Seminary Road
Complete Streets Project

City Council Public Hearing
September 14, 2019

Seminary Road

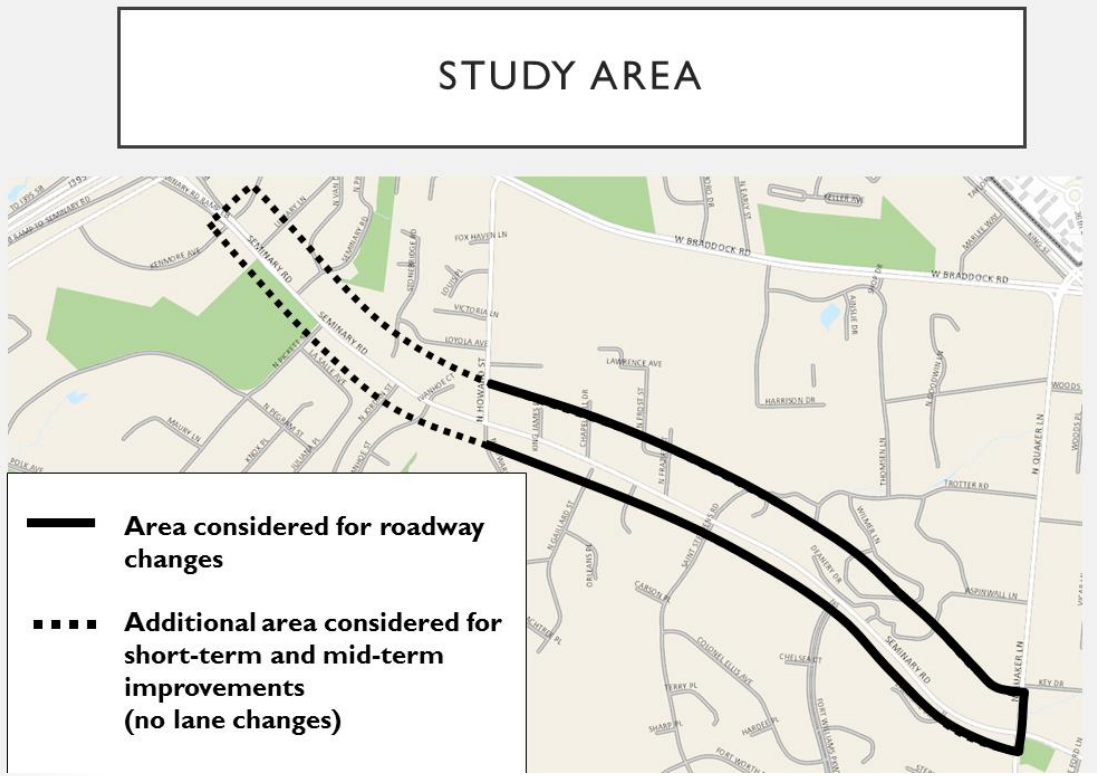
- **Issue**: On June 24th, 2019, the Traffic and Parking Board considered multiple alternative traffic control plans for Seminary Road, and made a recommendation to maintain the existing four motor vehicle lanes and install two HAWK signals for traffic control. The Director of T&ES has deferred a final decision on that recommendation to City Council, and a group of residents has filed an appeal of that recommendation to ask that Council consider another alternative. Council is considering both the recommendation of the Traffic and Parking Board and the residents' appeal.

- **Recommendation**: That City Council

(1) Concur with the recommendations of the Traffic and Parking Board including the addition of two HAWK signals along Seminary Road

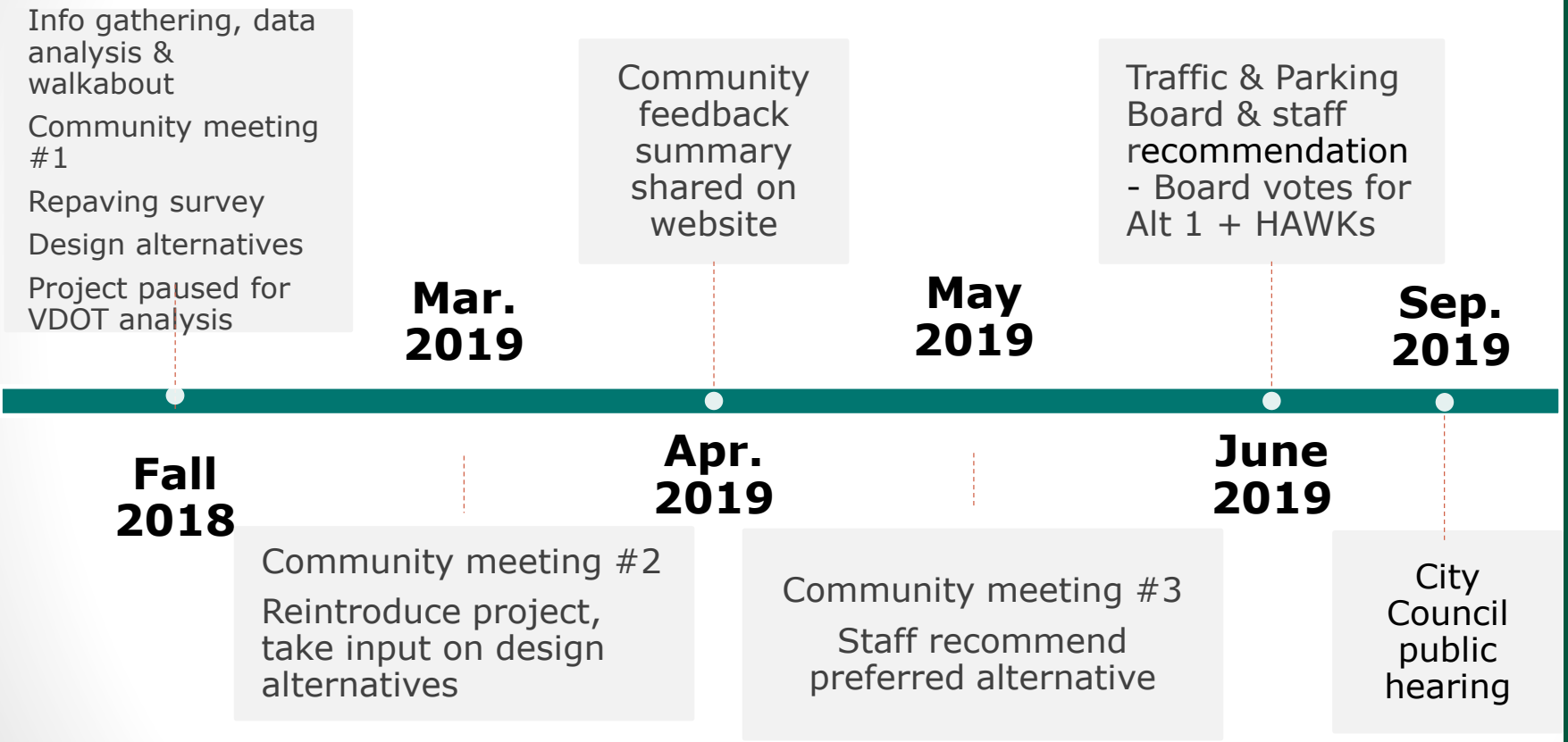
(2) Deny the appeal of the Traffic and Parking Board decision

Overview



- Routine Street Maintenance
- City's Complete Streets Policy: Opportunity to evaluate roadway design changes in coordination with repaving
  - Consider improvements for people who walk, ride bicycles at minimal cost
- Process includes multiple rounds of feedback

Timeline

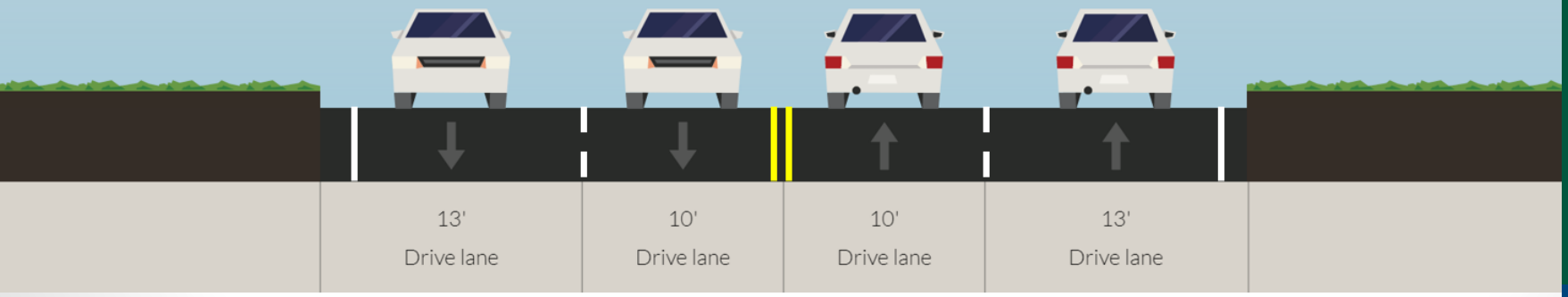

Info gathering, data analysis & walkabout
Community meeting #1
Repaving survey
Design alternatives
Project paused for VDOT analysis
Fall 2018
Mar. 2019
Community meeting #2
Reintroduce project, take input on design alternatives
Community feedback summary shared on website
Apr. 2019
May 2019
Community meeting #3
Staff recommend preferred alternative
Traffic & Parking Board & staff recommendation - Board votes for Alt 1 + HAWKs
June 2019
Sep. 2019
City Council public hearing

Process

1. Roadway on resurfacing schedule
2. Community feedback on issues
3. Three design alternatives proposed → gathered feedback
4. Feedback + Policies = Hybrid proposal to Traffic & Parking Board (TPB)
   - Process: TPB recommendation would go to City Council
5. TPB choose Alternative 1 + HAWK Signals
6. City Council Public Hearing
   - Appeal filed to consider Alternative 3

