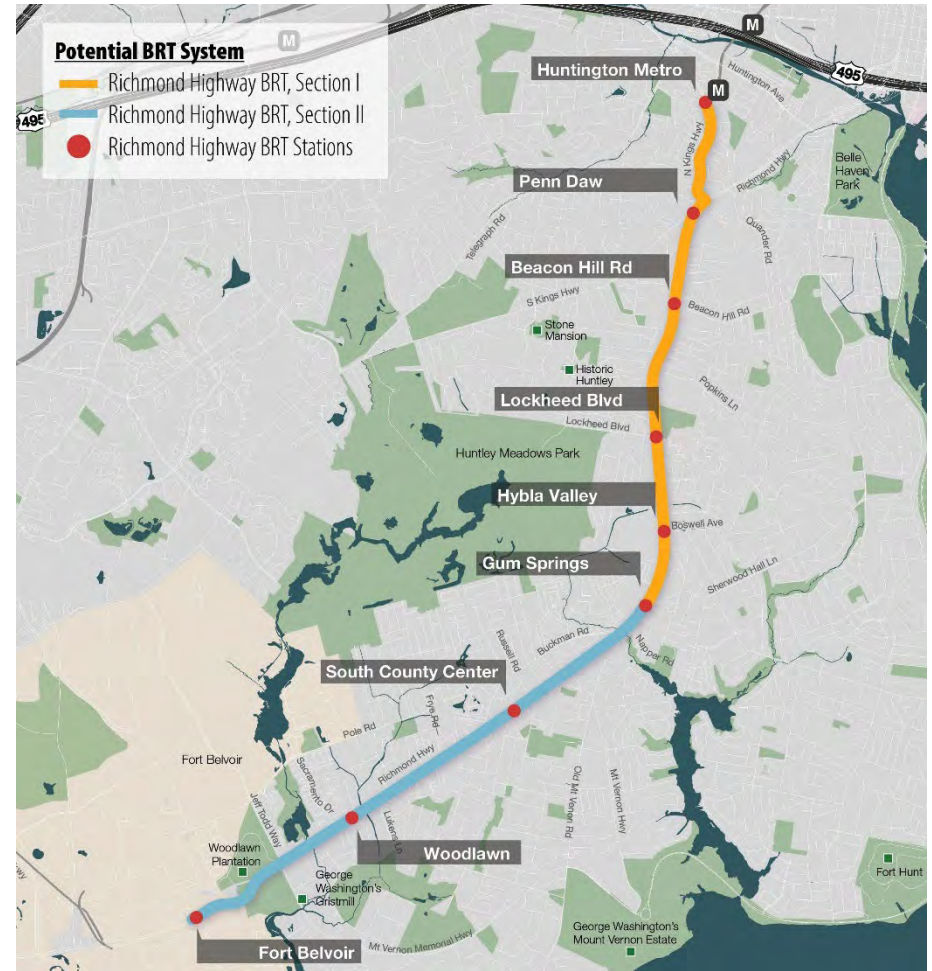




County of Fairfax, Virginia



# Richmond Highway Bus Rapid Transit Summary of Turn Lane Analysis Survey Results May 3-31, 2022



The Richmond Highway BRT project is funded in part by the Northern Virginia Transportation Authority.



# Background

- On June 27, 2021, in response to community concerns and as part BRT project design endorsement, the Board directed staff to evaluate potential design modifications
  - Objective of narrowing cross section along Richmond Highway
  - Identified 13 intersections for potential left/right turn lane reductions
- Analysis was completed in coordination with Virginia Department of Transportation (VDOT)





# Background

- **Intersections that were identified for potential turn lane reductions:**

- Richmond Highway cross-section between Furman Lane and Shields Avenue
- Richmond Highway & North Kings Highway/Shields Avenue
- Richmond Highway & (New) Furman Lane Extension
- Richmond Highway & Fordson Road/Boswell Avenue
- Richmond Highway & Arlington Drive
- Richmond Highway & Memorial Street
- Richmond Highway & Beacon Hill Road
- Richmond Highway & Southgate Drive
- Richmond Highway & Sherwood Hall Lane
- Richmond Highway & North Buckman Road/Mount Vernon Highway
- Richmond Highway & Ladson Lane
- Richmond Highway & Sacramento Drive/Cooper Road
- Richmond Highway & Jeff Todd Way/Mount Vernon Memorial Highway





# Survey Questions

- ZIP Code
- Neighborhood
- Age
- Transit riding frequency
- Driving frequency
- For each intersection studied:
  - Listed the intersection change that was studied along with a note about whether or not the change is recommended by staff
  - Asked, “Do you agree with the staff recommendations about the potential modifications studied for the [intersection] area?”
  - Answer choices were “Yes” / “No” / “No opinion”, with opportunity to provide additional comments

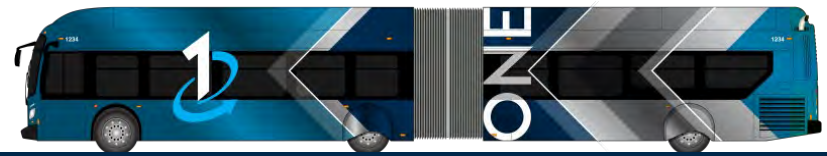




# Survey Responses

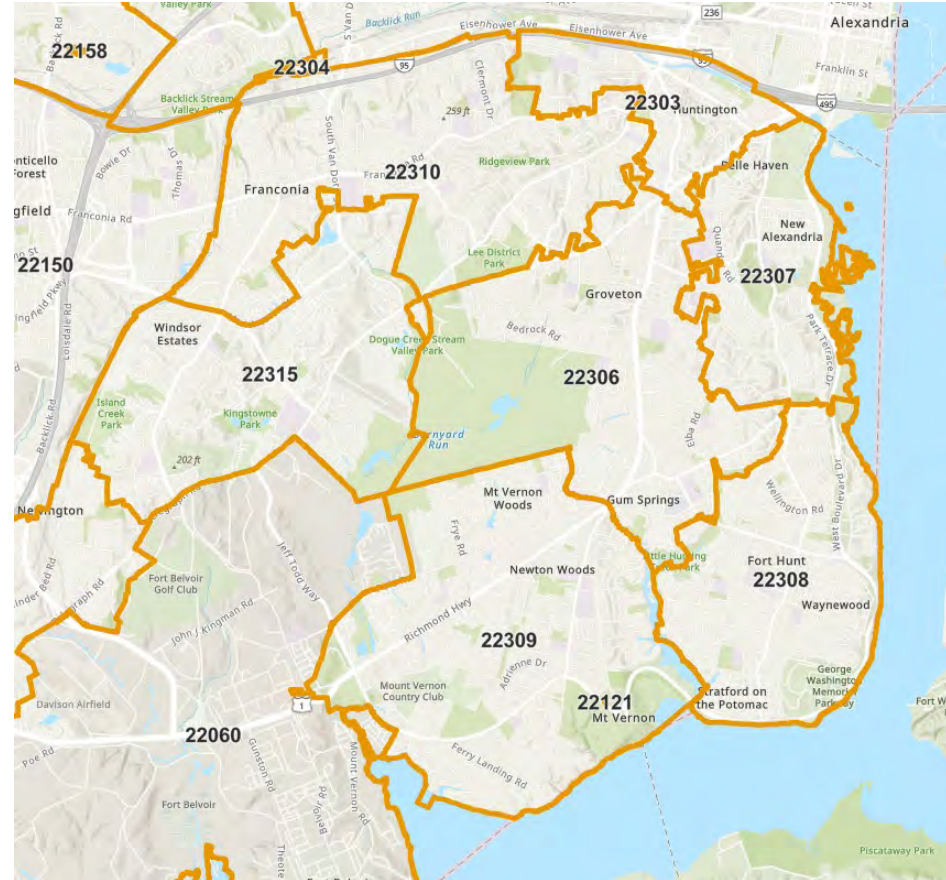
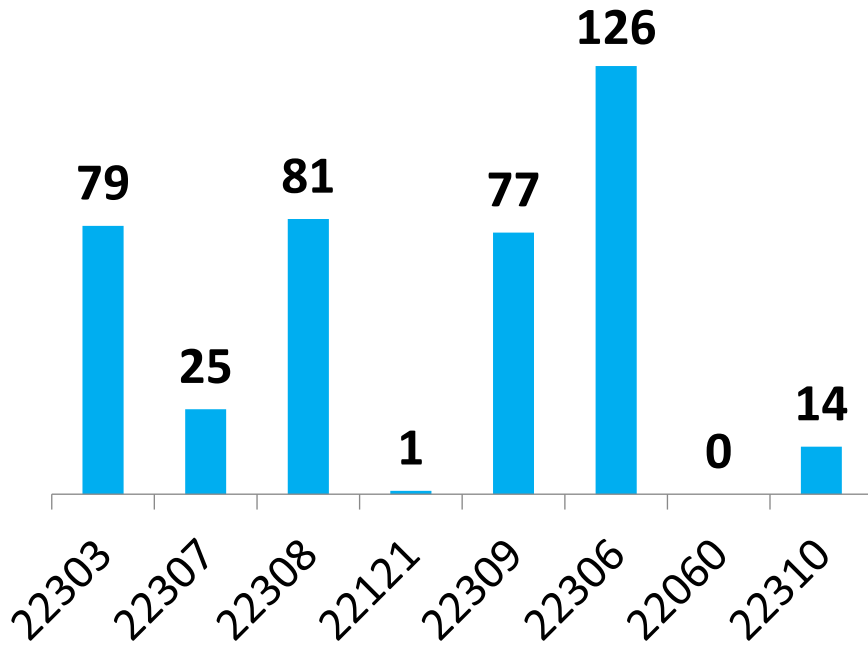
- Survey and comment period were open May 3 - May 31, 2022.
- There were 430 responses overall, though not all respondents answered all questions.
  - About 200-250 people responded to each of the intersection questions.
- Surveys in English and Spanish were available online as well as on paper at the public meeting on May 3.





