

MEMORANDUM

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Date: May 6, 2019

Subject: Route 28 and Dulles Toll Road/Dulles Greenway Study
Traffic Volume Forecast for 2025 No-Build Conditions

Introduction

This memorandum summarizes the development of balanced traffic volumes for year 2025 No-Build conditions as part of the Route 28 and Dulles Toll Road/Dulles Greenway Interchange Study. This includes traffic volumes for a supplemental No-Build scenario in which the Route 267 eastbound mainline has been widened between the Dulles Greenway main toll plaza and the off-ramp to Centreville Road (referred to henceforth as the “No-Build with EB Widening” scenario). The balanced freeway mainline and ramp volumes are provided alongside the corresponding balanced arterial turning movement volumes at study intersections.

Background Transportation Network Improvements

The following background transportation network improvements are assumed to be in place by 2025 and are coded into the MWCOG travel demand model (and will be incorporated into the 2025 No-Build VISSIM models):

- Innovation Center Station is one of three new Metrorail stations in Fairfax County on the Silver Line that will open when Phase 2 construction is complete. Three additional stations will be located west of the project study area in Loudoun County, including one at Dulles International Airport.
- Frying Pan Road will be widened to two lanes in each direction east of Sunrise Valley Drive. A new four-lane roadway, River Birch Drive, will tie into the north side of Frying Pan Road between Route 28 and Sunrise Valley Drive, providing additional access to points north of Frying Pan Road.

- Route 606 (Old Ox Road) was widened to two lanes in each direction between Loudoun County Parkway and its current four-lane section east of the Dulles Greenway (Route 267) (Loudoun County). This project was completed in 2018.
- Shellhorn Road and Sterling Boulevard will provide a new four-lane roadway between Loudoun County Parkway and Route 28 (Loudoun County). This represents an extension of Sterling Boulevard west of Pacific Boulevard connecting to Loudoun County Parkway, providing additional east-west capacity in the region north of the Dulles Greenway and south of Waxpool Road.
- Prentice Drive will be extended as a four-lane roadway from Lockridge Road to Shellhorn Road (Loudoun County). This also represents additional east-west capacity in the region north of the Dulles Greenway and south of Waxpool Road.
- Westwind Drive will be a new four-lane roadway between Route 606 and Loudoun County Parkway south/west of the Dulles Greenway (Loudoun County)
- Davis Drive will be a new four-lane roadway between Route 606 and its current terminus south of Sterling Boulevard. The extension of Davis Drive south of Route 606 to Innovation Avenue is not assumed under 2025 conditions.
- All facilities in Northern Virginia restricted to HOV-2 will convert to be restricted to HOV-3 by 2020, including the left-most lane along the Dulles Toll Road eastbound during the AM peak and westbound during the PM peak.

Additionally, in the 2025 No-Build with Eastbound Widening scenario, it is assumed that the Dulles Greenway/Dulles Toll Road is widened to include an additional eastbound lane between the Dulles Greenway main toll plaza and the off-ramp to Centreville Road.

Forecasting Methodology

Traffic volumes were forecasted using the outputs from the MWCOG travel demand model. The Existing Conditions (2018) model scenario was calibrated and approved by VDOT in a memorandum dated April 9th, 2019. Relevant edits to the model network and scripts documented in that memorandum were carried forward to a 2025 No-Build model scenario, which also includes the background network improvements listed above. Outputs from these models were used to estimate growth on study area roadway links using *NCHRP 765* industry-standard practices. Traffic volumes for the 2025 No-Build and 2025 No-Build with EB Widening scenarios were both grown from the Existing 2018 balanced volumes, which were provided to VDOT in a memorandum dated March 19th, 2019. Note that for trips on facilities leading into or out of Dulles Airport, volumes were grown using a constant 1.5 percent linear growth rate based upon discussions with VDOT and MWAA.

The *NCHRP 765* iterative-directional method was used to convert forecasted link volumes into forecasted turning movement volumes for arterial intersections. Volumes were then balanced using the methodology described in the following section.

Balancing Methodology

Future forecast volumes were balanced in a consistent manner as existing volumes were. The objective of volume balancing is to remove discrepancies between separate count locations to define

consistent volumes throughout the network for traffic simulation purposes. The criterion for this procedure is to minimize the adjustments to the original volumes, specifically minimizing the number of vehicles removed from the network. The daily, AM peak hour, and PM peak hour traffic volumes for this project were balanced in the sequence shown in **Figure 1**. Trips into and out of Dulles Airport, including the DIAAH and several ramps to and from the Dulles Greenway, Dulles Toll Road, and Route 28, were grown at a constant 1.5 percent annual linear growth rate and then held fixed during volume balancing. Due to the significant interface between these movements and the Dulles Greenway/Dulles Toll Road mainlines, the rest of Route 267 was balanced next, followed by Route 28. Finally, the study intersections were balanced holding the corresponding balanced ramp volumes from Route 28 and Route 267 constant. The balanced volumes were then rounded to the nearest five vehicles.

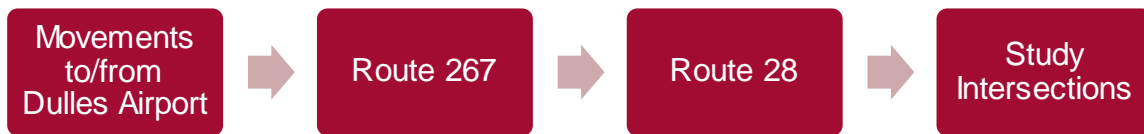


Figure 1 Volume Balancing Sequence

The intersection volumes were balanced by holding constant the approach and departure volumes controlled by freeway on- and off-ramps. The intersection turning movements at these locations were adjusted in accordance with the turning movement proportions defined by the original intersection counts. This procedure was repeated for the AM peak hour and PM peak hour and again for the 2025 No-Build with EB Widening scenario.

2025 No-Build Traffic Volume Forecasts

The following section and attachments show the forecast volumes for the 2025 No-Build scenario and 2025 No-Build with EB Widening scenario. A series of attachments is provided summarizing the daily, AM peak hour, and PM peak hour volumes along the freeway segments and at arterial intersections. The following sub-section highlights notable observations from these forecasts, including trends such as volume decreases or significant volume increases.

FORECAST VOLUME OBSERVATIONS

The following observations should be noted in the 2025 No-Build forecasts:

Existing vs. 2025 No-Build

- At the east end of the study area along the Dulles Toll Road, freeway volumes show minimal growth from Existing Conditions, and in some cases, slight negative growth. This is due to both the new Metrorail Silver Line service and the HOV-2 to HOV-3 changeover, which results in a significant decrease in traffic utilizing the HOV lane along the Dulles Toll Road. At the daily level and during the AM peak hour, traffic volumes along the eastbound Dulles Toll Road decrease slightly from Existing; during the PM peak hour, traffic volumes along the westbound Dulles Toll Road decrease slightly from existing. These decreases most notably

affect the east-facing ramps at the Centreville Road interchange and volume to and from the south along Route 28.

- At the west end of the study area along the Dulles Greenway, freeway volumes show modest growth from Existing Conditions (0.5 to 1 percent linear yearly growth).
- At the south end of the study area along Route 28, freeway volumes show yearly growth rates between 1 and 2 percent, with more substantial increases in volumes to and from Frying Pan Road (which can be attributed to the widening of Frying Pan Road as well as the HOV-3 restriction along the parallel Dulles Toll Road).
- At the north end of the study area along Route 28, freeway volumes show minimal to negative growth from Existing Conditions. This is attributable to the new connections provided by Shellhorn Road/Sterling Boulevard extended (west of Pacific Boulevard) and Prentice Drive. These facilities provide east-west connections north of the Dulles Greenway and south of Waxpool Road that do not exist today. These connections result in a decrease in demand for trips using Waxpool Road to and from Route 28; however, these new connections result in a significant increase in trips using Sterling Boulevard to access Route 28 from the west, as well as an increase in through trips along Sterling Boulevard. The net result is volume growth along Route 28 south of Sterling Boulevard.
 - This new connection results in a decrease in trips along the ramp from Sterling Boulevard westbound to Route 28 northbound and along the ramp from Route 28 southbound to Sterling Boulevard eastbound, as some of these trips can now be served by traveling through along Sterling Boulevard to and from the west.

2025 No-Build vs. 2025 No-Build with EB Widening

- The most notable changes in volumes between these two scenarios is along eastbound Dulles Greenway/Dulles Toll Road, as expected. Volumes are approximately 1,200 vpd higher in the weave section just west of Centreville Road (2.2 percent increase from 2025 No-Build). During the AM peak hour, volumes in this segment are approximately 340 vph higher (5.3 percent increase). There is minimal change in PM peak hour volume in this segment.
- Most of the increase in volume along the Dulles Toll Road eastbound is coming from the Dulles Greenway eastbound, with some volume from Route 28 northbound. Traffic from Route 28 southbound to the Dulles Toll Road eastbound does not change as significantly.
- The rest of the freeway network beyond the Dulles Toll Road/Dulles Greenway eastbound sees fairly minimal changes in volume as a result of the eastbound widening. The most noticeable change is a reduction in eastbound through trips of 125 vph (4.4 percent reduction from No-Build) along Frying Pan Road during the AM peak hour.

