



# INTRODUCTION TO THE TURN LANE ANALYSIS

- **On June 27, 2021, in response to community concerns and as part of the 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)**

## 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

*Staff reviewed thirteen intersections, and the following board displays contain information about all thirteen locations and findings. Some have multiple lanes identified for analysis.*



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

## RICHMOND HIGHWAY BUS RAPID TRANSIT PUBLIC INFORMATION MEETING

Fairfax County Department of Transportation (FCDOT) ensures nondiscrimination in all programs and activities in accordance with Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA). If you need this information in an alternate format, contact FCDOT at 703-877-5600, TTY 711.





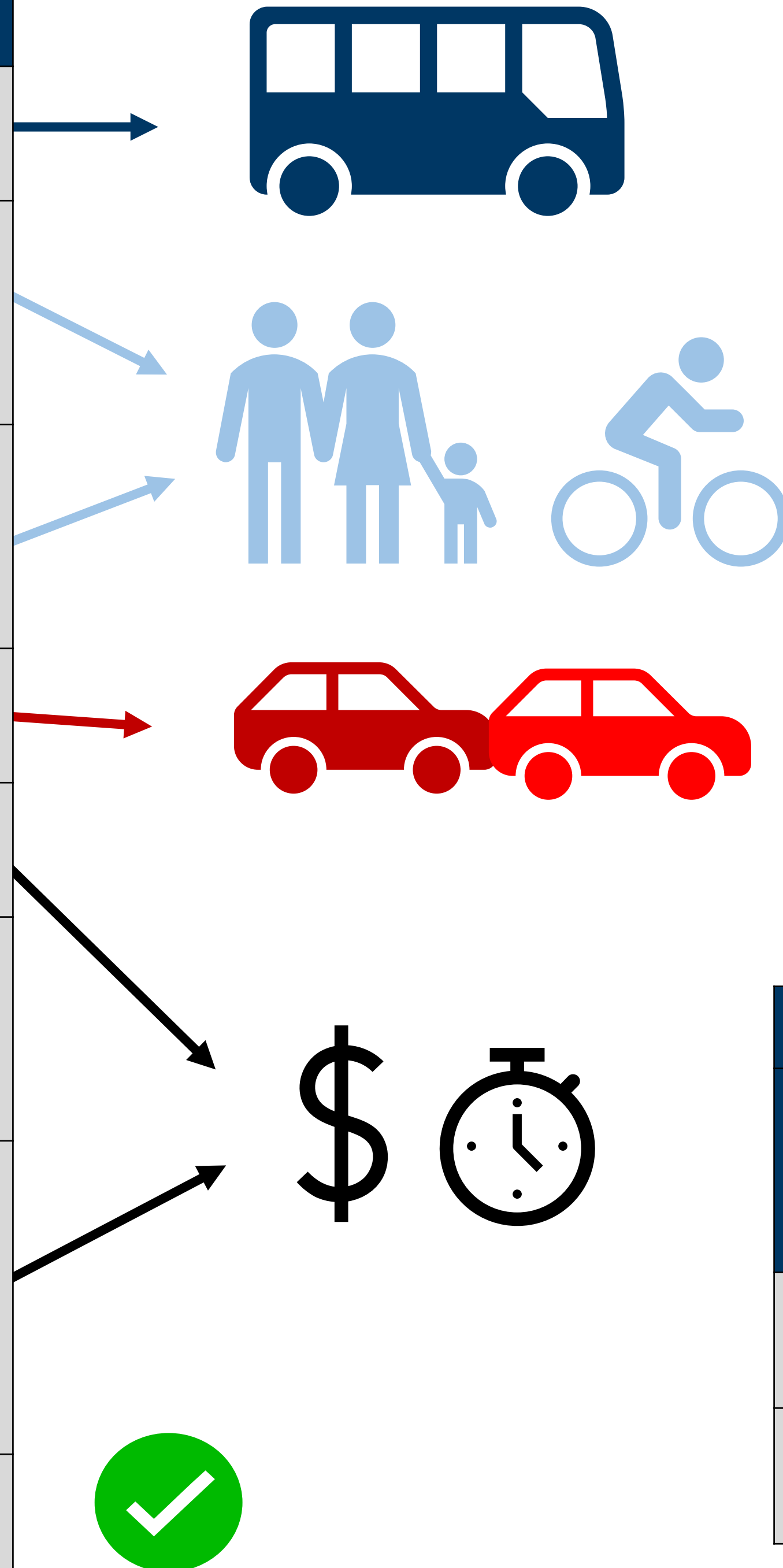


# HOW TO READ THE BOARDS

The graphics below are examples from various intersections.

## Standard Format:

Findings for Removal of SB 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>	Additional project cost, VDOT Design Waiver
<b>Recommendation</b>	Remove



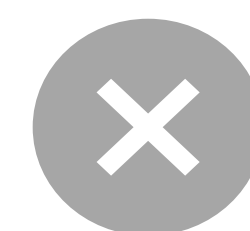
### Maximum queue lengths

- Base and Lane Reduction scenario
- AM and PM Peak Hour

	Intersection Delay (seconds)					
	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

## LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



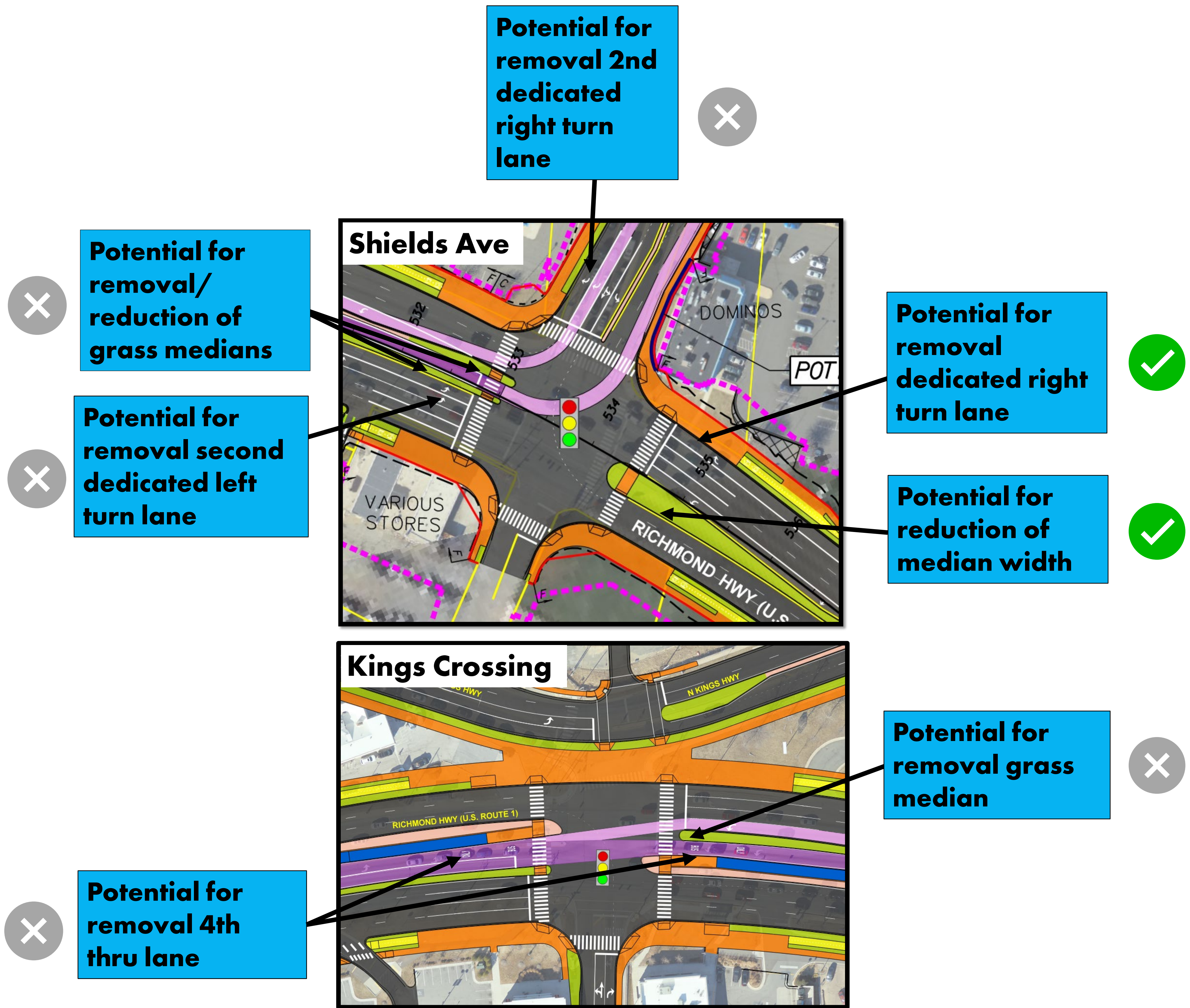




# PENN DAW AREA

## 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



### LEGEND

Potential modifications for analysis/evaluation

⊗ Change not proposed for inclusion in design

✔ Change proposed for inclusion in design





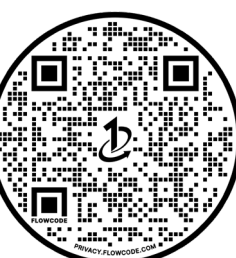
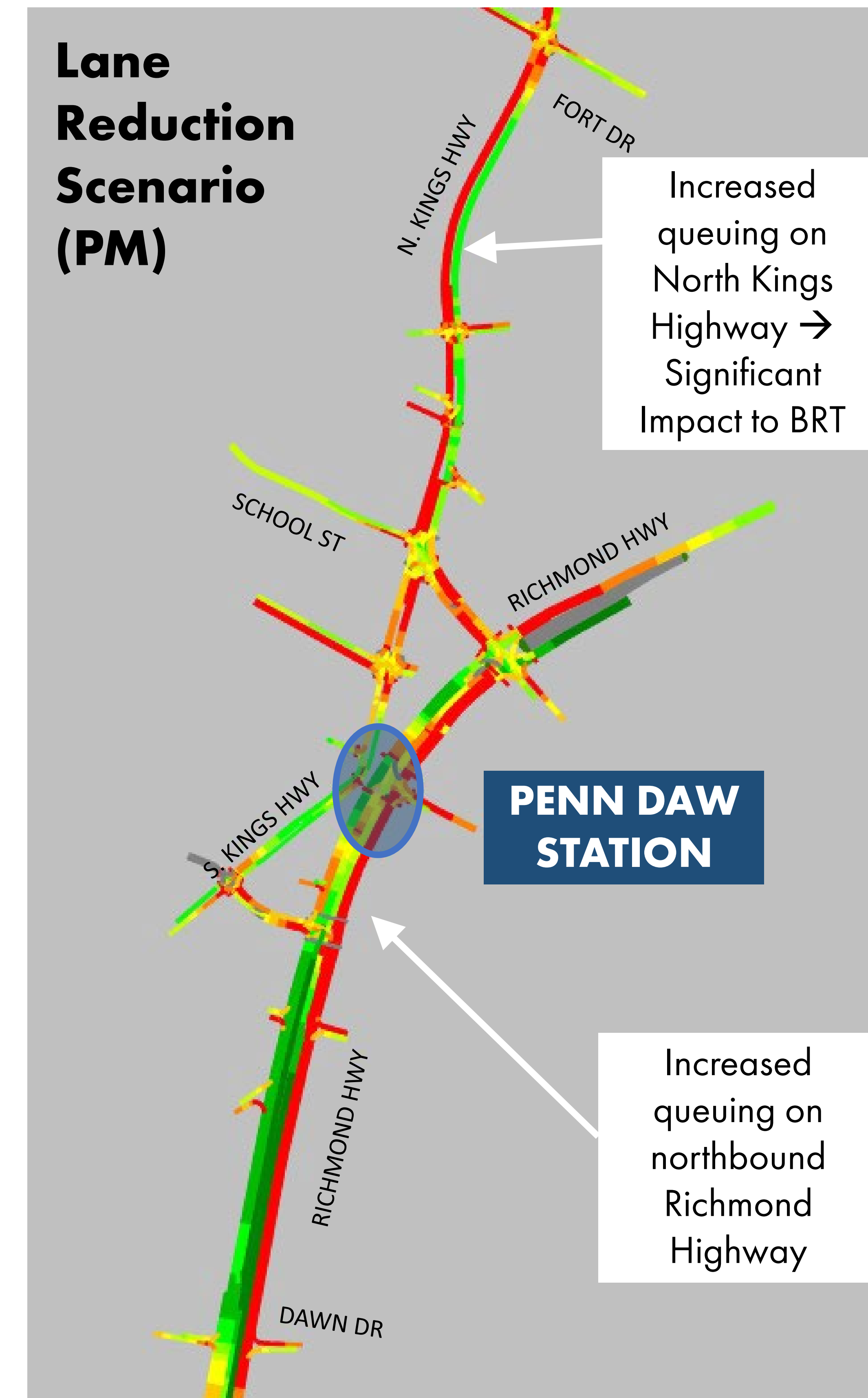
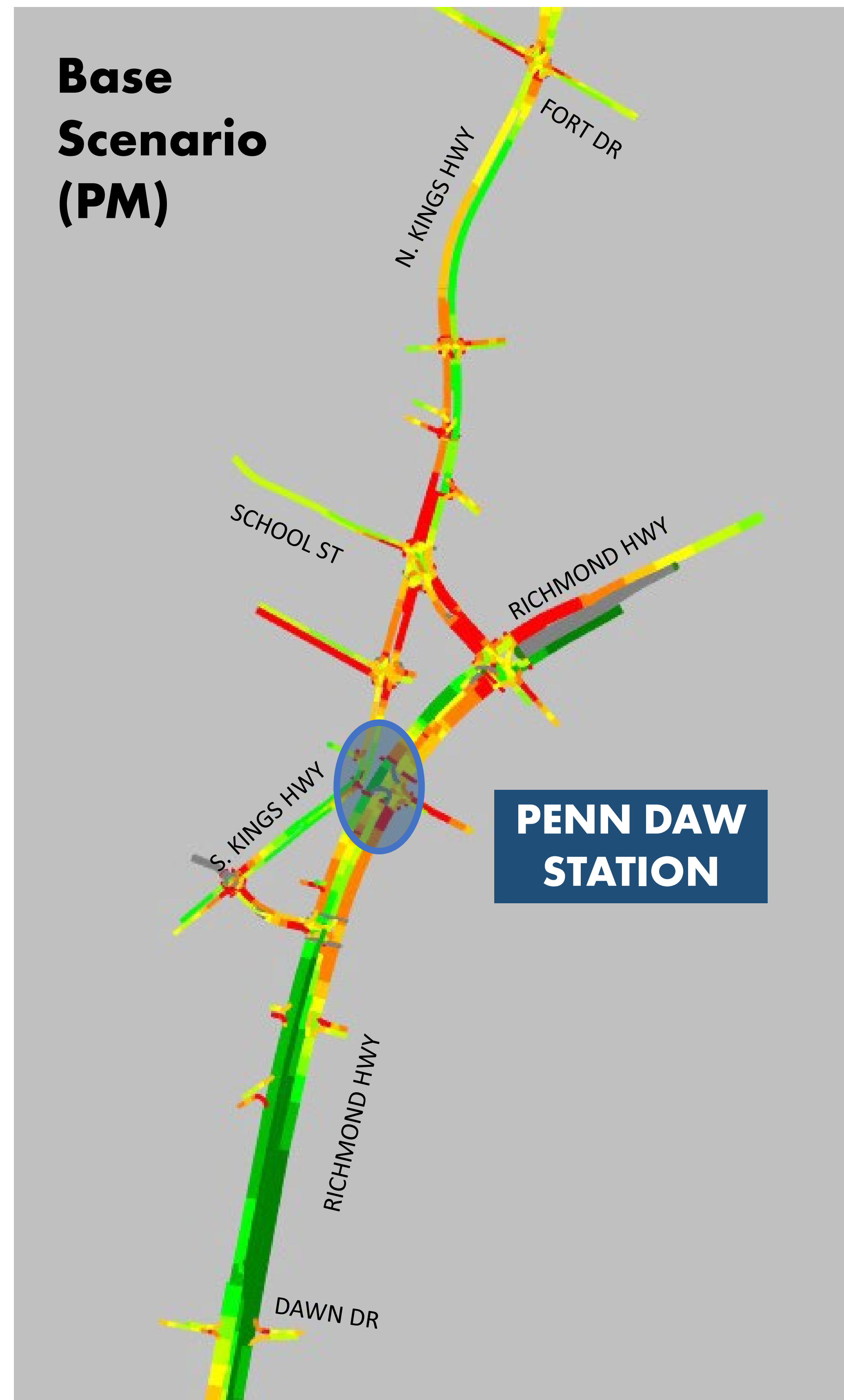


# PENN DAW AREA

## Corridor Speeds - PM Peak Hour

- The maps below show the results of traffic modeling for both the "Base Scenario" (the current design) and the "Lane Reduction Scenario" (which incorporates potential reductions into the design).
- These changes would result in:
  - A **5.5 Minute increase in BRT travel time** in the PM in the Southbound Direction
  - Only **5 of the 10 BRT buses getting through** during the PM peak hour

Color	Vehicle Speed Range
Red	0-5 MPH
Orange	5-10 MPH
Yellow	10-15 MPH
Light Green	15-20 MPH
Green	20-25 MPH
Light Green	25-30 MPH
Green	30-35 MPH
Dark Green	35-40 MPH
Dark Green	40-45 MPH

