

Attachment 1

Primary Data for Seminary Road and Neighboring Side Streets

This attachment includes primary data for the “Seminary Road Complete Streets Project Post-Implementation Evaluation” memo, including data for Seminary Road and neighboring side streets.

Traffic data was collected on weekdays prior to project implementation, and in Spring 2022 after the project was completed and had been operational for approximately 2.5 years. More information about the data can be found in the subsections below.

Data was collected using various tools. *All traffic data is collected on mid-weekdays (Tuesday-Thursday) on months with typical traffic patterns when school is in session.*

- The crash data was retrieved from the Virginia Department of Motor Vehicles, which compiles crashes reported to law enforcement in the Commonwealth.
- Data for traffic volumes and travel times was collected using the Streetlight Data platform. Streetlight compiles anonymous data from Bluetooth devices in vehicles and mobile phones and aggregates and processes that data so it can be used to analyze travel patterns. That data is validated using traffic counters and embedded sensors. The “Before” data was collected September-October 2019 and the “After” data was collected March-April 2022.
- Traffic speeds were collected using pneumatic roadway sensory tube counters various times from 2015 through 2022.
- Bicycle and pedestrian data were recorded at one intersection by observation and camera recording on specific dates.

Seminary Road Reported Crash Data

Reported crash data includes all crashes reported to law enforcement in the Commonwealth of Virginia. The data below was retrieved from Virginia Department of Motor Vehicles.

Fatal injury crashes are those in which the injury results in death within 30 days after the crash. Severe injury crashes include those with severe lacerations, broken bones, crush injuries, burns, unconsciousness, or paralysis. Visible injuries are observed at the time of crash but are less serious than severe injuries. Property Damage crashes are those in which there is no apparent injury and the crash resulted in damage of \$1,500 or more.¹

The tables below show crash data before and after the Seminary Complete Streets Project. Table A presents the raw data for all reported crashes from 2015 to 2021. The data is divided into three timeframes: Before the Road Diet (January 2015 to September 2019), During Implementation (October – December 2019), and After the Road Diet (January 2020 to July 2022). Table B summarizes the crash data and compares crashes Before the Road Diet and After the Road Diet.

Note that Table B does not include the six crashes reported in 2019 during construction. More detail on the 2019 crashes can be found in Table A.

¹ Virginia Department of Transportation (VDOT) Crash Data Manual (2017):
https://www.virginiadot.org/business/VDOT_Crash_Data_Manual_Nov2017.pdf

Table A: Raw Reported Crashes on Seminary Road (N. Howard Street to Quaker Lane)

Table A: Seminary Road Reported Crashes							
			Fatal or Severe Injury Crashes		Non-Severe Injury Crashes		
	Year	Total Crashes	Fatal	Severe Injury	Visible Injury	Non-Visible Injury	Property Damage
Before the Road Diet	2015	13	0	1	3	0	9
	2016	5	0	0	2	1	2
	2017	10	0	0	3	0	7
	2018	15	0	3	3	1	8
	2019	10	0	0	2	0	8
During Implementation	2019	6	0	0	3	0	3
After the Road Diet	2020	7	0	0	4	0	3
	2021	6	0	0	0	1	5
	2022	4	0	0	2	0	2

TABLE B: SEMINARY ROAD AVERAGE ANNUAL REPORTED CRASHES			
Crash Types	1/2015 to 9/2019	1/2020 to 7/2022	% Change
All Crashes	11.2	6.6	-41%
Fatal or Severe Injury Crashes	0.8	0.0	-100%
Non-Severe Injury Crashes	3.2	2.7	-14%
Average Property Damage Crashes	7.2	6.6	-8%

Source: Virginia Department of Motor Vehicles

Commented [H01]: @Bryan - is this 2020?

Vehicle Speeds

Vehicle speeds were collected on Seminary Road using pneumatic roadway sensory tubes. The source for those counts is listed in the table. The 85th percentile speed is the speed at which or below which 85 percent of traffic travels.