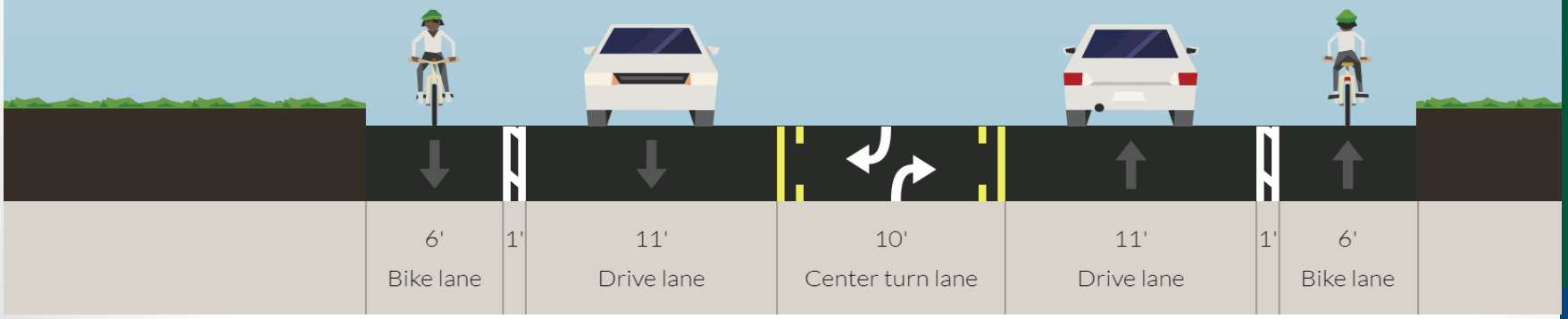
Recommendation
(Traffic & Parking Board)

- Maintain two through-lanes in each direction
- Add two new crosswalks with pedestrian activated HAWK signals



Design Alternative 3

- One through-lane in each direction
- Center turn lanes for intersections and driveways
- Install new crosswalks with planted median islands
- Buffered bike lanes



Design Alternatives

PERFORMANCE INDICATORS	STAFF RECOMMENDATION (4 lanes with minor changes)	ALTERNATIVE 3 (1 eastbound, 1 westbound, 1 turn lane)
PEDESTRIAN SAFETY/COMFORT	+1	+2
FILLING THE SIDEWALK GAP	0	+1
CONTROLLING SPEED	0	+2
PREVENTING CRASHES	0	+2
MINIMIZING VEHICLE DELAY	+1	+1
ACCOMMODATING VEHICLE VOLUMES	+2	0
ADJACENT RESIDENT LIVABILITY	0	+1
BICYCLIST SAFETY/COMFORT	0	+2
Totals (max score +16, min score -16	+4	+11

Delay Comparison of Alternatives

The numbers below are the traffic model's results showing the average seconds of delay and changes under each alternative for the average day in **worst 15 minutes in the peak periods** (morning and evening rush).

		EXISTING	Staff Recommendation	Alternative 3
Intersection	**Peak Time**	**Delay (sec)**	**Change (sec)**	**Change (sec)**
N Howard St & Seminary Rd	AM	28.6	*0.0*	**+6**
	PM	28.8	*0.0*	**-3.4**
St. Stephens Rd & Seminary Rd	AM	8.2	*0.0*	**+7.6**
	PM	6.3	*0.0*	**-0.3**
N Quaker Ln & Seminary Rd	AM	76.5	*0.0*	**-14.5**
	PM	57.6	*0.0*	**-13.4**

Note: Adjustments were made to the traffic model to optimize the signals and coordinate them across the corridor segment for all alternatives. This allows traffic to flow better and to reduce delays at intersections with north-south streets.

Traffic Impacts

- Traffic model estimates a travel time *savings* for the staff recommended configuration
  - Staff estimate that given the roadway width, HAWK signals would stop all vehicle traffic for approximately 13-15 seconds to allow for a person to cross when activated.

- Design Alternative 3 had the greatest delay (8 sec) at one intersection in the worst 15 minutes of the AM peak and it is unlikely a model would divert traffic to an alternative route given this delay

- Possible to develop a model based on delay
  - Costs of over $100,000
  - Inconclusive result likely

Public Safety

- **Fire Department**: Travel lanes must accommodate apparatus 10’ wide & to include maneuverability within the lane
  - For Optimal operations and response efficiencies, it is AFD’s position to consider Alternative 3

VDOT/Transurban Project
(HOV to HOT conversion for south-facing ramp at Seminary Road and I-395)

- Project delayed five months
- Transurban provided traffic counts and speeds but modeling remains incomplete
- Because of need to repave, conservative traffic estimates were built into Complete Streets project traffic analysis
- Timeline TBD for Transurban analysis
  - Delaying beyond FY 2020 may jeopardize $290k of state funds for resurfacing and road will further deteriorate

Recommendation

That City Council:

(1) Concur with the recommendations of the Traffic and Parking Board including the addition of two HAWK signals along Seminary Road

(2) Deny the appeal of the Traffic and Parking Board decision

Thank you!

Questions?

Additional Slides & Background

1. Alternatives

ALTERNATIVE 1 - Four Travel Lanes

Seminary Road
Complete Streets Project

Description

- Optimize existing layout of Seminary Road
- Maintain two through lanes in each direction
- Maintain existing signal timing and phasing
- No positive or negative traffc impacts
- Upgrade existing crosswalks
- Narrow lane widths to discourage speeding

Typical Cross Section

Intersection Delay and Level of Service Grade

		EXISTING	ALTERNATIVE 1	
Intersection	Time of Day	Delay (sec)	Delay (sec)	Change (sec)
N Howard St & Seminary Rd	AM	36.8	36.8	*0.0*
	PM	21.4	21.4	*0.0*
St. Stephens Rd & Seminary Rd	AM	11.7	11.7	*0.0*
	PM	8.1	8.1	*0.0*
N Quaker Ln & Seminary Rd	AM	69.1	69.1	*0.0*
	PM	53.2	53.2	*0.0*

Corridor Map and Traffic Performance

Howard and Seminary
- ***Operational Changes:***
  - Left turn phases become protected (➔)
- ***Average projected delay:***
  - Morning Rush= 35-55 sec
  - Evening Rush= <35 sec
- Queue lengths in the morning rush continue to extend past King James Pl for westbound traffic and to Jordan for eastbound traffic in the evening rush

St. Stephens and Seminary
- ***Operational Changes:***
  - None
- ***Average projected delay:***
  - Morning Rush= <35 sec
  - Evening Rush= <35 sec

Quaker and Seminary
- ***Operational Changes:***
  - Removes exclusive eastbound left and westbound left
- ***Average Projected Delay:***
  - Morning Rush= >55 sec
  - Evening Rush= 35-55 sec
- Queues at this intersection are longer or equal to other alternatives

Performance Assessment

Scoring

- Concepts were scored on a scale of 1 to 5 for each of the objectives for the project.
- One point is given for concepts that make no improvements or substantially worsen existing conditions.
- Five points are given for concepts that substantially improve conditions or fully preserve existing strengths of Seminary Road.

PERFORMANCE MEASURE	RATING
PEDESTRIAN SAFETY/COMFORT	●●○○○
FILLING THE SIDEWALK GAP	●○○○○
CONTROLLING SPEED	●●○○○
PREVENTING CRASHES	●●○○○
MINIMIZING VEHICLE DELAY	●●●●○
ADJACENT RESIDENT LIVABILITY	●○○○○
BICYCLIST SAFETY/COMFORT	●○○○○

Performance Details

- **Ped Safety/Comfort:** Provides minimal additional help to crossing pedestrians, other than upgraded crosswalks, and some possible other signage/marking
- **Filling the sidewalk gap:** Maintains existing lanes, and does not allow for future relocation of curb to provide more off-street space for a sidewalk
- **Controlling Speed**: Narrowed lanes may calm traffic slightly, but a wide travelway will still allow passing and speeding
- **Preventing car crashes:** Narrowed lanes may provide some crash reduction benefits, but are unlikely to reduce angle, sideswipe, or rear-end as other alternatives could.
- **Minimizing vehicle delay:** This alternative provides the same lane distribution and signal operations as the existing conditions. Queue lengths stay the same, often extending past intersecting streets
- **Adjacent resident livability**: Does not provide turn pockets, or space for cars to pull out of driveways.
- **Bicycling Safety/Comfort:** Does not provide any bicycle facilities.

ALTERNATIVE 2 - Two Westbound & One Eastbound Travel Lanes, Bike Lanes

Seminary Road Complete Streets Project

Description

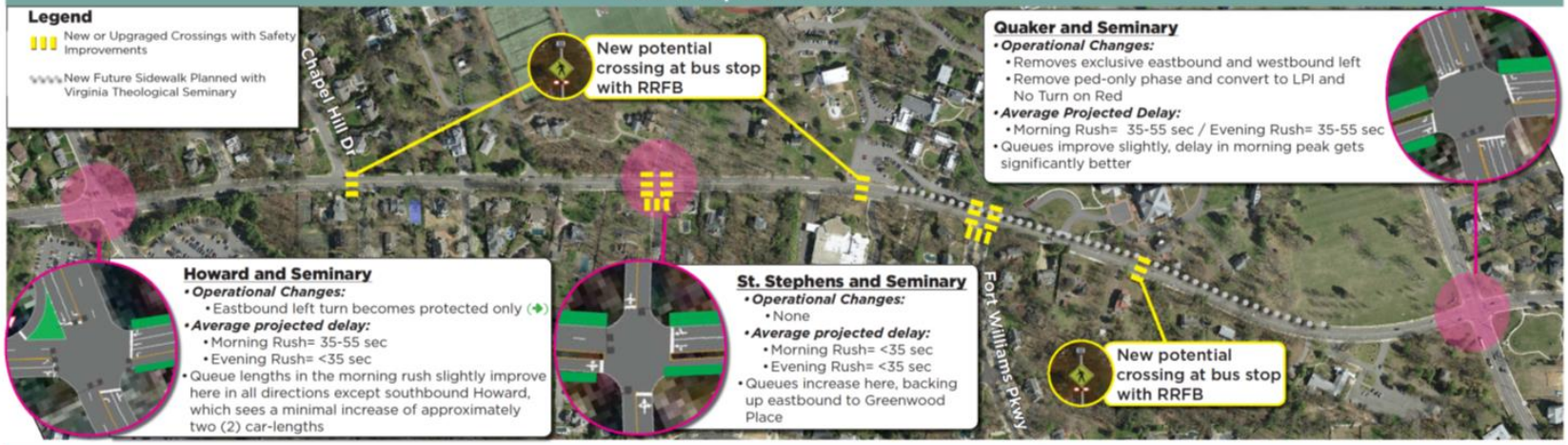
- Maintain traffic flow while enhancing mobility, safety, and comfort for people walking and biking
- Preserve two westbound travel lanes, where traffic volumes are higher during rush hour
- One eastbound travel lane
- Bike lanes possible
- Pedestrian refuge islands and turn lanes may not be possible
- Upgrade and install new crosswalks where feasible

Typical Cross Section

Intersection Delay and Level of Service Grade

		EXISTING	ALTERNATIVE 2	
Intersection	Time of Day	Delay (sec)	Delay (sec)	Change (sec)
N Howard St & Seminary Rd	AM	36.8	37.5	+0.7
	PM	21.4	29.4	+8.0
St. Stephens Rd & Seminary Rd	AM	11.7	12.4	+0.7
	PM	8.1	13.2	+5.1
N Quaker Ln & Seminary Rd	AM	69.1	59.1	-10.0
	PM	53.2	42.9	-10.3

Corridor Map and Traffic Performance



Performance Assessment

Scoring

- Concepts were scored on a scale of 1 to 5 for each of the objectives for the project.
- One point is given for concepts that make no improvements or substantially worsen existing conditions.
- Five points are given for concepts that substantially improve conditions or fully preserve existing strengths of Seminary Road.

