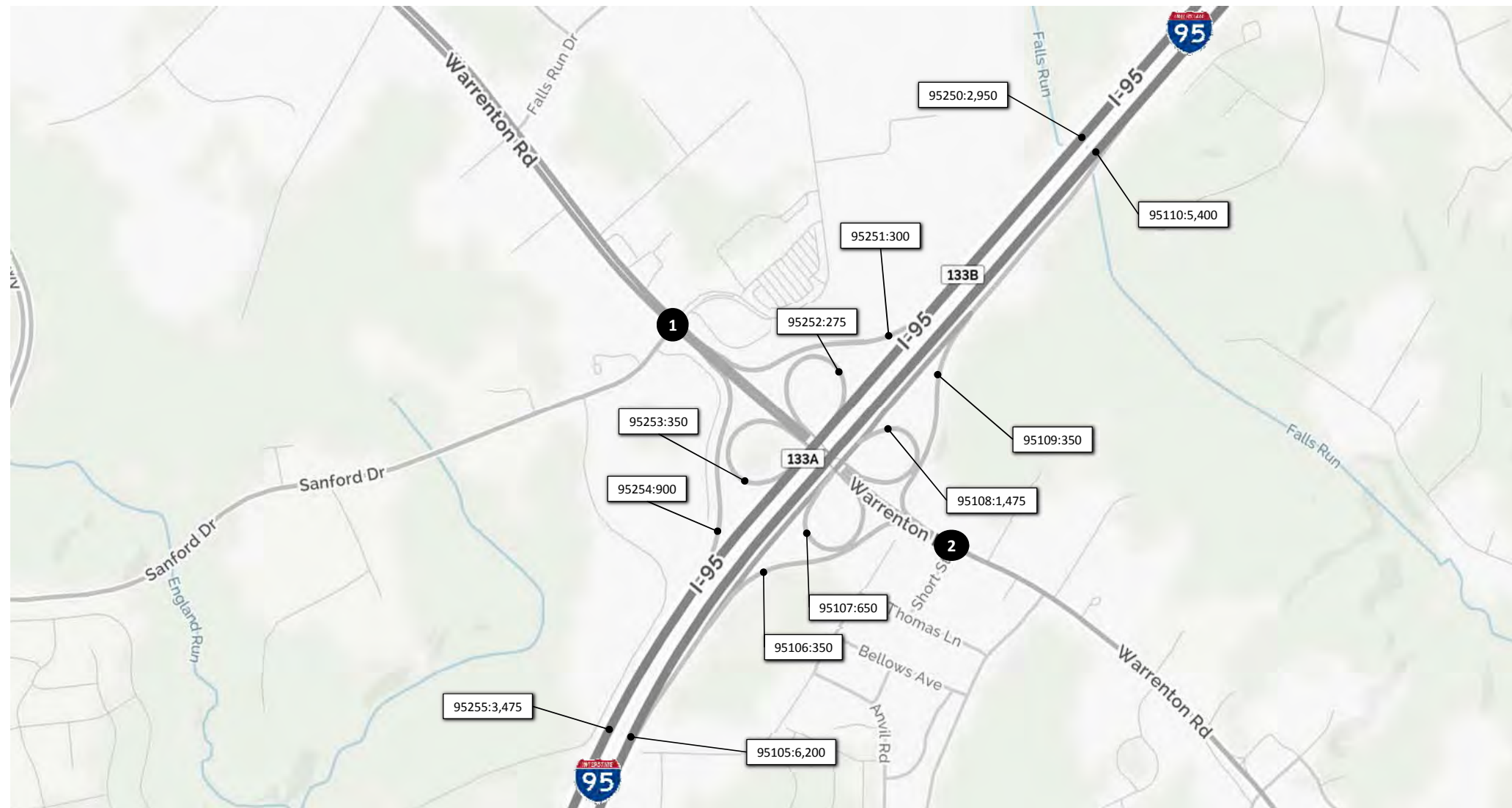
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 7- 8 AM Volumes
 I-95 Corridor

August 2017

Figure B.2-1



1	39	26	269	S Gateway Dr	R	330
					T	2,708
	R	T	L	Sanford Dr	L	238
	US-17 (Warrenton Rd)				L	T
46				53	24	301
1,836						1333
27						
2	3	2	3	Parking Lot	R	2
					T	2,001
	R	T	L	Short St	L	19
	US-17 BUS (Warrenton Rd)				L	T
3				129	2	29
1,445						1338
102						

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 7- 8 AM Volumes
I-95 Corridor

August 2017

Figure B.2-2



1	16	I-95 SB Off-Ramp		T	1,131
	R	Garrisonville Road (610)			
	2,900	T			
	214	R			
		I-95 SB On-Ramp			
					1431
2	66	1,363	US-1		
	R	T	I-95 NB On-Ramp		L T
			US-1	593	2,927
					1434
3	665	602	97	US-1	
	R	T	L	R	306
				T	129
				L	83
	Garrisonville Road (610)		L T R		
	1,595	L			
	150	T	143	1,620	7
	411	R			
			US-1		1438
4		986	111	US-1	
		T	L	R	153
				L	7
	I-95 NB Off-Ramp		T R		
	546	L			
	112	T	US-1		1,071 31
	17	R			
					1432

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 7- 8 AM Volumes
 I-95 Corridor

August 2017

Figure B.2-5



Legend

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

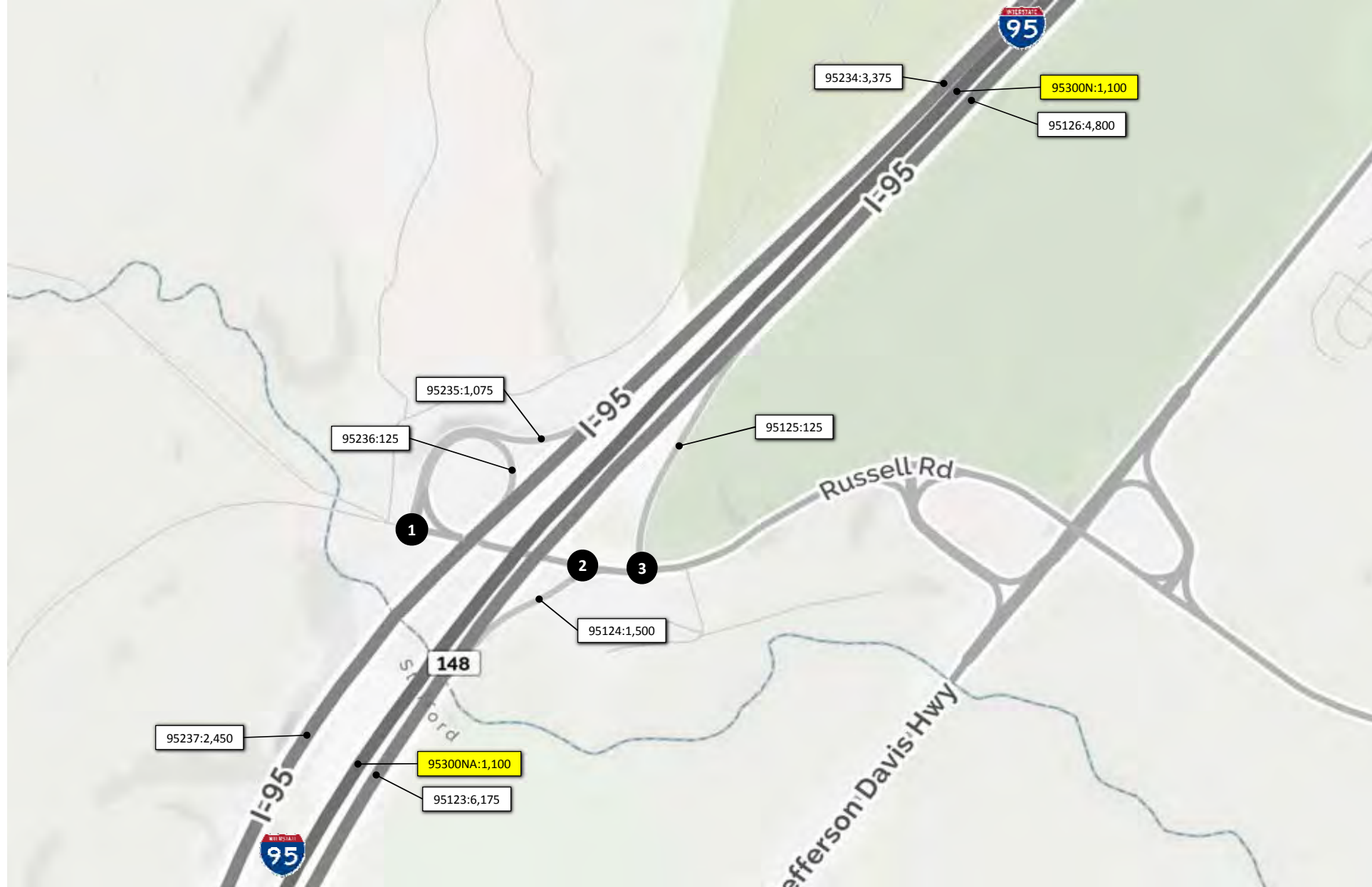
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 7- 8 AM Volumes
 I-95 Corridor

August 2017

Figure B.2-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	559	503		111	
	267			308	
				1483	
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	770		163	1,335	
				1486	
3	Russell Road		I-95 NB On-Ramp		
				R	T
	31			104	
	2,074			255	
				1488	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 7- 8 AM Volumes
 I-95 Corridor

August 2017

Figure B.2-7



1	61	5	277	Carl D Silver Pkwy			R	609
							T	1,635
	R	T	L				L	15
	VA-3 (Plank Road)			L	T	R		
	2,681					L	10	
	3					T		
						R		
							1303	
2	17	3	5	Ramseur St			R	15
							T	1,404
	R	T	L				L	183
	VA-3 (Plank Road)			L	T	R		
	68					L	215	
	1,931					T	0	
	269					R		
							1304	
						Gateway Blvd		

Legend

xx,xxx Weekday Hourly Volume

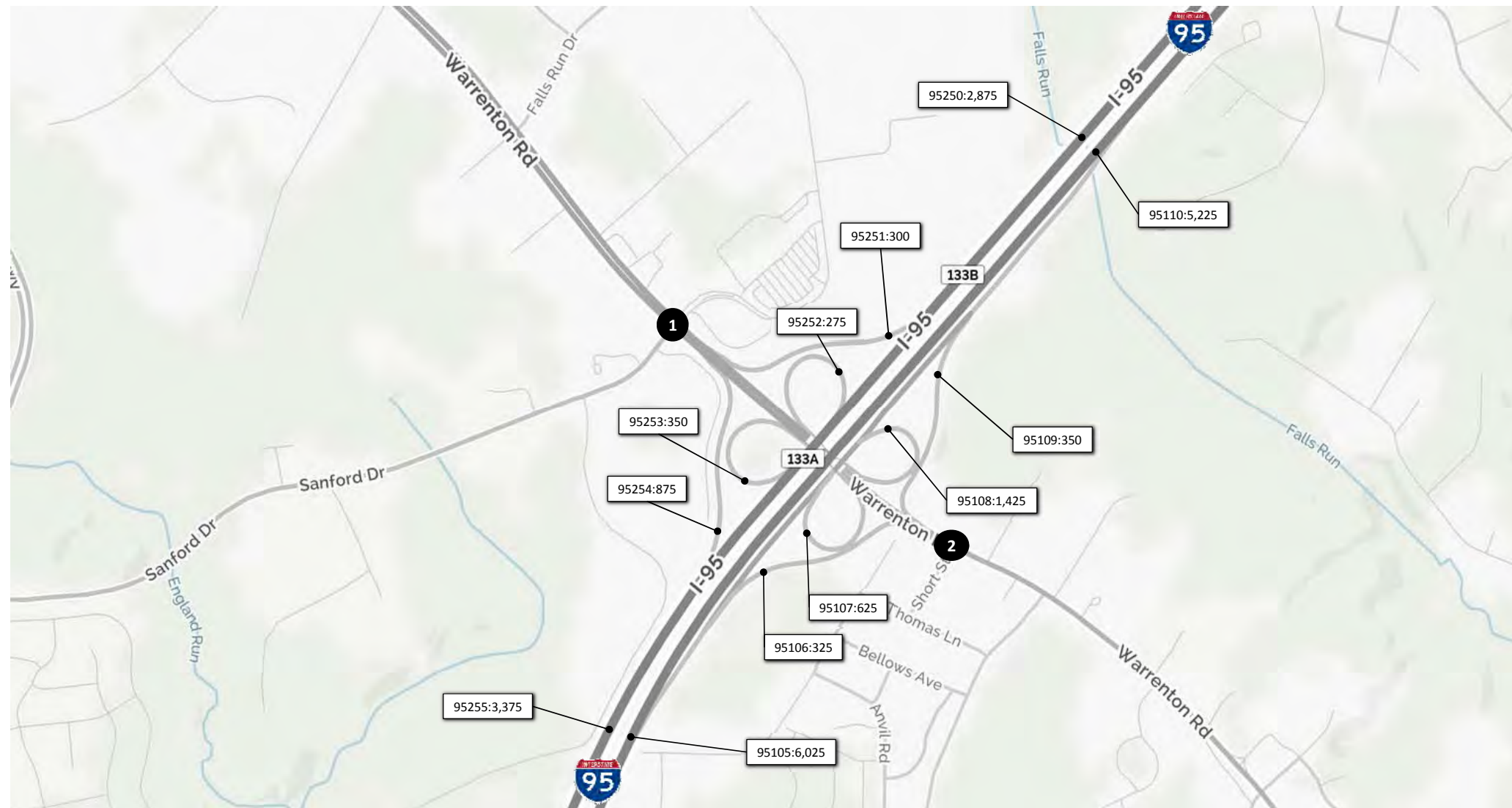
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 8 - 9 AM Volumes
I-95 Corridor

August 2017

Figure B.3-1



1	38	25	261	S Gateway Dr	R	320	
					T	2,628	
	R	T	L	Sanford Dr	L	231	
	US-17 (Warrenton Rd)				L	T	R
	45	L		51	23	292	
	1,782	T					
	26	R				1333	
2	3	2	3	Parking Lot	R	2	
					T	1,942	
	R	T	L	Short St	L	18	
	US-17 BUS (Warrenton Rd)				L	T	R
		3	L		125	2	28
		1,403	T				
	99	R				1338	

Legend

xx,xxx Weekday Hourly Volume

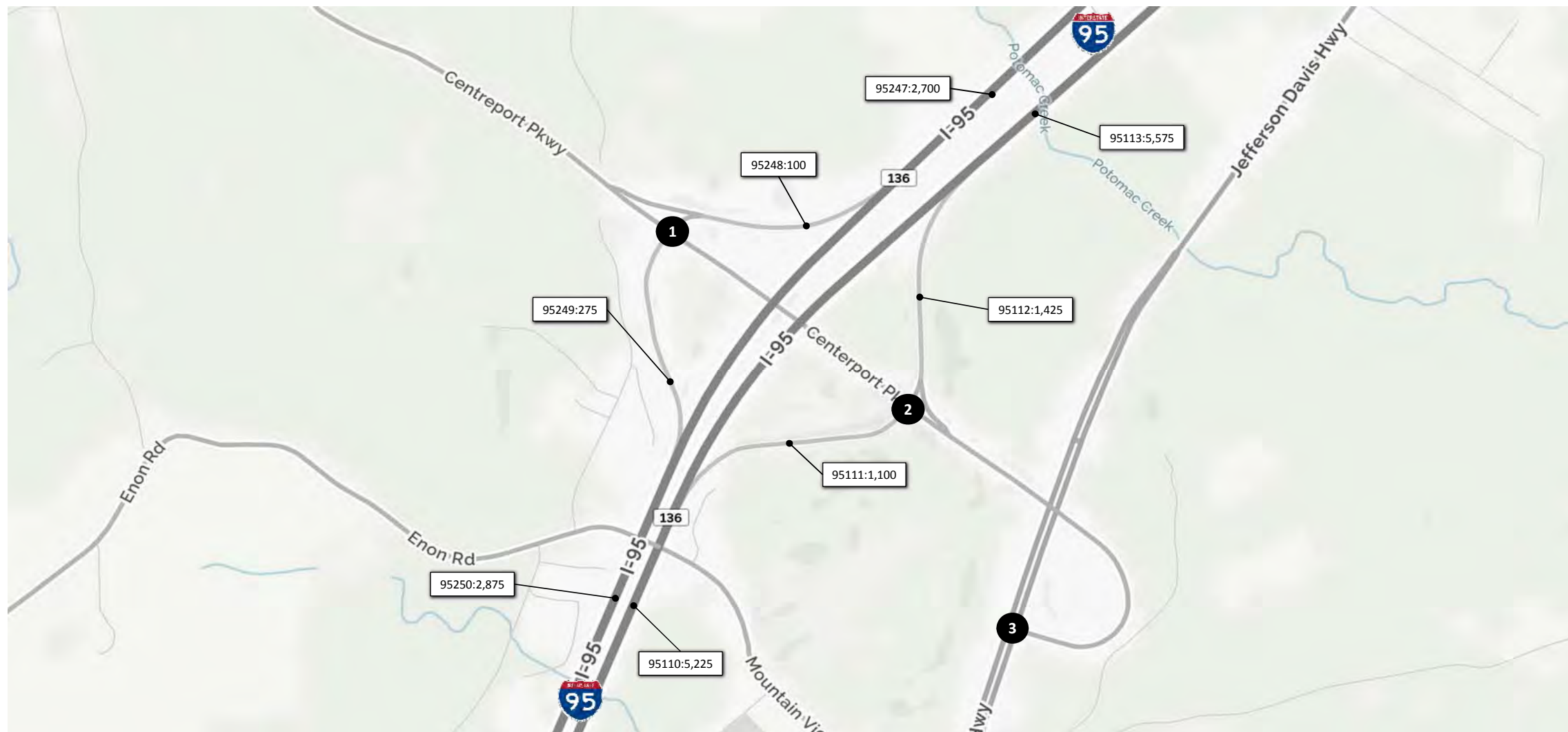
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 8 - 9 AM Volumes
I-95 Corridor

August 2017

Figure B.3-2



Location	Direction	Volume
1	Centreport Pkwy	136
	I-95 SB Off-Ramp	97
	I-95 NB On-Ramp	200
	I-95 SB On-Ramp	132
	I-95 NB Off-Ramp	71
	I-95 SB On-Ramp	535
	I-95 NB Off-Ramp	200
	I-95 SB On-Ramp	1363
	I-95 NB Off-Ramp	71
	I-95 SB On-Ramp	1363
2	Centreport Pkwy	1366
	I-95 NB On-Ramp	1,373
	I-95 NB Off-Ramp	40
	I-95 SB On-Ramp	566
	I-95 NB Off-Ramp	536
	I-95 SB On-Ramp	59
	I-95 NB Off-Ramp	170
	I-95 SB On-Ramp	1366
	I-95 NB Off-Ramp	1366
	I-95 SB On-Ramp	1366
3	US-1	373
	US-1	333
	US-1	1,351
	US-1	1,300
	US-1	1368
	US-1	629
	US-1	112
	US-1	373
	US-1	333
	US-1	1368

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 8 - 9 AM Volumes
I-95 Corridor

August 2017

Figure B.3-3



1	53	I-95 SB Off-Ramp		T	1,097
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	2,815	T			
	208	R			
		1431			
2	64	1,323	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
			576	2,841	
		1434			
3	645	584	94	US-1	
	R	T	L	R	297
Garrisonville Road (610)		US-1		T	125
	1,548	L	L	T	81
	145	T	139	1,572	7
	399	R			
		1438			
4		957	107	US-1	
		T	L	R	149
I-95 NB Off-Ramp		US-1		L	7
	530	L			
	109	T			
	17	R	1,040		30
		1432			

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 8 - 9 AM Volumes
 I-95 Corridor

August 2017

Figure B.3-5



Legend

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

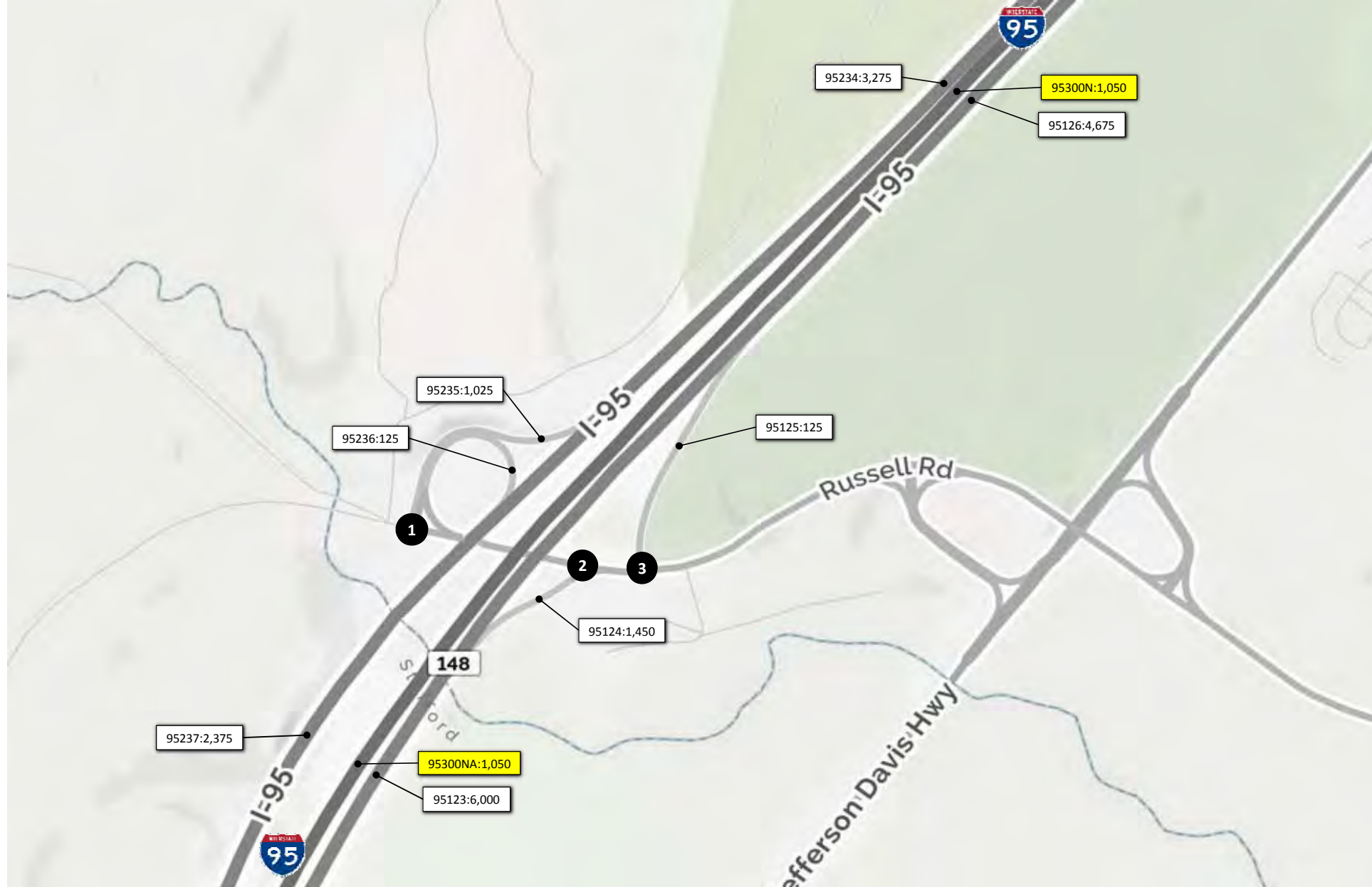
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 8 - 9 AM Volumes
 I-95 Corridor

August 2017

Figure B.3-6



1	Russell Road		I-95 SB On/Off-Ramps	R	T	107 299
	R	L				
	543	488				
	18	L				
	259	T				
						1483
2	Russell Road		I-95 NB Off-Ramp	L	R	158 1,295
	R	L				
	747	T				
						1486
3	Russell Road		I-95 NB On-Ramp	R	T	101 248
	R	L				
	30	L				
	2,013	T				
						1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 8 - 9 AM Volumes
I-95 Corridor

August 2017

Figure B.3-7



1	324	8	795	Carl D Silver Pkwy		
	R	T	L	R	927	
				T	2,078	
				L	18	
VA-3 (Plank Road)			L	T	R	
263			L			
1,815			T	11	8	8
6			R			
			Mall Court			1303
2	15	5	14	Ramsour St		
	R	T	L	R	5	
				T	2,004	
				L	224	
VA-3 (Plank Road)			L	T	R	
33			L			
1,625			T	311	3	282
383			R			
			Gateway Blvd			1304

Legend

xx,xxx Weekday Hourly Volume

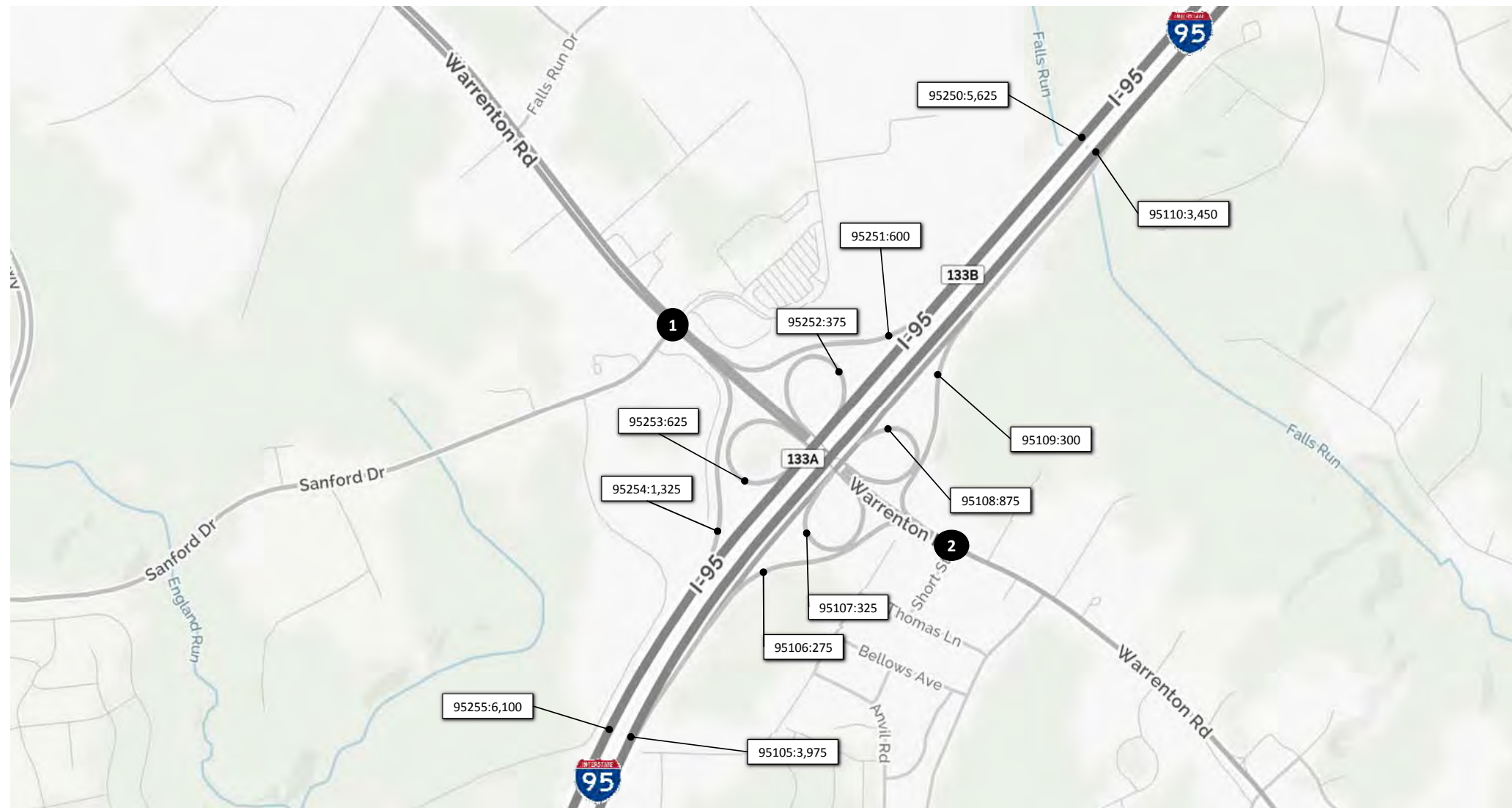
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 3 - 4 PM Volumes
 I-95 Corridor

August 2017

Figure B.4-1



1			S Gateway Dr		
72	54	378	R		393
			T		2,247
R	T	L	L		243
US-17 (Warrenton Rd)			L	T	R
72					
2,529			41	9	404
39					
			1333		

2			Parking Lot		
6	0	5	R		3
			T		1,938
R	T	L	L		27
US-17 BUS (Warrenton Rd)			L	T	R
5					
2,391			128	3	35
153					
			1338		

Legend

xx,xxx Weekday Hourly Volume

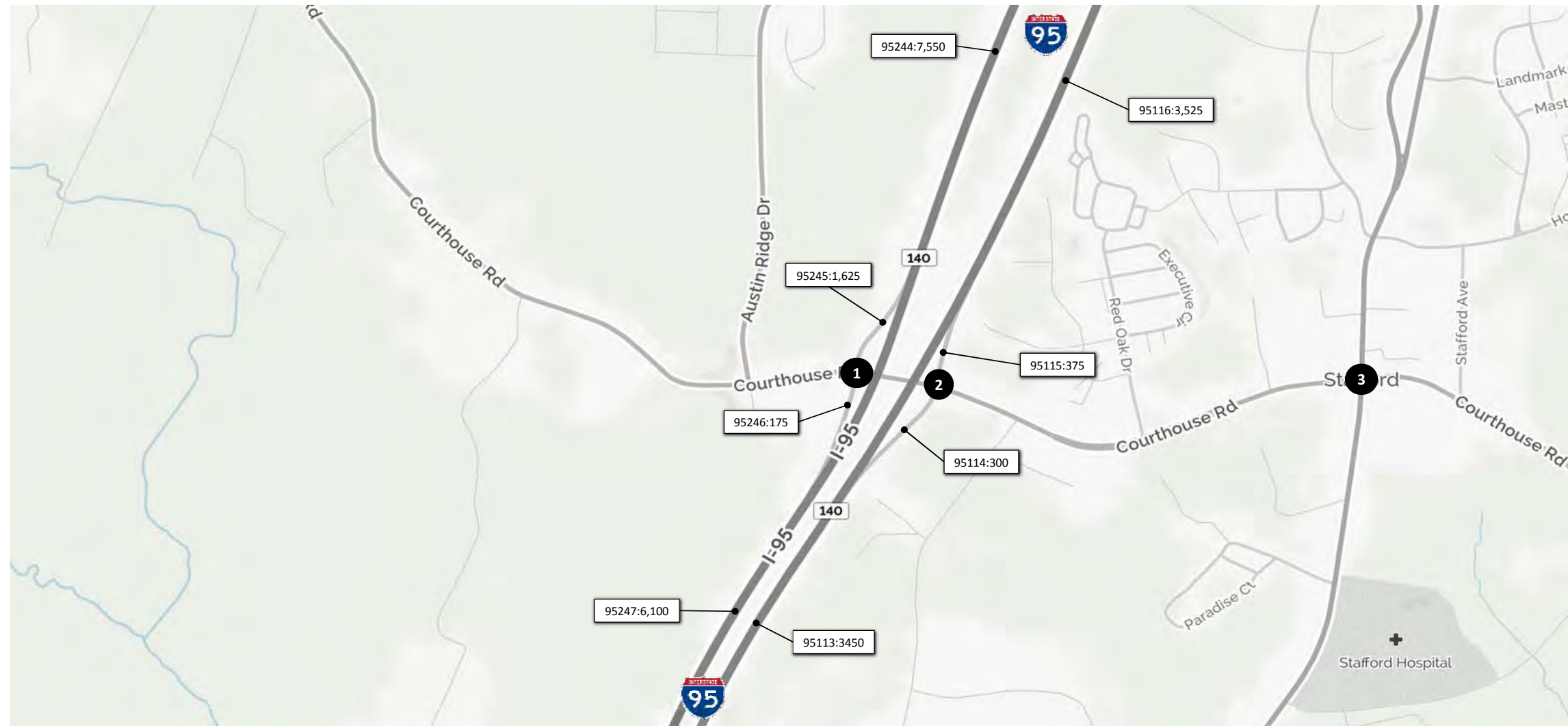
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 3 - 4 PM Volumes
 I-95 Corridor

August 2017

Figure B.4-2



1					
752	0	873			
R	T	L	I-95 SB Off-Ramp	T	558
Courthouse Road (630)			I-95 NB On-Ramp	L	39
779		T			
134		R			
					1403

2					
				R	359
				T	576
Courthouse Road (630)			I-95 NB Off-Ramp	L	T
18		L			
1,634		T		21	0
					R
					272
					1406

3					
206	654	206	US-1	R	257
				T	308
Courthouse Road (630)			US-1	L	65
420		L			
597		T		422	606
888		R			84
					1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 3 - 4 PM Volumes
I-95 Corridor

August 2017

Figure B.4-4



1	246	I-95 SB Off-Ramp		T	2,481
	R	Garrisonville Road (610)			
	2,045	T			
	951	R			1431
2	38	3,525	US-1		
	R	T	I-95 NB On-Ramp		L T
			US-1	212	1,811
					1434
3	1,728	1,568	230	US-1	R 147
	Garrisonville Road (610)			L	T 237
	747	L	L	T	R 119
	255	T	US-1	722	1,128 126
	800	R			1438
4		2,324	162	US-1	R 173
	I-95 NB Off-Ramp			L	T 26
	285	L	US-1		
	14	T			1,518 38
	15	R			1432

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 3 - 4 PM Volumes
 I-95 Corridor

August 2017

Figure B.4-5



Legend

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

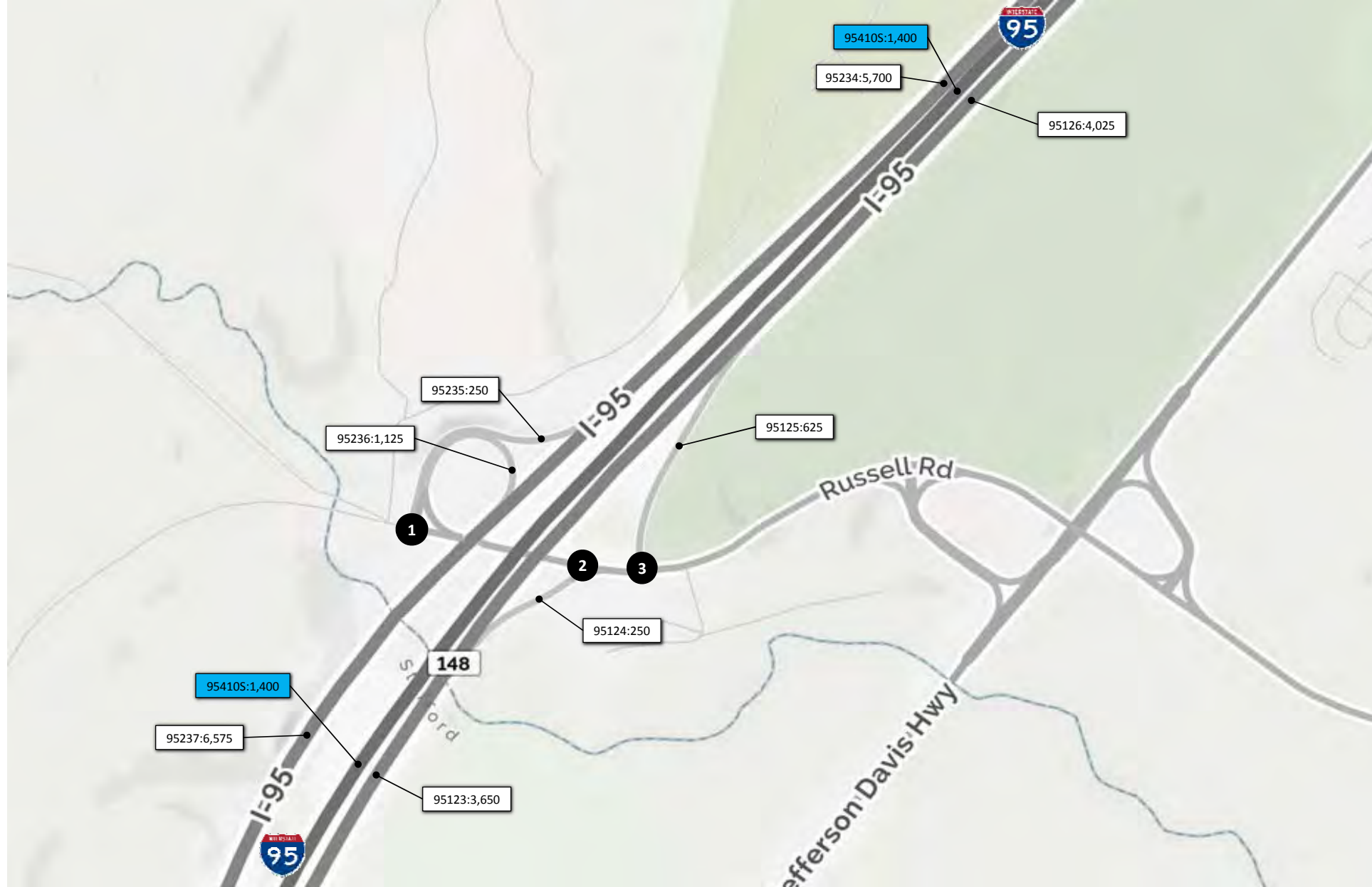
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 3 - 4 PM Volumes
 I-95 Corridor

August 2017

Figure B.4-6



1			I-95 SB On/Off-Ramps		
	48	198	R	998	
			T	248	
	R	L			
Russell Road					
	132	L			
	522	T			1483
2			I-95 NB Off-Ramp		
			L		
			R	210	
			T	1,206	
Russell Road					
	720	T	39		
					1486
3			I-95 NB On-Ramp		
			R	185	
			T	1,206	
	R	L			
Russell Road					
	435	L			
	495	T			1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2042 No Build
Weekday 3 - 4 PM Volumes
I-95 Corridor

August 2017

Figure B.4-7



1	356	8	875	Carl D Silver Pkwy			
				R			1,020
				T			2,285
	R	T	L	L	T	R	20
VA-3 (Plank Road)							
	289		L				
	1,997		T				
	7		R				
Mall Court							
							1303
2	17	5	15	Ramseur St			
				R			5
				T			2,204
	R	T	L	L	T	R	246
VA-3 (Plank Road)							
	36		L				
	1,787		T				
	421		R				
Gateway Blvd							
							1304

Legend

xx,xxx Weekday Hourly Volume

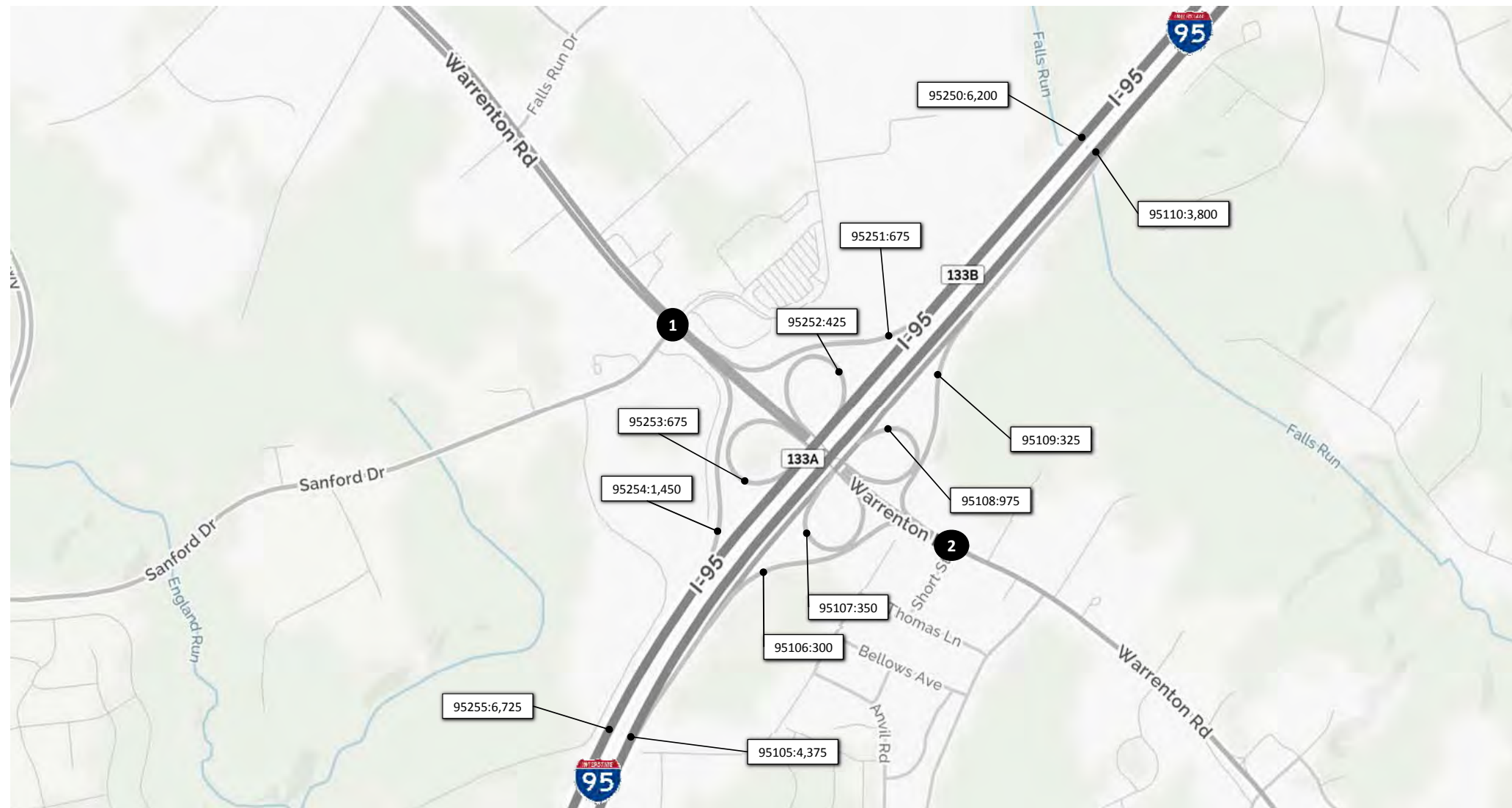
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 4 - 5 PM Volumes
I-95 Corridor

August 2017

Figure B.5-1



1	79	59	416	S Gateway Dr	R	432
					T	2,472
	R	T	L	L	267	
	US-17 (Warrenton Rd)			L	T	R
	79		L			
	2,782		T	45	10	444
	43		R			1333
2	7	0	5	Parking Lot	R	3
					T	2,132
	R	T	L	L	30	
	US-17 BUS (Warrenton Rd)			L	T	R
		5		L		
		2,630		T	140	3
	168		R			1338

Legend

xx,xxx Weekday Hourly Volume

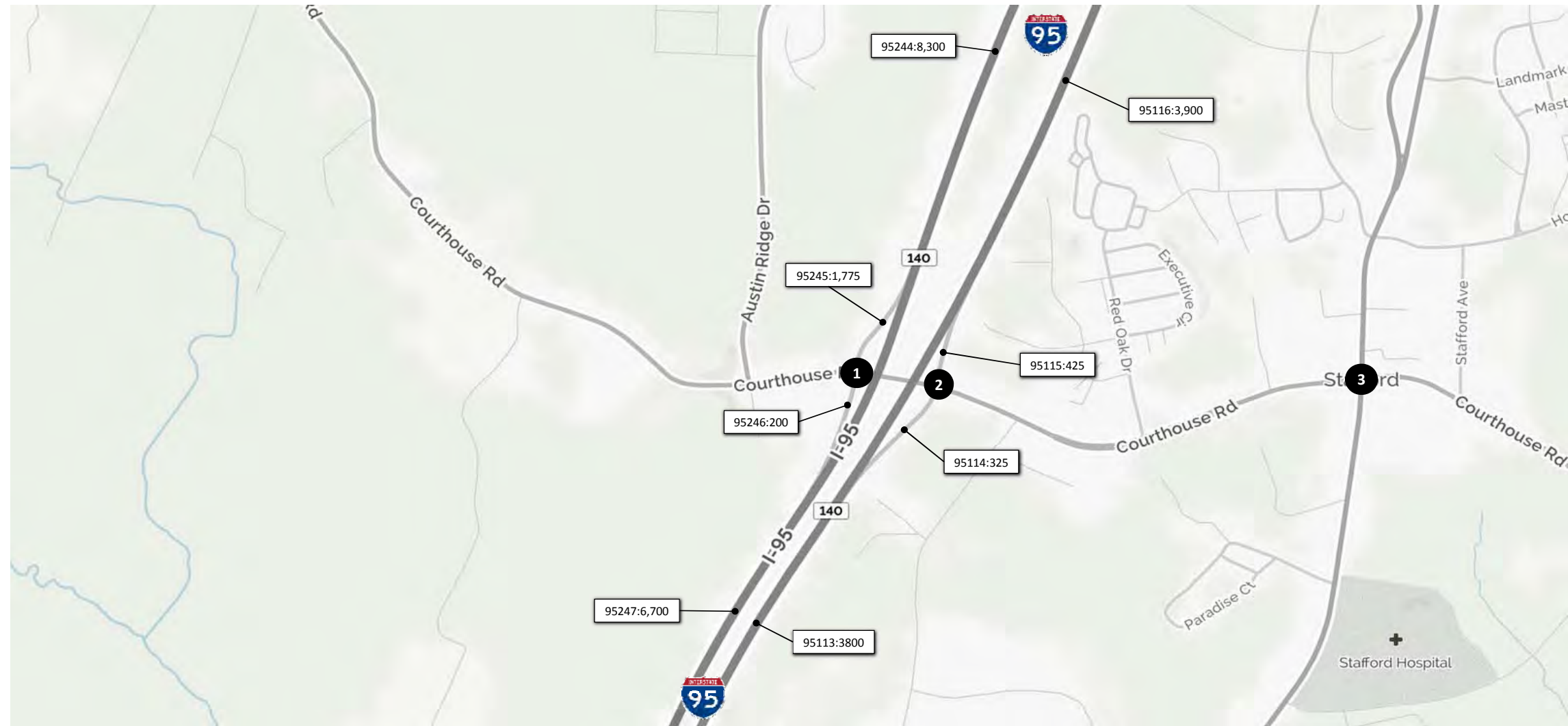
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 4 - 5 PM Volumes
I-95 Corridor

August 2017

Figure B.5-2



1						
	827	0	960			
R	T	L		T		614
Courthouse Road (630)				L		43
	856		T			
	147		R			
				I-95 SB Off-Ramp		
				I-95 SB On-Ramp		1403

2						
				R		394
				T		634
				L	T	R
Courthouse Road (630)						
	20		L			
	1,797		T			
				I-95 NB Off-Ramp		
				I-95 NB On-Ramp		1406

3						
	226	719	226			
R	T	L		R		282
Courthouse Road (630)				T		338
	462		L			71
	657		T			
	977		R			
				I-95 NB On-Ramp		
				I-95 NB Off-Ramp		1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 4 - 5 PM Volumes
I-95 Corridor

August 2017

Figure B.5-4



1	271	I-95 SB Off-Ramp		T	2,729		
	R						
Garrisonville Road (610)		I-95 SB On-Ramp					
	2,249	T					
	1,046	R					
				1431			
2	41	US-1		L	T		
	R	T					
I-95 NB On-Ramp		US-1		233	1,992		
				1434			
3	1,901	1,724	252	US-1	R	162	
	R	T	L			T	261
Garrisonville Road (610)		US-1		L	T	R	
	822			L	130		
	281	T			794	1,241	139
	879	R			1438		
4	2,556		178	US-1	R	190	
	T		L			L	28
I-95 NB Off-Ramp		US-1				T	R
	314					1,670	41
	15	T			1432		
	17	R					

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 4 - 5 PM Volumes
 I-95 Corridor