TABLE C: SEMINARY ROAD SPEEDS BETWEEN QUAKER LANE AND HOWARD STREET				
	Before			After
	June 2016	November 2016	September 2019	May 2022
Average 85th Percentile Speed (EB/WB)	36	37	34	34
Average % of Drivers Traveling 35+ (EB/WB)	28%	24%	11%	7%

Source: Pneumatic roadway sensory tubes

Traffic Volumes

Traffic volume data below show the number of motor vehicles that used Seminary Road *all day* on Tuesday to Thursday. Peak travel volumes show the number of vehicles using the roads during *peak times* Tuesday to Thursday. The morning peak is from 7:00 a.m. to 9:00 a.m. The afternoon peak runs from 4:00 p.m. to 7:00 p.m. Since the afternoon peak is an hour longer, it is to be expected that there are higher volumes during peak times.

TABLE D: SEMINARY ROAD TRAFFIC VOLUMES								
Corridor	From	To	Before		After		% Change	
			EB	WB	EB	WB	EB	WB
Seminary	Quaker	Howard	7,899	8,506	7,724	7,924	-2%	-7%
Seminary	Quaker	St. Stephens	7,554	8,591	7,122	7,720	-6%	-10%
Seminary	St. Stephens	Howard	8,244	8,420	8,326	8,127	1%	-3%

Source: Streetlight

TABLE E: SEMINARY ROAD PEAK PERIOD TRAFFIC VOLUMES (CORRIDOR AVERAGE)									
Corridor	From	To	Peak	Before		After		% Change	
				EB	WB	EB	WB	EB	WB
Seminary	Quaker	Howard	AM	1,020	1,929	1,168	1,592	15%	-17%
Seminary	Quaker	Howard	PM	2,317	1,706	1,986	1,521	-14%	-11%
Seminary	Quaker	St. Stephens	AM	890	1,928	976	1,600	10%	-17%
Seminary	Quaker	St. Stephens	PM	2,229	1,737	1,964	1,384	-12%	-20%
Seminary	St. Stephens	Howard	AM	1,150	1,929	1,360	1,583	18%	-18%
Seminary	St. Stephens	Howard	PM	2,404	1,675	2,007	1,658	-17%	-1%

Source: Streetlight

TABLE F: NEIGHBORING SIDE STREET TRAFFIC VOLUMES (AVERAGE)

Corridor	From	To	Before		After		% Change	
			EB/NB	WB/SB	EB/NB	WB/SB	EB/NB	WB/SB
Howard	Seminary	Jordan	2,681	2,952	2,258	2,075	-16%	-30%
Jordan	Seminary	Howard	3,636	3,839	2,731	3,266	-25%	-15%
St. Stephens	Seminary	Orleans	2,730	1,967	2,211	1,889	-19%	-4%
Colonel Ellis	St. Stephens	Ft. Williams	174	217	65	89	-63%	-59%
Ft. Williams	Dearborn	Trinity	1,458	1,244	1,640	1,652	12%	33%

Source: Streetlight

TABLE G: NEIGHBORING SIDE STREET PEAK TRAFFIC VOLUMES (AVERAGE)

Corridor	From	To	Peak	Before		After		% Change	
				EB/NB	WB/SB	EB/NB	WB/SB	EB/NB	WB/SB
Howard	Seminary	Jordan	AM	824	164	885	126	7%	-23%
Howard	Seminary	Jordan	PM	364	890	368	554	1%	-38%
Jordan	Seminary	Howard	AM	636	232	546	264	-14%	14%
Jordan	Seminary	Howard	PM	538	1,066	540	929	0%	-13%
St. Stephens	Seminary	Orleans	AM	668	520	393	593	-41%	14%
St. Stephens	Seminary	Orleans	PM	774	570	621	339	-20%	-41%
Colonel Ellis	St. Stephens	Ft. Williams	AM	33	81	5	26	-85%	-68%
Colonel Ellis	St. Stephens	Ft. Williams	PM	67	59	14	13	-79%	-78%

Travel Time

Travel times below are measured in seconds. Peak travel times show the number of vehicles using the roads during peak times Tuesday to Thursday. The morning peak is from 7:00 a.m. to 9:00 a.m. The afternoon peak runs from 4:00 p.m. to 7:00 p.m. Since the afternoon peak is an hour longer, it is to be expected that there are higher volumes during peak times.