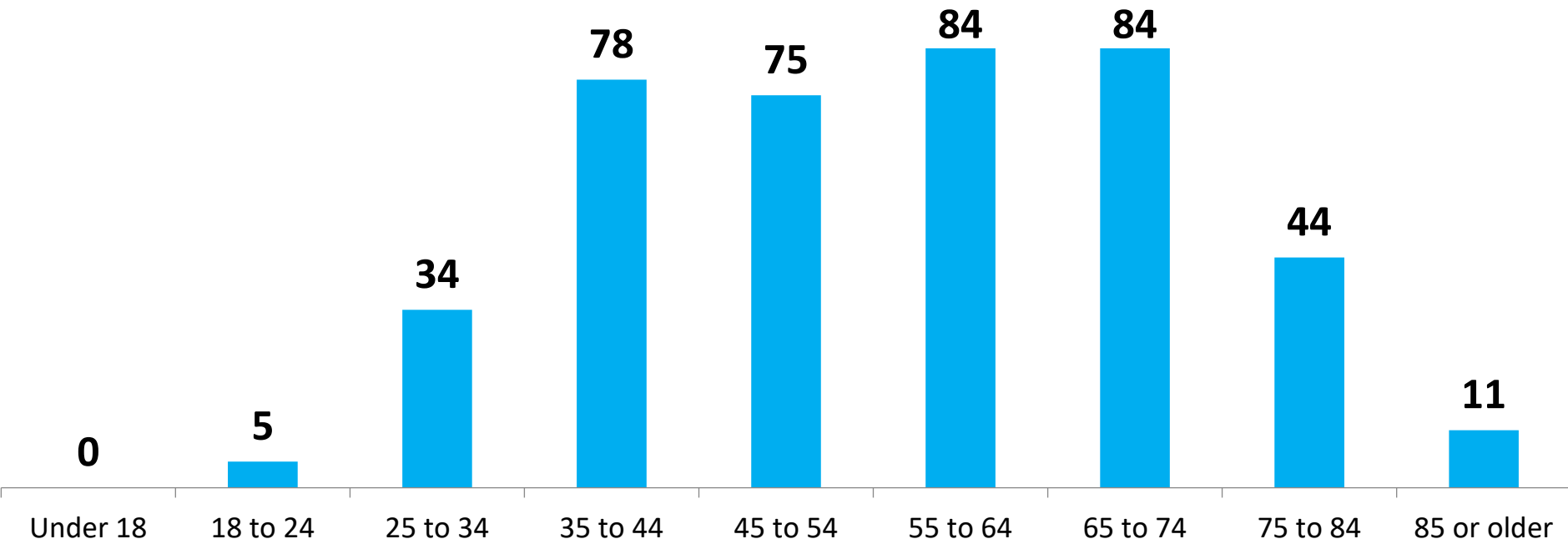
County of Fairfax, Virginia

# ZIP code



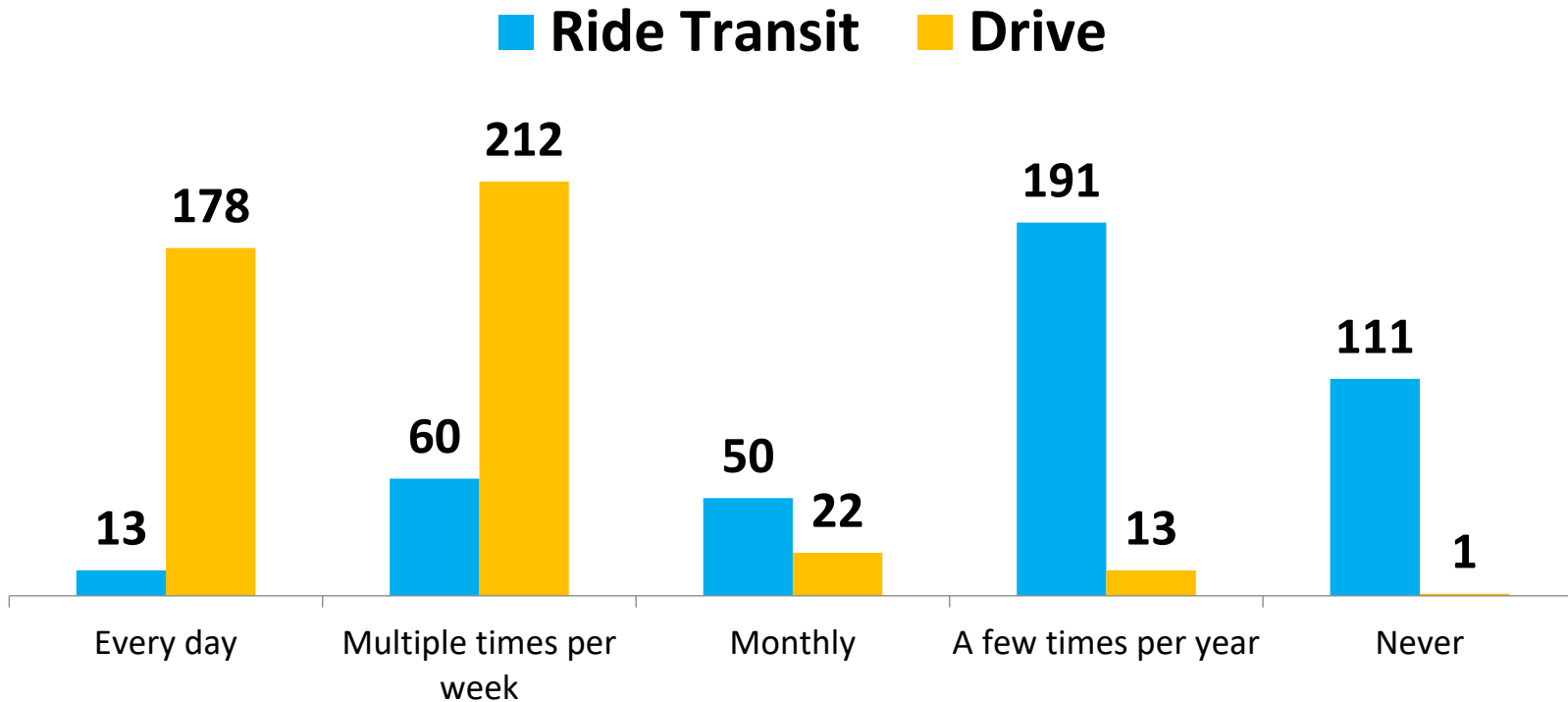


# Age





# Travel Habits Today







# All Intersections

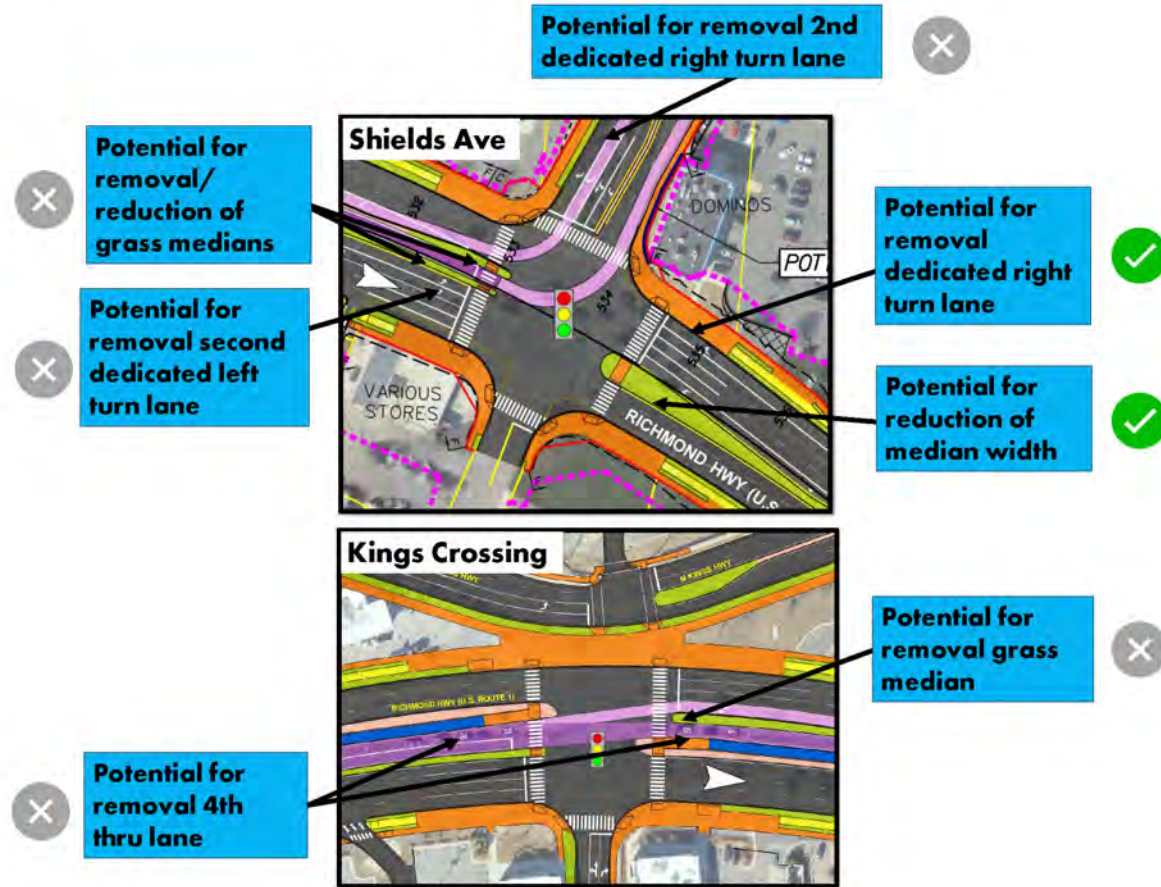
## Design & Response



# PENN DAW AREA – SHIELDS AVE & KINGS CROSSING

## Potential modifications: Remove/ reduce the width of the grass medians north and south of the intersection at Shields Avenue