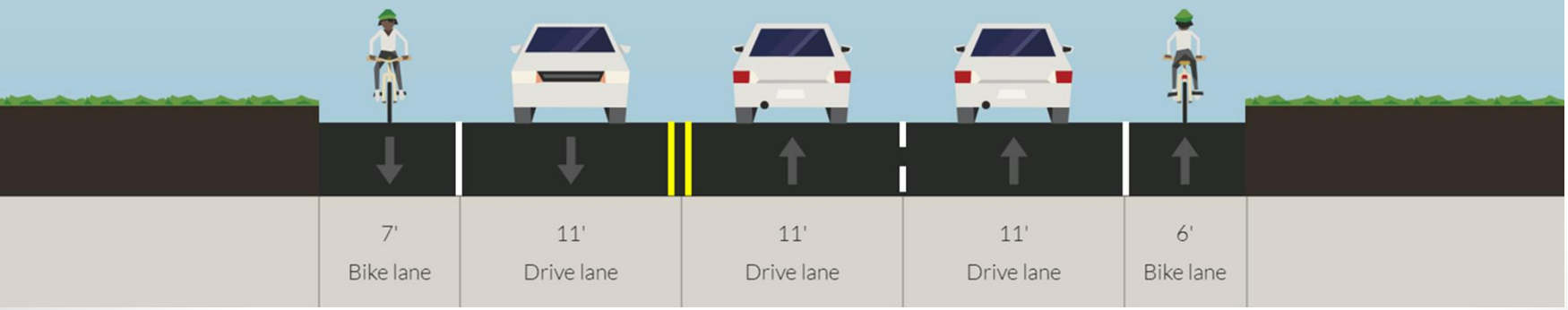
PERFORMANCE MEASURE	RATING
PEDESTRIAN SAFETY/COMFORT	●●●○○
FILLING THE SIDEWALK GAP	●●●○○
CONTROLLING SPEED	●●●○○
PREVENTING CRASHES	●●●○○
MINIMIZING VEHICLE DELAY	●●●●○
ADJACENT RESIDENT LIVABILITY	●●○○○
BICYCLIST SAFETY/COMFORT	●●●○○

Performance Details

- **Ped Safety/Comfort:** Reduces the number of through-lanes to be crossed, but median islands at uncontrolled crosswalks are unlikely.
- **Filling the sidewalk gap:** Space provided to a bike lane could be reapportioned to a long-term sidewalk and protected and marked for pedestrian use in the interim
- **Controlling Speed**: Provides a single through-lane for the eastbound direction, which would control speed, but two westbound lanes would still allow passing
- **Preventing car crashes:** Reduced lanes, especially eastbound, may provide some crash reduction benefits, but are unlikely to reduce angle, sideswipe, or rear-end crashes, especially in the westbound direction.
- **Minimizing vehicle delay:** This alternative provides the same lane distribution and signal operations as the existing conditions. Queue lengths stay the same, slightly improve over exiting conditions in most intersections, except for St. Stephens Road.
- **Adjacent resident livability**: Bike lanes provide more space than existing conditions for residents to pull in and out of driveways, but no turn pockets makes access to connecting streets more difficult
- **Bicycling Safety/Comfort:** Provides an unbuffered bicycle lane but is not a low-stress connection

Initial Design Alternative 2

- Maintain two through-lanes in the heavier westbound direction
- Install some new crosswalks where safe and feasible
- Bike lanes or sidewalk buffer possible



ALTERNATIVE 3 - Two Travel Lanes, Center Turn Lane, and Buffered Bike Lanes

Seminary Road Complete Streets Project

Description

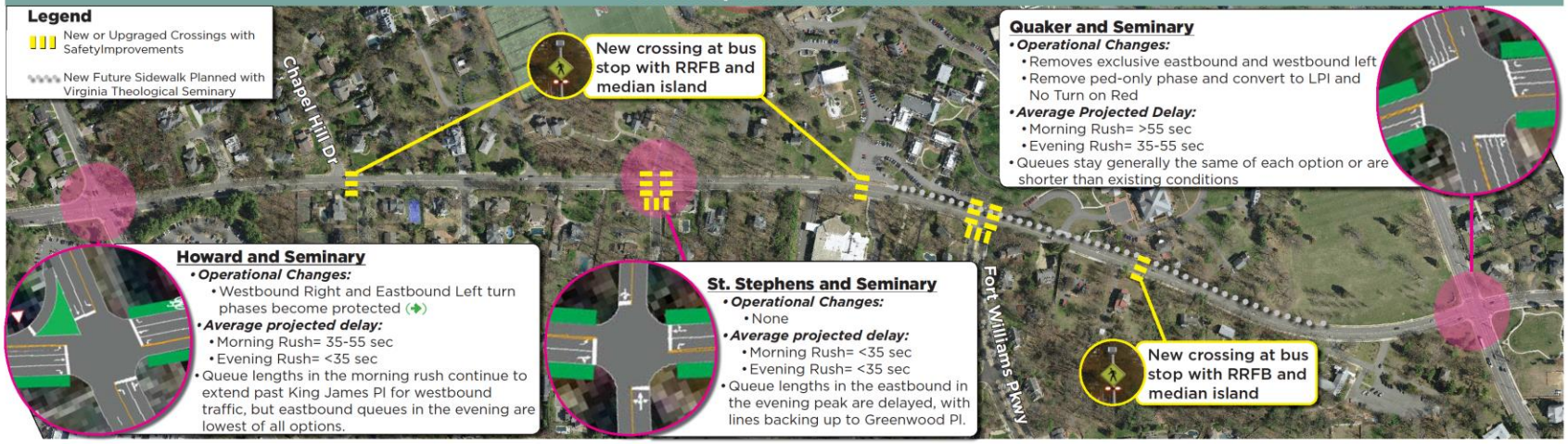
- One through lane in each direction
- Center left turn lane space may also be used as a median or a pedestrian refuge island
- Enhance signal operations to mitigate traffic impacts
- Upgrade and install new crosswalks, where feasible
- Buffered bike lanes possible

Typical Cross Section

Intersection Delay and Level of Service Grade

		EXISTING	ALTERNATIVE 3	
Intersection	Time of Day	Delay (sec)	Delay (sec)	Change (sec)
N Howard St & Seminary Rd	AM	36.8	34.5	-2.3
	PM	21.4	25.9	+4.5
St. Stephens Rd & Seminary Rd	AM	11.7	16.5	+4.8
	PM	8.1	10.9	+2.8
N Quaker Ln & Seminary Rd	AM	69.1	61.1	-8.0
	PM	53.2	42.5	-10.7

Corridor Map and Traffic Performance



Performance Assessment

Scoring

- Concepts were scored on a scale of 1 to 5 for each of the objectives for the project.
- One point is given for concepts that make no improvements or substantially worsen existing conditions.
- Five points are given for concepts that substantially improve conditions or fully preserve existing strengths of Seminary Road.

PERFORMANCE MEASURE	RATING
PEDESTRIAN SAFETY/COMFORT	●●●●○
FILLING THE SIDEWALK GAP	●●●●●
CONTROLLING SPEED	●●●●●
PREVENTING CRASHES	●●●●●
MINIMIZING VEHICLE DELAY	●●●○○
ADJACENT RESIDENT LIVABILITY	●●●○○
BICYCLIST SAFETY/COMFORT	●●●●●

Performance Details

- **Ped Safety/Comfort:** Provides the most comfort and safety for people walking. Upgraded crosswalks, signage/marking, and median islands make for safe, visible, convenient, and comfortable access and mobility for people walking.
- **Filling the sidewalk gap:** Allows space to fill the sidewalk gap in partnership with VTS.
- **Controlling Speed**: Reduced, narrowed lanes calm traffic, do not allow passing, and reduce speeding.
- **Preventing car crashes:** Reduced and narrowed lanes provide the best crash reduction benefits, likely to reduce angle, sideswipe, or rear-end crashes the most of all alternatives.
- **Minimizing vehicle delay:** Changes in intersection delay are generally minimal and improve in some cases. The worst average delay is seen at Howard Street with an additional 5 seconds of wait time in the evening peak period. Left turns are eased with a dedicated turn lane.
- **Adjacent resident livability**: Provides dedicated turn lane for left turning vehicles. Ample space for cars to pull out of driveways. or side streets with increased sight distances.
- **Bicycling Safety/Comfort:** Provides the best facility of the alternatives with a buffered bicycle lane on each side of the roadway.