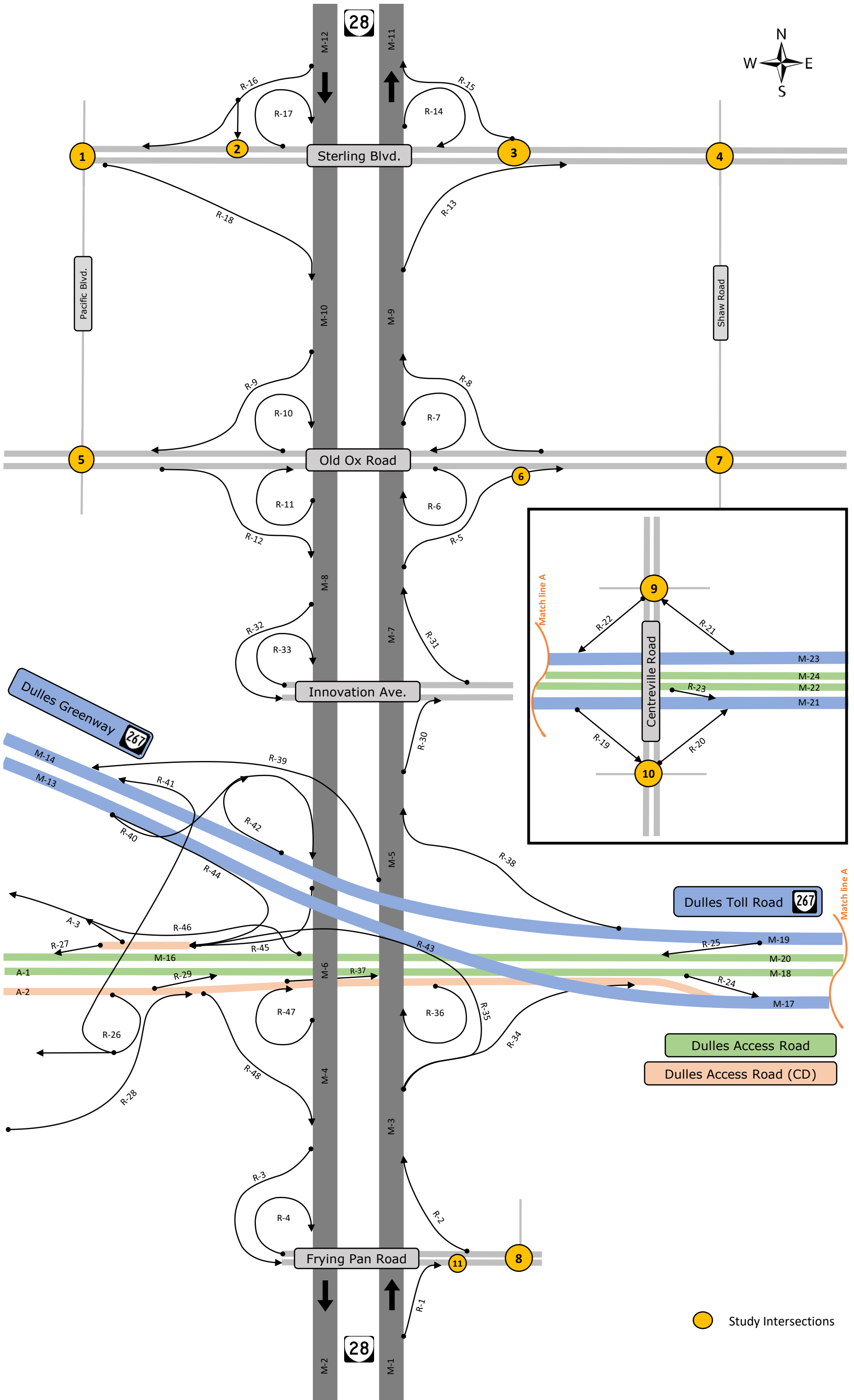
SUMMARY OF ATTACHMENTS

The PDF attachment to this memorandum contains the following graphics:

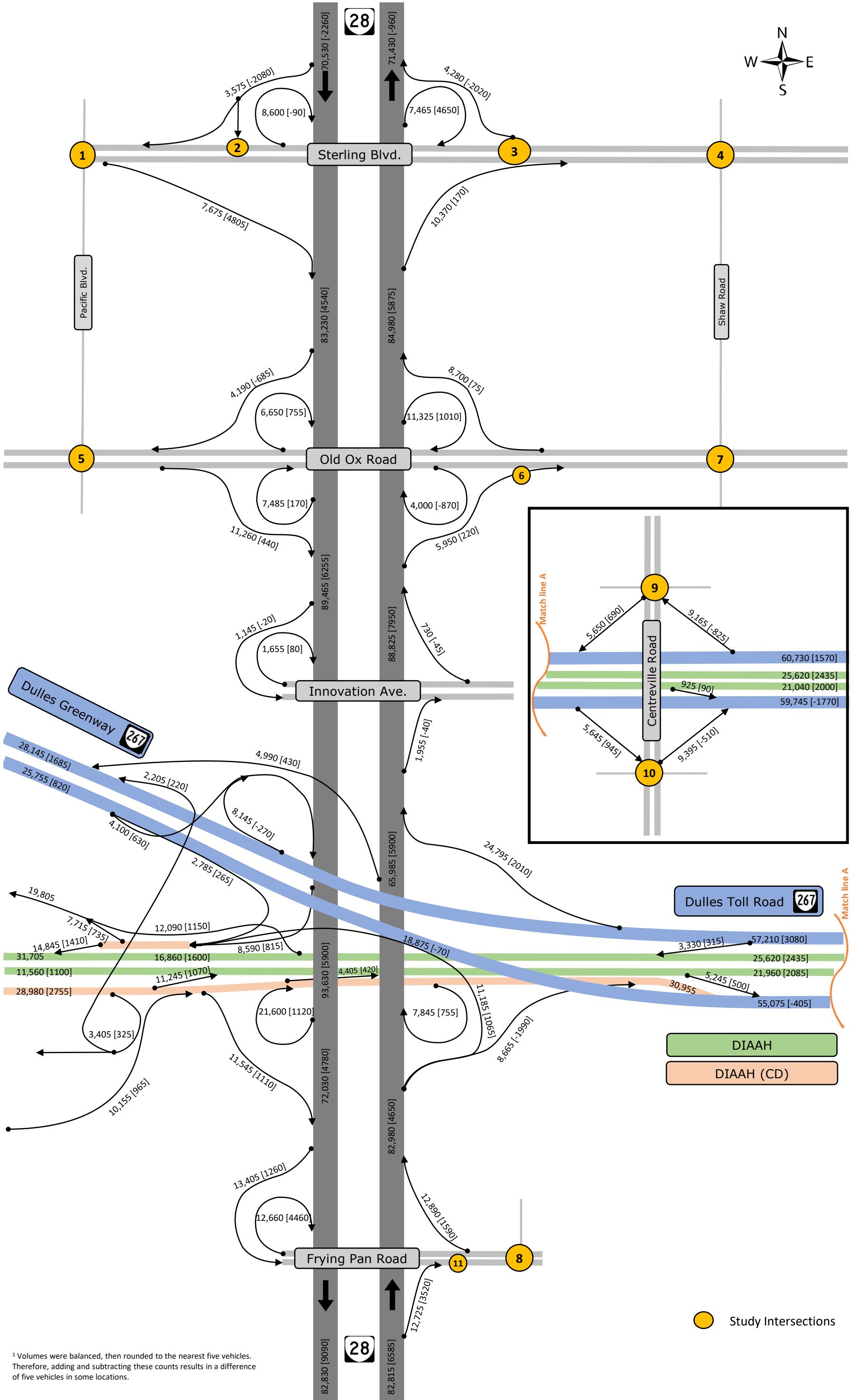
- Page 1 | Location key of count locations.
- Page 2 | Visual representation of balanced freeway and ramp volumes for 2025 No-Build Average Daily Traffic.

- Pages 3&4 | Tabular representation of balanced mainline and ramp volumes for 2025 No-Build Average Daily Traffic, highlighting the numeric and percent difference in vehicles from 2018 Existing volumes.
- Page 5 | Visual representation of balanced freeway and ramp volumes for 2025 No-Build AM peak hour.
- Pages 6&7 | Tabular representation of balanced mainline and ramp volumes for 2025 No-Build AM peak hour, highlighting the numeric and percent difference in vehicles from 2018 Existing volumes.
- Page 8 | Visual representation of balanced freeway and ramp volumes for 2025 No-Build PM peak hour.
- Pages 9&10 | Tabular representation of balanced mainline and ramp volumes for 2025 No-Build PM peak hour, highlighting the numeric and percent difference in vehicles from 2018 Existing volumes.
- Page 11 | Visual representation of balanced intersection turning movement counts for 2025 No-Build AM and PM peak hours.
- Page 12 | Tabular representation of existing (2018) and forecasted turning movement counts for 2025 No-Build AM and PM peak hours.
- Page 13 | Visual representation of balanced freeway and ramp volumes for 2025 No-Build with EB Widening Average Daily Traffic.
- Pages 14&15 | Tabular representation of balanced mainline and ramp volumes for 2025 No-Build with EB Widening Average Daily Traffic, highlighting the numeric and percent difference in vehicles from 2018 Existing volumes.
- Page 16 | Visual representation of balanced freeway and ramp volumes for 2025 No-Build with EB Widening AM peak hour.
- Pages 17&18 | Tabular representation of balanced mainline and ramp volumes for 2025 No-Build with EB Widening AM peak hour, highlighting the numeric and percent difference in vehicles from 2018 Existing volumes.
- Page 19 | Visual representation of balanced freeway and ramp volumes for 2025 No-Build with EB Widening PM peak hour.
- Pages 20&21 | Tabular representation of balanced mainline and ramp volumes for 2025 No-Build with EB Widening PM peak hour, highlighting the numeric and percent difference in vehicles from 2018 Existing volumes.
- Page 22 | Visual representation of balanced intersection turning movement counts for 2025 No-Build with EB Widening AM and PM peak hours.
- Page 23 | Tabular representation of existing (2018) and forecasted turning movement counts for 2025 No-Build with EB Widening AM and PM peak hours.