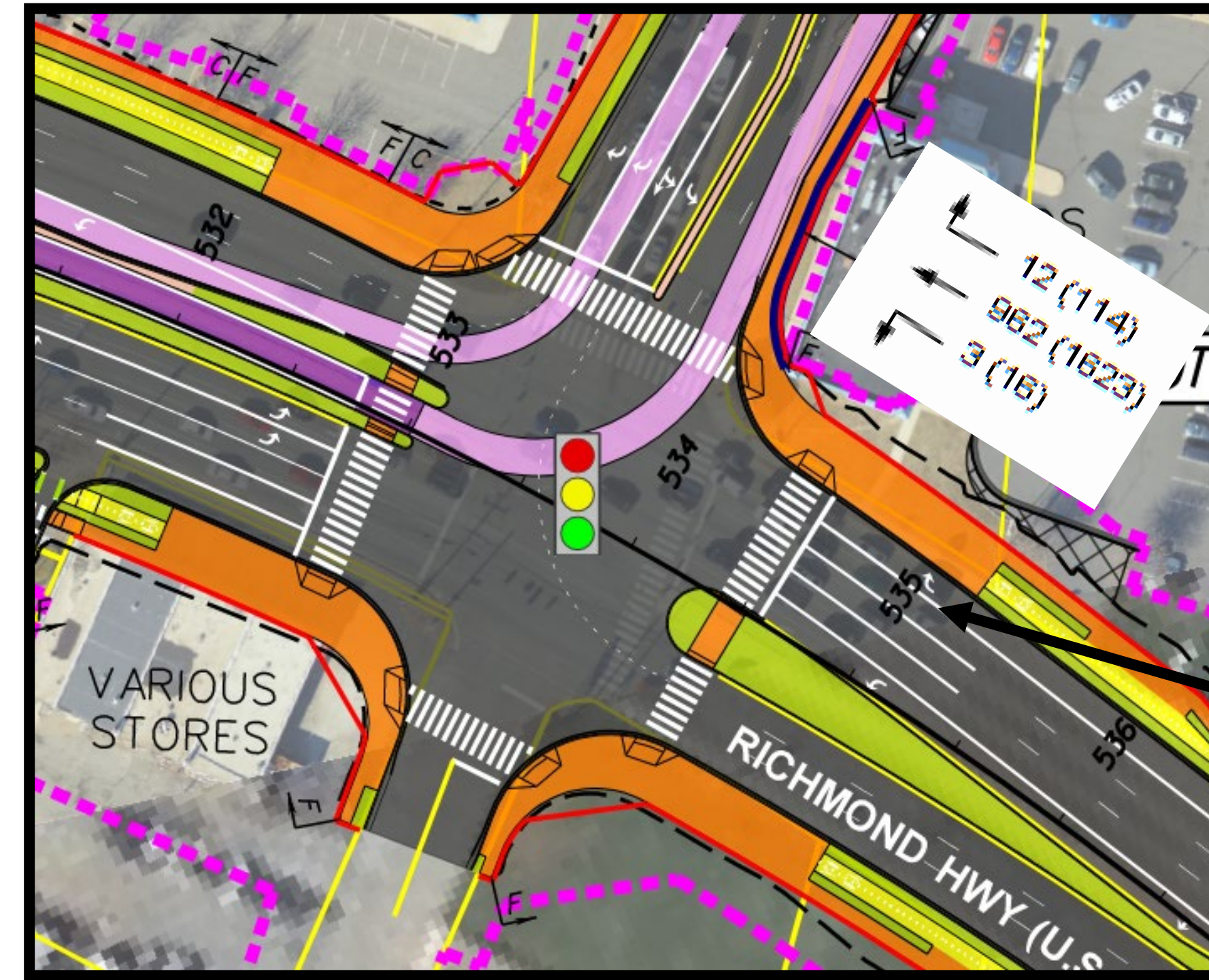




## Potential modification: Removal of southbound right turn (SBR) lane along Richmond Highway

### • 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

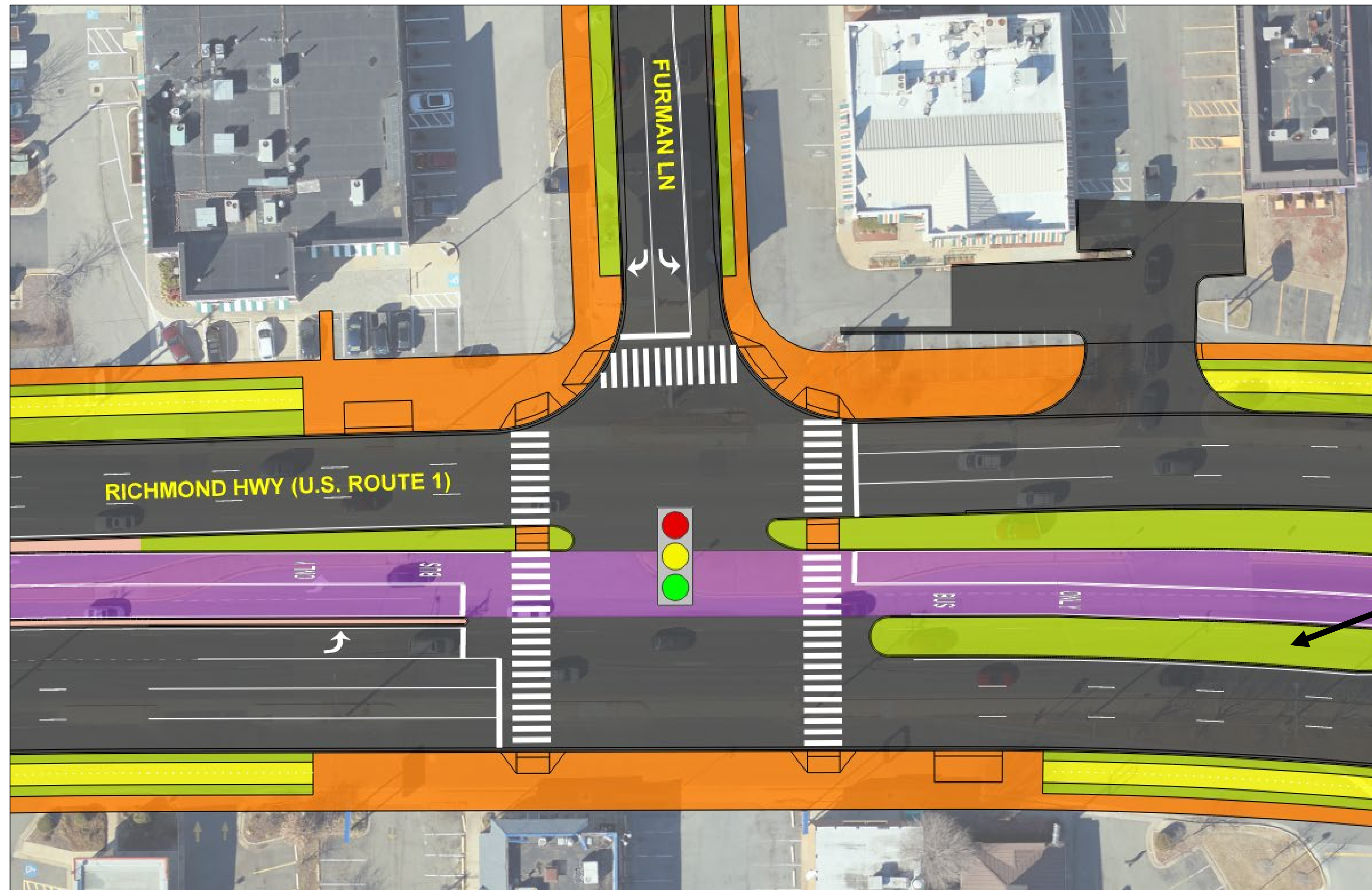




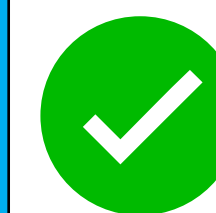


# NEW FURMAN LANE EXTENSION

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



New grass median

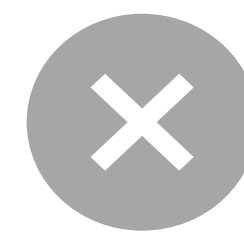


Three NB travel lanes (instead of four)



## LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



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## RICHMOND HIGHWAY BUS RAPID TRANSIT PUBLIC INFORMATION MEETING

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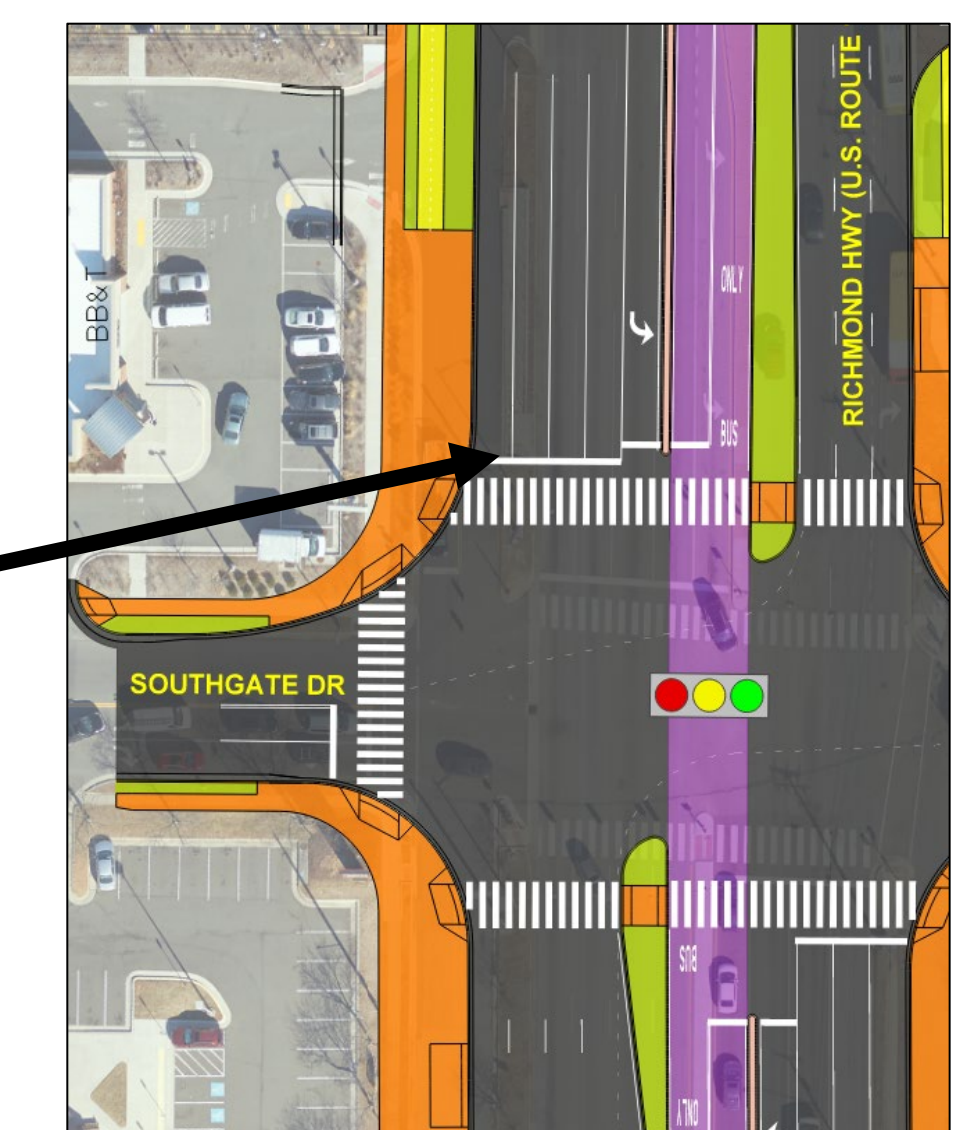


# BEACON HILL/SOUTHGATE/MEMORIAL

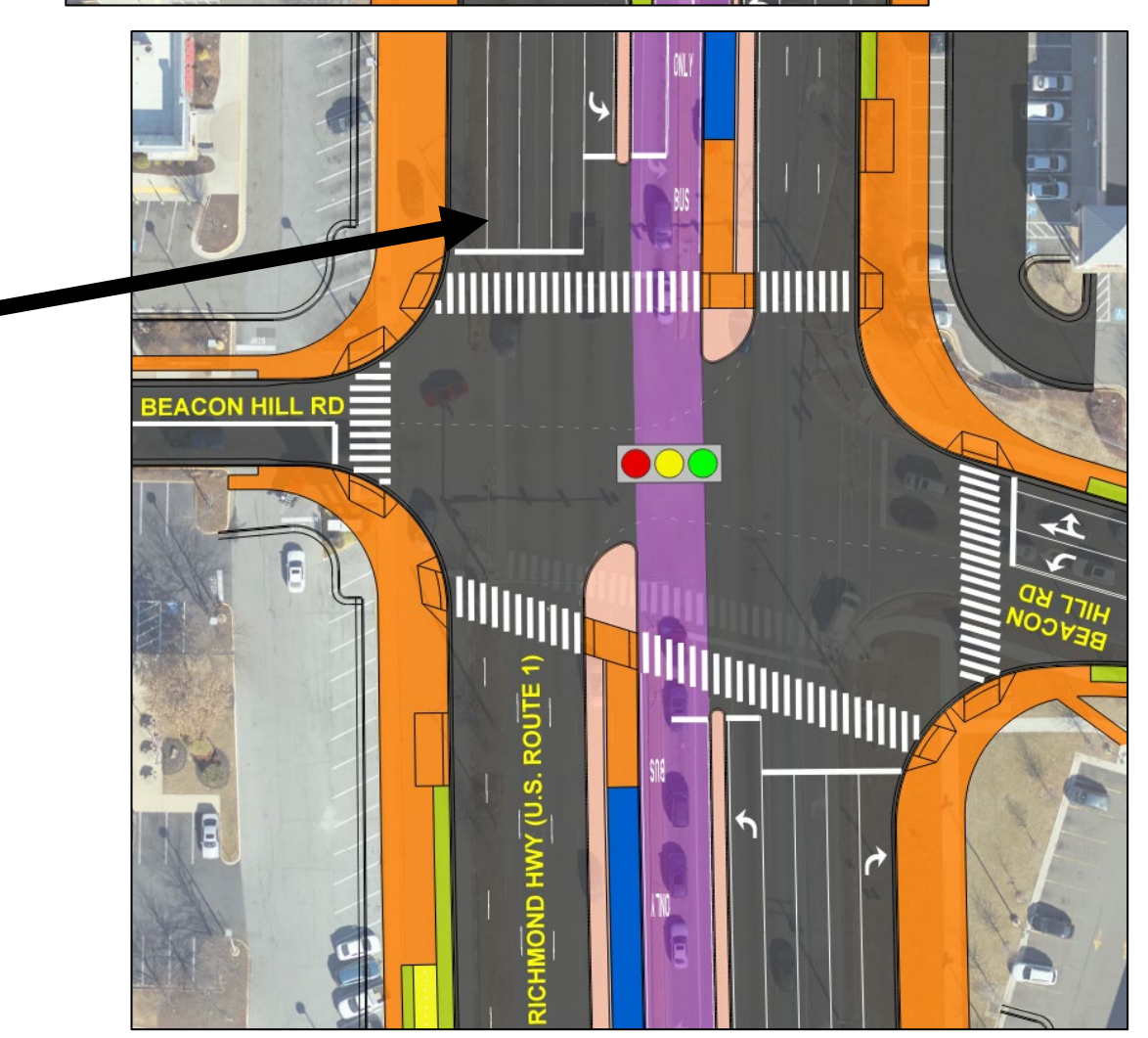
**Potential modification: Removal of southbound thru/right turn lane (SBR) along Richmond Highway north of Southgate Drive to Memorial Street**