STAFF RECOMMENDATION: Howard Street to St. Stephens Road - Four Lanes

Seminary Road Complete Streets Project

Description

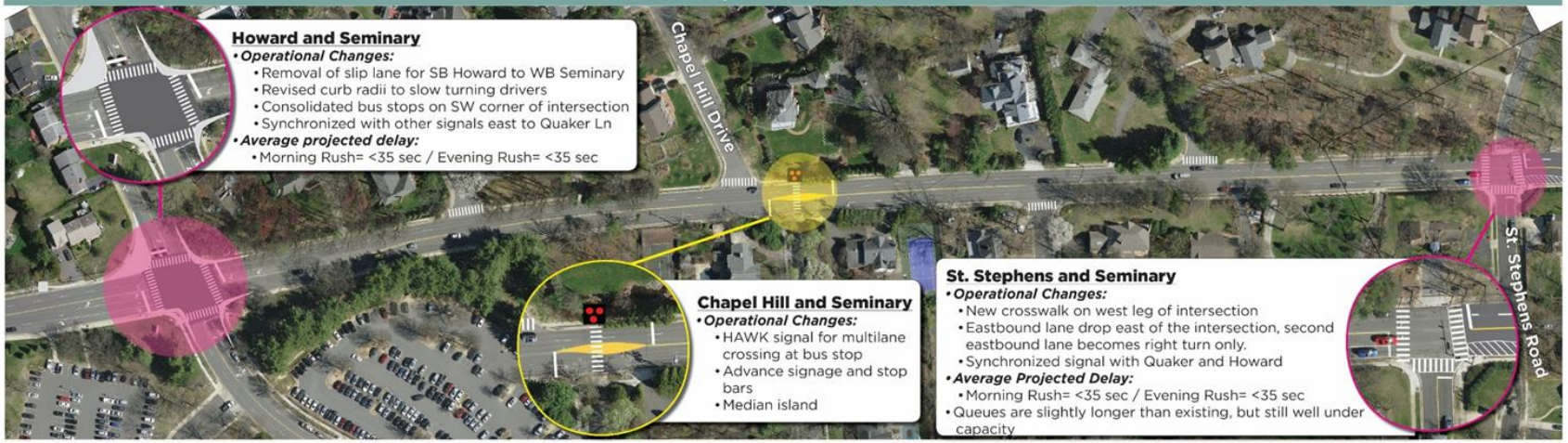
- Optimize existing layout of Seminary Road
- Maintain two through lanes in each direction
- Optimize and synchronize signal timing and phasing
- Traffic flows slightly better
- Upgrade existing crosswalks with safety improvements
- Narrow lane widths to discourage speeding

Typical Cross Section

Intersection Delay

Intersection	Time of Day	EXISTING Delay (sec)	Staff Recommendation Delay (sec)	Staff Recommendation Change (sec)
N Howard St & Seminary Rd	AM	28.6	*30*	**+1.4**
	PM	28.8	*29.5*	**+0.7**
St. Stephens Rd & Seminary Rd	AM	8.2	*8.6*	**+0.4**
	PM	6.3	*5.3*	**-1**

Corridor Map and Traffic Performance



Performance Assessment

Scoring

STAFF RECOMMENDATION

PERFORMANCE MEASURE	RATING
PEDESTRIAN SAFETY/COMFORT	+1
FILLING THE SIDEWALK GAP	+2
CONTROLLING SPEED	0
PREVENTING CRASHES	+1
MINIMIZING VEHICLE DELAY	+2
ACCOMMODATING VEHICLE VOLUMES	+2
ADJACENT RESIDENT LIVABILITY	+1
BICYCLIST SAFETY/COMFORT	0

Performance Details

- **Ped Safety/Comfort:** Reduces the number of through-lanes to be crossed on a portion of the roadway, with median islands at uncontrolled crosswalks along with flashing pedestrian signals.
- **Filling the sidewalk gap:** Fills sidewalk gap when space from lane reconfiguration is reappropriated to a temporary sidewalk treatment and sidewalk buffer.
- **Controlling Speed**: Provides minimal improvements in controlling speed with a single through-lane for the eastbound direction, for a little less than half of the segment, which would control speed slightly, but two westbound lanes would still allow passing
- **Preventing car crashes:** Reduced lanes eastbound for a portion of the corridor, may provide some crash reduction benefits, but are unlikely to reduce angle, sideswipe, or rear-end crashes, especially in the westbound direction.
- **Minimizing vehicle delay:** This alternative optimizes signal operations over the existing conditions. Queue lengths stay the same, slightly improve over exiting conditions in most intersections, except for St. Stephens Road.
- **Accommodating Vehicle Volumes:** This alternative employs signal synchronization to better accommodate vehicle volumes
- **Adjacent resident livability**: Maintains similar travel times to existing, buffer space in part of the corridor assists cars to pull out of driveways and for residents to feel safer walking along the road.
- **Bicycling Safety/Comfort:** Provides shared lane markings, which provides minimal improvements over existing ability of cyclists to take the lane.

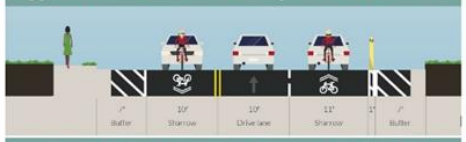
STAFF RECOMMENDATION - St. Stephens Road to Quaker Lane- Hybrid

Seminary Road Complete Streets Project

Description

- Preserve two westbound travel lanes, where traffic volumes are higher during morning rush hour and one eastbound travel lane from St. Stephens to Zabriskie
- Zabriskie to Quaker maintains four travel lanes
- Sidewalk is installed as a short-term, temporary treatment until funding secured
- Pedestrian refuge islands possible
- Install new crosswalks at bus stops

Typical Cross Section St. Stephens to Zabriskie

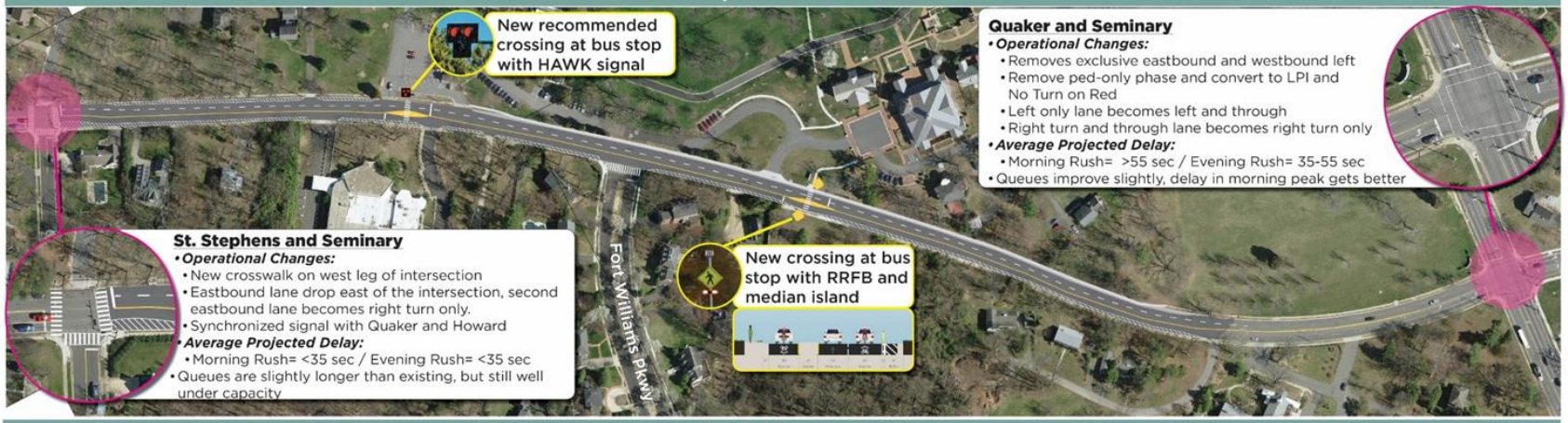


Typical Cross Section Zabriskie to Quaker

Intersection Delay

Intersection	Time of Day	EXISTING Delay (sec)	Staff Recommendation Delay (sec)	Staff Recommendation Change (sec)
St. Stephens Rd & Seminary Rd	AM	8.2	8.6	+0.4
	PM	6.3	5.3	-1
N Quaker Ln & Seminary Rd	AM	76.5	62.3	-14.2
	PM	57.6	43.2	-14.4

Corridor Map and Traffic Performance



Performance Assessment

Scoring

STAFF RECOMMENDATION

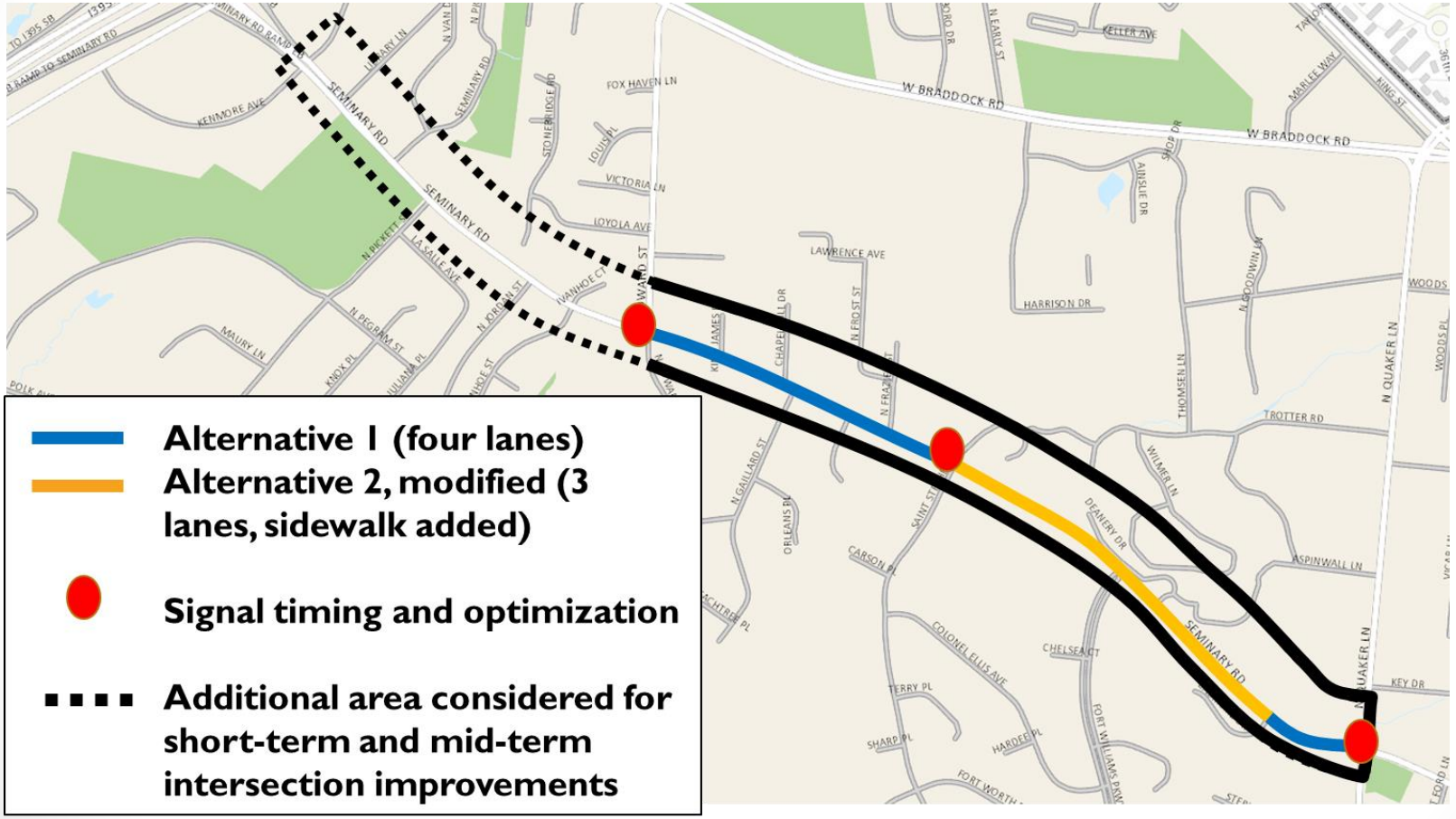
PERFORMANCE MEASURE	RATING
PEDESTRIAN SAFETY/COMFORT	+1
FILLING THE SIDEWALK GAP	+2
CONTROLLING SPEED	0
PREVENTING CRASHES	+1
MINIMIZING VEHICLE DELAY	+2
ACCOMMODATING VEHICLE VOLUMES	+2
ADJACENT RESIDENT LIVABILITY	+1
BICYCLIST SAFETY/COMFORT	0