- Median width necessary for proper clearance behind the southbound Penn Daw BRT platform



# PENN DAW AREA – SHIELDS AVE

## Potential modification: Removal of southbound right turn (SBR) lane along Richmond Highway

### • Impact to max queues:

- AM: 275' to 300'
- PM: 1400' to 1600'



Potential for removal of southbound right turn lane



	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	SB R	SB Approach	Overall Intersection	SB R	SB Approach	Overall Intersection
<b>Base Design</b>	23.5	28.9	32.2	112.5	79.0	85.3
<b>Lane Reduction</b>	27.7	29.2	32.3	99.9	73.9	78.2

Findings for Removal of Southbound Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	No significant impact
<b>Existing lane (Y/N)</b>	Yes (shared thru/right)
<b>Cost impacts/other considerations</b>	VDOT Design Waiver
<b>Recommendation</b>	Remove

**LEGEND**

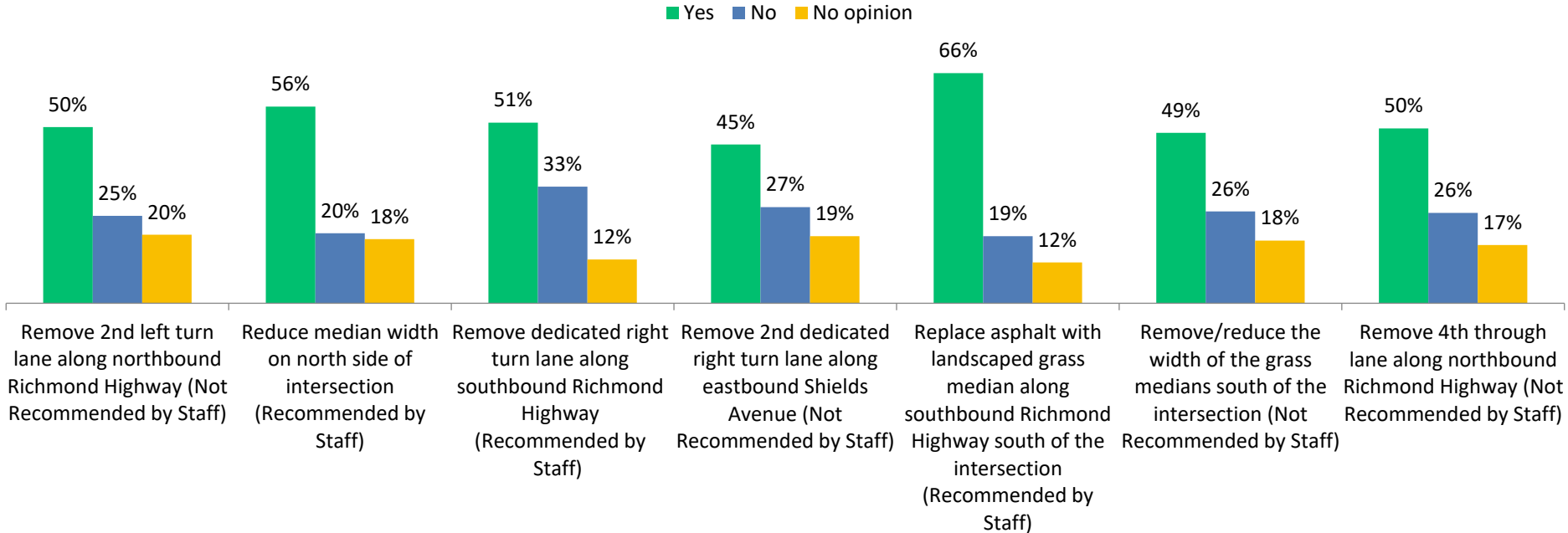
- Potential modifications for analysis/evaluation
- ✕ Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel



# Penn Daw

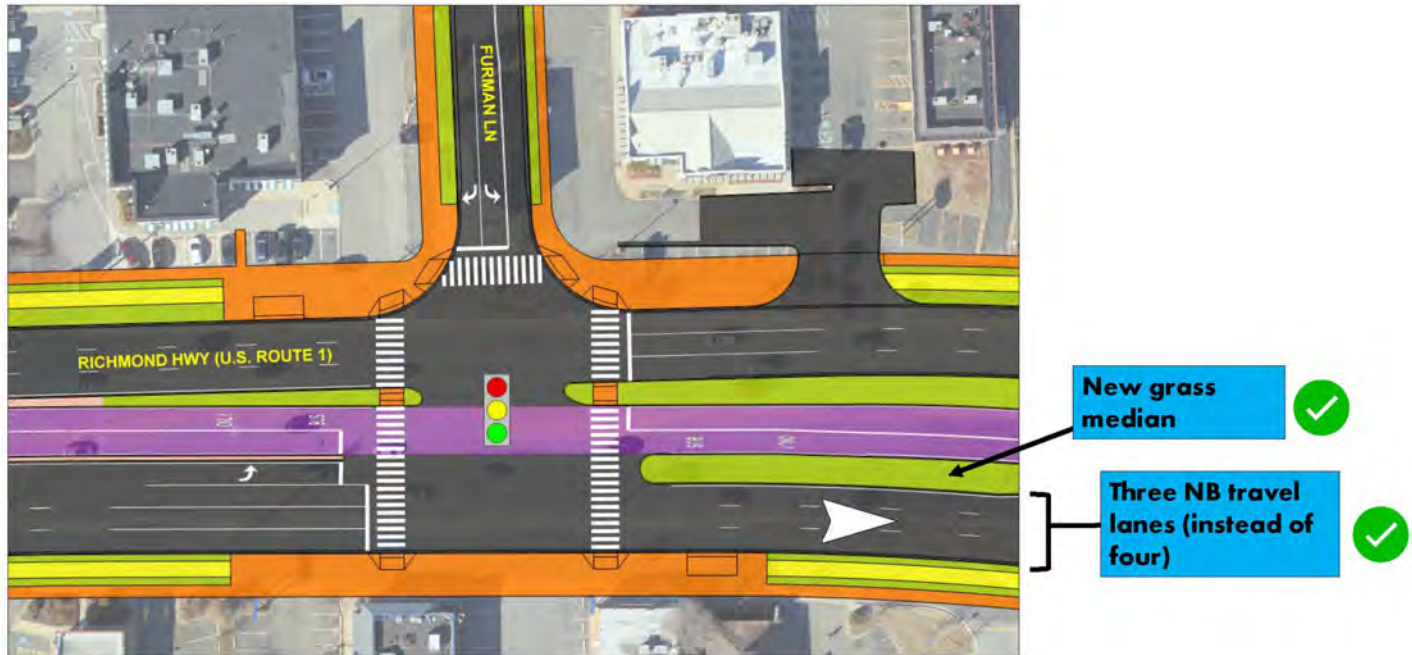
241 responses

## Do you agree with the staff recommendations about the potential modifications studied for the Penn Daw area?



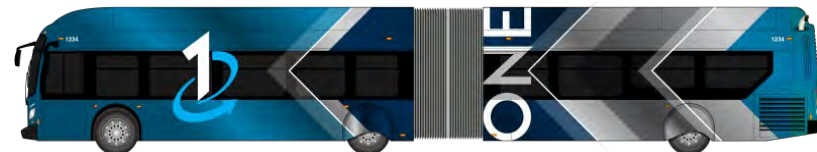
# NEW FURMAN LANE EXTENSION

**Potential modification: Grass median added to the design and 4<sup>th</sup> thru lane removed**



**LEGEND**

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

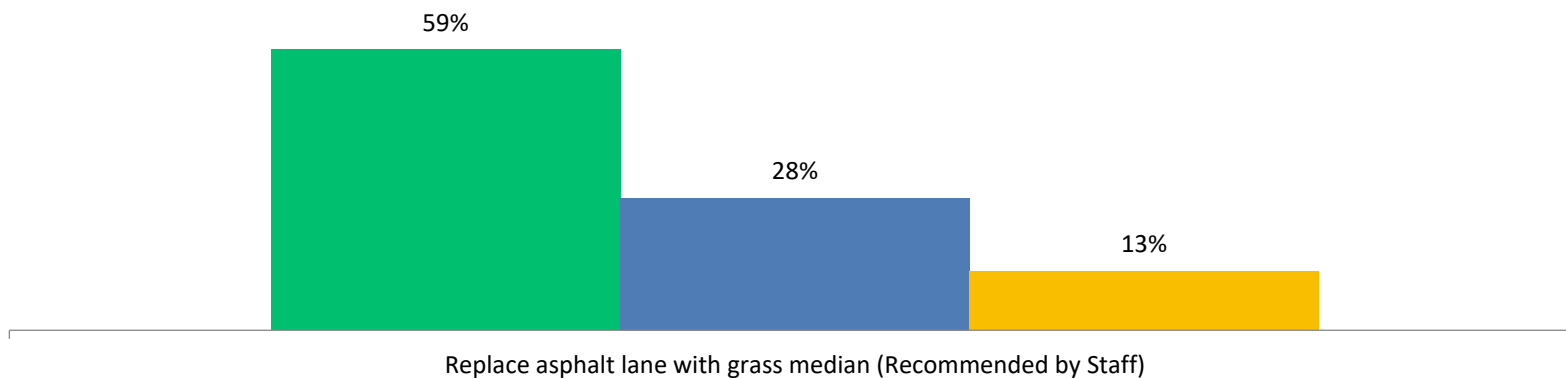


# Furman Lane

232 responses

Do you agree with the staff recommendation about the potential modification studied for the Furman Lane intersection?