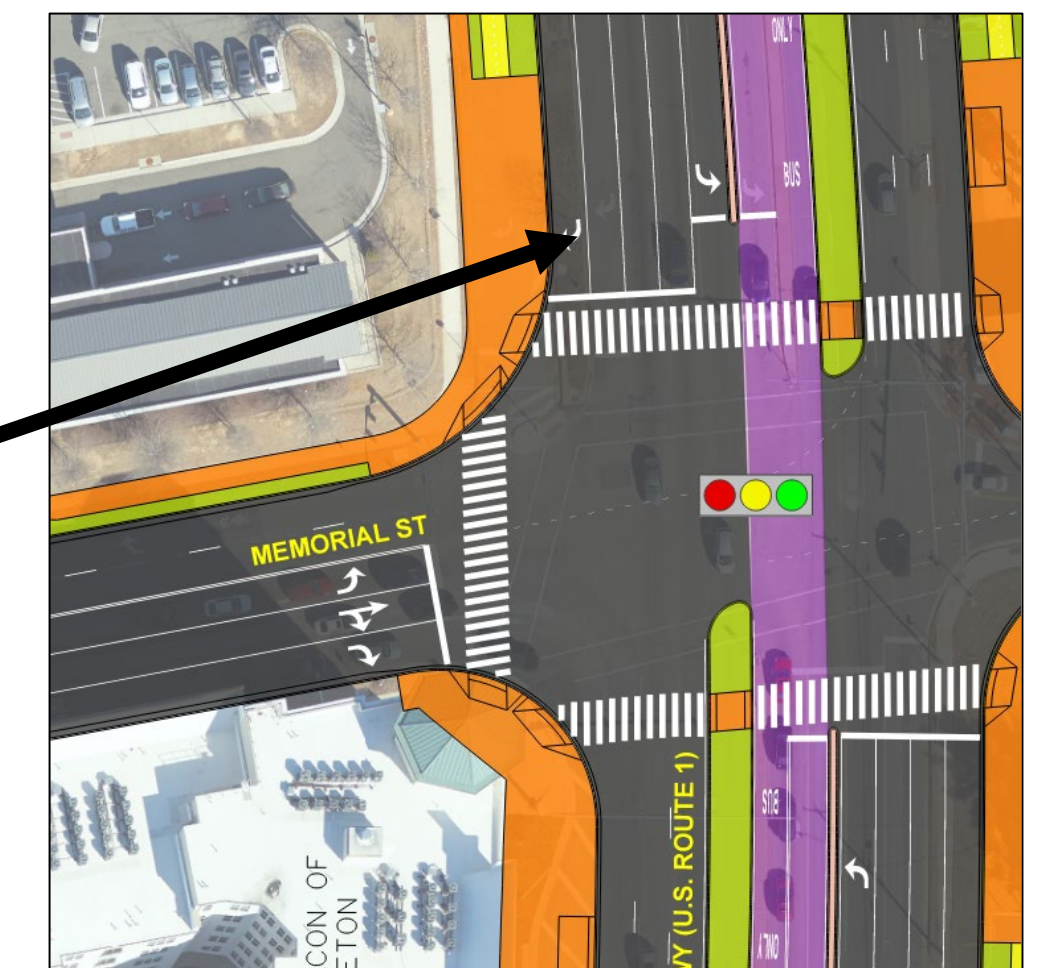
**Potential for removal SB thru/right**



**Potential for removal SB thru/right**



**Potential for removal right turn lane**

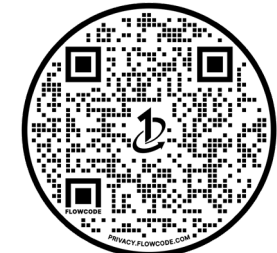


## LEGEND

**Potential modifications for analysis/evaluation**

 **Change not proposed for inclusion in design**

 **Change proposed for inclusion in design**







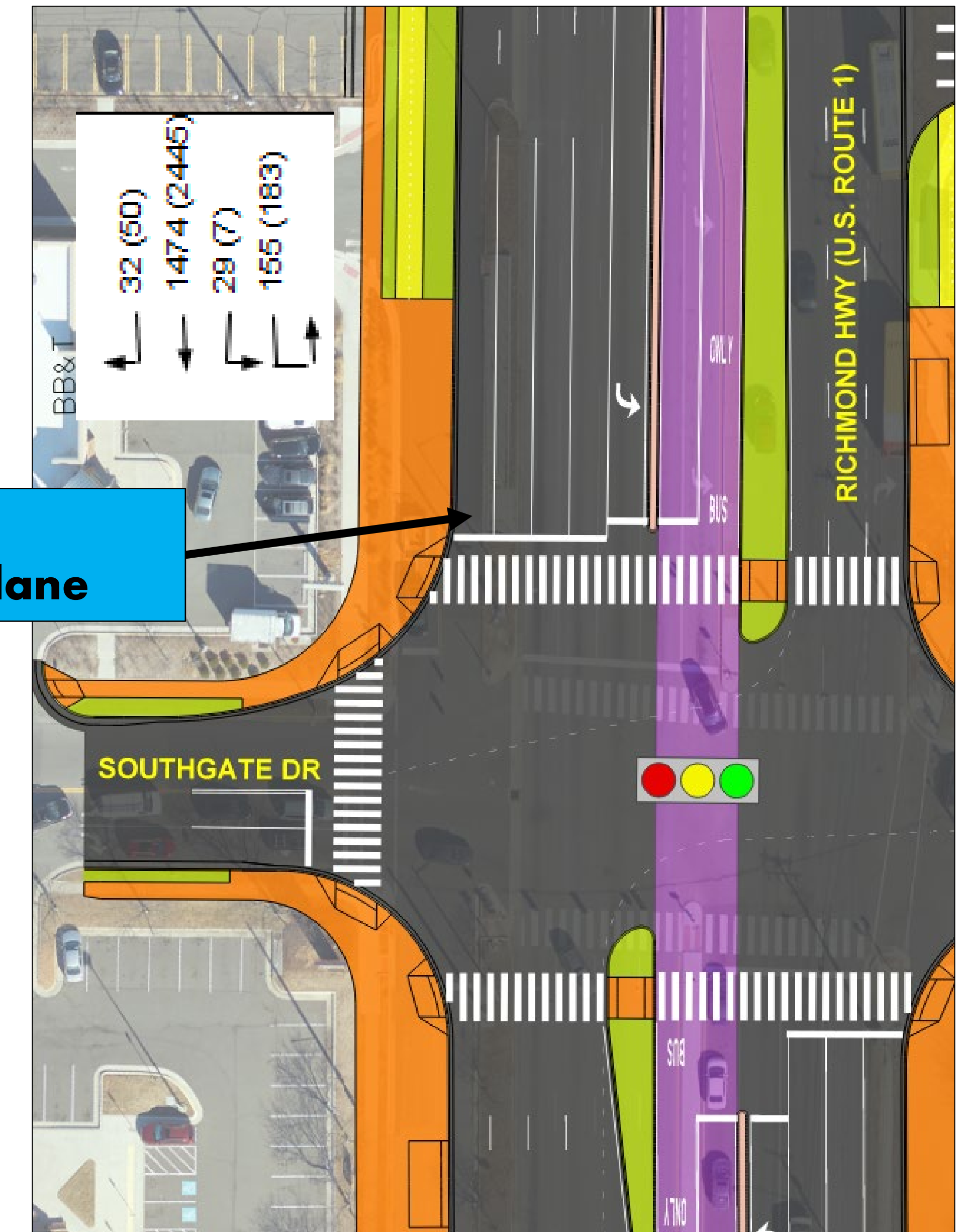
# SOUTHGATE DRIVE

## 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

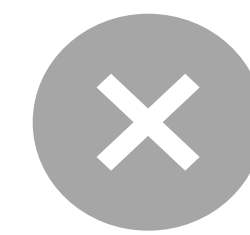
Findings for Removal of SB Thru/Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	Potential 3 sec. reduction
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased SB delay (20+ sec.)
<b>Existing lane (Y/N)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

Remove SB right/thru lane



### LEGEND

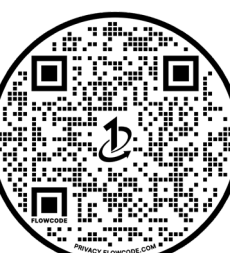
Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



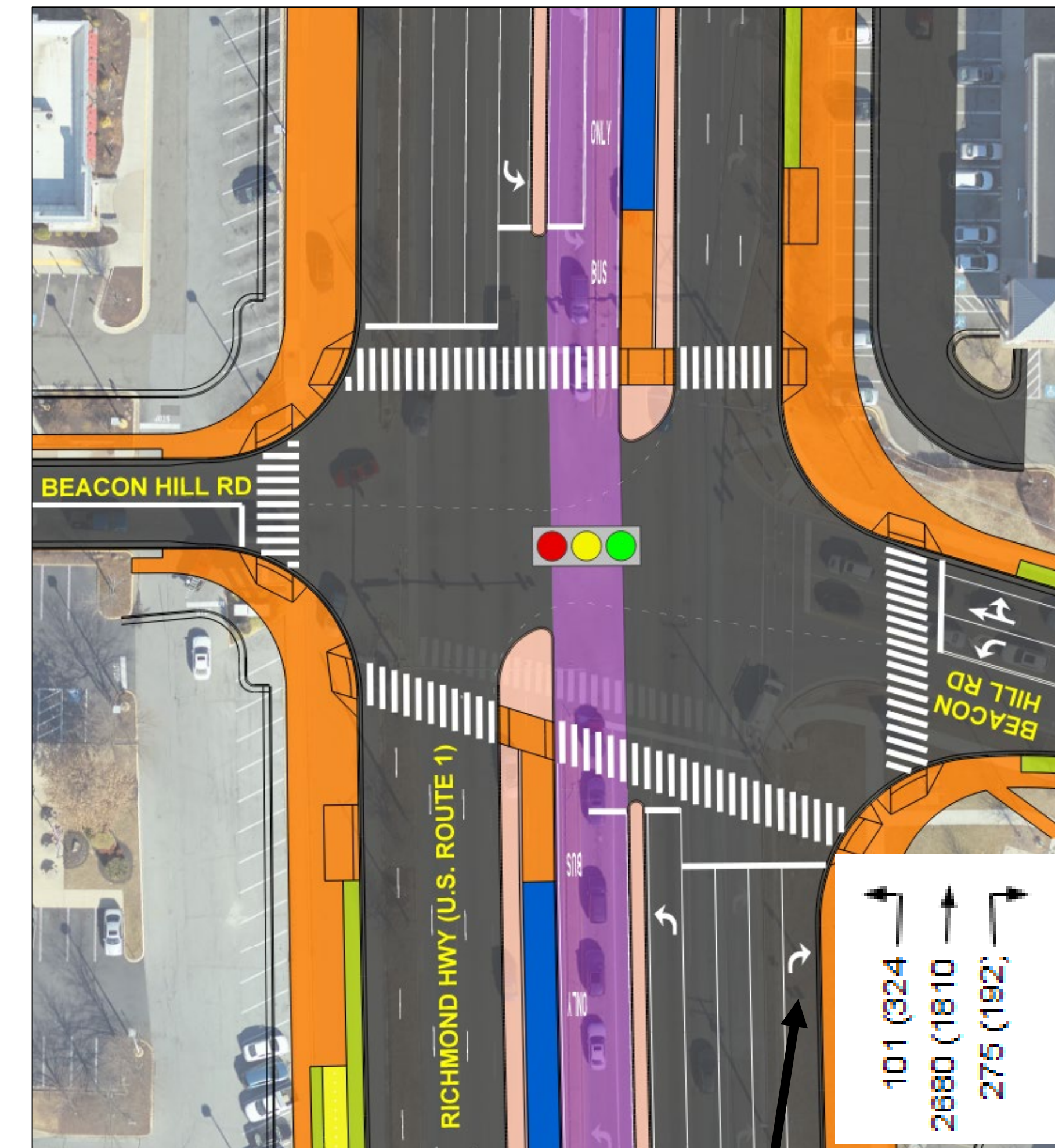


# BEACON HILL ROAD - NORTHBOUND

## 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
<b>Base Design</b>	3.6	41.7	51.5	3.7	36.0	52.5
<b>Lane Reduction</b>	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