These attachments are best printed in 11x17.



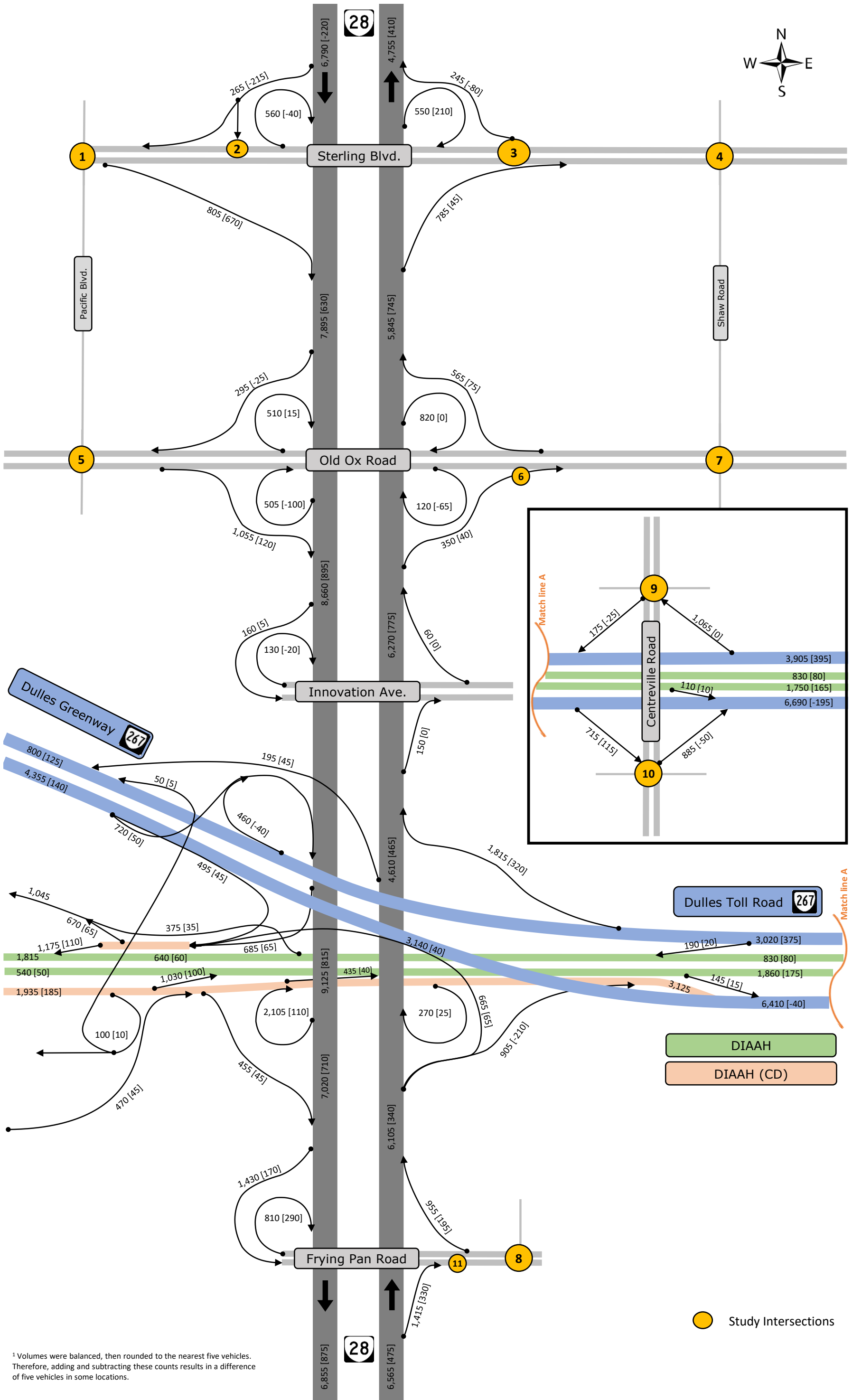
● Study Intersections



¹ Volumes were balanced, then rounded to the nearest five vehicles. Therefore, adding and subtracting these counts results in a difference of five vehicles in some locations.

			% Difference Less Than	0.0%	
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			% Difference Greater Than	10.0%	
Average Daily Traffic: 2018 Existing Volumes & 2025 No Build Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	76,230	82,815	6,585	8.3%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	73,740	82,830	9,090	11.6%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	78,330	82,980	4,650	5.8%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	67,250	72,030	4,780	6.9%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	60,085	65,985	5,900	9.4%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	87,730	93,630	5,900	6.5%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	80,875	88,825	7,950	9.4%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	83,210	89,465	6,255	7.2%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	79,105	84,980	5,875	7.2%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	78,690	83,230	4,540	5.6%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	72,390	71,430	-960	-1.3%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	72,790	70,530	-2,260	-3.2%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	24,935	25,755	820	3.2%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	26,460	28,145	1,685	6.2%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	36,685	40,540	3,855	10.0%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	15,260	16,860	1,600	10.0%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	55,480	55,075	-405	-0.7%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	19,875	21,960	2,085	10.0%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	54,130	57,210	3,080	5.5%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	23,185	25,620	2,435	10.0%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	61,515	59,745	-1,770	-2.9%
Eastbound DIAAH Mainline east of Centreville Road	M-22	19,040	21,040	2,000	10.0%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	59,160	60,730	1,570	2.6%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	23,185	25,620	2,435	10.0%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	9,205	12,725	3,520	32.1%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	11,300	12,890	1,590	13.1%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	12,145	13,405	1,260	9.9%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	8,200	12,660	4,460	42.8%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	5,730	5,950	220	3.8%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	4,870	4,000	-870	-19.6%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	10,315	11,325	1,010	9.3%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	8,625	8,700	75	0.9%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	4,875	4,190	-685	-15.1%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	5,895	6,650	755	12.0%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	7,315	7,485	170	2.3%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	10,820	11,260	440	4.0%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	10,200	10,370	170	1.7%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	2,815	7,465	4,650	90.5%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	6,300	4,280	-2,020	-38.2%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	5,655	3,575	-2,080	-45.1%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	8,690	8,600	-90	-1.0%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	2,870	7,675	4,805	91.1%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	4,700	5,645	945	18.3%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	9,905	9,395	-510	-5.3%

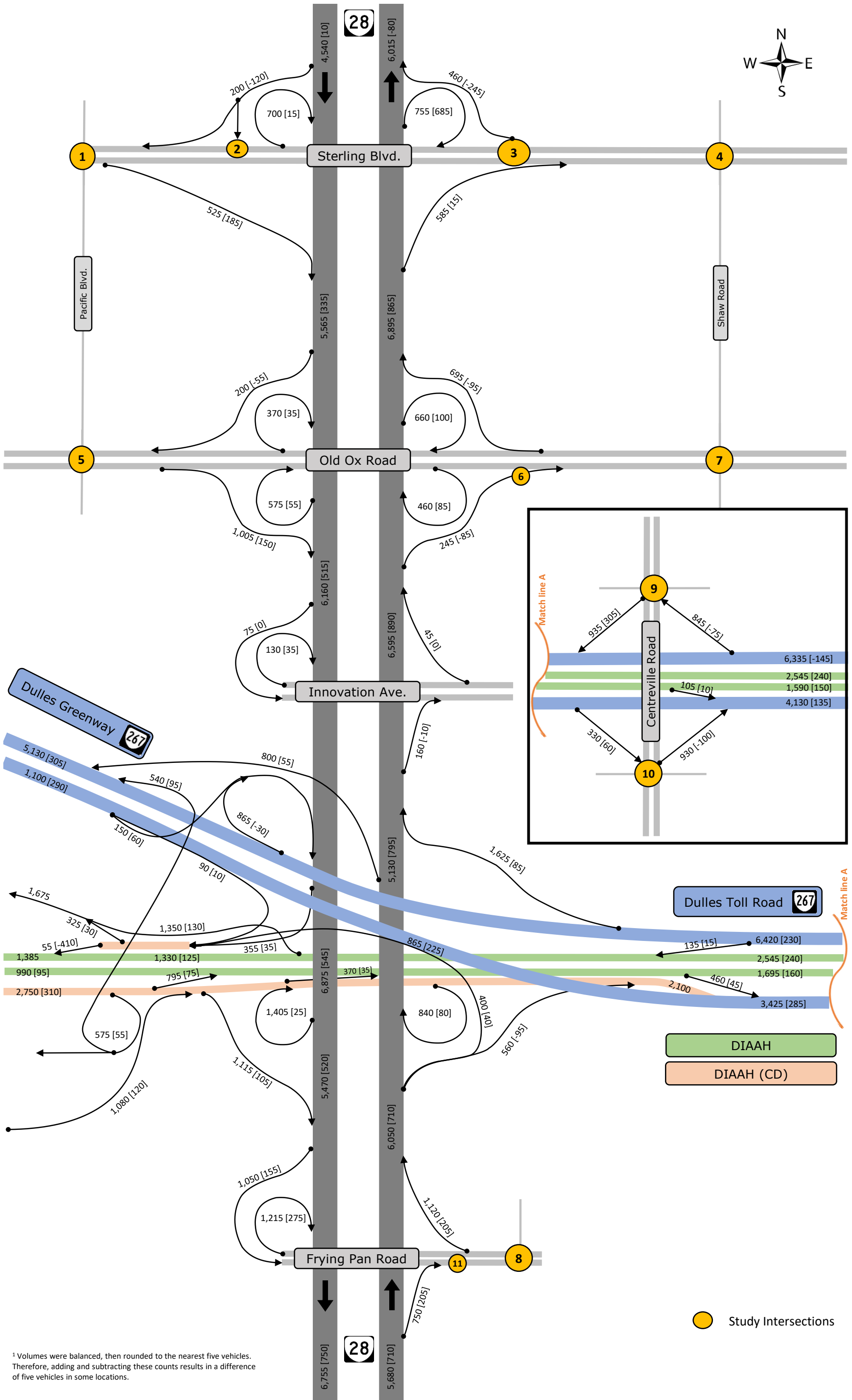
		% Difference Less Than	0.0%		
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		% Difference Greater Than	10.0%		
Average Daily Traffic: 2018 Existing Volumes & 2025 No Build Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	9,990	9,165	-825	-8.6%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	4,960	5,650	690	13.0%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	835	925	90	10.2%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	4,745	5,245	500	10.0%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	3,015	3,330	315	9.9%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	3,080	3,405	325	10.0%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	13,435	14,845	1,410	10.0%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	9,190	10,155	965	10.0%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	10,175	11,245	1,070	10.0%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	1,995	1,955	-40	-2.0%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	775	730	-45	-6.0%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	1,165	1,145	-20	-1.7%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	1,575	1,655	80	5.0%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	10,655	8,665	-1,990	-20.6%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	10,120	11,185	1,065	10.0%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	7,090	7,845	755	10.1%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	3,985	4,405	420	10.0%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	22,785	24,795	2,010	8.4%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	4,560	4,990	430	9.0%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	3,470	4,100	630	16.6%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	1,985	2,205	220	10.5%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	8,415	8,145	-270	-3.3%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	18,945	18,875	-70	-0.4%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	2,520	2,785	265	10.0%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	7,775	8,590	815	10.0%
Off-ramp from westbound DIAAH to Rudder Road	R-46	10,940	12,090	1,150	10.0%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	20,480	21,600	1,120	5.3%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	10,435	11,545	1,110	10.1%