■ Yes ■ No ■ No opinion

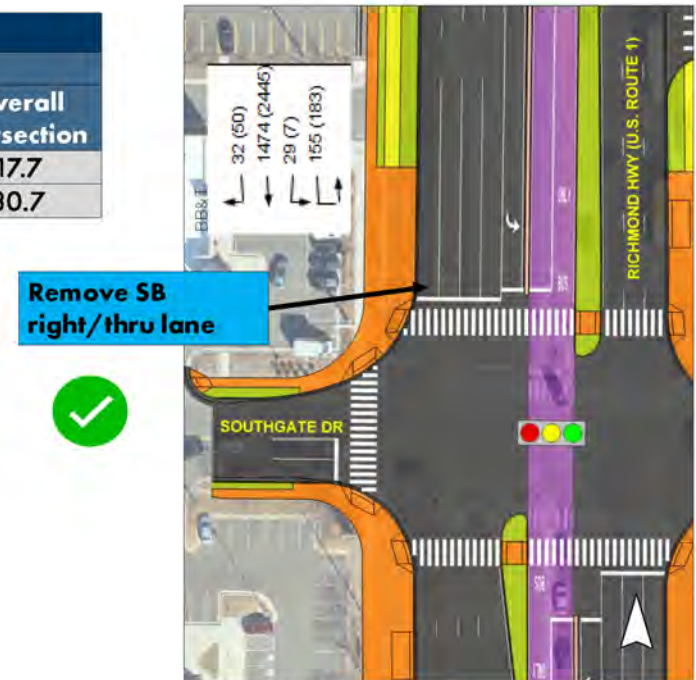


# SOUTHGATE DRIVE

## Potential modification: Removal of southbound thru/right turn lane (SBR) along Richmond Highway

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	SB R	SB Approach	Overall Intersection	SB R	SB Approach	Overall Intersection
<b>Base Design</b>	14.7	34.8	20.9	11.4	18.3	17.7
<b>Lane Reduction</b>	26.2	42.5	23.9	41.2	40.9	30.7

Findings for Removal of SB Thru/Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased SB delay (20+ sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost, VDOT Design Waiver
<b>Recommendation</b>	Remove



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



Direction of Northbound Richmond Highway Travel

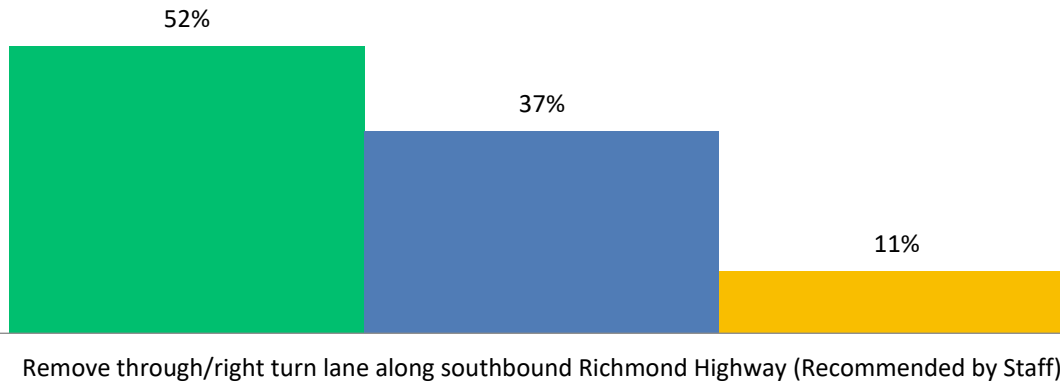


# Southgate Drive

240 responses

Do you agree with the staff recommendation about the potential modification studied for the Southgate Drive intersection?

■ Yes ■ No ■ No opinion





# BEACON HILL ROAD - NORTHBOUND

## Potential modification: Removal of northbound right turn (NBR) lane along Richmond Highway

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	NB R	NB Approach	Overall Intersection	NB R	NB Approach	Overall Intersection
Base Design	3.6	41.7	51.5	3.7	36.0	52.5
Lane Reduction	40.6	43.9	51.0	21.2	33.5	55.5

Findings for Removal of NB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased SBR delay (20+ sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	VDOT Design Waiver
<b>Recommendation</b>	Remove



Potential for removal NB right turn lane



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



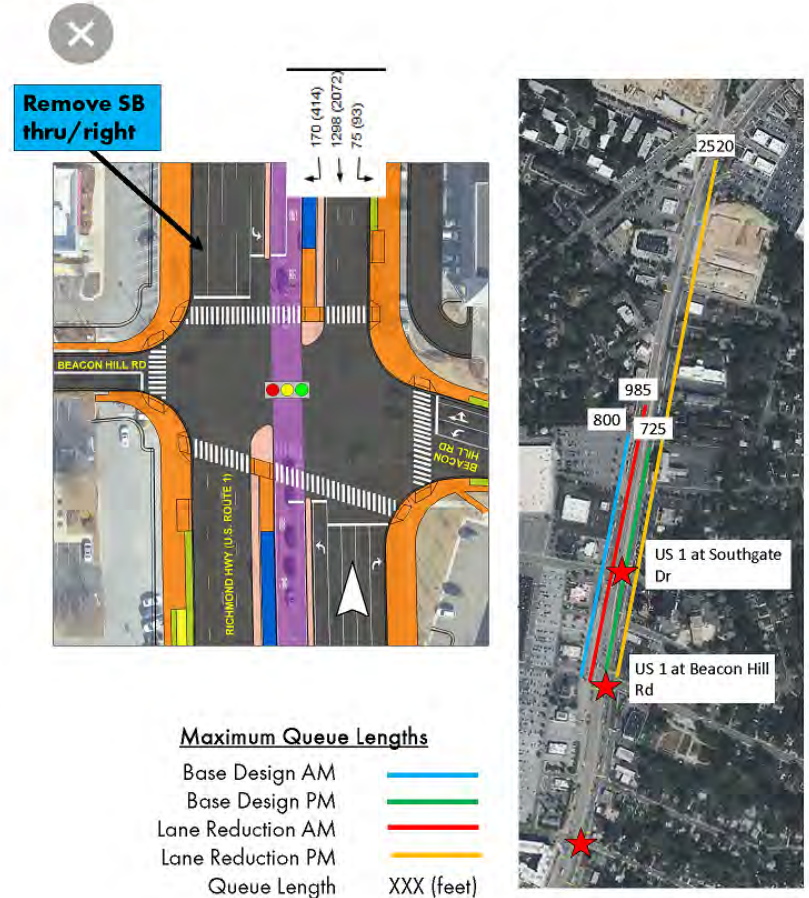
Direction of Northbound Richmond Highway Travel

# BEACON HILL ROAD - SOUTHBOUND

## Potential modification: Removal of southbound thru/right turn lane (SBR) along Richmond Highway

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	SB R	SB Approach	Overall Intersection	SB R	SB Approach	Overall Intersection
<b>Base Design</b>	18.7	22.6	51.5	32.0	35.0	52.5
<b>Lane Reduction</b>	16.1	20.3	51.0	46.4	42.6	55.5

Findings for Removal of SB Thru/Right Turn Lane	
<b>BRT impact</b>	Potential impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased SBR delay (20+ sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost, VDOT Design Waiver
<b>Recommendation</b>	Do not remove



**LEGEND**

- Potential modifications for analysis/evaluation
- ✕ Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

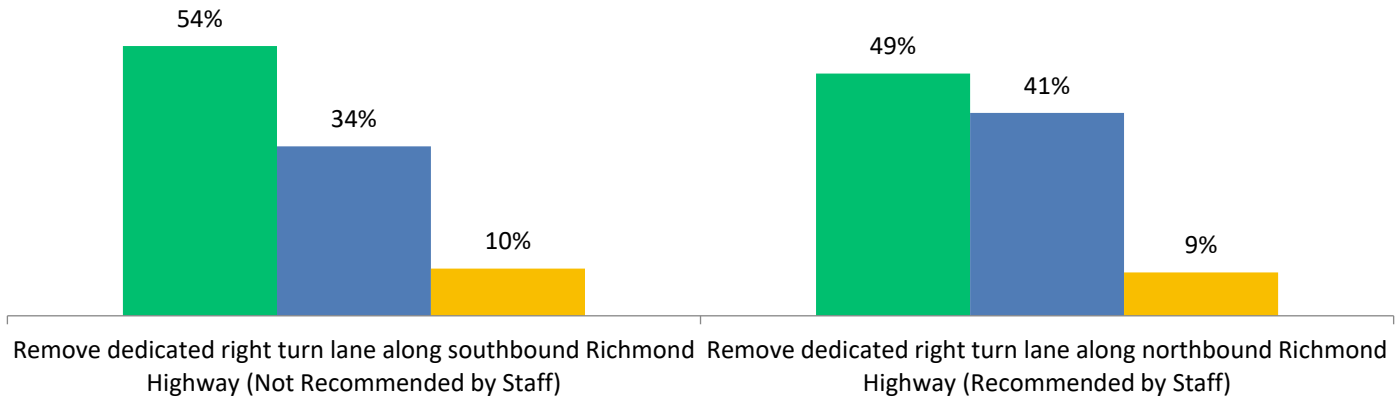


# Beacon Hill Road

252 responses

Do you agree with the staff recommendations about the potential modifications studied for the Beacon Hill Road intersection?

