

MEMORANDUM

To: Abi Lerner, P.E.
Amir Shahpar, P.E.
Virginia Department of Transportation (VDOT)

From: Geoff Giffin, P.E., PTOE
Anthony Gallo, P.E.
Kavita Boddu, P.E.
Britton Hammit, Ph.D., EIT
Kimley-Horn and Associates, Inc.

Date: August 23, 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 2045 No-Build conditions as part of the Route 28 and Dulles Toll Road/Dulles Greenway Interchange Study. This follows a set of volume forecasts for the 2025 No-Build scenario, which were delivered to VDOT on May 6th, 2019 and subsequently approved for use in traffic simulation analysis. The following sections document the background transportation improvements assumed for the 2045 No-Build conditions and forecasting methodology. The balanced 2045 No-Build 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 2045 and are coded into the MWCOG travel demand model (and will be incorporated into the 2045 No-Build VISSIM models):

Improvements in Place by 2025 (Included in 2025 No-Build Condition)

1. 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.
2. Route 28 northbound is widened to have an additional through lane between the northbound off-ramp to Dulles Airport/eastbound Dulles Toll Road and the off-ramp to Sterling Boulevard westbound. This is consistent with the southbound widening of Route 28 which has already been constructed in this section.

3. 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.
4. 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.
5. 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.
6. 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.
7. Westwind Drive will be a new four-lane roadway between Route 606 and Loudoun County Parkway south/west of the Dulles Greenway (Loudoun County)
8. 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.
9. 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.
10. Along eastbound Dulles Toll Road, the HOV enforcement location will be relocated from its current location to east of Centreville Road.
11. 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. This improvement was studied for the 2025 No-Build condition and approved for inclusion in the 2045 No-Build condition based on stakeholder input.

Improvements in Place by 2045

12. Route 28 has multiple improvements (some of which are already in place):
 - a. In Loudoun County, Route 28 will have four through lanes in each direction between Sterling Boulevard and Route 7.
 - b. In Fairfax County, Route 28 will convert the left-most lane to HOV-3 in both directions during the AM and PM peaks. The HOV lanes are assumed to be in place from south of Route 267 (just north of Frying Pan Road) to I-66. Between Westfields Boulevard and I-66, Route 28 is widened to 5 lanes in each direction (with the innermost lane remaining HOV-3).
13. Sunrise Valley Drive is extended south from Frying Pan Road to connect to Park Center Road as a north/south parallel roadway to Route 28.

Two developments, the Hub (formerly Dulles World Center) and Waterside were also factored into the 2045 planned transportation network as they are located within the project study area. The developments, both located in Loudoun County, are considered to add the following transportation improvements to the baseline network based on approved proffers that require the developments to construct them:

14. Shaw Road is extended south from Route 606 as a four-lane roadway to Innovation Avenue. The intersection of Shaw Road and Innovation Avenue will be added to the 2045 VISSIM network to account for metering impacts of a proposed traffic signal at this location (but the results will not be reported).
15. Davis Drive is extended south from Route 606 to Innovation Avenue as a four-lane roadway, which continues south and crosses the Dulles Toll Road and connects to Sunrise Valley Drive.
16. A two-lane local connector road is assumed to the south of Innovation Avenue along its previous alignment. This road is assumed to continue south of the intersection of Shaw Road and Innovation Avenue, turn east and run under the proposed new crossing of the Dulles Toll Road, and then turn north to terminate at the intersection of Innovation Avenue and Rock Hill Road.
17. A baseline grid network of side streets is assumed in the Hub and Waterside development areas, providing additional access to Route 606 and Davis Drive east of the project study area. This network is consistent with the Fairfax County Innovation Center Station (North) Comprehensive Plan Amendment Transportation Study.

Additionally, along the Dulles Toll Road and Dulles Greenway, toll plazas are assumed to have been removed and replaced with all-electronic/high-speed tolling. This improvement is not incorporated into the MWCOG model but will be included in the 2045 VISSIM models.

Land Use

The MWCOG Round 9.1 land use projections were assumed for the traffic forecasting. The one exception is the Fairfax County Innovation Center Transit Station Area Land Units L-1 and L-2. Fairfax County requested that the study assume the optional office development (total of 4.2 million square feet of development, primarily office) that was recently adopted through a Comprehensive Plan Amendment. The land use in this zone in Fairfax County (TAZ #1705) was updated to incorporate these changes in the MWCOG model for the year 2045; in order to balance trip productions and attractions, a corresponding decrease in land use was made and spread out among zones in jurisdictions far from the study area (e.g. far southeastern Maryland).

Forecasting Methodology

The traffic forecasting and volume balancing methodology is consistent with the methodology previously described to develop 2025 No-Build forecasts.

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 2045 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 2045 No-Build scenario were 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 and 2025 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.

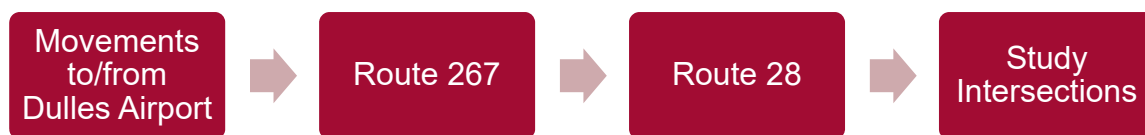


Figure 1 Volume Balancing Sequence

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.

2045 No-Build Traffic Volume Forecasts

The following section and attachments show the forecast volumes for the 2045 No-Build 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, including comparisons to Existing and 2025 No-Build conditions. 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 2045 No-Build forecasts:

Growth along Freeway Mainlines

- At the east end of the study area along the Dulles Toll Road, freeway volumes show modest growth as compared to Existing and 2025 No-Build conditions. 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. The most modest growth occurs in the eastbound direction in the AM peak and in the westbound direction in the PM peak, in which linear yearly growth rates are in the 0.2 to 0.3 percent range; at a daily level, the yearly growth rate is approximately 0.7 percent.
- At the west end of the study area along the Dulles Greenway, freeway volumes show a higher growth than the east end, with a linear yearly growth rate of approximately 1.2 percent for daily volumes. The most significant growth occurs in the off-peak directions and time periods (westbound traffic in the AM and eastbound traffic in the PM), as Existing 2018 volumes are very low for these movements (1,000 vph or less).
- At the south end of the study area along Route 28, freeway volumes show a yearly growth rate of approximately 0.6 percent; during the AM and PM peak hours, the left-most lane of traffic in both directions is assumed to operate as HOV-3 only during both the AM and PM peak periods.
- At the north end of the study area along Route 28, freeway volumes show a yearly growth rate of approximately 0.3 percent; previously, in 2025 No-Build conditions, essentially no growth was shown along Route 28 at the north end. 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 more significant volume growth along Route 28 south of Sterling Boulevard (approximately 0.7 percent annually).

Growth at Interchanges

- At Frying Pan Road, the north-facing ramps (southbound off-ramp and northbound on-ramp) grow at a yearly rate of 0.6 to 0.7 percent, while the south-facing ramps (northbound off-ramp and southbound on-ramp) grow at a yearly rate of 1.0 to 1.1 percent, reflecting demand for the improved Frying Pan Road east-west connection as well as the growth anticipated in the vicinity of the Innovation Center Metrorail station. Note that the growth for the south-facing ramps is projected to be slightly less than 2025 conditions, as Sunrise Valley Drive Extended is able to serve some of these trips.

- At Innovation Avenue, the major developments described previously (Waterside, the Hub, and the land use around the current CIT site) are expected to come online between 2025 and 2045; these developments result in a significant increase in volume using the Innovation Avenue interchange ramps as compared to Existing and 2025 No-Build conditions, in which peak-hour volumes are very low (less than 200 vph). Ramp ADTs are forecasted to grow from less than 1,000 vpd to 2,000 vpd today to between 10,000 and 14,000 vpd in 2045, with peak-hour ramp volumes between approximately 800 and 1,200 vph.
- At the Route 606 interchange, the most significant growth is expected for the southbound to eastbound and westbound to northbound ramp movements, which are the movements associated with trips to and from the major new developments coming online in the area. Decreases in volume are expected for the northbound to eastbound and westbound to southbound ramp movements, which can be accommodated by Innovation Avenue and Shaw Road in 2045.
- Along Sterling Boulevard, as noted previously, the new connections provided by Shellhorn Road/Sterling Boulevard extended (west of Pacific Boulevard) and Prentice Drive result in a significant increase in volume as compared to Existing Conditions. 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.
- At Centreville Road, significant increases in volume are expected for the west-facing ramps (eastbound off-ramp and westbound on-ramp), especially in the peak direction (eastbound off-ramp during the AM and westbound on-ramp during the PM). Peak-period growth is more than 3 percent annually (a growth of more than 500 vph for both movements). This is likely attributable to demand for the increased lane use in the Innovation Center Metrorail station area, including the new developments on the north side of the Dulles Toll Road.