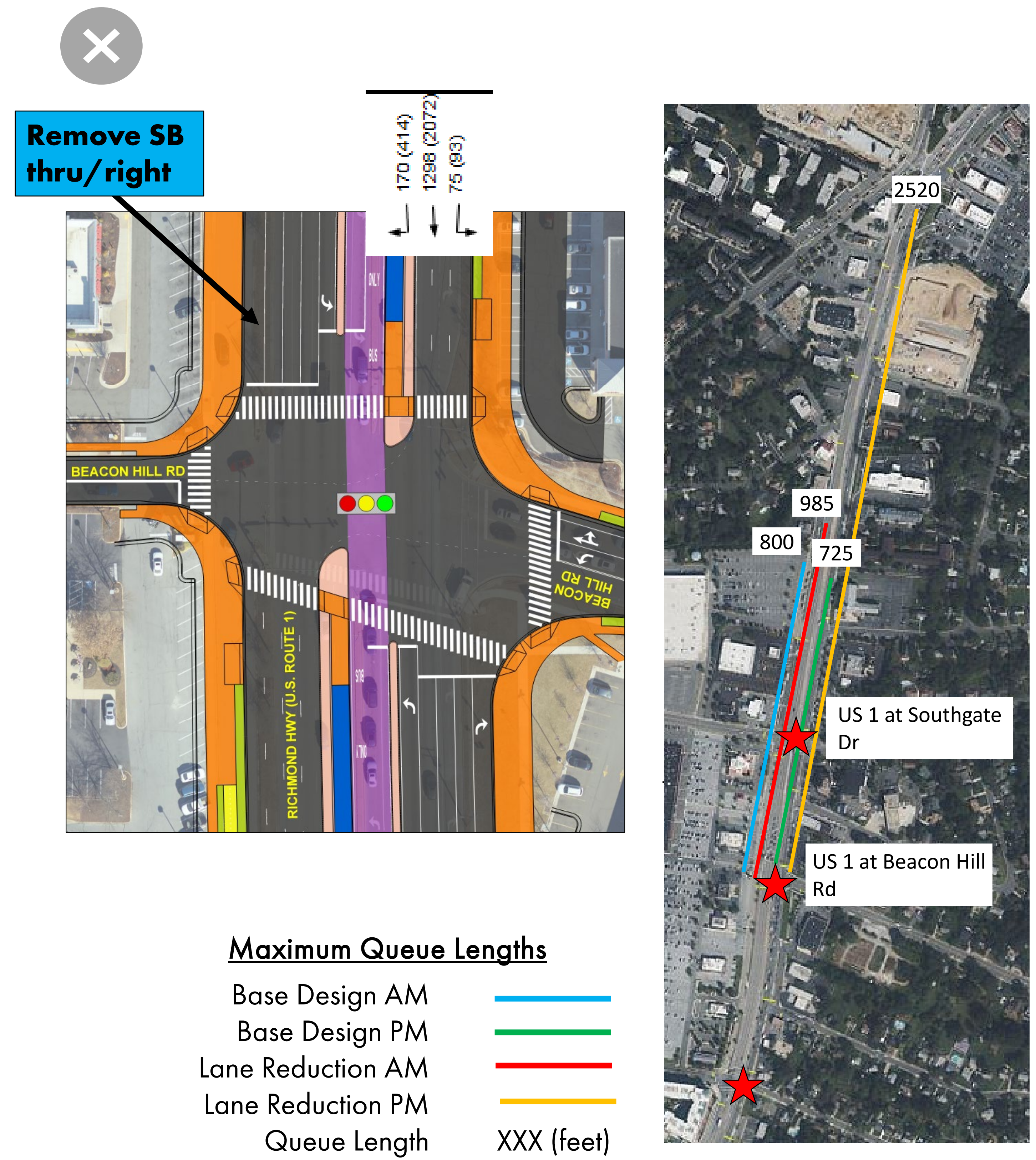


# BEACON HILL ROAD - SOUTHBOUND

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

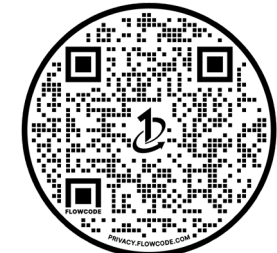
Intersection Delay (sec.)						
	AM Peak Hour			PM Peak Hour		
	SB R	SB Approach	Overall Intersection	SB R	SB Approach	Overall Intersection
<b>Base Design</b>	18.7	22.6	51.5	32.0	35.0	52.5
<b>Lane Reduction</b>	16.1	20.3	51.0	46.4	42.6	55.5

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>	<b>Do not remove</b>



**LEGEND**

- Potential modifications for analysis/evaluation
- X Change not proposed for inclusion in design
- ✓ Change proposed for inclusion in design







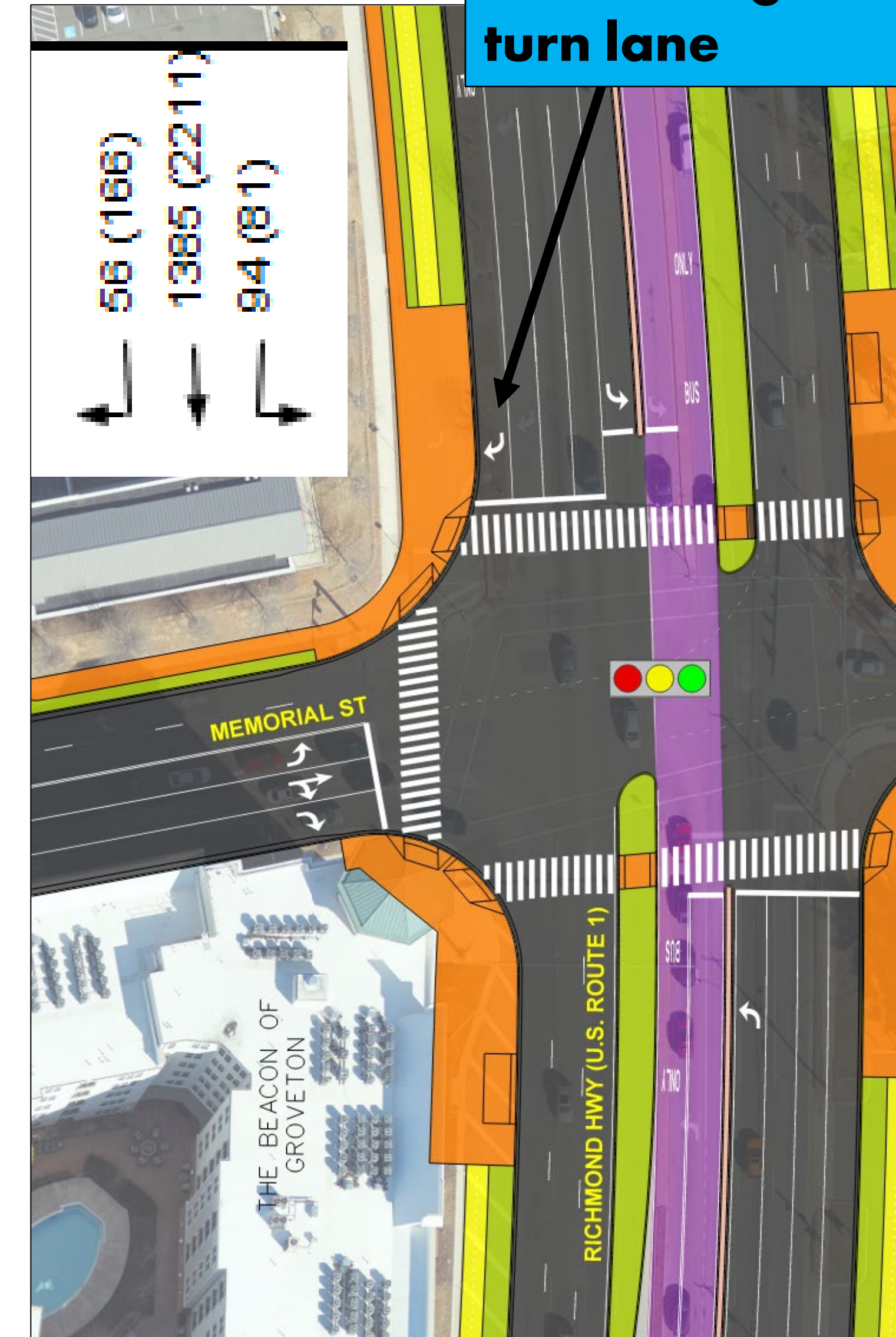
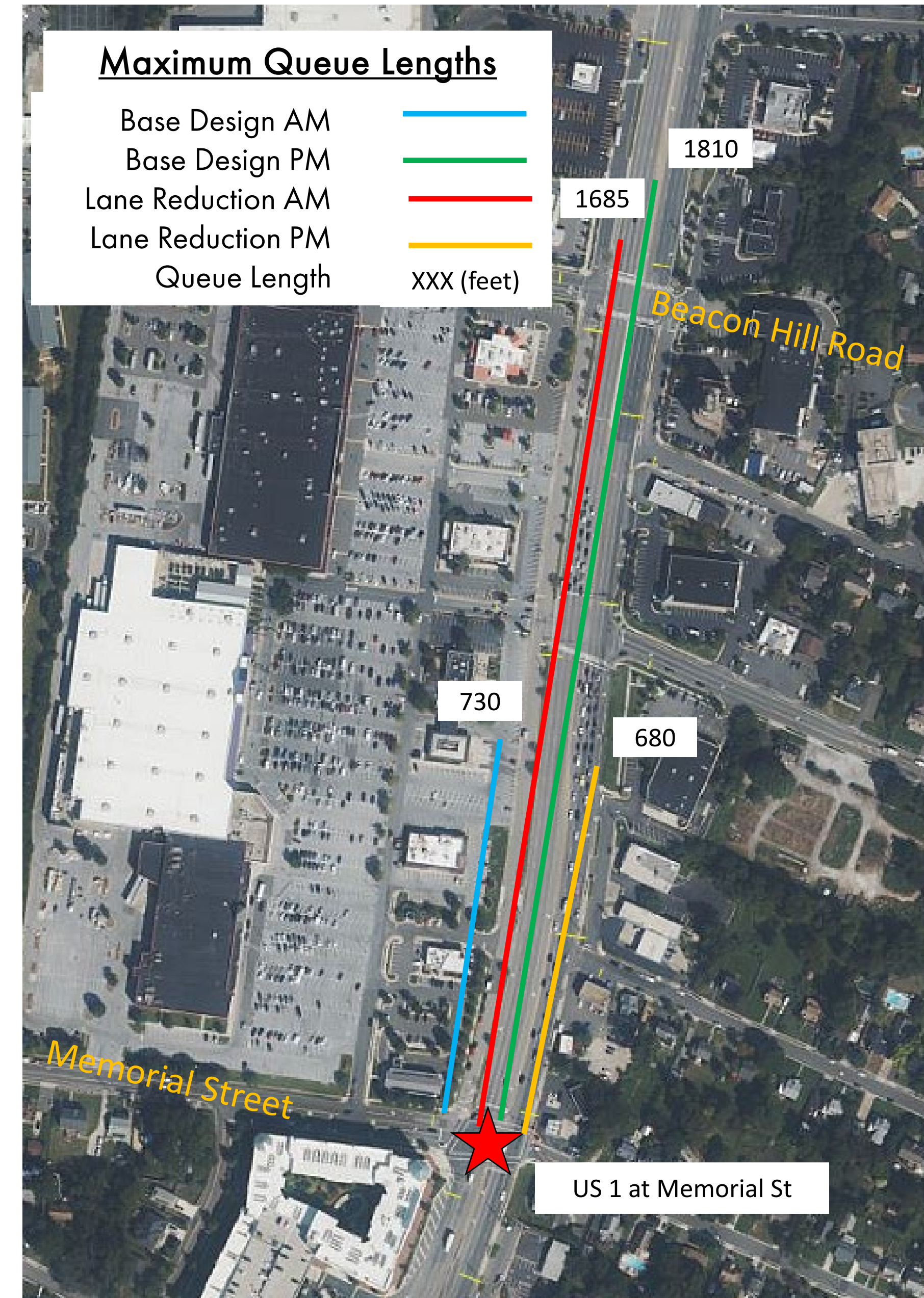
# MEMORIAL STREET - SOUTHBOUND