August 2017

Figure B.5-5



Legend

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

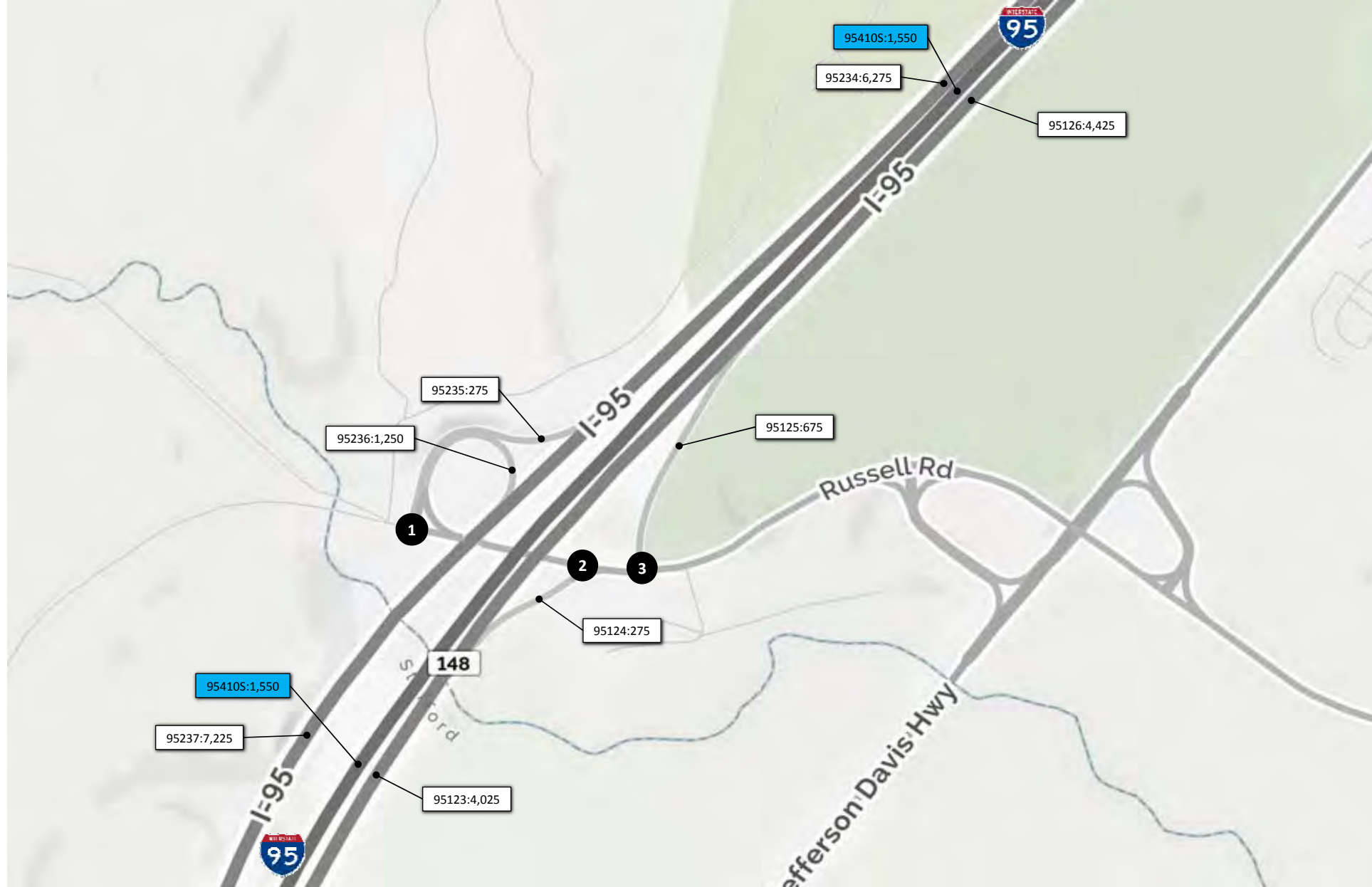
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 4 - 5 PM Volumes
 I-95 Corridor

August 2017

Figure B.5-6



1			I-95 SB On/Off-Ramps		
	R	L	R	T	
Russell Road					
53	218			1,097	
				272	
					1483
2			I-95 NB Off-Ramp		
			L	R	
Russell Road					
		43	231		
					1486
3			I-95 NB On-Ramp		
			R	T	
Russell Road					
479				203	
545				1,327	
					1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 4 - 5 PM Volumes
I-95 Corridor

August 2017

Figure B.5-7



1	367	9	901	Carl D Silver Pkwy			
				R			1,051
				T			2,355
	R	T	L	L	T	R	20
VA-3 (Plank Road)							
			L				
	298						
	2,057		T			12	9
	7		R				
							1303
2	17	5	15	Ramseur St			
				R			5
				T			2,271
	R	T	L	L	T	R	253
VA-3 (Plank Road)							
			L				
	37						
	1,841		T			352	3
	434		R				
							1304

Legend

xx,xxx Weekday Hourly Volume

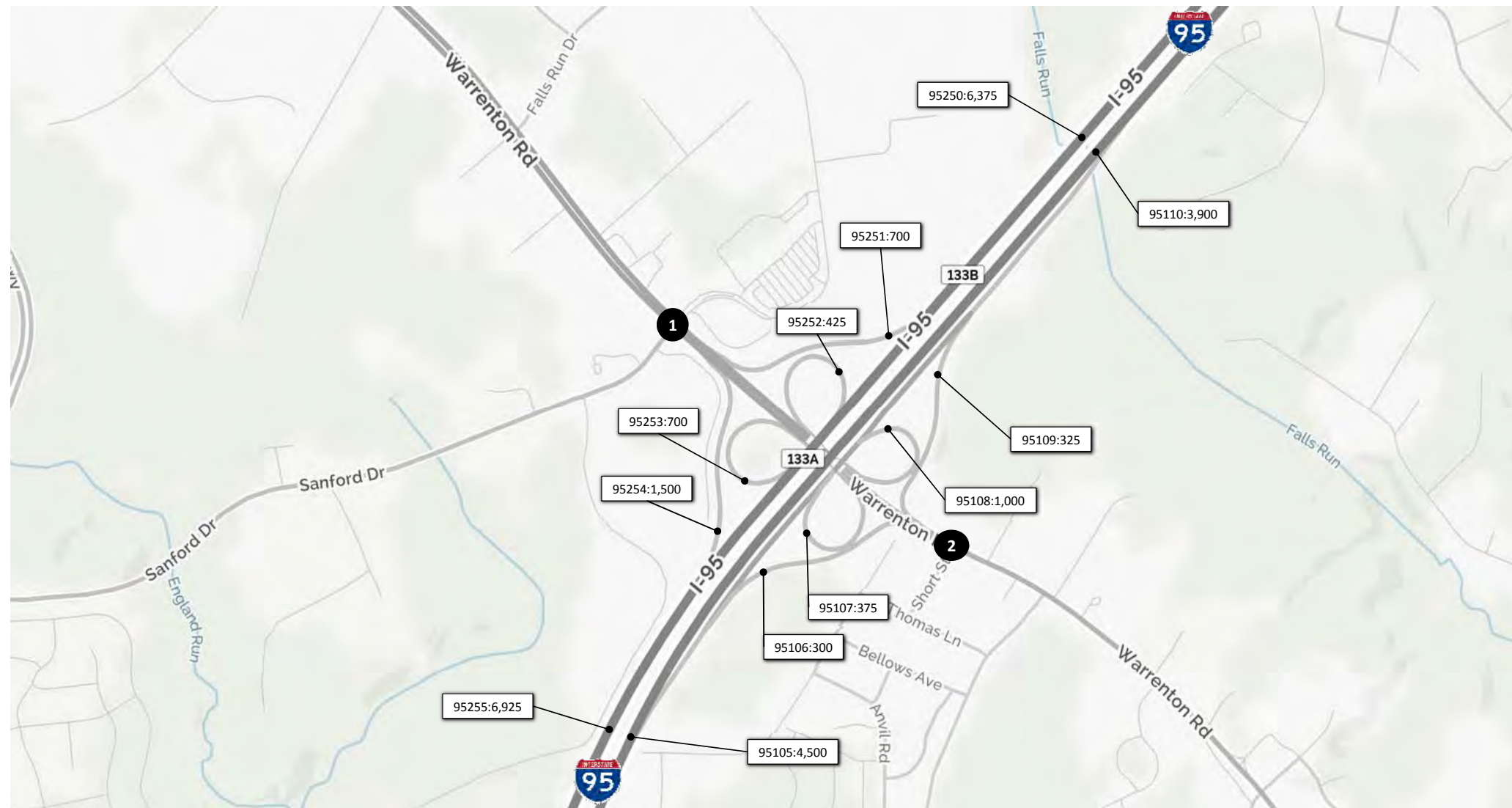
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

August 2017

Figure B.6-1



1	82	61	428	S Gateway Dr			R	445
							T	2,547
	R	T	L				L	275
	US-17 (Warrenton Rd)			L	T	R		
	82							
	2,866					46	10	457
	44			Sanford Dr				1333
							L	
2	7	0	5	Parking Lot			R	3
							T	2,196
	R	T	L				L	31
	US-17 BUS (Warrenton Rd)			L	T	R		
	5							
	2,710					145	3	39
	173			Short St				1338
							L	

Legend

xx,xxx Weekday Hourly Volume

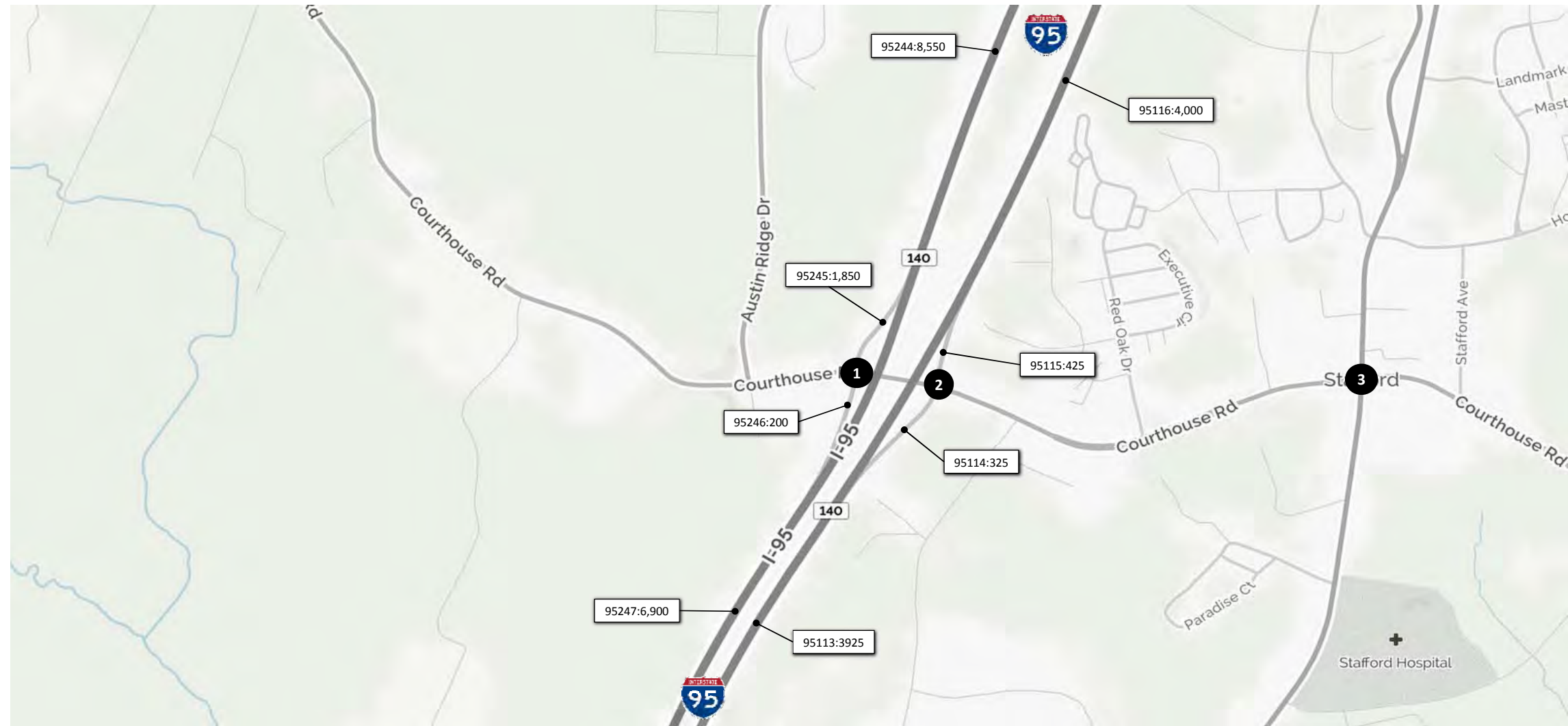
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

August 2017

Figure B.6-2



1 852 0 989 R T L		I-95 SB Off-Ramp		T 632	
		Courthouse Road (630)		L 44	
882 T		I-95 SB On-Ramp			
151 R				1403	

2 20 L 1,851 T		I-95 NB On-Ramp		R 406	
		Courthouse Road (630)		T 653	
24 0 308		I-95 NB Off-Ramp		L T R	
				1406	

3 233 741 233 R T L		US-1		R 291	
		Courthouse Road (630)		T 349	
476 L		US-1		L T R	
677 T				L T R	
1,006 R				1408	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 5 - 6 PM Volumes
 I-95 Corridor

August 2017

Figure B.6-4



1	279	I-95 SB Off-Ramp		T	2,812
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	2,317	T			
	1,078	R			
1431					
2	43	3,995	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
				240	2,052
1434					
3	1,958	1,777	260	US-1	
	R	T	L	R	167
Garrisonville Road (610)		US-1		T	269
				L	134
				L	T
				818	1,278
				143	
1438					
4	2,633		184	US-1	
	T		L	R	196
I-95 NB Off-Ramp		US-1		L	29
				T	R
				1,720	43
1432					

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 5 - 6 PM Volumes
 I-95 Corridor

August 2017

Figure B.6-5



Legend

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

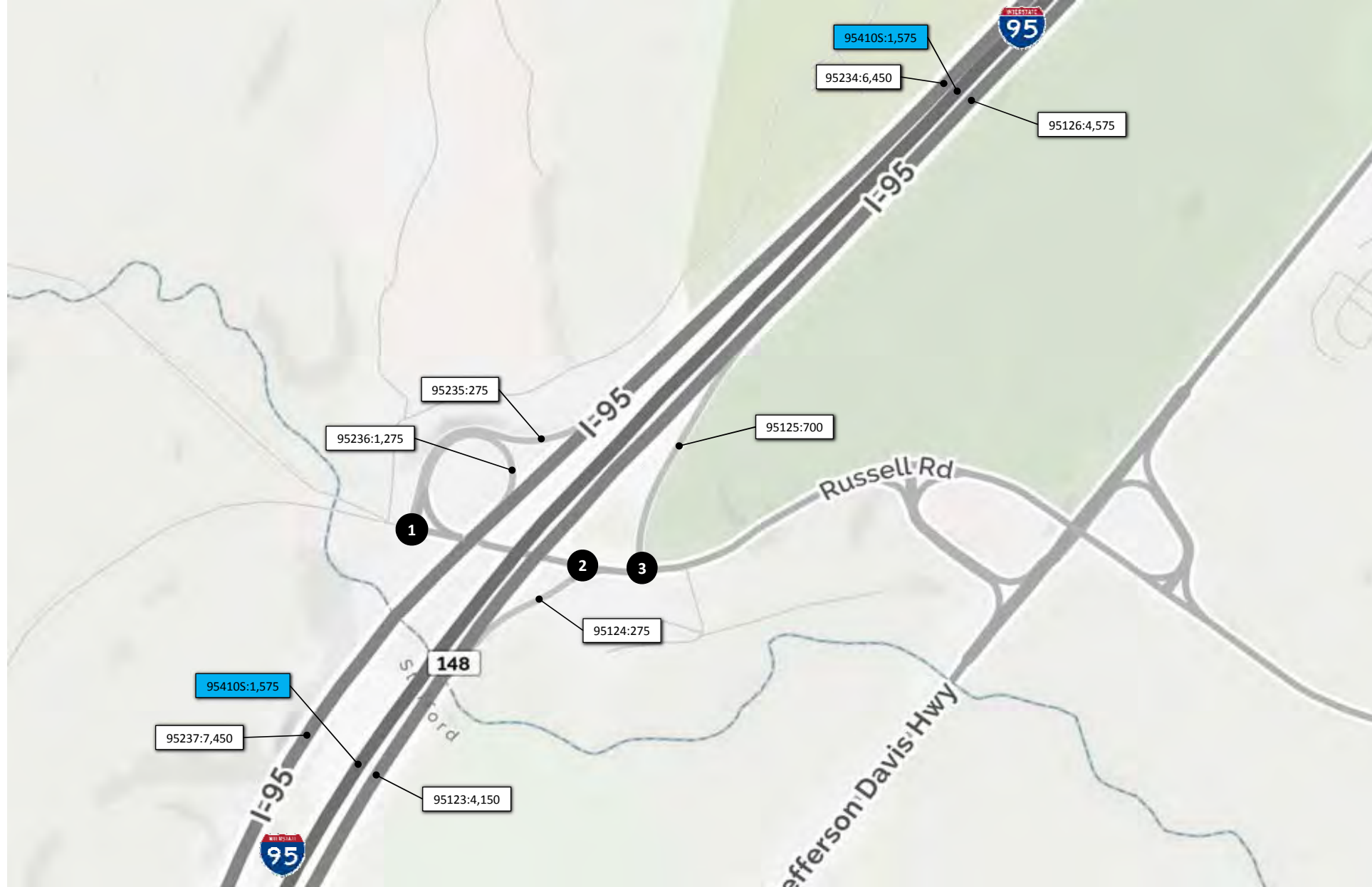
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 5 - 6 PM Volumes
 I-95 Corridor

August 2017

Figure B.6-6



1			I-95 SB On/Off-Ramps		
	R	L	R	T	
	54	224			1,131
					281
	Russell Road				
	150	L			
	592	T			
					1483
2			I-95 NB Off-Ramp		
			L	R	
					1,367
	Russell Road				
	816	T	44	238	
					1486
3			I-95 NB On-Ramp		
			R	T	
					209
					1,367
	Russell Road				
	493	L			
	561	T			
					1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

August 2017

Figure B.6-7



1	356	8	875	Carl D Silver Pkwy			
				R			1,020
				T			2,285
	R	T	L	L	T	R	20
VA-3 (Plank Road)							
			L				
	289						
	1,997		T			12	8
	7		R				8
							1303
2	17	5	15	Ramseur St			
				R			5
				T			2,204
	R	T	L	L	T	R	246
VA-3 (Plank Road)							
			L				
	36						
	1,787		T			342	3
	421		R				310
							1304

Legend

xx,xxx Weekday Hourly Volume

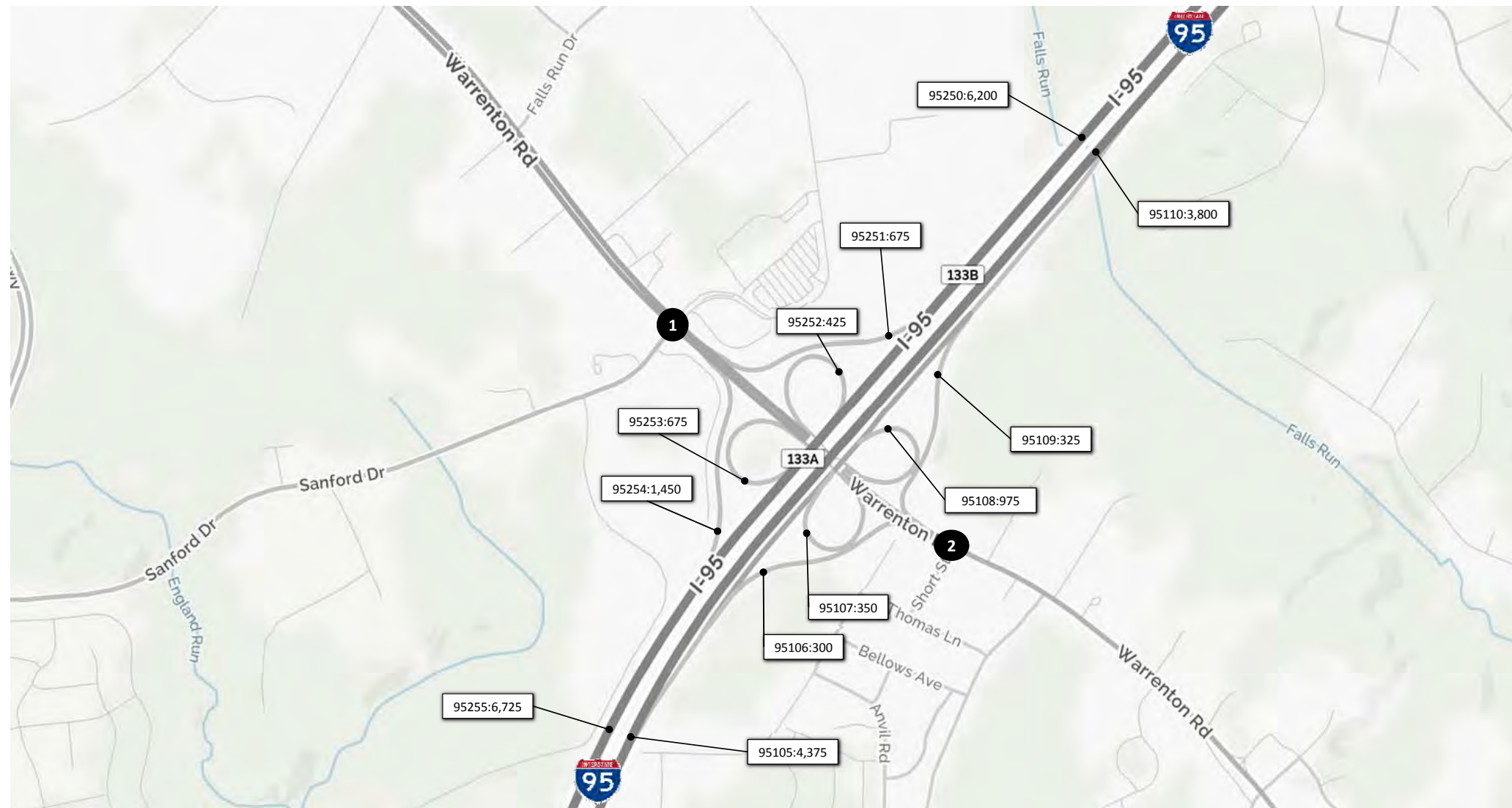
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure B.7-1



1	79	59	416	S Gateway Dr	R	432
					T	2,472
	R	T	L	L	267	
	US-17 (Warrenton Rd)			L	T	R
	79		L			
	2,782		T	45	10	444
	43		R			1333
2	7	0	5	Parking Lot	R	3
					T	2,132
	R	T	L	L	30	
	US-17 BUS (Warrenton Rd)			L	T	R
		5		L		
		2,630		T	140	3
	168		R			1338

Legend

xx,xxx Weekday Hourly Volume

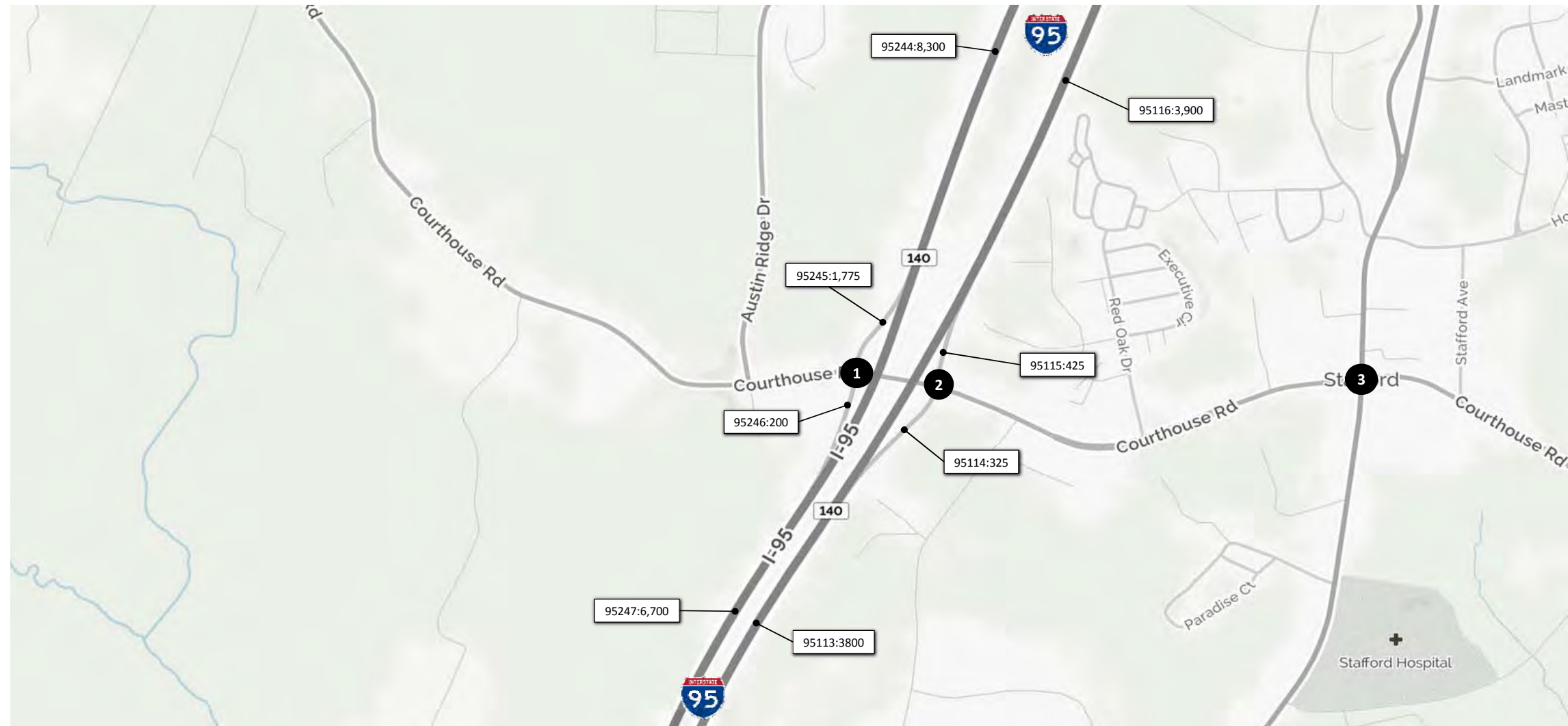
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure B.7-2



1						
	827	0	960			
R	T	L		T		614
Courthouse Road (630)				L		43
	856		T			
	147		R			
				I-95 SB Off-Ramp		
				I-95 SB On-Ramp		1403

2						
				R		394
				T		634
Courthouse Road (630)				L	T	R
	20		L			
	1,797		T			
				I-95 NB Off-Ramp		
				I-95 NB On-Ramp		1406

3						
	226	719	226			
R	T	L		R		282
Courthouse Road (630)				T		338
	462		L			71
	657		T			
	977		R			
				I-95 NB Off-Ramp		
				I-95 NB On-Ramp		1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure B.7-4



1	271	I-95 SB Off-Ramp		T	2,729	
	R					
Garrisonville Road (610)		I-95 SB On-Ramp				
	2,249	T				
	1,046	R				
				1431		
2	41	US-1		L	T	
	R	T				
I-95 NB On-Ramp		US-1		233	1,992	
				1434		
3	1,901	1,724	252	US-1	R	162
	R	T	L	T	261	
Garrisonville Road (610)		US-1		L	T	R
	822	L				
	281	T	794	1,241	139	
	879	R				
				1438		
4	2,556	178	US-1	R	190	
	T	L				
I-95 NB Off-Ramp		US-1		L	28	
	314	L				
	15	T				
	17	R				
				T	R	
				1,670	41	
				1432		

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 6 - 7 PM Volumes
 I-95 Corridor

August 2017

Figure B.7-5



Legend

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

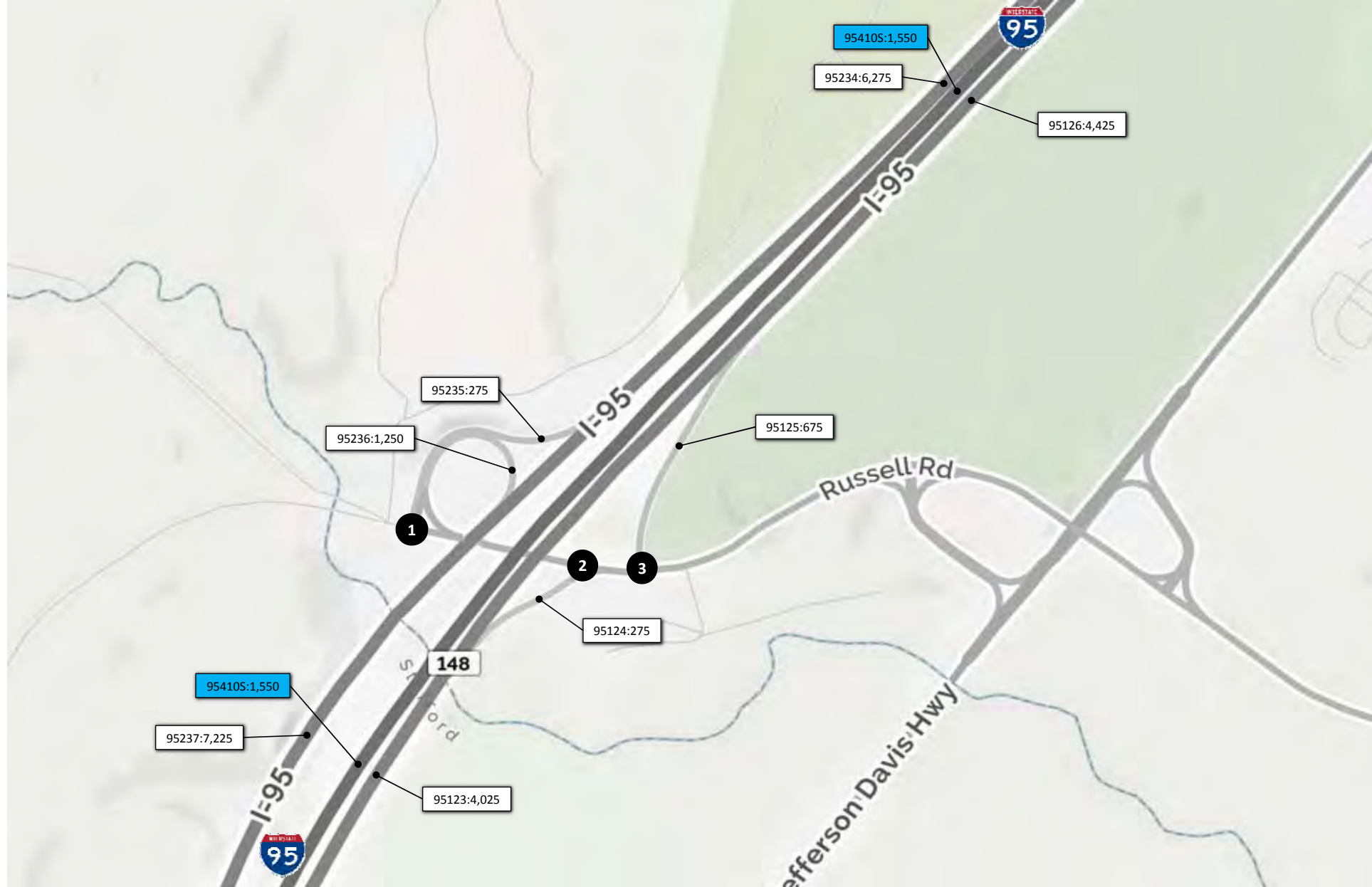
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 No Build
 Weekday 6 - 7 PM Volumes
 I-95 Corridor

August 2017

Figure B.7-6



1			I-95 SB On/Off-Ramps		
	R	L		R	T
	53	218			
				1,097	
				272	
	Russell Road				
	145	L			
	574	T			
				1483	
2			I-95 NB Off-Ramp		
				L	R
				1,327	
	Russell Road				
	792	T	43	231	
				1486	
3			I-95 NB On-Ramp		
				R	T
				203	
				1,327	
	Russell Road				
	479	L			
	545	T			
				1488	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure B.7-7

**APPENDIX C:
2042 BUILD
TRAFFIC VOLUMES**



1			Carl D Silver Pkwy			
61	5	277		R	573	
			T	1,551		
R	T	L	L	15		
VA-3 (Plank Road)			L	T	R	
226		L				
2,699		T	5	3	10	
3		R				
			Mail Court		1303	

2			Ramsour St			
17	3	5		R	15	
			T	1,510		
R	T	L	L	183		
VA-3 (Plank Road)			L	T	R	
68		L				
1,985		T	297	183	206	
274		R				
			Gateway Blvd		1304	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure C.1-1



1			S Gateway Dr		
33	23	285	R		322
			T		2,364
R	T	L	L		274
US-17 (Warrenton Rd)			L	T	R
46					
2,170			61	30	429
26					
			1333		

2			Parking Lot		
3	2	3	R		2
			T		1,945
R	T	L	L		20
US-17 BUS (Warrenton Rd)			L	T	R
3					
1,594			99	2	25
139					
			1338		

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

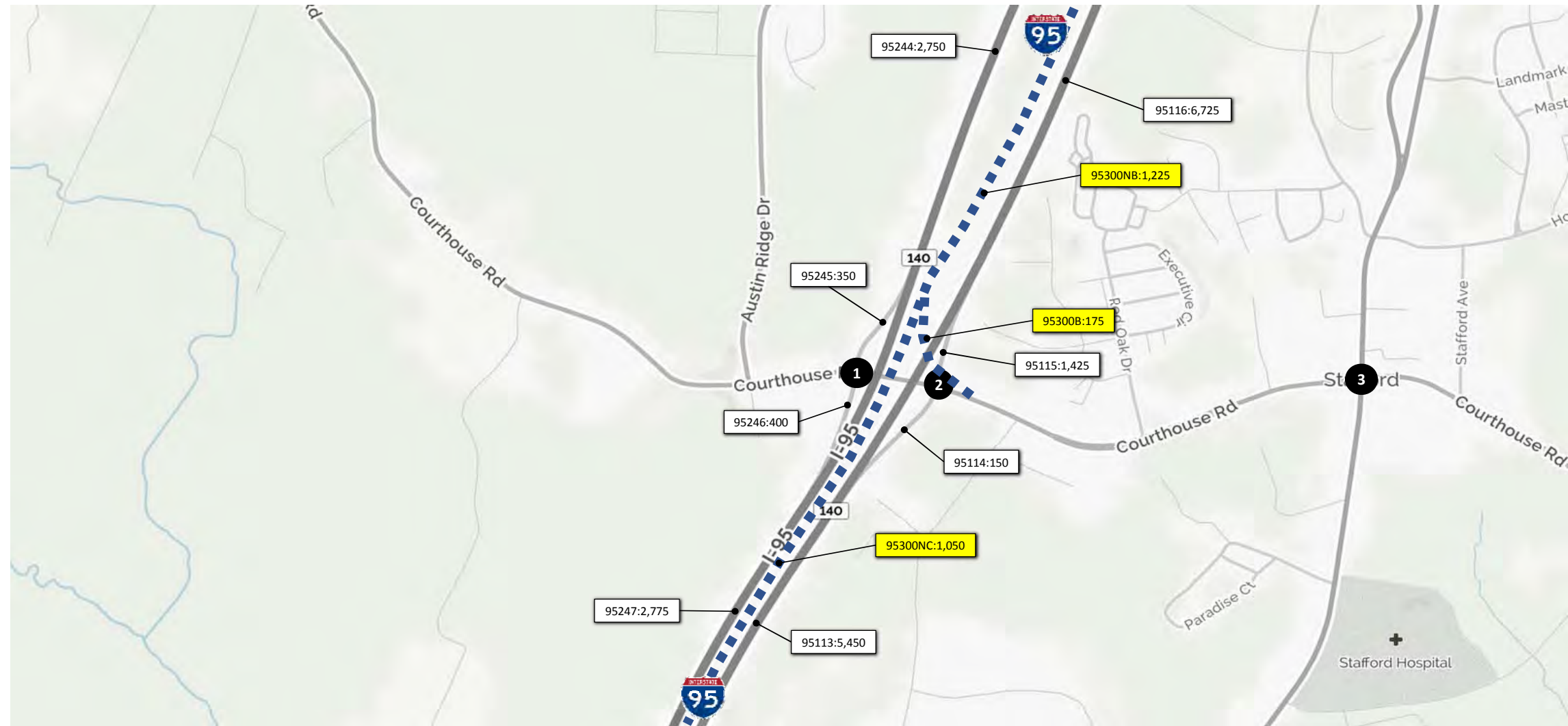
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017

Figure C.1-2



1							
	73	0	287				
R		T		L		T	624
Courthouse Road (630)			I-95 SB Off-Ramp		L		84
	954		T				
	304		R				
			I-95 SB On-Ramp				1403

2							
						R	774
						T	607
Courthouse Road (630)			I-95 NB On-Ramp		L	T	R
	658		L				
	582		T		101	0	58
			I-95 NB Off-Ramp				1406

3							
	381	460	186			R	294
						T	513
Courthouse Road (630)			US-1		L	T	R
	106		L				
	104		T		487	328	31
	431		R				
			US-1				1408

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure C.1-4



1	0		I-95 SB Off-Ramp		T		809	
	R		Garrisonville Road (610)		T		1431	
2,383		353		I-95 SB On-Ramp				
2	53		1,455		US-1			
	R		T		I-95 NB On-Ramp		L T	
				US-1		333 3,071		
						1434		
3	599		749		107		US-1	
	R		T		L		R T	
						355		
						132		
						78		
						1438		
						152 1,361 3		
4	1,097		76		US-1		R	
	T		L		I-95 NB Off-Ramp		L T	
				US-1		701 25		
						1432		
						12		

Legend

xx,xxx Weekday Hourly Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017 Figure C.1-5



Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

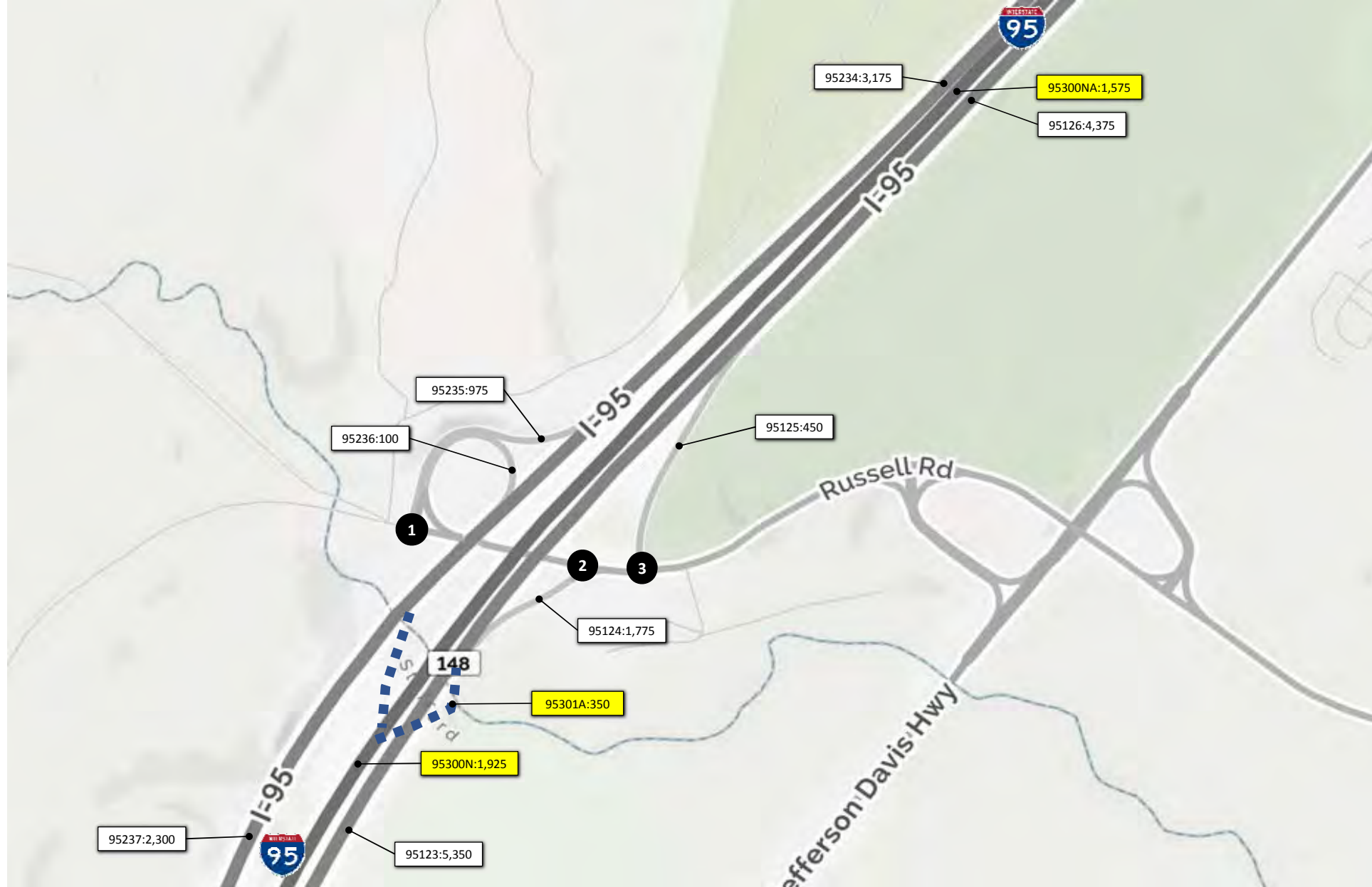
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017

Figure C.1-6



1			I-95 SB On/Off-Ramps		
	541	439	R	89	
	R	L	T	363	
	Russell Road				
	17	L			
	249	T			1483
2			I-95 NB Off-Ramp		
				T	239
	Russell Road		L	R	
	688	T	213	1,566	
					1486
3			I-95 NB On-Ramp		
				R	117
				T	239
	Russell Road		L		
	333	L			
	1,921	T			1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2042 Build
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure C.1-7



1	63	5	286	Carl D Silver Pkwy	R	590
					T	1,598
	R	T	L	Mall Court	L	15
	VA-3 (Plank Road)				L	T
233		L		5	3	10
2,781		T				
3		R				
						1303
2	17	3	5	Ramseur St	R	15
					T	1,556
	R	T	L	Gateway Blvd	L	189
	VA-3 (Plank Road)				L	T
70		L		306	189	213
2,045		T				
282		R				
						1304

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure C.2-1



1			S Gateway Dr		
34	24	294	R		332
			T		2,436
R	T	L	L		282
US-17 (Warrenton Rd)			L	T	R
48					
2,236		T	63	31	442
27		R			
1333					

2			Parking Lot		
3	2	3	R		2
			T		2,004
R	T	L	L		20
US-17 BUS (Warrenton Rd)			L	T	R
3					
1,642		T	102	2	26
143		R			
1338					

Legend

xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension

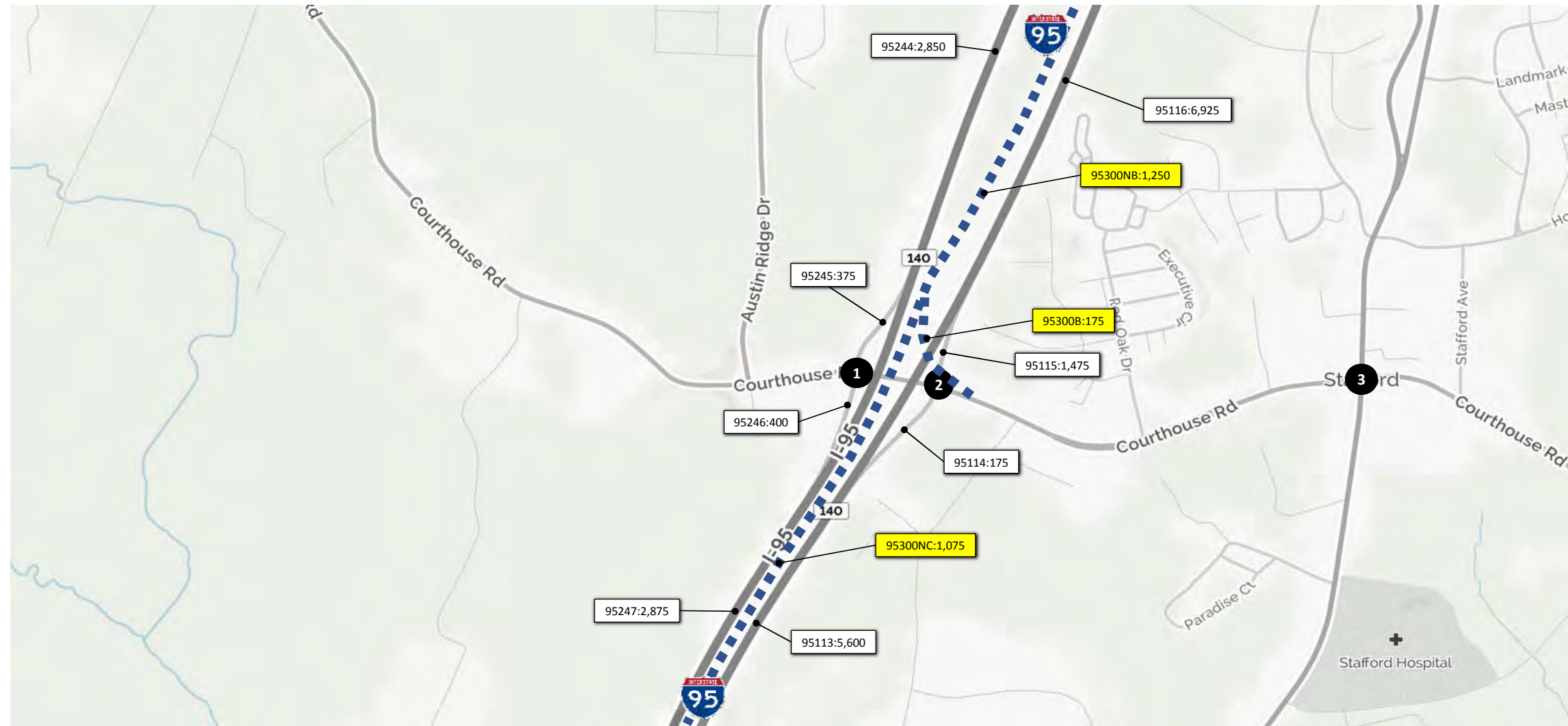
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure C.2-2



1							
	75	0	296				
R		T		L		T	643
Courthouse Road (630)						L	87
	983		T				
	313		R				
							1403

2							
						R	797
						T	626
Courthouse Road (630)					L	T	R
	678		L				
	600		T			104	0
							60
							1406

3							
	393	474	192			R	303
						T	529
Courthouse Road (630)					L	T	R
	109		L				
	107		T			502	338
	444		R				32
							1408

Legend

xx,xxx Weekday Hourly Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2042 Build

Weekday 7-8 AM Volumes

I-95 Corridor

August 2017

Figure C.2-4



1	0		I-95 SB Off-Ramp		T		833
	R		Garrisonville Road (610)				
2,455		T		I-95 SB On-Ramp		1431	
364		R					
2	54		1,499		US-1		
	R		T		I-95 NB On-Ramp		
				US-1		L	T
						343	3,164
						1434	
3	617		772		111		US-1
	R		T		L		R
						T	366
						L	136
						L	80
				Garrisonville Road (610)			
1,739		L		US-1		L	T
114		T				156	1,403
357		R				3	
						1438	
4	1,131		78		US-1		R
	T		L		I-95 NB Off-Ramp		L
						T	129
						T	12
						T	26
						723	
						1432	

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure C.2-5



Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

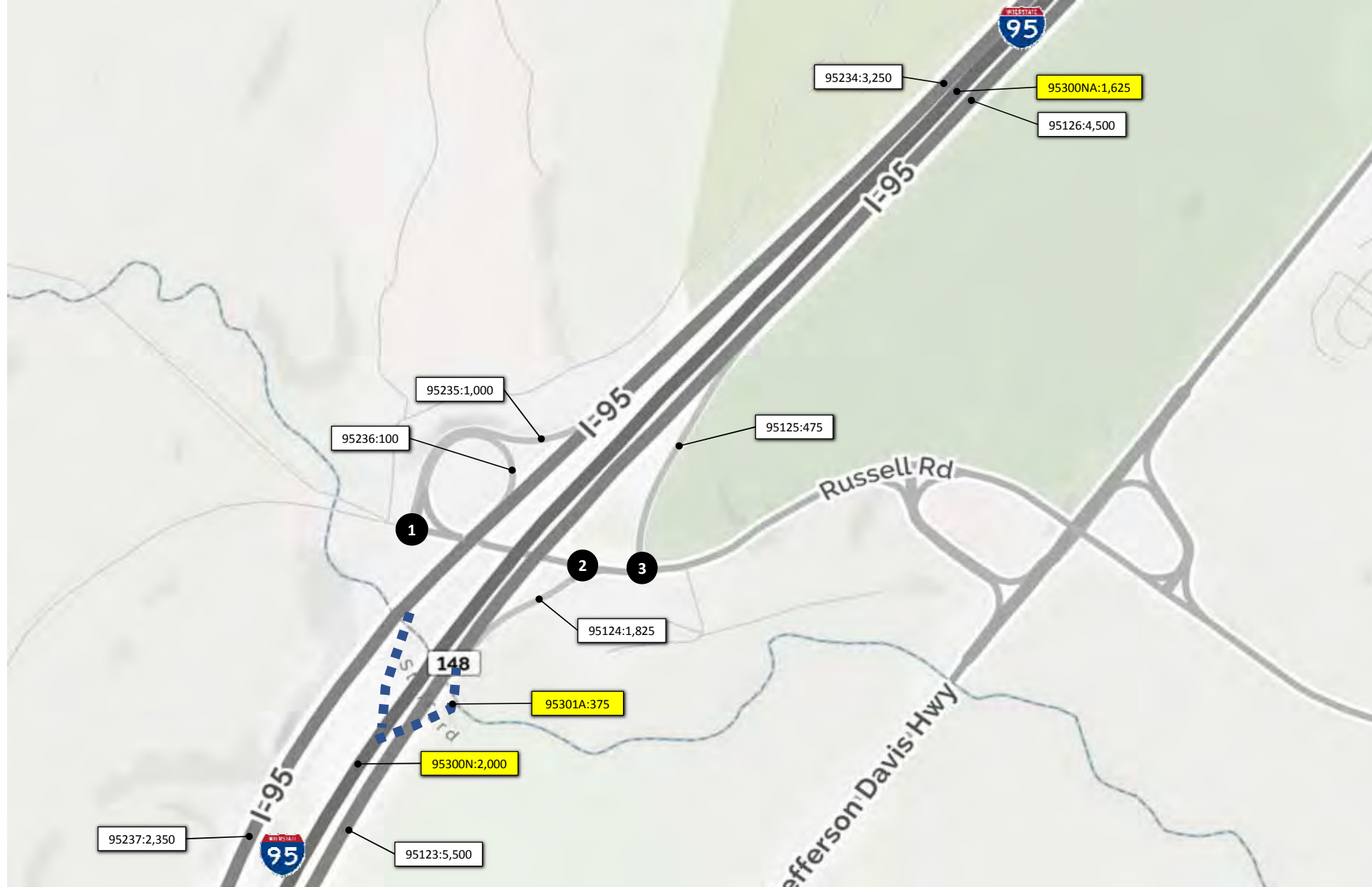
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure C.2-6