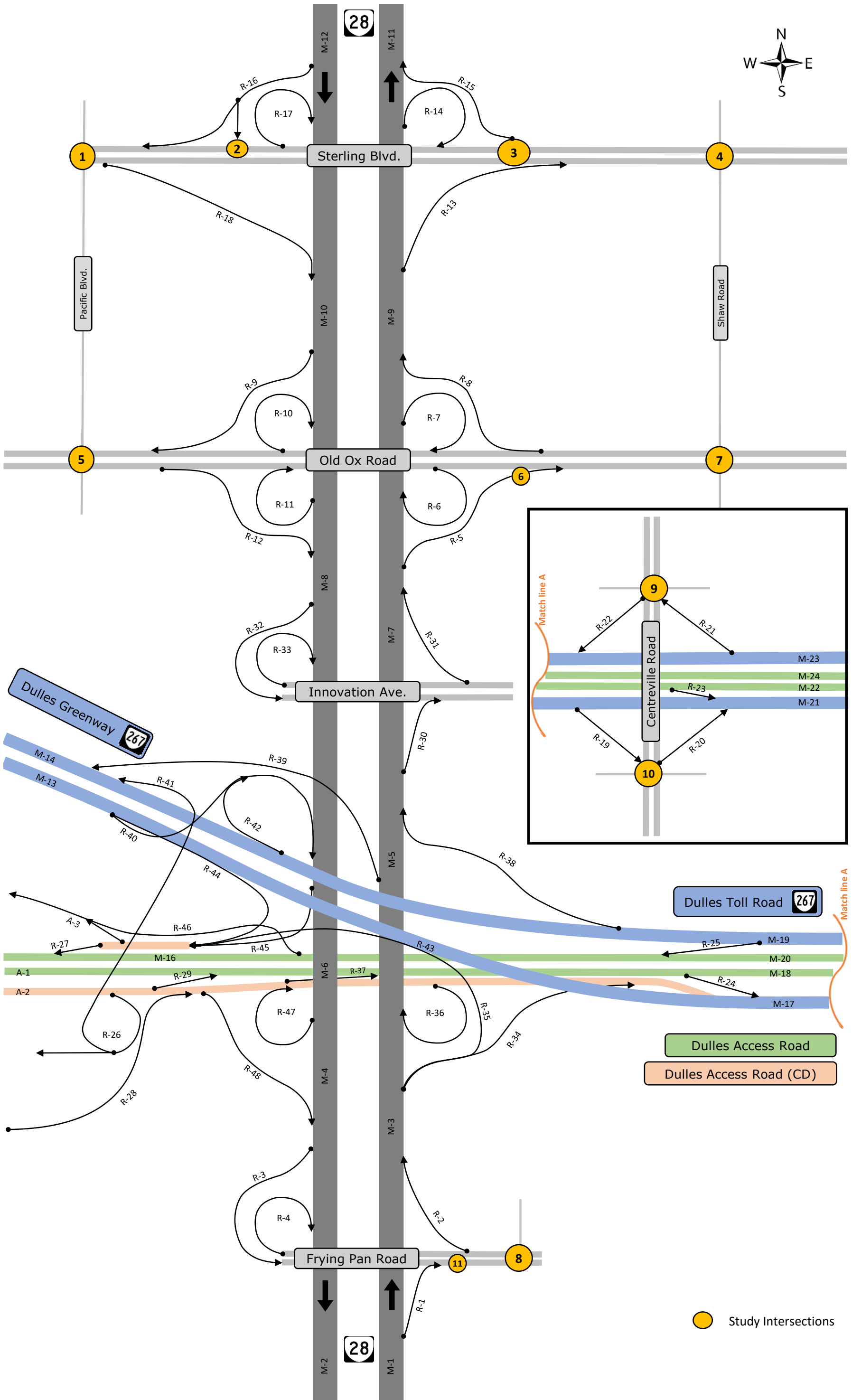
SUMMARY OF ATTACHMENTS

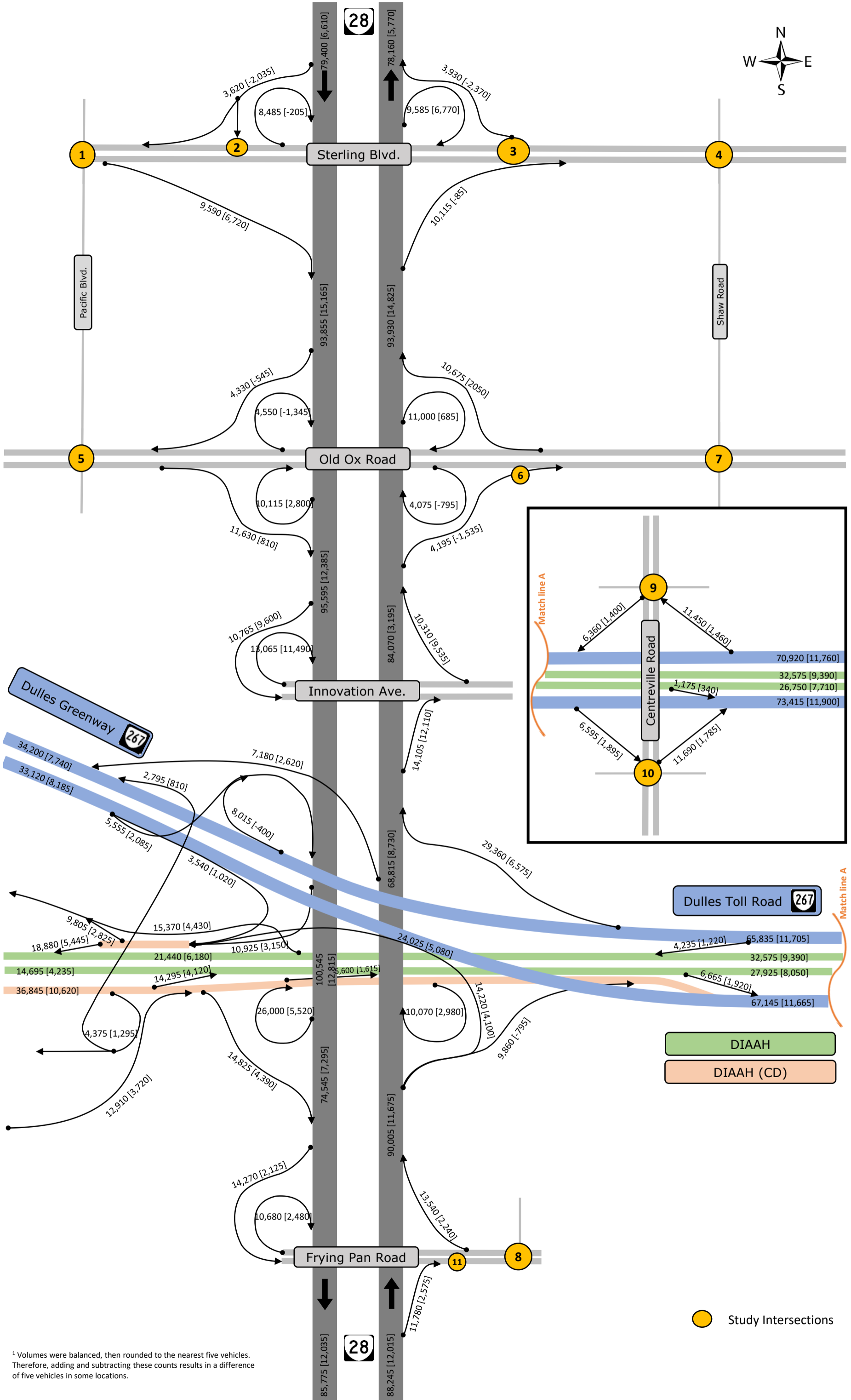
The PDF attachment to this memorandum contains the following graphics:

- Page 1 | Location key of count locations.
- Page 2 | Visual representation of balanced freeway and ramp volumes for 2045 No-Build Average Daily Traffic.
- Pages 3&4 | Tabular representation of balanced mainline and ramp volumes for 2045 No-Build Average Daily Traffic, highlighting the numeric and percent difference in vehicles from 2018 Existing and 2045 No-Build volumes.
- Page 5 | Visual representation of balanced freeway and ramp volumes for 2045 No-Build AM peak hour.

- Pages 6&7 | Tabular representation of balanced mainline and ramp volumes for 2045 No-Build AM peak hour, highlighting the numeric and percent difference in vehicles from 2018 Existing and 2045 No-Build volumes.
- Page 8 | Visual representation of balanced freeway and ramp volumes for 2045 No-Build PM peak hour.
- Pages 9&10 | Tabular representation of balanced mainline and ramp volumes for 2045 No-Build PM peak hour, highlighting the numeric and percent difference in vehicles from 2018 Existing and 2045 No-Build volumes.
- Page 11 | Visual representation of balanced intersection turning movement counts for 2045 No-Build AM and PM peak hours.
- Pages 12&13 | Tabular summary of Existing (2018), 2025 No-Build, and 2045 No-Build Average Daily Traffic.
- Pages 14&15 | Tabular summary of Existing (2018), 2025 No-Build, and 2045 No-Build AM peak hour.
- Pages 16&17 | Tabular summary of Existing (2018), 2025 No-Build, and 2045 No-Build PM peak hour.
- Page 18 | Visual representation of balanced freeway and ramp volumes for 2045 No-Build (compared with 2025 No-Build) Average Daily Traffic.
- Pages 19&20 | Tabular representation of balanced mainline and ramp volumes for 2045 No-Build Average Daily Traffic, highlighting the numeric and percent difference in vehicles from 2025 No-Build and 2045 No-Build volumes.
- Page 21 | Visual representation of balanced freeway and ramp volumes for 2045 No-Build (compared with 2025 No-Build) AM peak hour.
- Pages 22&23 | Tabular representation of balanced mainline and ramp volumes for 2045 No-Build AM peak hour, highlighting the numeric and percent difference in vehicles from 2025 No-Build and 2045 No-Build volumes.
- Page 24 | Visual representation of balanced freeway and ramp volumes for 2045 No-Build (compared with 2025 No-Build) PM peak hour.
- Pages 25&26 | Tabular representation of balanced mainline and ramp volumes for 2045 No-Build PM peak hour, highlighting the numeric and percent difference in vehicles from 2025 No-Build and 2045 No-Build volumes.