■ Yes ■ No ■ No opinion



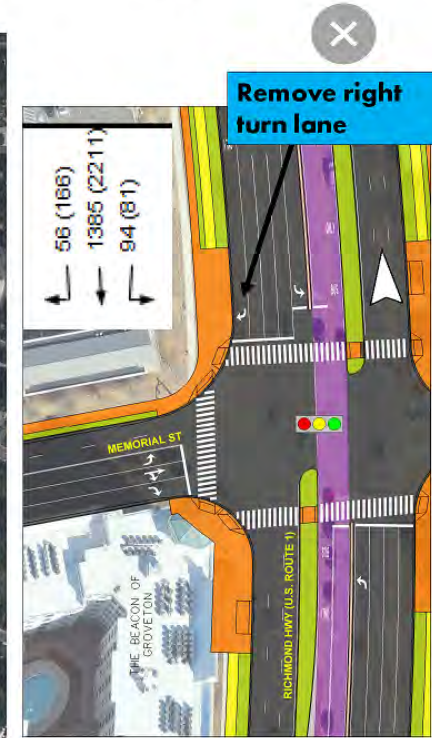
# MEMORIAL STREET - SOUTHBOUND

## Potential modification: Removal of southbound right turn (SBR) lane along Richmond Highway

- Impacts at Beacon Hill Road affect the results for Memorial Street SB approach by metering in the PM

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	SB R	SB Approach	Overall Intersection	SB R	SB Approach	Overall Intersection
<b>Base Design</b>	8.5	25.8	27.0	7.5	26.2	26.1
<b>Lane Reduction</b>	15.1	26.3	33.5	31.2	28.1	38.0

Findings for Removal of SB Right Turn Lane	
<b>BRT impact</b>	Potential impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased SBR delay (20+ sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost
<b>Recommendation</b>	Do not remove



**LEGEND**

- Potential modifications for analysis/evaluation
- ✕ Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

# MEMORIAL STREET - EASTBOUND

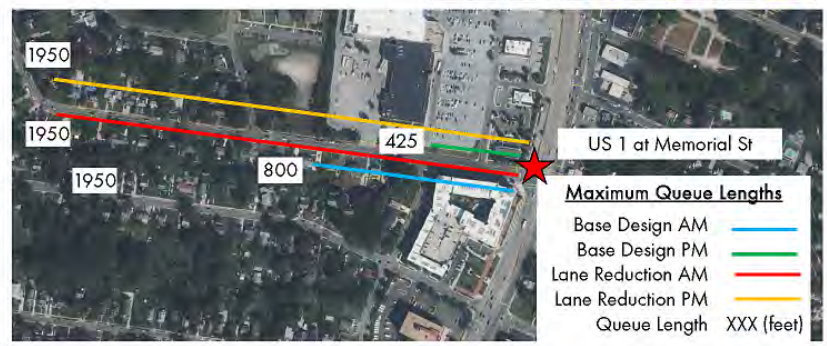
## Potential modification: Removal of eastbound right turn

- As development occurs, lane will be dual purposed for future off-peak parking
- 

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	EB R	EB Approach	Overall Intersection	EB R	EB Approach	Overall Intersection
<b>Base Design</b>	35.6	69.7	27.0	35.3	49.9	26.1
<b>Lane Reduction</b>	150.6	171.8	33.5	137.4	141.3	38.0

Findings for Removal of EB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased EB delay (100+ sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost, possible VDOT design waiver
<b>Recommendation</b>	Do not remove

⊗  
Potential for removal of right turn lane



**LEGEND**

- Potential modifications for analysis/evaluation
- ⊗ Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

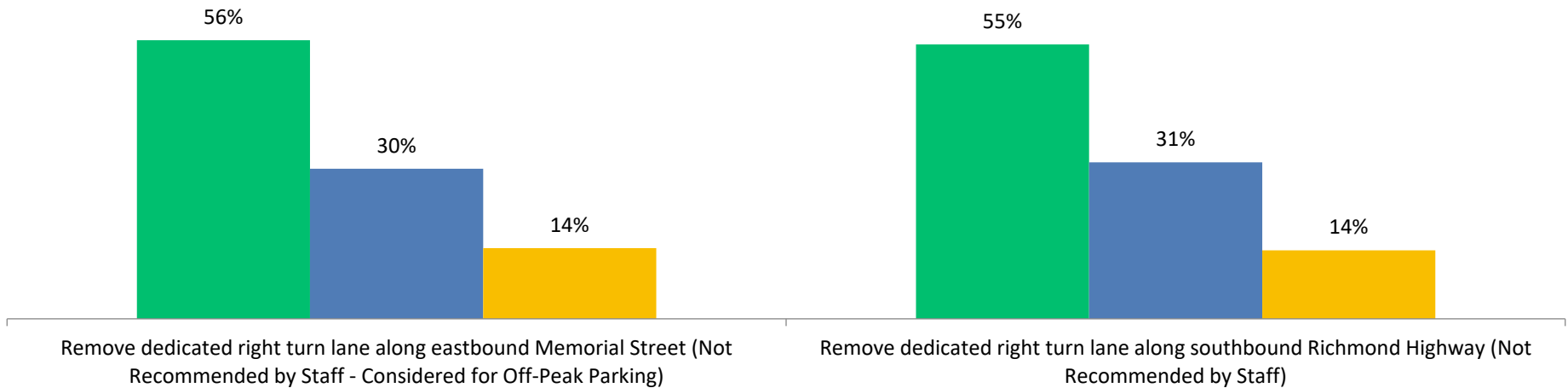


# Memorial Street

234 responses

Do you agree with the staff recommendations about the potential modifications studied for the Memorial Street intersection?

■ Yes ■ No ■ No opinion

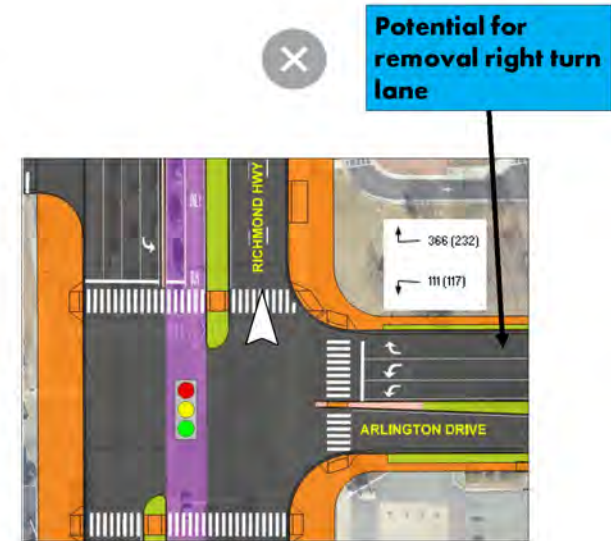


# ARLINGTON DRIVE

## Potential modification: Removal of westbound right turn (WBR) lane along Arlington Drive

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	WB R	WB Approach	Overall Intersection	WB R	WB Approach	Overall Intersection
Base Design	13.1	28.9	17.6	8.5	33.2	23.0
Lane Reduction	67.9	73.0	26.1	62.8	70.0	26.8

Findings for Removal of WB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased WB delay (45 sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost, possible VDOT design waiver
<b>Recommendation</b>	Do not remove



**LEGEND**

- Potential modifications for analysis/evaluation
- ✕ Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

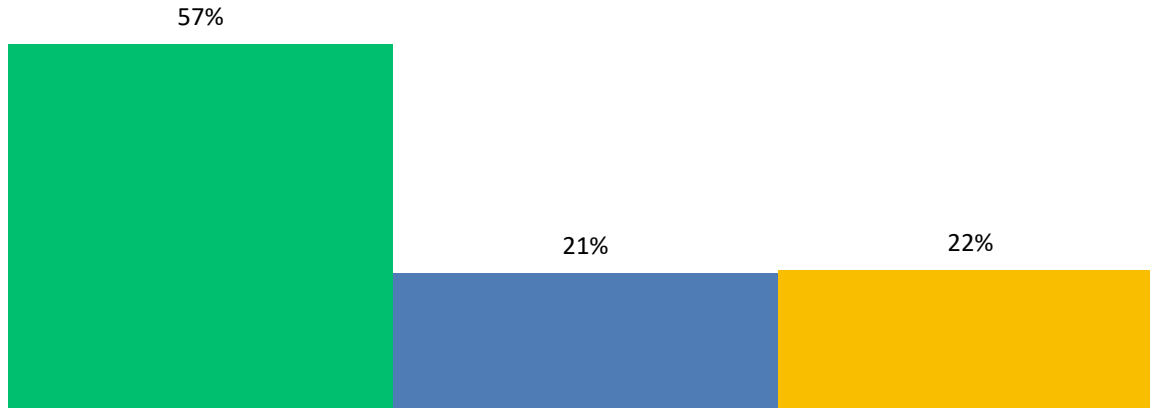


# Arlington Drive

216 responses

Do you agree with the staff recommendation about the potential modification studied for the Arlington Drive intersection?