1			I-95 SB On/Off-Ramps		
	R	L	R	T	
Russell Road					
558	452			92	
17				374	
257					1483
2			I-95 NB Off-Ramp		
			L	R	
Russell Road					
709		219	1,613		
					1486
3			I-95 NB On-Ramp		
			R	T	
Russell Road					
343			121		
1,979			247		1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2042 Build
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure C.2-7



1	61	5	277	Carl D Silver Pkwy			R	573
							T	1,551
	R	T	L				L	15
	VA-3 (Plank Road)			L	T	R		
226						L	10	
2,699						T	3	
3						R	5	
						Mall Court		
						1303		
2	17	3	5	Ramseur St			R	15
							T	1,510
	R	T	L				L	183
	VA-3 (Plank Road)			L	T	R		
68						L	206	
1,985						T	183	
274						R	297	
						Gateway Blvd		
						1304		

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure C.3-1



1			S Gateway Dr		
33	23	285	R		322
			T		2,364
			L		274
US-17 (Warrenton Rd)			L	T	R
46					
2,170			61	30	429
26					
			1333		

2			Parking Lot		
3	2	3	R		2
			T		1,945
			L		20
US-17 BUS (Warrenton Rd)			L	T	R
3					
1,594			99	2	25
139					
			1338		

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

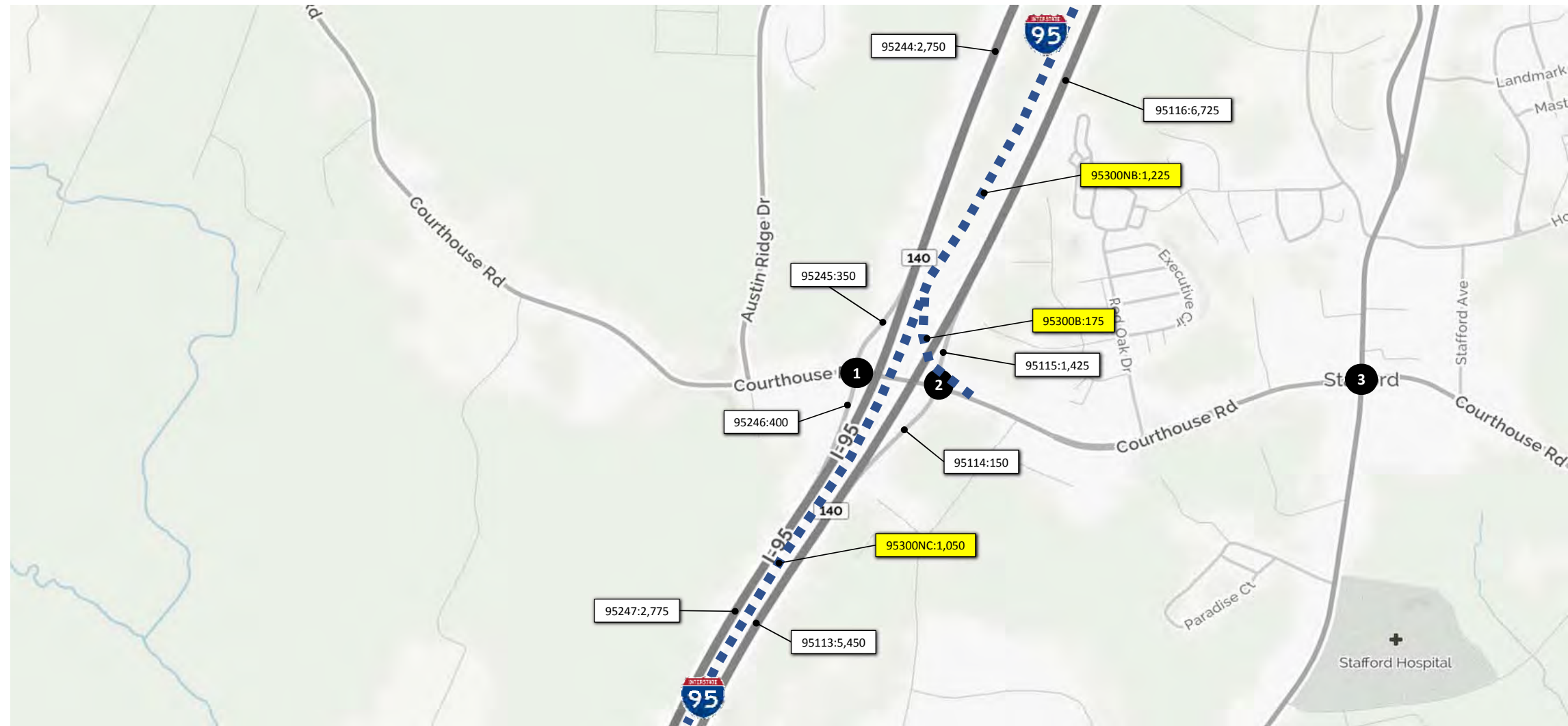
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure C.3-2



1							
	73	0	287				
R		T		L		T	624
Courthouse Road (630)			I-95 SB Off-Ramp		L		84
	954		T				
	304		R				
			I-95 SB On-Ramp				1403

2							
					R	774	
					T	607	
Courthouse Road (630)			I-95 NB On-Ramp		L	T	R
	658		L				
	582		T		101	0	58
			I-95 NB Off-Ramp				1406

3							
	381	460	186				
R		T		L		R	294
Courthouse Road (630)			US-1		L		513
	106		L				71
	104		T				
	431		R				
			US-1				1408

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure C.3-4



1	0		I-95 SB Off-Ramp		T		809						
	R												
Garrisonville Road (610)				I-95 SB On-Ramp				1431					
2,383		T											
353		R											
2	53		1,455		US-1								
	R		T										
I-95 NB On-Ramp				US-1		L		T					
						333		3,071					
								1434					
3	599		749		107		US-1		R		355		
	R		T		L				T		132		
Garrisonville Road (610)								L		T		R	
1,688		L						152		1,361		3	
111		T										1438	
347		R											
4			1,097		76		US-1		R		125		
			T		L				L		12		
I-95 NB Off-Ramp										T		R	
690		L								701		25	
178		T										1432	
51		R											

Legend

xx,xxx Weekday Hourly Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2042 Build

Weekday 8-9 AM Volumes

I-95 Corridor

August 2017

Figure C.3-5



Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

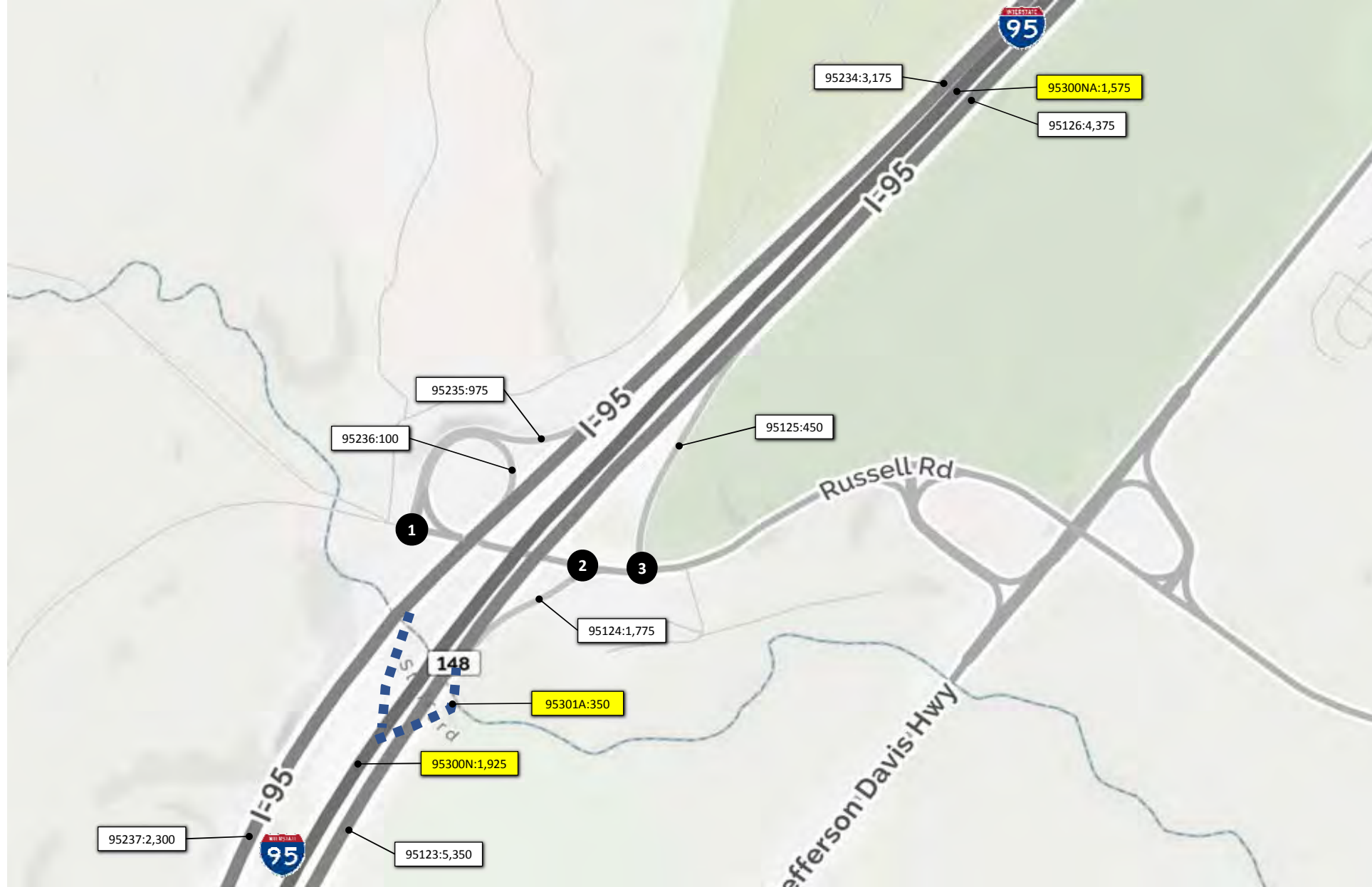
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure C.3-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	541	439		89	
	17			363	
	249				
					1483
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	688		213	1,566	
					1486
3	Russell Road		I-95 NB On-Ramp		
				R	T
	333			117	
	1,921			239	
					1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2042 Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure C.3-7



1	291	8	747	Carl D Silver Pkwy			R	1,184	
							T	2,594	
							L	18	
	VA-3 (Plank Road)						L	T	R
	236			Mall Court					
	1,754						L	T	R
	6						11	8	8
									1303
2	15	5	14	Ramseur St			R	5	
							T	1,778	
							L	215	
	VA-3 (Plank Road)						L	T	R
	33			Gateway Blvd					
	1,973						287	3	275
	455								1304

Legend

xx,xxx Weekday Hourly Volume

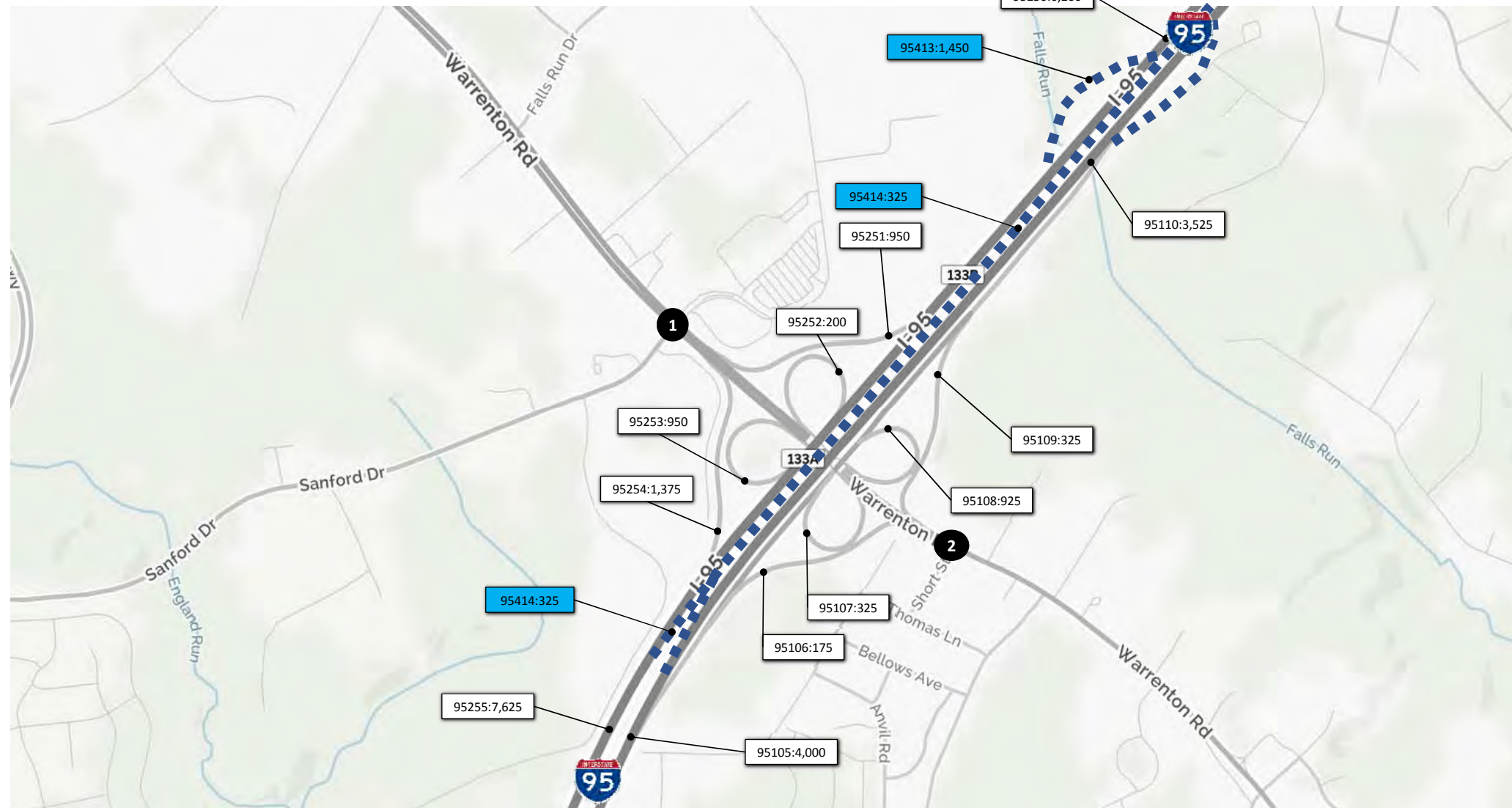
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure C.4-1



1			S Gateway Dr		
65	83	327	R		308
			T		2,150
R	T	L	L		438
US-17 (Warrenton Rd)			L	T	R
57		L			
2,298		T	39	8	374
56		R			
			1333		

2			Parking Lot		
6	0	5	R		3
			T		1,389
R	T	L	L		21
US-17 BUS (Warrenton Rd)			L	T	R
6		L			
2,274		T	129	3	33
158		R			
			1338		

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure C.4-2



Location	Direction	Volume
1	Centreport Pkwy	72
	Centreport Pkwy	5
	Centreport Pkwy	621
	I-95 SB Off-Ramp	371
	I-95 SB Off-Ramp	159
	I-95 SB Off-Ramp	183
2	Centreport Pkwy	9
	Centreport Pkwy	771
	I-95 NB On-Ramp	320
	I-95 NB On-Ramp	261
	I-95 NB On-Ramp	269
	I-95 NB On-Ramp	123
3	US-1	996
	US-1	105
	US-1	117
	US-1	777
	US-1	893
	US-1	476

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure C.4-3



1	149	I-95 SB Off-Ramp		T	1,889
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	1,820	T			
	1,389	R			
		1431			
2	47	3,203	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
				224	1,769
		1434			
3	1,587	1,370	246	US-1	
	R	T	L	R	182
Garrisonville Road (610)		US-1		T	251
				L	119
				L	T
				668	1,232
				R	135
		1438			
4	1,850		152	US-1	
	T		L	R	101
I-95 NB Off-Ramp		US-1		L	14
				T	R
				357	L
				21	T
				20	R
				1,577	41
		1432			

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
Extension Study

2042 Build
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure C.4-5



Legend

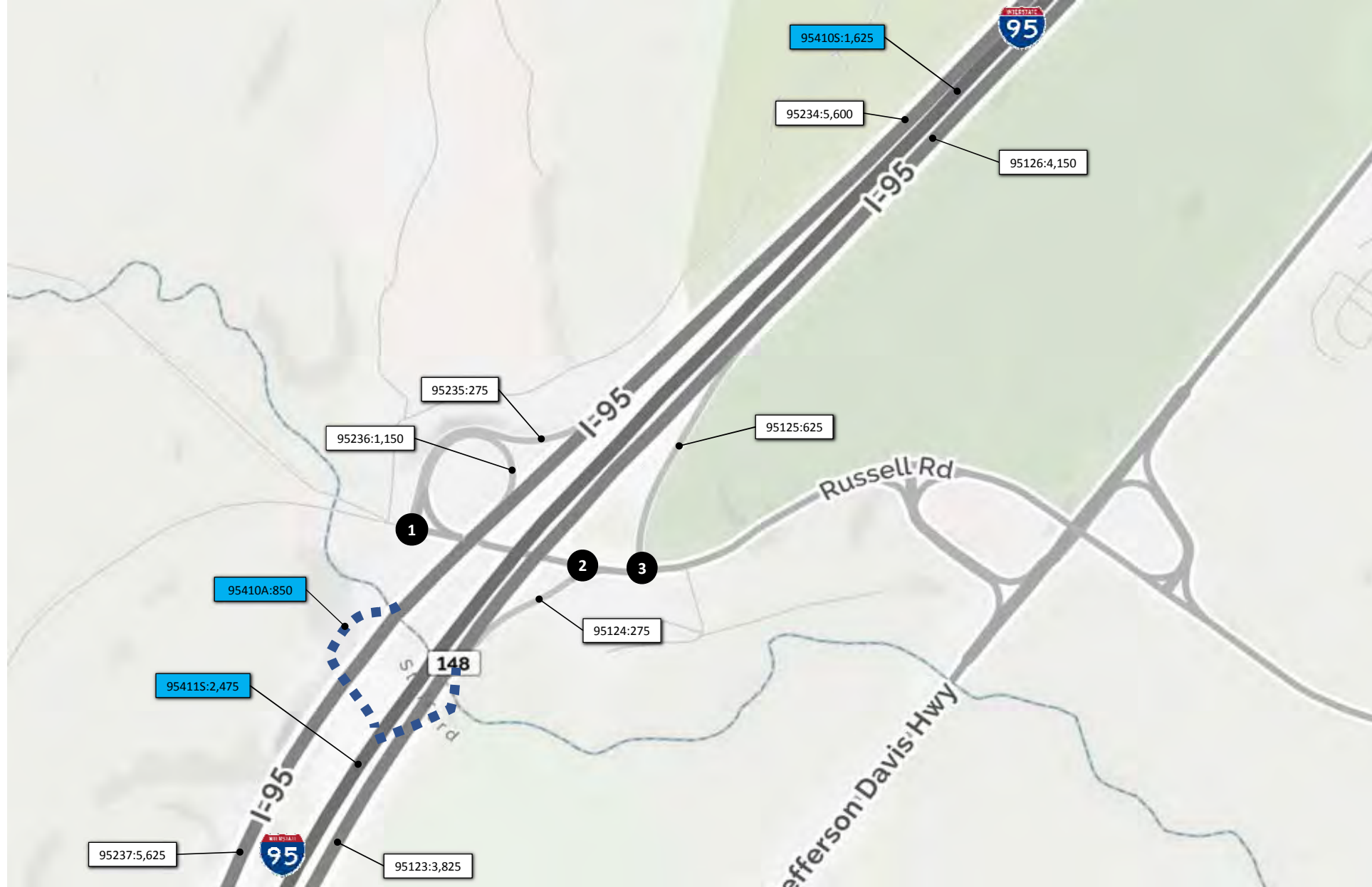
xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure C.4-6



1	66	198	I-95 SB On/Off-Ramps	R	986
	R	L		T	318
Russell Road					
	159	L			
	566	T			1483
2			I-95 NB Off-Ramp		1,287
				T	
Russell Road					
	764	T		L	17
				R	266
					1486
3			I-95 NB On-Ramp		200
				R	
Russell Road					
	419	L			
	611	T			1,287
					1488

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure C.4-7



1			Carl D Silver Pkwy			
320	8	822		R	1,302	
			T	2,853		
R	T	L	L	20		
VA-3 (Plank Road)			L	T	R	
259		L				
1,929		T	12	8	8	
7		R				
			Mall Court		1303	

2			Ramsour St			
17	5	15		R	5	
			T	1,955		
R	T	L	L	236		
VA-3 (Plank Road)			L	T	R	
36		L				
2,170		T	315	3	302	
500		R				
			Gateway Blvd		1304	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure C.5-1



1	71	91	360	S Gateway Dr			R	338
							T	2,364
	R	T	L				L	482
	US-17 (Warrenton Rd)			L	T	R		
	63			Sanford Dr			L	43
	2,528						T	8
	61						R	411
								1333
2	7	0	5	Parking Lot			R	3
							T	1,528
	R	T	L				L	23
	US-17 BUS (Warrenton Rd)			L	T	R		
	7			Short St			L	142
	2,501						T	3
	173						R	36
								1338

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure C.5-2



Location	Direction	Volume	
1	Centreport Pkwy	R	79
		T	5
		L	683
	I-95 SB Off-Ramp	T	408
		L	175
		Total	1363
2	Centreport Pkwy	L	10
		T	848
		R	295
	I-95 NB On-Ramp	L	2
		T	135
		Total	1366
3	Centreport Pkwy	L	1,096
		T	116
		R	129
	US-1	L	855
		T	982
		R	523
Total	1368		

Legend

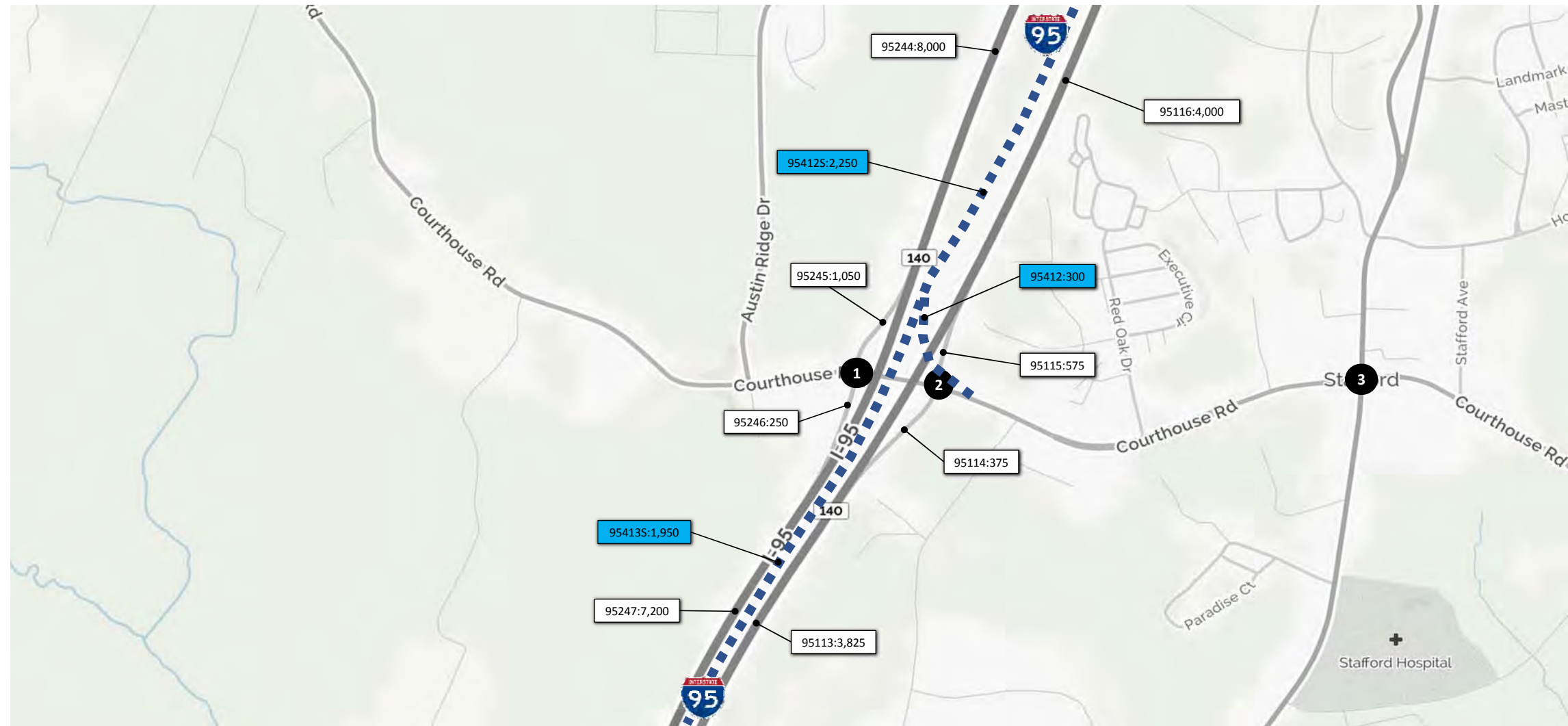
- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 4-5 PM Volumes
I-95 Corridor

August 2017

Figure C.5-3



1					
	541	0	510		
R		T		L	
Courthouse Road (630)					
	553		T		
	190		R		
					1403

2					
			R		526
			T		571
Courthouse Road (630)			L	T	R
	38		L		
	1,025		T		
				76	0
					300
					1406

3					
	378	635	122		
R		T		L	
Courthouse Road (630)					
	203		L		
	642		T		
	480		R		
					1408

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure C.5-4



1	164	I-95 SB Off-Ramp		T	2,077
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	2,001	T			
	1,528	R			
1431					
2	51	3,523	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
			246	1,945	
1434					
3	1,746	1,506	271	US-1	
	R	T	L	R	200
Garrisonville Road (610)		US-1		T	276
	637	L	L	T	130
	241	T	734	1,355	149
	564	R			
1438					
4		2,034	167	US-1	
		T	L	R	111
I-95 NB Off-Ramp		US-1		L	15
	393	L			
	23	T	1,734		45
	21	R			
1432					

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure C.5-5



Legend

xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension

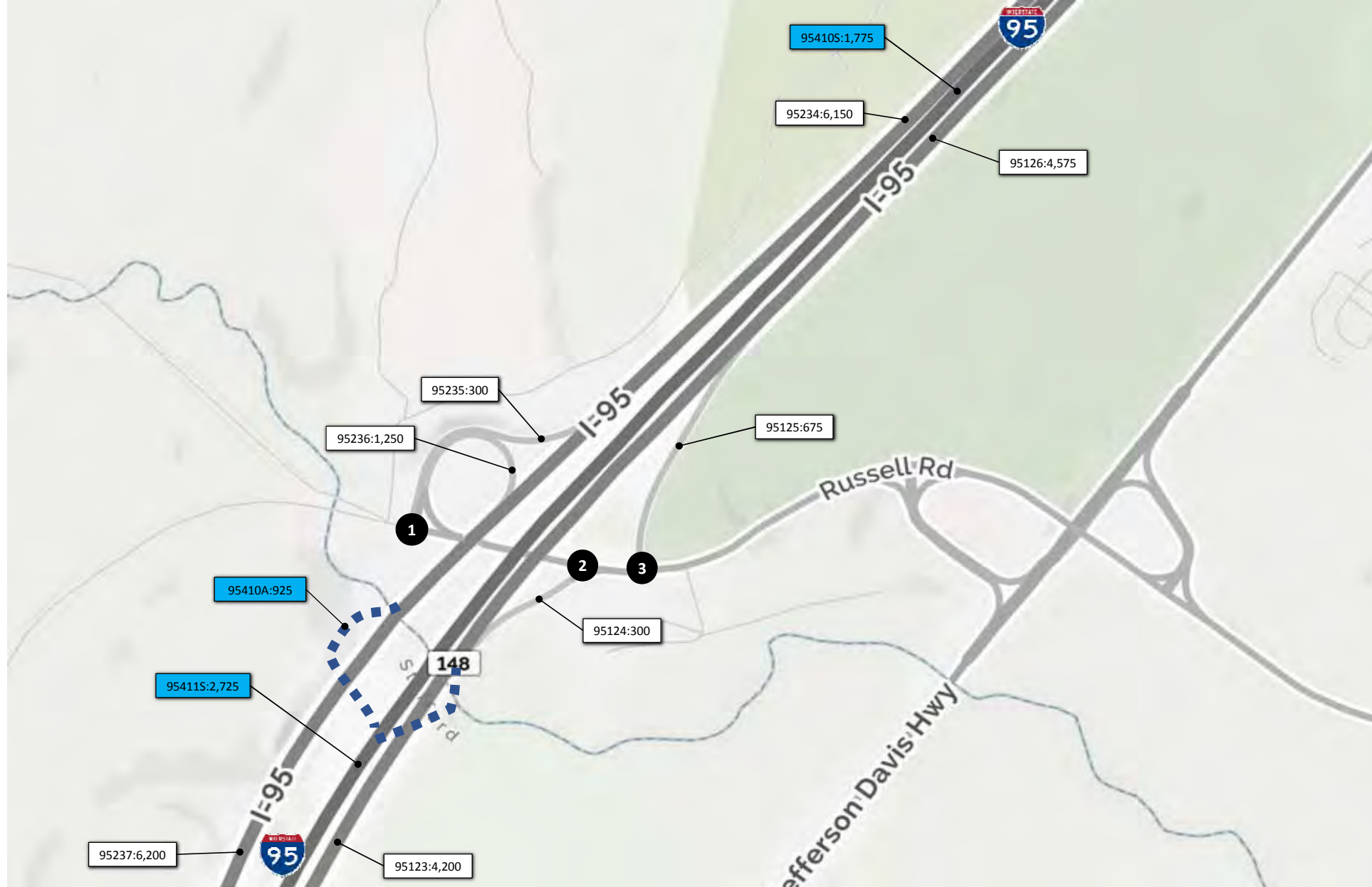


I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure C.5-6



1	73	218	I-95 SB On/Off-Ramps	R	1,084
	R	L		T	350
Russell Road					
175		L			1483
622		T			
2			I-95 NB Off-Ramp	T	1,416
				L	R
Russell Road					
840		T	18	292	1486
3			I-95 NB On-Ramp	R	219
				T	1,416
Russell Road					
460		L			1488
672		T			

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure C.5-7



1	330	9	847	Carl D Silver Pkwy	R	1,341
					T	2,939
	R	T	L	Mall Court	L	20
	VA-3 (Plank Road)				L	T
	267		L			
	1,987		T	12	9	9
	7		R			
						1303
2	17	5	15	Ramseur St	R	5
					T	2,015
	R	T	L	Gateway Blvd	L	243
	VA-3 (Plank Road)				L	T
	37		L			
	2,236		T	325	3	311
	515		R			
						1304

Legend

xx,xxx Weekday Hourly Volume

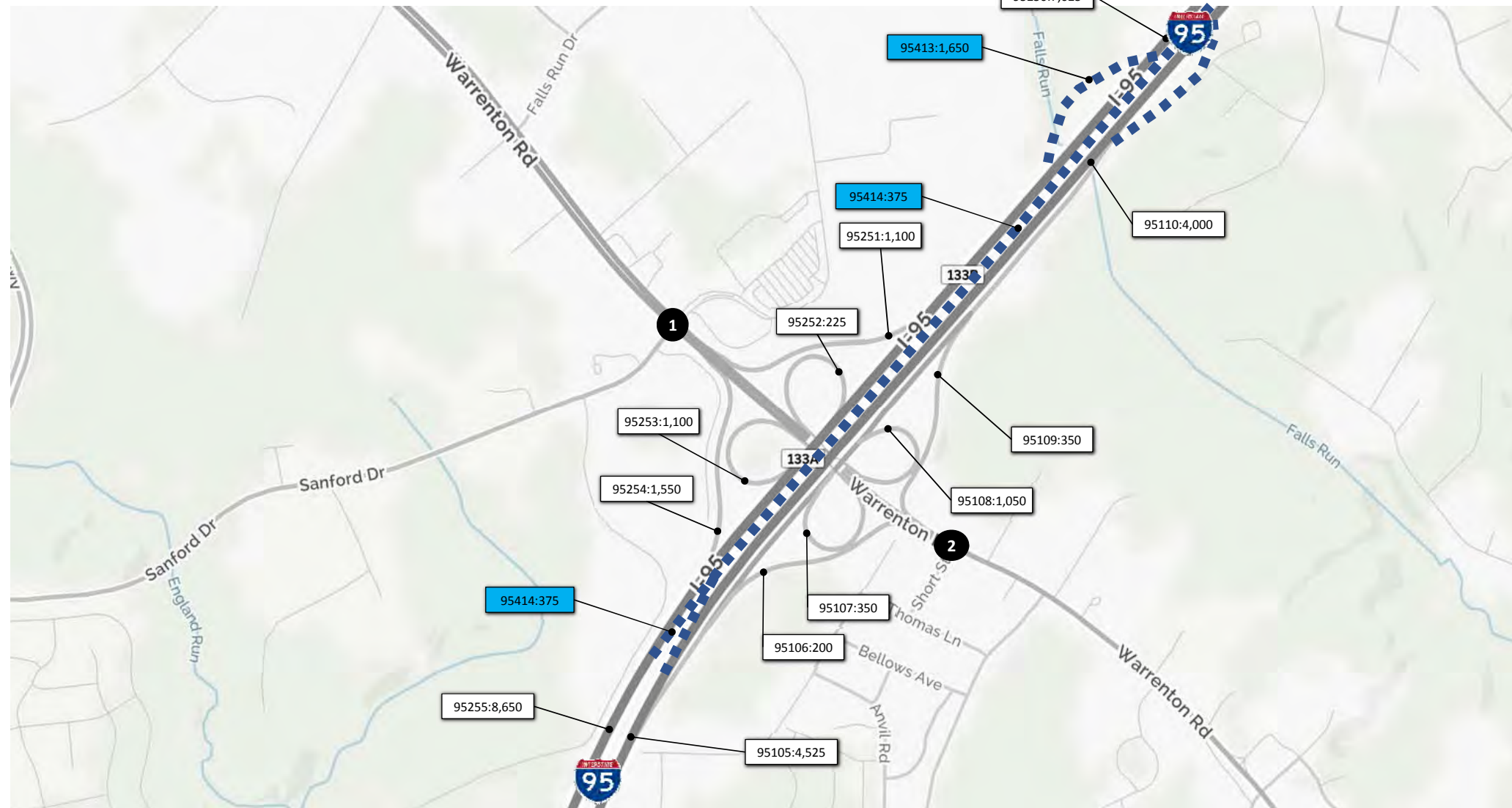
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure C.6-1



1			S Gateway Dr		
73	94	371	R		349
			T		2,436
R	T	L	L		496
US-17 (Warrenton Rd)			L	T	R
			L		
65					
2,604		T	44	9	423
63		R			
			1333		

2			Parking Lot		
7	0	5	R		3
			T		1,574
R	T	L	L		24
US-17 BUS (Warrenton Rd)			L	T	R
			L		
7					
2,577		T	146	3	37
179		R			
			1338		

Legend

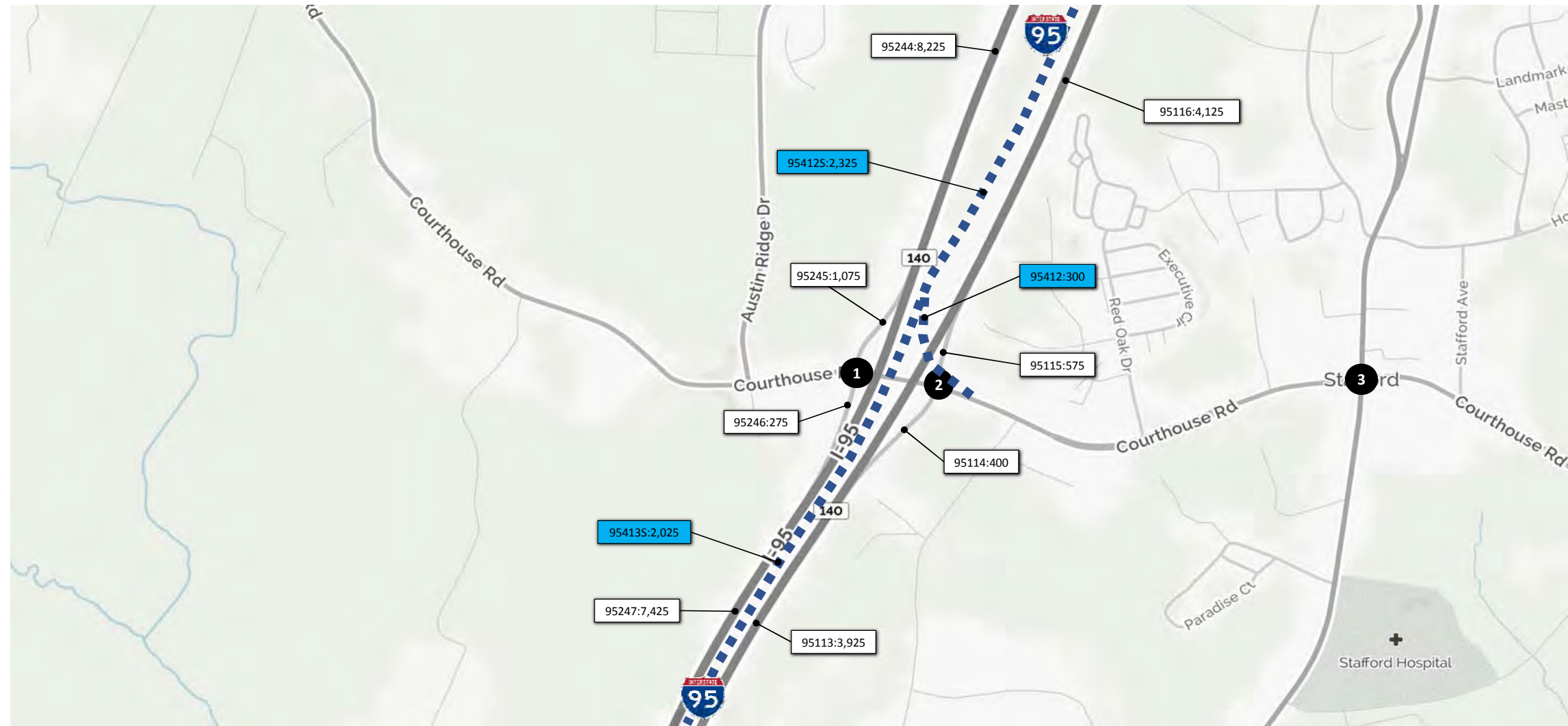
- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure C.6-2



1							
558	0	525					
R	T	L		T		593	
Courthouse Road (630)				L		73	
570		T					
196		R					
						1403	

2							
				R		542	
				T		588	
Courthouse Road (630)				L	T	R	
				39			
				1,056	T		
				78	0	309	
						1406	

3							
389	655	126					
R	T	L					
Courthouse Road (630)							
209		L					
661		T					
495		R					
						1408	

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension

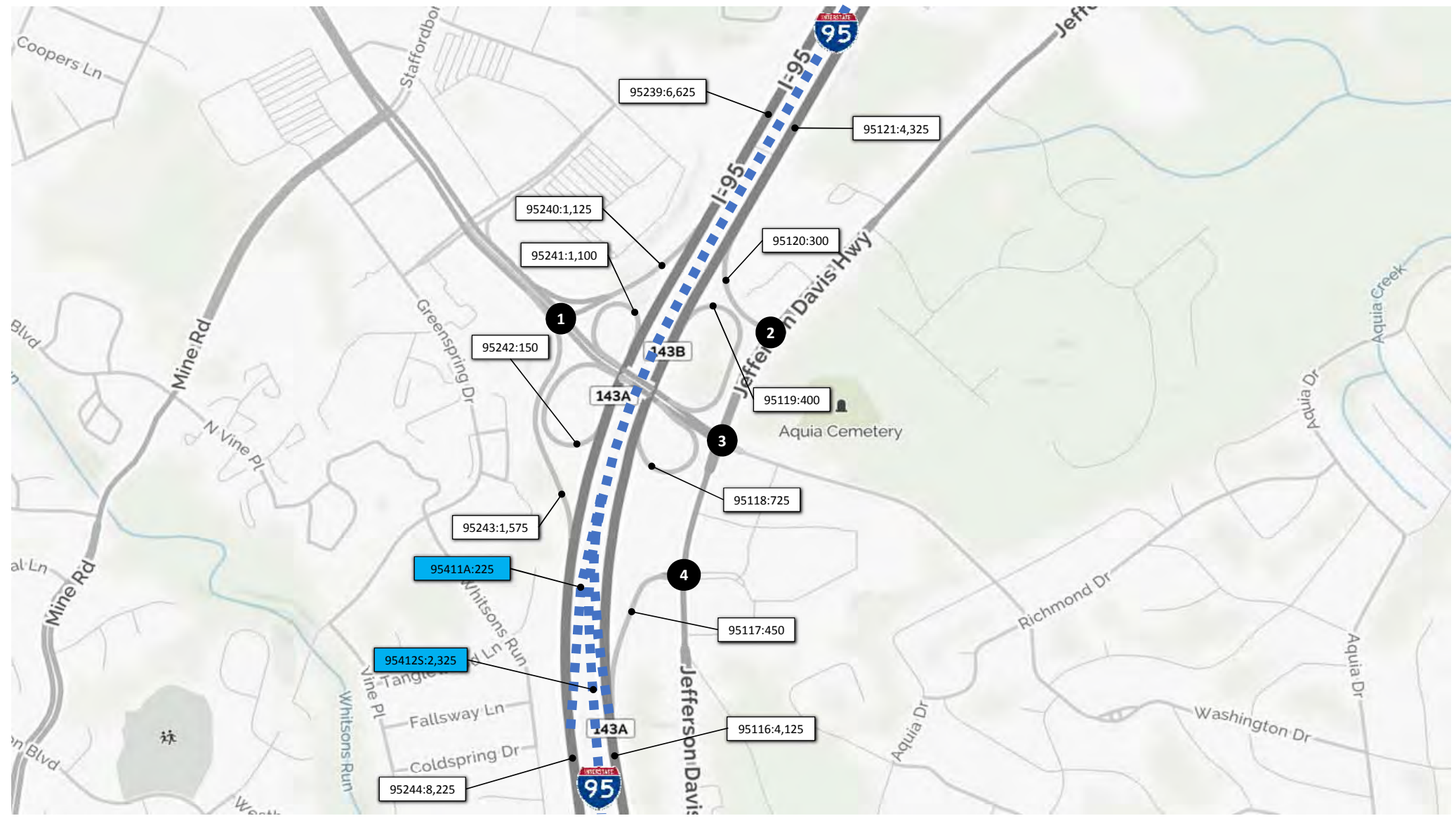
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure C.6-4



1	169	I-95 SB Off-Ramp		T	2,140
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	2,062	T			
	1,574	R			
1431					
2	53	3,630	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
				253	2,004
1434					
3	1,799	1,552	279	US-1	
	R	T	L	R	206
Garrisonville Road (610)				T	284
				L	134
				L	T
				757	1,396
				R	153
1438					
4		2,096	172	US-1	
		T	L	R	114
I-95 NB Off-Ramp				L	15
				T	R
				1,787	46
1432					

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure C.6-5



Legend

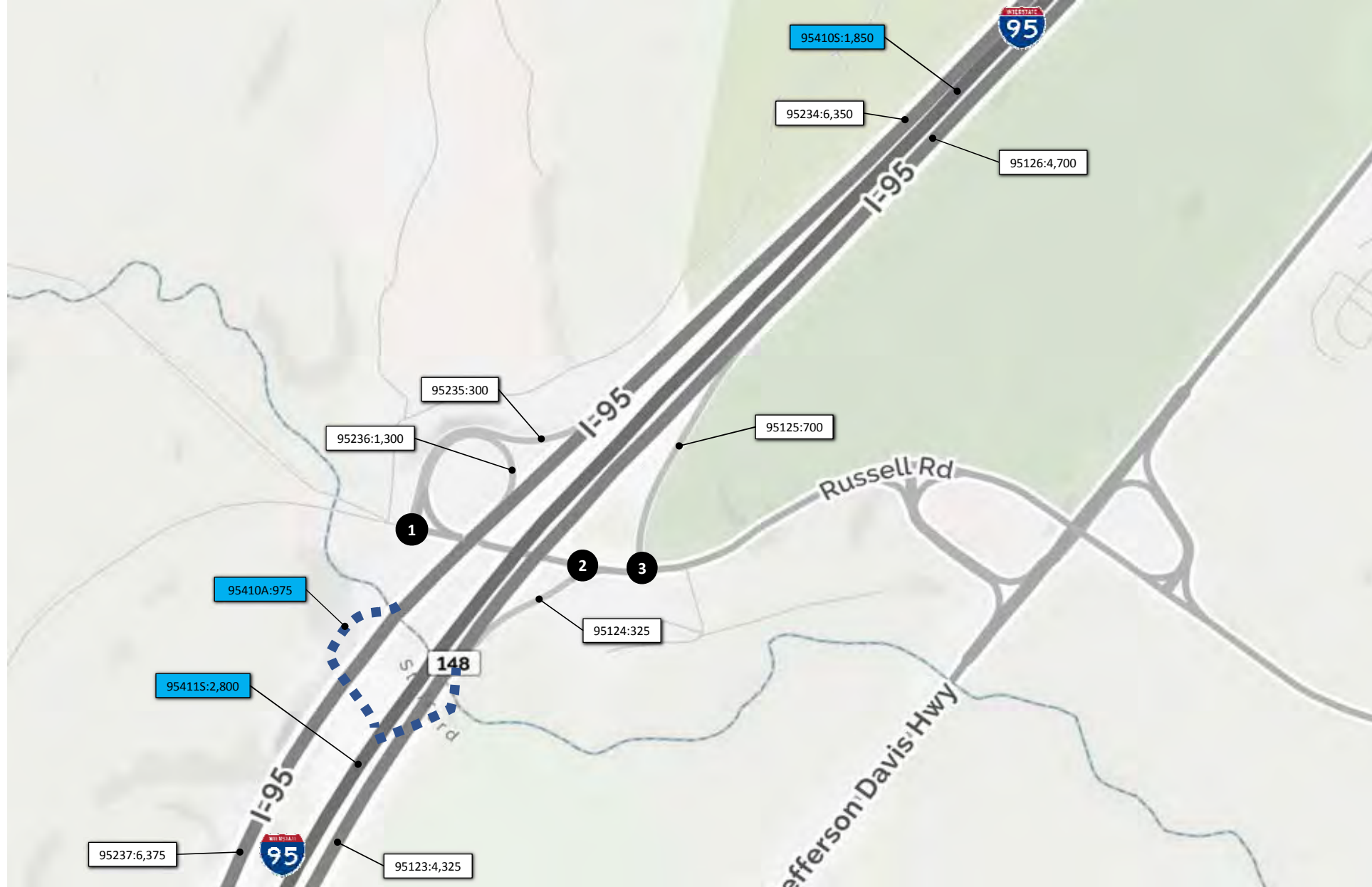
xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure C.6-6



1	75	224	I-95 SB On/Off-Ramps	R	1,117	
				L	360	
Russell Road						
	180			L		
	641			T		
					1483	
2					T	1,459
	Russell Road					
	865			L		
		T		R	301	
					1486	
3					T	1,459
	Russell Road					
	474			L		
	692			T		
					1488	

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure C.6-7



1	320	8	822	Carl D Silver Pkwy	R	1,302
					T	2,853
	R	T	L	Mall Court	L	20
	VA-3 (Plank Road)				L	T
	259	L		12	8	8
	1,929	T				
	7	R				
						1303
2	17	5	15	Ramseur St	R	5
					T	1,955
	R	T	L	Gateway Blvd	L	236
	VA-3 (Plank Road)				L	T
	36	L		315	3	302
	2,170	T				
	500	R				
						1304