These attachments are best printed in 11x17.

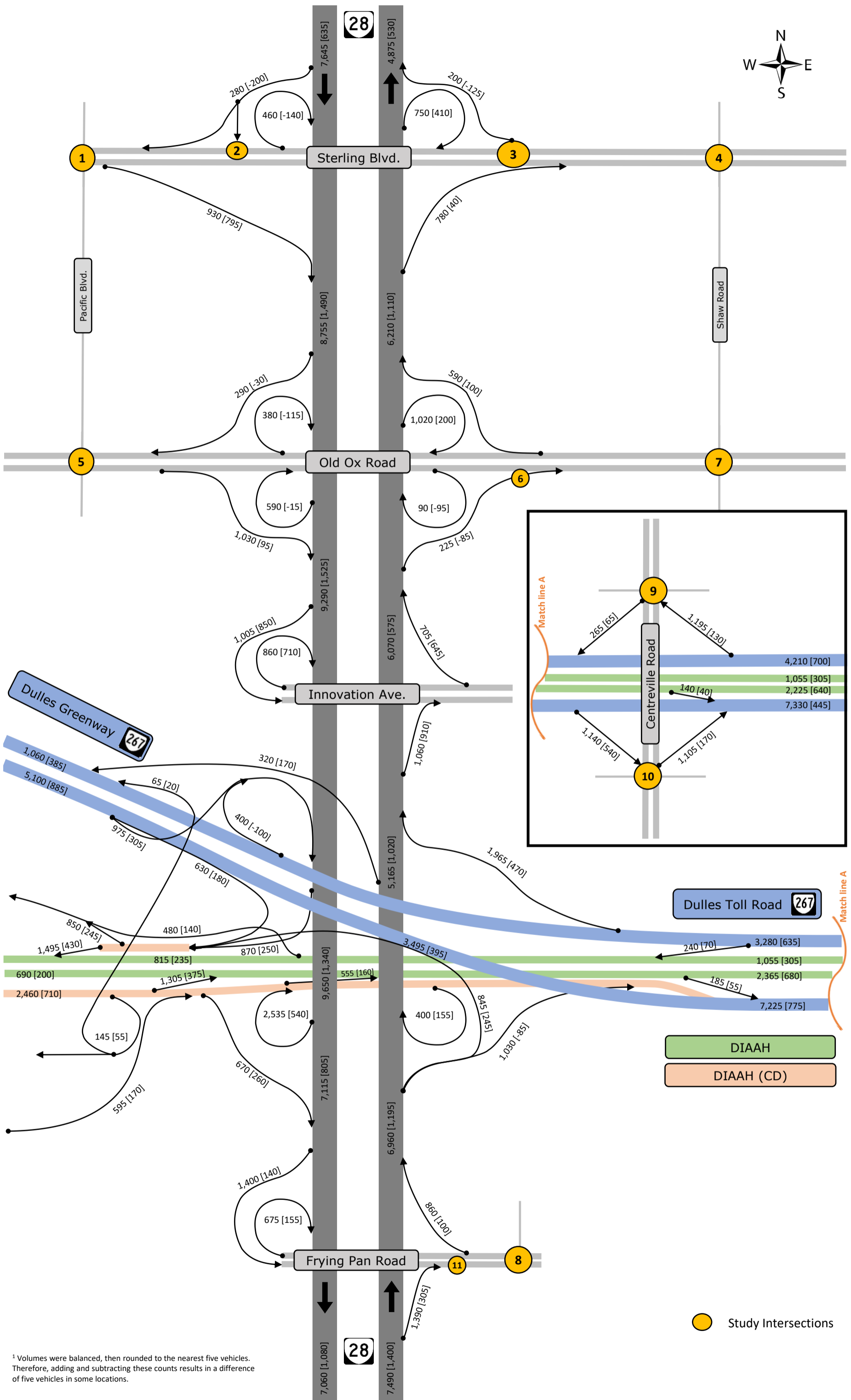




¹ Volumes were balanced, then rounded to the nearest five vehicles. Therefore, adding and subtracting these counts results in a difference of five vehicles in some locations.

			% Difference Less Than	0.0%	
			% Difference Less Than	10.0%	
			% Difference Greater Than	10.0%	
ADTs: 2018 Existing Volumes & 2045 No Build Forecasted Volumes					
Location	Index	2018 Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	76,230	88,245	12,015	14.6%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	73,740	85,775	12,035	15.1%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	78,330	90,005	11,675	13.9%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	67,250	74,545	7,295	10.3%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	60,085	68,815	8,730	13.5%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	87,730	100,545	12,815	13.6%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	80,875	84,070	3,195	3.9%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	83,210	95,595	12,385	13.9%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	79,105	93,930	14,825	17.1%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	78,690	93,855	15,165	17.6%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	72,390	78,160	5,770	7.7%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	72,790	79,400	6,610	8.7%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	24,935	33,120	8,185	28.2%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	26,460	34,200	7,740	25.5%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	36,685	51,540	14,855	33.7%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	15,260	21,440	6,180	33.7%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	55,480	67,145	11,665	19.0%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	19,875	27,925	8,050	33.7%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	54,130	65,835	11,705	19.5%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	23,185	32,575	9,390	33.7%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	61,515	73,415	11,900	17.6%
Eastbound DIAAH Mainline east of Centreville Road	M-22	19,040	26,750	7,710	33.7%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	59,160	70,920	11,760	18.1%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	23,185	32,575	9,390	33.7%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	9,205	11,780	2,575	24.5%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	11,300	13,540	2,240	18.0%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	12,145	14,270	2,125	16.1%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	8,200	10,680	2,480	26.3%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	5,730	4,195	-1,535	-30.9%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	4,870	4,075	-795	-17.8%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	10,315	11,000	685	6.4%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	8,625	10,675	2,050	21.2%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	4,875	4,330	-545	-11.8%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	5,895	4,550	-1,345	-25.8%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	7,315	10,115	2,800	32.1%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	10,820	11,630	810	7.2%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	10,200	10,115	-85	-0.8%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	2,815	9,585	6,770	109.2%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	6,300	3,930	-2,370	-46.3%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	5,655	3,620	-2,035	-43.9%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	8,690	8,485	-205	-2.4%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	2,870	9,590	6,720	107.9%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	4,700	6,595	1,895	33.6%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	9,905	11,690	1,785	16.5%

