



POST-PROJECT IMPLEMENTATION EVALUATION

SEMINARY ROAD COMPLETE STREETS PROJECT

2022 // CITY OF ALEXANDRIA, DEPARTMENT OF
TRANSPORTATION & ENVIRONMENTAL SERVICES



October 2022

In 2019, the Alexandria City Council voted to approve the implementation of a road diet on Seminary Road between North Howard Street and Quaker Lane. The project was completed in Winter 2019. This report provides a post-implementation update on the Seminary Road Complete Streets Project.

EXECUTIVE SUMMARY

As part of the Seminary Road Complete Streets Project, staff committed to monitor the roadway and perform a post-implementation evaluation, assessing changes in crashes, vehicle speeds, travel times, and traffic volumes.

The evaluation was originally planned to occur in early 2021, 18 months after the project was completed. However, the evaluation was postponed due to the COVID-19 public health emergency and the pandemic's impact on travel. The evaluation compares data collected before and after the project was implemented. More detailed data can be found in Attachment 1 on the [project webpage](#).

SEMINARY ROAD HIGHLIGHTS

Average annual crashes decreased by 41 percent.

The annual average was 11.2 crashes per year before the road diet, and 6.6 after.

Non-severe injury crashes decreased by 14 percent.

Additionally, the percentage of property damage-only crashes decreased by 8 percent.

Traffic volumes on Seminary Road during peak travel times decreased between 11 and 17 percent.

However, traffic volume eastbound on Seminary Road increased by 15 percent during the morning peak.

Traffic does not appear to have diverted to neighboring streets.

Vehicle volumes on N. Howard Street, N. Jordan Street, and St. Stephens all decreased. Ft. Williams Parkway is the only segment that saw an increase in both directions of 12 to 33 percent. (Attachment 1)

Since implementation, there have been zero crashes in which people were killed or seriously injured.

There was one fatal crash on Seminary Road between 2015 and 2019.

Extreme speeding has decreased on the corridor.

The 85th percentile speed remained consistent before and after the project (34 mph), while the percentage of people exceeding 35 miles per hour decreased from 11 percent to 7 percent.

Peak period travel times on Seminary Road decreased by 35 to 60 seconds.

Reductions eastbound were marginally greater than trips traveling west.

Bicycle ridership increased by 75% during peak times.

Most of the increases were during the afternoon peak. Pedestrian volumes decreased by 22%.

Project Background

Seminary Road was identified as both a Top 10 Priority Bicycle Project and Top 10 Priority Sidewalk Project in the adopted Transportation Master Plan: Pedestrian and Bicycle Chapter (2016).

In 2018, City staff began engagement on the Seminary Road Complete Streets Project. The project included the following goals:

- Improve safety and accessibility
- Improve facilities for people who walk, bike, ride transit or drive cars
- Implement previously adopted plans, policies, and study recommendations



Summary of Improvements

Staff developed three design alternatives for Seminary Road and performed extensive community engagement to inform the recommendation of a preferred alternative. All engagement materials are available on the project webpage: alexandriava.gov/go/2838

In 2019, City Council approved a roadway design alternative to fulfill the Transportation Master Plan recommendations and make Seminary Road safer and more accessible for all roadway users. The project included the following elements:

- **Conversion of the previous configuration** of two westbound lanes and two eastbound lanes to one westbound lane, one eastbound lane, a center turn lane, and buffered bike lanes.
- **Installation of an in-street shared-use path** for people walking and biking, where a sidewalk is missing on the north side of the street.
- **Addition of four new pedestrian crossings** with median refuge islands and rapid flash beacons.
- **Modification of signal timing** to support the new intersection designs.

In addition to meetings, feedback forms, and other community engagement, the public was notified of the changes prior to project implementation via variable message boards, emails to civic associations, website updates, and social media. Project implementation began in October 2019 and was completed in December.



Data Collection Results

Following standard data collection processes, traffic data was collected on weekdays prior to project implementation and in Spring 2022, after the project had been operational for approximately 2.5 years. Due to the COVID-19 pandemic, data collection was delayed until traffic patterns began to return to pre-covid levels. Data for this analysis was collected using various tools, and all traffic data is collected on mid-week days (Tuesday-Thursday) on months with typical traffic patterns, when school is in session.

- The crash data for Seminary Road was retrieved from the Virginia Department of Motor Vehicles, which compiles crashes reported to law enforcement in the Commonwealth. Crash data was collected for Seminary Road from North Howard Street to Quaker Lane.
- Data for traffic volumes and travel times were collected using Streetlight traffic data. Streetlight compiles data from mobile phone users and processes that data so it can be used to analyze travel patterns. That data is validated using traffic counters and embedded sensors.
- Speed data was collected using pneumatic road tube sensors which record the speed of moving vehicles.
- Data for the bicycle and pedestrian volumes was recorded at one intersection by observation and video recording.