¹ Volumes were balanced, then rounded to the nearest five vehicles. Therefore, adding and subtracting these counts results in a difference of five vehicles in some locations.

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
AM Peak Hour (8-9AM): 2018 Existing Volumes & 2025 No Build Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	6,090	6,565	475	7.5%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	5,980	6,855	875	13.6%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,765	6,105	340	5.7%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	6,310	7,020	710	10.7%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,145	4,610	465	10.6%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	8,310	9,125	815	9.3%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,495	6,270	775	13.2%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	7,765	8,660	895	10.9%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	5,100	5,845	745	13.6%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	7,265	7,895	630	8.3%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	4,345	4,755	410	9.0%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	7,010	6,790	-220	-3.2%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	4,215	4,355	140	3.3%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	675	800	125	16.9%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	2,240	2,475	235	10.0%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	580	640	60	9.8%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	6,450	6,410	-40	-0.6%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,685	1,860	175	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	2,645	3,020	375	13.2%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	750	830	80	10.1%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	6,885	6,690	-195	-2.9%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,585	1,750	165	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	3,510	3,905	395	10.7%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	750	830	80	10.1%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	1,085	1,415	330	26.4%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	760	955	195	22.7%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	1,260	1,430	170	12.6%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	520	810	290	43.6%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	310	350	40	12.1%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	185	120	-65	-42.6%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	820	820	0	0.0%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	490	565	75	14.2%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	320	295	-25	-8.1%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	495	510	15	3.0%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	605	505	-100	-18.0%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	935	1,055	120	12.1%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	740	785	45	5.9%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	340	550	210	47.2%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	325	245	-80	-28.1%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	480	265	-215	-57.7%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	600	560	-40	-6.9%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	135	805	670	142.6%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	600	715	115	17.5%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	935	885	-50	-5.5%

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
AM Peak Hour (8-9AM): 2018 Existing Volumes & 2025 No Build Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	1,065	1,065	0	0.0%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	200	175	-25	-13.3%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	100	110	10	9.5%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	130	145	15	10.9%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	170	190	20	11.1%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	90	100	10	10.5%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	1,065	1,175	110	9.8%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	425	470	45	10.1%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	930	1,030	100	10.2%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	150	150	0	0.0%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	60	60	0	0.0%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	155	160	5	3.2%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	150	130	-20	-14.3%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	1,115	905	-210	-20.8%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	600	665	65	10.3%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	245	270	25	9.7%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	395	435	40	9.6%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,495	1,815	320	19.3%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	150	195	45	26.1%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	670	720	50	7.2%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	45	50	5	10.5%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	500	460	-40	-8.3%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	3,100	3,140	40	1.3%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	450	495	45	9.5%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	620	685	65	10.0%
Off-ramp from westbound DIAAH to Rudder Road	R-46	340	375	35	9.8%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,995	2,105	110	5.4%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	410	455	45	10.4%



¹ Volumes were balanced, then rounded to the nearest five vehicles. Therefore, adding and subtracting these counts results in a difference of five vehicles in some locations.

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
PM Peak Hour (5-6PM): 2018 Existing Volumes & 2025 No Build Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	4,970	5,680	710	13.3%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	6,005	6,755	750	11.8%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,340	6,050	710	12.5%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	4,950	5,470	520	10.0%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,335	5,130	795	16.8%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	6,330	6,875	545	8.3%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,705	6,595	890	14.5%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	5,645	6,160	515	8.7%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	6,030	6,895	865	13.4%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	5,230	5,565	335	6.2%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	6,095	6,015	-80	-1.3%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	4,530	4,540	10	0.2%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	810	1,100	290	30.4%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	4,825	5,130	305	6.1%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	3,335	3,740	405	11.4%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	1,205	1,330	125	9.9%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	3,140	3,425	285	8.7%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,535	1,695	160	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	6,190	6,420	230	3.6%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	2,305	2,545	240	9.9%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	3,995	4,130	135	3.3%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,440	1,590	150	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	6,480	6,335	-145	-2.3%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	2,305	2,545	240	9.9%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	545	750	205	31.7%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	915	1,120	205	20.1%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	895	1,050	155	15.9%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	940	1,215	275	25.5%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	330	245	-85	-29.6%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	375	460	85	20.4%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	560	660	100	16.4%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	790	695	-95	-12.8%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	255	200	-55	-24.2%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	335	370	35	9.9%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	520	575	55	10.0%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	855	1,005	150	16.1%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	570	585	15	2.6%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	70	755	685	166.1%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	705	460	-245	-42.1%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	320	200	-120	-46.2%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	685	700	15	2.2%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	340	525	185	42.8%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	270	330	60	20.0%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	1,030	930	-100	-10.2%

				% Difference Less Than	0.0%
				% Difference Less Than	10.0%
				% Difference Greater Than	10.0%
PM Peak Hour (5-6PM): 2018 Existing Volumes & 2025 No Build Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	920	845	-75	-8.5%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	630	935	305	39.0%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	95	105	10	10.0%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	415	460	45	10.3%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	120	135	15	11.8%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	520	575	55	10.0%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	465	55	-410	-157.7%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	960	1,080	120	11.8%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	720	795	75	9.9%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	170	160	-10	-6.1%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	45	45	0	0.0%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	75	75	0	0.0%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	95	130	35	31.1%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	655	560	-95	-15.6%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	360	400	40	10.5%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	760	840	80	10.0%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	335	370	35	9.9%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,540	1,625	85	5.4%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	745	800	55	7.1%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	90	150	60	50.0%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	445	540	95	19.3%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	895	865	-30	-3.4%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	640	865	225	29.9%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	80	90	10	11.8%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	320	355	35	10.4%
Off-ramp from westbound DIAAH to Rudder Road	R-46	1,220	1,350	130	10.1%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,380	1,405	25	1.8%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	1,010	1,115	105	9.9%

Route 846 | Sterling Blvd

I-1: Pacific Boulevard at Route 846 (S. Sterling Boulevard)	
50 (220) ↓ 245 (55) ↓ 525 (490)	↖ 530 (290) ← 255 (600) ↙ 280 (120)
120 (70) ↗ 890 (335) → 130 (50) ↘	↖ 20 (25) ↑ 75 (280) ↗ 140 (370)

I-2: Route 846 (S. Sterling Boulevard) and Route 28 southbound off-ramps	
215 (120) ↖ 50 (80) ↘	↖ 560 (700) ← 845 (895)
750 (665) →	

I-3: Route 846 (S. Sterling Boulevard) and Route 28 northbound off-ramps	
550 (755) ↖	↖ 225 (440) ← 855 (840)
20 (20) ↗ 780 (730) →	↗ 785 (585)

I-4: Shaw Road at Route 846 (S. Sterling Boulevard)	
5 (75) ↖ 5 (15) ↓ 5 (15)	↖ 20 (10) ← 965 (965) ↙ 175 (180)
80 (50) ↗ 1090 (1170) → 385 (90) ↘	↖ 90 (230) ↑ 20 (40) ↗ 170 (355)

Route 606 | Old Ox Road

I-5: Pacific Boulevard at Route 606 (Old Ox Road)	
190 (150) ↖ 60 (30) ↓ 270 (505)	↖ 465 (350) ← 1140 (1455) ↙ 100 (70)
160 (165) ↗ 1860 (1550) → 120 (90) ↘	↖ 85 (30) ↑ 35 (30) ↗ 150 (235)

I-6: Route 606 (Old Ox Road) and Route 28 northbound off-ramps	
820 (660) ↖	↖ 565 (695) ← 1110 (1390)
1620 (1405) → 120 (460) ↘	↖ 85 (60) ↗ 265 (185)

I-7: Shaw Road at Route 606 (Old Ox Road)	
155 (160) ↖ 50 (45) ↓ 180 (210)	↖ 190 (220) ← 1240 (1605) ↙ 55 (85)
160 (130) ↗ 1495 (1190) → 315 (320) ↘	↖ 280 (310) ↑ 35 (85) ↗ 100 (110)

AM Peak Hour Volume (PM Peak Hour Volume)

¹ Volumes were balanced then rounded to the nearest five vehicles. Therefore, direct comparison of these counts with the controlling freeway mainline and ramp volumes results in a difference of five vehicles in some locations.