Performance Details

- **Ped Safety/Comfort:** Reduces the number of through-lanes to be crossed on a portion of the roadway, with median islands at uncontrolled crosswalks along with flashing pedestrian signals.
- **Filling the sidewalk gap:** Fills sidewalk gap when space from lane reconfiguration is reappropriated to a temporary sidewalk treatment and sidewalk buffer.
- **Controlling Speed**: Provides minimal improvements in controlling speed with a single through-lane for the eastbound direction, for a little less than half of the segment, which would control speed slightly, but two westbound lanes would still allow passing
- **Preventing car crashes:** Reduced lanes eastbound for a portion of the corridor, may provide some crash reduction benefits, but are unlikely to reduce angle, sideswipe, or rear-end crashes, especially in the westbound direction.
- **Minimizing vehicle delay:** This alternative optimizes signal operations over the existing conditions. Queue lengths stay the same, slightly improve over exiting conditions in most intersections, except for St. Stephens Road, where average delay is projected to increase by 7.6 seconds.
- **Accommodating Vehicle Volumes:** This alternative employs signal synchronization to better accommodate vehicle volumes
- **Adjacent resident livability**: Maintains similar travel times to existing, buffer space in part of the corridor assists cars to pull out of driveways and for residents to feel safer walking along the road.
- **Bicycling Safety/Comfort:** Provides shared lane markings, which provides minimal improvements over existing ability of cyclists to take the lane.

Hybrid Staff Recommendation

(Presented by staff to TPB on June 24)



Why this recommendation?

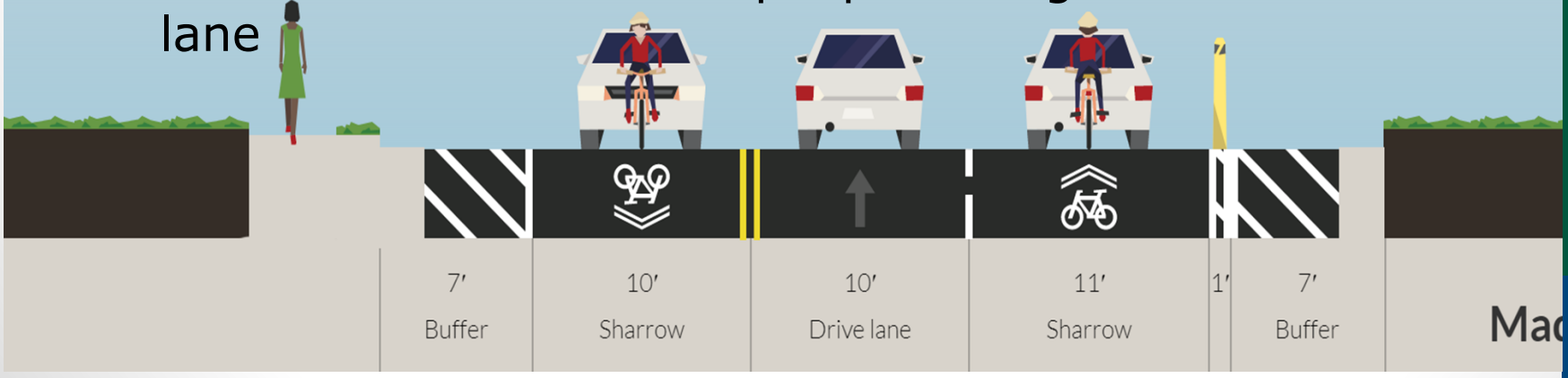
- Public input
  (we listened)
- Data
- Close a major sidewalk gap
- More ways to safely cross
- Advances many City policies, plans and commitments
  - Improve safety and mobility for all road users

Howard to St. Stephens Rd

- Maintain two through-lanes in the areas of heavier traffic (ADT is 18,600)
- Install crossing at Chapel Hill/Galliard
  - HAWK signal for bus stops
- Shared curbside lanes - people biking can take the lane

St. Stephens to Zabriskie

- Two westbound lanes to accommodate peak direction, peak period traffic volumes. (WB in AM peak hour sees 1,104 vehicles from St. Stephens to Howard)
- Install new crosswalks with median islands at bus stops
- Buffer on north side to fill sidewalk gap
- Buffer on south side for pedestrians, occasional event parking
- Shared curbside lanes – people biking can take the lane



St. Stephens to Zabriskie - Crossing

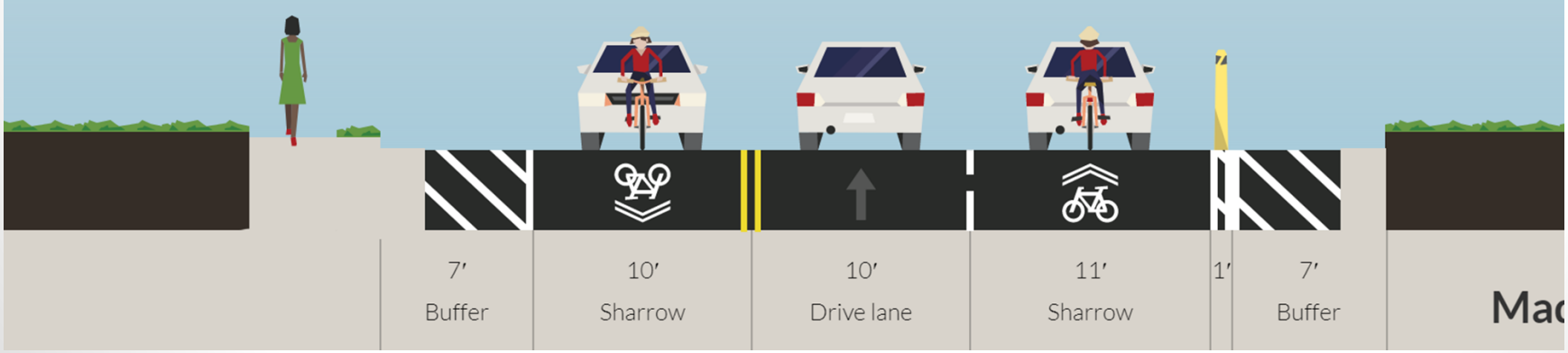
- Same lane configuration
- Median proposed with Rectangular Rapid Flash Beacons (RRFBs)
- Buffer on north side to fill sidewalk gap
- Shared curbside lanes- people biking can take the lane

Howard to St. Stephens Data

Intersection	Time of Day	EXISTING Delay (sec)	Staff Recommendation Delay (sec)	Staff Recommendation Change (sec)
N Howard St & Seminary Rd	AM	28.6	*30*	**+1.4**
	PM	28.8	*29.5*	**+0.7**
St. Stephens Rd & Seminary Rd	AM	8.2	*8.6*	**+0.4**
	PM	6.3	*5.3*	**-1**

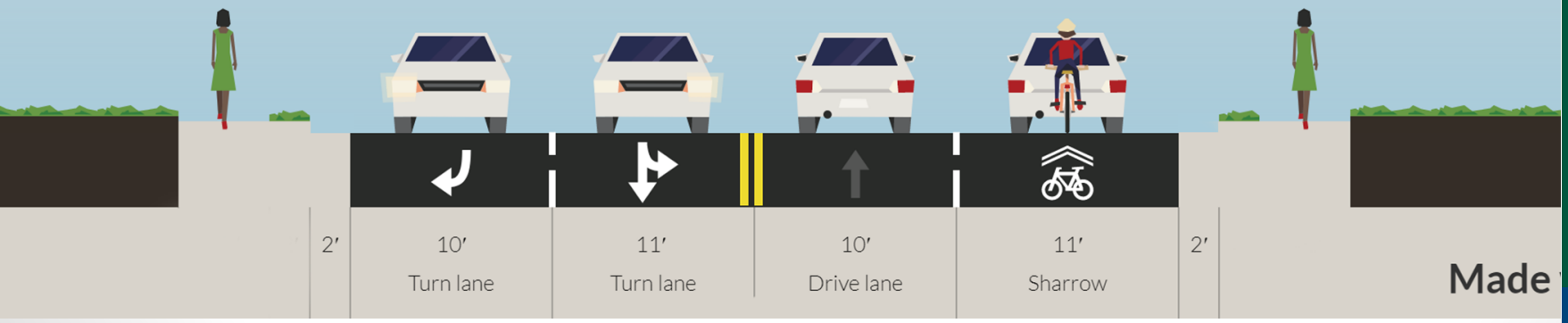
St. Stephens to Zabriskie Data

Intersection	Time of Day	EXISTING Delay (sec)	Staff Recommendation Delay (sec)	Staff Recommendation Change (sec)
St. Stephens Rd & Seminary Rd	AM	8.2	8.6	+0.4
	PM	6.3	5.3	-1
N Quaker Ln & Seminary Rd	AM	76.5	62.3	-14.2
	PM	57.6	43.2	-14.4