■ Yes ■ No ■ No opinion



Remove dedicated right turn lane along westbound Arlington Drive (Not Recommended by Staff)



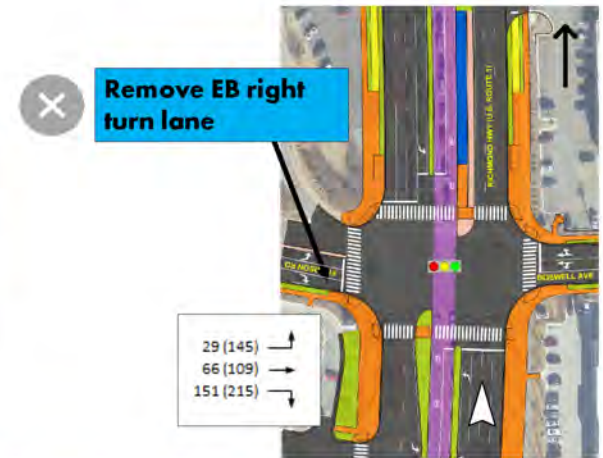


# FORDSON RD / BOSWELL AVE

## Potential modification: Removal of eastbound right turn (EBR) lane along Fordson Road

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	EB R	EB Approach	Overall Intersection	EB R	EB Approach	Overall Intersection
Base Design	42.5	64.4	42.6	26.5	53.9	30.5
Lane Reduction	144.7	161.7	48.5	351.4	352.1	41.2

Findings for Removal of EB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased EB delay (100-300 sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost, possible VDOT design waiver
<b>Recommendation</b>	Do not remove



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



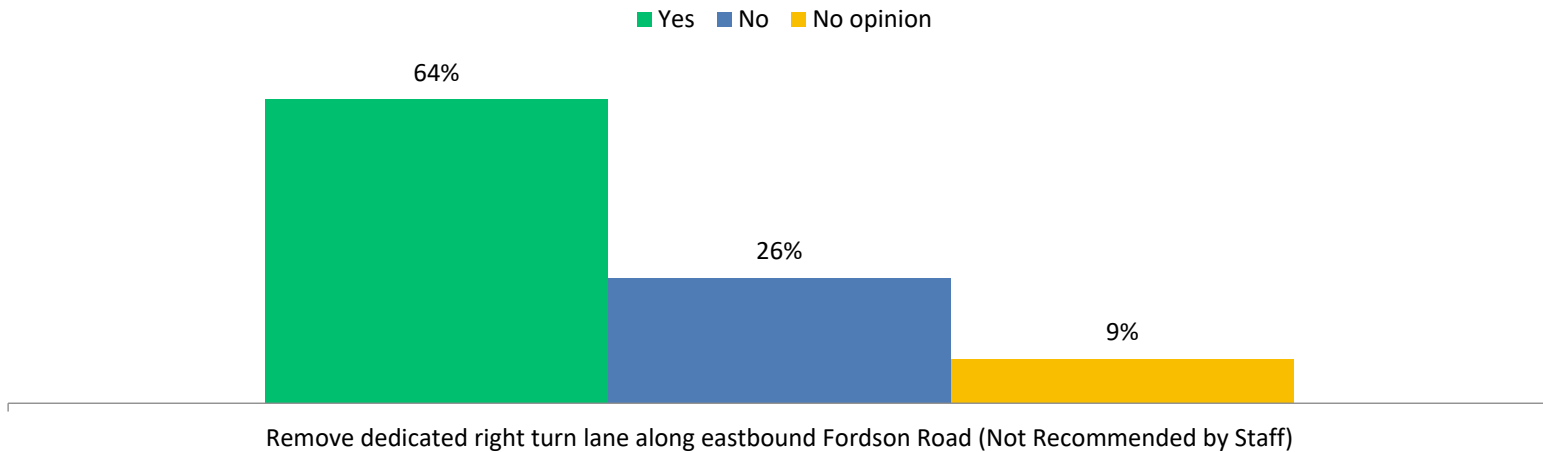
Direction of Northbound Richmond Highway Travel



# Fordson/Boswell

238 responses

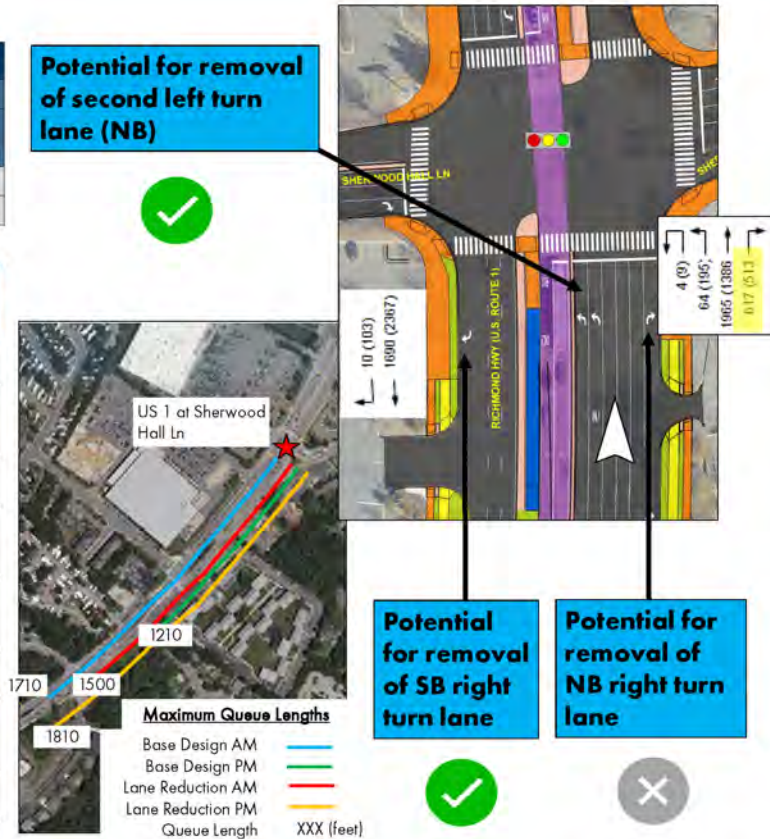
Do you agree with the staff recommendation about the potential modification studied for the Fordson Road/Boswell Avenue intersection?



# SHERWOOD HALL LANE - NORTHBOUND

	Intersection Delay (sec.)							
	AM Peak Hour				PM Peak Hour			
	NB R	NB L	NB Approach	Overall Intersection	NB R	NB L	NB Approach	Overall Intersection
Base Design	15.8	83.4	21.7	34.3	8.0	66.1	15.1	48.6
Lane Reduction	18.5	98.7	17.1	31.2	12.8	44.5	13.7	61.0

	Findings for Removal of SB Right Turn Lane	Findings for Removal of NB Left Turn Lane	Findings for Removal of NB Right Turn Lane
<b>BRT impact</b>	No impact	No impact	No impact
<b>Ped. crossing distance</b>	11-foot reduction	6-foot reduction	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction	Potential 2 sec. reduction	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends	Potential increase for rear-ends	Potential increase for rear-ends
<b>Delay</b>	N/A	Increased Overall delay (12 sec.)	Increased SBR delay (20+ sec.)
<b>Existing lane (Y/N)</b>	Yes	Yes	Yes (channelized turn)
<b>Cost impacts/other considerations</b>	Additional project cost	Additional project cost	Additional project cost, VDOT Design Waiver
<b>Recommendation</b>	Remove	Remove	Do not remove



**LEGEND**

- Potential modifications for analysis/evaluation
- ✗ Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

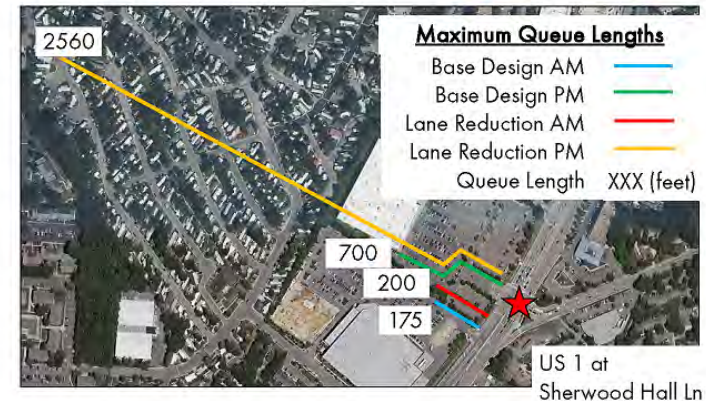
# SHERWOOD HALL LANE - EASTBOUND

## Potential modification: Removal of eastbound right turn lane (EBR) along Sherwood Hall Lane

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	EB R	EB Approach	Overall Intersection	EB R	EB Approach	Overall Intersection
Base Design	6.9	60.3	34.3	19.0	62.1	48.6
Lane Reduction	34.3	64.8	31.2	217.5	242.3	61.0

Findings for Removal of EB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased EB delay (180 sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost
<b>Recommendation</b>	Do not remove

Potential for removal right turn lane



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



Direction of Northbound Richmond Highway Travel

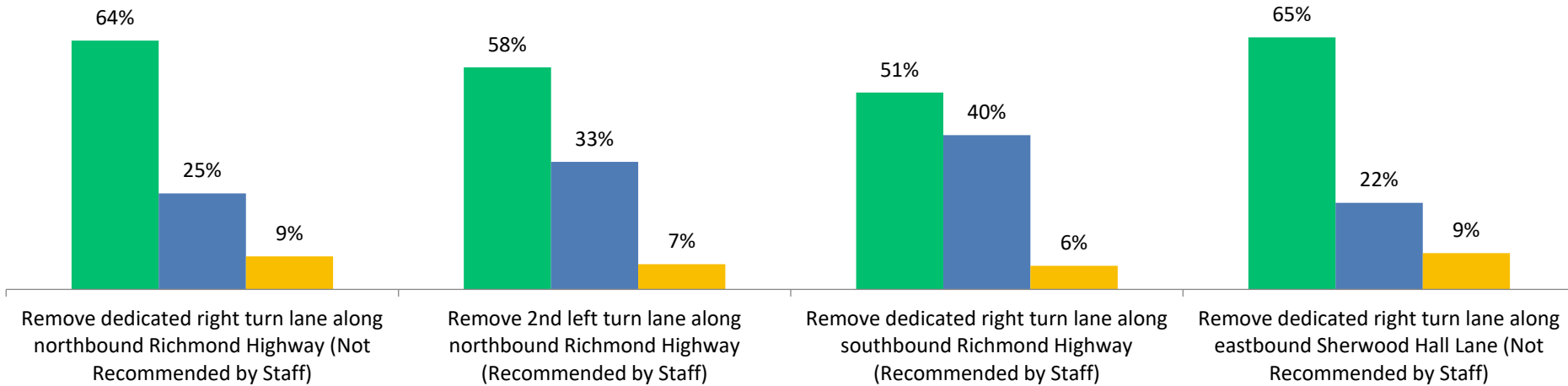


# Sherwood Hall Lane

245 responses

Do you agree with the staff recommendations about the potential modifications studied for the Sherwood Hall Lane intersection?