TABLE H: SEMINARY ROAD TRAVEL TIMES (CORRIDOR AVERAGE, SECONDS)

Corridor	From	To	Before		After		% Change	
			EB	WB	EB	WB	EB	WB
Seminary	Quaker	Howard	195	173	154	146	-21%	-16%
Seminary	Quaker	St. Stephens	121	100	93	86	-23%	-14%
Seminary	St. Stephens	Howard	74	73	61	60	-18%	-18%

Source: Streetlight

TABLE I: NEIGHBORING SIDE STREET TRAVEL TIMES (AVERAGE, SECONDS)								
Corridor	From	To	Before		After		% Change	
			EB/NB	WB/SB	EB/NB	WB/SB	EB/NB	WB/SB
Howard	Seminary	Jordan	143	120	124	108	-13%	-10%
Jordan	Seminary	Howard	115	100	103	82	-10%	-18%
St. Stephens	Seminary	Orleans	49	33	63	32	29%	-3%
Colonel Ellis	St. Stephens	Ft. Williams	141	105	104	71	-26%	-32%

Source: Streetlight

TABLE J: SEMINARY ROAD PEAK TRAVEL TIMES (SECONDS)											
Corridor	From	To	Peak	Before		After		% Change		Seconds Change	
				EB	WB	EB	WB	EB	WB	EB	WB
Seminary	Quaker	Howard	AM	252	213	192	168	-24%	-21%	-60	-45
Seminary	Quaker	Howard	PM	226	202	174	167	-23%	-17%	-52	-35
Seminary	Quaker	St. Stephens	AM	156	120	118	99	-24%	-18%	-38	-21
Seminary	Quaker	St. Stephens	PM	139	113	101	95	-27%	-16%	-38	-18
Seminary	St. Stephens	Howard	AM	96	93	74	69	-23%	-26%	-22	-24
Seminary	St. Stephens	Howard	PM	87	89	73	72	-16%	-19%	-14	-17

Source: Streetlight

TABLE K: NEIGHBORING SIDE STREET PEAK TRAVEL TIMES (SECONDS)											
Corridor	From	To	Peak	Before		After		% Change		Seconds Change	
				EB / NB	WB / SB	EB / NB	WB / SB	EB / NB	WB / SB	EB / NB	WB / SB
Howard	Seminary	Jordan	AM	166	159	120	115	-28%	-28%	-46	-44
Howard	Seminary	Jordan	PM	132	128	134	109	2%	-15%	2	-19
Jordan	Seminary	Howard	AM	154	102	116	77	-25%	-25%	-38	-25
Jordan	Seminary	Howard	PM	126	118	99	81	-21%	-31%	-27	-37
St. Stephens	Seminary	Orleans	AM	55	45	37	36	-33%	-20%	-18	-9
St. Stephens	Seminary	Orleans	PM	71	41	71	32	0%	-22%	0	-9
Colonel Ellis	St. Stephens	Ft. Williams	AM	n/a	119	n/a	n/a	n/a	n/a	n/a	n/a
Colonel Ellis	St. Stephens	Ft. Williams	PM	133	233	n/a	n/a	n/a	n/a	n/a	n/a
Ft. Williams	Dearborn	Trinity	AM	15	29	16	32	7%	10%	1	3
Ft. Williams	Dearborn	Trinity	PM	18	12	12	14	-33%	17%	-6	2

Source: Streetlight

Bicycle and Pedestrian

Data for the bicycle and pedestrian volumes was recorded at one intersection by observation and a camera recording. Data was recorded during weekdays (Tuesday to Thursday). Peak times for this data were 7:00 to 9:00 a.m. in the morning and 5:00 to 7:00 p.m. in the afternoon. Bicycle and pedestrian data was pulled on October 10, 2019 and May 24-26, 2022.

TABLE L: SEMINARY ROAD PEAK PEDESTRIAN AND BICYCLE VOLUMES				
	Peak Period	Fall 2019	Spring 2022	% Change
Pedestrian	AM (7-9 am)	33	17	-94%
	PM (5-7 pm)	26	29	10%
	Total	59	46	-28%
Bicycle	AM (7-9 am)	3	3	0%
	PM (5-7 pm)	1	14	92%
	Total	4	16	75%

Source: Observation & Video Recording