## 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>	<b>Do not remove</b>



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design







# MEMORIAL STREET - EASTBOUND

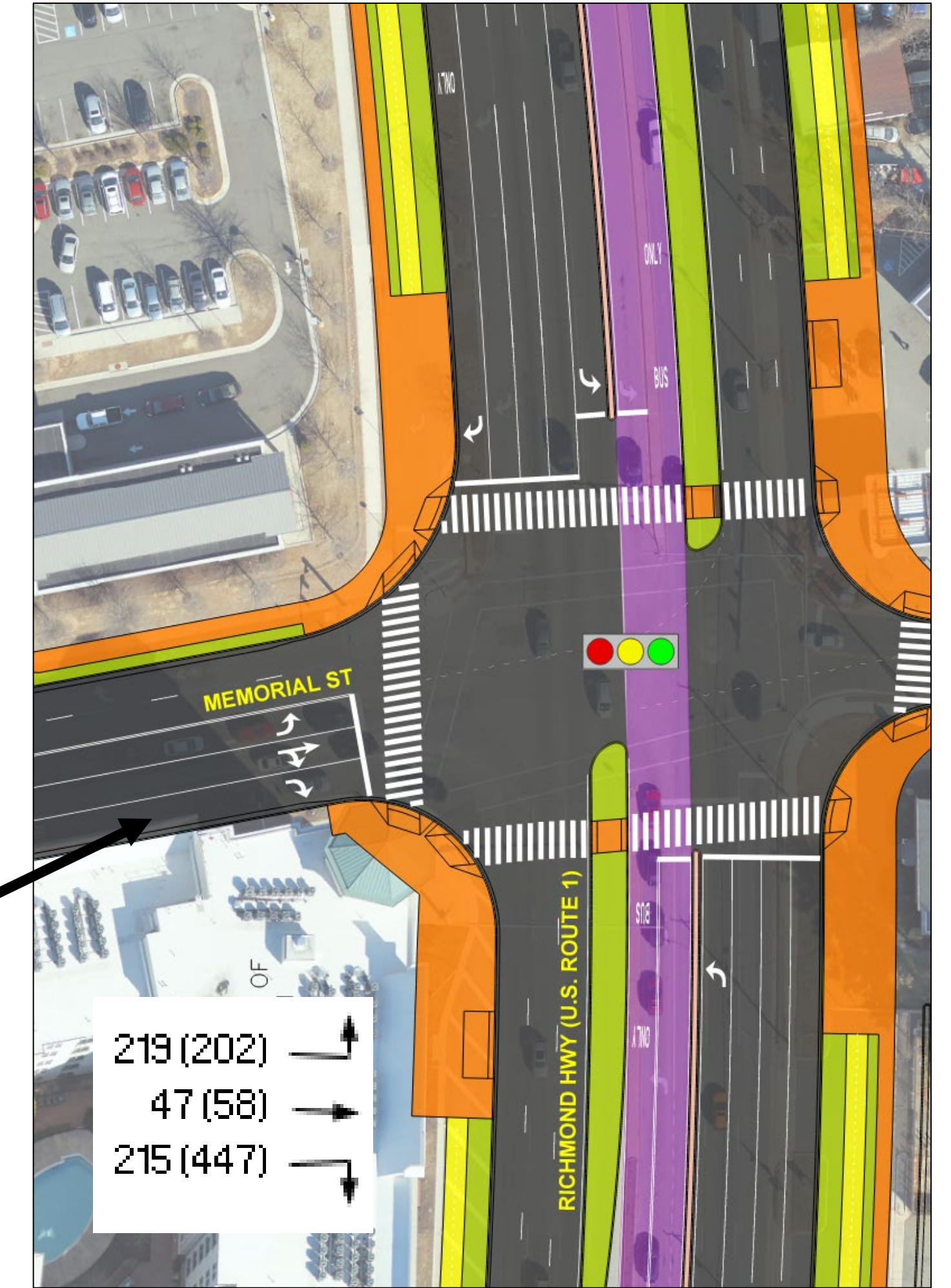
## Potential modification: Removal of eastbound right turn (EBR) lane along Memorial Street

- As redevelopment occurs, lane can be reevaluated 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>	<b>Do not remove</b>

⊗  
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







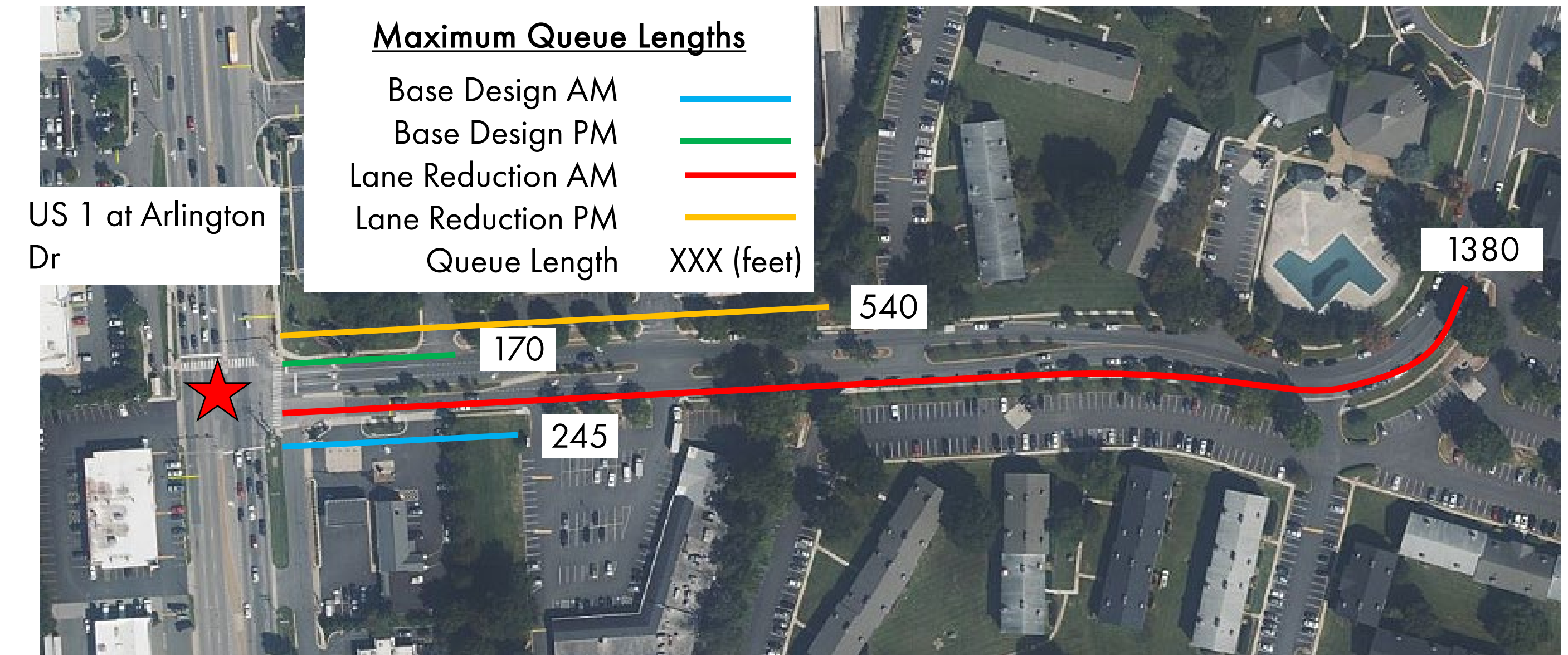
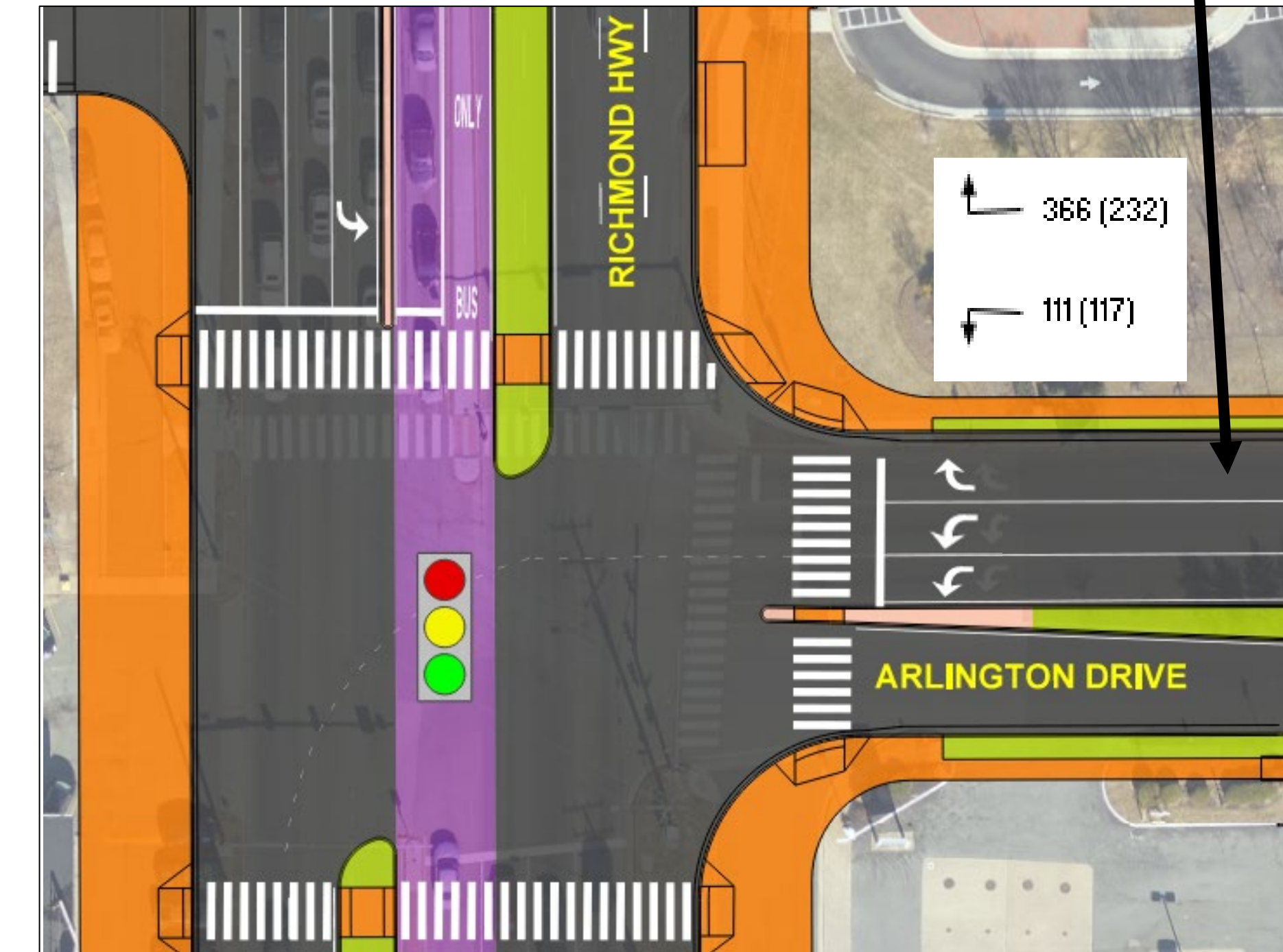
# ARLINGTON DRIVE