Legend

xx,xxx Weekday Hourly Volume

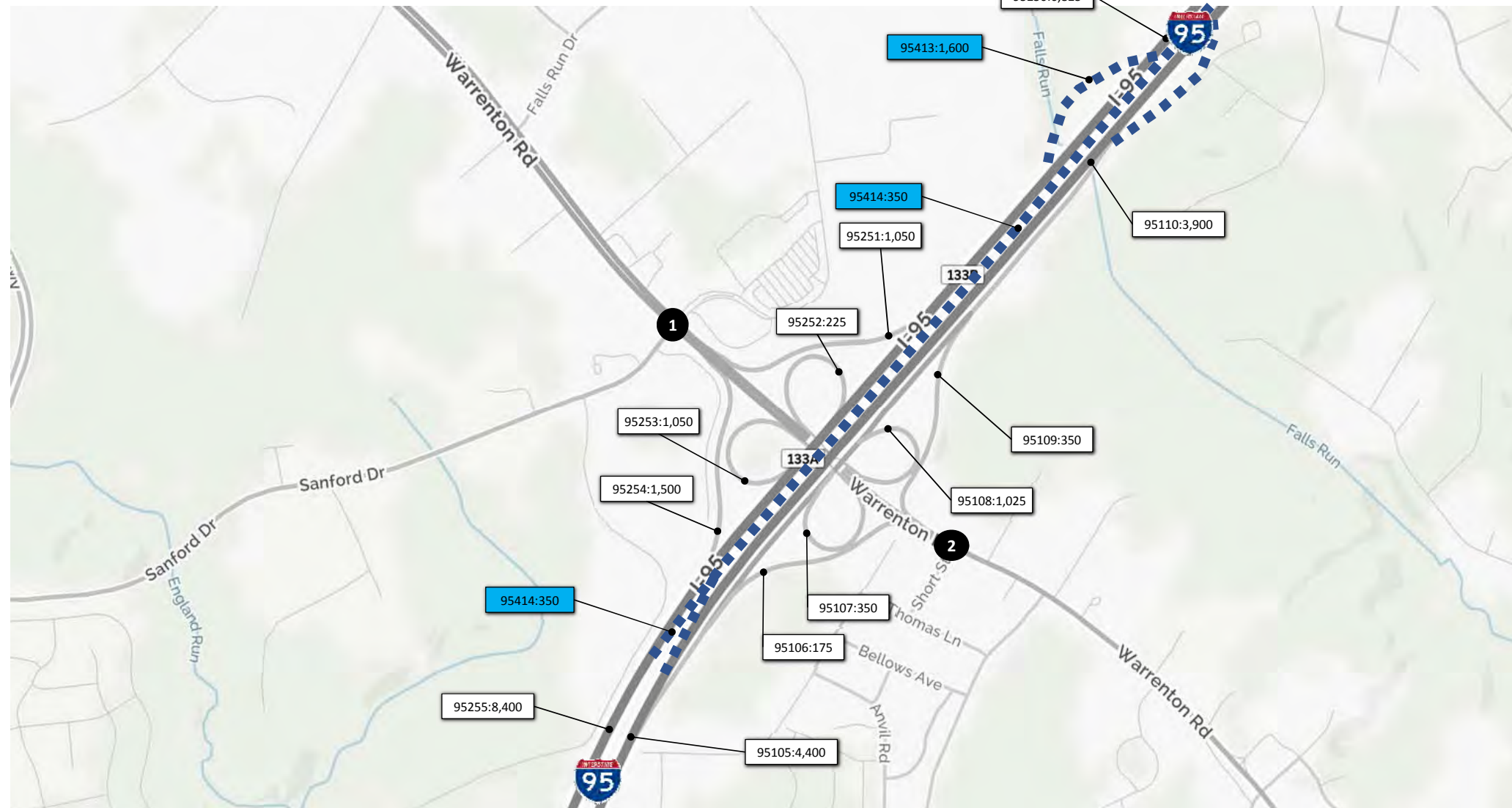
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2042 Build
Weekday 6-7 PM Volumes
I-95 Corridor

August 2017

Figure C.7-1



1			S Gateway Dr		
71	91	360	R		338
			T		2,364
R	T	L	L		482
US-17 (Warrenton Rd)			L	T	R
63		L			
2,528		T	43	8	411
61		R			
			1333		

2			Parking Lot		
7	0	5	R		3
			T		1,528
R	T	L	L		23
US-17 BUS (Warrenton Rd)			L	T	R
7		L			
2,501		T	142	3	36
173		R			
			1338		

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor
 August 2017 Figure C.7-2



Location	Direction	Volume	
1	Centreport Pkwy	R	79
		T	5
		L	683
	I-95 SB Off-Ramp	T	408
		L	175
		Total	1363
2	Centreport Pkwy	L	10
		T	848
		Total	858
	I-95 NB On-Ramp	L	295
		T	2
		R	135
I-95 NB Off-Ramp	R	351	
	T	287	
	Total	1366	
3	Centreport Pkwy	T	1,096
		L	116
		Total	1,212
	US-1	L	855
		T	982
		R	523
I-95 SB On-Ramp	R	129	
	L	855	
	Total	1368	

Legend

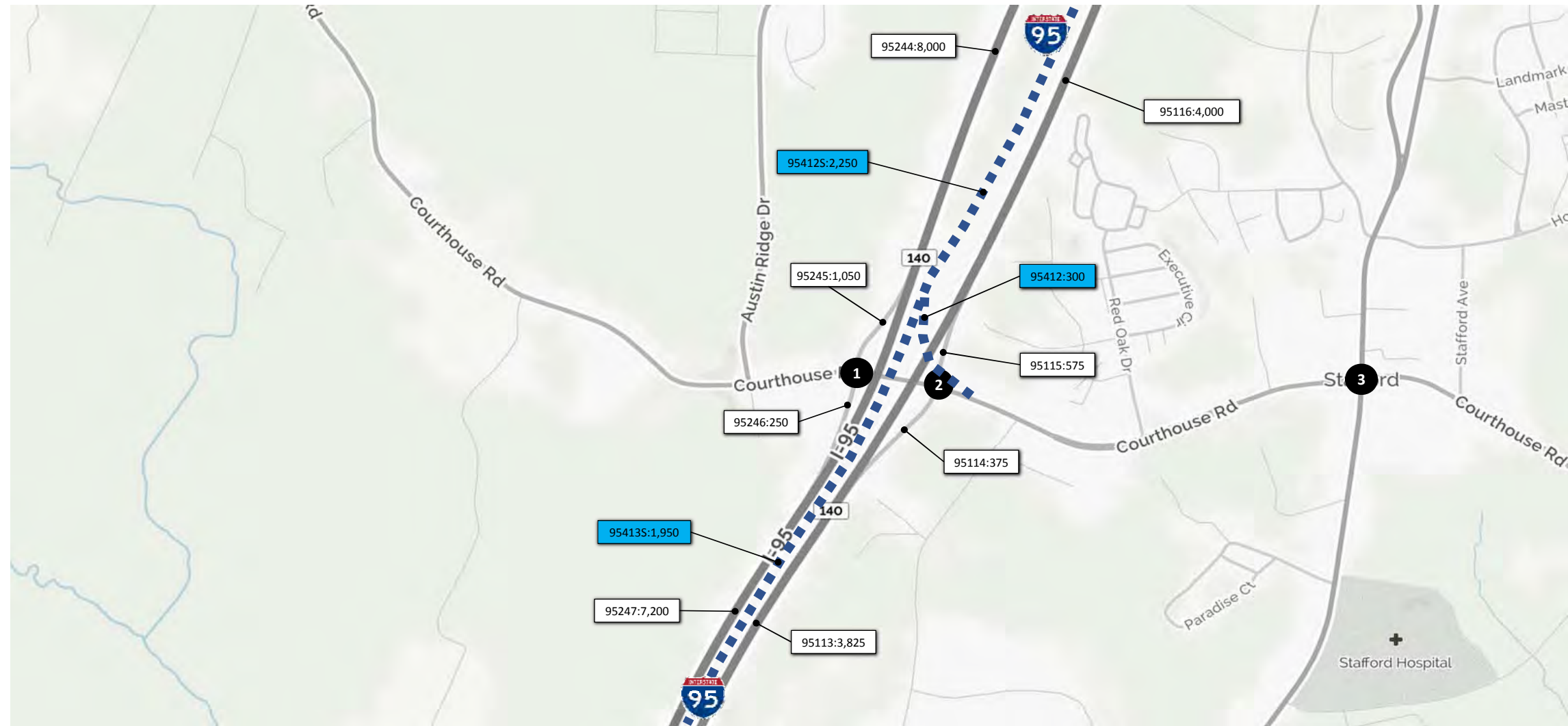
- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure C.7-3



1					
541	0	510			
R	T	L	I-95 SB Off-Ramp	T	576
Courthouse Road (630)			I-95 SB On-Ramp	L	71
553		T			
190		R			
1403					

2						
				R	526	
				T	571	
			I-95 NB On-Ramp	L	T	R
Courthouse Road (630)			I-95 NB Off-Ramp	76	0	300
38		L				
1,025		T				
1406						

3						
378	635	122	US-1	R	132	
				T	351	
				L	38	
Courthouse Road (630)			US-1	L	T	R
203		L				
642		T		368	246	23
480		R				
1408						

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE

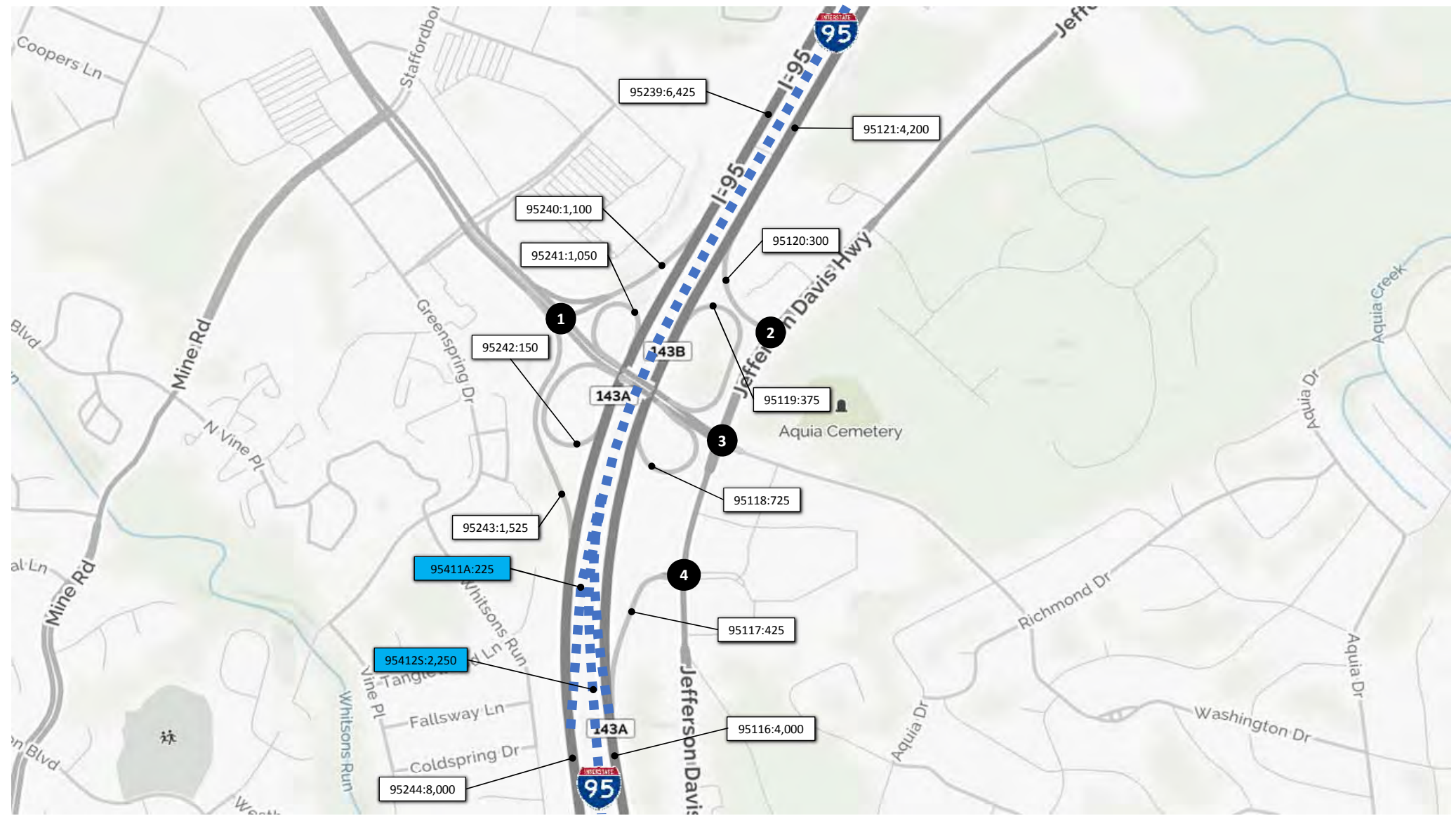


I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure C.7-4



1	164	I-95 SB Off-Ramp		T	2,077
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	2,001	T			
	1,528	R			
1431					
2	51	3,523	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
				246	1,945
1434					
3	1,746	1,506	271	US-1	
	R	T	L	R	200
Garrisonville Road (610)		US-1		T	276
	637			L	130
	241	T			
	564	R	L	T	R
			734	1,355	149
1438					
4	2,034		167	US-1	
	T		L	R	111
I-95 NB Off-Ramp		US-1		L	15
	393			T	R
	23	T			
	21	R			1,734
					45
1432					

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure C.7-5



Legend

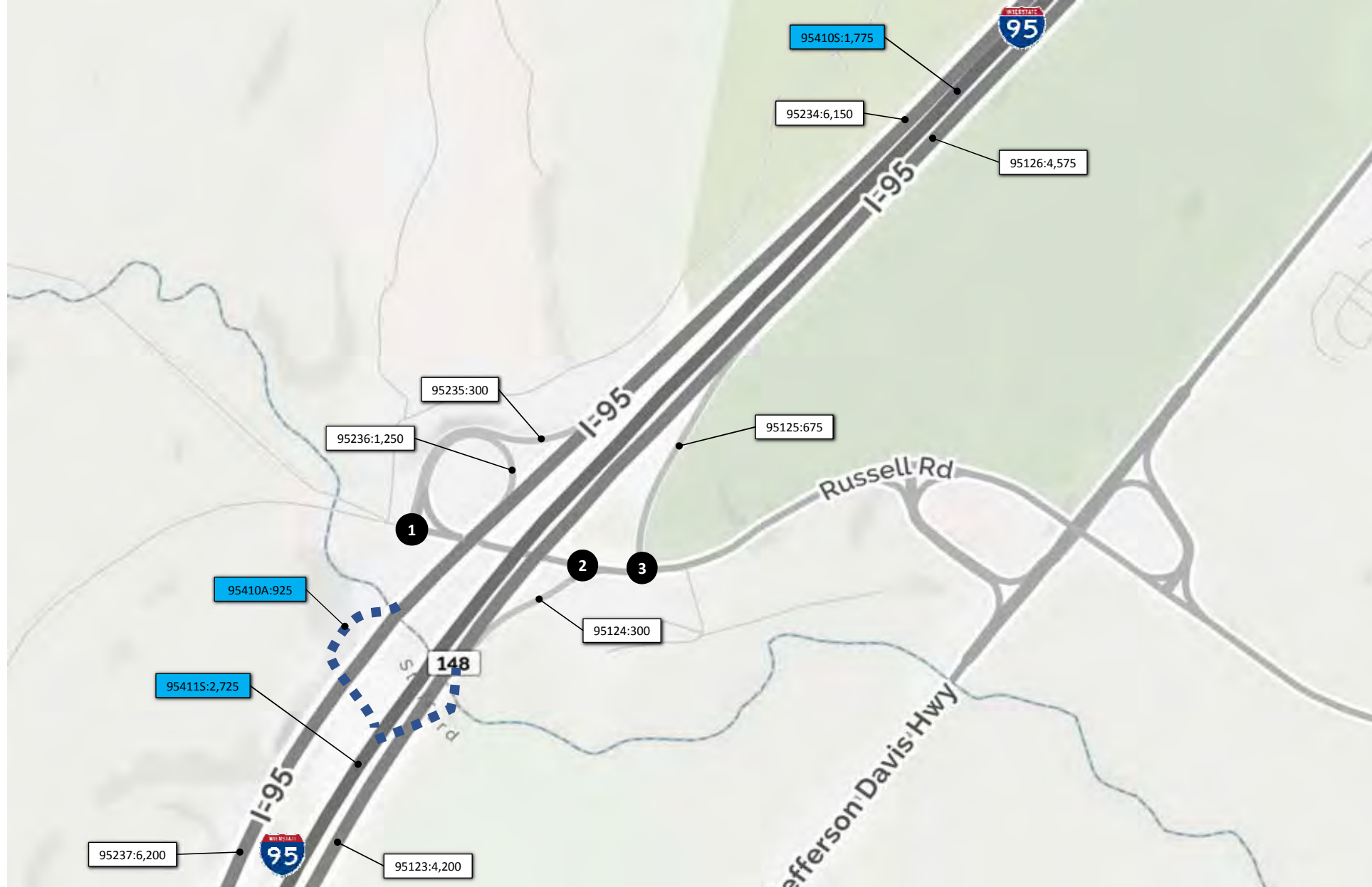
xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2042 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure C.7-6



1	73	218	I-95 SB On/Off-Ramps	R	1,084
	R	L		T	350
Russell Road					
	175	L			
	622	T			1483
2			I-95 NB Off-Ramp	T	1,416
	Russell Road				
	840	T		L	18
				R	292
					1486
3			I-95 NB On-Ramp	R	219
				T	1,416
Russell Road					
	460	L			
	672	T			1488

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



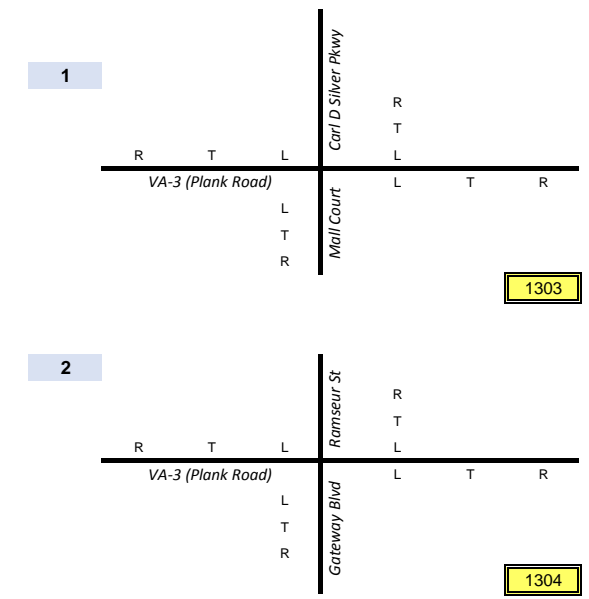
I-95 Express Lanes Fredericksburg
 Extension Study

2042 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure C.7-7

**APPENDIX D:
2022 NO-BUILD
TRAFFIC VOLUMES**



Legend

xx,xxx Weekday Daily Volume

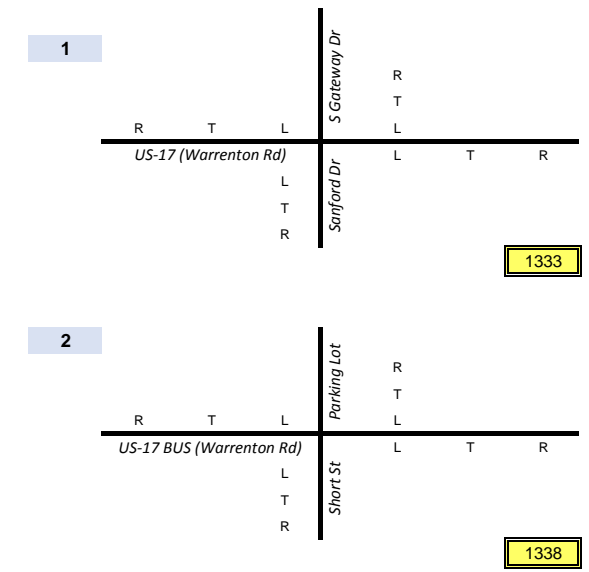
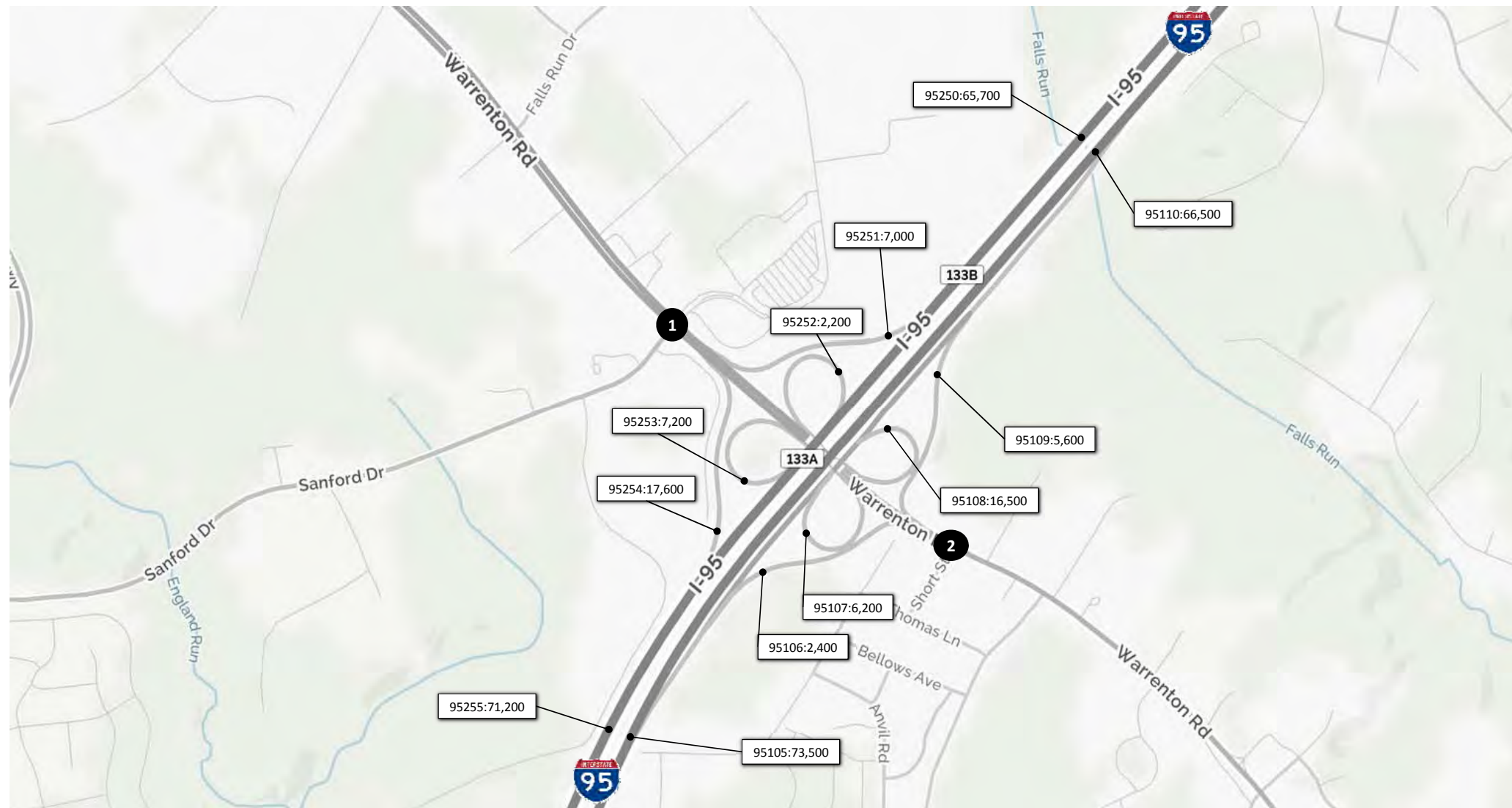
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure D.1-1



Legend

xx,xxx Weekday Daily Volume

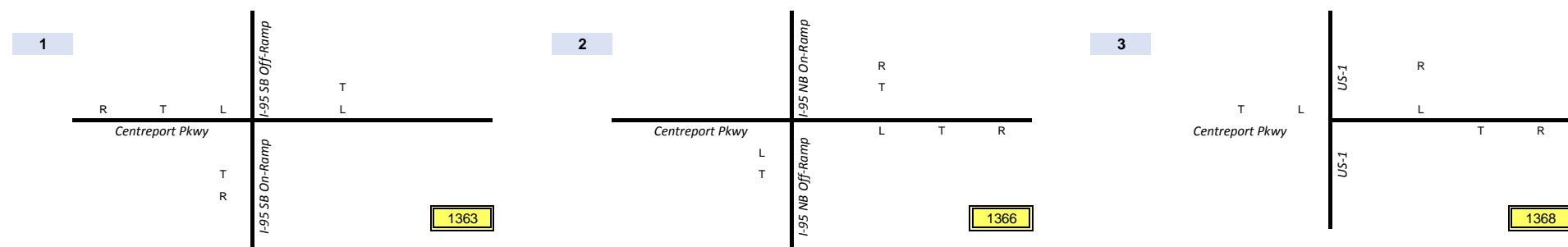
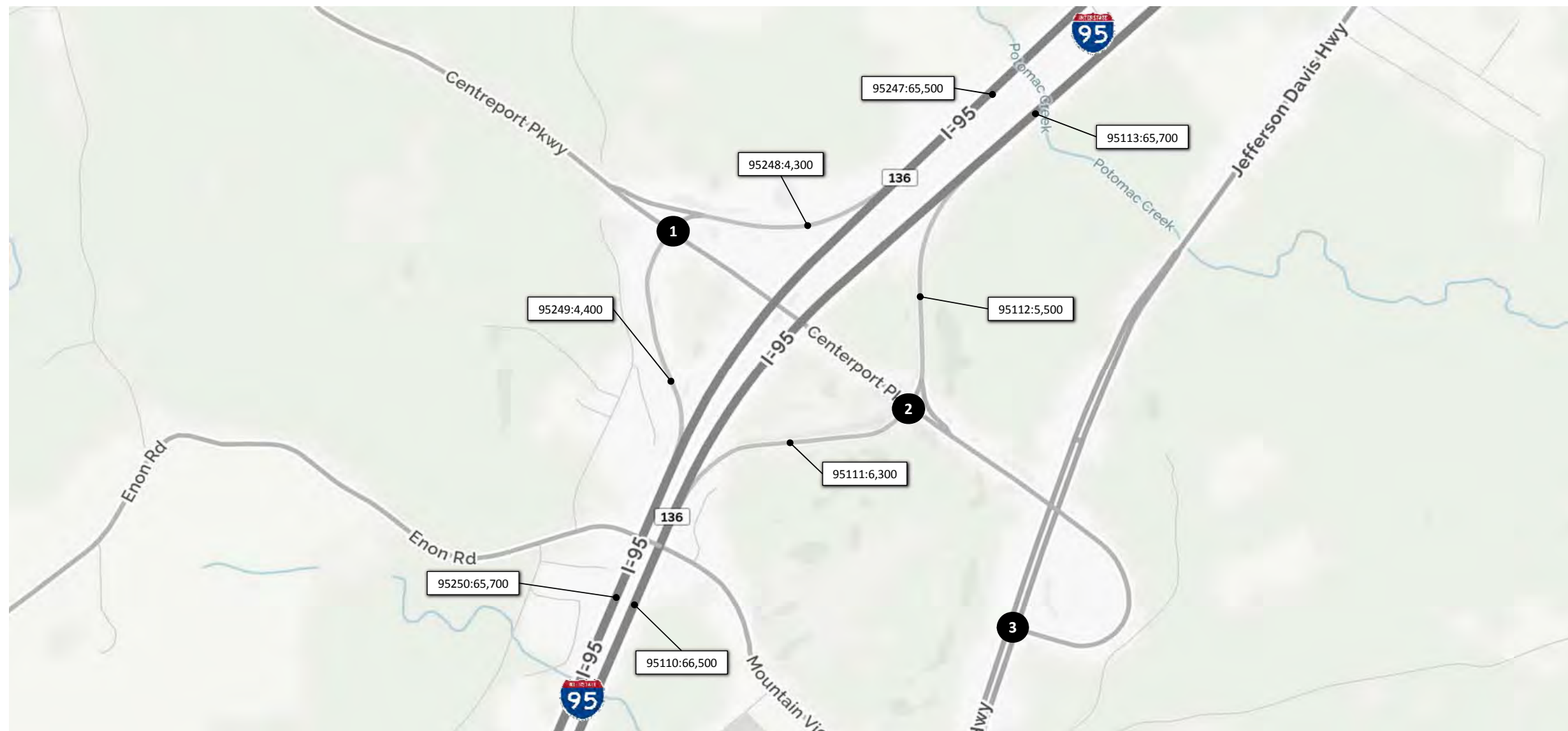
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure D.1-2



Legend

xx,xxx Weekday Daily Volume

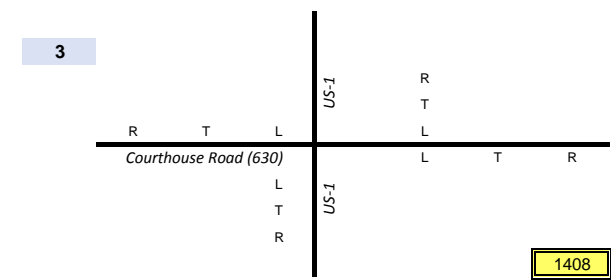
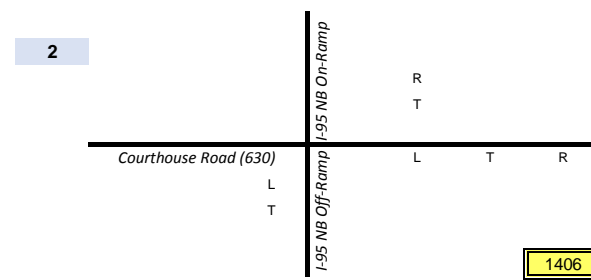
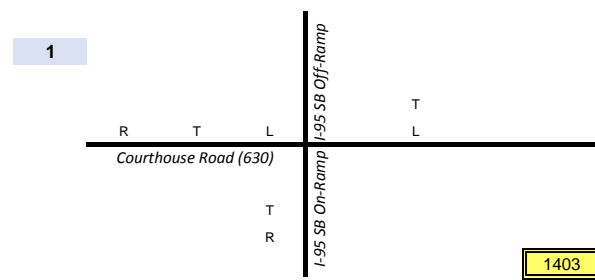
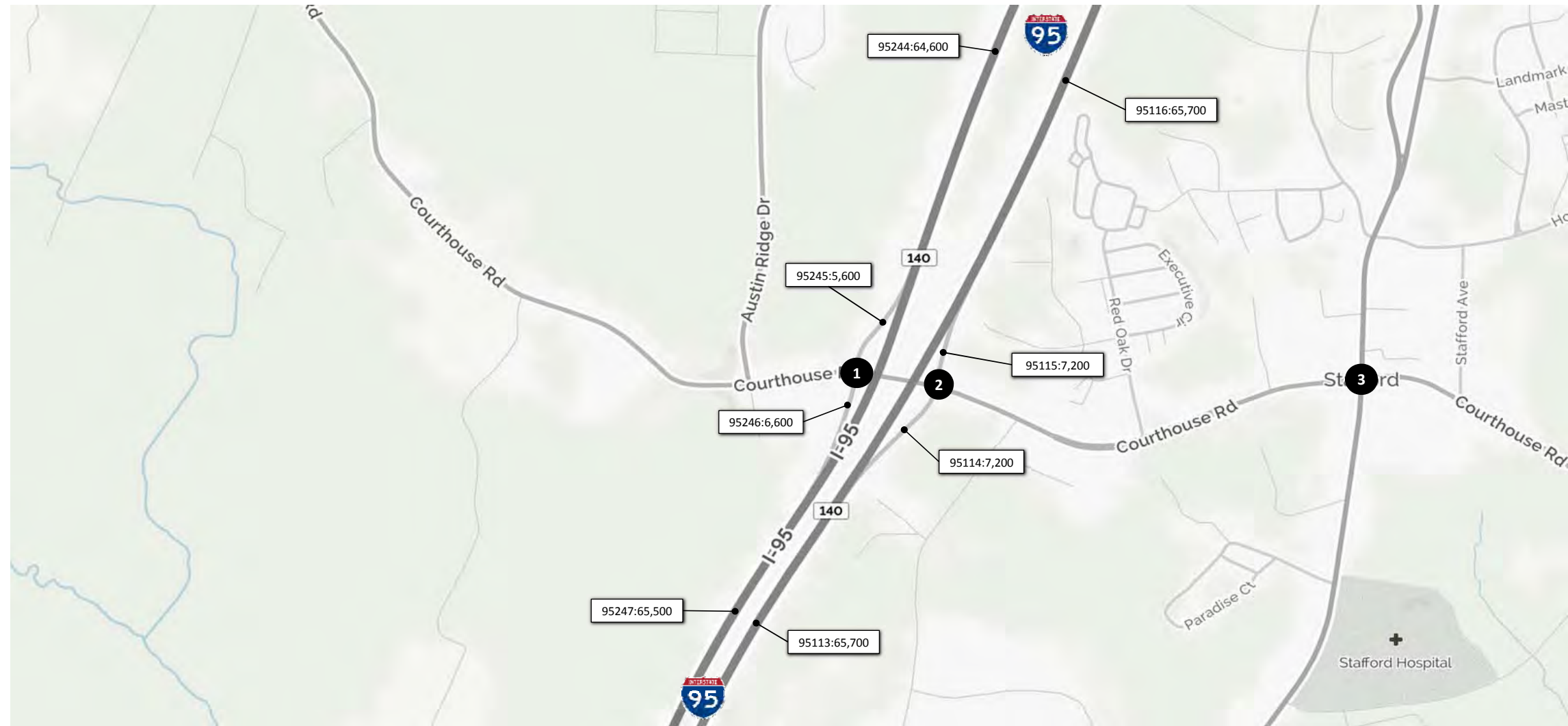
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure D.1-3



Legend

xx,xxx Weekday Daily Volume

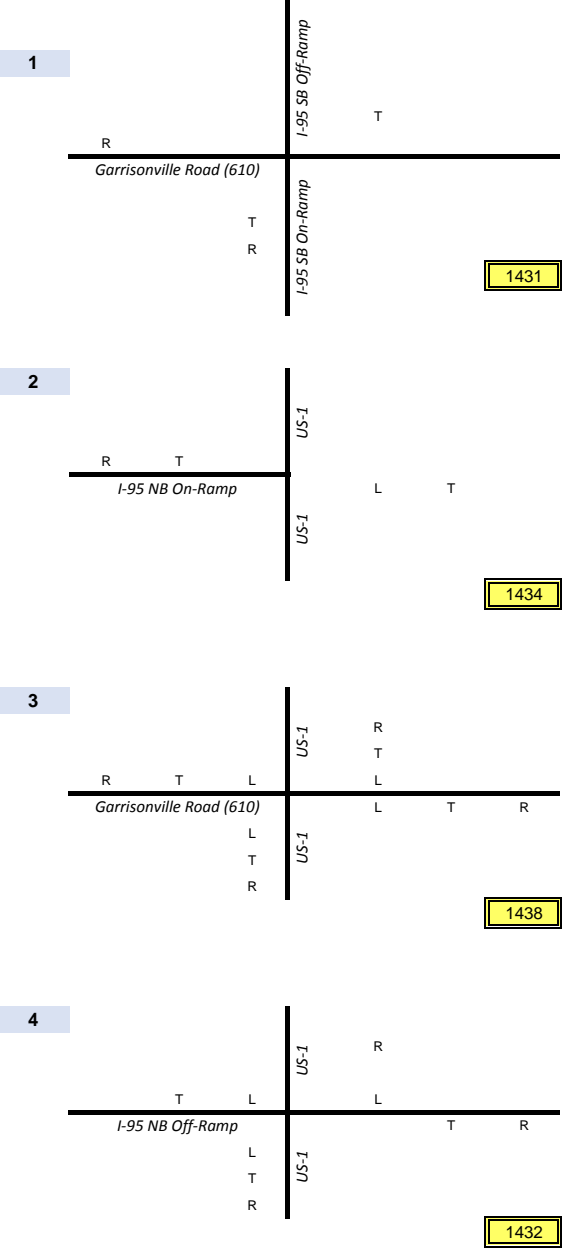
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure D.1-4



Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure D.1-5



Legend

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

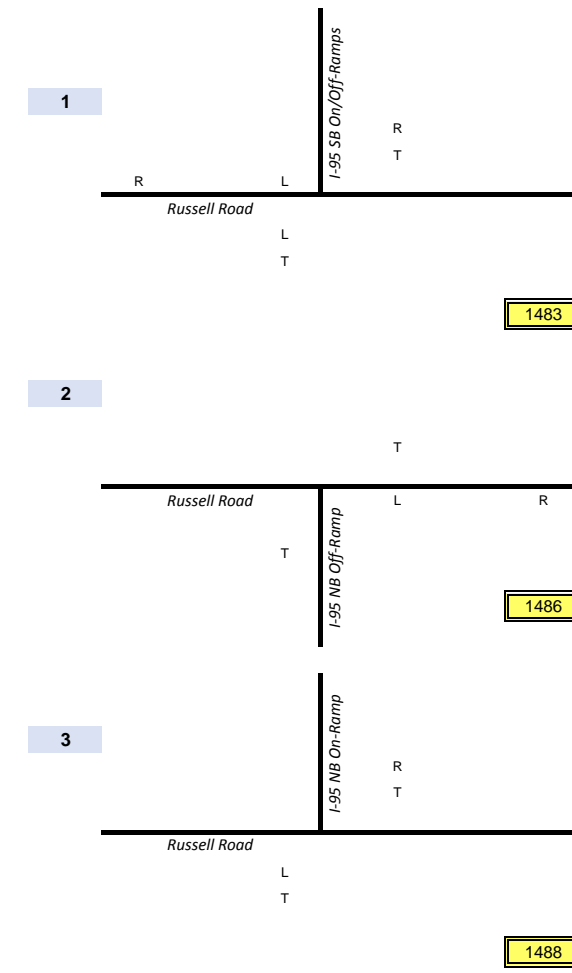
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure D.1-6



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure D.1-7



1			Carl D Silver Pkwy		
37	3	276	R		407
			T		1,190
R	T	L	L		10
VA-3 (Plank Road)			L	T	R
151		L			
2,797		T	7	1	10
4		R			
			1303		

2			Ramseur St		
13	1	1	R		3
			T		1,010
R	T	L	L		108
VA-3 (Plank Road)			L	T	R
71		L			
1,383		T	280	0	136
222		R			
			1304		

Legend

xx,xxx Weekday Hourly Volume

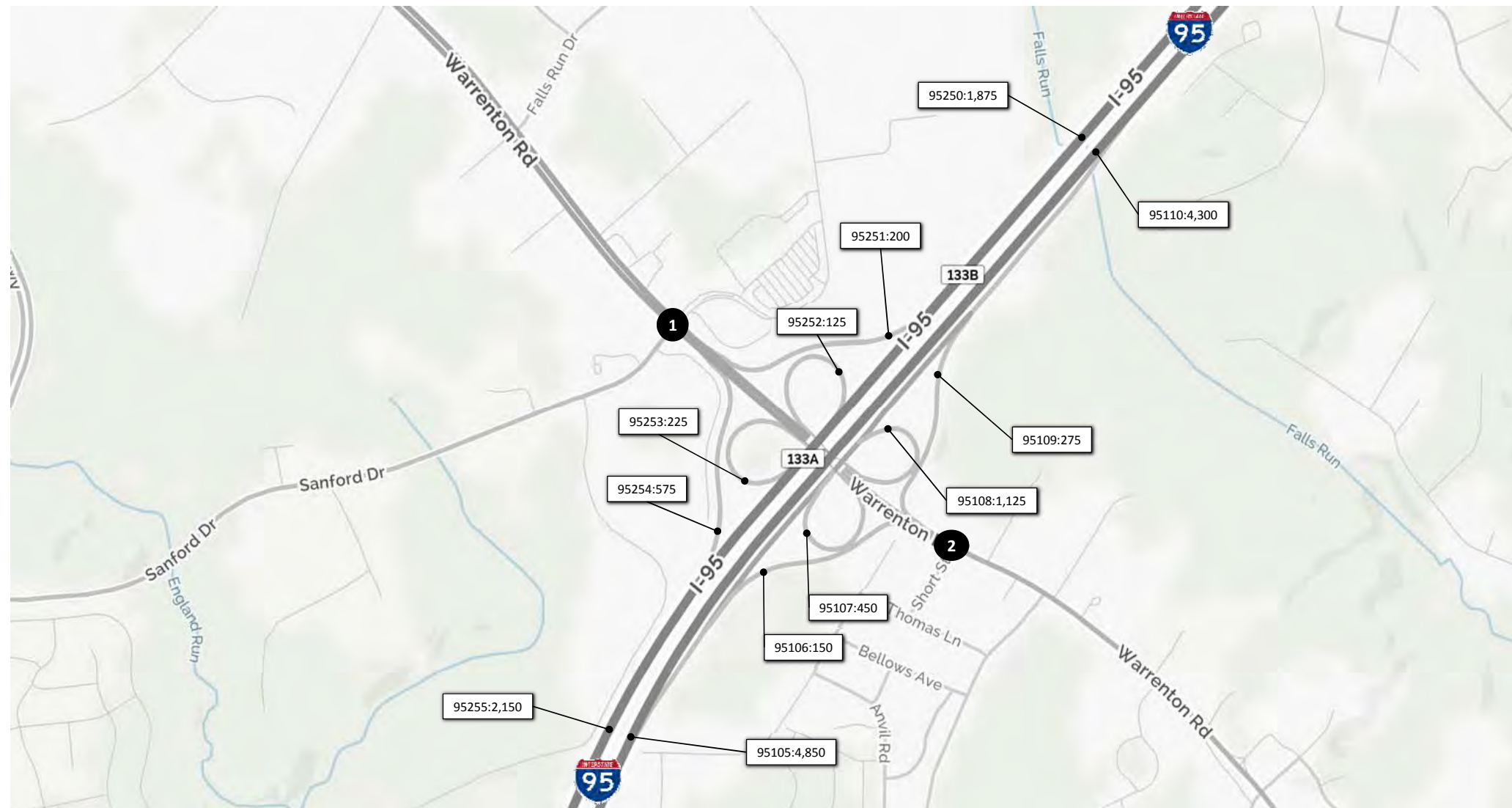
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 -7 AM Volumes
 I-95 Corridor

August 2017

Figure D.2-1



1	21	6	192	S Gateway Dr	R	201	
					T	1,798	
	R	T	L	Sanford Dr	L	102	
	US-17 (Warrenton Rd)				L	T	R
	26						
	1,185				20	13	
	14						
						1333	
2	1	2	2	Parking Lot	R	0	
					T	1,092	
	R	T	L	Short St	L	7	
	US-17 BUS (Warrenton Rd)				L	T	R
		1					
		781				92	0
	56					14	
						1338	

Legend

xx,xxx Weekday Hourly Volume

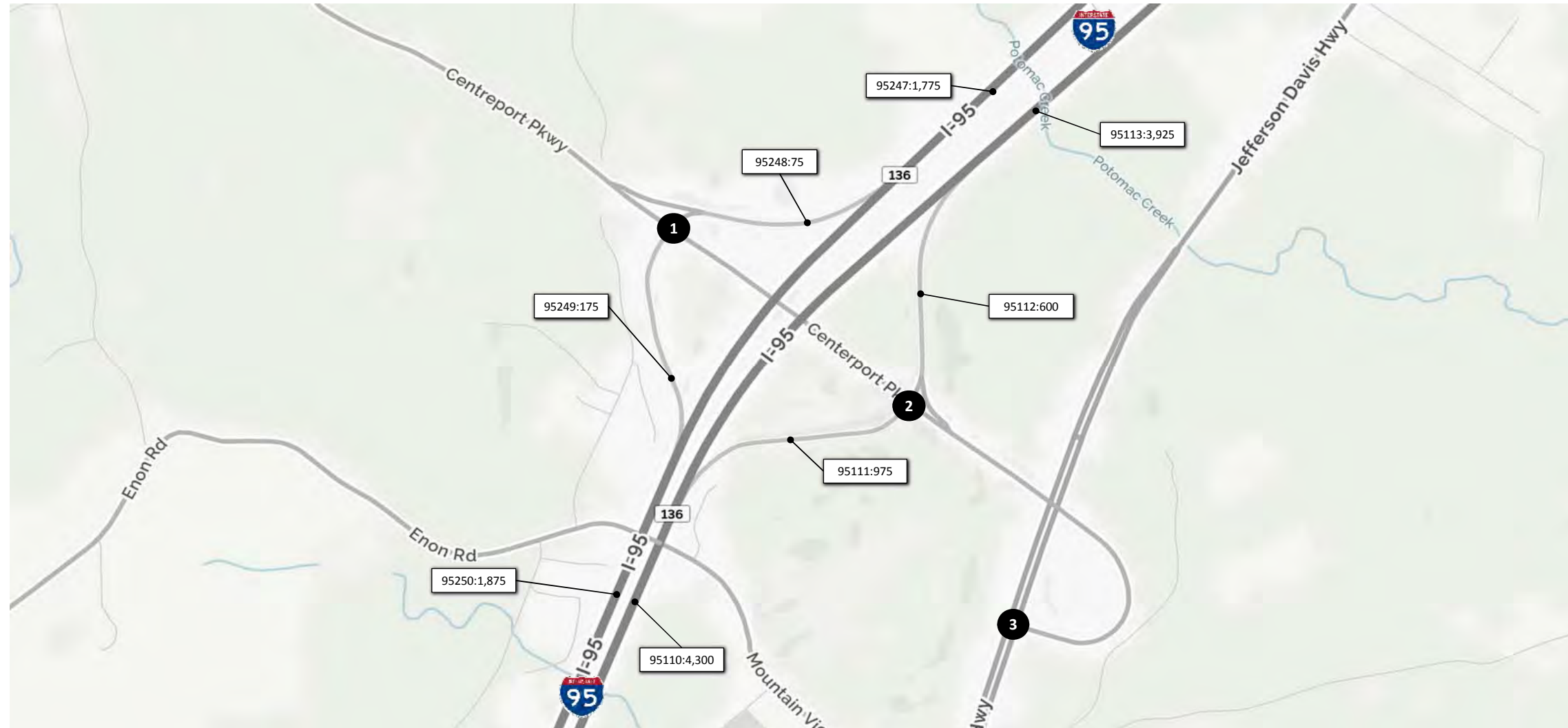
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 6 -7 AM Volumes
I-95 Corridor

August 2017

Figure D.2-2



Location	Direction	Volume
1	I-95 SB Off-Ramp	623
	I-95 SB On-Ramp	54
	Centreport Pkwy	1363
	I-95 SB On-Ramp	65
	I-95 SB On-Ramp	109
	I-95 SB On-Ramp	64
2	I-95 NB On-Ramp	571
	I-95 NB On-Ramp	192
	Centreport Pkwy	1366
	I-95 NB Off-Ramp	16
	I-95 NB Off-Ramp	114
	I-95 NB Off-Ramp	477
3	US-1	415
	US-1	183
	Centreport Pkwy	1368
	US-1	273
	US-1	53
	US-1	710