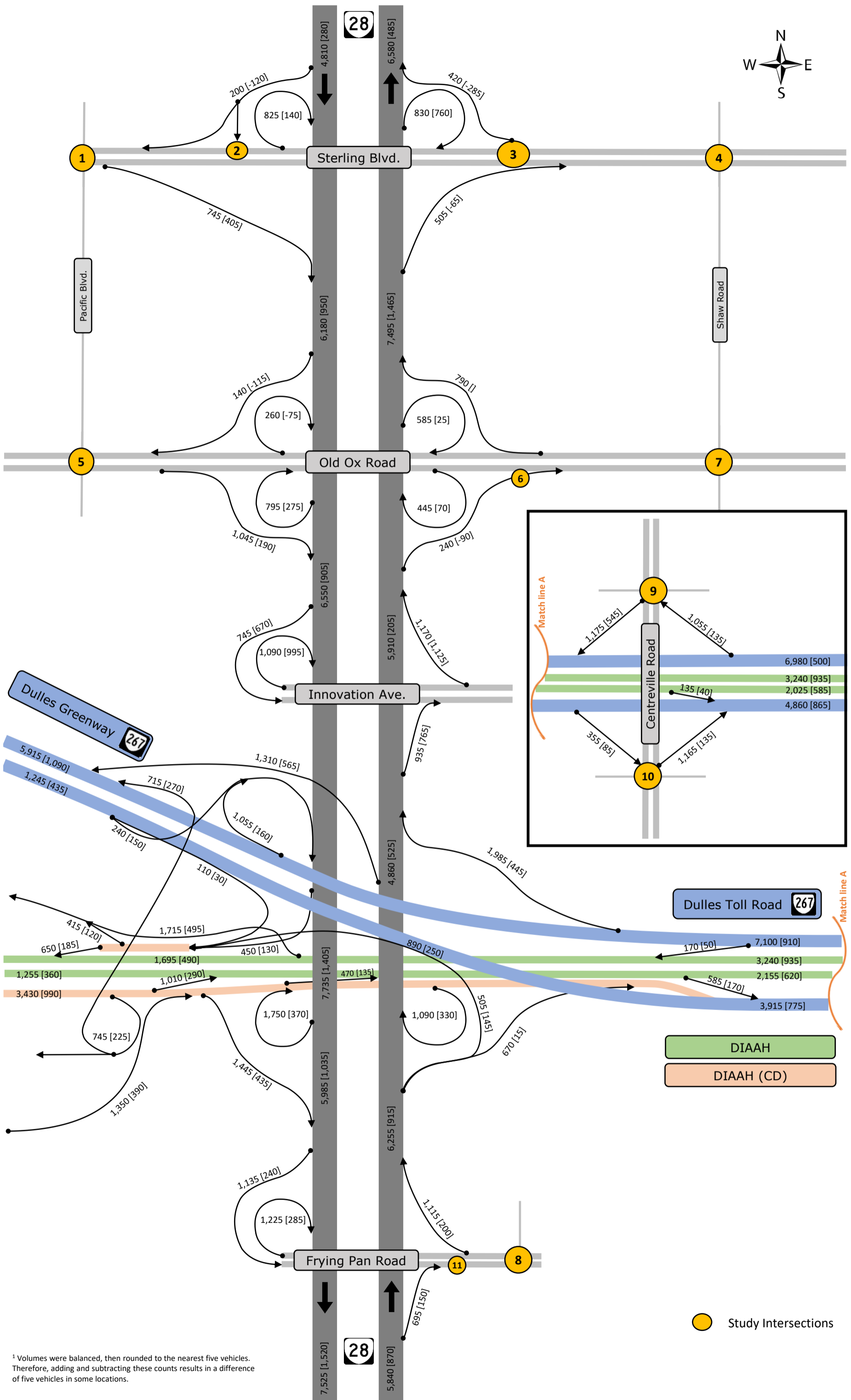
		% Difference Less Than	0.0%		
		% Difference Less Than	10.0%		
		% Difference Greater Than	10.0%		
ADTs: 2018 Existing Volumes & 2045 No Build Forecasted Volumes					
Location	Index	2018 Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	9,990	11,450	1,460	13.6%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	4,960	6,360	1,400	24.7%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	835	1,175	340	33.8%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	4,745	6,665	1,920	33.7%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	3,015	4,235	1,220	33.7%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	3,080	4,375	1,295	34.7%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	13,435	18,880	5,445	33.7%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	9,190	12,910	3,720	33.7%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	10,175	14,295	4,120	33.7%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	1,995	14,105	12,110	150.4%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	775	10,310	9,535	172.0%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	1,165	10,765	9,600	160.9%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	1,575	13,065	11,490	157.0%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	10,655	9,860	-795	-7.8%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	10,120	14,220	4,100	33.7%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	7,090	10,070	2,980	34.7%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	3,985	5,600	1,615	33.7%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	22,785	29,360	6,575	25.2%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	4,560	7,180	2,620	44.6%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	3,470	5,555	2,085	46.2%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	1,985	2,795	810	33.9%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	8,415	8,015	-400	-4.9%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	18,945	24,025	5,080	23.6%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	2,520	3,540	1,020	33.7%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	7,775	10,925	3,150	33.7%
Off-ramp from westbound DIAAH to Rudder Road	R-46	10,940	15,370	4,430	33.7%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	20,480	26,000	5,520	23.8%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	10,435	14,825	4,390	34.8%



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: 2018 Existing Volumes & 2045 No Build Forecasted Volumes					
Location	Index	2018 Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	6,090	7,490	1,400	20.6%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	5,980	7,060	1,080	16.6%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,765	6,960	1,195	18.8%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	6,310	7,115	805	12.0%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,145	5,165	1,020	21.9%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	8,310	9,650	1,340	14.9%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,495	6,070	575	9.9%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	7,765	9,290	1,525	17.9%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	5,100	6,210	1,110	19.6%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	7,265	8,755	1,490	18.6%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	4,345	4,875	530	11.5%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	7,010	7,645	635	8.7%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	4,215	5,100	885	19.0%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	675	1,060	385	44.4%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	2,240	3,150	910	33.8%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	580	815	235	33.7%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	6,450	7,225	775	11.3%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,685	2,365	680	33.6%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	2,645	3,280	635	21.4%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	750	1,055	305	33.8%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	6,885	7,330	445	6.3%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,585	2,225	640	33.6%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	3,510	4,210	700	18.1%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	750	1,055	305	33.8%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	1,085	1,390	305	24.6%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	760	860	100	12.3%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	1,260	1,400	140	10.5%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	520	675	155	25.9%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	310	225	-85	-31.8%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	185	90	-95	-69.1%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	820	1,020	200	21.7%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	490	590	100	18.5%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	320	290	-30	-9.8%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	495	380	-115	-26.3%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	605	590	-15	-2.5%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	935	1,030	95	9.7%
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	750	410	75.2%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	325	200	-125	-47.6%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	480	280	-200	-52.6%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	600	460	-140	-26.4%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	135	930	795	149.3%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	600	1,140	540	62.1%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	935	1,105	170	16.7%

		% Difference Less Than	0.0%		
		% Difference Less Than	10.0%		
		% Difference Greater Than	10.0%		
AM Peak Hour: 2018 Existing Volumes & 2045 No Build Forecasted Volumes					
Location	Index	2018 Balanced Volumes	2045 No Build 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	1,195	130	11.5%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	200	265	65	28.0%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	100	140	40	33.3%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	130	185	55	34.9%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	170	240	70	34.1%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	90	145	55	46.8%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	1,065	1,495	430	33.6%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	425	595	170	33.3%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	930	1,305	375	33.6%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	150	1,060	910	150.4%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	60	705	645	168.6%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	155	1,005	850	146.6%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	150	860	710	140.6%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	1,115	1,030	-85	-7.9%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	600	845	245	33.9%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	245	400	155	48.1%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	395	555	160	33.7%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,495	1,965	470	27.2%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	150	320	170	72.3%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	670	975	305	37.1%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	45	65	20	36.4%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	500	400	-100	-22.2%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	3,100	3,495	395	12.0%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	450	630	180	33.3%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	620	870	250	33.6%
Off-ramp from westbound DIAAH to Rudder Road	R-46	340	480	140	34.1%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,995	2,535	540	23.8%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	410	670	260	48.1%



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%		
PM Peak Hour: 2018 Existing Volumes & 2045 No Build Forecasted Volumes					
Location	Index	2018 Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	4,970	5,840	870	16.1%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	6,005	7,525	1,520	22.5%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,340	6,255	915	15.8%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	4,950	5,985	1,035	18.9%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,335	4,860	525	11.4%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	6,330	7,735	1,405	20.0%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,705	5,910	205	3.5%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	5,645	6,550	905	14.8%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	6,030	7,495	1,465	21.7%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	5,230	6,180	950	16.7%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	6,095	6,580	485	7.7%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	4,530	4,810	280	6.0%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	810	1,245	435	42.3%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	4,825	5,915	1,090	20.3%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	3,335	4,685	1,350	33.7%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	1,205	1,695	490	33.8%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	3,140	3,915	775	22.0%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,535	2,155	620	33.6%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	6,190	7,100	910	13.7%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	2,305	3,240	935	33.7%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	3,995	4,860	865	19.5%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,440	2,025	585	33.8%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	6,480	6,980	500	7.4%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	2,305	3,240	935	33.7%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	545	695	150	24.2%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	915	1,115	200	19.7%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	895	1,135	240	23.6%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	940	1,225	285	26.3%
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	445	70	17.1%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	560	585	25	4.4%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	790	790	0	0.0%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	255	140	-115	-58.2%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	335	260	-75	-25.2%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	520	795	275	41.8%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	855	1,045	190	20.0%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	570	505	-65	-12.1%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	70	830	760	168.9%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	705	420	-285	-50.7%
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	825	140	18.5%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	340	745	405	74.7%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	270	355	85	27.2%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	1,030	1,165	135	12.3%

		% Difference Less Than	0.0%		
		% Difference Less Than	10.0%		
		% Difference Greater Than	10.0%		
PM Peak Hour: 2018 Existing Volumes & 2045 No Build Forecasted Volumes					
Location	Index	2018 Balanced Volumes	2045 No Build 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	1,055	135	13.7%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	630	1,175	545	60.4%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	95	135	40	34.8%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	415	585	170	34.0%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	120	170	50	34.5%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	520	745	225	35.6%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	465	650	185	33.2%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	960	1,350	390	33.8%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	720	1,010	290	33.5%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	170	935	765	138.5%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	45	1,170	1,125	185.2%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	75	745	670	163.4%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	95	1,090	995	167.9%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	655	670	15	2.3%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	360	505	145	33.5%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	760	1,090	330	35.7%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	335	470	135	33.5%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,540	1,985	445	25.2%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	745	1,310	565	55.0%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	90	240	150	90.9%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	445	715	270	46.6%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	895	1,055	160	16.4%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	640	890	250	32.7%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	80	110	30	31.6%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	320	450	130	33.8%
Off-ramp from westbound DIAAH to Rudder Road	R-46	1,220	1,715	495	33.7%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,380	1,750	370	23.6%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	1,010	1,445	435	35.4%

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.