Zabriskie to Quaker

- Maintain four travel lanes
- Convert eastbound lanes
  - Through/right and left-only to right-only and through/left
- All-walk phase converted to LPI and No Turn on Red



2. Project Elements

Sidewalk information

- Short term – 1-3 years
  - Painted sidewalk with separation
    - Flexposts, bumpers, etc.
  - Opportunity to watch change over time
- Long Term – 3-5 years*
  - Seek grant funding now to build sidewalk
  - Cost could be up to $1.5 Million

* Dependent on funding

Signal Timing Improvements

- Coordinate all signals along the corridor to mitigate queuing concerns
  - St. Stephens Road signal to be coordinated with Quaker and Howard
- Optimize signals
  - Adjust timing to mitigate queueing
- Implement "Leading Pedestrian Intervals" and No Turn on Red Restrictions at Quaker Lane and Howard Street

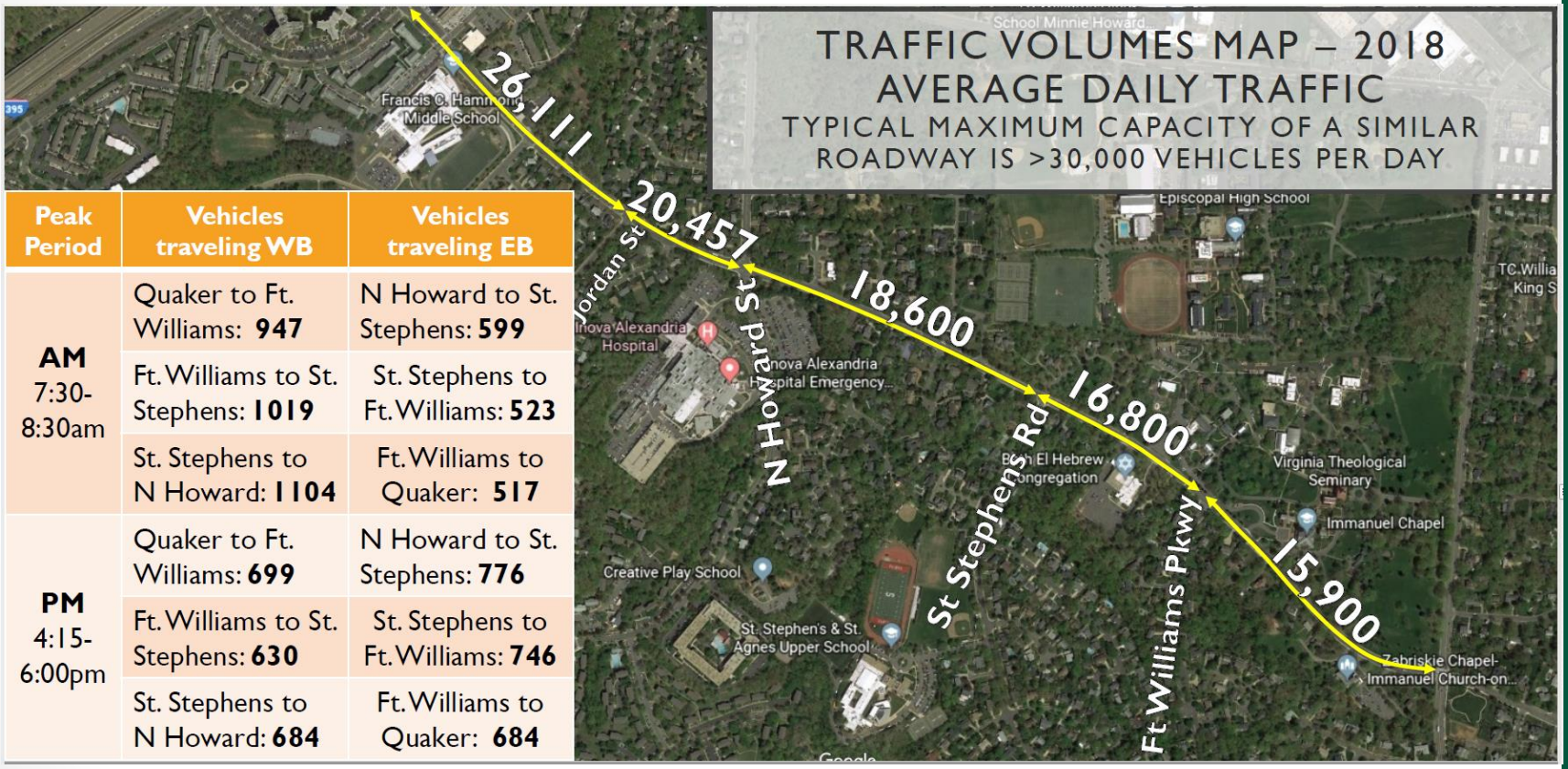
Project Evaluation

- Evaluation 18 months after implementation
  - Speeds
  - Volumes
    - Pedestrian
    - Bicycle
    - Vehicles
  - Crashes
  - Travel times

3. Traffic Data

Traffic Volumes

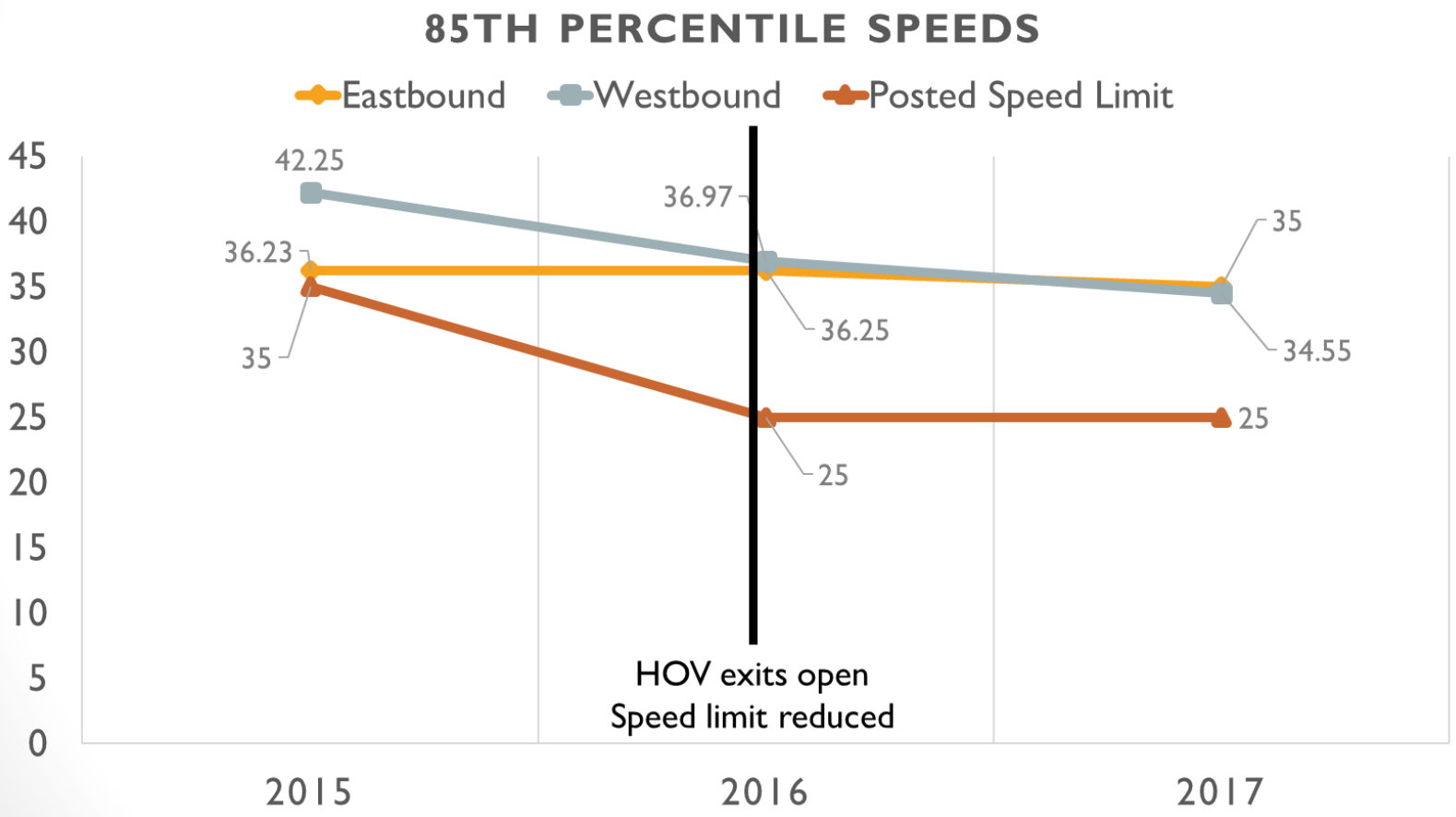
Peak Period	Vehicles traveling WB	Vehicles traveling EB
AM 7:30-8:30am	Quaker to Ft. Williams: **947**	N Howard to St. Stephens: **599**
	Ft. Williams to St. Stephens: **1019**	St. Stephens to Ft. Williams: **523**
	St. Stephens to N Howard: **1104**	Ft. Williams to Quaker: **517**
PM 4:15-6:00pm	Quaker to Ft. Williams: **699**	N Howard to St. Stephens: **776**
	Ft. Williams to St. Stephens: **630**	St. Stephens to Ft. Williams: **746**
	St. Stephens to N Howard: **684**	Ft. Williams to Quaker: **684**



Public Input | Traffic Volumes | Safety & Best Practice | City Plans and Policies