Yes No No opinion



# LADSON LANE - SOUTHBOUND

## Potential modification: Removal of southbound thru/right lane (SBR) along Richmond Highway

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	SB R	SB Approach	Overall Intersection	SB R	SB Approach	Overall Intersection
<b>Base Design</b>	5.9	6.0	12.2	15.0	12.4	14.5
<b>Lane Reduction</b>	6.3	11.0	14.7	11.7	11.4	23.5

Findings for Removal of SB Thru/Right Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends (50% increase)
<b>Delay</b>	Increased SBR delay (20+ sec.)
<b>Existing lane (Y/N)</b>	Yes (right turn only lane)
<b>Cost impacts/other considerations</b>	Additional project cost, VDOT Design Waiver
<b>Recommendation</b>	Do not remove



Maximum Queue Lengths

- Base Design AM —
- Base Design PM —
- Lane Reduction AM —
- Lane Reduction PM —
- Queue Length XXX (feet)



**Remove thru/right turn lane**

Note: SB right/thru lane provides storage for heavy SB right turn at Buckman.

<b>LEGEND</b>	<span style="background-color: #00AEEF; color: white; padding: 2px;">Potential modifications for analysis/evaluation</span>	<span style="border: 1px solid gray; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">✕</span> Change not proposed for inclusion in design	<span style="border: 1px solid green; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">✓</span> Change proposed for inclusion in design	<span style="font-size: 2em;">➤</span> Direction of Northbound Richmond Highway Travel

# LADSON LANE - EASTBOUND

## Potential modification: Removal of eastbound right turn (EBR) lane along Ladson Lane

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	EB R	EB Approach	Overall Intersection	EB R	EB Approach	Overall Intersection
<b>Base Design</b>	56.6	76.1	12.2	45.0	55.6	14.5
<b>Lane Reduction</b>	96.6	92.2	14.7	50.1	64.2	23.5

Findings for Removal of EB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased EBR delay (40 sec.)
<b>Existing lane (Y/N)</b>	Yes
<b>Cost impacts/other considerations</b>	Additional project cost, possible VDOT design waiver
<b>Recommendation</b>	Remove

Potential for removal right turn lane



**LEGEND**

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



Direction of Northbound Richmond Highway Travel

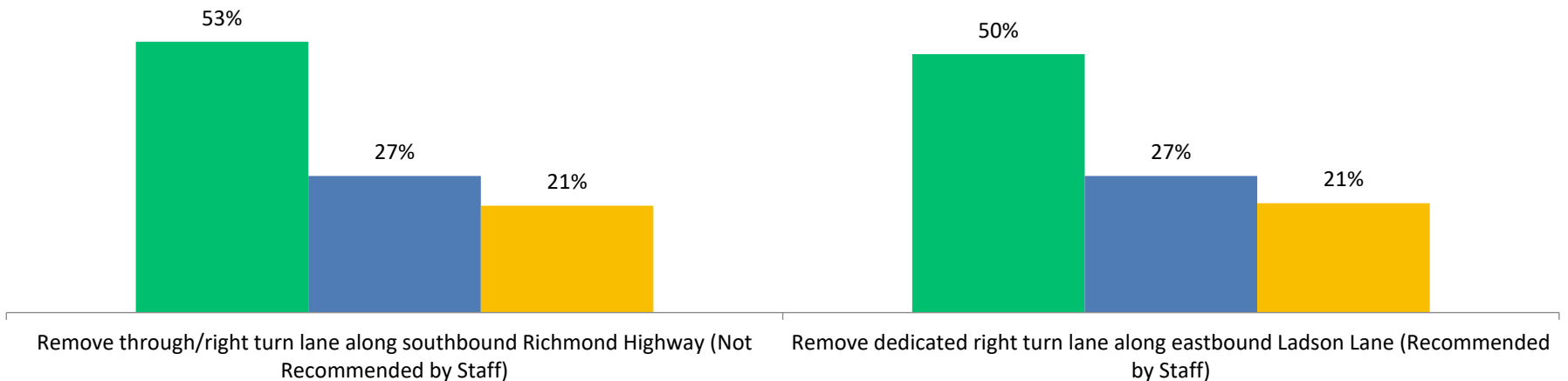


# Ladson Lane

207 responses

Do you agree with the staff recommendations about the potential modifications studied for the Ladson Lane intersection?

■ Yes ■ No ■ No opinion





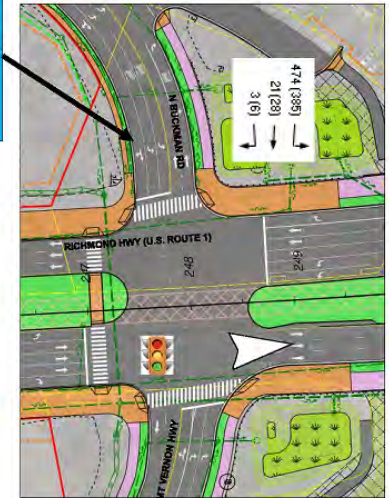
# BUCKMAN RD/MT VERNON HWY - EASTBOUND

## Potential modification: Removal of eastbound lane (EBR) along Mt Vernon Hwy

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	EB R	EB Approach	Overall Intersection	EB R	EB Approach	Overall Intersection
Base Design	12.5	76.3	47.2	21.1	74.4	33.9
Lane Reduction	43.2	75.5	59.0	60.3	76.3	39.8

Findings for Removal of EB Right Turn Lane	
BRT impact	No impact
Ped. crossing distance	11-foot reduction
Walk time for signal	With mainline green
Potential conflicts	Potential increase for rear-ends
Delay	Increased EBR delay (30-40 sec.)
Existing lane (Y/N)	No
Cost impacts/other considerations	Blocking of driveways
Recommendation	Remove

Potential for removal thru/right and reduce to 4 lanes



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



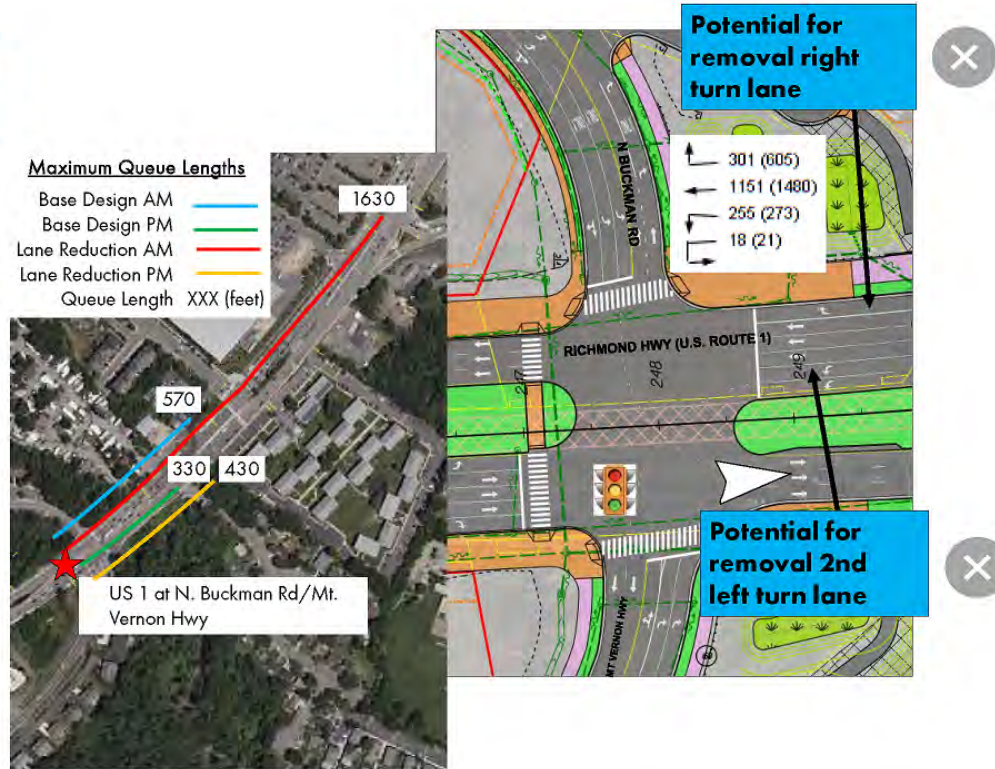
Direction of Northbound Richmond Highway Travel

# BUCKMAN RD/MT VERNON HWY - SOUTHBOUND

## Potential modifications: Removal of southbound right (SBR) and left turn (SBL) lanes along Richmond Highway

Intersection Delay (sec.)								
	AM Peak Hour				PM Peak Hour			
	SB R	SB L	SB Approach	Overall Intersection	SB R	SB L	SB Approach	Overall Intersection
<b>Base Design</b>	11.9	66.8	29.8	47.2	9.6	96.3	23.0	33.9
<b>Lane Reduction</b>	27.0	197.9	51.0	59.0	17.1	99.1	26.8	39.8

	Findings for Removal of SB Left Turn Lane	Findings for Removal of SB Right Turn Lane
<b>BRT impact</b>	No impact	No impact
<b>Ped. crossing distance</b>	11-foot reduction	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends	Potential increase for rear-ends
<b>Delay</b>	Increased LT delay (130 sec.)	Increased SBR delay (17 sec.)
<b>Existing lane (Y/N)</b>	No	Yes
<b>Cost impacts/other considerations</b>	N/A	VDOT Design Waiver
<b>Recommendation</b>	Do not remove	Do not remove