Route 846 | Sterling Blvd

I-1: Pacific Boulevard at Route 846 (S. Sterling Boulevard)	
85 (205) 270 (35) 685 (515)	550 (350) 460 (635) 315 (85)
100 (125) 940 (575) 115 (55)	25 (20) 45 (275) 105 (370)

I-2: Route 846 (S. Sterling Boulevard) and Route 28 southbound off-ramps	
245 (105) 35 (95)	460 (825) 1080 (970)
800 (715)	

I-3: Route 846 (S. Sterling Boulevard) and Route 28 northbound off-ramps	
750 (830)	190 (405) 790 (965)
10 (15) 820 (800)	780 (505)

I-4: Shaw Road at Route 846 (S. Sterling Boulevard)	
06 (01) 02 (01) 02 (5)	25 (10) 895 (995) 280 (190)
70 (45) 1085 (1155) 435 (100)	65 (275) 15 (45) 195 (400)

Route 606 | Old Ox Road

I-5: Pacific Boulevard at Route 606 (Old Ox Road)	
225 (200) 70 (30) 385 (475)	485 (355) 1480 (2205) 125 (80)
155 (190) 2770 (1875) 145 (120)	115 (45) 40 (35) 270 (260)

I-6: Route 606 (Old Ox Road) and Route 28 northbound off-ramps	
1020 (585)	590 (790) 1170 (2185)
2905 (1925) 90 (445)	40 (90) 185 (150)

I-7: Shaw Road at Route 606 (Old Ox Road)	
100 (25) 330 (35) 30 (10)	65 (25) 1560 (2365) 60 (150)
150 (20) 2285 (1890) 695 (240)	100 (570) 90 (115) 80 (150)

Innovation Avenue

I-131: Innovation Avenue at Shaw Road	
585 (366) 59 (011) 07 (09)	40 (50) 860 (1255) 35 (20)
315 (405) 1190 (915) 555 (360)	310 (620) 45 (115) 20 (35)

Frying Pan Road

I-11: River Birch Road at Frying Pan Road	
730 (1010) 200 (90)	150 (85) 805 (1330)
1135 (760) 1655 (1070)	

I-8: Sunrise Valley Drive at Frying Pan Road	
205 (500) 56 (511) 25 (95)	125 (90) 685 (855) 345 (415)
690 (270) 1080 (820) 80 (65)	65 (55) 110 (120) 320 (360)

Centreville Road

I-9: Centreville Road and Dulles Toll Road Ramps North (WB) of Dulles Toll Road	
600 (551) 0291 (0101)	430 (530) 760 (525)
	110 (575) 2150 (1350)

I-10: Centreville Road and Dulles Toll Road Ramps South (EB) of Dulles Toll Road	
5281 (0051) 020 (072)	
565 (215) 575 (140)	835 (845) 1695 (1710)

ADTs: 2018 Existing, 2025 No Build, and 2045 No Build Volumes

Location	Index	2018 Balanced Volumes	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes
Northbound Route 28 Mainline south of Frying Pan Road	M-1	76,230	83,065	88,245
Southbound Route 28 Mainline south of Frying Pan Road	M-2	73,740	82,905	85,775
Northbound Route 28 Mainline north of Frying Pan Road	M-3	78,330	83,335	90,005
Southbound Route 28 Mainline north of Frying Pan Road	M-4	67,250	71,845	74,545
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	60,085	65,900	68,815
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	87,730	93,455	100,545
Northbound Route 28 Mainline north of Innovation Avenue	M-7	80,875	88,735	84,070
Southbound Route 28 Mainline north of Innovation Avenue	M-8	83,210	89,650	95,595
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	79,105	84,620	93,930
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	78,690	83,360	93,855
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	72,390	71,375	78,160
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	72,790	70,670	79,400
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	24,935	26,020	33,120
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	26,460	28,145	34,200
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	36,685	40,540	51,540
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	15,260	16,860	21,440
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	67,145
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	19,875	21,960	27,925
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	65,835
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	23,185	25,620	32,575
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	61,515	59,960	73,415
Eastbound DIAAH Mainline east of Centreville Road	M-22	19,040	21,040	26,750
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	59,160	60,630	70,920
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	23,185	25,620	32,575
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	9,205	12,640	11,780
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	11,300	12,910	13,540
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	12,145	13,340	14,270
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	8,200	12,855	10,680
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	5,730	5,945	4,195
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	4,870	3,990	4,075
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	10,315	11,570	11,000
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	8,625	8,675	10,675
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	4,875	4,205	4,330
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	5,895	6,650	4,550
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	7,315	7,425	10,115
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	10,820	11,270	11,630
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	10,200	10,360	10,115
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	2,815	7,170	9,585
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	6,300	4,285	3,930
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	5,655	3,585	3,620
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	8,690	8,625	8,485
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	2,870	7,650	9,590
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	4,700	6,460	6,595
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	9,905	9,210	11,690
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	9,990	8,995	11,450
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	4,960	5,710	6,360
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	835	925	1,175

ADTs: 2018 Existing, 2025 No Build, and 2045 No Build Volumes

Location	Index	2018 Balanced Volumes	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes
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	6,665
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	4,235
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	3,080	3,410	4,375
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	13,435	14,845	18,880
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	9,190	10,155	12,910
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	10,175	11,245	14,295
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	1,995	1,955	14,105
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	775	730	10,310
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	1,165	1,145	10,765
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	1,575	1,665	13,065
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	10,655	9,210	9,860
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	10,120	11,185	14,220
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	7,090	7,845	10,070
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	3,985	4,405	5,600
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	22,785	24,795	29,360
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	4,560	4,885	7,180
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	3,470	3,700	5,555
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	1,985	2,205	2,795
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	8,415	8,170	8,015
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	18,945	19,535	24,025
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	2,520	2,785	3,540
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	7,775	8,590	10,925
Off-ramp from westbound DIAAH to Rudder Road	R-46	10,940	12,090	15,370
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	20,480	21,610	26,000
On-ramp from DIAAH (CD) to southbound Route 28	R-48	10,435	11,545	14,825

AM Peak Hour: 2018 Existing, 2025 No Build, and 2045 No Build Volumes

Location	Index	2018 Balanced Volumes	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes
Northbound Route 28 Mainline south of Frying Pan Road	M-1	6,090	6,580	7,490
Southbound Route 28 Mainline south of Frying Pan Road	M-2	5,980	6,815	7,060
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,765	6,165	6,960
Southbound Route 28 Mainline north of Frying Pan Road	M-4	6,310	6,935	7,115
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,145	4,605	5,165
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	8,310	9,060	9,650
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,495	6,285	6,070
Southbound Route 28 Mainline north of Innovation Avenue	M-8	7,765	8,690	9,290
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	5,100	5,835	6,210
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	7,265	7,915	8,755
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	4,345	4,745	4,875
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	7,010	6,805	7,645
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	4,215	4,440	5,100
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	675	795	1,060
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	2,240	2,490	3,150
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	580	640	815
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	7,225
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,685	1,860	2,365
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	3,280
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	750	830	1,055
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	6,885	6,710	7,330
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,585	1,750	2,225
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	3,510	3,880	4,210
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	750	830	1,055
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	1,085	1,365	1,390
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	760	945	860
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	1,260	1,395	1,400
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	520	825	675
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	310	350	225
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	185	115	90
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	820	825	1,020
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	490	555	590
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	320	300	290
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	495	500	380
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	605	475	590
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	935	1,055	1,030
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	740	780	780
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	340	545	750
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	325	240	200
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	480	270	280
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	600	565	460
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	135	815	930
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	600	1,025	1,140
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	935	875	1,105
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	1,065	995	1,195
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	200	185	265
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	100	110	140