Legend

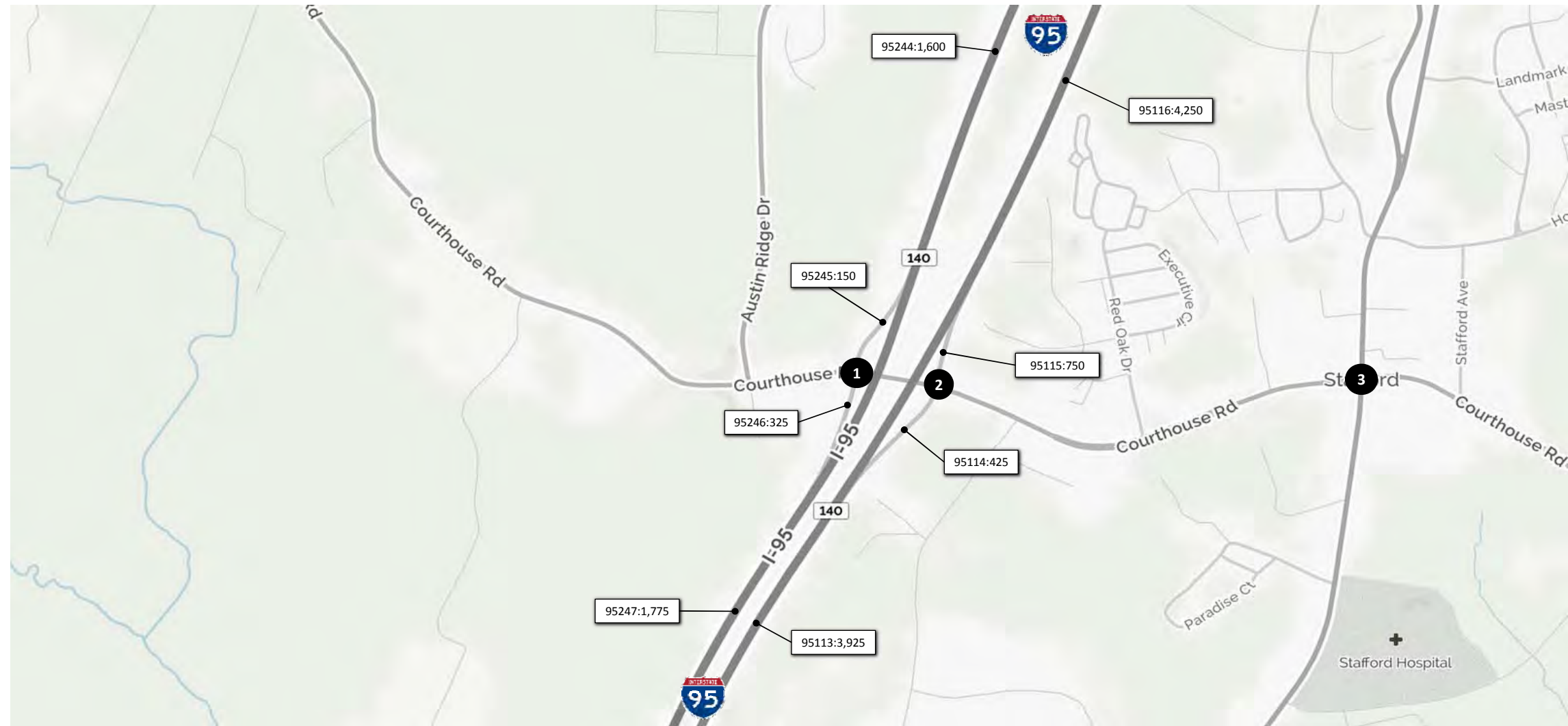
xx,xxx Weekday Hourly Volume
 NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 - 7 AM Volumes
 I-95 Corridor

August 2017

Figure D.2-3



1							
	43	0	97				
R		T		L			
Courthouse Road (630)				I-95 SB Off-Ramp		T 719	
						L	97
	321		T				
	228		R				
			I-95 SB On-Ramp				
							1403

2							
				R			606
				T			513
Courthouse Road (630)				I-95 NB On-Ramp		R 606	
	140		L			T	513
	279		T			L	
			I-95 NB Off-Ramp				
							1406

3							
	334	168	85				
R		T		L			
Courthouse Road (630)				US-1		R 194	
	115		L			T	310
	104		T			L	28
	171		R				
			US-1				
							1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 6 - 7 AM Volumes
I-95 Corridor

August 2017

Figure D.2-4



1	0		I-95 SB Off-Ramp		T		770						
	R												
Garrisonville Road (610)				I-95 SB On-Ramp				1431					
2,127		T											
193		R											
2	61		802		US-1								
	R		T										
I-95 NB On-Ramp				US-1		L		T					
						893		1,723					
								1434					
3	488		281		33		US-1		R		297		
	R		T		L				T		173		
Garrisonville Road (610)								L		T		70	
1,057		L											
44		T						161		1,262		2	
180		R										1438	
4	472		59		US-1		R		126				
	T		L				L		7				
I-95 NB Off-Ramp										T		R	
248		L											
88		T								1,052		51	
8		R										1432	

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 - 7 AM Volumes
 I-95 Corridor

August 2017

Figure D.2-5



Legend

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

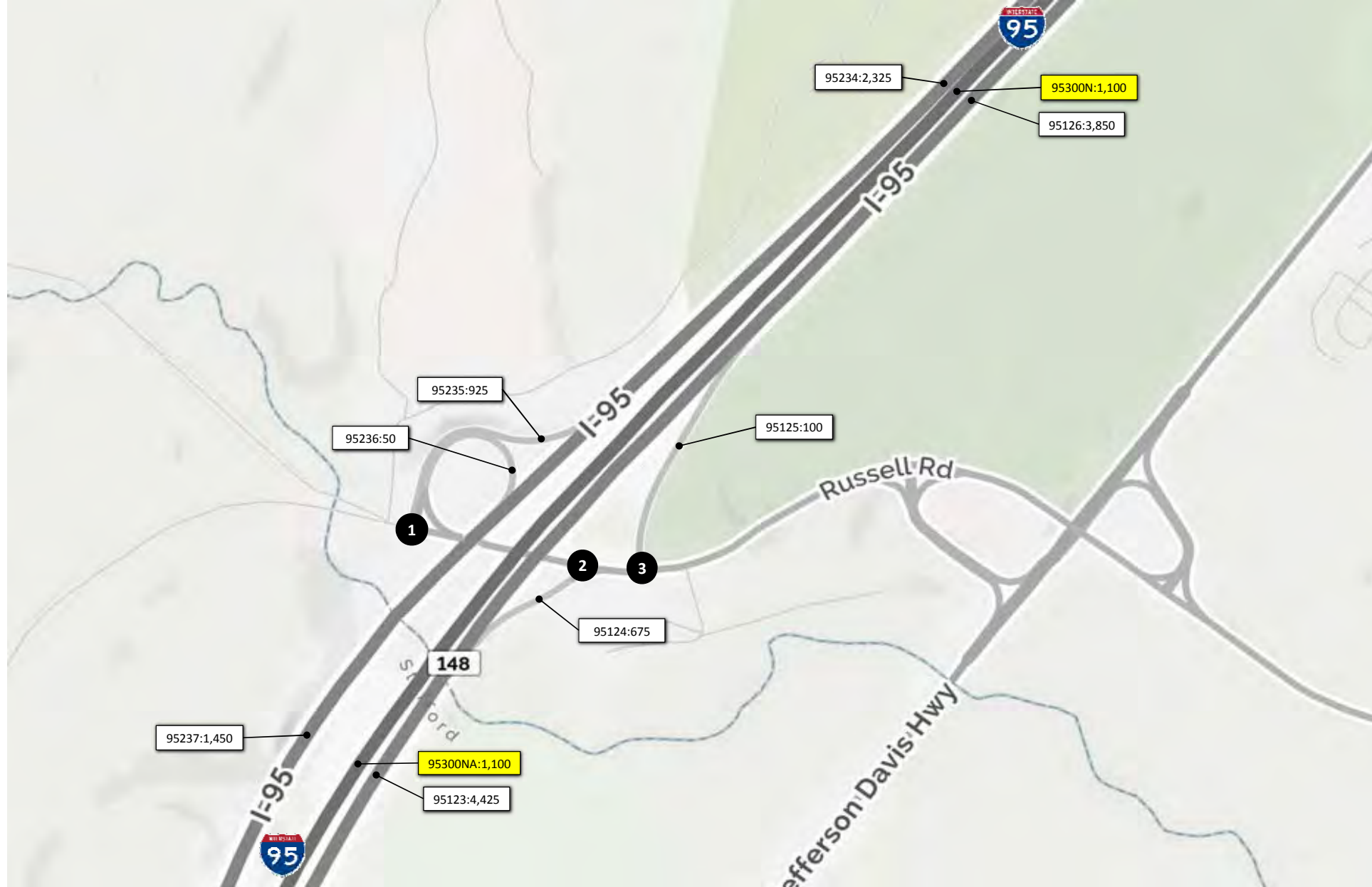
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 -7 AM Volumes
 I-95 Corridor

August 2017

Figure D.2-6



1	Russell Road		I-95 SB On/Off-Ramps	R	T	43	208
	R	L					
	446	474					
	5	L					
	163	T					1483
2	Russell Road		I-95 NB Off-Ramp	L	R	83	583
		T					
	637						1486
3	Russell Road		I-95 NB On-Ramp	R	T	77	167
		L					
	21						
	1,198	T					1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 -7 AM Volumes
 I-95 Corridor

August 2017

Figure D.2-7



1			Carl D Silver Pkwy		
37	3	276	R		407
			T		1,190
R	T	L	L		10
VA-3 (Plank Road)			L	T	R
151		L			
2,797		T	7	1	10
4		R			
			Mall Court		
			1303		

2			Ramseur St		
13	1	1	R		3
			T		1,010
R	T	L	L		108
VA-3 (Plank Road)			L	T	R
71		L			
1,383		T	280	0	136
222		R			
			Gateway Blvd		
			1304		

Legend

xx,xxx Weekday Hourly Volume

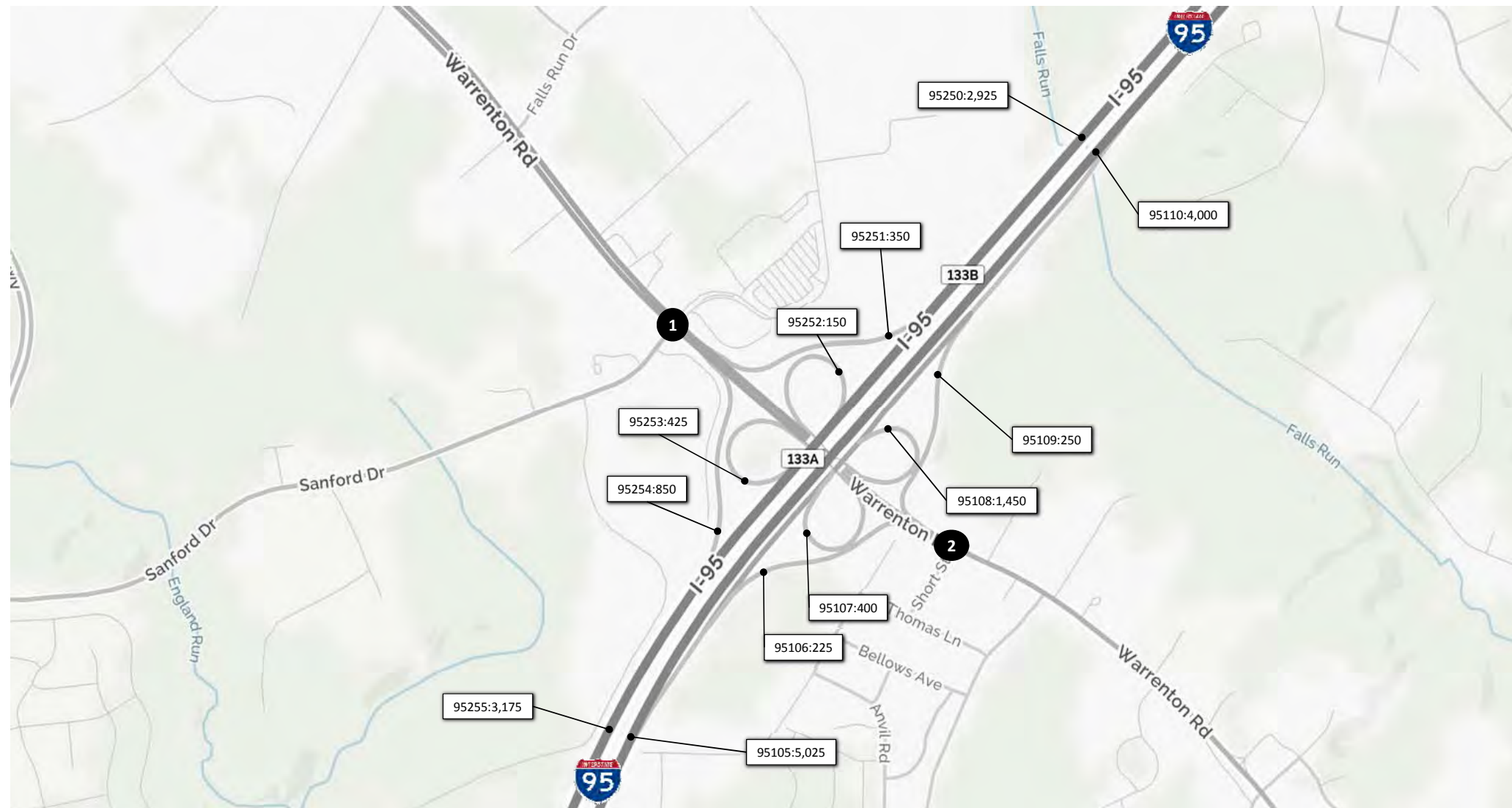
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure D.3-1



1			S Gateway Dr		
21	6	192	R		201
			T		1,798
R	T	L	L		102
US-17 (Warrenton Rd)			L	T	R
26					
1,185			20	13	112
14					
			Sanford Dr		
					1333

2			Parking Lot		
1	2	2	R		0
			T		1,092
R	T	L	L		7
US-17 BUS (Warrenton Rd)			L	T	R
1					
781			92	0	14
56					
			Short St		
					1338

Legend

xx,xxx Weekday Hourly Volume

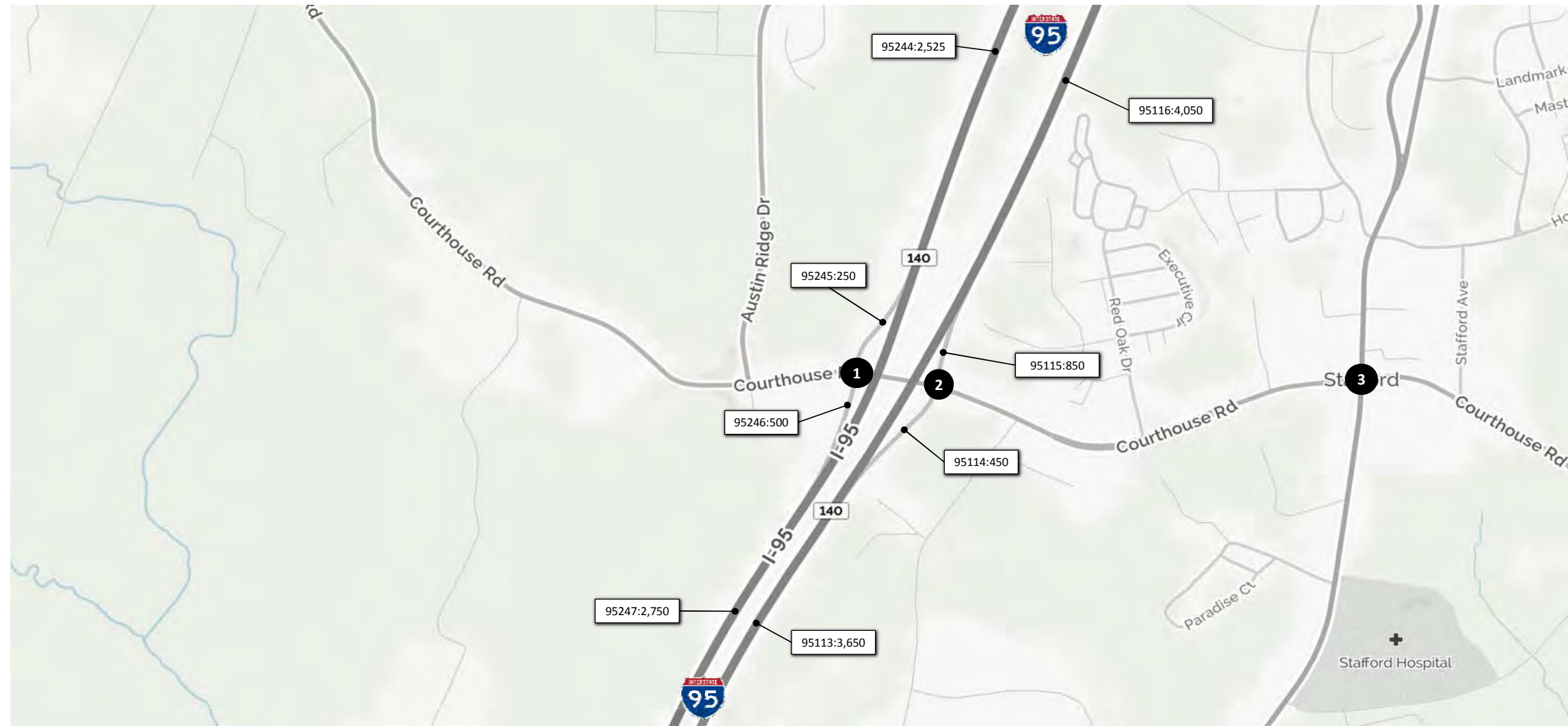
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure D.3-2



1						
	43	0	97			
R	T	L		T		719
Courthouse Road (630)				L		97
	321		T			
	228		R			
				I-95 SB Off-Ramp		
				I-95 SB On-Ramp		
						1403

2						
				R		606
				T		513
Courthouse Road (630)				L	T	R
	140		L			
	279		T			
				I-95 NB Off-Ramp		
				I-95 NB On-Ramp		
						1406

3						
	334	168	85			
R	T	L		R		194
Courthouse Road (630)				T		310
	115		L	L		28
	104		T			
	171		R			
				I-95		
				I-95		
						1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure D.3-4



1	0		I-95 SB Off-Ramp		T		770						
	R												
Garrisonville Road (610)				I-95 SB On-Ramp				1431					
2,127		T											
193		R											
2	61		802		US-1								
	R		T										
I-95 NB On-Ramp				US-1		L		T					
						893		1,723					
								1434					
3	488		281		33		US-1		R		297		
	R		T		L				T		173		
Garrisonville Road (610)								L		T		70	
1,057		L											
44		T						161		1,262		2	
180		R										1438	
4			472		59		US-1		R		126		
			T		L				L		7		
I-95 NB Off-Ramp										T		R	
248		L											
88		T								1,052		51	
8		R										1432	

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure D.3-5



Legend

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

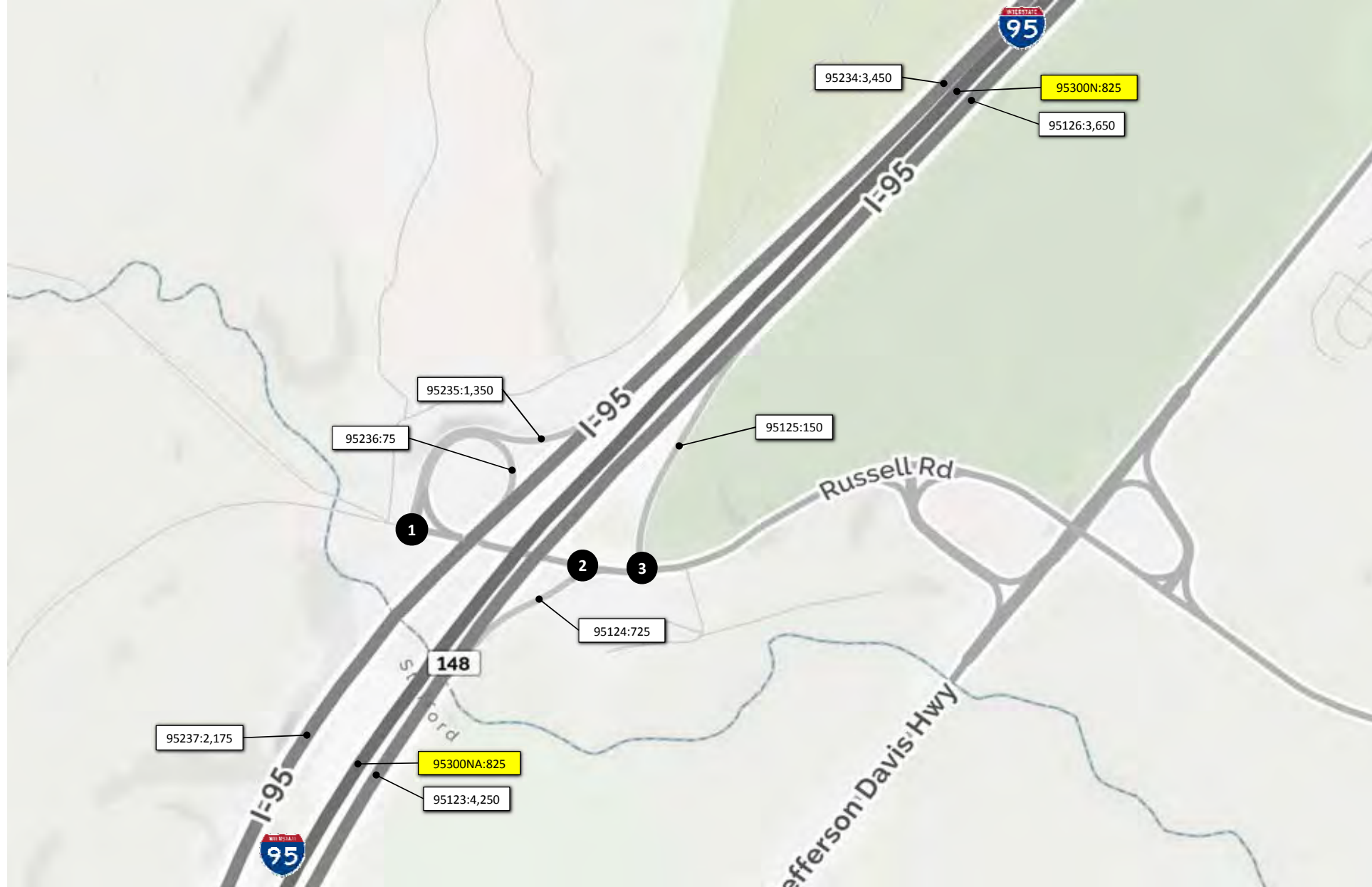
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure D.3-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	446	474		43	
	163			208	
					1483
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	637		83	583	
					1486
3	Russell Road		I-95 NB On-Ramp		
				R	T
	21			77	
	1,198			167	
					1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure D.3-7



1	77	9	301	Carl D Silver Pkwy	R	609
					T	1,441
	R	T	L	L	18	
	VA-3 (Plank Road)			L	T	R
	214		L			
	2,390		T	7	5	12
		2	R			
				Mall Court		
						1303
2	16	6	4	Ramseur St	R	15
					T	1,118
	R	T	L	L	144	
	VA-3 (Plank Road)			L	T	R
	36		L			
	1,543		T	251	1	183
		292	R			
				Gateway Blvd		
						1304

Legend

xx,xxx Weekday Hourly Volume

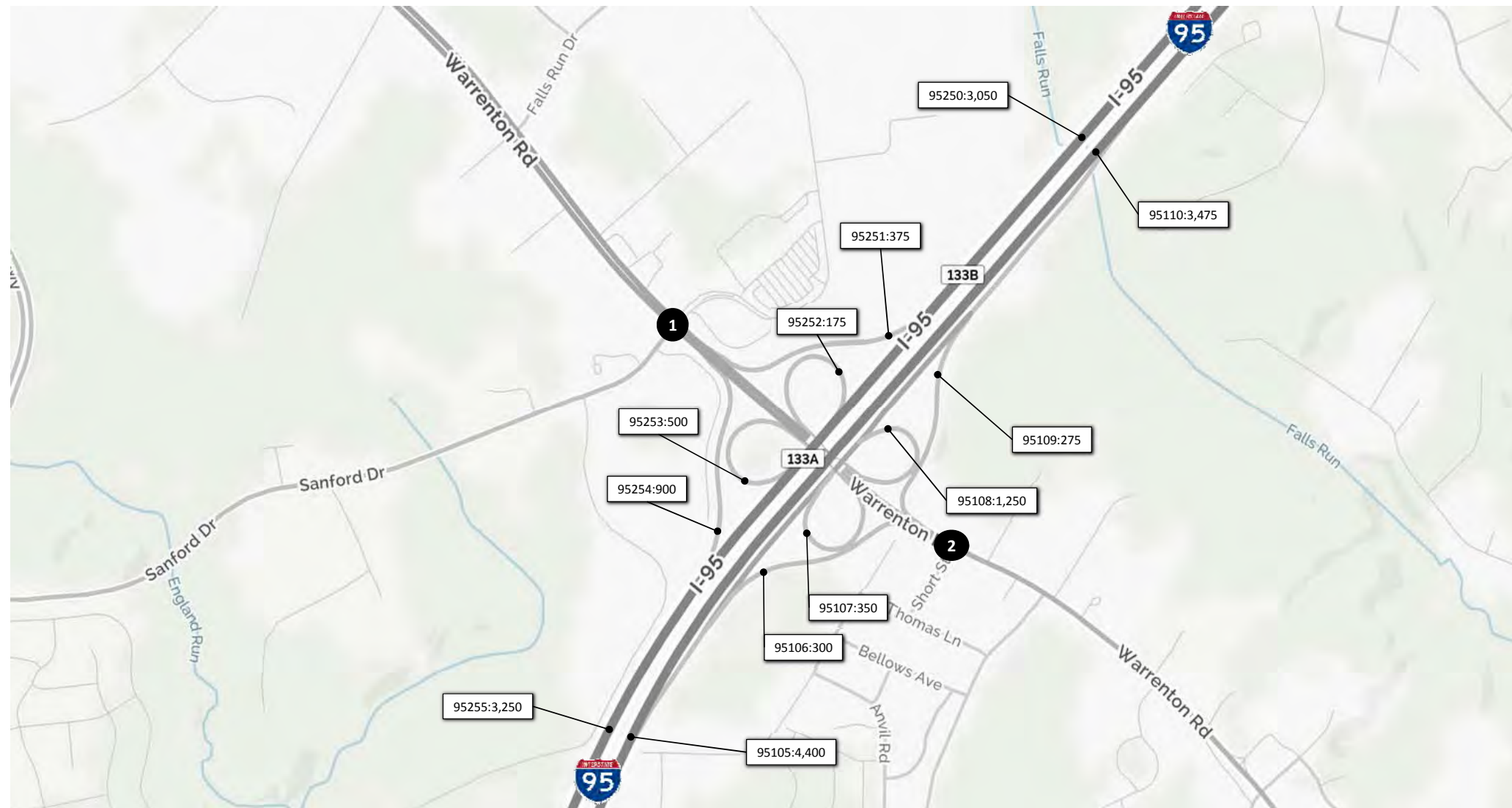
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure D.4-1



1			S Gateway Dr		
73	51	270	R		346
			T		2,078
R	T	L	L		183
US-17 (Warrenton Rd)			L	T	R
70		L			
1,525		T	33	15	173
28		R			
			1333		

2			Parking Lot		
6	0	5	R		2
			T		1,300
R	T	L	L		14
US-17 BUS (Warrenton Rd)			L	T	R
5		L			
1,430		T	109	2	26
77		R			
			1338		

Legend

xx,xxx Weekday Hourly Volume

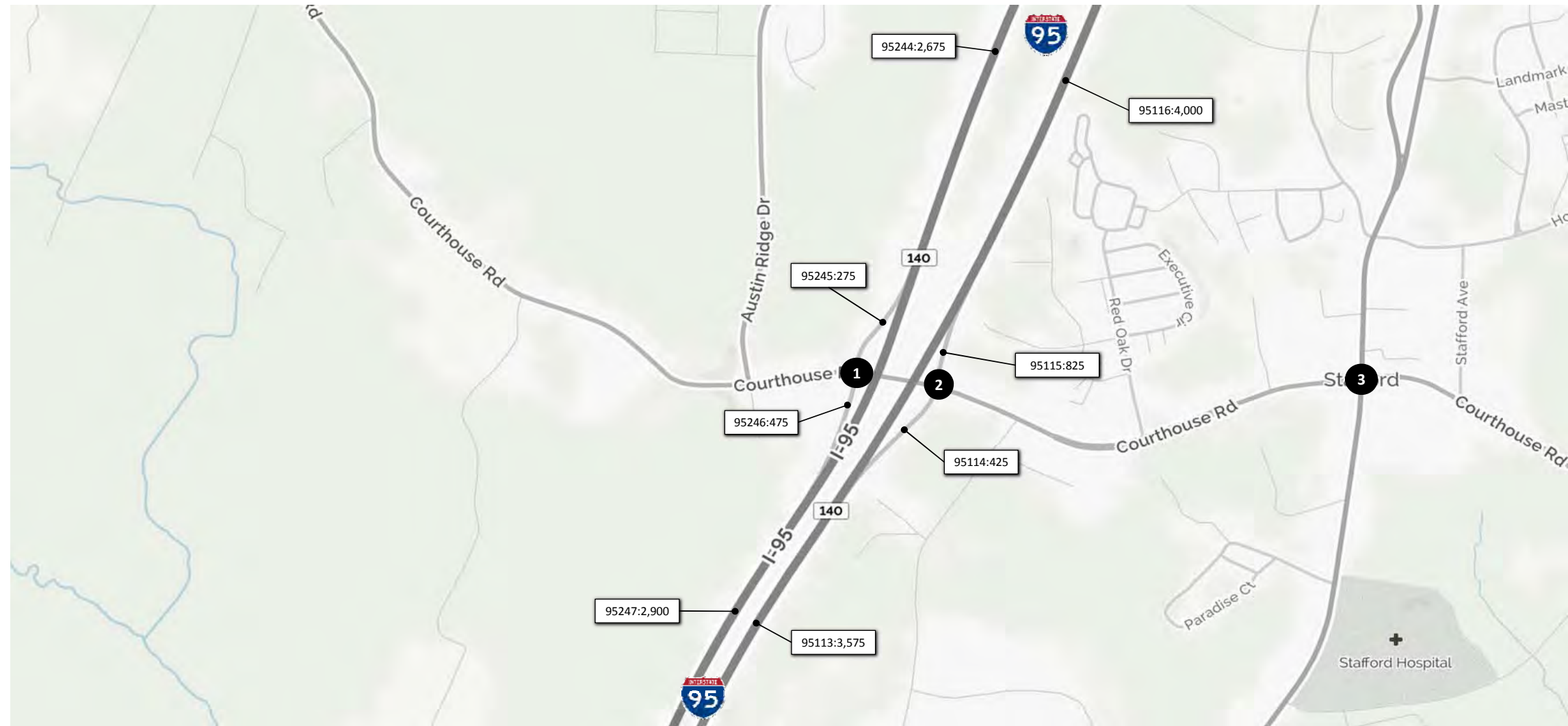
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure D.4-2



1							
	85	2	183				
R		T	L		T		685
Courthouse Road (630)					L		110
	542		T				
	368		R				
					I-95 SB Off-Ramp		
					I-95 SB On-Ramp		1403

2							
					R		628
					T		549
					L	T	R
Courthouse Road (630)							
	199		L				
	526		T		247	8	159
					I-95 NB Off-Ramp		
					I-95 NB On-Ramp		1406

3							
	343	285	88				
R		T	L		US-1	R	316
Courthouse Road (630)					L	T	370
	220		L		L	T	40
	74		T		US-1		
	391		R			463	344
							22
							1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure D.4-4



1	0		I-95 SB Off-Ramp		T		1,032
	R		Garrisonville Road (610)				
2,723		T					
314		R		I-95 SB On-Ramp		1431	
2	49		948		US-1		
	R		T		I-95 NB On-Ramp		
				US-1		L	T
						634	2,138
						1434	
3	596		280		72		US-1
	R		T		L		R
						T	269
						L	279
						L	61
				Garrisonville Road (610)		L	T
1,235		L				L	R
194		T		US-1		219	1,269
358		R					9
						1438	
4	625		74		US-1		R
	T		L				L
							147
							28
				I-95 NB Off-Ramp		T	R
265		L					
96		T		US-1			1,085
35		R					108
						1432	

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure D.4-5



Legend

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

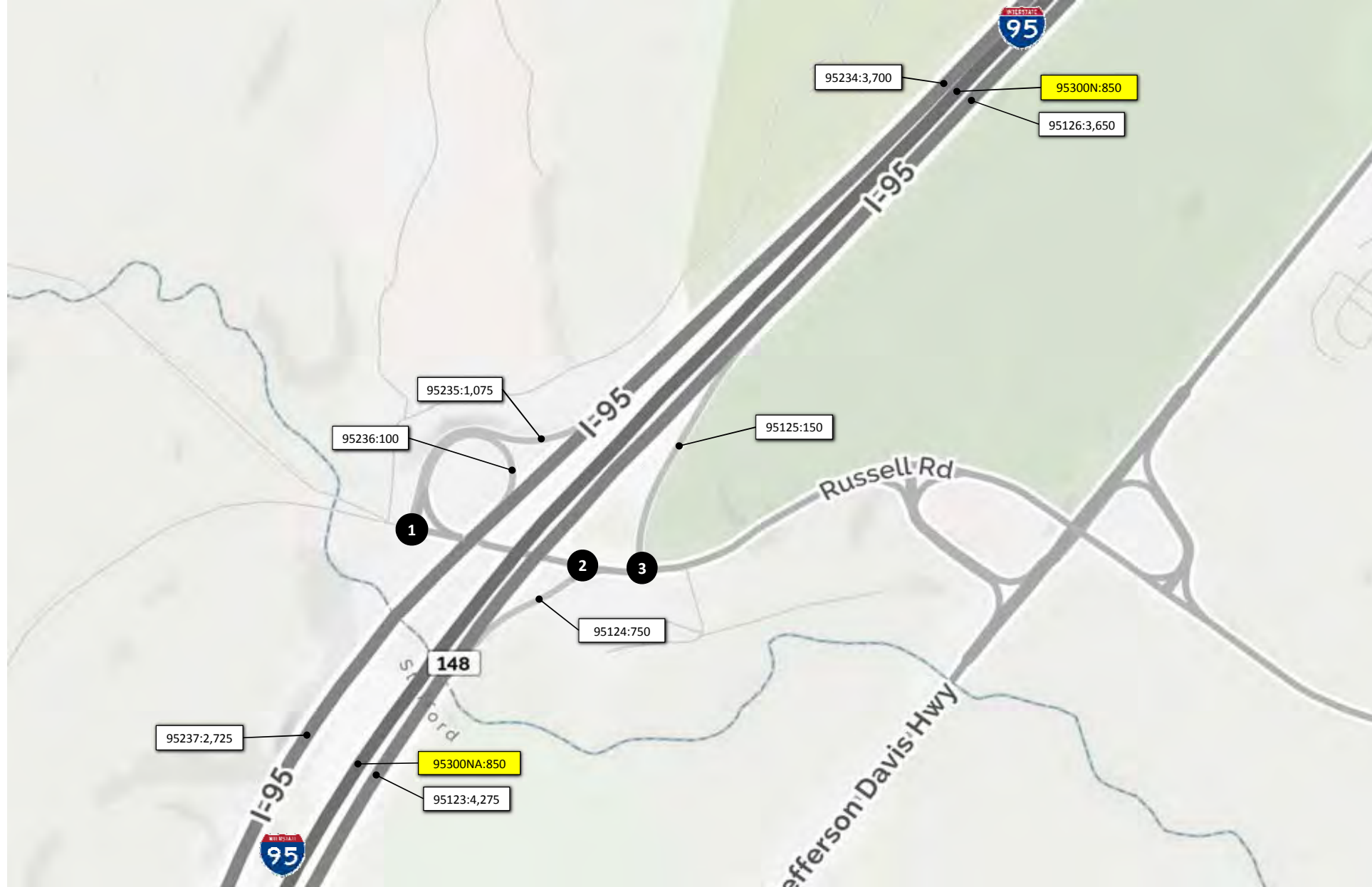
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure D.4-6



1			I-95 SB On/Off-Ramps		
	570		505	R	83
	R		L	T	262
Russell Road					
	13		L		
	309		T		
					1483
2			I-95 NB Off-Ramp		
				T	220
	Russell Road				
	814		T	125	637
			L		
			R		
					1486
3			I-95 NB On-Ramp		
				R	82
				T	220
Russell Road					
	65		L		
	1,387		T		
					1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure D.4-7



1	324	8	795	Carl D Silver Pkwy		
	R	T	L	R	927	
				T	2,078	
				L	18	
VA-3 (Plank Road)			L	T	R	
263			L			
1,815			T	11	8	8
6			R			
			Mall Court			1303
2	15	5	14	Ramseur St		
	R	T	L	R	5	
				T	2,004	
				L	224	
VA-3 (Plank Road)			L	T	R	
33			L			
1,625			T	311	3	282
383			R			
			Gateway Blvd			1304

Legend

xx,xxx Weekday Hourly Volume

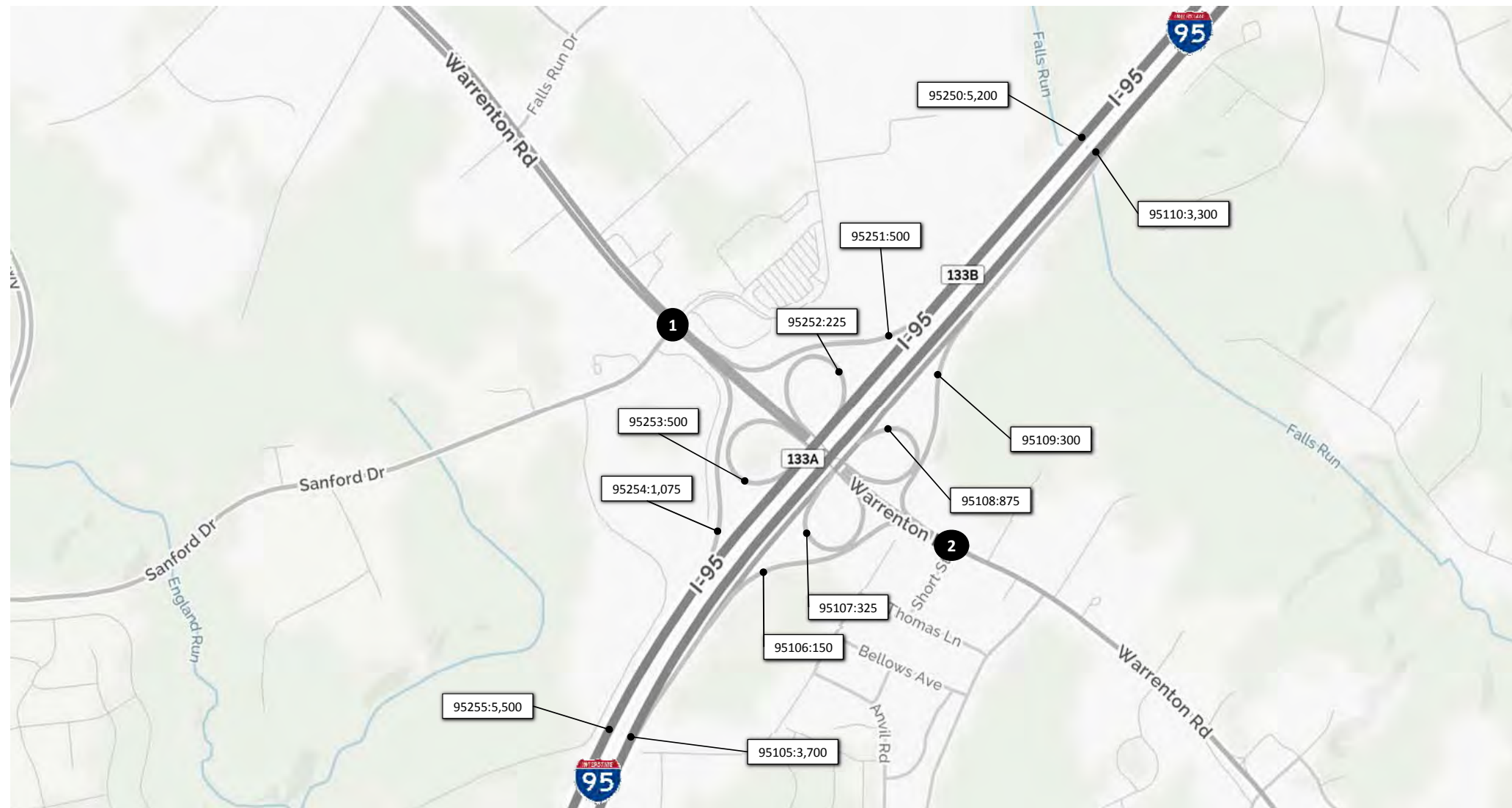
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 3 - 4 PM Volumes
I-95 Corridor

August 2017

Figure D.5-1



1	72	54	378	S Gateway Dr	R	393	
					T	2,247	
	R	T	L	Sanford Dr	L	243	
	US-17 (Warrenton Rd)				L	T	R
	72	L		41	9	404	
	2,529	T					
	39	R				1333	
2	6	0	5	Parking Lot	R	3	
					T	1,938	
	R	T	L	Short St	L	27	
	US-17 BUS (Warrenton Rd)				L	T	R
		5	L				
		2,391	T		128	3	35
	153	R				1338	

Legend

xx,xxx Weekday Hourly Volume

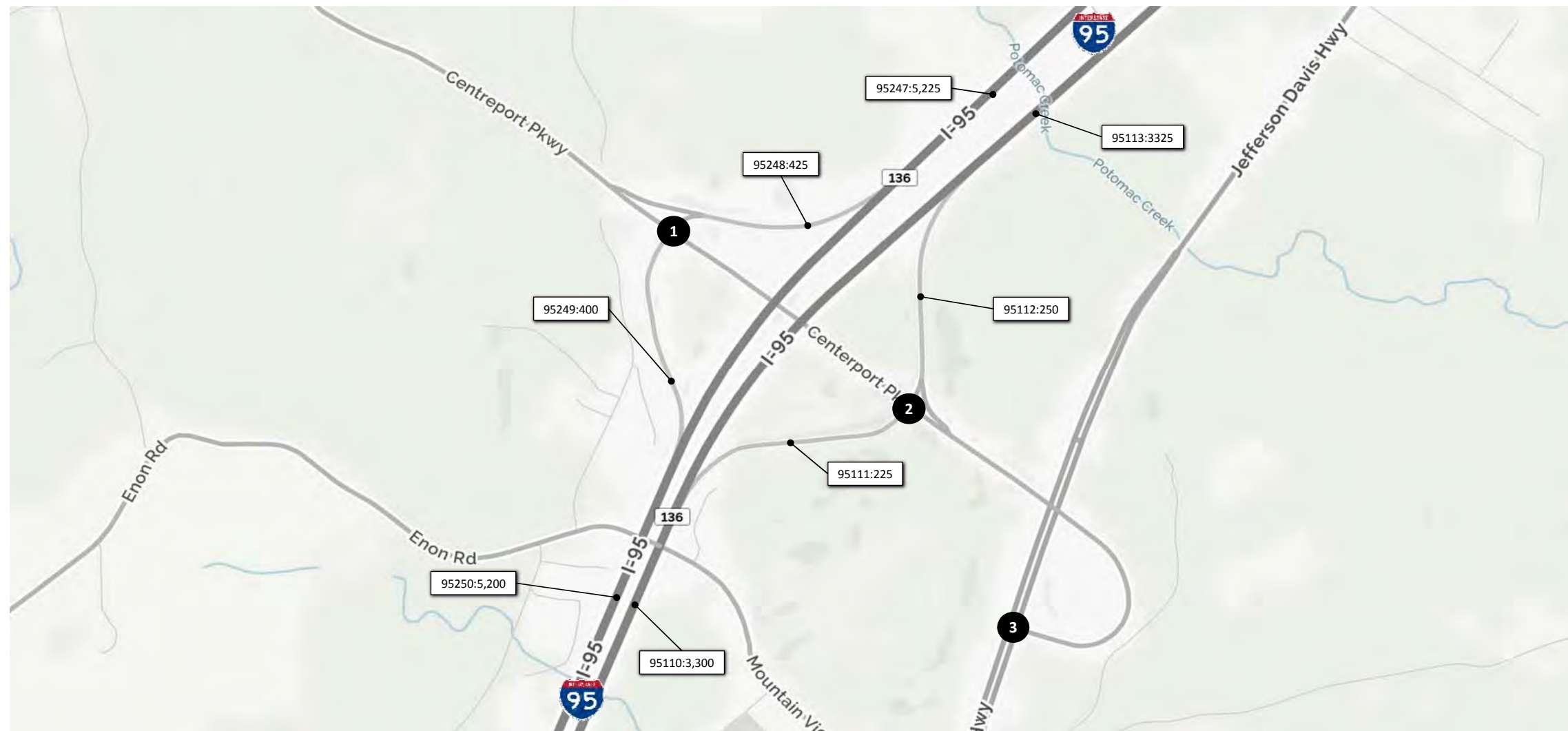
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 3 - 4 PM Volumes
I-95 Corridor

August 2017

Figure D.5-2



1						2						3					
Centreport Pkwy			I-95 SB Off-Ramp			Centreport Pkwy			I-95 NB On-Ramp			Centreport Pkwy			US-1		
R	T	L	T	L		L	T	R	L	T	R	L	T	R	L	T	R
183	3	663			386	41						1,284					104
					113	777			252	0	123						797
155		T															
275		R															
			1363						1366						1368		

Legend

xx,xxx Weekday Hourly Volume

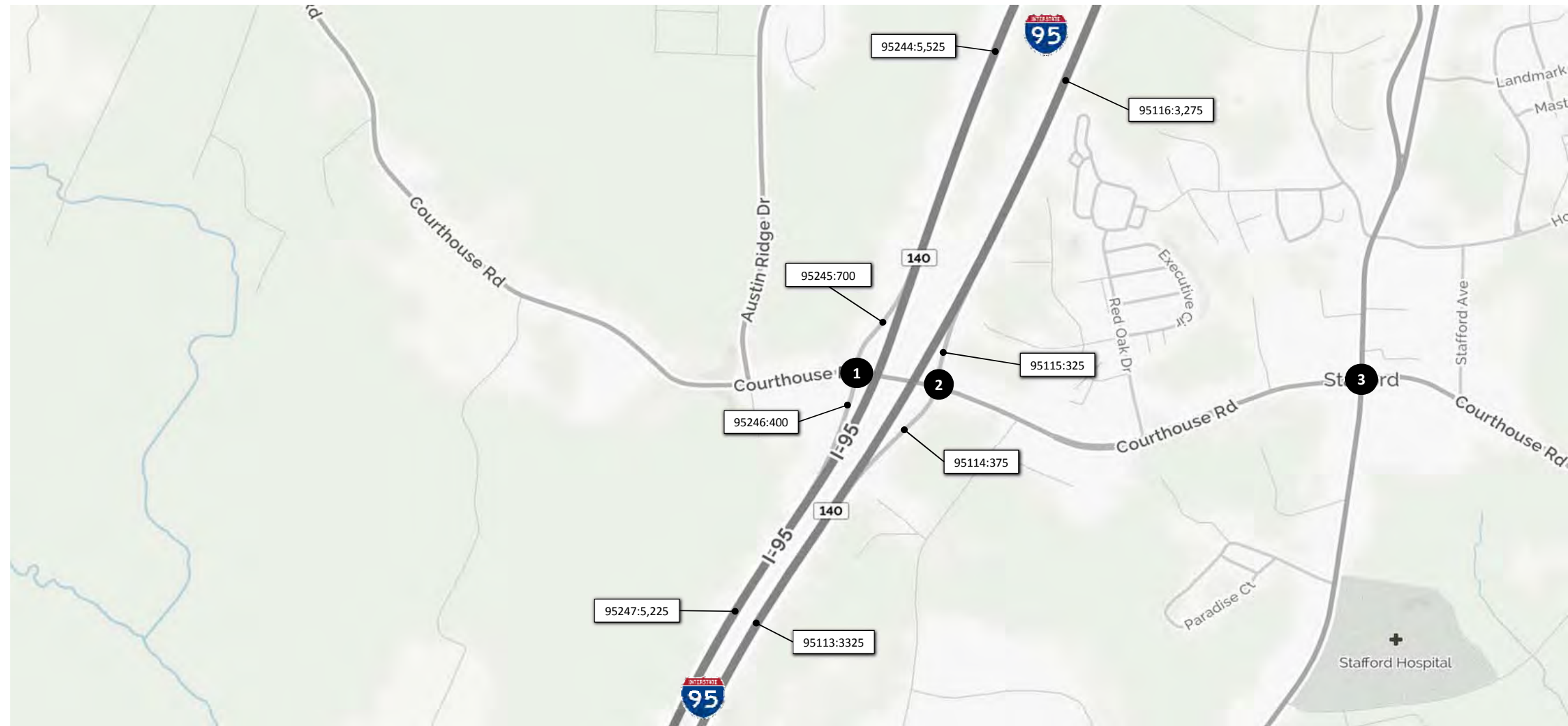
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 3 - 4 PM Volumes
I-95 Corridor

August 2017

Figure D.5-3



1					
	752	0	873		
R		T		L	
Courthouse Road (630)			I-95 SB Off-Ramp		
					558
				T	
				L	39
				I-95 SB On-Ramp	
	779		T		
	134		R		
					1403

2					
				R	359
				T	576
Courthouse Road (630)			I-95 NB On-Ramp		
				L	
	18		L		
	1,634		T		
				I-95 NB Off-Ramp	
				L	
				T	0
				R	272
					1406

3					
	206	654	206		
R		T		L	
Courthouse Road (630)			US-1		
					257
				R	
				T	308
				L	65
				US-1	
	420		L		
	597		T		
	888		R		
				L	422
				T	606
				R	84
					1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 3 - 4 PM Volumes
I-95 Corridor

August 2017

Figure D.5-4



1	246			I-95 SB Off-Ramp	T	2,481		
	R			Garrisonville Road (610)				
		2,045	T					
		951	R	I-95 SB On-Ramp				
						1431		
2	38	3,525			US-1	L	T	
	R	T			I-95 NB On-Ramp			
				US-1	212	1,811		
						1434		
3	1,728	1,568	230	US-1	R	147		
					Garrisonville Road (610)	T	237	
		747	L			L	119	
		255	T	US-1	722	1,128	126	
		800	R					
						1438		
4			2,324	162	US-1	R	173	
			T	L			L	26
				I-95 NB Off-Ramp			T	R
		285	L					
		14	T	US-1			1,518	38
		15	R					
						1432		

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 3 - 4 PM Volumes
 I-95 Corridor