Frying Pan Road

I-11: River Birch Road at Frying Pan Road	
590 (655) ↖ 180 (115) ↘	↖ 140 (125) ← 1175 (1680)
805 (535) ↗ 2040 (1265) →	

I-8: Sunrise Valley Drive at Frying Pan Road	
275 (580) ↖ 5 (25) ↘	↖ 20 (25) ← 1040 (1215)
790 (345) ↗ 1435 (1025) →	

Centreville Road

I-9: Centreville Road and Dulles Toll Road Ramps North (WB) of Dulles Toll Road	
1014 (001) ↖ 1141 (0701) ↓	↖ 315 (360) ↙ 755 (480)
75 (525) ↗ 1295 (1500) →	

I-10: Centreville Road and Dulles Toll Road Ramps South (EB) of Dulles Toll Road	
5891 (5291) ↖ 1012 (002) ↘	
315 (180) ↗ 400 (150) ↘	↖ 1055 (1745) ↗ 685 (720)

Existing (2018) and Forecasted (2025 NB) Intersection Turning Movement Counts for AM Peak Hour (8-9AM)

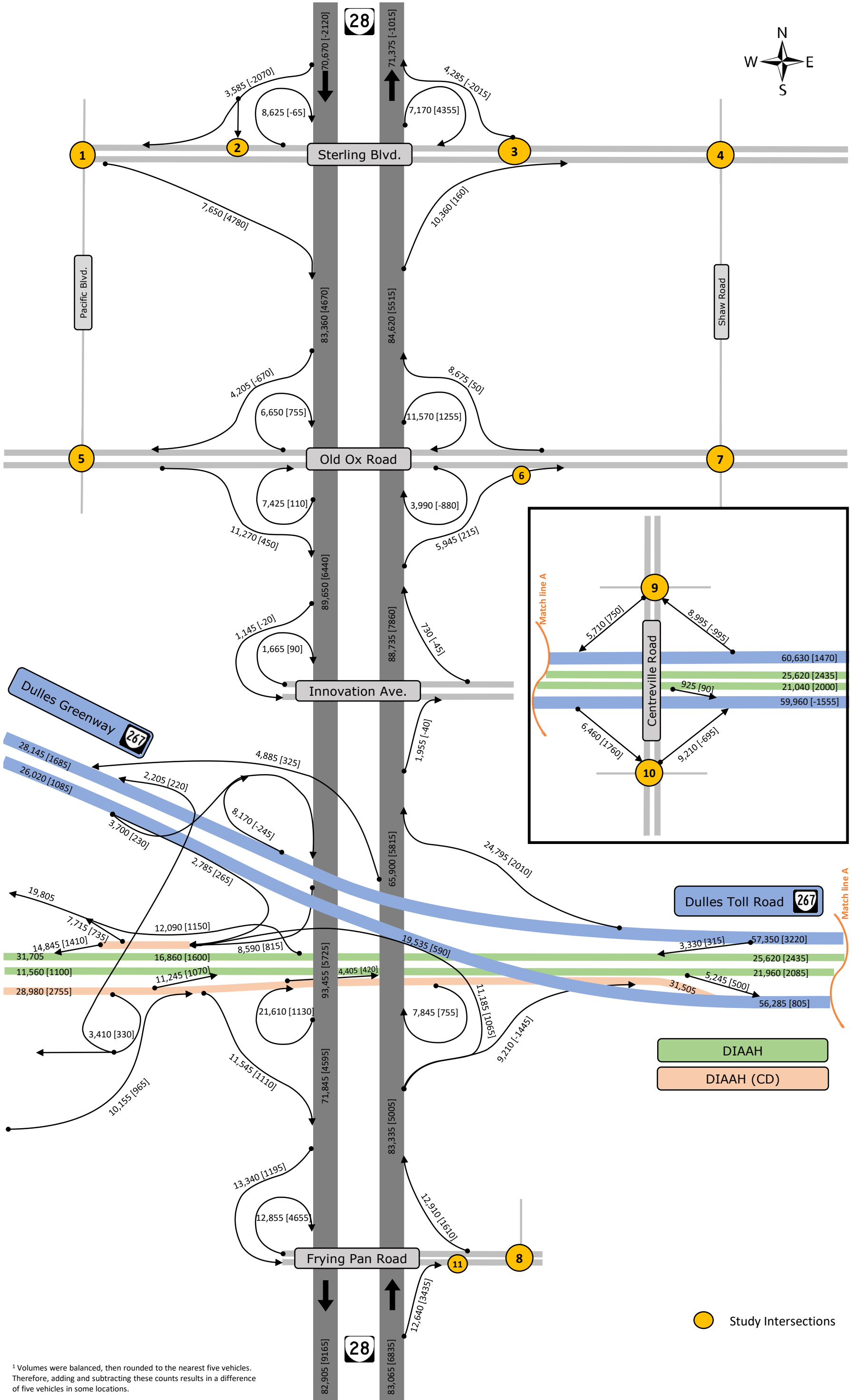
Map ID	1			2			3			4			5			6			7			8			9			10		
Intersection Name	Pacific Boulevard at Route 846 (S. Sterling Boulevard)			Route 846 (S. Sterling Boulevard) and Route 28 southbound off-ramps			Route 846 (S. Sterling Boulevard) and Route 28 northbound off-ramps			Shaw Road at Route 846 (S. Sterling Boulevard)			Pacific Boulevard at Route 606 (Old Ox Road)			Route 606 (Old Ox Road) and Route 28 northbound off-ramps			Shaw Road at Route 606 (Old Ox Road)			Sunrise Valley Drive at Frying Pan Road			Centreville Road and Dulles Toll Road Ramps North (WB) of Dulles Toll Road			Centreville Road and Dulles Toll Road Ramps South (EB) of Dulles Toll Road		
	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff
NBU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NBL	10	20	10	0	0	0	0	0	0	100	90	-10	75	85	10	0	0	0	155	280	125	0	0	0	85	75	-10	0	0	0
NBT	145	75	-70	0	0	0	0	0	0	25	20	-5	40	35	-5	80	85	5	25	35	10	0	0	0	1185	1295	110	995	1055	60
NBR	95	140	45	0	0	0	740	785	45	215	170	-45	145	150	5	230	265	35	60	100	40	0	0	0	0	0	0	705	685	-20
SBU	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	335	525	190	300	50	-250	0	0	0	20	5	-15	290	270	-20	0	0	0	200	180	-20	15	5	-10	0	0	0	225	200	-25
SBT	430	245	-185	0	0	0	0	0	0	50	15	-35	70	60	-10	0	0	0	25	50	25	0	0	0	1000	1070	70	1515	1625	110
SBR	20	50	30	180	215	35	340	550	210	65	15	-50	195	190	-5	820	820	0	160	155	-5	670	275	-395	115	100	-15	0	0	0
EBU	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	10	120	110	0	0	0	55	20	-35	75	80	5	165	160	-5	0	0	0	175	160	-15	1520	790	-730	0	0	0	275	315	40
EBT	25	890	865	320	750	430	565	780	215	900	1090	190	1530	1860	330	1465	1620	155	1455	1495	40	830	1435	605	0	0	0	0	0	0
EBR	10	130	120	0	0	0	0	0	0	315	385	70	105	120	15	185	120	-65	140	315	175	0	0	0	0	0	0	325	400	75
WBU	0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0
WBL	255	280	25	0	0	0	0	0	0	205	175	-30	90	100	10	0	0	0	25	55	30	0	0	0	745	755	10	0	0	0
WBT	55	255	200	650	845	195	910	855	-55	1005	965	-40	970	1140	170	950	1110	160	1125	1240	115	605	1040	435	0	0	0	0	0	0
WBR	520	530	10	600	560	-40	270	225	-45	25	20	-5	525	465	-60	490	565	75	215	190	-25	65	20	-45	320	315	-5	0	0	0

Existing (2018) and Forecasted (2025 NB) Intersection Turning Movement Counts for PM Peak Hour (5-6PM)