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



Direction of Northbound Richmond Highway Travel

# BUCKMAN RD/MT VERNON HWY - WESTBOUND

## Potential modification: Removal of westbound right turn (WBR) lane along Mt Vernon Hwy

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	WB R	WB Approach	Overall Intersection	WB R	WB Approach	Overall Intersection
<b>Base Design</b>	67.0	67.4	47.2	27.1	38.7	33.9
<b>Lane Reduction</b>	102.9	100.8	59.0	28.9	41.0	39.8

Findings for Removal of WB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased WB delay (35 sec.)
<b>Existing lane (Y/N)</b>	No
<b>Cost impacts/other considerations</b>	None
<b>Recommendation</b>	Do not remove



Potential for removal of right turn lane



**LEGEND**

- Potential modifications for analysis/evaluation
- Change not proposed for inclusion in design
- Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

# BUCKMAN RD/MT VERNON HWY - NORTHBOUND

## Potential modifications: Removal of northbound right (NBR) and left turn (NBL) lanes along Richmond Highway

	Intersection Delay (sec.)							
	AM Peak Hour				PM Peak Hour			
	NB R	NB L	NB Approach	Overall Intersection	NB R	NB L	NB Approach	Overall Intersection
Base Design	13.9	57.7	50.0	47.2	11.4	91.7	38.5	33.9
Lane Reduction	50.0	N/A	50.9	59.0	42.9	N/A	48.9	39.8

	Findings for Removal of NB Left Turn Lane	Findings for Removal of NB Right Turn Lane
<b>BRT impact</b>	No impact	No impact
<b>Ped. crossing distance</b>	6-foot reduction	11-foot reduction
<b>Walk time for signal</b>	Potential 2 sec. reduction	Potential 3 sec. reduction
<b>Potential conflicts</b>	N/A	Potential increase for rear-ends
<b>Delay</b>	Increased LT delay (130 sec.)	Increased SBR delay (35 sec.)
<b>Existing lane (Y/N)</b>	Yes	Yes
<b>Cost impacts/other considerations</b>	Left turns would be restricted, volumes would need to shift to Janna Lee or Ladson	Additional project cost, VDOT Design Waiver
<b>Recommendation</b>	Remove	Remove

Potential for removal left turn lane



Potential for removal right turn lane



**LEGEND**

- Potential modifications for analysis/evaluation
- ✗ Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel

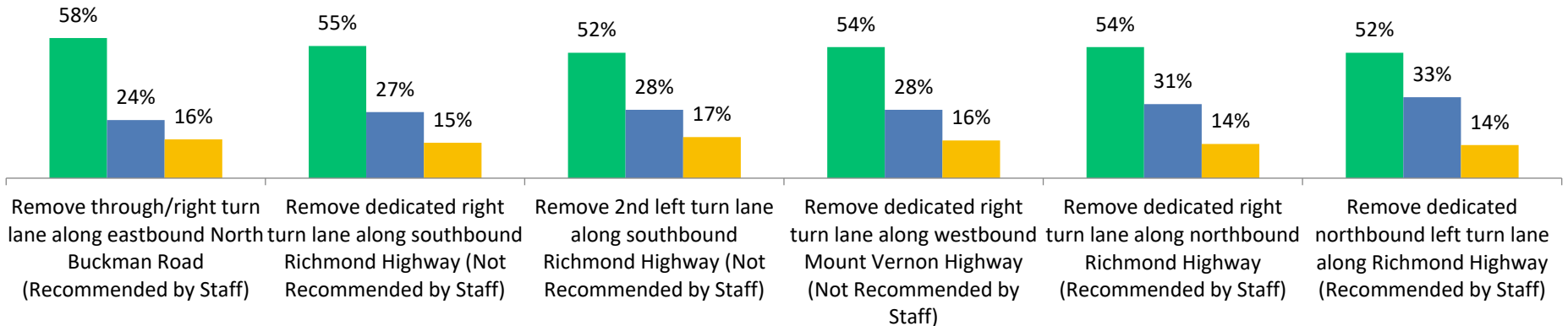


# North Buckman Rd/Mount Vernon Hwy

212 responses

Do you agree with the staff recommendations about the potential modifications studied for the North Buckman Road/Mount Vernon Highway intersection?

Yes No No opinion



# SACRAMENTO DR/COOPER RD - EASTBOUND

## Potential modification: Removal of eastbound right turn

- As development occurs, lane will be dual purposed for future off-peak parking

	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	EB R	EB Approach	Overall Intersection	EB R	EB Approach	Overall Intersection
<b>Base Design</b>	39.0	58.8	39.9	53.5	88.2	42.8
<b>Lane Reduction</b>	41.0	58.9	40.3	56.1	90.9	47.9

Findings for Removal of EB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased northbound left/southbound left delay (35 sec.)
<b>Existing lane (Y/N)</b>	No (combining intersections)
<b>Cost impacts/other considerations</b>	Blocking of driveways, economic development impact
<b>Recommendation</b>	Do not remove



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



Direction of Northbound Richmond Highway Travel

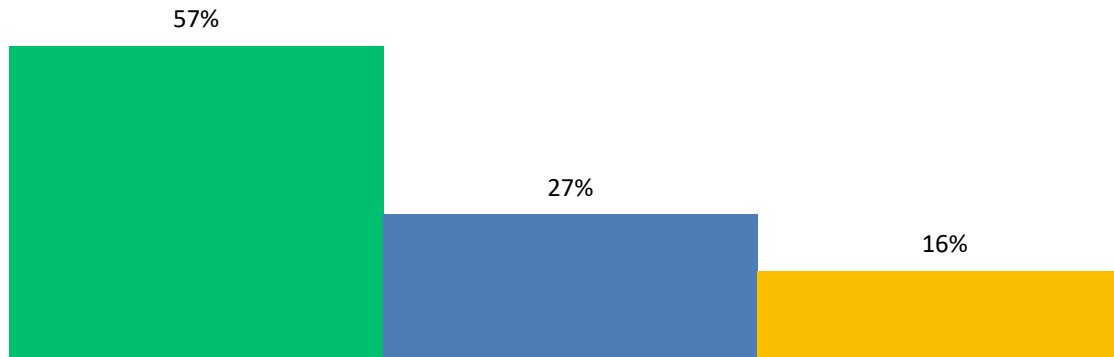


# Sacramento Dr/Cooper Rd

196 responses

Do you agree with the staff recommendation about the potential modification studied for the Sacramento Drive/Cooper Road intersection?

■ Yes ■ No ■ No opinion



Remove dedicated right turn lane along eastbound Sacramento Drive (Not Recommended by Staff - Considered for Off-Peak Parking)

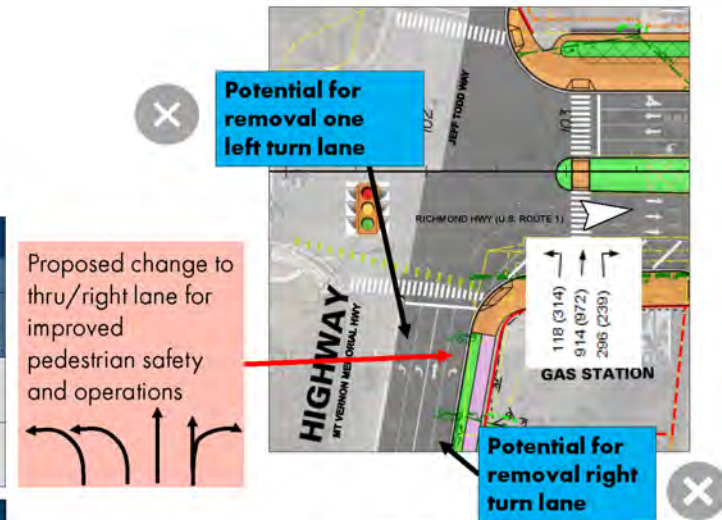


# JEFF TODD WAY / MT VERNON - WESTBOUND

**Potential modifications: Removal of westbound left (WBL) and right turn (WBR) lanes along Mt Vernon Hwy**

	Intersection Delay (sec.)							
	AM Peak Hour				PM Peak Hour			
	WB R	WB L	WB Approach	Overall Intersection	WB R	WB L	WB Approach	Overall Intersection
<b>Base Design</b>	6.0	83.1	73.3	33.4	9.0	88.9	58.0	44.6
<b>Lane Reduction</b>	48.6	127.9	94.3	37.0	81.2	128.4	103.0	49.0

	Findings for Removal of WB Left Turn Lane	Findings for Removal of WB Right Turn Lane
<b>BRT impact</b>	No impact	No impact
<b>Ped. crossing distance</b>	11-foot reduction	11-foot reduction
<b>Walk time for signal</b>	With mainline green	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends	Potential increase for rear-ends
<b>Delay</b>	Increased WBL delay (40-45 sec.)	Increased WBR delay (40-70 sec.)
<b>Existing lane (Y/N)</b>	Yes	No
<b>Cost impacts/other considerations</b>	Additional project cost	Previously requested by the public
<b>Recommendation</b>	Do not remove	Do not remove/Lanes reconfigured



**LEGEND**

- Potential modifications for analysis/evaluation
- ⊗ Change not proposed for inclusion in design
- ✔ Change proposed for inclusion in design
- Direction of Northbound Richmond Highway Travel





# Jeff Todd Way/Mount Vernon Memorial Hwy

206 responses

Do you agree with the staff recommendations about the potential modifications studied for the Jeff Todd Way/Mount Vernon Memorial Highway intersection?