August 2017

Figure D.5-5



Legend

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

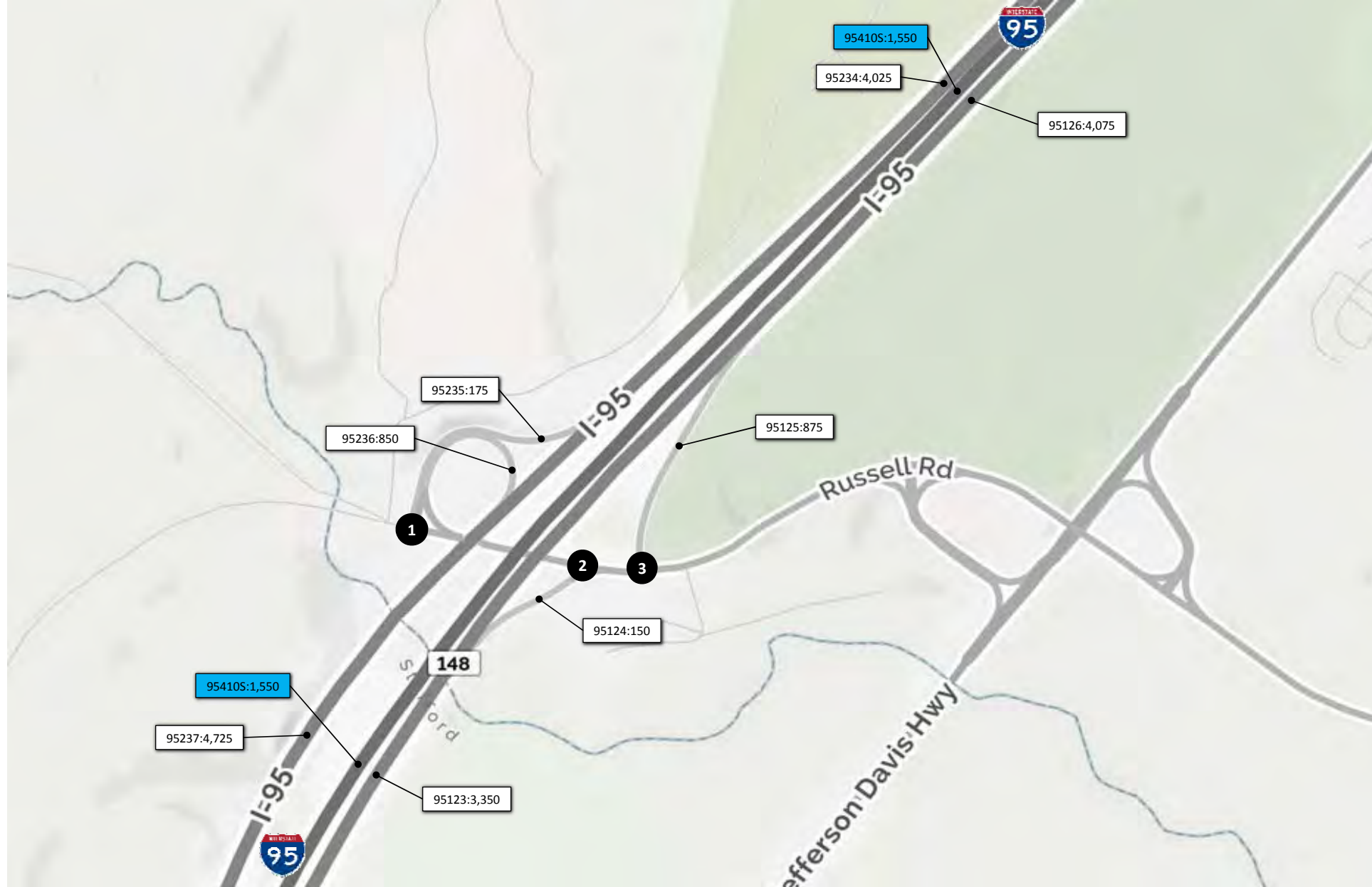
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 3 - 4 PM Volumes
 I-95 Corridor

August 2017

Figure D.5-6



1			I-95 SB On/Off-Ramps		
	48	198	R	998	
			T	248	
	Russell Road				
	132	L			
	522	T			1483
2			I-95 NB Off-Ramp		
			L		
			R	210	
	Russell Road				
	720	T	39		1486
3			I-95 NB On-Ramp		
			R	185	
			T	1,206	
	Russell Road				
	435	L			
	495	T			1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 3 - 4 PM Volumes
 I-95 Corridor

August 2017

Figure D.5-7



1	305	9	831	Carl D Silver Pkwy			R	947	
							T	2,097	
	R	T	L				L	18	
	VA-3 (Plank Road)			L	T	R			
						Mall Court			
	260			L		L	10	11	13
	1,996			T					
	5			R					
									1303
2	21	7	9	Ramseur St			R	3	
							T	1,724	
	R	T	L				L	180	
	VA-3 (Plank Road)			L	T	R			
	34			L		Gateway Blvd			
	1,514			T		L	306	2	230
	393			R					
									1304

Legend

xx,xxx Weekday Hourly Volume

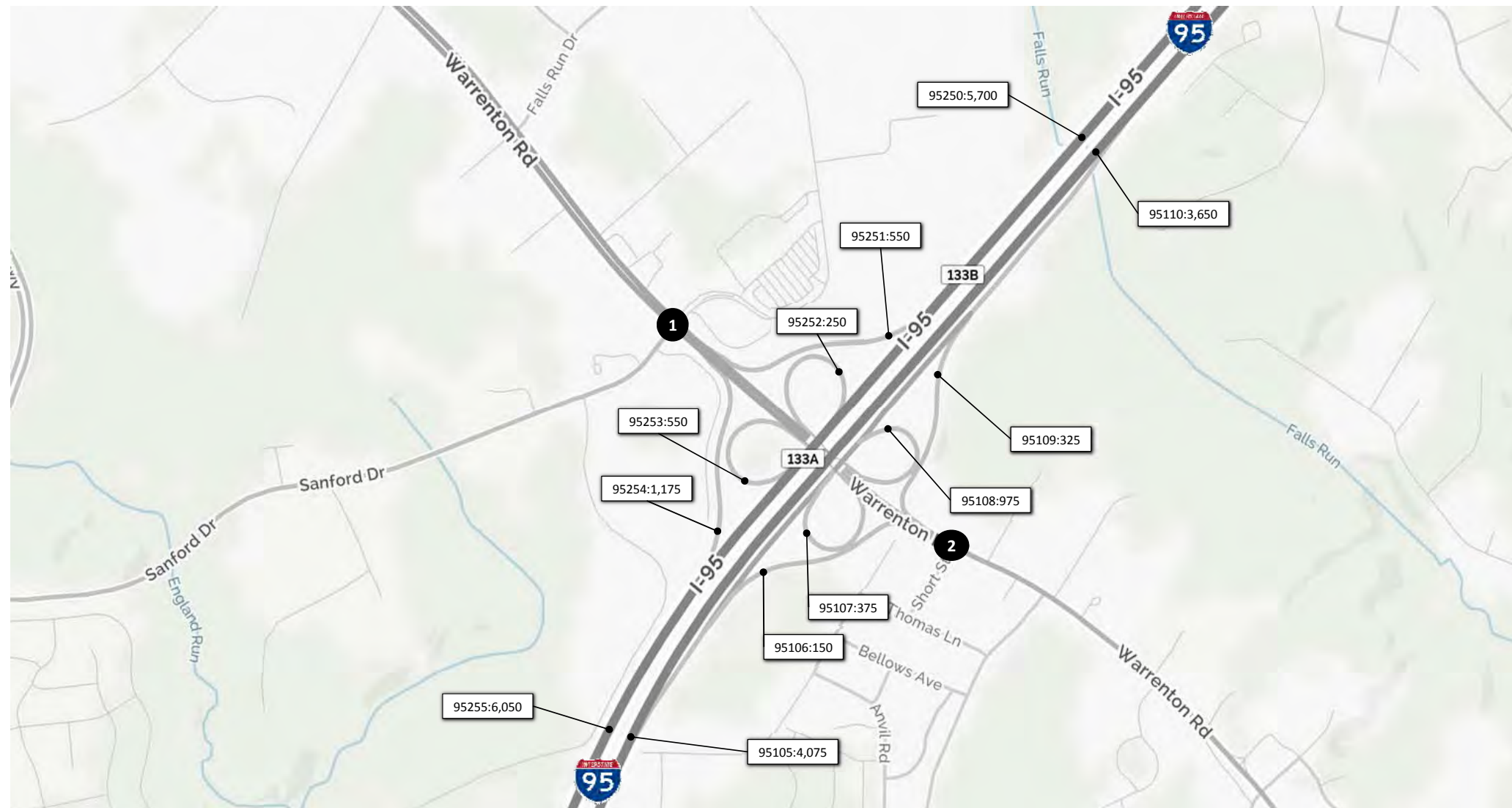
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 4 - 5 PM Volumes
 I-95 Corridor

August 2017

Figure D.6-1



1	87	31	425	S Gateway Dr	R	377
					T	1,924
	R	T	L	L	136	
	US-17 (Warrenton Rd)			L	T	R
	80		L			
	2,185		T	34	18	397
	28		R			1333
2	7	0	8	Parking Lot	R	5
					T	1,405
	R	T	L	L	18	
	US-17 BUS (Warrenton Rd)			L	T	R
		5		L		
		2,052		T	101	2
	111		R			1338

Legend

xx,xxx Weekday Hourly Volume

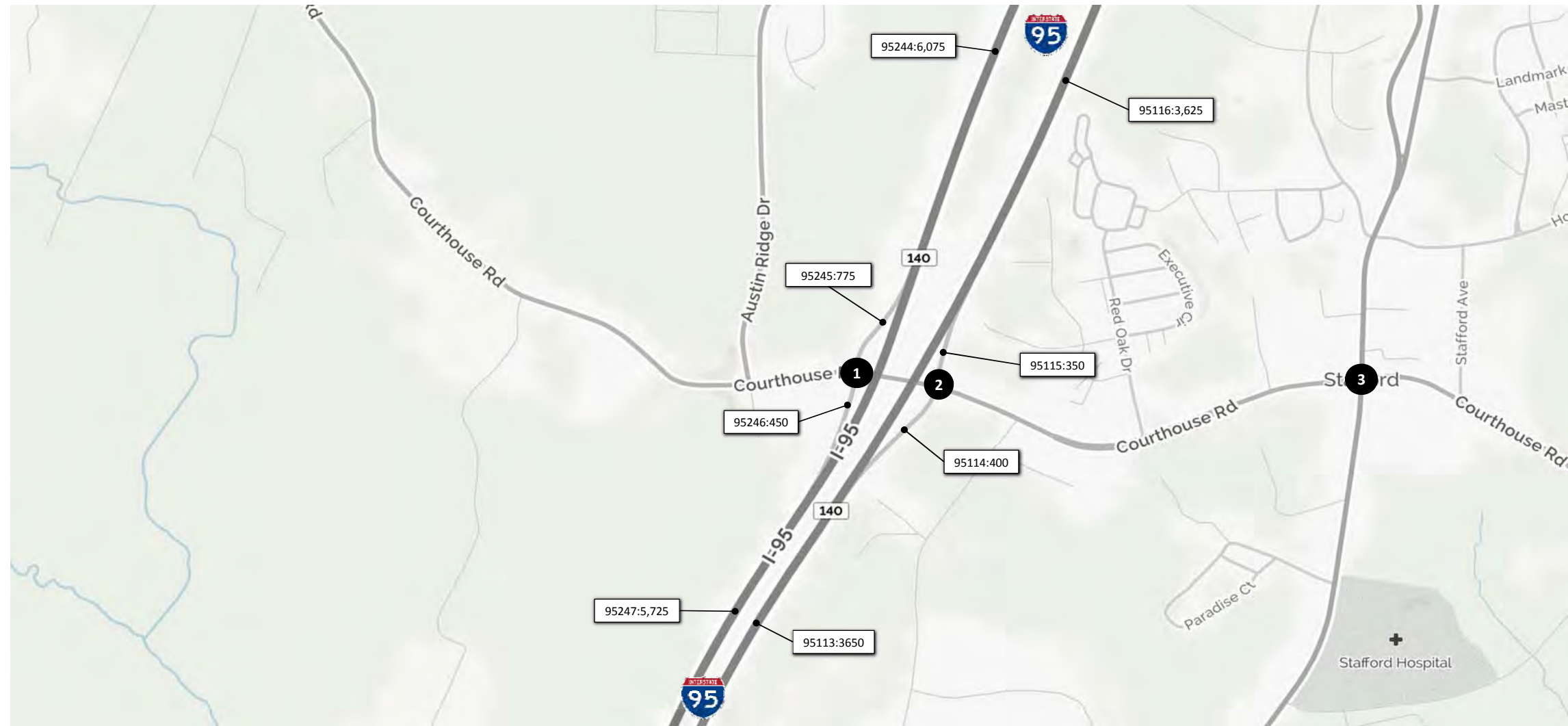
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 4 - 5 PM Volumes
I-95 Corridor

August 2017

Figure D.6-2



1			
335	1	441	
R	T	L	
Courthouse Road (630)			T 639
I-95 SB Off-Ramp			L 155
I-95 SB On-Ramp			
630		T	
282		R	
1403			

2			
			R 262
			T 573
Courthouse Road (630)			L T R
96	L		
975	T		
I-95 NB Off-Ramp			L T R
I-95 NB On-Ramp			
		220	2 184
1406			

3			
256	658	163	
R	T	L	
Courthouse Road (630)			US-1 R 175
US-1			T 271
US-1			L 55
US-1			
242		L	
298		T	
619		R	
US-1			L T R
US-1			
		308	350 45
1408			

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 4 - 5 PM Volumes
I-95 Corridor

August 2017

Figure D.6-4



1	256			I-95 SB Off-Ramp	T	2,134	
	R			Garrisonville Road (610)			
		1,999	T				
		787	R	I-95 SB On-Ramp			
						1431	
2	21	2,509			US-1		
	R	T			I-95 NB On-Ramp	L T	
				US-1	185	1,113	
						1434	
3	1,316	1,003	191	US-1	R	90	
	R	T	L	Garrisonville Road (610)	T	209	
		545	L			89	
		379	T	US-1	L T R		
		826	R			1438	
4	1,803	114			US-1	R	141
	T	L			I-95 NB Off-Ramp	L	91
		215	L				
		33	T	US-1	T R		
		49	R			1432	

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 4 - 5 PM Volumes
 I-95 Corridor

August 2017

Figure D.6-5



Legend

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

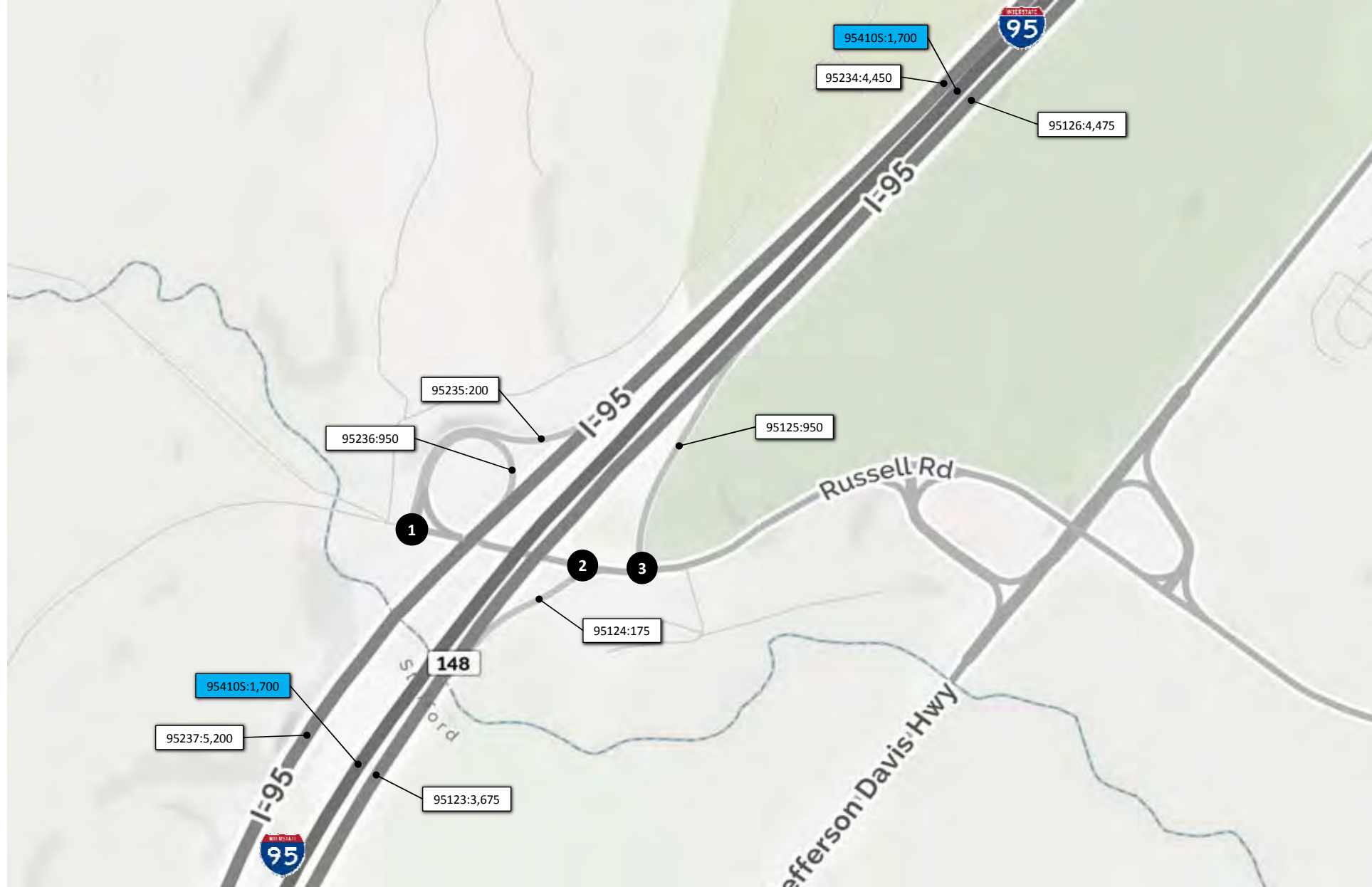
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 4 - 5 PM Volumes
 I-95 Corridor

August 2017

Figure D.6-6



1			I-95 SB On/Off-Ramps		
	R	L	R	T	
Russell Road					
56	137			802	
				264	
140		L			
824		T			1483
2			I-95 NB Off-Ramp		
			L	R	
Russell Road					
961		T	14	154	
					1486
3			I-95 NB On-Ramp		
			R	T	
Russell Road					
615		L			
500		T			1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2022 No Build
Weekday 4 - 5 PM Volumes
I-95 Corridor

August 2017

Figure D.6-7



1	297	7	786	Carl D Silver Pkwy			R	996
							T	1,906
	R	T	L				L	17
	VA-3 (Plank Road)			L	T	R		
	257							
	2,112			Mall Court			L	11
	6					T	8	
						R	7	
								1303
2	20	4	14	Ramsour St			R	7
							T	1,692
	R	T	L				L	223
	VA-3 (Plank Road)			L	T	R		
	36							
	1,679			Gateway Blvd			L	313
	411					T	3	
						R	227	
								1304

Legend

xx,xxx Weekday Hourly Volume

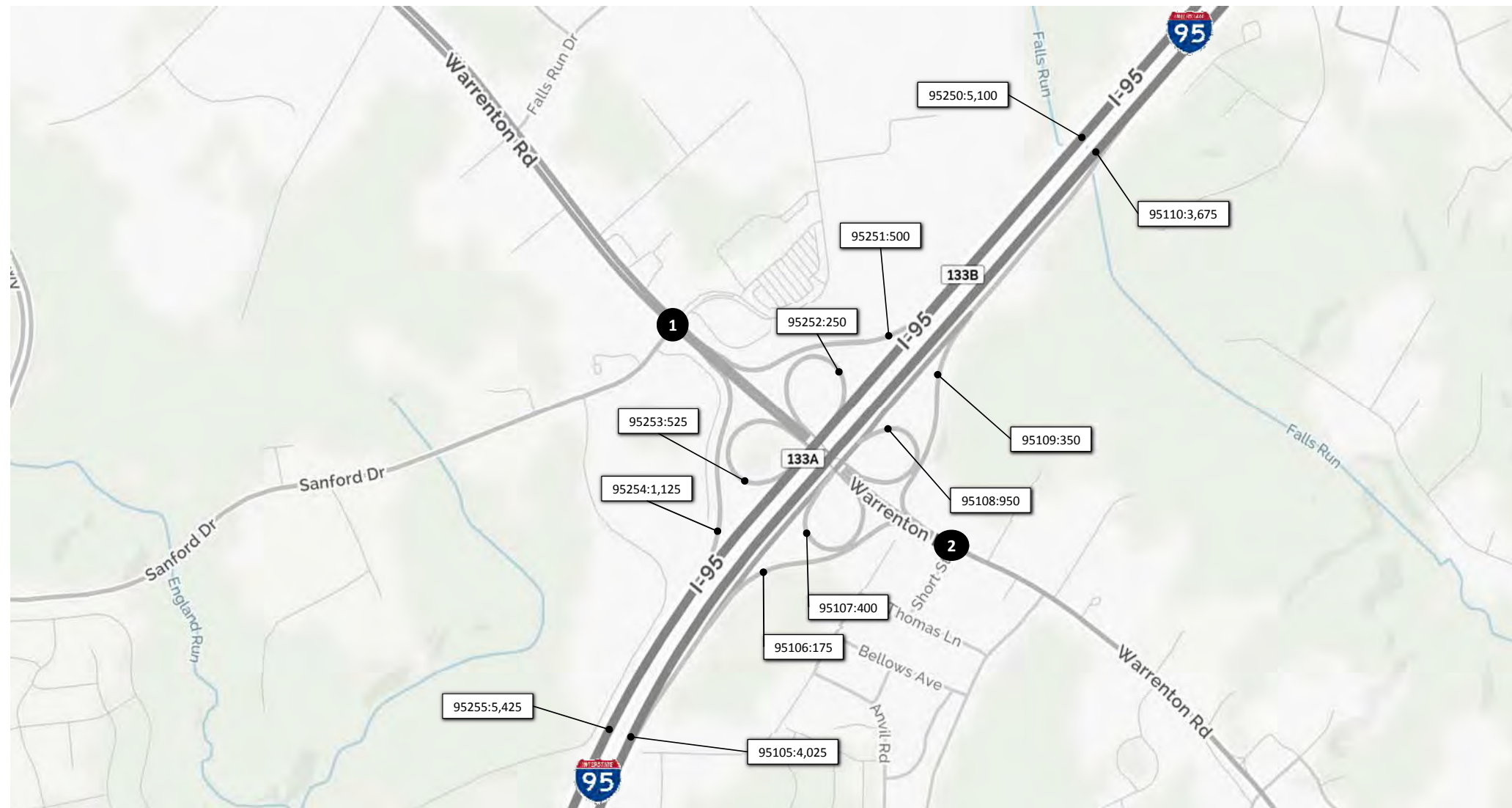
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

August 2017

Figure D.7-1



1	96	26	461	S Gateway Dr	R	378	
					T	1,902	
	R	T	L	Sanford Dr	L	110	
	US-17 (Warrenton Rd)				L	T	R
	82	L		34	13	349	
	2,119	T					
	20	R				1333	
2	6	0	6	Parking Lot	R	2	
					T	1,428	
	R	T	L	Short St	L	23	
	US-17 BUS (Warrenton Rd)				L	T	R
		7	L				
		2,075	T		102	2	23
	128	R				1338	

Legend

xx,xxx Weekday Hourly Volume

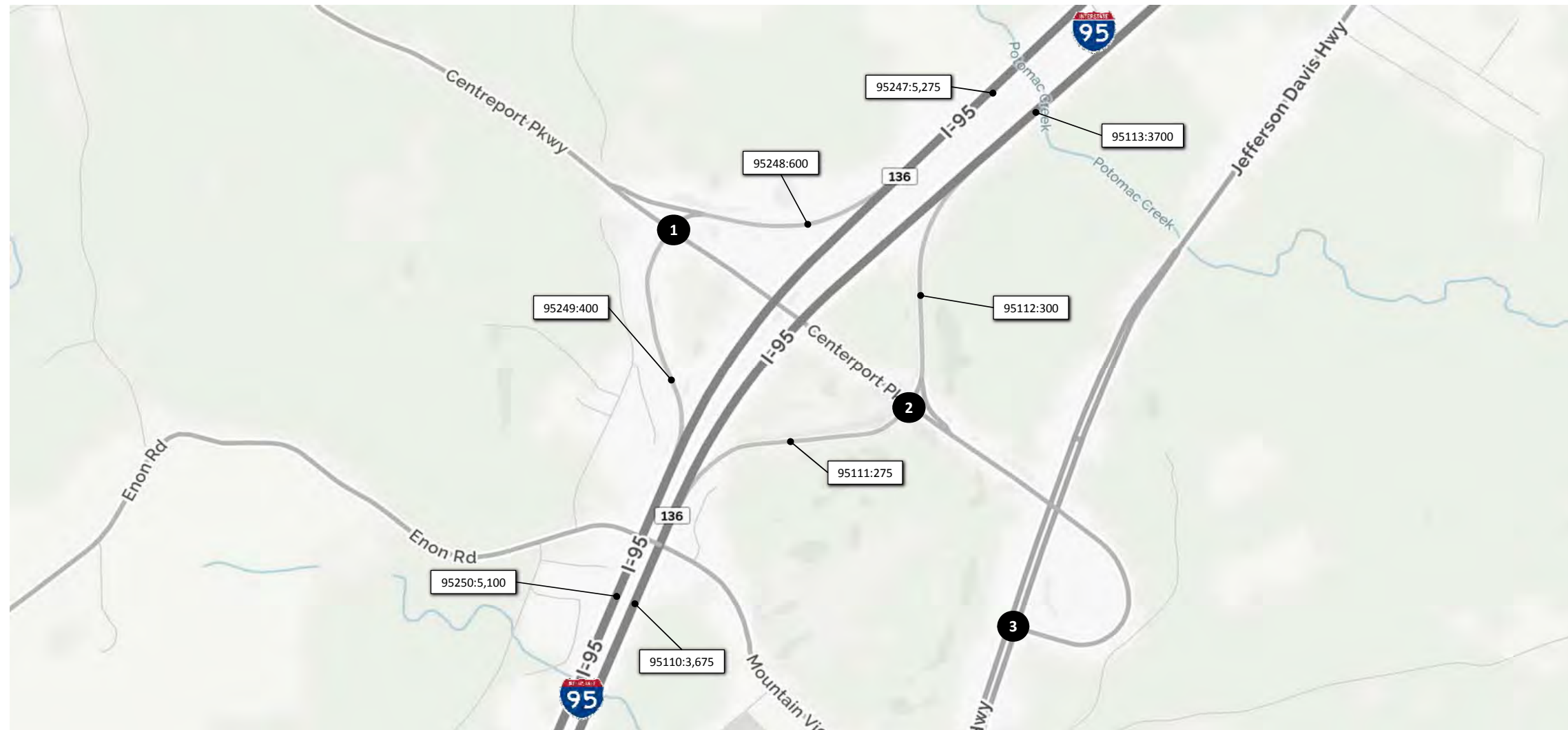
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 5 - 6 PM Volumes
 I-95 Corridor

August 2017

Figure D.7-2



1

64	3	524	I-95 SB Off-Ramp		T	279
R	T	L			L	127
Centreport Pkwy						
177		T	I-95 SB On-Ramp			
276		R				
1363						

2

Centreport Pkwy			L	T	R	290
14		L	I-95 NB On-Ramp		T	247
688		T			L	105
			159	1		
1366						

3

Centreport Pkwy			T	L	1,204	109
			US-1		R	78
					L	715
					T	429
					R	533
1368						

Legend

xx,xxx Weekday Hourly Volume

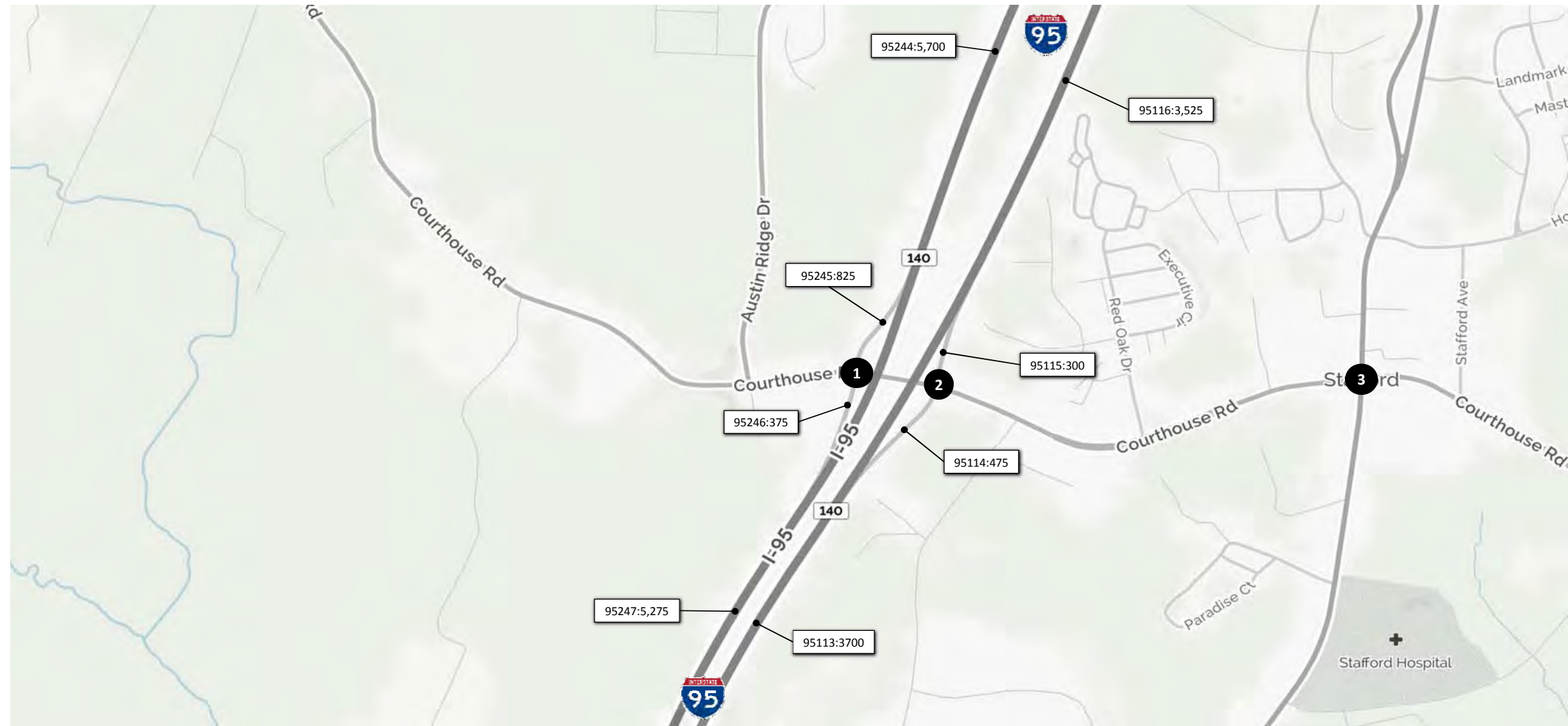
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

August 2017

Figure D.7-3



1							
350	0	462					
R	T	L	I-95 SB Off-Ramp	T	712		
Courthouse Road (630)			I-95 SB On-Ramp	L	97		
659		T					
290		R					
							1403

2							
				R	206		
			I-95 NB On-Ramp	T	542		
Courthouse Road (630)			I-95 NB Off-Ramp	L	T	R	
84		L		267	0	201	
1,037		T					
							1406

3							
239	726	160					
R	T	L	US-1	R	162		
Courthouse Road (630)			US-1	T	237		
281		L		L	41		
299		T		L	T	R	
658		R		273	357	37	
							1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

August 2017

Figure D.7-4



1	241	I-95 SB Off-Ramp		T	2,220	
	R	Garrisonville Road (610)				
	2,172	T				
	767	R			1431	
2	28	2,565	US-1			
	R	T	I-95 NB On-Ramp			
			L	T		
			207	1,166	1434	
3	1,287	1,067	212	US-1		
	R	T	L	R	95	
				T	235	
				L	103	
	Garrisonville Road (610)			L	T	R
	587					
	467			656	690	139
	874		R			1438
4		1,912	132	US-1		
		T	L	R	175	
				L	87	
	I-95 NB Off-Ramp			T	R	
	215					
	36				1,095	75
	35		R			1432

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 5 - 6 PM Volumes
 I-95 Corridor

August 2017

Figure D.7-5



Legend

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

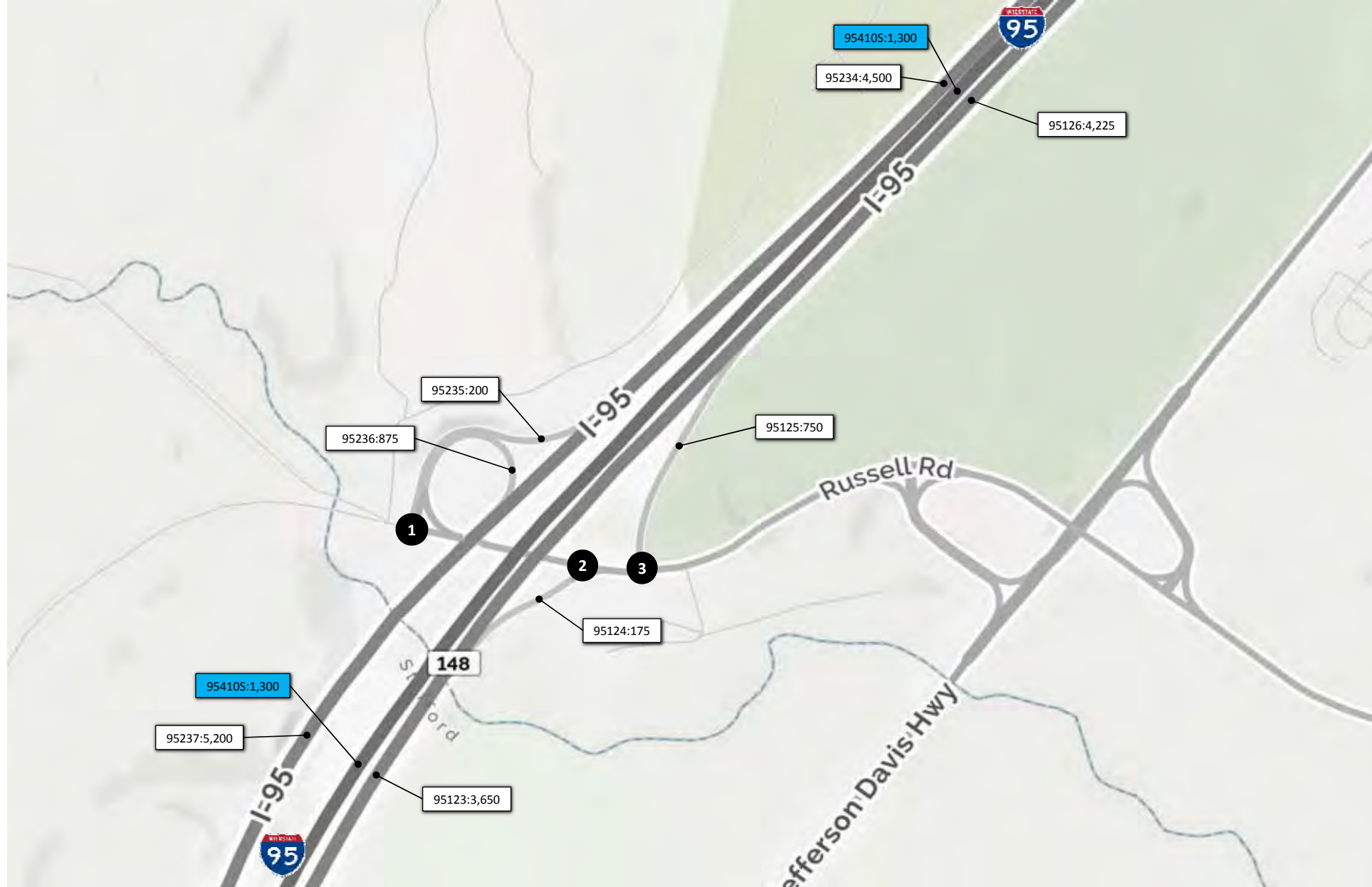
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 5 - 6 PM Volumes
 I-95 Corridor

August 2017

Figure D.7-6



1			I-95 SB On/Off-Ramps		
	64	130	R	749	
			T	252	
	Russell Road				
	137	L			
	678	T			1483
2			I-95 NB Off-Ramp		
				T	981
	Russell Road		L	R	
	808	T	20	152	1486
3			I-95 NB On-Ramp		
				R	239
				T	981
	Russell Road				
	508	L			
	453	T			1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2022 No Build
Weekday 5 - 6 PM Volumes
I-95 Corridor

August 2017

Figure D.7-7



1	296	8	757	Carl D Silver Pkwy			R	809
							T	1,997
	R	T	L				L	25
	VA-3 (Plank Road)			L	T	R		
	243					L	13	
	1,718			T		T	6	
	7			R		R	5	
				Mall Court				1303
2	10	4	9	Ramseur St			R	1
							T	1,690
	R	T	L				L	152
	VA-3 (Plank Road)			L	T	R		
		22					L	319
		1,295			T		T	1
	351			R		R	187	
				Gateway Blvd				1304

Legend

xx,xxx Weekday Hourly Volume

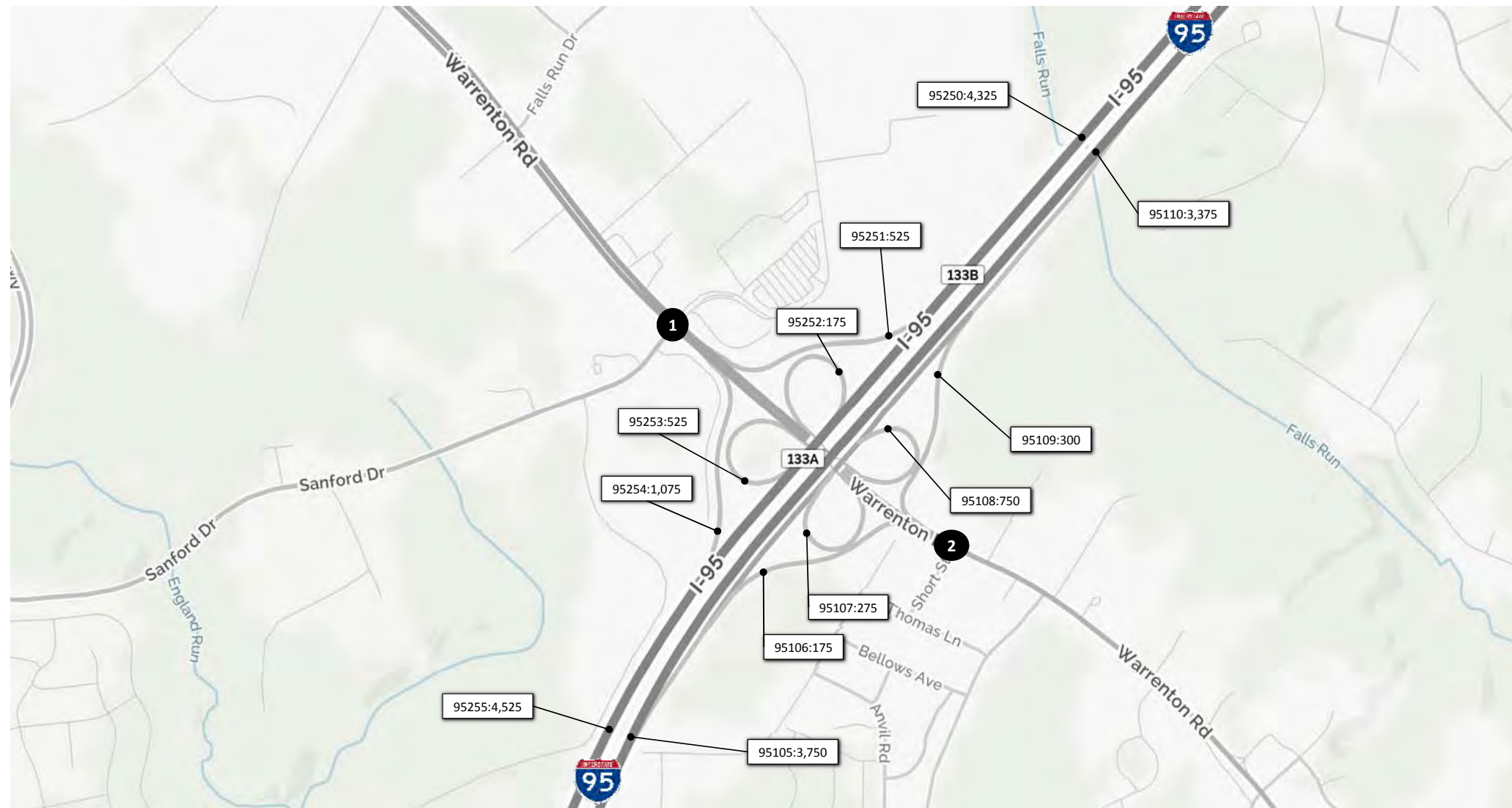
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure D.8-1



1	91	43	378	S Gateway Dr			R	356
							T	1,746
	R	T	L				L	110
	US-17 (Warrenton Rd)			L	T	R		
	96							
	1,885		T	42	2	231		
	10		R					
								1333
2	9	0	3	Parking Lot			R	2
							T	1,291
	R	T	L				L	16
	US-17 BUS (Warrenton Rd)			L	T	R		
	6		L					
	1,693		T	92	5	20		
	137		R					
								1338

Legend

xx,xxx Weekday Hourly Volume

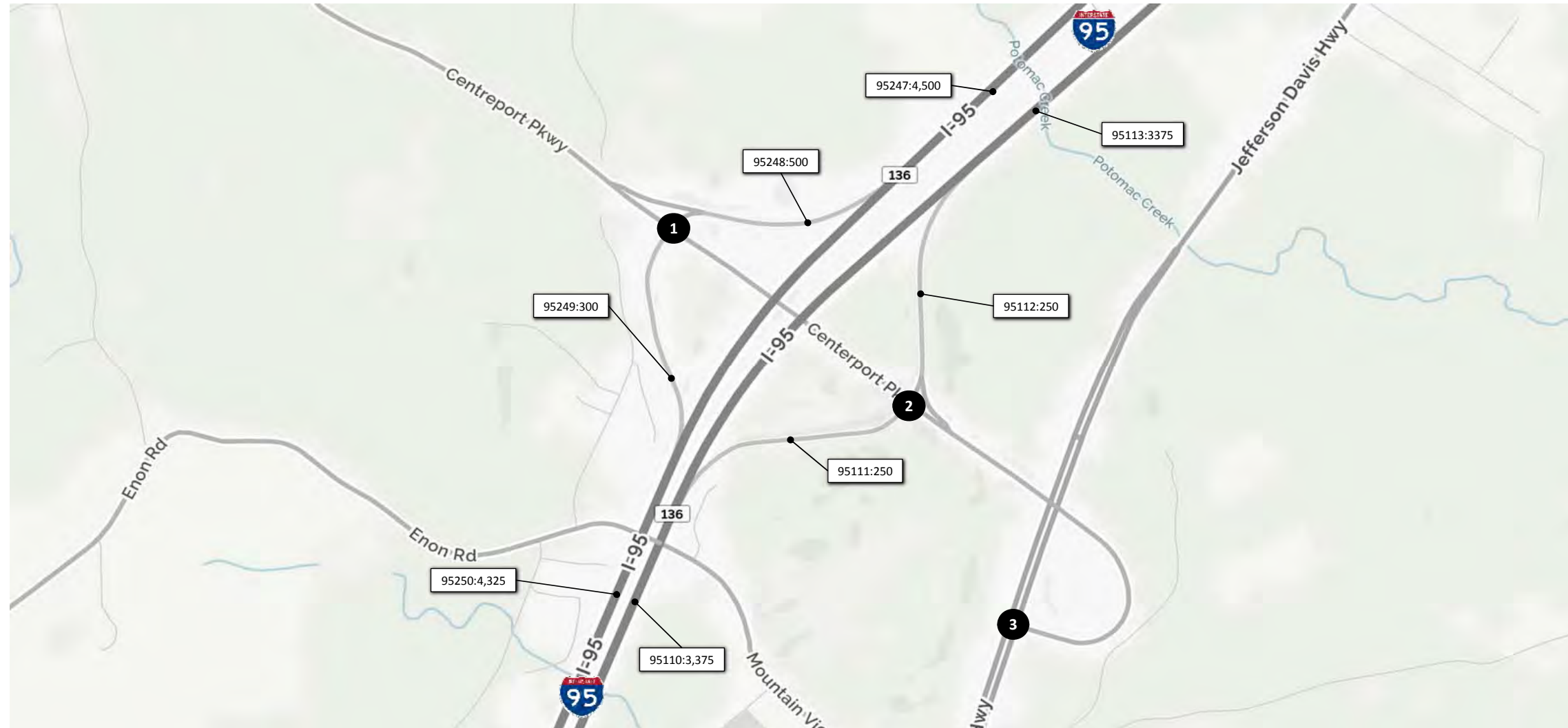
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure D.8-2



1						2						3					
Centreport Pkwy			I-95 SB Off-Ramp			Centreport Pkwy			I-95 NB On-Ramp			Centreport Pkwy			US-1		
R	T	L	T	L		L	T	R	L	T	R	L	T	R	L	T	R
83	1	411		262		12						1,013	90				
195		T		91		593	L		153	0	89						
214		R					T										
			1363						1366						1368		

Legend

xx,xxx Weekday Hourly Volume

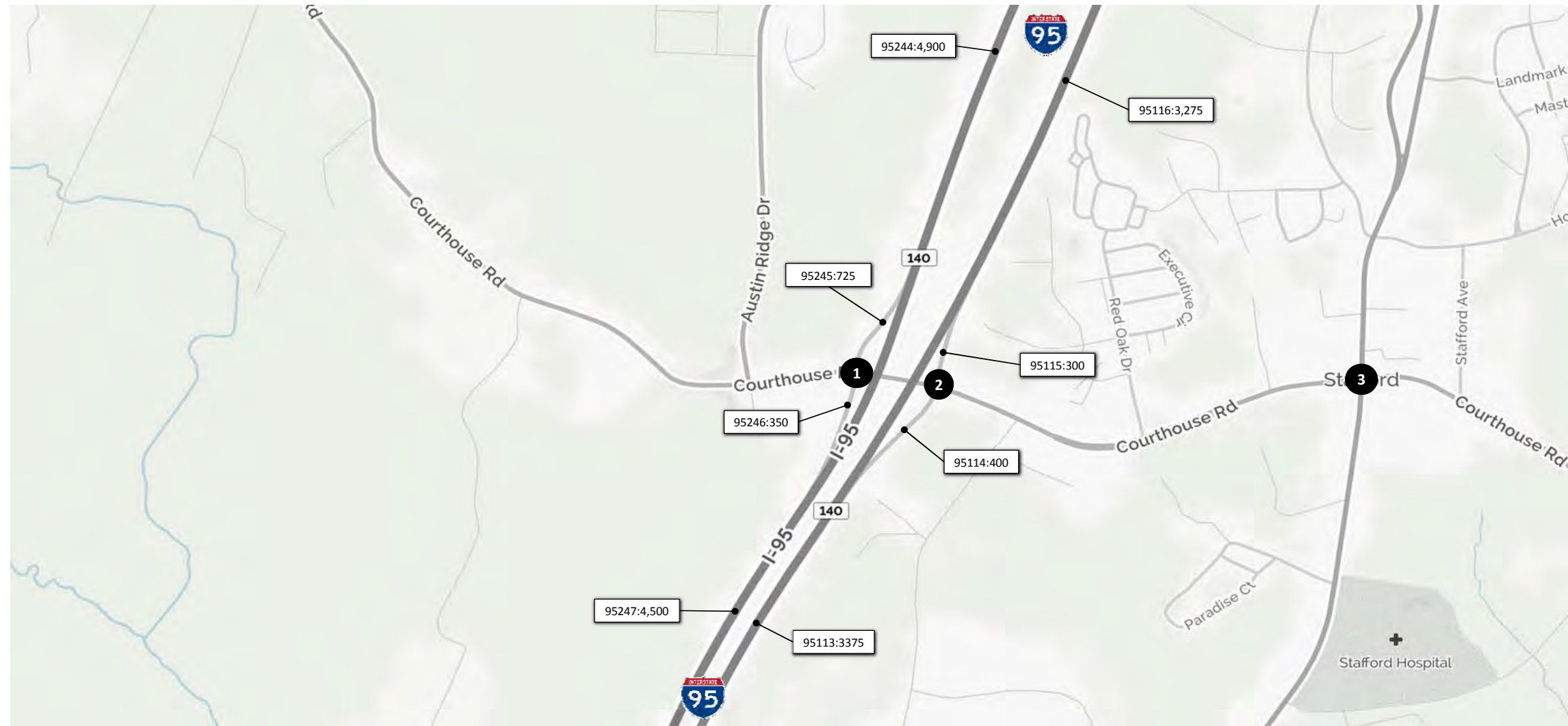
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 - 7 PM Volumes
 I-95 Corridor