Map ID	1			2			3			4			5			6			7			8			9			10		
Intersection Name	Pacific Boulevard at Route 846 (S. Sterling Boulevard)			Route 846 (S. Sterling Boulevard) and Route 28 southbound off-ramps			Route 846 (S. Sterling Boulevard) and Route 28 northbound off-ramps			Shaw Road at Route 846 (S. Sterling Boulevard)			Pacific Boulevard at Route 606 (Old Ox Road)			Route 606 (Old Ox Road) and Route 28 northbound off-ramps			Shaw Road at Route 606 (Old Ox Road)			Sunrise Valley Drive at Frying Pan Road			Centreville Road and Dulles Toll Road Ramps North (WB) of Dulles Toll Road			Centreville Road and Dulles Toll Road Ramps South (EB) of Dulles Toll Road		
	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff
NBU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NBL	0	25	25	0	0	0	0	0	0	275	230	-45	45	30	-15	0	0	0	140	310	170	0	0	0	355	525	170	0	0	0
NBT	500	280	-220	0	0	0	0	0	0	60	40	-20	50	30	-20	110	60	-50	45	85	40	0	0	0	1430	1500	70	1630	1745	115
NBR	360	370	10	0	0	0	570	585	15	365	355	-10	215	235	20	220	185	-35	45	110	65	0	0	0	0	0	0	780	720	-60
SBU	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	620	490	-130	255	80	-175	0	0	0	20	15	-5	500	505	5	0	0	0	250	210	-40	35	25	-10	0	0	0	250	210	-40
SBT	180	55	-125	0	0	0	0	0	0	25	15	-10	45	30	-15	0	0	0	30	45	15	0	0	0	1325	1415	90	1595	1685	90
SBR	15	220	205	65	120	55	70	755	685	110	75	-35	255	150	-105	560	660	100	205	160	-45	1125	580	-545	275	410	135	0	0	0
EBU	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	10	10	0	5	5	0	0	0	0	0	0	0
EBL	10	70	60	0	0	0	235	20	-215	65	50	-15	220	165	-55	0	0	0	165	130	-35	705	345	-360	0	0	0	155	180	25
EBT	25	335	310	670	665	-5	695	730	35	1080	1170	90	1200	1550	350	1210	1405	195	1190	1190	0	730	1025	295	0	0	0	0	0	0
EBR	10	50	40	0	0	0	0	0	0	115	90	-25	100	90	-10	375	460	85	170	320	150	0	0	0	0	0	0	115	150	35
WBU	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0
WBL	140	120	-20	0	0	0	0	0	0	220	180	-40	50	70	20	0	0	0	40	85	45	0	0	0	525	480	-45	0	0	0
WBT	15	600	585	335	895	560	955	840	-115	1035	965	-70	1245	1455	210	1125	1390	265	1555	1605	50	725	1215	490	0	0	0	0	0	0
WBR	245	290	45	685	700	15	470	440	-30	15	10	-5	305	350	45	790	695	-95	250	220	-30	35	25	-10	395	360	-35	0	0	0

*I-11 only present in future conditions; therefore, not compared in this table.

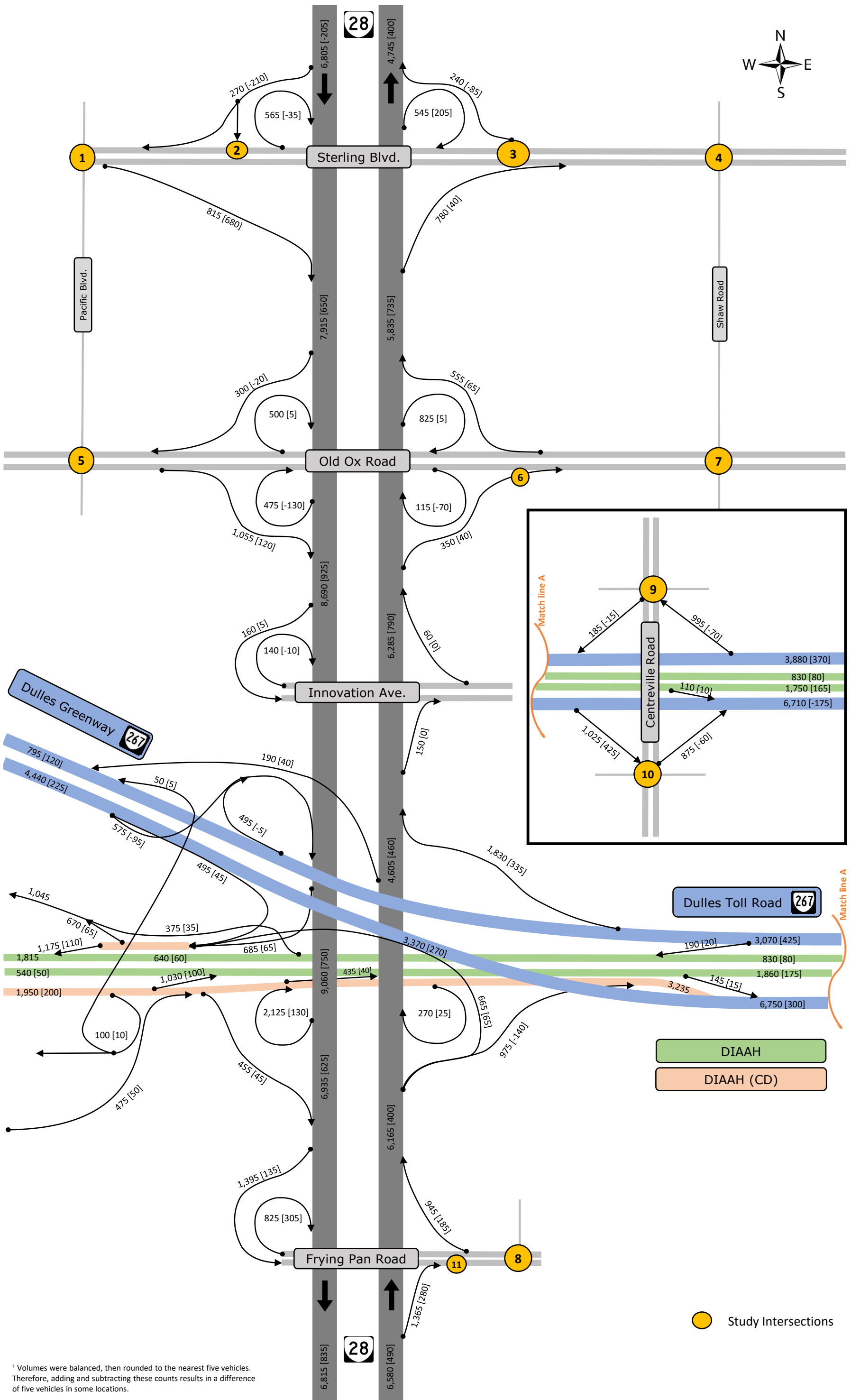
*Volumes were balanced then rounded to the nearest five vehicles. Therefore, direct comparison of these counts with the controlling freeway mainline and ramp volumes results in a difference of five vehicles in some locations.



¹ Volumes were balanced, then rounded to the nearest five vehicles. Therefore, adding and subtracting these counts results in a difference of five vehicles in some locations.

		% Difference Less Than		0.0%	
		% Difference Less Than		10.0%	
		% Difference Greater Than		10.0%	
Average Daily Traffic: 2018 Existing Volumes & 2025 No Build with Route 267 EB Widening Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	76,230	83,065	6,835	8.6%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	73,740	82,905	9,165	11.7%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	78,330	83,335	5,005	6.2%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	67,250	71,845	4,595	6.6%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	60,085	65,900	5,815	9.2%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	87,730	93,455	5,725	6.3%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	80,875	88,735	7,860	9.3%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	83,210	89,650	6,440	7.5%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	79,105	84,620	5,515	6.7%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	78,690	83,360	4,670	5.8%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	72,390	71,375	-1,015	-1.4%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	72,790	70,670	-2,120	-3.0%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	24,935	26,020	1,085	4.3%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	26,460	28,145	1,685	6.2%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	36,685	40,540	3,855	10.0%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	15,260	16,860	1,600	10.0%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	55,480	56,285	805	1.4%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	19,875	21,960	2,085	10.0%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	54,130	57,350	3,220	5.8%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	23,185	25,620	2,435	10.0%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	61,515	59,960	-1,555	-2.6%
Eastbound DIAAH Mainline east of Centreville Road	M-22	19,040	21,040	2,000	10.0%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	59,160	60,630	1,470	2.5%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	23,185	25,620	2,435	10.0%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	9,205	12,640	3,435	31.4%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	11,300	12,910	1,610	13.3%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	12,145	13,340	1,195	9.4%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	8,200	12,855	4,655	44.2%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	5,730	5,945	215	3.7%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	4,870	3,990	-880	-19.9%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	10,315	11,570	1,255	11.5%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	8,625	8,675	50	0.6%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	4,875	4,205	-670	-14.8%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	5,895	6,650	755	12.0%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	7,315	7,425	110	1.5%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	10,820	11,270	450	4.1%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	10,200	10,360	160	1.6%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	2,815	7,170	4,355	87.2%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	6,300	4,285	-2,015	-38.1%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	5,655	3,585	-2,070	-44.8%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	8,690	8,625	-65	-0.8%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	2,870	7,650	4,780	90.9%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	4,700	6,460	1,760	31.5%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	9,905	9,210	-695	-7.3%