## 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>	<b>Do not remove</b>

⊗ 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





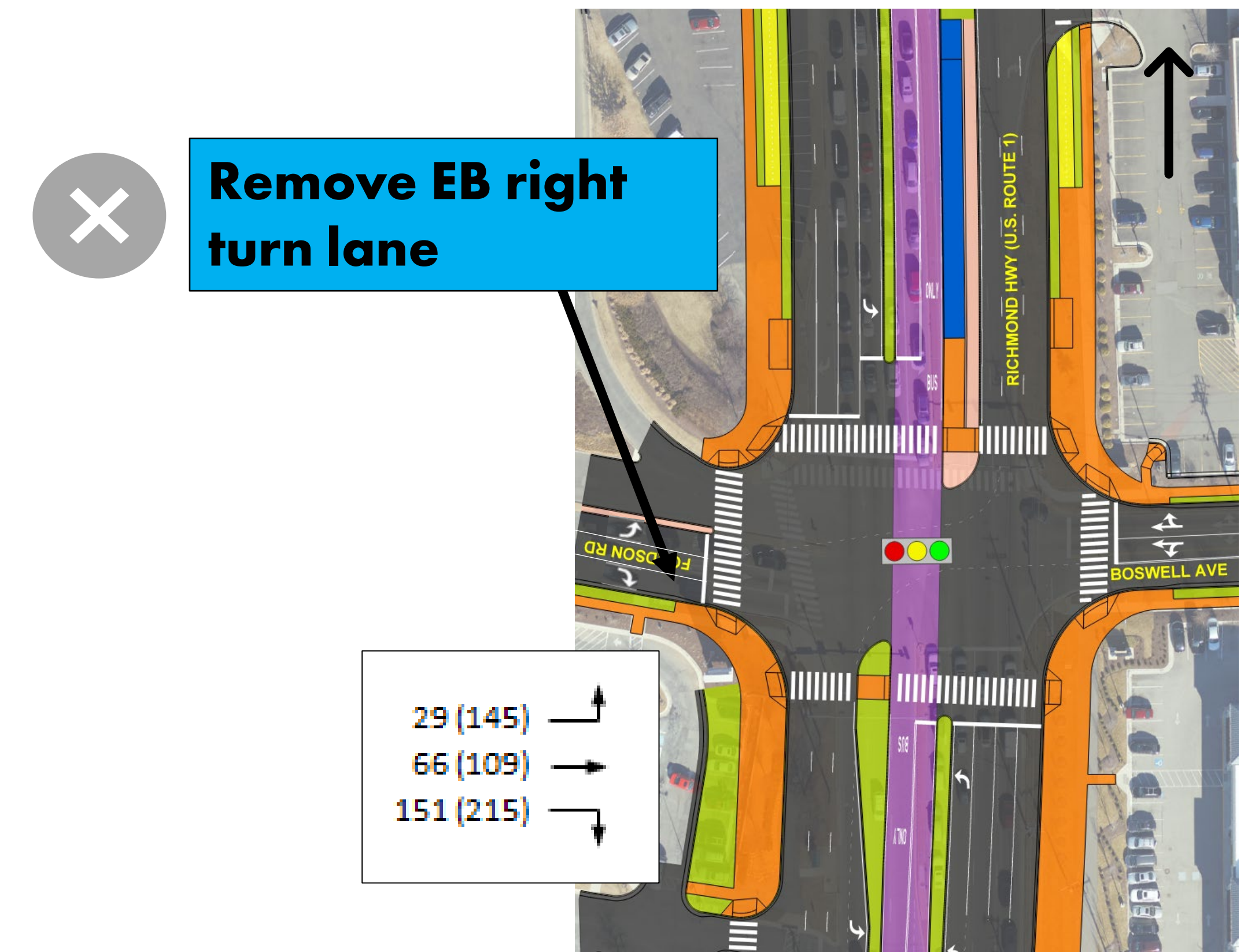


# FORDSON RD / BOSWELL AVE

## 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
<b>Base Design</b>	42.5	64.4	42.6	26.5	53.9	30.5
<b>Lane Reduction</b>	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>	<b>Do not remove</b>



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



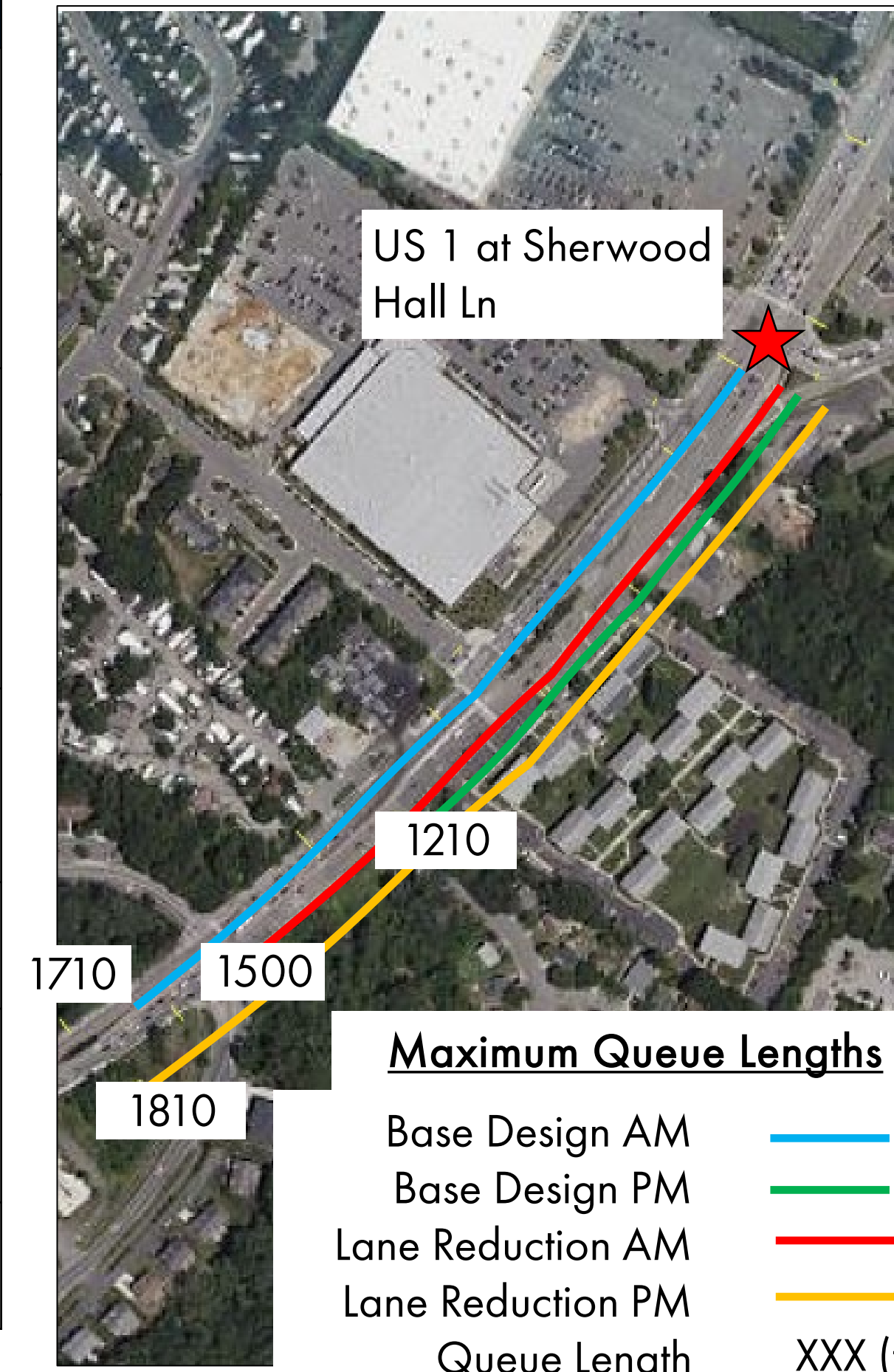
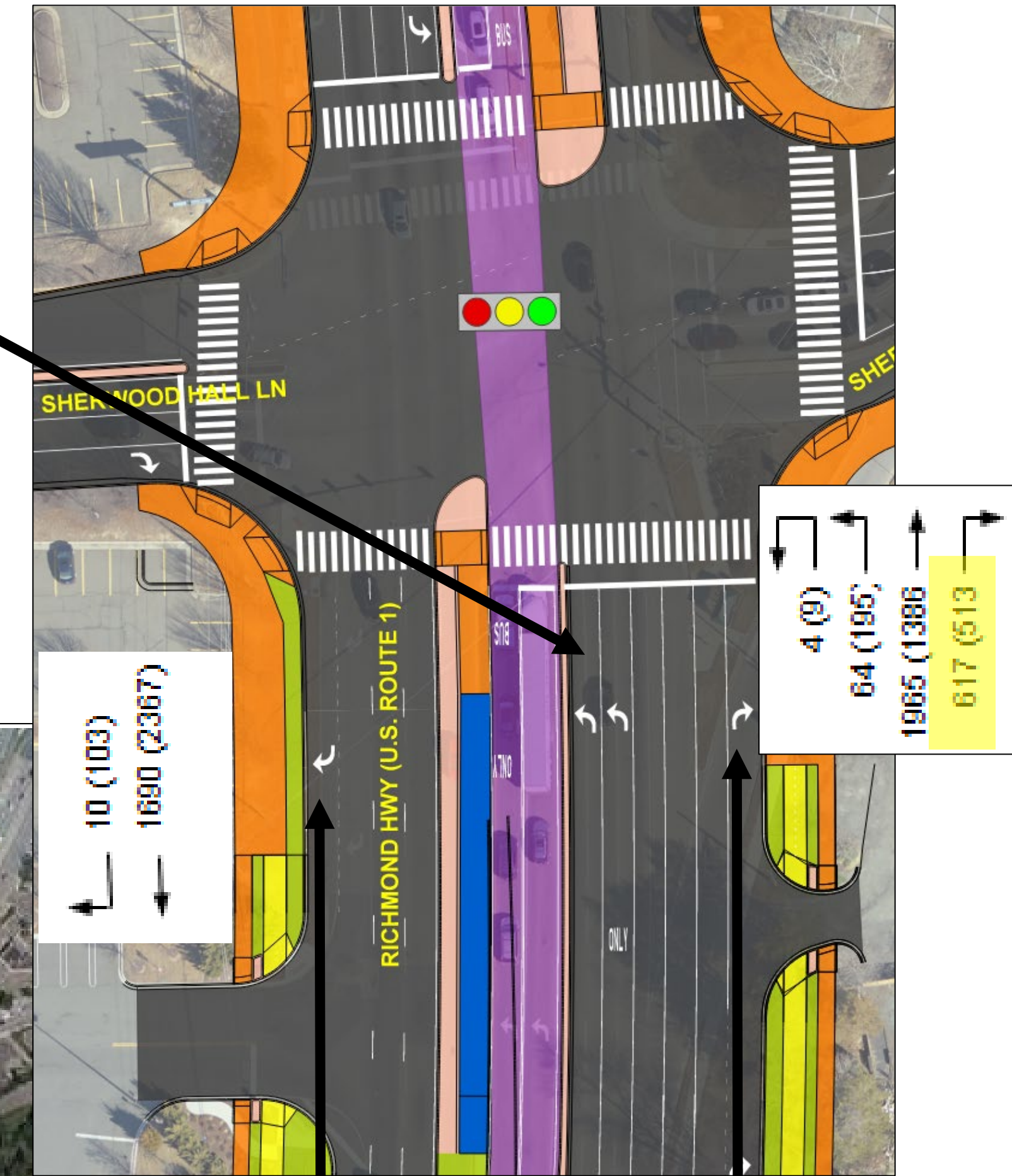