August 2017

Figure D.8-3



1							
	303	0	423				
R		T		L			
Courthouse Road (630)				I-95 SB Off-Ramp		T 634	
						L	98
	550		T				
	240		R				
			I-95 SB On-Ramp				
							1403

2							
						R	220
						T	526
Courthouse Road (630)				I-95 NB On-Ramp		L T R	
	73		L				
	900		T			206	0
			I-95 NB Off-Ramp				190
							1406

3							
	229	578	116			R	163
						T	233
Courthouse Road (630)				US-1		L T R	
	264		L			L	40
	316		T				
	510		R			284	322
			US-1				36
							1408

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure D.8-4



1	231			I-95 SB Off-Ramp	T	1,874
	R					
Garrisonville Road (610)				I-95 SB On-Ramp		
	2,000	T				
	631	R				1431
2	46	2,387			US-1	
	R	T				
I-95 NB On-Ramp				US-1	L	T
					160	1,116
						1434
3	1,218	967	203			
	R	T	L	US-1	R	77
Garrisonville Road (610)					T	200
	564	L			L	86
	407	T		US-1	L	T
	831	R			655	636
						142
						1438
4		1,748	136			
		T	L	US-1	R	145
I-95 NB Off-Ramp					L	75
	210	L				
	20	T		US-1		
	40	R			1,078	81
						1432

Legend

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

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 - 7 PM Volumes
 I-95 Corridor

August 2017

Figure D.8-5



Legend

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

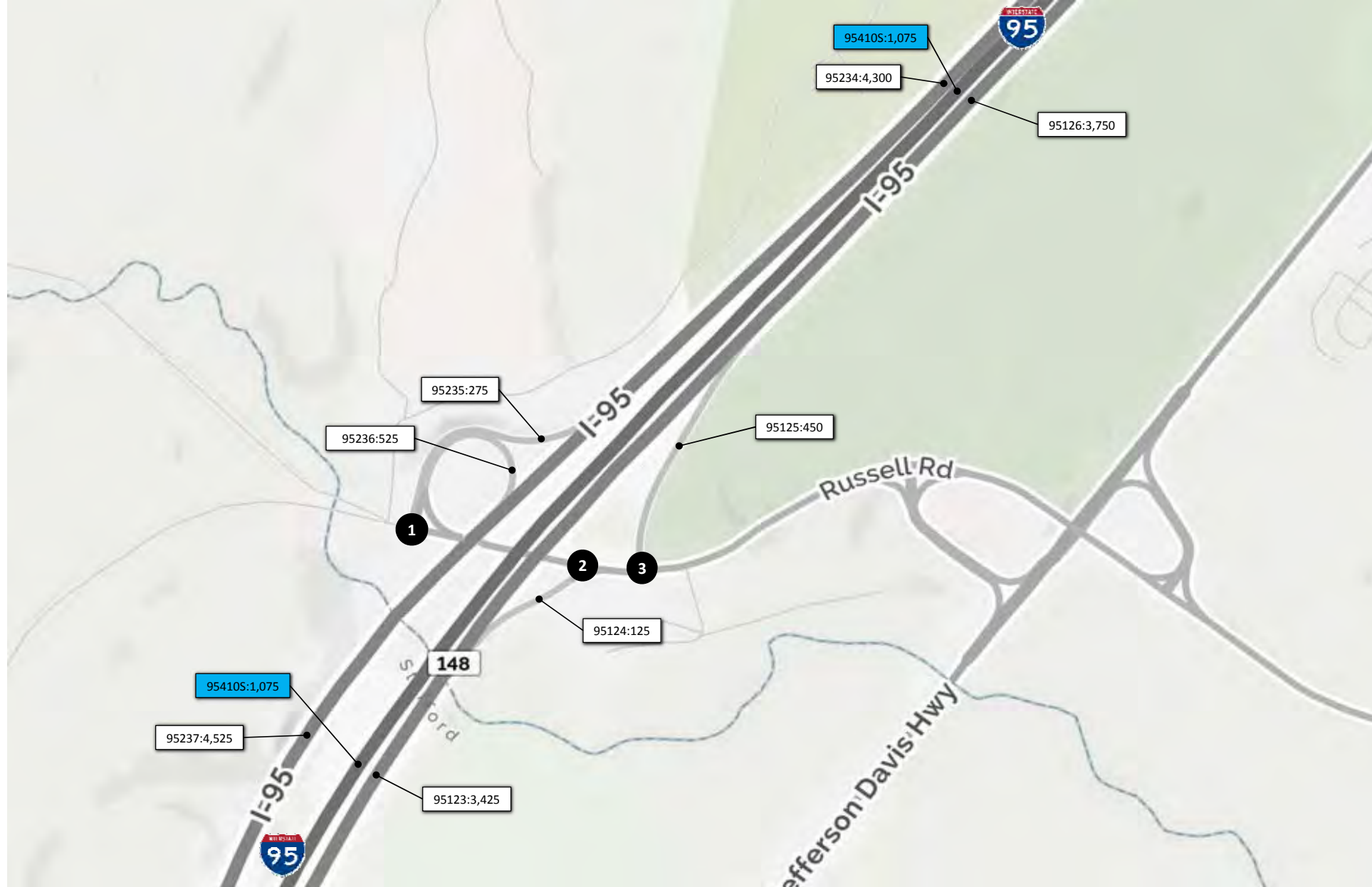
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 No Build
 Weekday 6 - 7 PM Volumes
 I-95 Corridor

August 2017

Figure D.8-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	46	241		446	
	80			178	
	382				
					1483
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	624		13	111	
					1486
3	Russell Road		I-95 NB On-Ramp		
				R	T
	288			155	
	447			612	
					1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE

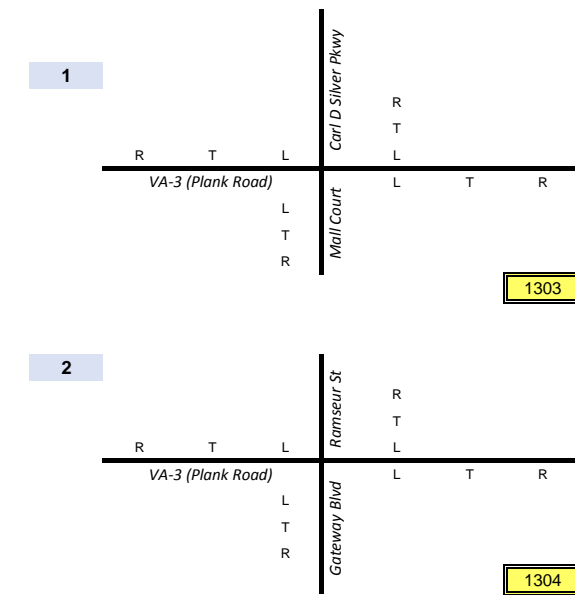


I-95 Express Lanes Fredericksburg
Extension Study
2022 No Build
Weekday 6 - 7 PM Volumes
I-95 Corridor

August 2017

Figure D.8-7

**APPENDIX E:
2022 BUILD
TRAFFIC VOLUMES**



Legend

xx,xxx Weekday Daily Volume

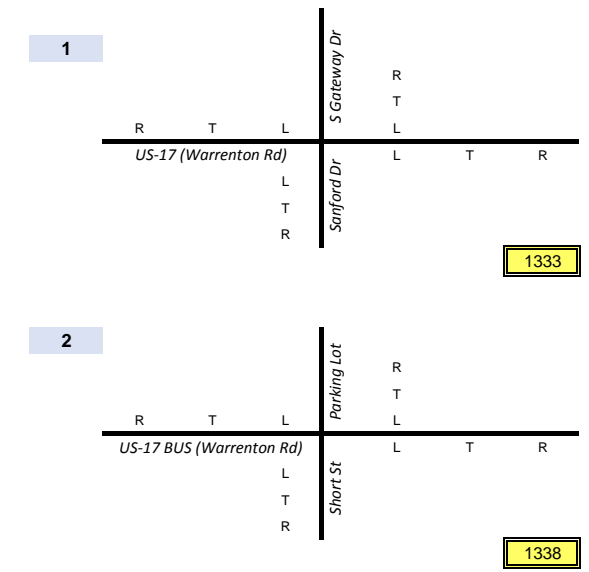
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure E.1-1



Legend

xx,xxx Weekday Daily Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

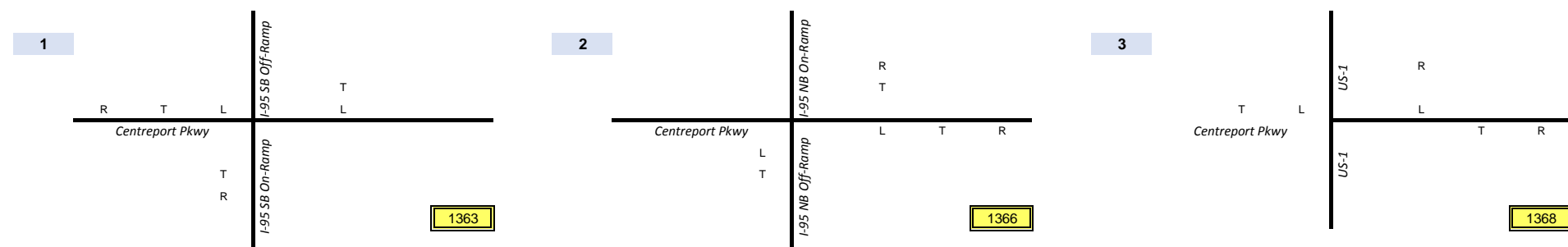
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure E.1-2



Legend

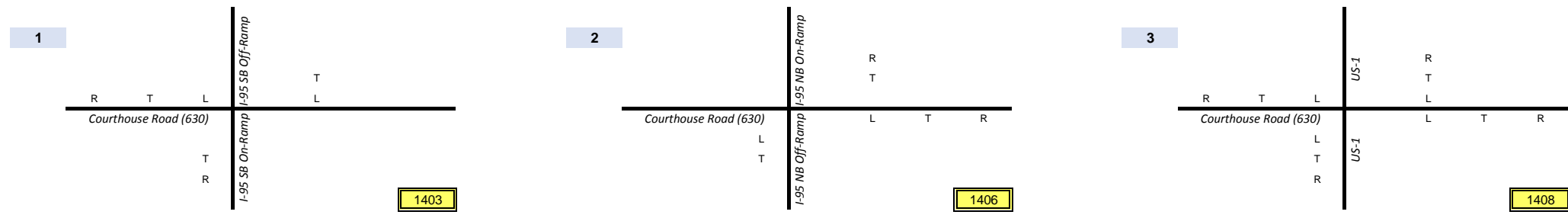
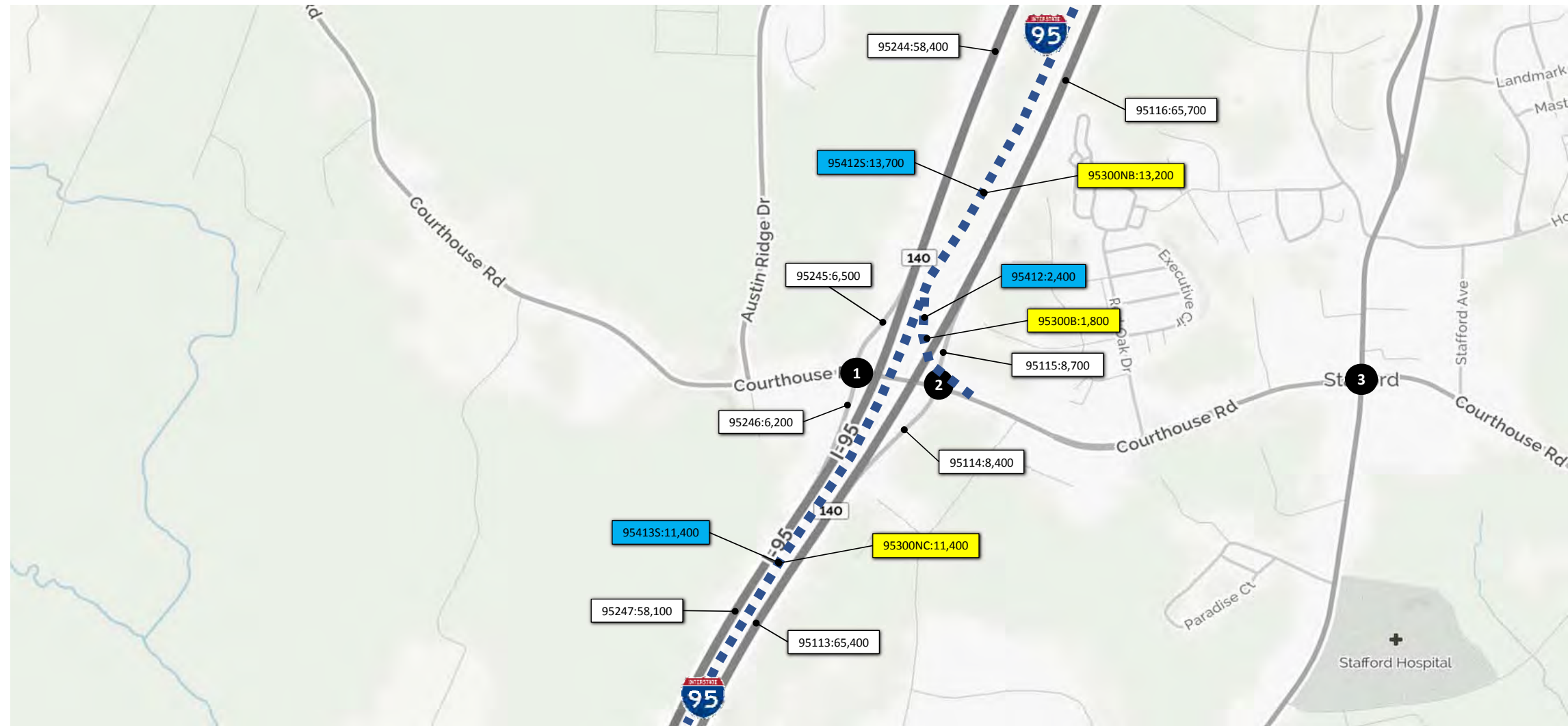
xx,xxx Weekday Daily Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension
 NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure E.1-3



Legend

xx,xxx Weekday Daily Volume
 ■■■■■ Proposed Express Lane Extension

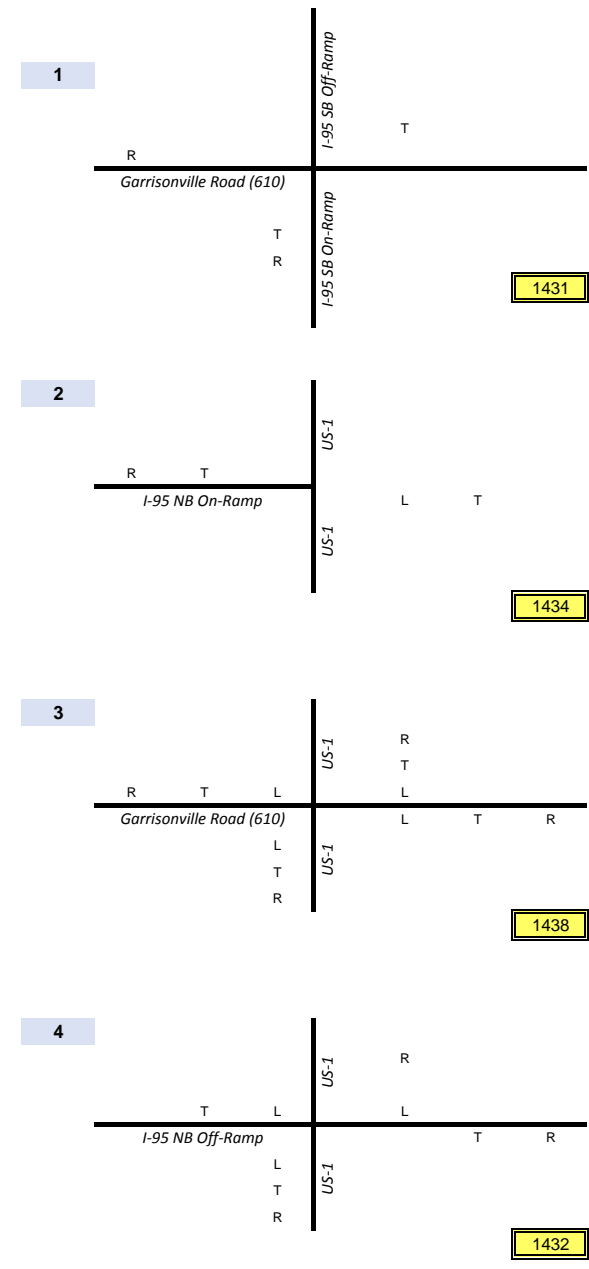
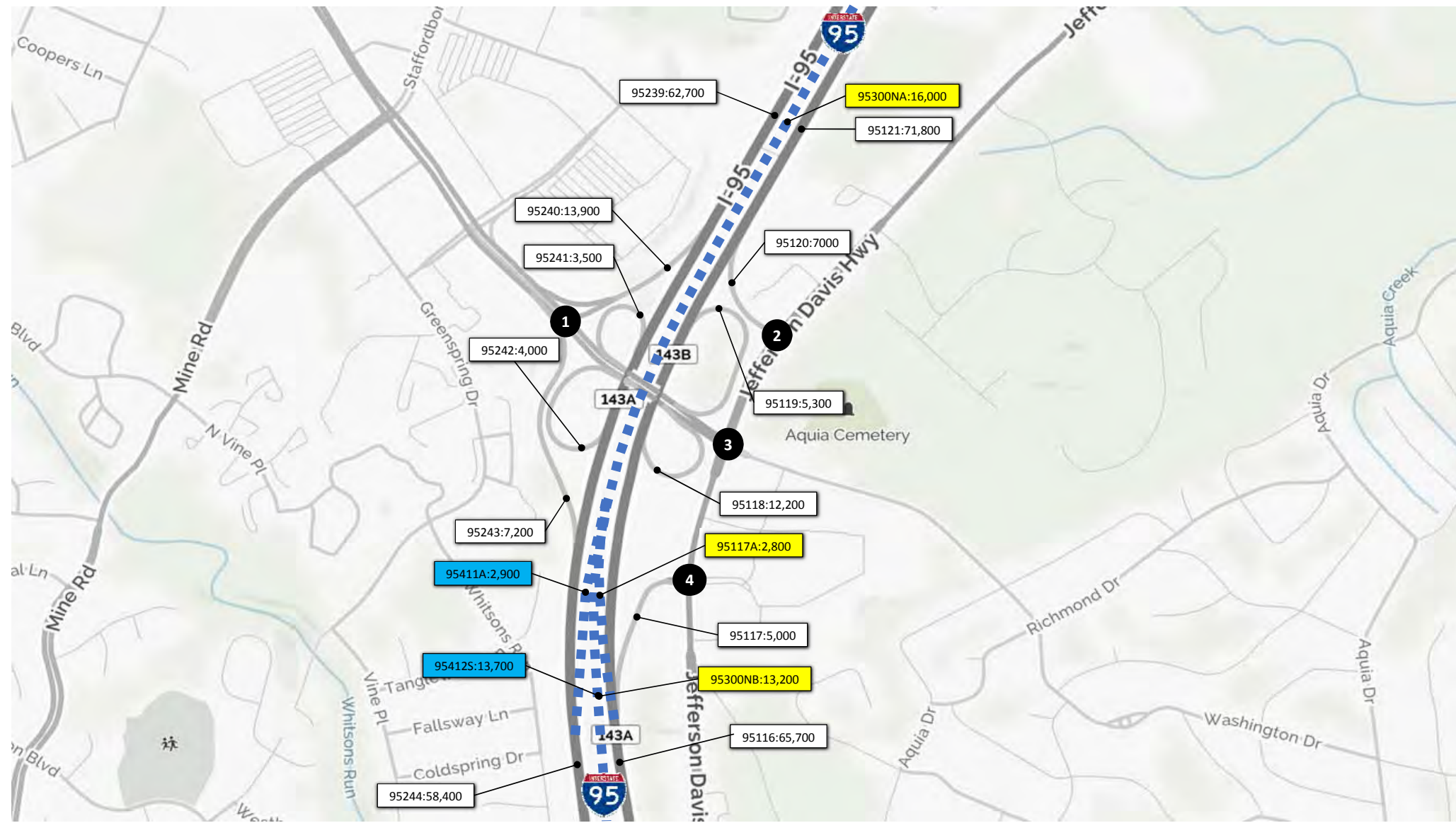
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure E.1-4



Legend

xx,xxx Weekday Daily Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure E.1-5



Legend

xx,xxx Weekday Daily Volume
 ■■■■■ Proposed Express Lane Extension

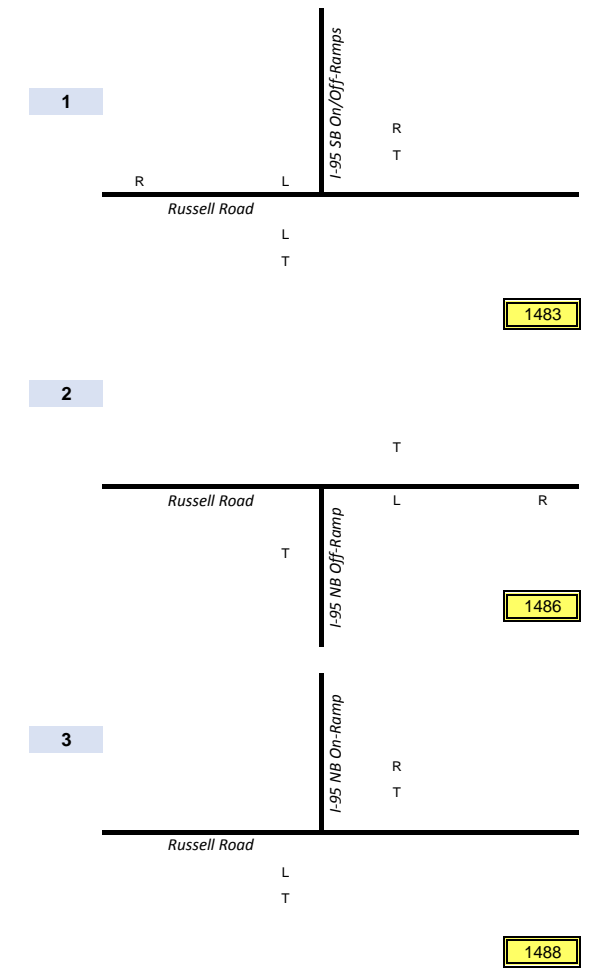
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday Daily Volumes
 I-95 Corridor

August 2017

Figure E.1-6



Legend

xx,xxx Weekday Daily Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2022 Build
Weekday Daily Volumes
I-95 Corridor

August 2017

Figure E.1-7



1	28	20	246	S Gateway Dr	R	277	
					T	2,034	
	R	T	L	Sanford Dr	L	236	
	US-17 (Warrenton Rd)				L	T	R
40				53	26	369	
1,866		T				1333	
23		R					
2	3	1	3	Parking Lot	R	1	
					T	1,673	
	R	T	L	Short St	L	17	
	US-17 BUS (Warrenton Rd)				L	T	R
	3				85	1	21
	1,371		T				1338
119		R					

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

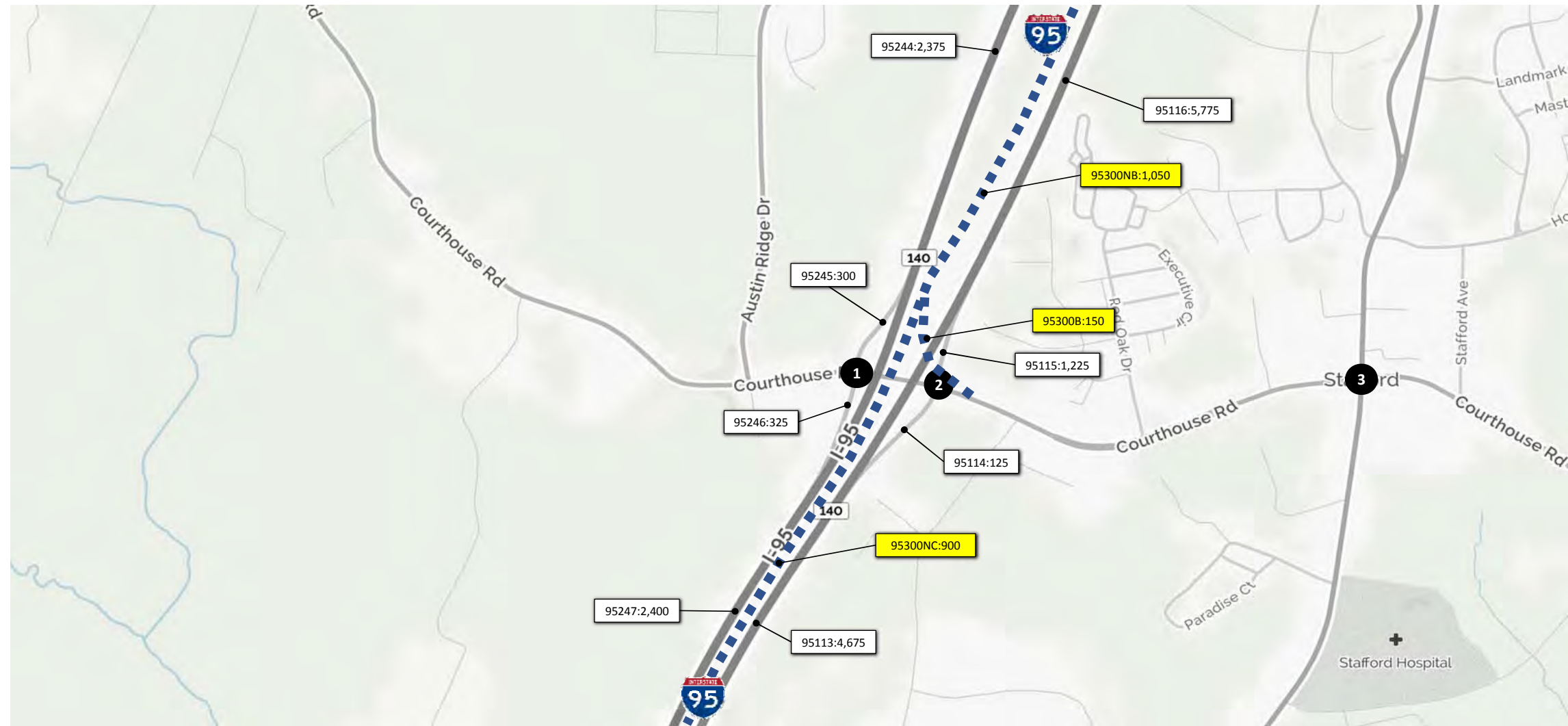
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017

Figure E.2-2



1					
	62	0	247		
R	T	L		T	537
Courthouse Road (630)				L	72
	820		T		
	261		R		
				I-95 SB On-Ramp	
				I-95 SB Off-Ramp	
					1403

2					
				R	666
				T	522
Courthouse Road (630)			L	T	R
	566	L			
	501	T		87	0
					50
				I-95 NB Off-Ramp	
				I-95 NB On-Ramp	
					1406

3					
	328	396	160		
R	T	L		R	253
Courthouse Road (630)				T	441
	91		L	L	61
	89		T		
	370		R		
				I-95	
				I-95	
					1408

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure E.2-4



1	0		I-95 SB Off-Ramp		T		695	
	R		Garrisonville Road (610)		T		1431	
2,050		T		I-95 SB On-Ramp		1431		
304		R						
2	45		1,252		US-1			
	R		T		I-95 NB On-Ramp		L T	
				US-1		287 2,641		
						1434		
3	515		644		92		US-1	
	R		T		L		R T	
						305		
						114		
						67		
						Garrisonville Road (610)		
						L T R		
						1,452		
						95		
						298		
						US-1		
						131 1,171 3		
						1438		
4	944		65		US-1		R	
	T		L		L		108	
						T R		
						10		
						I-95 NB Off-Ramp		
						593		
						153		
						44		
						US-1		
						603 21		
						1432		

Legend

xx,xxx Weekday Hourly Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017 Figure E.2-5



Legend

xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension

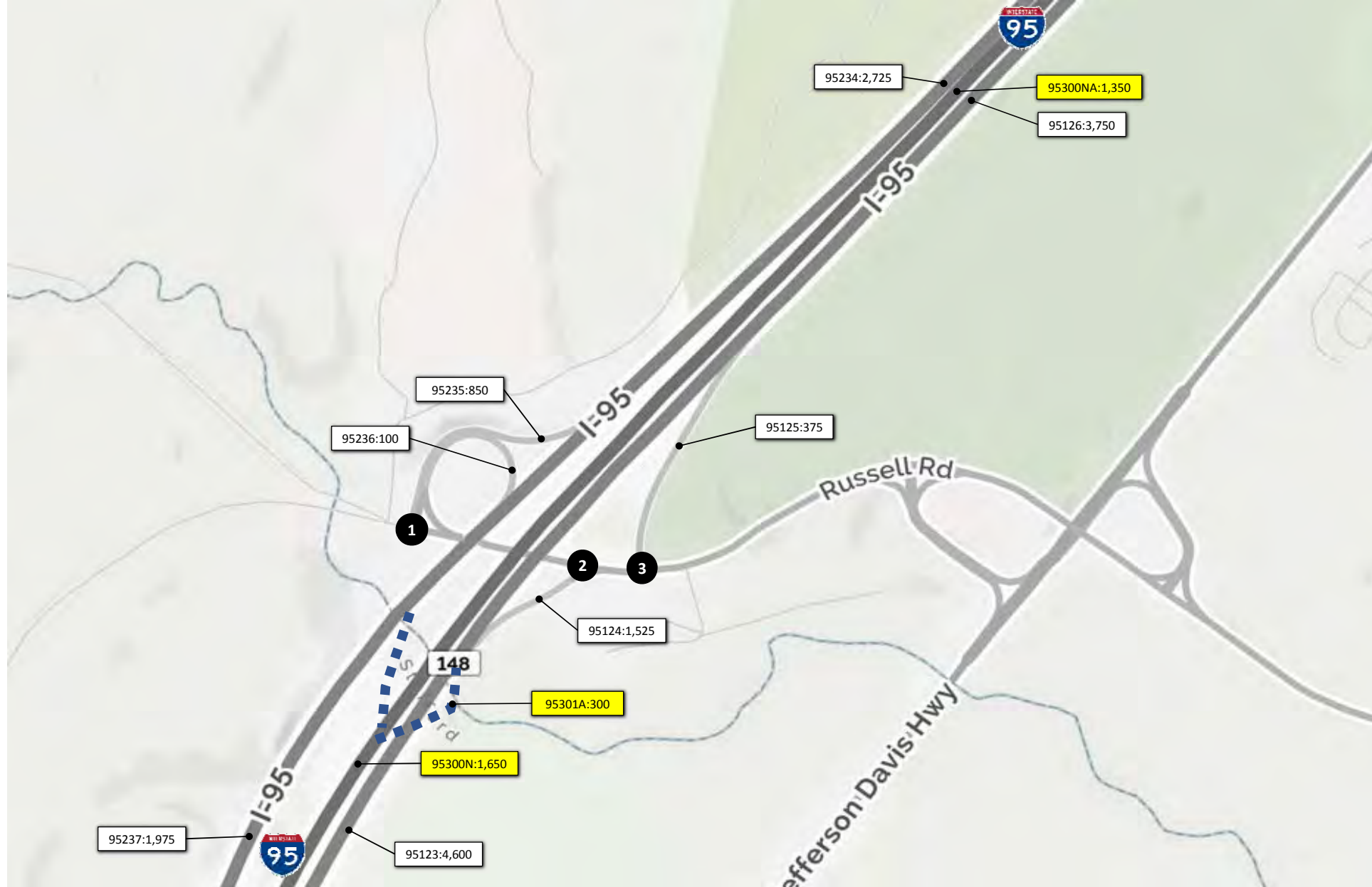
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 AM Volumes
 I-95 Corridor

August 2017

Figure E.2-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	466	378		77	
	214			312	
				1483	
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	592		183	1,347	
				1486	
3	Russell Road		I-95 NB On-Ramp		
		L		R	T
	287			101	
	1,652			206	
				1488	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2022 Build
Weekday 6-7 AM Volumes
I-95 Corridor

August 2017

Figure E.2-7



1	54	4	246	Carl D Silver Pkwy	R	507
					T	1,375
	R	T	L	Mall Court	L	13
	VA-3 (Plank Road)				L	T
200		L				
2,392		T		4	3	9
3		R				
						1303
2	15	3	4	Ramseur St	R	13
					T	1,338
	R	T	L	Gateway Blvd	L	162
	VA-3 (Plank Road)				L	T
60		L				
1,759		T		263	162	183
243		R				
						1304

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure E.3-1



1			S Gateway Dr		
29	20	253	R		285
			T		2,096
R	T	L	L		243
US-17 (Warrenton Rd)			L	T	R
41			L		
1,923			T	54	26
23			R		380
1333					

2			Parking Lot		
3	1	3	R		1
			T		1,724
R	T	L	L		18
US-17 BUS (Warrenton Rd)			L	T	R
3			L		
1,413			T	88	1
123			R		22
1338					

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure E.3-2



1	0		I-95 SB Off-Ramp		T		717		
	R		Garrisonville Road (610)						
2,112		T		I-95 SB On-Ramp				1431	
313		R							
2	47		1,290		US-1				
	R		T		I-95 NB On-Ramp		L T		
				US-1		295 2,721		1434	
3	531		664		95		US-1 R		314
	R		T		L		T		117
1,496		L		Garrisonville Road (610)		L T R		69	
98		T		US-1		135 1,206 3		1438	
307		R							
4	972		67		US-1		R		111
	T		L		I-95 NB Off-Ramp		L		10
611		L		US-1		T R		622 22	
158		T						1432	
45		R							

Legend

xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure E.3-5



Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

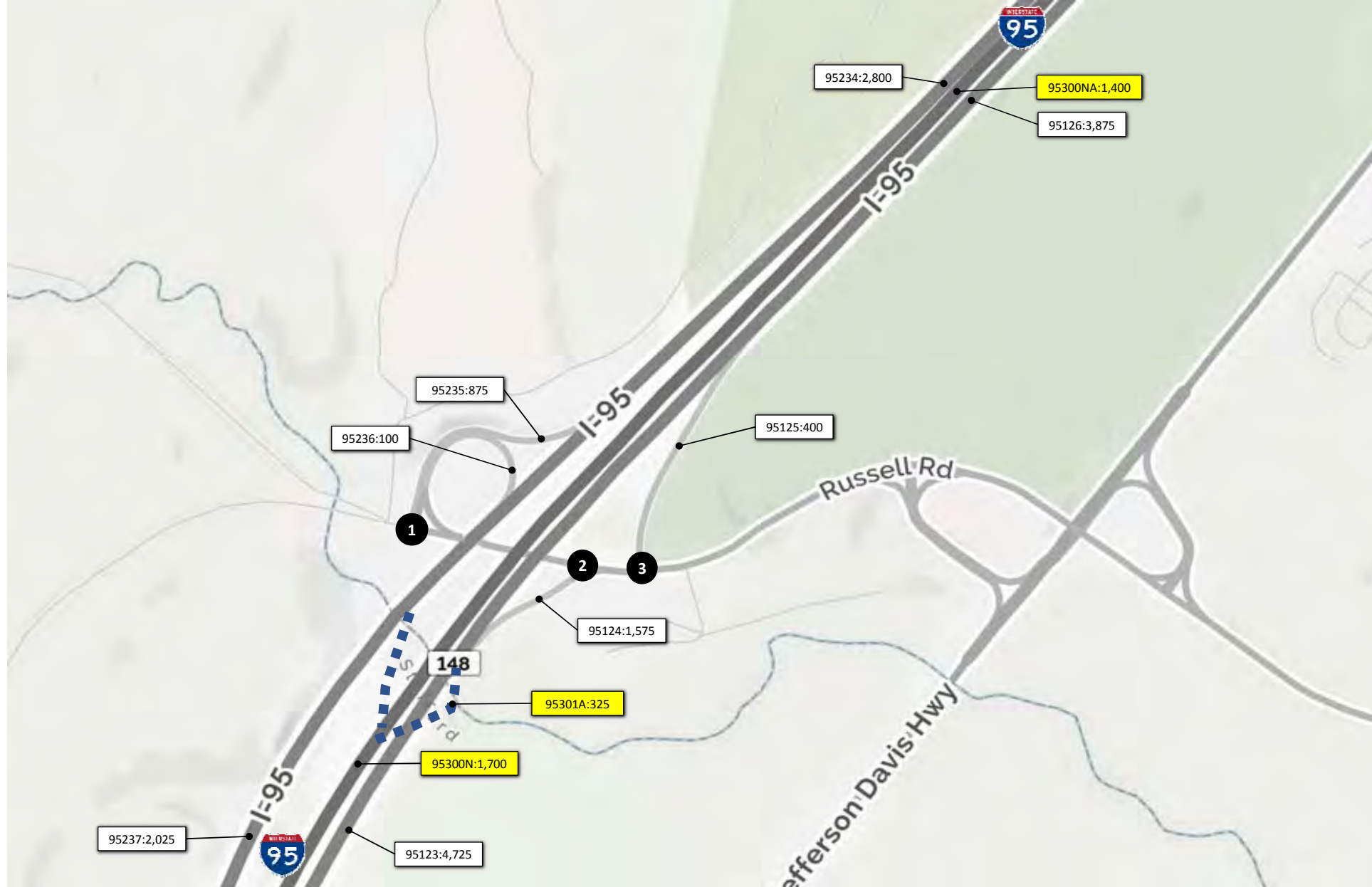
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 7-8 AM Volumes
 I-95 Corridor

August 2017

Figure E.3-6



1	Russell Road		I-95 SB On/Off-Ramps		
	R	L		R	T
	480	389		79	
	221			322	
				1483	
2	Russell Road		I-95 NB Off-Ramp		
		T		L	R
	610		189	1,388	
				1486	
3	Russell Road		I-95 NB On-Ramp		
		L		R	T
	295			104	
	1,702			212	
				1488	

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2022 Build
Weekday 7-8 AM Volumes
I-95 Corridor

August 2017

Figure E.3-7



1	53	4	238	Carl D Silver Pkwy			R	493
							T	1,334
	R	T	L				L	13
	VA-3 (Plank Road)			L	T	R		
	194							
	2,322							
	3			Mall Court			L	1303
							T	4
							R	3
								9
2	14	3	4	Ramseur St			R	13
							T	1,299
	R	T	L				L	158
VA-3 (Plank Road)			L	T	R			
	58							
	1,707							
	236			Gateway Blvd			L	1304
							T	255
							R	158
								177

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure E.4-1



1			S Gateway Dr		
28	20	246	R		277
			T		2,034
R	T	L	L		236
US-17 (Warrenton Rd)			L	T	R
40					
1,866		T	53	26	369
23		R			
1333					

2			Parking Lot		
3	1	3	R		1
			T		1,673
R	T	L	L		17
US-17 BUS (Warrenton Rd)			L	T	R
3					
1,371		T	85	1	21
119		R			
1338					

Legend

xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension

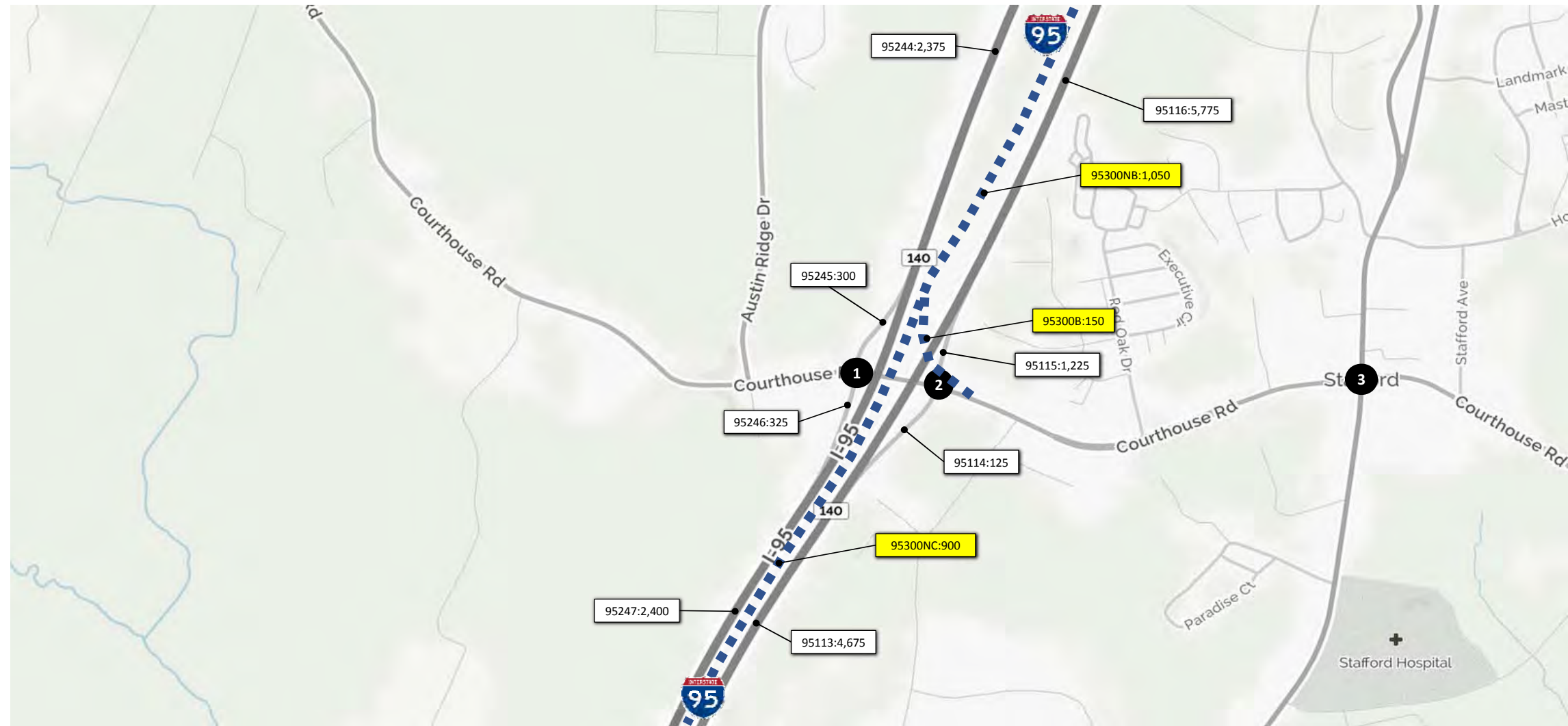
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure E.4-2



1							
	62	0	247				
R	T	L		T		537	
Courthouse Road (630)				L		72	
	820		T				
	261		R				
							1403

2							
				R		666	
				T		522	
Courthouse Road (630)				L	T	R	
	566		L				
	501		T	87	0	50	
							1406

3							
	328	396	160				
R	T	L					
Courthouse Road (630)				L	T	R	
	91		L				
	89		T	419	282	27	
	370		R				1408

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure E.4-4



1	0		I-95 SB Off-Ramp		T		695
	R		Garrisonville Road (610)				
2,050		T		I-95 SB On-Ramp		1431	
304		R					
2	45		1,252		US-1		
	R		T		I-95 NB On-Ramp		
				US-1		L	T
						287	2,641
						1434	
3	515		644		92		US-1
	R		T		L		R
						T	305
						L	114
						L	67
						Garrisonville Road (610)	
1,452		L		US-1		L	T
95		T				131	1,171
298		R				3	
						1438	
4	944		65		US-1		R
	T		L				L
						T	108
						T	10
						I-95 NB Off-Ramp	
593		L		US-1		T	R
153		T				603	21
44		R				1432	

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure E.4-5



Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

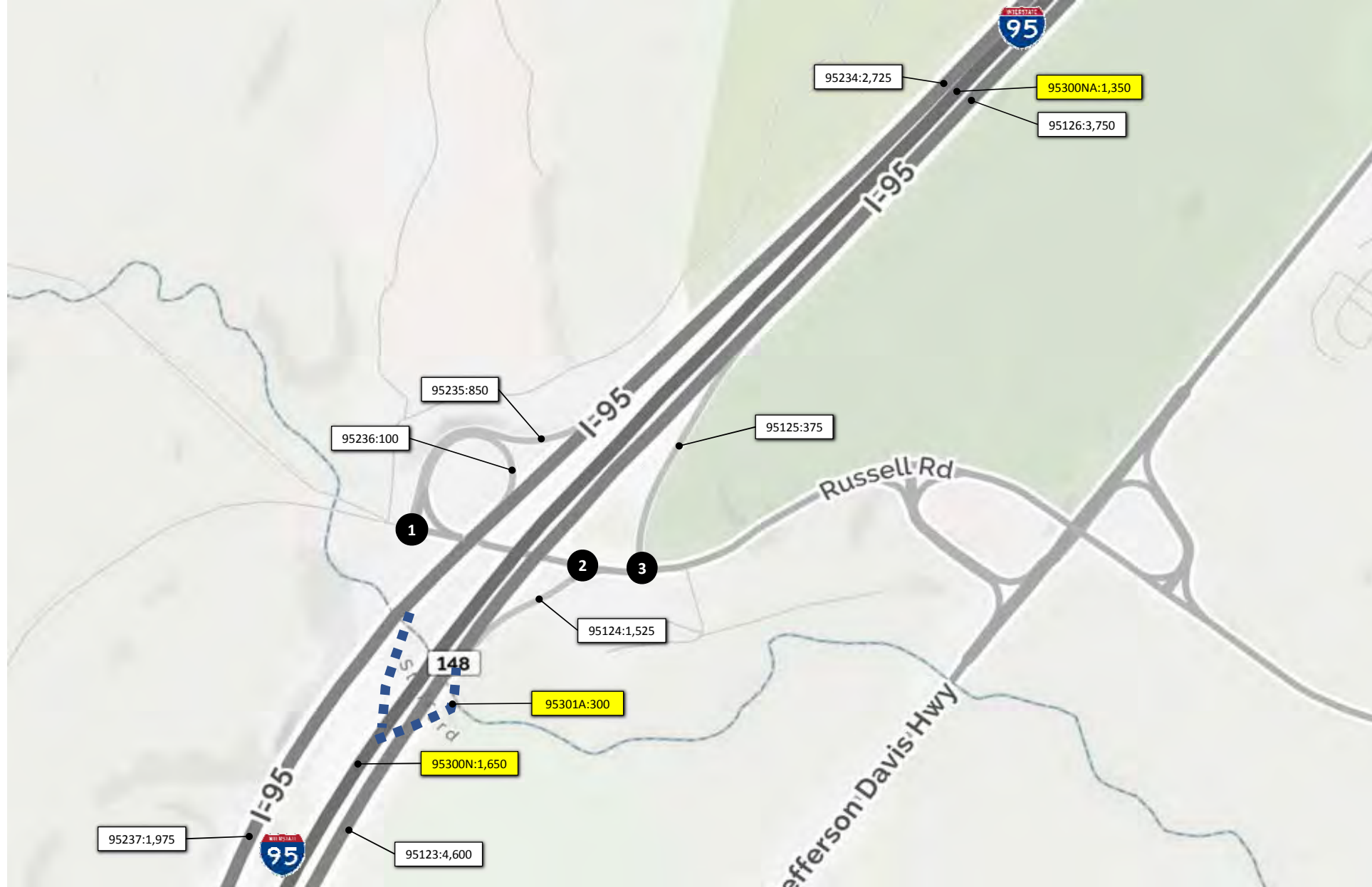
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 8-9 AM Volumes
 I-95 Corridor

August 2017

Figure E.4-6



1	466	378	I-95 SB On/Off-Ramps		77
	R	L	R	T	312
Russell Road					
	14	L			
	214	T			1483
2				T	206
	Russell Road				
	592	T	L	R	
			183	1,347	1486
3			I-95 NB Off-Ramp		
			R	T	101
Russell Road					
	287	L			
	1,652	T			1488

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study

2022 Build
Weekday 8-9 AM Volumes
I-95 Corridor

August 2017

Figure E.4-7



1	250	6	643	Carl D Silver Pkwy	R	1,018
					T	2,231
	R	T	L	Mall Court	L	15
	VA-3 (Plank Road)				L	T
	203	L		L	9	6
	1,508	T				6
	5	R				
						1303
2	13	4	12	Ramsour St	R	4
					T	1,529
	R	T	L	Gateway Blvd	L	185
	VA-3 (Plank Road)				L	T
	28	L		L	246	3
	1,697	T				236
	391	R				
						1304