AM Peak Hour: 2018 Existing, 2025 No Build, and 2045 No Build Volumes

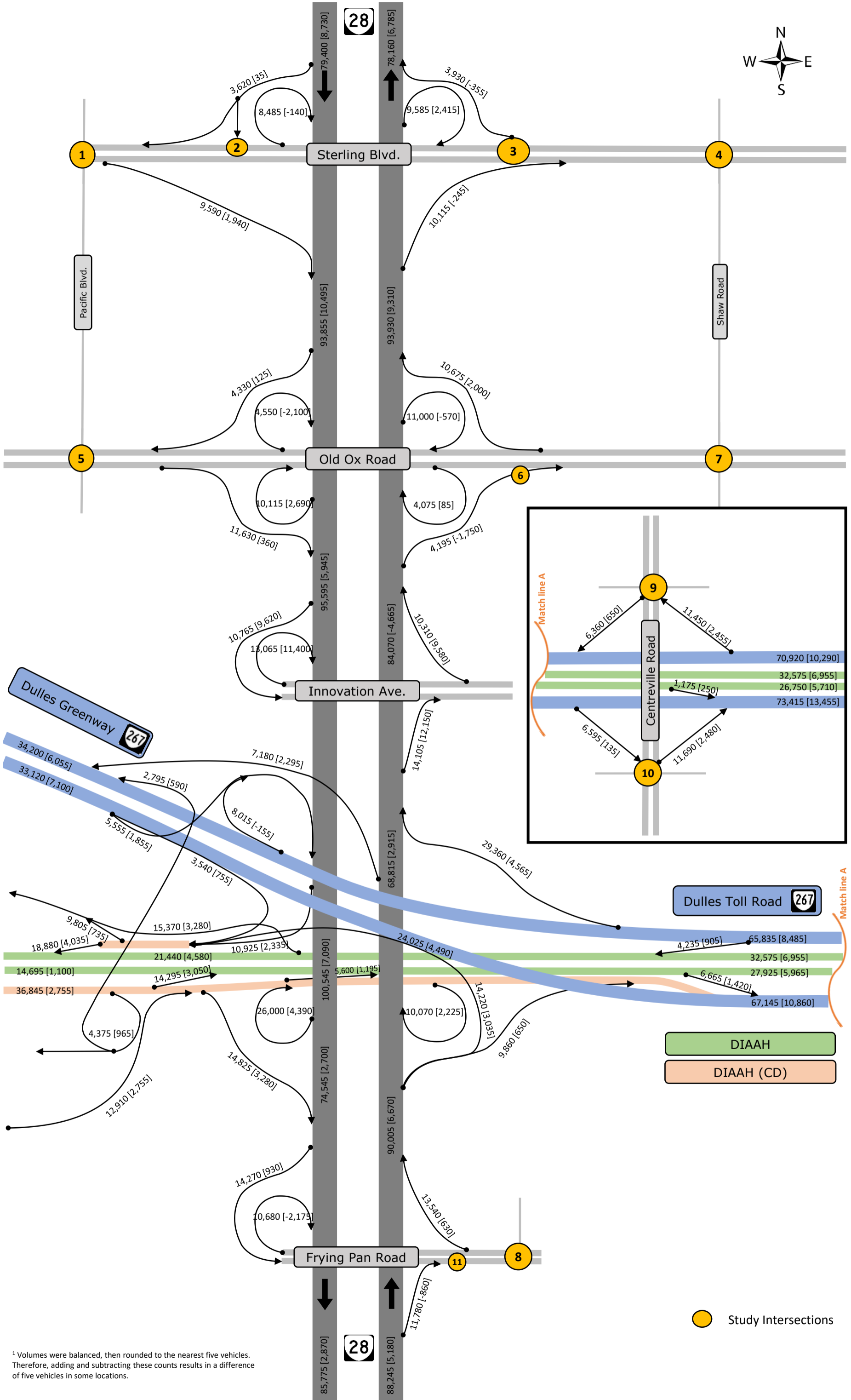
Location	Index	2018 Balanced Volumes	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	130	145	185
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	170	190	240
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	90	100	145
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	1,065	1,175	1,495
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	425	475	595
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	930	1,030	1,305
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	150	150	1,060
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	60	60	705
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	155	160	1,005
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	150	140	860
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	1,115	975	1,030
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	600	665	845
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	245	270	400
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	395	435	555
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,495	1,830	1,965
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	150	190	320
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	670	575	975
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	45	50	65
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	500	495	400
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	3,100	3,370	3,495
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	450	495	630
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	620	685	870
Off-ramp from westbound DIAAH to Rudder Road	R-46	340	375	480
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,995	2,125	2,535
On-ramp from DIAAH (CD) to southbound Route 28	R-48	410	455	670

PM Peak Hour: 2018 Existing, 2025 No Build, and 2045 No Build Volumes

Location	Index	2018 Balanced Volumes	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes
Northbound Route 28 Mainline south of Frying Pan Road	M-1	4,970	5,665	5,840
Southbound Route 28 Mainline south of Frying Pan Road	M-2	6,005	6,745	7,525
Northbound Route 28 Mainline north of Frying Pan Road	M-3	5,340	6,030	6,255
Southbound Route 28 Mainline north of Frying Pan Road	M-4	4,950	5,460	5,985
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,335	5,135	4,860
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	6,330	6,865	7,735
Northbound Route 28 Mainline north of Innovation Avenue	M-7	5,705	6,600	5,910
Southbound Route 28 Mainline north of Innovation Avenue	M-8	5,645	6,175	6,550
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	6,030	6,880	7,495
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	5,230	5,575	6,180
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	6,095	6,010	6,580
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	4,530	4,545	4,810
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	810	1,100	1,245
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	4,825	5,130	5,915
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	3,335	3,735	4,685
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	1,205	1,330	1,695
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	3,915
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,535	1,695	2,155
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	7,100
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	2,305	2,545	3,240
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	3,995	4,120	4,860
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,440	1,590	2,025
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	6,480	6,320	6,980
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	2,305	2,545	3,240
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	545	755	695
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	915	1,120	1,115
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	895	1,050	1,135
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	940	1,220	1,225
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	330	240	240
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	375	460	445
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	560	670	585
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	790	690	790
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	255	200	140
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	335	370	260
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	520	580	795
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	855	1,010	1,045
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	570	585	505
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	70	745	830
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	705	460	420
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	320	200	200
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	685	705	825
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	340	525	745
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	270	335	355
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	1,030	920	1,165
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	920	830	1,055
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	630	940	1,175
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	95	105	135

PM Peak Hour: 2018 Existing, 2025 No Build, and 2045 No Build Volumes

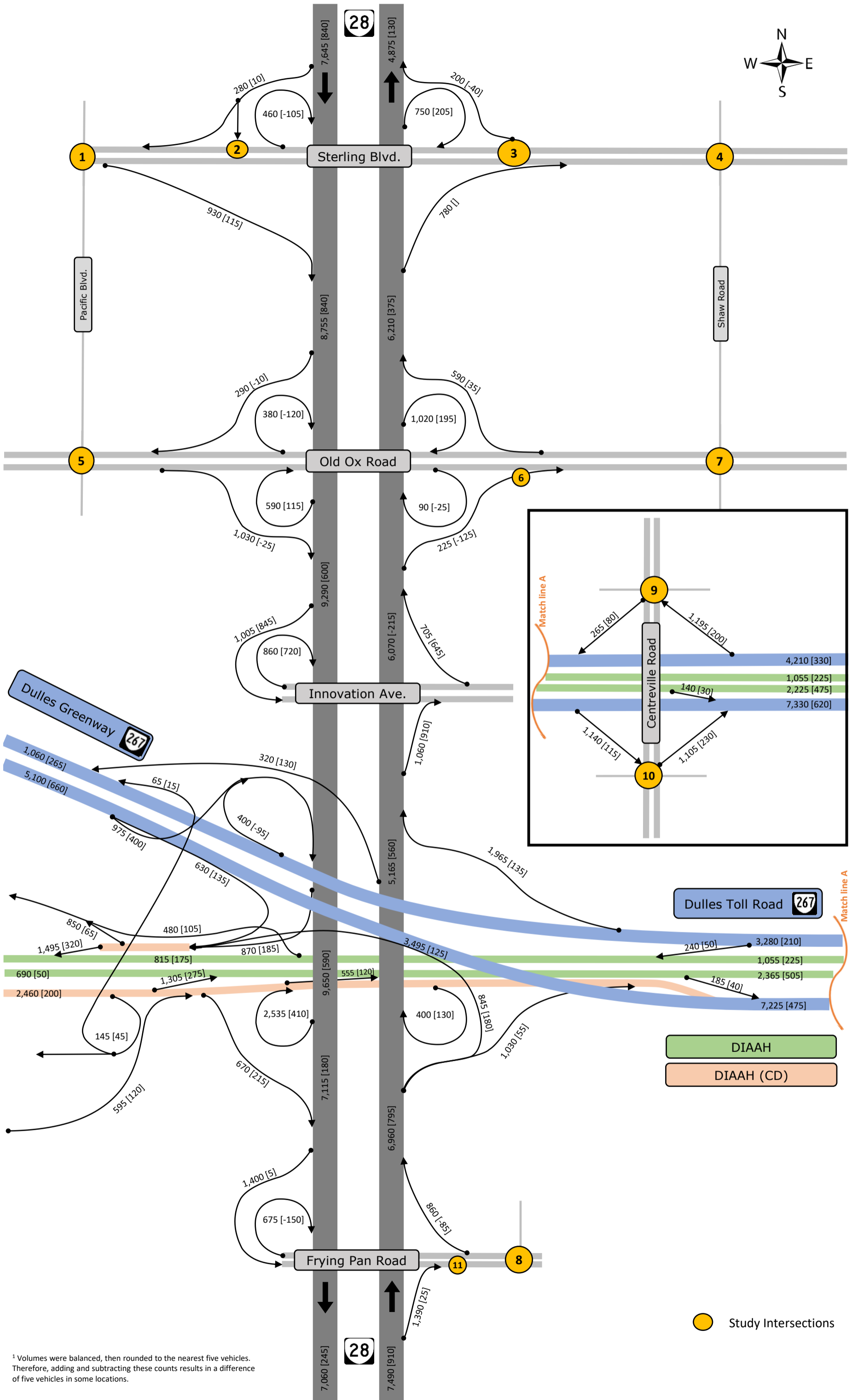
Location	Index	2018 Balanced Volumes	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	415	460	585
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	120	135	170
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	520	575	745
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	465	520	650
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	960	1,080	1,350
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	720	795	1,010
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	170	160	935
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	45	45	1,170
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	75	75	745
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	95	125	1,090
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	655	565	670
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	360	400	505
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	760	840	1,090
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	335	370	470
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,540	1,625	1,985
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	745	770	1,310
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	90	150	240
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	445	535	715
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	895	845	1,055
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	640	860	890
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	80	90	110
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	320	355	450
Off-ramp from westbound DIAAH to Rudder Road	R-46	1,220	1,350	1,715
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,380	1,405	1,750
On-ramp from DIAAH (CD) to southbound Route 28	R-48	1,010	1,115	1,445