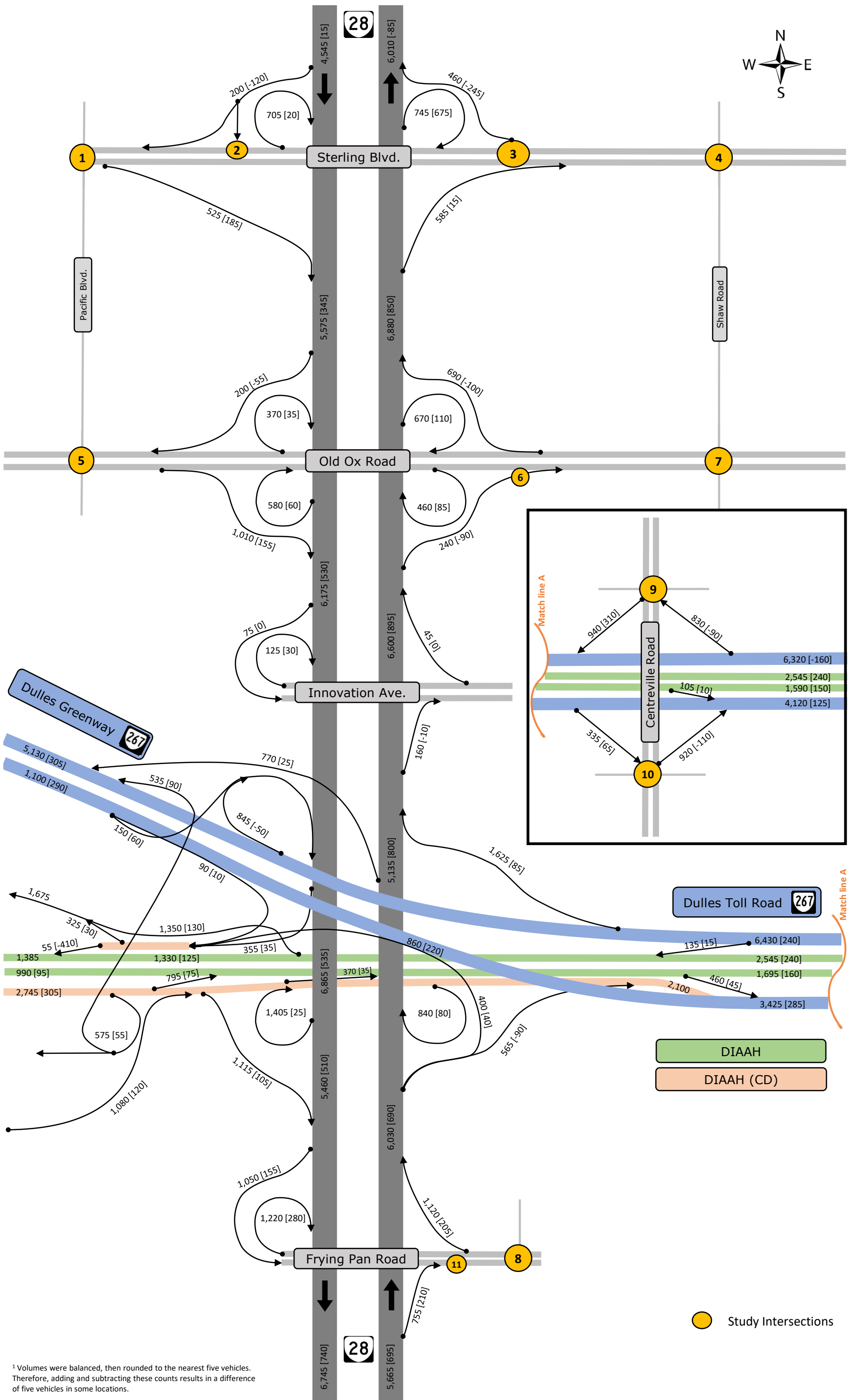
		% Difference Less Than		0.0%	
		% Difference Less Than		10.0%	
		% Difference Greater Than		10.0%	
Average Daily Traffic: 2018 Existing Volumes & 2025 No Build with Route 267 EB Widening Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	9,990	8,995	-995	-10.5%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	4,960	5,710	750	14.1%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	835	925	90	10.2%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	4,745	5,245	500	10.0%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	3,015	3,330	315	9.9%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	3,080	3,410	330	10.2%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	13,435	14,845	1,410	10.0%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	9,190	10,155	965	10.0%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	10,175	11,245	1,070	10.0%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	1,995	1,955	-40	-2.0%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	775	730	-45	-6.0%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	1,165	1,145	-20	-1.7%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	1,575	1,665	90	5.6%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	10,655	9,210	-1,445	-14.5%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	10,120	11,185	1,065	10.0%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	7,090	7,845	755	10.1%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	3,985	4,405	420	10.0%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	22,785	24,795	2,010	8.4%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	4,560	4,885	325	6.9%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	3,470	3,700	230	6.4%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	1,985	2,205	220	10.5%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	8,415	8,170	-245	-3.0%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	18,945	19,535	590	3.1%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	2,520	2,785	265	10.0%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	7,775	8,590	815	10.0%
Off-ramp from westbound DIAAH to Rudder Road	R-46	10,940	12,090	1,150	10.0%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	20,480	21,610	1,130	5.4%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	10,435	11,545	1,110	10.1%



¹ Volumes were balanced, then rounded to the nearest five vehicles. Therefore, adding and subtracting these counts results in a difference of five vehicles in some locations.

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
AM Peak Hour (8-9AM): 2018 Existing Volumes & 2025 No Build with Route 267 EB Widening Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	6,090	6,580	490	7.7%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	5,980	6,815	835	13.1%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,765	6,165	400	6.7%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	6,310	6,935	625	9.4%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,145	4,605	460	10.5%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	8,310	9,060	750	8.6%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,495	6,285	790	13.4%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	7,765	8,690	925	11.2%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	5,100	5,835	735	13.4%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	7,265	7,915	650	8.6%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	4,345	4,745	400	8.8%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	7,010	6,805	-205	-3.0%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	4,215	4,440	225	5.2%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	675	795	120	16.3%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	2,240	2,490	250	10.6%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	580	640	60	9.8%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	6,450	6,750	300	4.5%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,685	1,860	175	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	2,645	3,070	425	14.9%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	750	830	80	10.1%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	6,885	6,710	-175	-2.6%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,585	1,750	165	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	3,510	3,880	370	10.0%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	750	830	80	10.1%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	1,085	1,365	280	22.9%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	760	945	185	21.7%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	1,260	1,395	135	10.2%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	520	825	305	45.4%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	310	350	40	12.1%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	185	115	-70	-46.7%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	820	825	5	0.6%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	490	555	65	12.4%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	320	300	-20	-6.5%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	495	500	5	1.0%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	605	475	-130	-24.1%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	935	1,055	120	12.1%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	740	780	40	5.3%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	340	545	205	46.3%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	325	240	-85	-30.1%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	480	270	-210	-56.0%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	600	565	-35	-6.0%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	135	815	680	143.2%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	600	1,025	425	52.3%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	935	875	-60	-6.6%

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
AM Peak Hour (8-9AM): 2018 Existing Volumes & 2025 No Build with Route 267 EB Widening Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	1,065	995	-70	-6.8%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	200	185	-15	-7.8%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	100	110	10	9.5%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	130	145	15	10.9%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	170	190	20	11.1%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	90	100	10	10.5%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	1,065	1,175	110	9.8%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	425	475	50	11.1%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	930	1,030	100	10.2%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	150	150	0	0.0%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	60	60	0	0.0%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	155	160	5	3.2%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	150	140	-10	-6.9%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	1,115	975	-140	-13.4%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	600	665	65	10.3%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	245	270	25	9.7%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	395	435	40	9.6%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,495	1,830	335	20.2%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	150	190	40	23.5%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	670	575	-95	-15.3%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	45	50	5	10.5%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	500	495	-5	-1.0%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	3,100	3,370	270	8.3%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	450	495	45	9.5%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	620	685	65	10.0%
Off-ramp from westbound DIAAH to Rudder Road	R-46	340	375	35	9.8%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,995	2,125	130	6.3%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	410	455	45	10.4%



¹ Volumes were balanced, then rounded to the nearest five vehicles. Therefore, adding and subtracting these counts results in a difference of five vehicles in some locations.

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
PM Peak Hour (5-6PM): 2018 Existing Volumes & 2025 No Build with Route 267 EB Widening Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	4,970	5,665	695	13.1%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	6,005	6,745	740	11.6%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,340	6,030	690	12.1%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	4,950	5,460	510	9.8%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,335	5,135	800	16.9%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	6,330	6,865	535	8.1%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,705	6,600	895	14.5%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	5,645	6,175	530	9.0%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	6,030	6,880	850	13.2%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	5,230	5,575	345	6.4%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	6,095	6,010	-85	-1.4%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	4,530	4,545	15	0.3%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	810	1,100	290	30.4%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	4,825	5,130	305	6.1%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	3,335	3,735	400	11.3%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	1,205	1,330	125	9.9%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	3,140	3,425	285	8.7%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,535	1,695	160	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	6,190	6,430	240	3.8%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	2,305	2,545	240	9.9%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	3,995	4,120	125	3.1%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,440	1,590	150	9.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	6,480	6,320	-160	-2.5%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	2,305	2,545	240	9.9%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	545	755	210	32.3%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	915	1,120	205	20.1%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	895	1,050	155	15.9%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	940	1,220	280	25.9%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	330	240	-90	-31.6%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	375	460	85	20.4%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	560	670	110	17.9%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	790	690	-100	-13.5%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	255	200	-55	-24.2%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	335	370	35	9.9%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	520	580	60	10.9%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	855	1,010	155	16.6%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	570	585	15	2.6%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	70	745	675	165.6%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	705	460	-245	-42.1%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	320	200	-120	-46.2%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	685	705	20	2.9%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	340	525	185	42.8%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	270	335	65	21.5%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	1,030	920	-110	-11.3%

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
PM Peak Hour (5-6PM): 2018 Existing Volumes & 2025 No Build with Route 267 EB Widening Forecasted Volumes					
Location	Index	Existing Balanced Volumes	Forecasted Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	920	830	-90	-10.3%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	630	940	310	39.5%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	95	105	10	10.0%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	415	460	45	10.3%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	120	135	15	11.8%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	520	575	55	10.0%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	465	55	-410	-157.7%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	960	1,080	120	11.8%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	720	795	75	9.9%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	170	160	-10	-6.1%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	45	45	0	0.0%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	75	75	0	0.0%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	95	125	30	27.3%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	655	565	-90	-14.8%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	360	400	40	10.5%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	760	840	80	10.0%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	335	370	35	9.9%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,540	1,625	85	5.4%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	745	770	25	3.3%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	90	150	60	50.0%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	445	535	90	18.4%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	895	845	-50	-5.7%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	640	860	220	29.3%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	80	90	10	11.8%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	320	355	35	10.4%
Off-ramp from westbound DIAAH to Rudder Road	R-46	1,220	1,350	130	10.1%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,380	1,405	25	1.8%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	1,010	1,115	105	9.9%