Legend

xx,xxx Weekday Hourly Volume

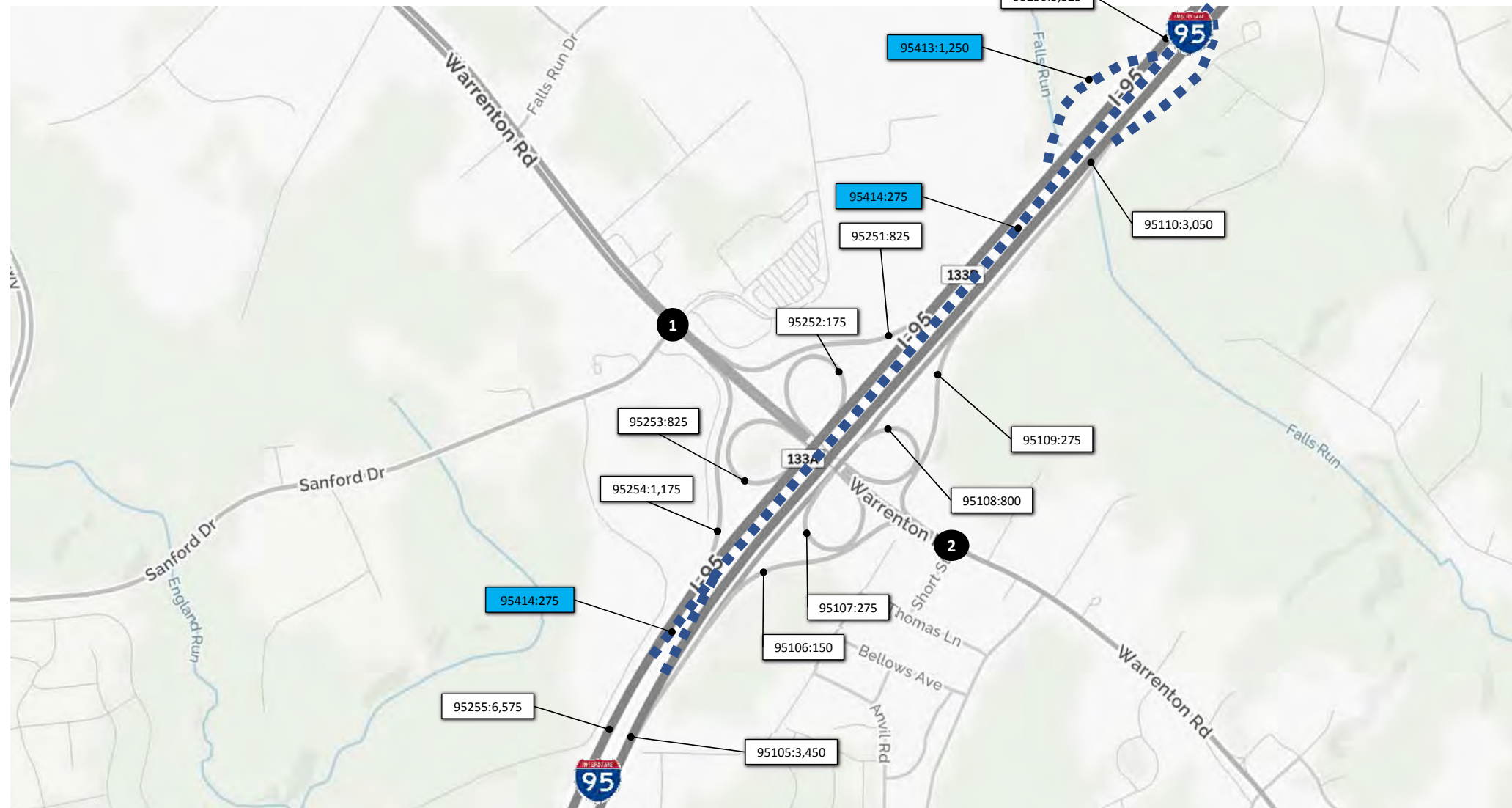
NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure E.5-1



1	55	71	281	S Gateway Dr			R	265
							T	1,849
	R	T	L				L	377
	US-17 (Warrenton Rd)			L	T	R		
	49		L					
	1,977		T	34	6		321	
	48		R	Sanford Dr				1333
2	5	0	4	Parking Lot			R	3
							T	1,195
	R	T	L				L	18
	US-17 BUS (Warrenton Rd)			L	T	R		
		5		L				
		1,956		T	111	3		28
	135		R	Short St				1338

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure E.5-2



Location	Direction	Volume	
1	I-95 SB Off-Ramp	R	62
		T	4
		L	534
	I-95 SB On-Ramp	T	319
		L	137
		T	157
Total: 1363			
2	I-95 NB On-Ramp	R	275
		T	225
		L	106
	I-95 NB Off-Ramp	L	231
		T	1
		R	8
Total: 1366			
3	US-1	R	101
		L	668
		T	409
	US-1	L	768
		T	857
		R	90
Total: 1368			

Legend

xx,xxx Weekday Hourly Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 3-4 PM Volumes
I-95 Corridor

August 2017

Figure E.5-3



1							
	423	0	399				
R		T		L			
Courthouse Road (630)				I-95 SB Off-Ramp		T 450	
	432		T			L	55
	148		R				
				I-95 SB On-Ramp			
							1403

2							
						R	412
						T	446
Courthouse Road (630)				I-95 NB On-Ramp		L	
	30		L			T	
	801		T			R	235
				I-95 NB Off-Ramp			
							1406

3							
	295	497	95			R	103
						T	275
Courthouse Road (630)				US-1		L	30
	159		L			T	
	502		T			R	18
	375		R				
				US-1			
							1408

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure E.5-4



1	129	I-95 SB Off-Ramp		T	1,625
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	1,565	T			
	1,195	R			
				1431	
2	40	2,755	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
				192	1,521
				1434	
3	1,365	1,178	212	US-1	
	R	T	L	R	156
Garrisonville Road (610)				T	215
				L	102
498				L	
188				T	574
441				R	1,059
					116
				1438	
4	1,591		130	US-1	
	T		L	R	86
I-95 NB Off-Ramp				L	12
307				T	
18				R	1,356
17					35
				1432	

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure E.5-5



Legend

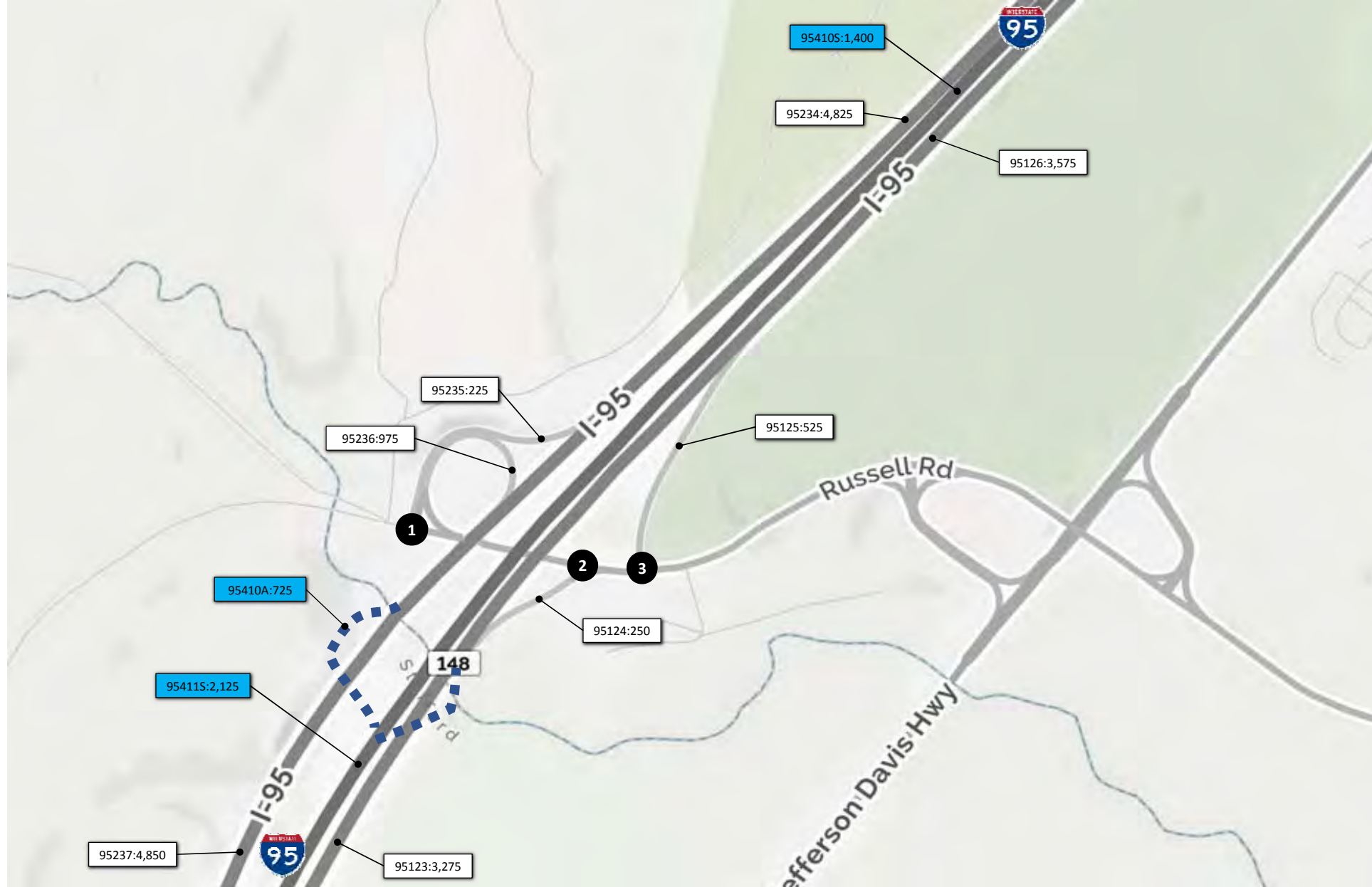
xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure E.5-6



1	57	170	I-95 SB On/Off-Ramps		848
	R	L	R	T	274
Russell Road					
	137	L			
	486	T			1483
2			I-95 NB Off-Ramp		1,107
			L	R	
Russell Road					
	657	T	14	228	
					1486
3			I-95 NB On-Ramp		172
			R	T	1,107
Russell Road					
	360	L			
	525	T			1488

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 3-4 PM Volumes
 I-95 Corridor

August 2017

Figure E.5-7



1			Carl D Silver Pkwy			
250	6	643		R	1,018	
			T	2,231		
R	T	L	L	15		
VA-3 (Plank Road)			L	T	R	
203		L				
1,508		T	9	6	6	
5		R				
			Mail Court		1303	

2			Ramsour St			
13	4	12		R	4	
			T	1,529		
R	T	L	L	185		
VA-3 (Plank Road)			L	T	R	
28		L				
1,697		T	246	3	236	
391		R				
			Gateway Blvd		1304	

Legend

xx,xxx Weekday Hourly Volume

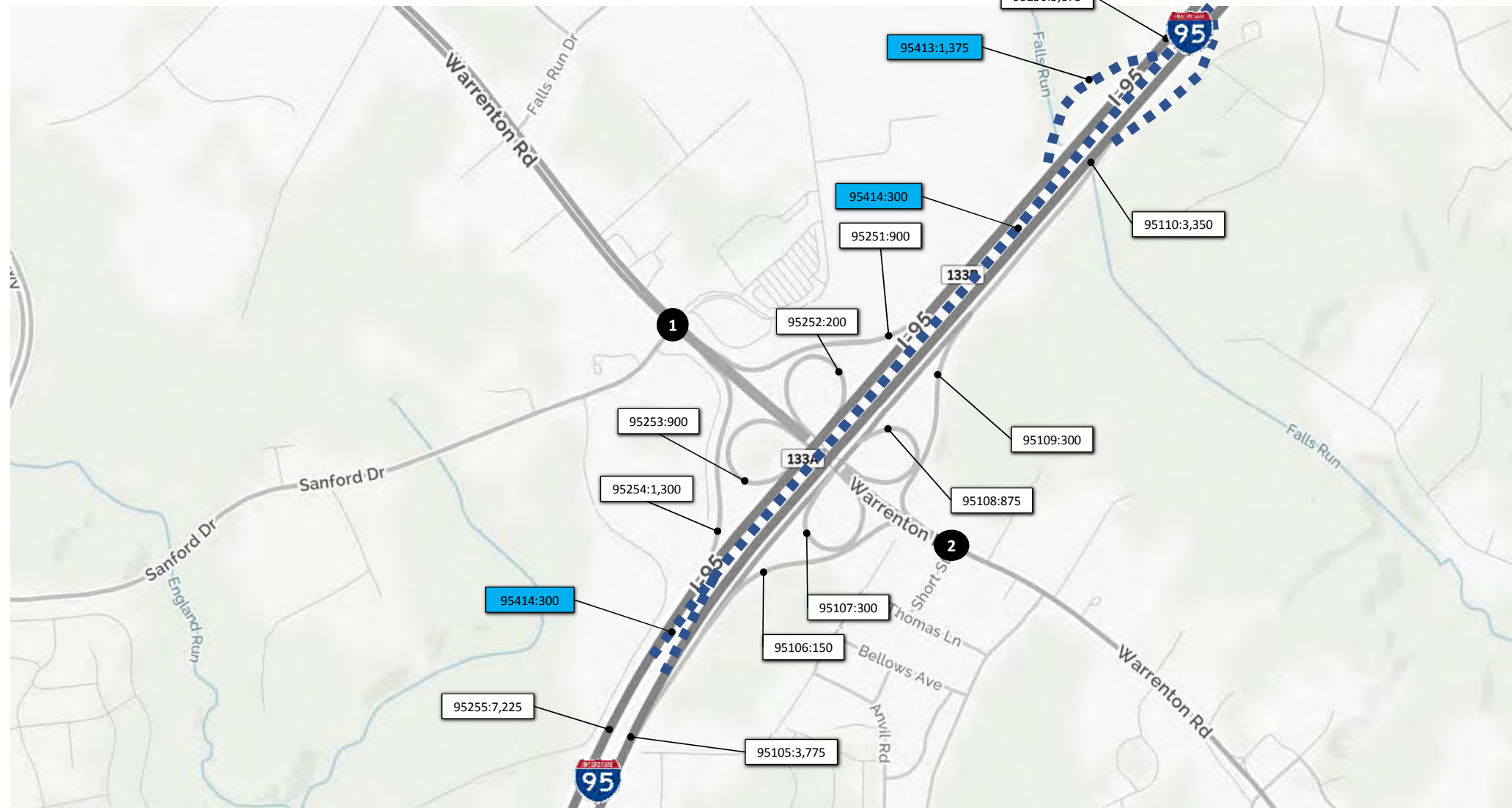
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure E.6-1



1			S Gateway Dr		
55	71	281	R		265
			T		1,849
R	T	L	L		377
US-17 (Warrenton Rd)			L	T	R
49					
1,977			34	6	321
48					
1333					

2			Parking Lot		
5	0	4	R		3
			T		1,195
R	T	L	L		18
US-17 BUS (Warrenton Rd)			L	T	R
5					
1,956			111	3	28
135					
1338					

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure E.6-2



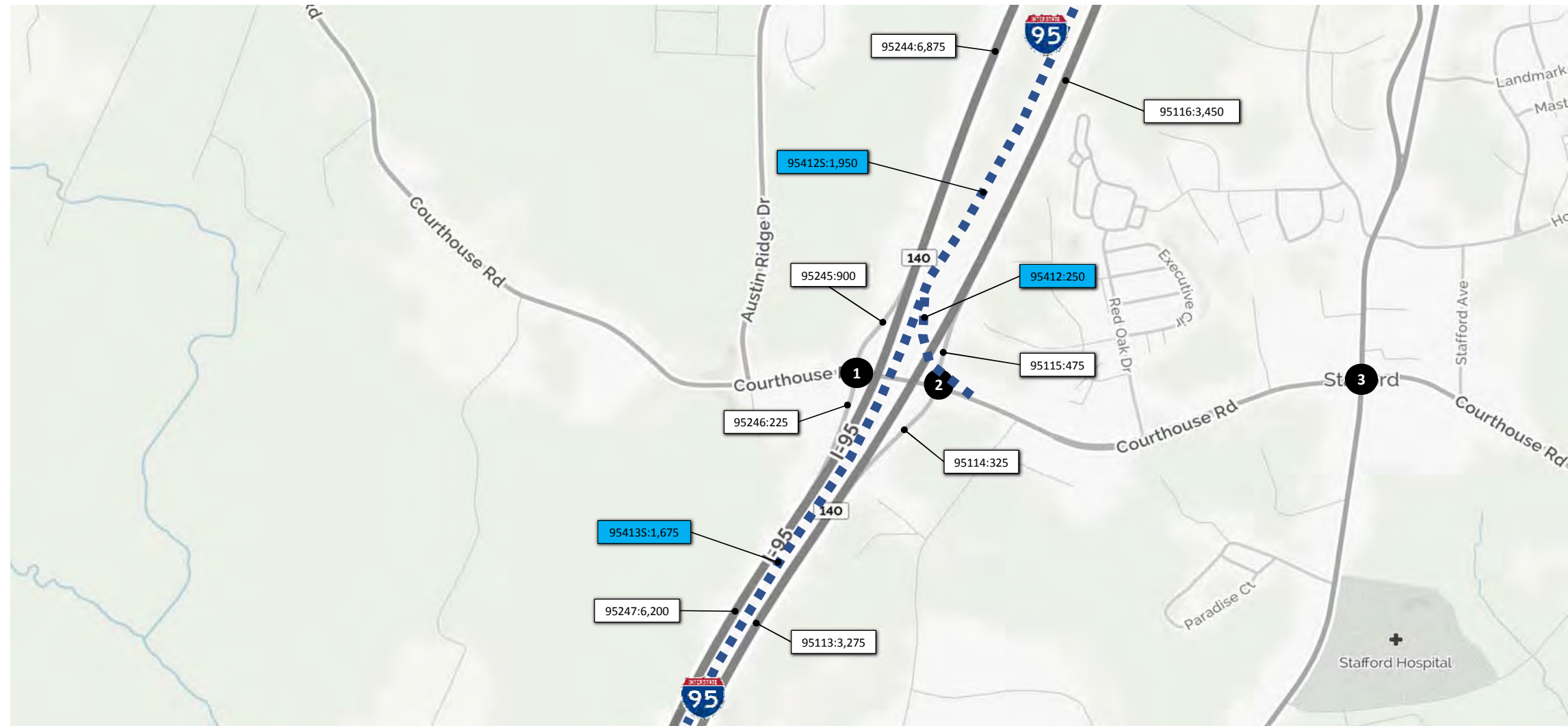
Location	Direction	Volume
1: Centreport Pkwy	Ramp to I-95 SB	534
	T	319
	L	137
	I-95 SB On-Ramp	157
2: Centreport Pkwy	L	8
	T	663
	Ramp to I-95 NB	231
	I-95 NB Off-Ramp	106
3: Centreport Pkwy	Ramp to I-95	857
	T	90
	L	668
	I-95 NB On-Ramp	409

Legend

- xx,xxx Weekday Hourly Volume
- Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor
 August 2017 Figure E.6-3



1					
423	0	399			
R	T	L	I-95 SB Off-Ramp	T	450
Courthouse Road (630)			I-95 SB On-Ramp	L	55
432		T			
148		R			
1403					

2						
				R	412	
				T	446	
Courthouse Road (630)			I-95 NB On-Ramp	L	T	R
30		L				
801		T		59	0	235
1406						

3						
295	497	95				
R	T	L	US-1	R	103	
Courthouse Road (630)			US-1	T	275	
159		L		L	30	
502		T		L	T	R
375		R		288	192	18
1408						

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure E.6-4



1	129	I-95 SB Off-Ramp		T	1,625
	R				
Garrisonville Road (610)		1,565	T		
		1,195	R		
		I-95 SB On-Ramp		1431	
2	40	2,755	US-1		
	R	T			
I-95 NB On-Ramp				L	T
				192	1,521
				1434	
3	1,365	1,178	212	US-1	
	R	T	L	R	156
Garrisonville Road (610)				T	215
				L	102
				US-1	
				L	T
				574	1,059
				R	116
				1438	
4	1,591		130	US-1	
	T		L	R	86
I-95 NB Off-Ramp				L	12
				T	R
				307	L
				18	T
				17	R
				1,356	
				35	
				1432	

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure E.6-5



Legend

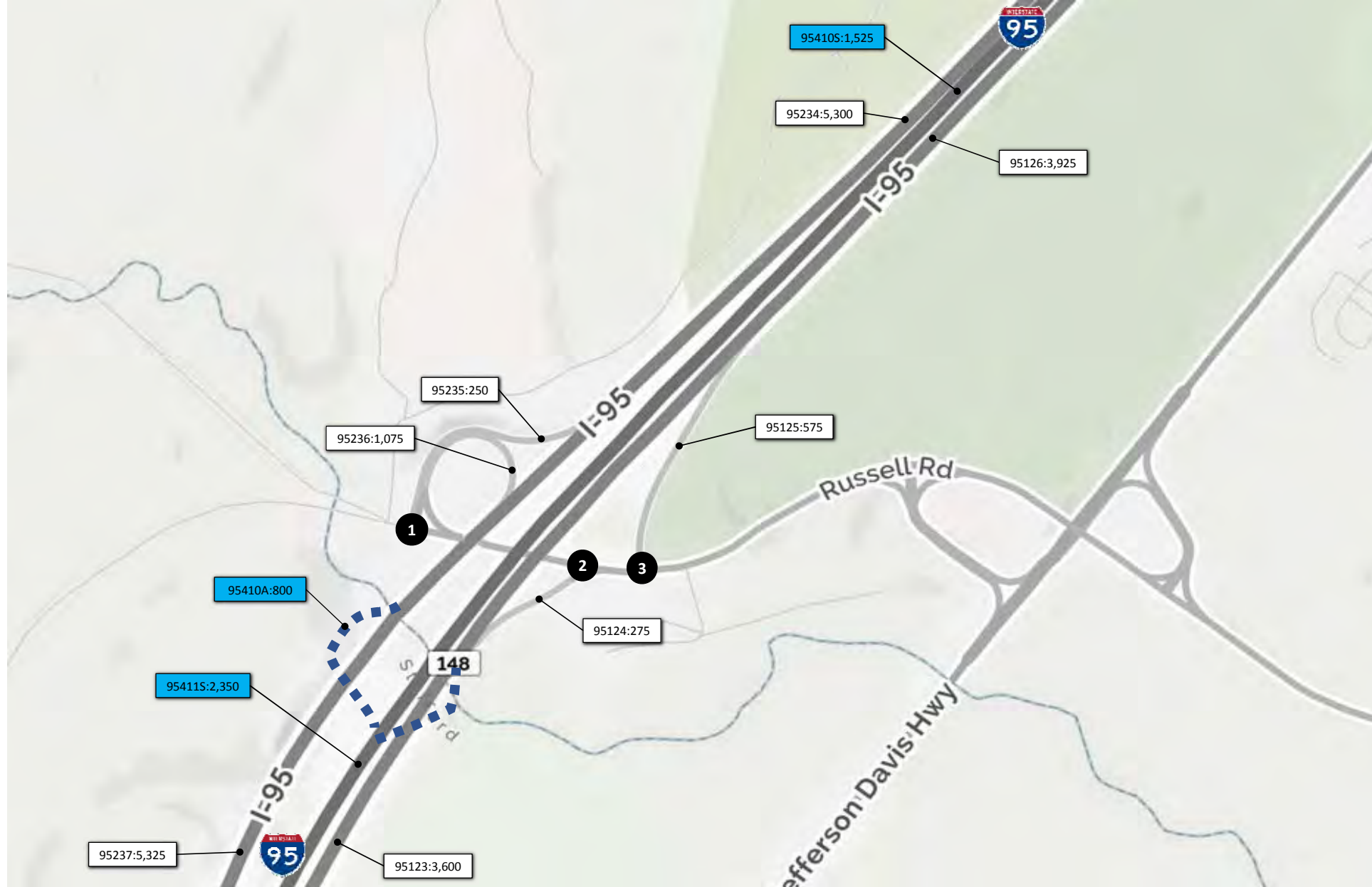
xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure E.6-6



1	57	170	I-95 SB On/Off-Ramps		848
	R	L	R	T	274
Russell Road					
	137	L			
	486	T			1483
2			I-95 NB Off-Ramp		1,107
			L	R	
Russell Road					
	657	T	14	228	
					1486
3			I-95 NB On-Ramp		172
			R	T	1,107
Russell Road					
	360	L			
	525	T			1488

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

2022 Build
 Weekday 4-5 PM Volumes
 I-95 Corridor

August 2017

Figure E.6-7



1	284	7	728	Carl D Silver Pkwy			R	1,154	
							T	2,528	
							L	18	
	VA-3 (Plank Road)						L	T	R
	230			Mall Court					
	1,710						L	T	R
	6						10	7	7
									1303
2	15	4	13	Ramsour St			R	4	
							T	1,733	
							L	209	
	VA-3 (Plank Road)						L	T	R
	32			Gateway Blvd					
	1,923						L	T	R
	443						279	3	268
									1304

Legend

xx,xxx Weekday Hourly Volume

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017

Figure E.7-1



1			S Gateway Dr		
63	80	319	R		300
			T		2,096
R	T	L	L		427
US-17 (Warrenton Rd)			L	T	R
56		L			
2,240		T	38	7	364
54		R			
			1333		

2			Parking Lot		
6	0	4	R		3
			T		1,354
R	T	L	L		20
US-17 BUS (Warrenton Rd)			L	T	R
6		L			
2,217		T	126	3	32
154		R			
			1338		

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure E.7-2



Location	Direction	Volume
1	I-95 SB Off-Ramp	605
	Centreport Pkwy	70 (R), 4 (T), 155 (L)
	I-95 SB On-Ramp	178
	Totals	1363
2	I-95 NB On-Ramp	311
	Centreport Pkwy	9 (L), 752 (T), 120 (R)
	I-95 NB Off-Ramp	254
	Totals	1366
3	I-95 SB	114
	Centreport Pkwy	971 (T), 102 (L), 758 (R)
	I-95 NB	464
	Totals	1368

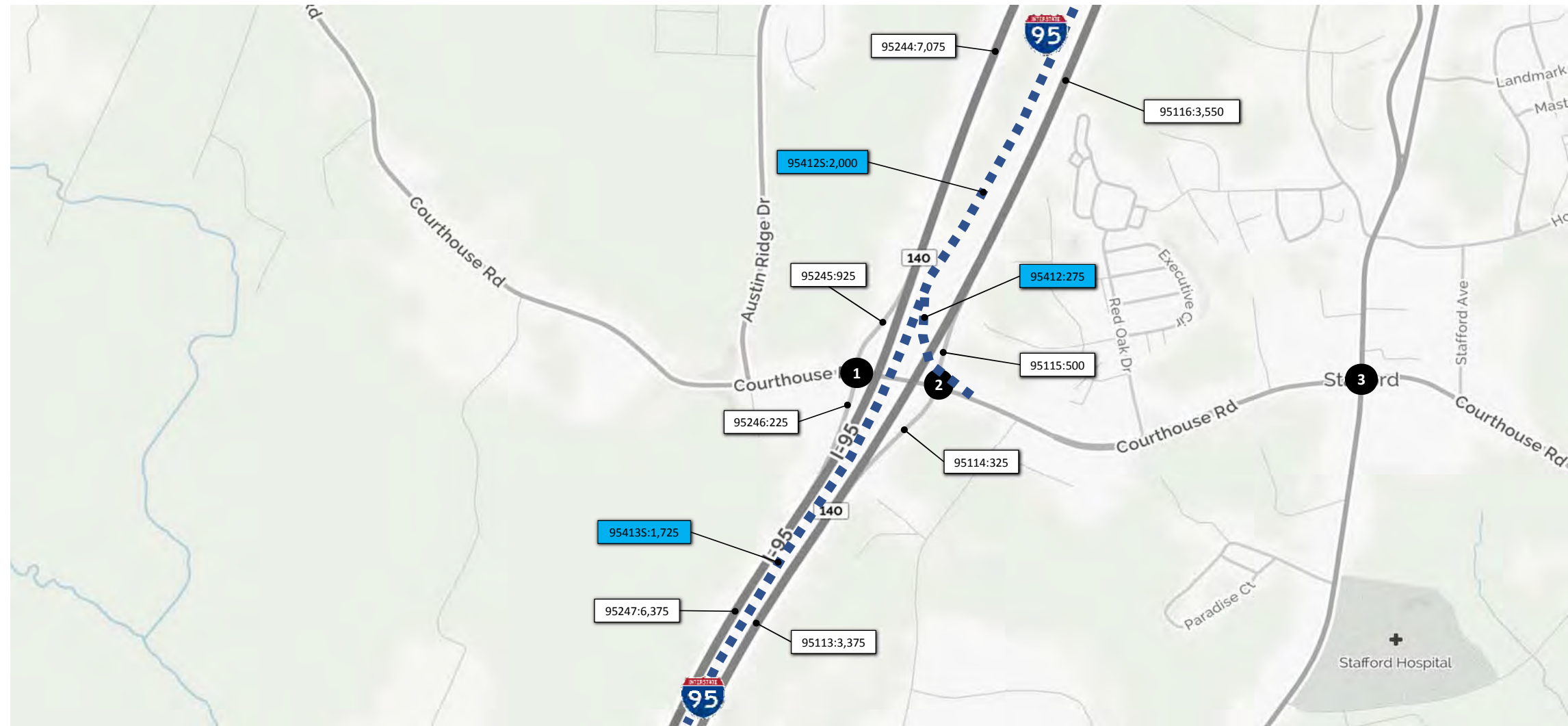
Legend
 xx,xxx Weekday Hourly Volume
 ■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure E.7-3



1					
480	0	452			
R	T	L	I-95 SB Off-Ramp	T	510
Courthouse Road (630)			I-95 SB On-Ramp	L	63
490		T			
168		R			
1403					

2						
				R	466	
				T	506	
Courthouse Road (630)			I-95 NB On-Ramp	L	T	R
34		L				
908		T		67	0	266
1406						

3						
335	563	108	US-1	R	117	
				T	311	
Courthouse Road (630)			US-1	L	34	
180		L				
569		T		326	218	20
426		R				
1408						

Legend

xx,xxx Weekday Hourly Volume

■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 5-6 PM Volumes
I-95 Corridor

August 2017 Figure E.7-4



1	146	I-95 SB Off-Ramp		T	1,841
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	1,774	T			
	1,354	R			
1431					
2	45	3,122	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
				218	1,724
1434					
3	1,547	1,335	240	US-1	
	R	T	L	R	177
Garrisonville Road (610)		US-1		T	244
	564	L			
	214	T	L	T	116
	500	R	651	1,201	132
1438					
4		1,803	148	US-1	
		T	L	R	98
I-95 NB Off-Ramp		US-1		L	13
	348	L			
	20	T			1,537
	19	R			39
1432					

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure E.7-5



Legend

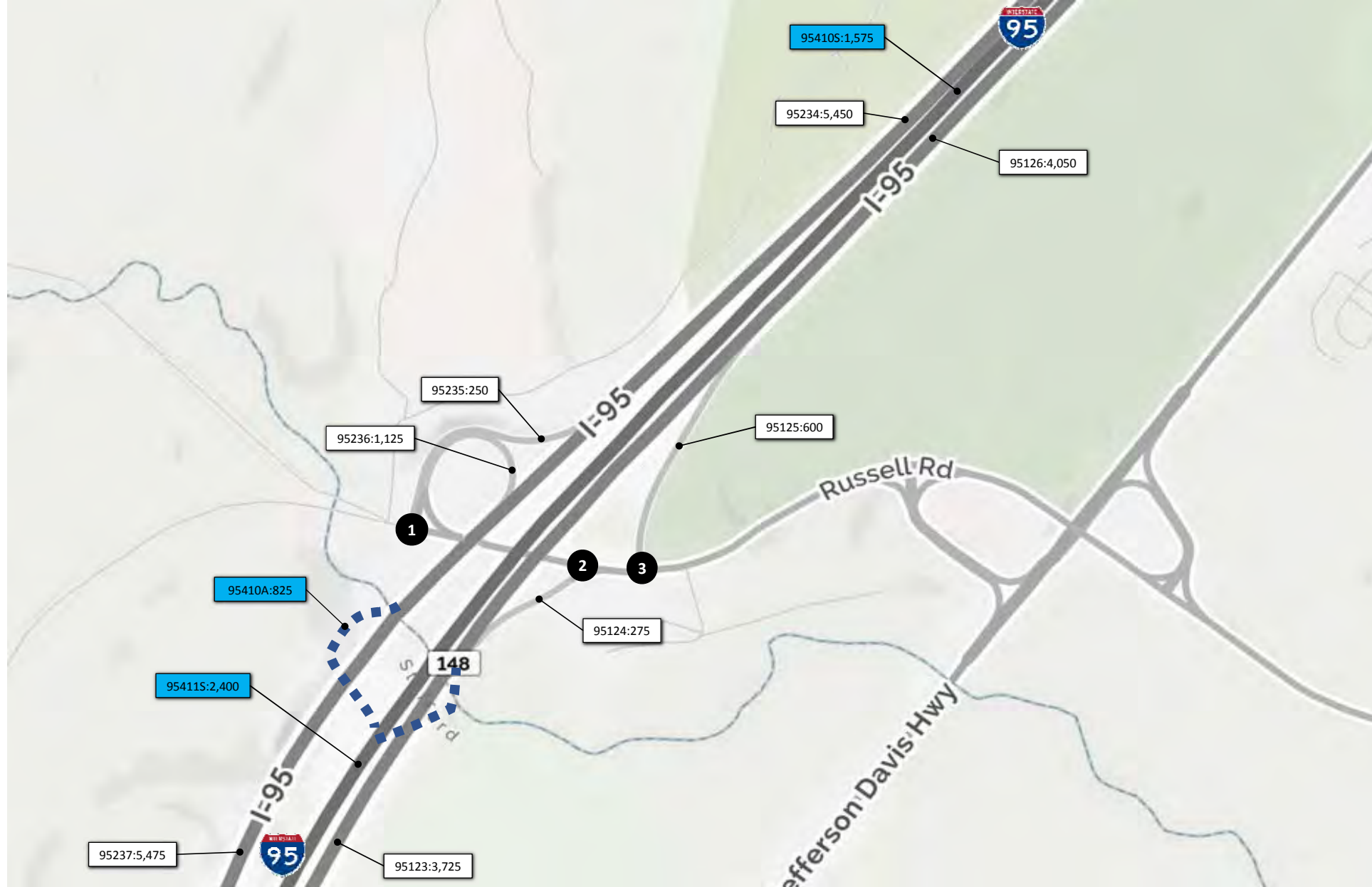
xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 5-6 PM Volumes
 I-95 Corridor

August 2017

Figure E.7-6



1	64	193	I-95 SB On/Off-Ramps		961
	R	L	R	T	310
Russell Road					
	155	L			
	551	T			1483
2			I-95 NB Off-Ramp		1,255
			L	R	
Russell Road					
	744	T	16	259	
					1486
3			I-95 NB On-Ramp		194
			R	T	1,255
Russell Road					
	408	L			
	595	T			1488

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

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

August 2017

Figure E.7-7



1	275	7	707	Carl D Silver Pkwy			R	1,120
							T	2,454
	R	T	L				L	17
	VA-3 (Plank Road)						L	T
223		L	Mall Court					
1,659		T				10	7	7
6		R						
								1303
2	14	4	13	Ramseur St			R	4
							T	1,682
	R	T	L	Gateway Blvd			L	203
	VA-3 (Plank Road)						L	T
31		L						
1,866		T				271	3	260
430		R						
								1304

Legend

xx,xxx Weekday Hourly Volume

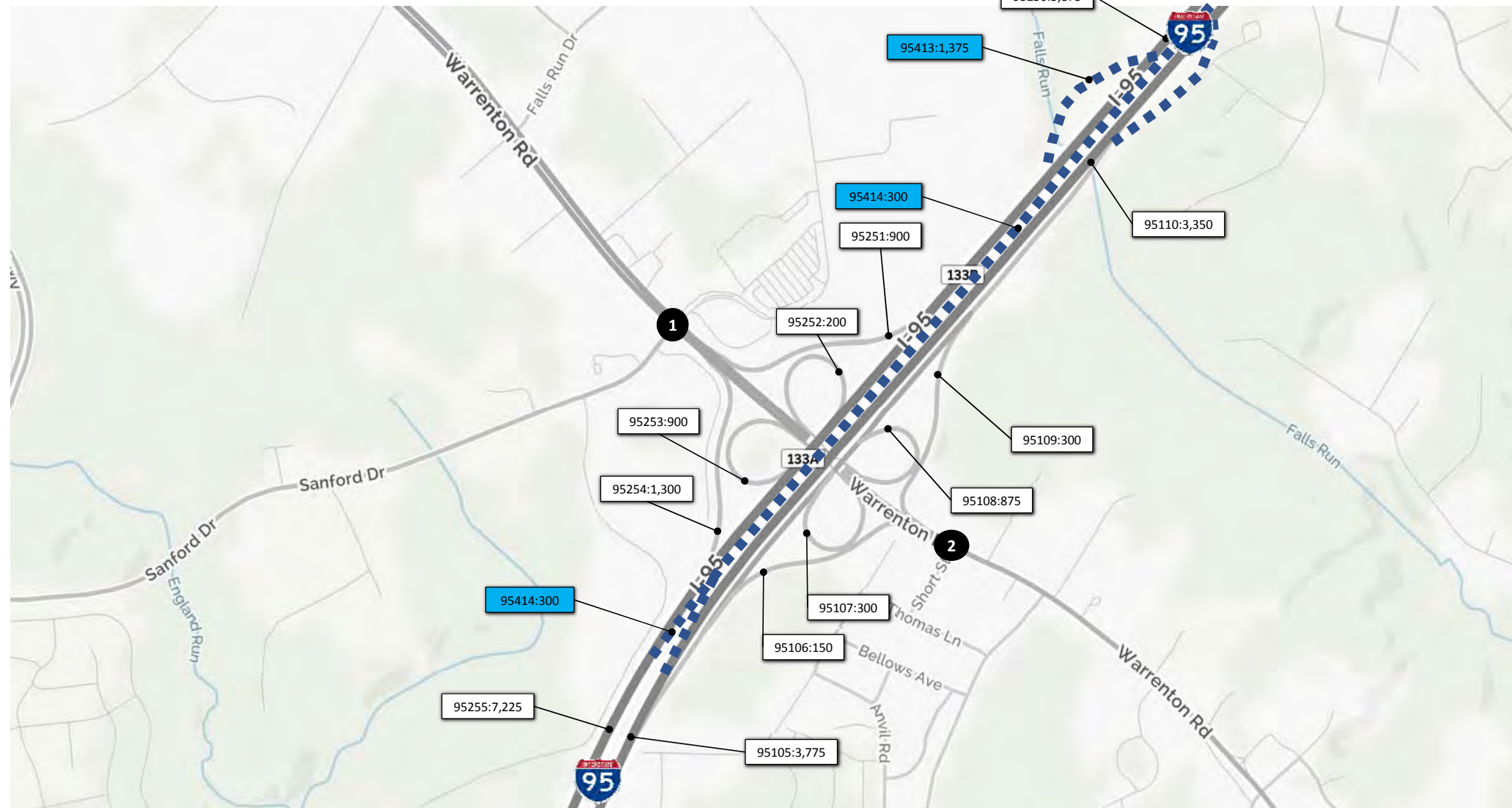
NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure E.8-1



1			S Gateway Dr		
61	78	309	R		291
			T		2,034
R	T	L	L		414
US-17 (Warrenton Rd)			L	T	R
54		L			
2,174		T	37	7	353
53		R			
1333					

2			Parking Lot		
6	0	4	R		3
			T		1,314
R	T	L	L		20
US-17 BUS (Warrenton Rd)			L	T	R
6		L			
2,152		T	122	3	31
149		R			
1338					

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure E.8-2



Location	Direction	Volume
Point 1	I-95 SB Off-Ramp	588
	Centreport Pkwy	68 (R), 4 (T), 150 (L)
	I-95 SB On-Ramp	173
	Totals	1363
Point 2	I-95 NB On-Ramp	302
	Centreport Pkwy	9 (L), 730 (T), 116 (R)
	I-95 NB Off-Ramp	254
	Totals	1366
Point 3	I-95 US-1	942
	Centreport Pkwy	99 (R), 735 (T), 450 (L)
	I-95 US-1	111
	Totals	1368

Legend

xx,xxx Weekday Hourly Volume

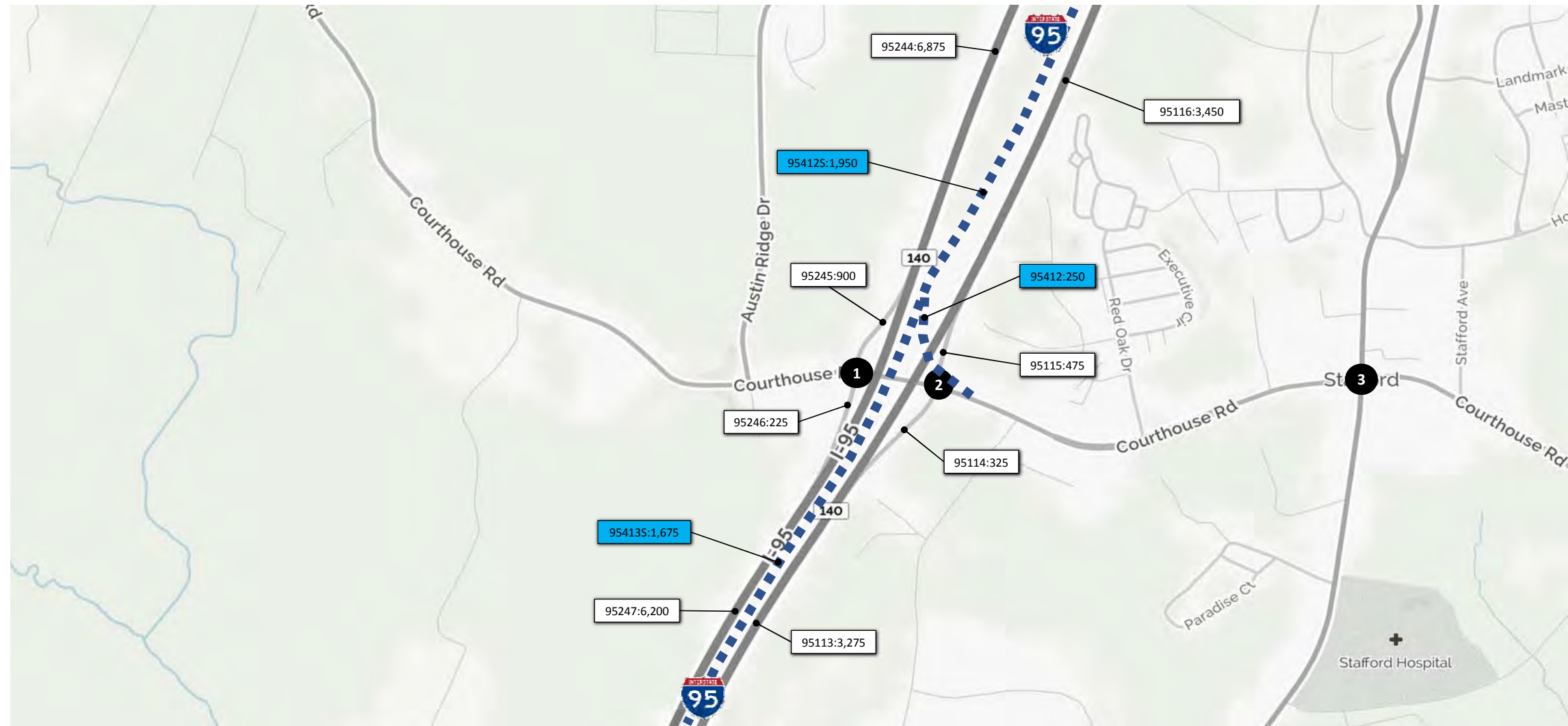
■ ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
Extension Study
2022 Build
Weekday 6-7 PM Volumes
I-95 Corridor

August 2017

Figure E.8-3



1					
	466	0	439		
R		T		L	
Courthouse Road (630)					
	475		T		
	163		R		
					1403

2					
			R		453
			T		491
Courthouse Road (630)					
	33	L			
	881		T		
					1406

3					
	325	546	105		
R		T		L	
Courthouse Road (630)					
	175		L		
	552		T		
	413		R		
					1408

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Extension

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure E.8-4



1	141	I-95 SB Off-Ramp		T	1,787
	R				
Garrisonville Road (610)		I-95 SB On-Ramp			
	1,722	T			
	1,314	R			
1431					
2	44	3,030	US-1		
	R	T			
I-95 NB On-Ramp		US-1		L	T
			211	1,673	
1434					
3	1,502	1,296	233	US-1	
	R	T	L	R	172
Garrisonville Road (610)		US-1		T	237
	548	L	L	T	112
	207	T	632	1,165	128
	485	R			
1438					
4		1,750	143	US-1	
		T	L	R	95
I-95 NB Off-Ramp		US-1		L	13
	338	L			
	20	T			
	18	R	1,492		38
1432					

Legend

- xx,xxx Weekday Hourly Volume
- ■ ■ ■ ■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure E.8-5



Legend

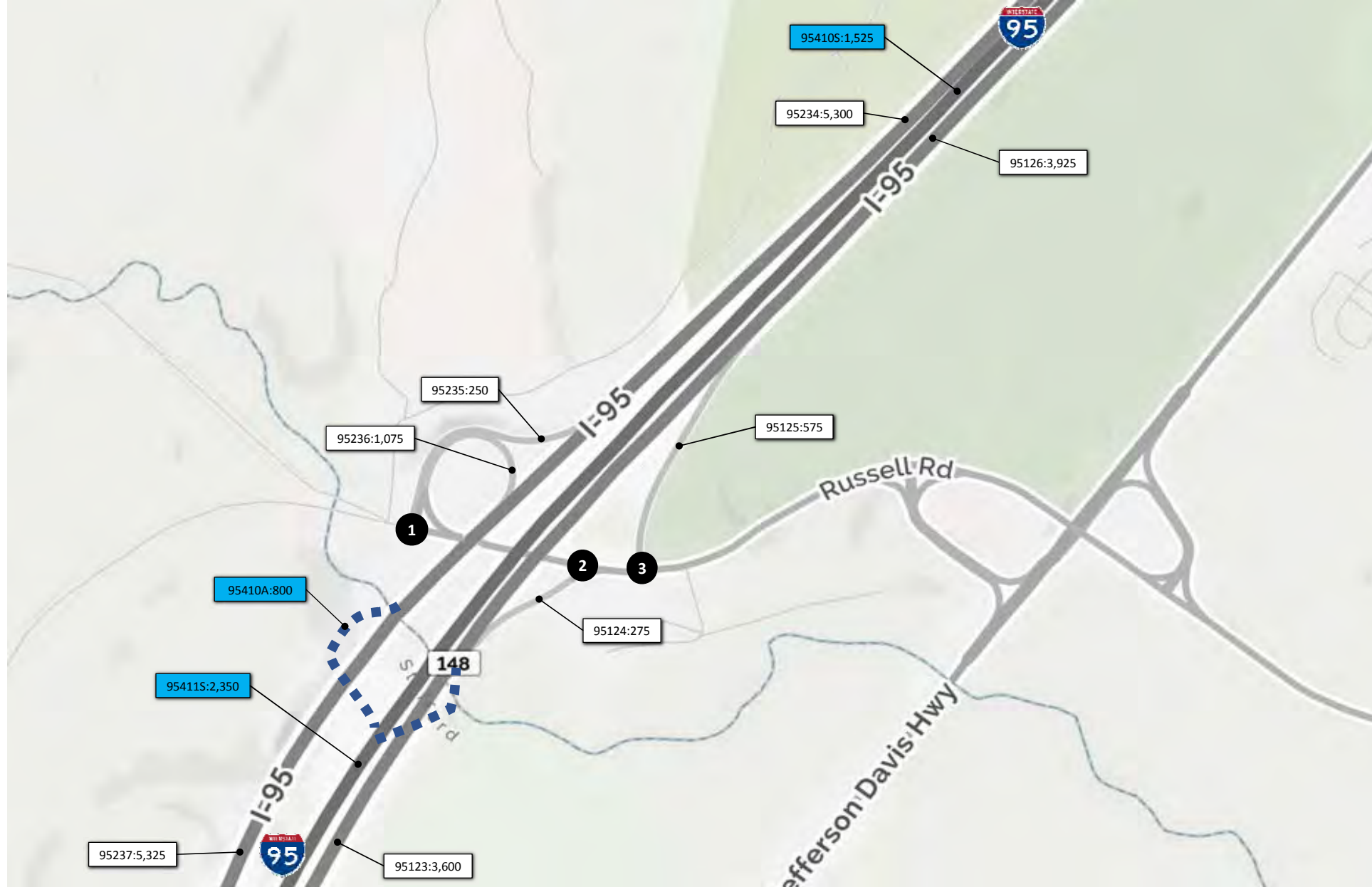
xx,xxx Weekday Hourly Volume
 ■■■■■ Proposed Express Lane Extension



I-95 Express Lanes Fredericksburg
 Extension Study
 2022 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure E.8-6



1	62	187	I-95 SB On/Off-Ramps	R	933
	R	L		T	301
Russell Road					
	150	L			
	535	T			1483
2			I-95 NB Off-Ramp	T	1,218
	Russell Road				
	722	T		L	R
				16	251
					1486
3			I-95 NB On-Ramp	R	189
				T	1,218
Russell Road					
	396	L			
	578	T			1488

Legend

xx,xxx Weekday Hourly Volume
 ■ ■ ■ ■ ■ Proposed Express Lane Access Point

NOT TO SCALE



I-95 Express Lanes Fredericksburg
 Extension Study

2022 Build
 Weekday 6-7 PM Volumes
 I-95 Corridor

August 2017

Figure E.8-7