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%		
ADTs: 2025 No Build & 2045 No Build Forecasted Volumes					
Location	Index	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	83,065	88,245	5,180	6.0%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	82,905	85,775	2,870	3.4%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	83,335	90,005	6,670	7.7%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	71,845	74,545	2,700	3.7%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	65,900	68,815	2,915	4.3%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	93,455	100,545	7,090	7.3%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	88,735	84,070	-4,665	-5.4%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	89,650	95,595	5,945	6.4%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	84,620	93,930	9,310	10.4%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	83,360	93,855	10,495	11.8%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	71,375	78,160	6,785	9.1%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	70,670	79,400	8,730	11.6%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	26,020	33,120	7,100	24.0%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	28,145	34,200	6,055	19.4%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	40,540	51,540	11,000	23.9%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	16,860	21,440	4,580	23.9%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	56,285	67,145	10,860	17.6%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	21,960	27,925	5,965	23.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	57,350	65,835	8,485	13.8%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	25,620	32,575	6,955	23.9%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	59,960	73,415	13,455	20.2%
Eastbound DIAAH Mainline east of Centreville Road	M-22	21,040	26,750	5,710	23.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	60,630	70,920	10,290	15.6%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	25,620	32,575	6,955	23.9%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	12,640	11,780	-860	-7.0%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	12,910	13,540	630	4.8%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	13,340	14,270	930	6.7%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	12,855	10,680	-2,175	-18.5%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	5,945	4,195	-1,750	-34.5%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	3,990	4,075	85	2.1%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	11,570	11,000	-570	-5.1%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	8,675	10,675	2,000	20.7%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	4,205	4,330	125	2.9%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	6,650	4,550	-2,100	-37.5%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	7,425	10,115	2,690	30.7%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	11,270	11,630	360	3.1%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	10,360	10,115	-245	-2.4%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	7,170	9,585	2,415	28.8%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	4,285	3,930	-355	-8.6%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	3,585	3,620	35	1.0%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	8,625	8,485	-140	-1.6%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	7,650	9,590	1,940	22.5%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	6,460	6,595	135	2.1%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	9,210	11,690	2,480	23.7%

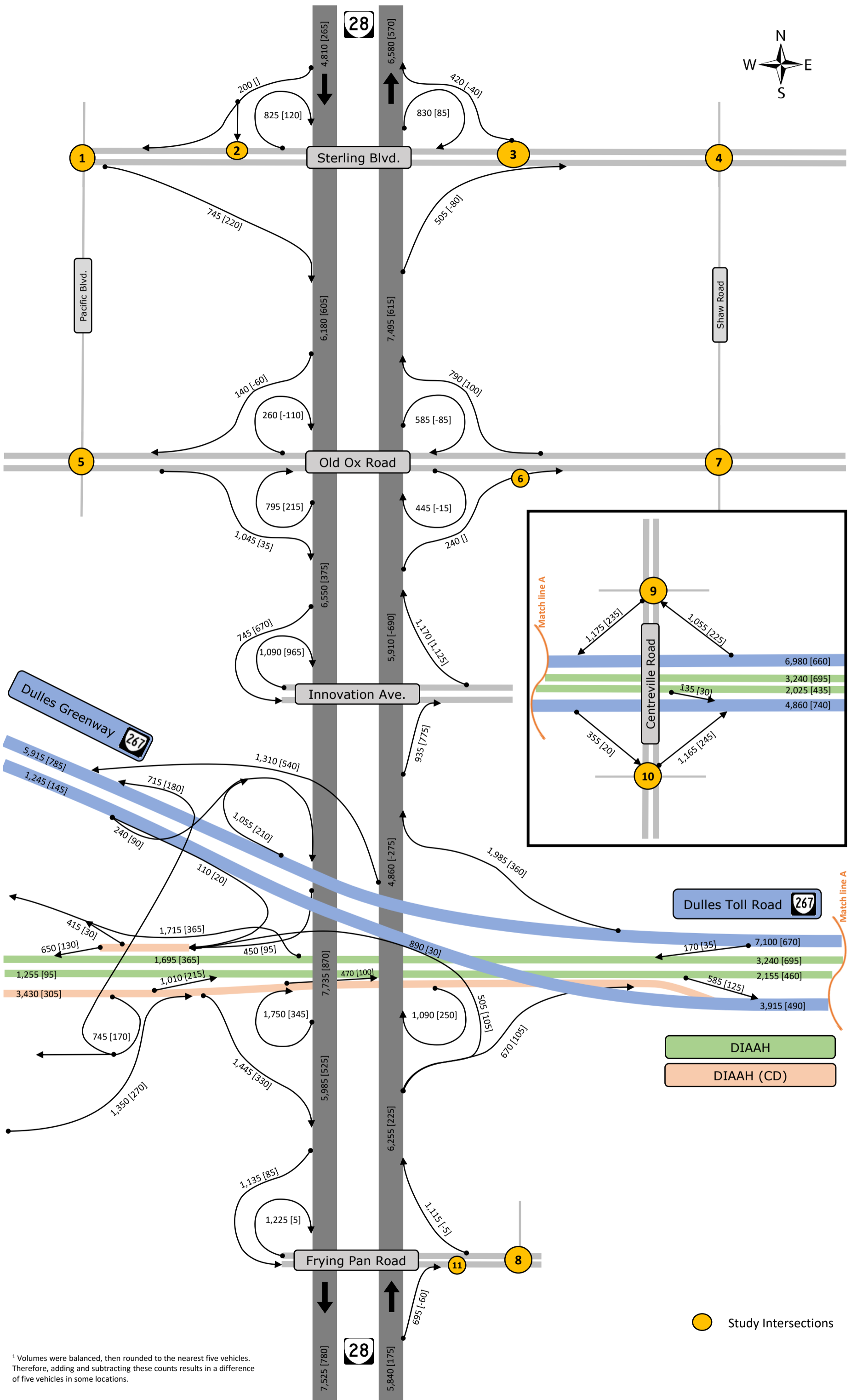
	% Difference Less Than	0.0%			
	% Difference Less Than	10.0%			
	% Difference Greater Than	10.0%			
ADTs: 2025 No Build & 2045 No Build Forecasted Volumes					
Location	Index	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	8,995	11,450	2,455	24.0%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	5,710	6,360	650	10.8%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	925	1,175	250	23.8%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	5,245	6,665	1,420	23.8%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	3,330	4,235	905	23.9%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	3,410	4,375	965	24.8%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	14,845	18,880	4,035	23.9%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	10,155	12,910	2,755	23.9%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	11,245	14,295	3,050	23.9%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	1,955	14,105	12,150	151.3%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	730	10,310	9,580	173.6%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	1,145	10,765	9,620	161.5%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	1,665	13,065	11,400	154.8%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	9,210	9,860	650	6.8%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	11,185	14,220	3,035	23.9%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	7,845	10,070	2,225	24.8%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	4,405	5,600	1,195	23.9%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	24,795	29,360	4,565	16.9%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	4,885	7,180	2,295	38.0%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	3,700	5,555	1,855	40.1%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	2,205	2,795	590	23.6%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	8,170	8,015	-155	-1.9%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	19,535	24,025	4,490	20.6%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	2,785	3,540	755	23.9%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	8,590	10,925	2,335	23.9%
Off-ramp from westbound DIAAH to Rudder Road	R-46	12,090	15,370	3,280	23.9%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	21,610	26,000	4,390	18.4%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	11,545	14,825	3,280	24.9%



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: 2025 No Build & 2045 No Build Forecasted Volumes					
Location	Index	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	6,580	7,490	910	12.9%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	6,815	7,060	245	3.5%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	6,165	6,960	795	12.1%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	6,935	7,115	180	2.6%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	4,605	5,165	560	11.5%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	9,060	9,650	590	6.3%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	6,285	6,070	-215	-3.5%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	8,690	9,290	600	6.7%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	5,835	6,210	375	6.2%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	7,915	8,755	840	10.1%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	4,745	4,875	130	2.7%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	6,805	7,645	840	11.6%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	4,440	5,100	660	13.8%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	795	1,060	265	28.6%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	2,490	3,150	660	23.4%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	640	815	175	24.1%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	6,750	7,225	475	6.8%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,860	2,365	505	23.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	3,070	3,280	210	6.6%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	830	1,055	225	23.9%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	6,710	7,330	620	8.8%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,750	2,225	475	23.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	3,880	4,210	330	8.2%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	830	1,055	225	23.9%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	1,365	1,390	25	1.8%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	945	860	-85	-9.4%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	1,395	1,400	5	0.4%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	825	675	-150	-20.0%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	350	225	-125	-43.5%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	115	90	-25	-24.4%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	825	1,020	195	21.1%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	555	590	35	6.1%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	300	290	-10	-3.4%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	500	380	-120	-27.3%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	475	590	115	21.6%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	1,055	1,030	-25	-2.4%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	780	780	0	0.0%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	545	750	205	31.7%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	240	200	-40	-18.2%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	270	280	10	3.6%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	565	460	-105	-20.5%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	815	930	115	13.2%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	1,025	1,140	115	10.6%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	875	1,105	230	23.2%

	% Difference Less Than	0.0%			
	% Difference Less Than	10.0%			
	% Difference Greater Than	10.0%			
AM Peak Hour: 2025 No Build & 2045 No Build Forecasted Volumes					
Location	Index	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	995	1,195	200	18.3%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	185	265	80	35.6%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	110	140	30	24.0%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	145	185	40	24.2%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	190	240	50	23.3%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	100	145	45	36.7%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	1,175	1,495	320	24.0%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	475	595	120	22.4%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	1,030	1,305	275	23.6%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	150	1,060	910	150.4%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	60	705	645	168.6%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	160	1,005	845	145.1%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	140	860	720	144.0%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	975	1,030	55	5.5%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	665	845	180	23.8%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	270	400	130	38.8%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	435	555	120	24.2%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,830	1,965	135	7.1%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	190	320	130	51.0%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	575	975	400	51.6%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	50	65	15	26.1%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	495	400	-95	-21.2%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	3,370	3,495	125	3.6%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	495	630	135	24.0%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	685	870	185	23.8%
Off-ramp from westbound DIAAH to Rudder Road	R-46	375	480	105	24.6%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	2,125	2,535	410	17.6%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	455	670	215	38.2%