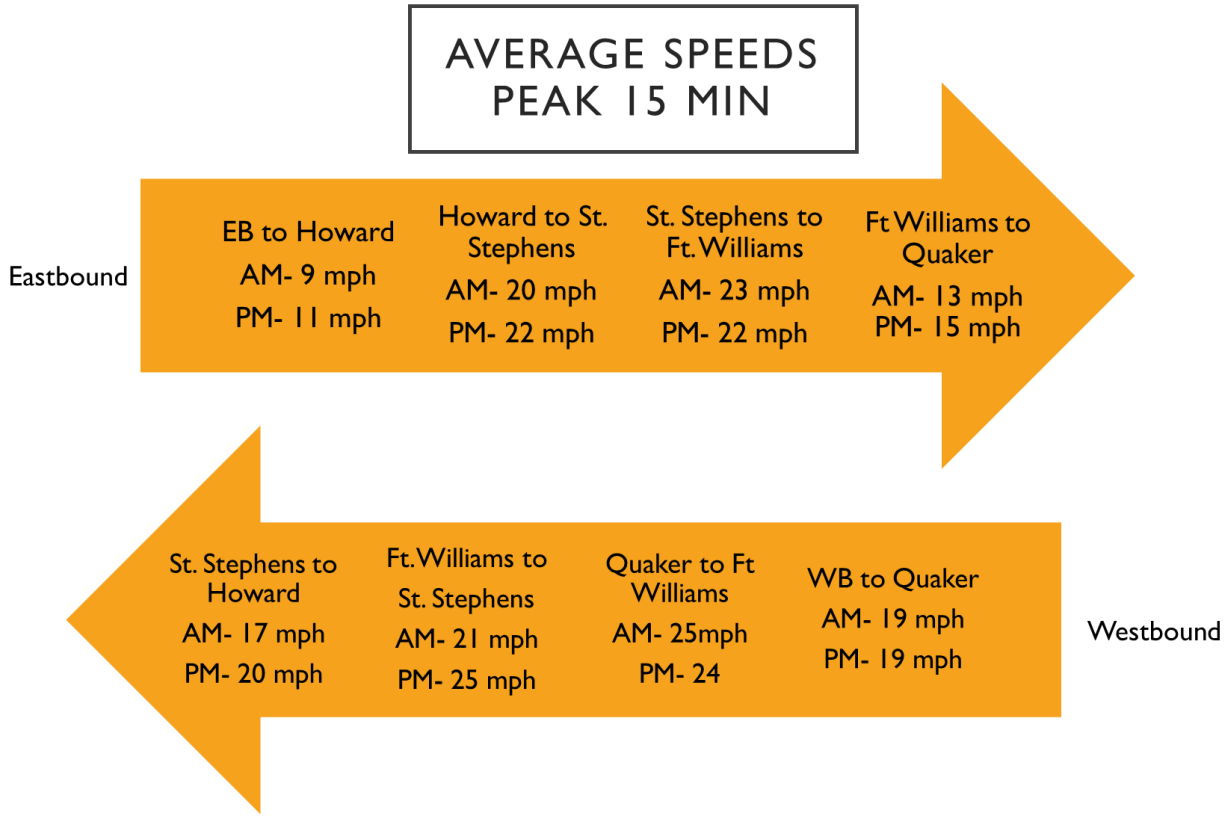
Seminary Road Complete Streets

Speed Data


85TH PERCENTILE SPEEDS
Eastbound
Westbound
Posted Speed Limit
45
40
35
30
25
20
15
10
5
0
42.25
36.97
36.23
35
36.25
35
34.55
25
25
HOV exits open
Speed limit reduced
2015
2016
2017

Travel Times

Average Speeds Peak 15 Min



Queue Lengths in Peak 15 min

- What you're seeing here:
  - Average queue length (in car lengths) for the **worst 15 minutes** of morning rush hour **with a 2% growth factor**
  - One car length is assumed as 20' including the vehicle itself and the stopping distance between vehicles.

		Alternative 1		Alternative 2		Alternative 3		Staff Recommendation	
Intersection	Peak Time	Distance (Car Lengths)		Distance (Car Lengths)		Distance (Car Lengths)		Distance (Car Lengths)	
Direction		EB	WB	EB	WB	EB	WB	EB	WB
N Howard St & Seminary Rd	AM	12	11	15	11	34	50	10	12
	PM	16	5	16	4	18	12	17	5
St. Stephens Rd & Seminary Rd	AM	4	4	13	7	11	11	6	5
	PM	5	2	5	2	4	4	3	2
N Quaker Ln & Seminary Rd	AM	14	6	12	7	9	6	11	6
	PM	21	6	35	6	19	6	13	5

4. Crash Data

Has a study been done of causes of crashes on Seminary from Howard to Quaker?

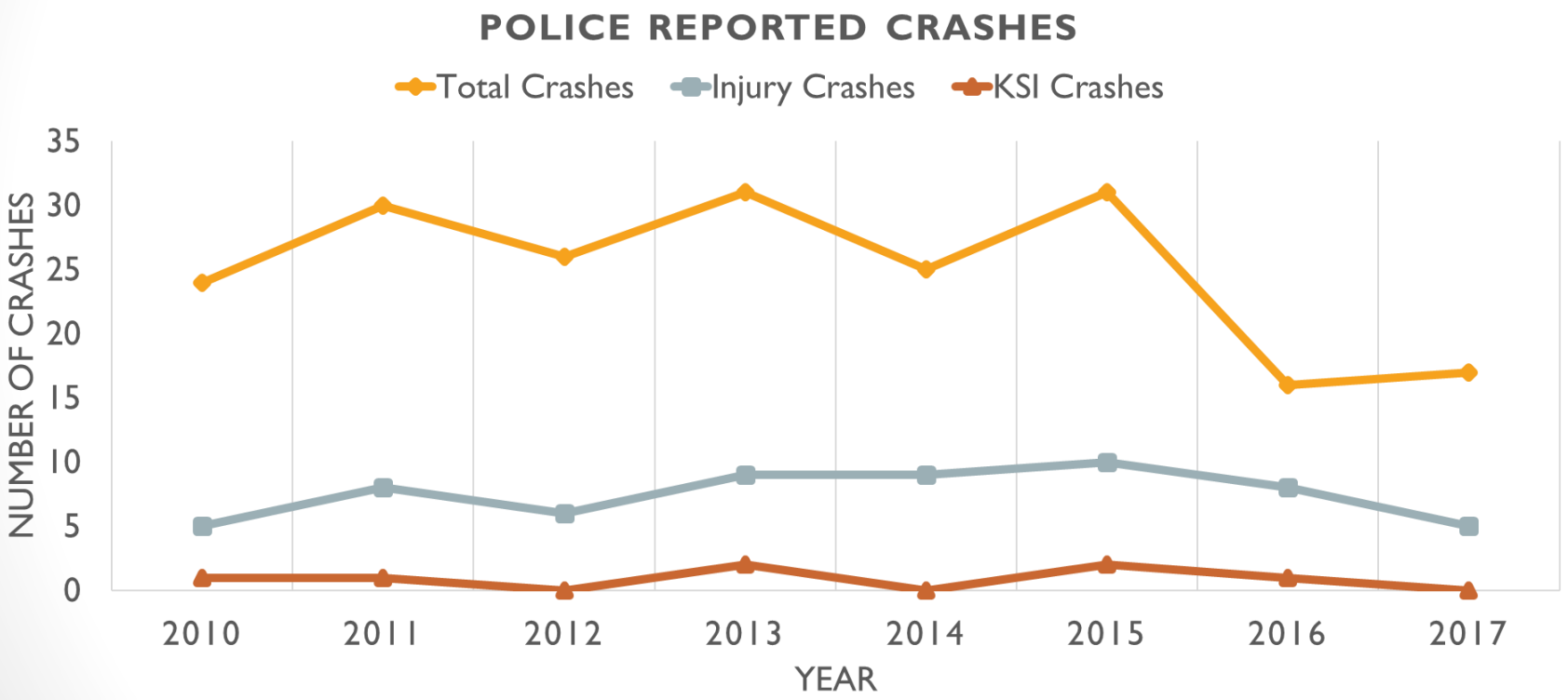
Yes, from January 2013 to July 2018, there were 31 crashes on Seminary Road between St. Stephens Road and North Quaker Lane. Of those 31 crashes, 11 involved an injury, and 2 involved a severe injury. (DMV TREDS data)

The following is a breakdown of the crash types:

Crash Type	Number
Rear End	10
Angle	10
Fixed Object – Off Road	6
Fixed Object – In Road	2
Head On	1
Deer	1
Other (Bicycle)	1

- While the speed limit reduction helped reduce injury crashes, speeds and general number of crashes have stayed consistent.