Route 846 | Sterling Blvd

I-1: Pacific Boulevard at Route 846 (S. Sterling Boulevard)			
50 (225)	240 (50)	520 (490)	530 (290)
275 (115)	255 (600)		
120 (70)	895 (335)	130 (50)	145 (370)
	25 (25)	75 (280)	

I-2: Route 846 (S. Sterling Boulevard) and Route 28 southbound off-ramps			
225 (120)	45 (80)	565 (705)	840 (885)
740 (665)			

I-3: Route 846 (S. Sterling Boulevard) and Route 28 northbound off-ramps			
545 (745)		220 (440)	860 (845)
20 (20)			780 (585)
770 (730)			

I-4: Shaw Road at Route 846 (S. Sterling Boulevard)			
5 (75)	5 (15)	5 (15)	20 (10)
960 (970)	175 (180)		
80 (50)	1075 (1170)	385 (90)	170 (360)
	90 (230)	20 (40)	

Route 606 | Old Ox Road

I-5: Pacific Boulevard at Route 606 (Old Ox Road)			
190 (145)	95 (30)	275 (520)	475 (370)
100 (70)	1145 (1440)		
160 (165)	1850 (1545)	120 (90)	150 (235)
	85 (25)	35 (30)	

I-6: Route 606 (Old Ox Road) and Route 28 northbound off-ramps			
825 (670)		555 (690)	1100 (1385)
1590 (1410)		80 (60)	270 (180)
115 (460)			

I-7: Shaw Road at Route 606 (Old Ox Road)			
155 (160)	50 (45)	180 (210)	190 (220)
55 (85)	1220 (1595)		
160 (130)	1465 (1190)	315 (320)	100 (110)
	280 (310)	35 (85)	

AM Peak Hour Volume (PM Peak Hour Volume)

¹ Volumes were balanced then rounded to the nearest five vehicles. Therefore, direct comparison of these counts with the controlling freeway mainline and ramp volumes results in a difference of five vehicles in some locations.

Frying Pan Road

I-11: River Birch Road at Frying Pan Road			
585 (660)	185 (115)	150 (125)	1185 (1680)
790 (540)	1970 (1265)		

I-8: Sunrise Valley Drive at Frying Pan Road			
270 (580)	5 (25)	20 (25)	1065 (1220)
800 (350)	1355 (1025)		

Centreville Road

I-9: Centreville Road and Dulles Toll Road Ramps North (WB) of Dulles Toll Road			
501 (410)	0901 (0241)	280 (355)	715 (475)
	80 (530)	1330 (1510)	

I-10: Centreville Road and Dulles Toll Road Ramps South (EB) of Dulles Toll Road			
575 (150)	502 (002)		
450 (185)	960 (1745)	675 (715)	

Existing (2018) and Forecasted (2025 NB EB Widening) Intersection Turning Movement Counts for AM Peak Hour (8-9AM)

Map ID	1			2			3			4			5			6			7			8			9			10		
Intersection Name	Pacific Boulevard at Route 846 (S. Sterling Boulevard)			Route 846 (S. Sterling Boulevard) and Route 28 southbound off-ramps			Route 846 (S. Sterling Boulevard) and Route 28 northbound off-ramps			Shaw Road at Route 846 (S. Sterling Boulevard)			Pacific Boulevard at Route 606 (Old Ox Road)			Route 606 (Old Ox Road) and Route 28 northbound off-ramps			Shaw Road at Route 606 (Old Ox Road)			Sunrise Valley Drive at Frying Pan Road			Centerville Road and Dulles Toll Road Ramps North (WB) of Dulles Toll Road			Centerville Road and Dulles Toll Road Ramps South (EB) of Dulles Toll Road		
	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff
NBU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NBL	10	25	15	0	0	0	0	0	0	100	90	-10	75	85	10	0	0	0	155	280	125	0	0	0	85	80	-5	0	0	0
NBT	145	75	-70	0	0	0	0	0	0	25	20	-5	40	35	-5	80	80	0	25	35	10	0	0	0	1185	1330	145	995	960	-35
NBR	95	145	50	0	0	0	740	780	40	215	170	-45	145	150	5	230	270	40	60	100	40	0	0	0	0	0	0	705	675	-30
SBU	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	335	520	185	300	45	-255	0	0	0	20	5	-15	290	275	-15	0	0	0	200	180	-20	15	5	-10	0	0	0	225	200	-25
SBT	430	240	-190	0	0	0	0	0	0	50	10	-40	70	65	-5	0	0	0	25	50	25	0	0	0	1000	1060	60	1515	1575	60
SBR	20	50	30	180	225	45	340	545	205	65	15	-50	195	190	-5	820	825	5	160	155	-5	670	270	-400	115	105	-10	0	0	0
EBU	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	10	120	110	0	0	0	55	20	-35	75	80	5	165	160	-5	0	0	0	175	160	-15	1520	800	-720	0	0	0	275	450	175
EBT	25	895	870	320	740	420	565	770	205	900	1075	175	1530	1850	320	1465	1590	125	1455	1465	10	830	1355	525	0	0	0	0	0	0
EBR	10	130	120	0	0	0	0	0	0	315	385	70	105	120	15	185	115	-70	140	315	175	0	0	0	0	0	0	325	575	250
WBU	0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0
WBL	255	275	20	0	0	0	0	0	0	205	175	-30	90	100	10	0	0	0	25	55	30	0	0	0	745	715	-30	0	0	0
WBT	55	255	200	650	840	190	910	860	-50	1005	960	-45	970	1145	175	950	1100	150	1125	1220	95	605	1065	460	0	0	0	0	0	0
WBR	520	530	10	600	565	-35	270	220	-50	25	20	-5	525	475	-50	490	555	65	215	190	-25	65	20	-45	320	280	-40	0	0	0

Existing (2018) and Forecasted (2025 NB EB Widening) Intersection Turning Movement Counts for PM Peak Hour (5-6PM)

Map ID	1			2			3			4			5			6			7			8			9			10		
Intersection Name	Pacific Boulevard at Route 846 (S. Sterling Boulevard)			Route 846 (S. Sterling Boulevard) and Route 28 southbound off-ramps			Route 846 (S. Sterling Boulevard) and Route 28 northbound off-ramps			Shaw Road at Route 846 (S. Sterling Boulevard)			Pacific Boulevard at Route 606 (Old Ox Road)			Route 606 (Old Ox Road) and Route 28 northbound off-ramps			Shaw Road at Route 606 (Old Ox Road)			Sunrise Valley Drive at Frying Pan Road			Centerville Road and Dulles Toll Road Ramps North (WB) of Dulles Toll Road			Centerville Road and Dulles Toll Road Ramps South (EB) of Dulles Toll Road		
	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff	Existing	2025NB	Veh Diff
NBU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NBL	0	25	25	0	0	0	0	0	0	275	230	-45	45	25	-20	0	0	0	140	310	170	0	0	0	355	530	175	0	0	0
NBT	500	280	-220	0	0	0	0	0	0	60	40	-20	50	30	-20	110	60	-50	45	85	40	0	0	0	1430	1510	80	1630	1745	115
NBR	360	370	10	0	0	0	570	585	15	365	360	-5	215	235	20	220	180	-40	45	110	65	0	0	0	0	0	0	780	715	-65
SBU	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	620	490	-130	255	80	-175	0	0	0	20	15	-5	500	520	20	0	0	0	250	210	-40	35	25	-10	0	0	0	250	205	-45
SBT	180	50	-130	0	0	0	0	0	0	25	15	-10	45	30	-15	0	0	0	30	45	15	0	0	0	1325	1420	95	1595	1690	95
SBR	15	225	210	65	120	55	70	745	675	110	75	-35	255	145	-110	560	670	110	205	160	-45	1125	580	-545	275	410	135	0	0	0
EBU	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	10	10	0	5	5	0	0	0	0	0	0	0
EBL	10	70	60	0	0	0	235	20	-215	65	50	-15	220	165	-55	0	0	0	165	130	-35	705	350	-355	0	0	0	155	185	30
EBT	25	335	310	670	665	-5	695	730	35	1080	1170	90	1200	1545	345	1210	1410	200	1190	1190	0	730	1025	295	0	0	0	0	0	0
EBR	10	50	40	0	0	0	0	0	0	115	90	-25	100	90	-10	375	460	85	170	320	150	0	0	0	0	0	0	115	150	35
WBU	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0
WBL	140	115	-25	0	0	0	0	0	0	220	180	-40	50	70	20	0	0	0	40	85	45	0	0	0	525	475	-50	0	0	0
WBT	15	600	585	335	885	550	955	845	-110	1035	970	-65	1245	1440	195	1125	1385	260	1555	1595	40	725	1220	495	0	0	0	0	0	0
WBR	245	290	45	685	705	20	470	440	-30	15	10	-5	305	370	65	790	690	-100	250	220	-30	35	25	-10	395	355	-40	0	0	0

*I-11 only present in future conditions; therefore, not compared in this table.

*Volumes were balanced then rounded to the nearest five vehicles. Therefore, direct comparison of these counts with the controlling freeway mainline and ramp volumes results in a difference of five vehicles in some locations.