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: 2025 No Build & 2045 No Build Forecasted Volumes					
Location	Index	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Northbound Route 28 Mainline south of Frying Pan Road	M-1	5,665	5,840	175	3.0%
Southbound Route 28 Mainline south of Frying Pan Road	M-2	6,745	7,525	780	10.9%
Northbound Route 28 Mainline north of Frying Pan Road	M-3	6,030	6,255	225	3.7%
Southbound Route 28 Mainline north of Frying Pan Road	M-4	5,460	5,985	525	9.2%
Northbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-5	5,135	4,860	-275	-5.5%
Southbound Route 28 Mainline north of Route 267 (Dulles Toll Road)	M-6	6,865	7,735	870	11.9%
Northbound Route 28 Mainline north of Innovation Avenue	M-7	6,600	5,910	-690	-11.0%
Southbound Route 28 Mainline north of Innovation Avenue	M-8	6,175	6,550	375	5.9%
Northbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-9	6,880	7,495	615	8.6%
Southbound Route 28 Mainline north of Route 606 (Old Ox Road)	M-10	5,575	6,180	605	10.3%
Northbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-11	6,010	6,580	570	9.1%
Southbound Route 28 Mainline north of Route 846 (S. Sterling Boulevard)	M-12	4,545	4,810	265	5.7%
Eastbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-13	1,100	1,245	145	12.4%
Westbound Route 267 (Dulles Greenway) Mainline west of Route 28 & west of Toll Plaza	M-14	5,130	5,915	785	14.2%
Eastbound DIAAH & Eastbound DIAAH Collector/Distributor (CD) Mainline west of Route 28 & east of Rudder Road bridge	M-15	3,735	4,685	950	22.6%
Westbound DIAAH Mainline west of Route 28 & east of Rudder Road bridge	M-16	1,330	1,695	365	24.1%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-17	3,425	3,915	490	13.4%
Eastbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-18	1,695	2,155	460	23.9%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-19	6,430	7,100	670	9.9%
Westbound DIAAH Mainline east of Route 28 (between DIAAH Slip Ramps and Centreville Road Ramps)	M-20	2,545	3,240	695	24.0%
Eastbound Route 267 (Dulles Toll Road) Mainline east of Centreville Road	M-21	4,120	4,860	740	16.5%
Eastbound DIAAH Mainline east of Centreville Road	M-22	1,590	2,025	435	24.1%
Westbound Route 267 (Dulles Toll Road) Mainline east of Route 228 (Centreville Road/Elden Street)	M-23	6,320	6,980	660	9.9%
Westbound DIAAH Mainline east of Route 228 (Centreville Road/Elden Street)	M-24	2,545	3,240	695	24.0%
Off-ramp from northbound Route 28 to Route 608 (Frying Pan Road)	R-1	755	695	-60	-8.3%
On-ramp from westbound Route 608 (Frying Pan Road) to northbound Route 28	R-2	1,120	1,115	-5	-0.4%
Off-ramp from southbound Route 28 to Route 608 (Frying Pan Road)	R-3	1,050	1,135	85	7.8%
On-ramp from westbound Route 608 (Frying Pan Road) to southbound Route 28	R-4	1,220	1,225	5	0.4%
Off-ramp from northbound Route 28 to eastbound Route 606 (Old Ox Road)	R-5	240	240	0	0.0%
On-ramp from eastbound Route 606 (Old Ox Road) to northbound Route 28	R-6	460	445	-15	-3.3%
Off-ramp from northbound Route 28 to westbound Route 606 (Old Ox Road)	R-7	670	585	-85	-13.5%
On-ramp from westbound Route 606 (Old Ox Road) to northbound Route 28	R-8	690	790	100	13.5%
Off-ramp from southbound Route 28 to westbound Route 606 (Old Ox Road)	R-9	200	140	-60	-35.3%
On-ramp from westbound Route 606 (Old Ox Road) to southbound Route 28	R-10	370	260	-110	-34.9%
Off-ramp from southbound Route 28 to eastbound Route 606 (Old Ox Road)	R-11	580	795	215	31.3%
On-ramp from eastbound Route 606 (Old Ox Road) to southbound Route 28	R-12	1,010	1,045	35	3.4%
Off-ramp from northbound Route 28 to eastbound Route 846 (S. Sterling Boulevard)	R-13	585	505	-80	-14.7%
Off-ramp from northbound Route 28 to westbound Route 846 (S. Sterling Boulevard)	R-14	745	830	85	10.8%
On-ramp from Route 846 (S. Sterling Boulevard) to northbound Route 28	R-15	460	420	-40	-9.1%
Off-ramp from southbound Route 28 to Route 846 (S. Sterling Boulevard)	R-16	200	200	0	0.0%
On-ramp from westbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-17	705	825	120	15.7%
On-ramp from eastbound Route 846 (S. Sterling Boulevard) to southbound Route 28	R-18	525	745	220	34.6%
Off-ramp from eastbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-19	335	355	20	5.8%
On-ramp from Route 228 (Centreville Road/Elden Street) to eastbound Route 267 (Dulles Toll Road)	R-20	920	1,165	245	23.5%

	% Difference Less Than	0.0%			
	% Difference Less Than	10.0%			
	% Difference Greater Than	10.0%			
PM Peak Hour: 2025 No Build & 2045 No Build Forecasted Volumes					
Location	Index	2025 No Build Balanced Volumes	2045 No Build Balanced Volumes	Vehicle Difference	Percent Difference
Off-ramp from westbound Route 267 (Dulles Toll Road) to Route 228 (Centreville Road/Elden Street)	R-21	830	1,055	225	23.9%
On-ramp from Route 228 (Centreville Road/Elden Street) to westbound Route 267 (Dulles Toll Road)	R-22	940	1,175	235	22.2%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) east of Route 228 (Centreville Road/Elden Street)	R-23	105	135	30	25.0%
Slip-ramp from eastbound DIAAH to eastbound Route 267 (Dulles Toll Road) west of Route 228 (Centreville Road/Elden Street)	R-24	460	585	125	23.9%
Slip-ramp from westbound Route 267 (Dulles Toll Road) to westbound DIAAH west of Route 228 (Centreville Road/Elden Street)	R-25	135	170	35	23.0%
Off-ramp from eastbound DIAAH (CD) to Route 267 (Dulles Greenway) and Rudder Road	R-26	575	745	170	25.8%
On-ramp from westbound DIAAH (CD) to westbound DIAAH east of Rudder Road Bridge	R-27	520	650	130	22.2%
On-ramp from eastbound Aviation Blvd to eastbound DIAAH (CD)	R-28	1,080	1,350	270	22.2%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH	R-29	795	1,010	215	23.8%
Off-ramp from northbound Route 28 to Innovation Avenue	R-30	160	935	775	141.6%
On-ramp from westbound Innovation Avenue to northbound Route 28	R-31	45	1,170	1,125	185.2%
Off-ramp from southbound Route 28 to Innovation Avenue	R-32	75	745	670	163.4%
On-ramp from westbound Innovation Avenue to southbound Route 28	R-33	125	1,090	965	158.8%
Off-ramp from northbound Route 28 to eastbound DIAAH (CD)	R-34	565	670	105	17.0%
Off-ramp from northbound Route 28 to westbound DIAAH (CD)	R-35	400	505	105	23.2%
On-ramp from eastbound DIAAH (CD) to northbound Route 28	R-36	840	1,090	250	25.9%
Slip-ramp from eastbound DIAAH (CD) to eastbound DIAAH beneath Route 28 interchange	R-37	370	470	100	23.8%
On-ramp from westbound Route 267 (Dulles Toll Road) to northbound Route 28	R-38	1,625	1,985	360	19.9%
Off-ramp from northbound Route 28 to westbound Route 267 (Dulles Greenway)	R-39	770	1,310	540	51.9%
On-ramp from eastbound Route 267 (Dulles Greenway) to southbound Route 28	R-40	150	240	90	46.2%
Off-ramp from eastbound DIAAH (CD) to westbound (Dulles Greenway)	R-41	535	715	180	28.8%
On-ramp from westbound Route 267 (Dulles Toll Road) to southbound Route 28	R-42	845	1,055	210	22.1%
On-ramp from eastbound Route 267 (Dulles Greenway) to eastbound Route 267 (Dulles Toll Road)	R-43	860	890	30	3.4%
Off-ramp from eastbound Route 267 (Dulles Greenway) to westbound DIAAH (CD)	R-44	90	110	20	20.0%
Off-ramp from southbound Route 28 to westbound DIAAH (CD)	R-45	355	450	95	23.6%
Off-ramp from westbound DIAAH to Rudder Road	R-46	1,350	1,715	365	23.8%
Off-ramp from southbound Route 28 to eastbound DIAAH (CD)	R-47	1,405	1,750	345	21.9%
On-ramp from DIAAH (CD) to southbound Route 28	R-48	1,115	1,445	330	25.8%