Crash History- Kenmore to Quaker



5. Process

Information Gathering – May 2018

- Gathered and synthesized comments from other recent outreach
  - (Repaving Survey, CATS, Vision Zero Safety Map, Pedestrian Bike Master Plan Wikimap)
- Gathered data on corridor safety, speeds, volumes, etc.
- Determined draft project objectives
- Corridor walk in Early May
- Public meeting May 29, 2018
  - Information and data showing existing conditions and recent history of data and comments
  - Presented potential improvement ideas and asked for others

Information to Alternatives

- October 2018
  - Prepared for Public Meeting in October 2018,
    - On hold because of I-395 HOT lane project
  - Alternatives and preliminary information posted on webpage
- January 2019
  - Need to pave, decision to restart, and reduction of scope
- **March 2019**
  - **Public Meeting - three alternatives with minor changes and scope reduction**

Alternatives to Staff Recommendation

- March/April 2019
  - Two-week comment period on alternatives
  - Online content, narrated presentation, online feedback
  - Main feedback:
    - Strong opinions for Alternatives 1 and 3
    - Crossing
    - Sidewalk Gap
    - Speeding
- April/May 2019
  - Follow-up stakeholder meetings with civic associations, institutional stakeholders, and residents
  - Sketched/showed potential ideas and discussed their ideas

Initial Public Input – May 2018

Vehicle Issues

- Difficult to turn into side streets and driveways, and back out of driveways onto Seminary Road
- Speeding is common along the entire corridor
- Mixed opinions on function and character of Seminary Road

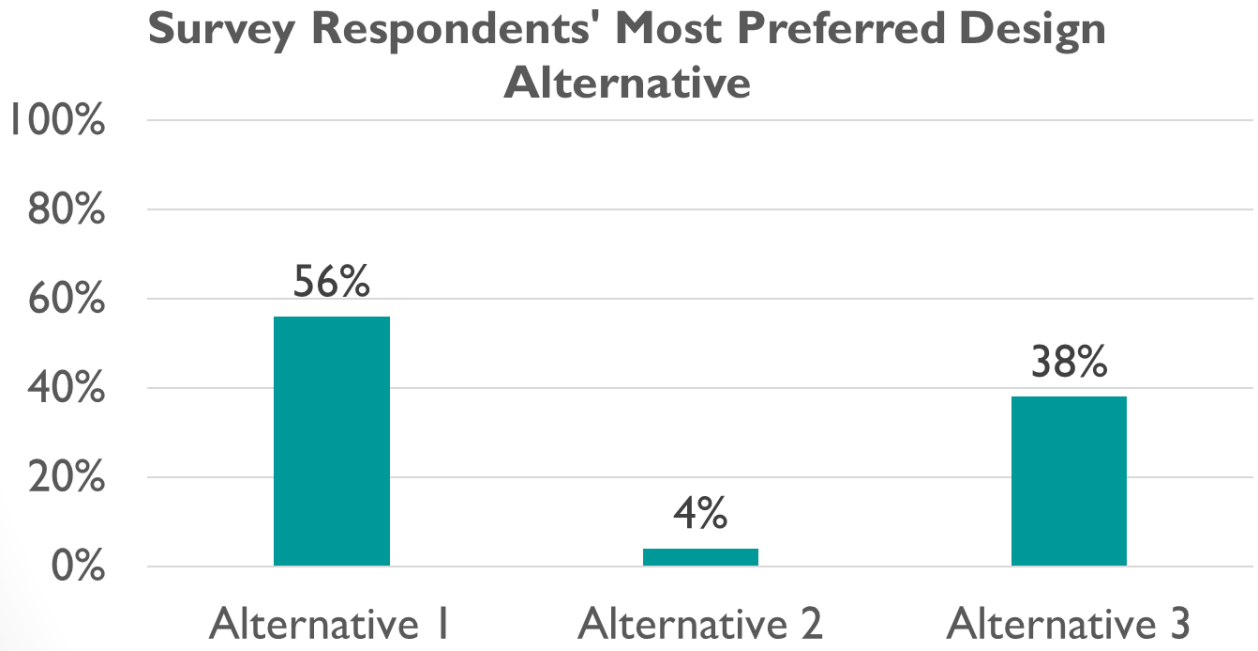
Pedestrian Issues

- Sidewalks should be wider, continuous, and buffered from moving traffic
- The distance between safe crossings is too great
- People walking must cross 4 lanes of traffic on Seminary Road without safety measures

Alternatives

- Mixed opinions on reducing travel lanes

Alternatives Public Comment Summary – March 2019



71% of respondents chose **Alternative 2 as their second choice**

Seminary Road Complete Streets

Alternatives Input – Top 4 Priorities for the project – March 2019

70-80% of respondents noted these four items and their top priorities for the project:

- Maintain Comparable Travel times
- Reduce Speeding
- Provide Safer Crossings
- Improve/adding sidewalks

- *Somewhat conflicting goals*
  - *Speed vs. Safety*
- *Staff must balance competing objectives*

Public Input through May 2019

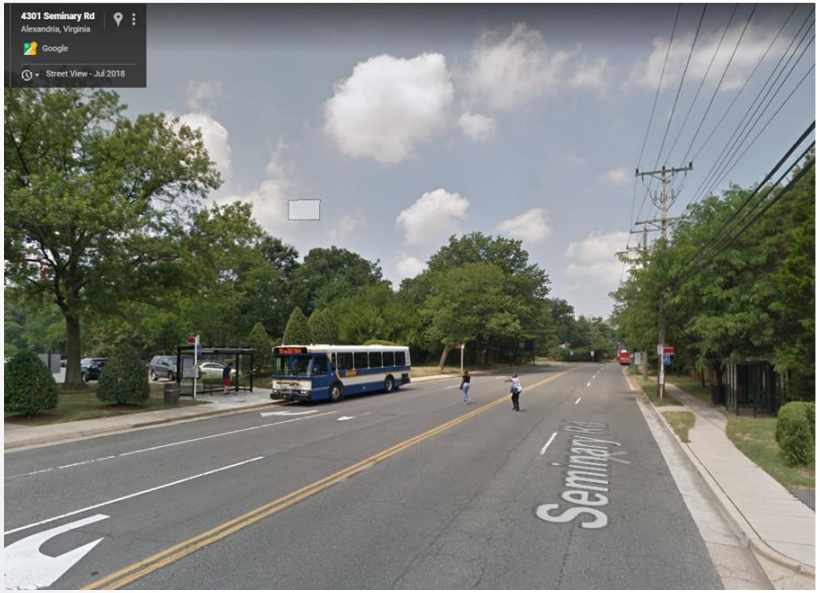
(prior to Traffic & Parking Board meeting)

- 501 responses to feedback form
- New crosswalks:
  - 173 people expressed support
  - 58 expressed opposition
  - 85 indicated that the proposed crossings are insufficient
- Open Comments (numbers are counts of people giving the comment)
  - 182 - retain four lanes
  - 164 – staff recommendation is insufficient, Alternative 3 is preferred
  - 146 - desire for better bicycle accommodations
  - 123 - support for more pedestrian safety improvements
  - 95 - concern about traffic congestion
  - 95 - speeding as a problem, either currently or as part of the staff recommendation
  - 42 - oppose LPIs and No Turn on Red restrictions; 12 – support LPIs and No Turn on Red restrictions
  - 38 - safer access to transit
  - 30 - concern about cut-through traffic
  - 25 - desire for a center left-turn lane
  - 10 - concern about emergency vehicle response times
  - 10 - filling the sidewalk gap is unnecessary

6. HAWK Signals

Why Crossings with HAWK signals?

Multiple Threat Crash



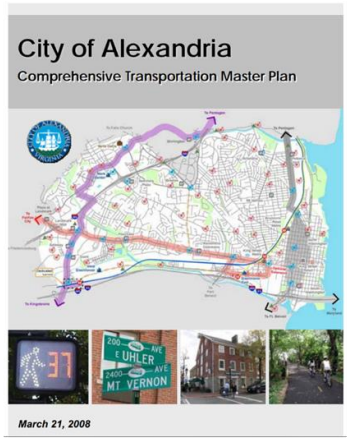
HAWK signal vs. RRFB

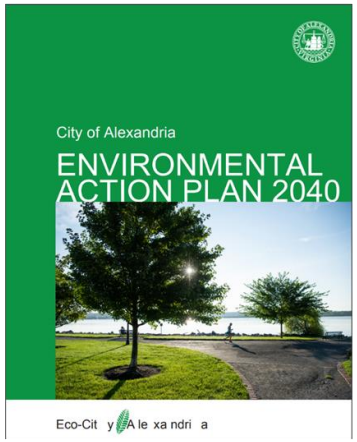
- Driver Yield Rate at unsignalized crossings and visibility
  - RRFB's on average show a 70-85% yield rate, but can vary[1] and can reduce pedestrian crashes by 47%
  - HAWK signals show a >90% yield rate[2] and reduce pedestrian crash rates by 55%
    - A full signal at an average of 98% yield rate[2]
- Traffic volumes
  - HAWKs recommended for roads with an ADT over 9,000 (Seminary between Howard and Quaker is 18,600- 15,900)

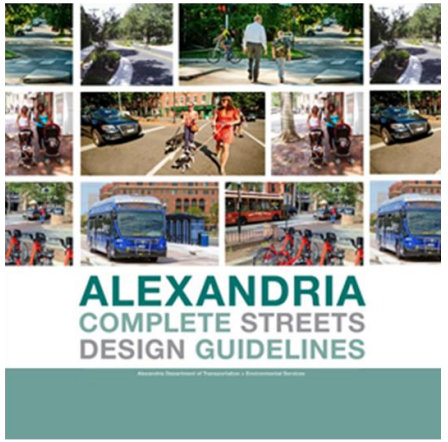
1. https://www.fhwa.dot.gov/publications/research/safety/pedbike/11039/003.cfm
2. Journal of Traffic and Transportation Engineering https://doi.org/10.1016/j.jtte.2016.01.007

7. Plans, Policies & Additional FAQs

Council-Adopted Plans and Policies







Sidewalk gap?

- Sidewalk advances City Council-adopted policies, plans and commitments
  - Improve safety & mobility for all roadway users
  - Top 10 priority sidewalk projects

ADDITIONAL FAQs

- **Patrick Henry/MacArthur Swing Space**
  - ACPS and T&ES are coordinating closely and ACPS is completing a traffic study to determine the impacts. Policy recommendations like staggered school hours and others are being considered to mitigate any potential traffic issues
- **Transit on Seminary (Howard to Quaker)**
  - AT2 and AT2X currently use Seminary. A study is determining what future service may be on this corridor.
  - Adjacent land uses need consideration

Criteria for Alternatives Analysis

- Federal guidance gives criteria for whether road diets are possible in certain circumstances, recognizing where they are and are not possible:
  - https://safety.fhwa.dot.gov/road_diets/guidance/info_guide/
- Reducing the number of lanes and introducing a buffer for the sidewalk improves conditions for people walking and trying to cross the roadway

< 10,000 Average Daily Traffic (ADT)	10,000-15,000 ADT	15,000-20,000 ADT	>20,000 ADT
Great candidate for Road Diets in most instances. Capacity will most likely not be affected.	Good candidate for Road Diets in many instances. Agencies should conduct intersection analysis and consider signal retiming to determine any effect on capacity.	Good candidate for Road Diets in some instances. Agencies should conduct a corridor analysis. Capacity may be affected at this volume depending on the "before" condition.	Agencies should complete a feasibility study to determine whether this is a good location for a Road Diet. There are several examples across the country where Road Diets have been successful with ADTs as high as 26,000. Capacity may be affected at this volume.

Seminary Road (from Quaker to Howard)
15,900-18,600 ADT