TABLE 1: 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	.8	0	-100%
Non-Severe Injury Crashes	3.2	2.7	-14%
Property Damage Crashes	7.2	6.6	-8%

Crashes

The number of crashes on Seminary Road decreased following the implementation of the road diet. There was one severe injury crash in the four years prior to project implementation and none since project completion. The percentage of property damage crashes also saw a significant decrease.

Note

Table 1 does not include the six reported crashes for October to December 2019 when the project was under construction. Of the crashes that occurred during project implementation, three were crashes in which only property damage was reported, and three crashes were reported as non-severe injury crash. For more information see Tables A and B in Attachment 1 on the [project webpage](#).

**TABLE 2: SEMINARY ROAD SPEEDS BETWEEN
QUAKER LANE AND HOWARD STREET**

	Before			After
	June 2016	November 2016	September 2019	May 2022
Average 85th Percentile Speed	36	37	34	34
Average % of Drivers Traveling 35+	28%	24%	11%	7%

Vehicle Speeds

Overall, the data shows that people are driving more slowly on Seminary Road. Between 2016 and 2019, the average 85th percentile speed (the speed at which or below which 85 percent of drivers traveled) decreased by three miles per hour. The reduction remained after project completion. The percentage of drivers exceeding 35 miles per hour decreased after the project was implemented.

TABLE 3: SEMINARY ROAD TRAFFIC VOLUMES

Weekday Period	Before Fall 2019		After Spring 2022		% Change	
	EB	WB	EB	WB	EB	WB
AM Peak (7-9am)	1,020	1,929	1,168	1,592	15%	-17%
PM Peak (4-7pm)	2,317	1,706	1,986	1,521	-14%	-11%
All-Day	7,899	8,506	7,724	7,924	-2%	-7%

Traffic Volumes

Table 3 shows that traffic volumes mostly decreased on Seminary Road, with some variability. During the morning peak, the volumes increased heading eastbound but decreased by 17 percent heading west. In the afternoon, both directions saw a decrease in traffic volume. All-day traffic volumes show that the number of vehicles traveling on Seminary Road remained relatively consistent as in the before period, with slight decreases.

Note

Traffic did not substantially divert from Seminary Road after the project was implemented (Attachment 1). Vehicle volumes on North Howard Street, North Jordan Street, and St. Stephens Road all decreased. Colonel Ellis Avenue had the largest decrease in traffic volume, dropping approximately 60 percent in each direction. Fort Williams Parkway is the only neighboring side street that saw an increase in both directions of 12 to 33 percent.

**TABLE 4: SEMINARY ROAD PEAK PERIOD TRAVEL TIMES
(MINUTES & SECONDS)**

Weekday Peak Period	Before Fall 2019		After Spring 2022		% Change		Seconds Change	
	EB	WB	EB	WB	EB	WB	EB	WB
AM (7-9am)	4 min 12 sec	3 min 33 sec	3 min 12 sec	2 min 48 sec	-24%	-21%	-60	-45
PM (4-7pm)	3 min 46 sec	3 min 22 sec	2 min 54 sec	2 min 47 sec	-23%	-17%	-52	-35

Travel Times

Peak travel times on Seminary Road decreased by approximately 17 to 24 percent in each direction between Quaker Lane and North Howard Street. The biggest reduction was during the morning peak in the eastbound direction where travel times decreased by a minute, despite a 15% increase in traffic volume at the same time. Westbound traffic saw reductions from 35 to 45 seconds. The faster travel times, in some cases, could be related to decreased traffic volumes or more efficient operation along the corridor with improved signal timing and the removal of left turns from the travel lanes.

Note

Neighboring side streets saw their peak travel times stay mostly the same or decrease (Attachment 1).

TABLE 5: SEMINARY ROAD PEAK PEDESTRIAN AND BICYCLE VOLUMES

	Peak Period	Fall 2019	Spring 2022	% Change
Pedestrian	AM (7-9am)	33	17	-48%
	PM (5-7pm)	26	29	10%
	Total	59	46	-22%
Bicycle	AM (7-9am)	3	3	0%
	PM (5-7pm)	1	14	1300%
	Total	4	16	300%

Bicycle and Pedestrian Volumes

Bicycle and pedestrian volumes were recorded at the intersection of Seminary Road and Fort Williams Parkway. The data comes from specific peaks on weekdays (Tuesday to Thursday). The morning peak was from 7 to 9 a.m. and the afternoon peak was from 5 to 7 p.m. Since these counts were conducted on individual days, factors like weather may have an impact on volumes.

Overall, the project has met its stated goals and objectives by enhancing mobility, access, and safety for people walking and biking, while minimizing impacts to motorists. Therefore, no major remedial changes are recommended at this time. Staff will continue to monitor conditions on Seminary Road and adjacent streets and will implement improvements as deemed appropriate in the context of citywide needs.

For more information, visit: alexandriava.gov/go/2838