# SHERWOOD HALL LANE - NORTHBOUND

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

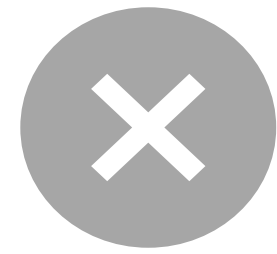
Potential for removal of second left turn lane (NB)



Potential for removal of SB right turn lane



Potential for removal of NB right turn lane



## LEGEND

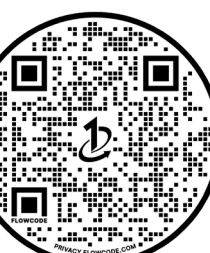
Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design





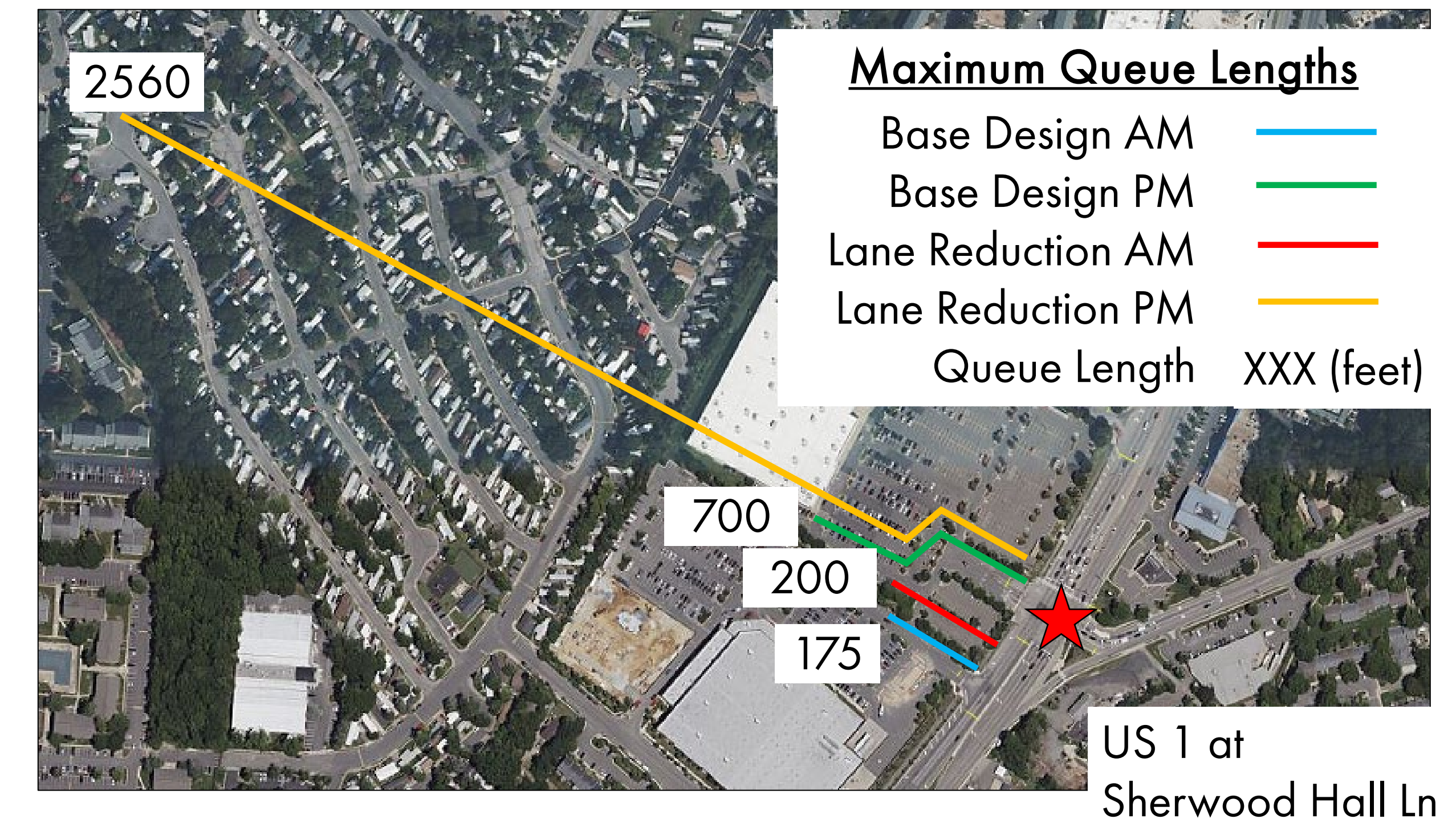
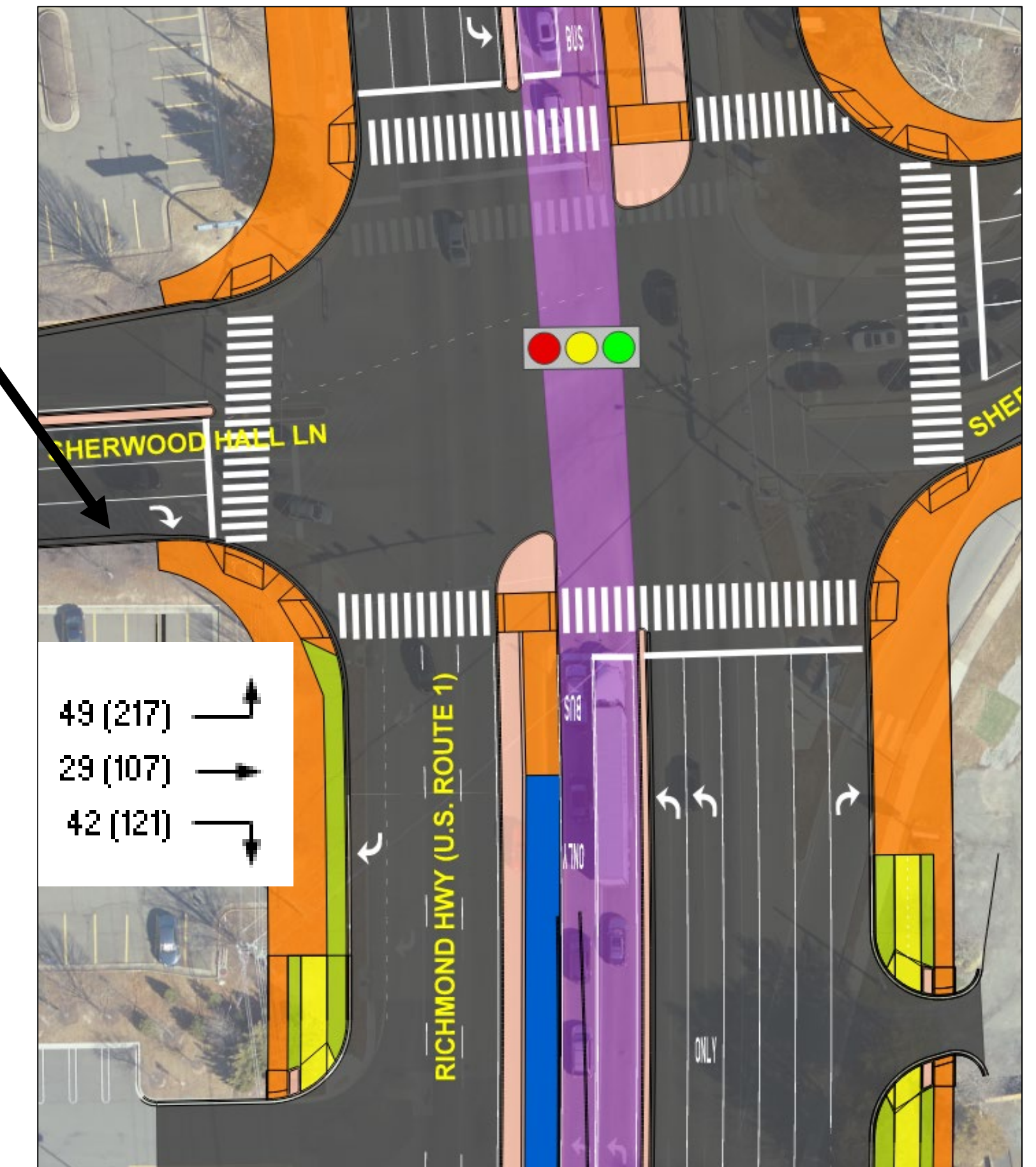
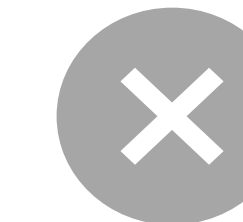
# SHERWOOD HALL LANE - EASTBOUND

## 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
<b>Base Design</b>	6.9	60.3	34.3	19.0	62.1	48.6
<b>Lane Reduction</b>	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>	<b>Do not remove</b>

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





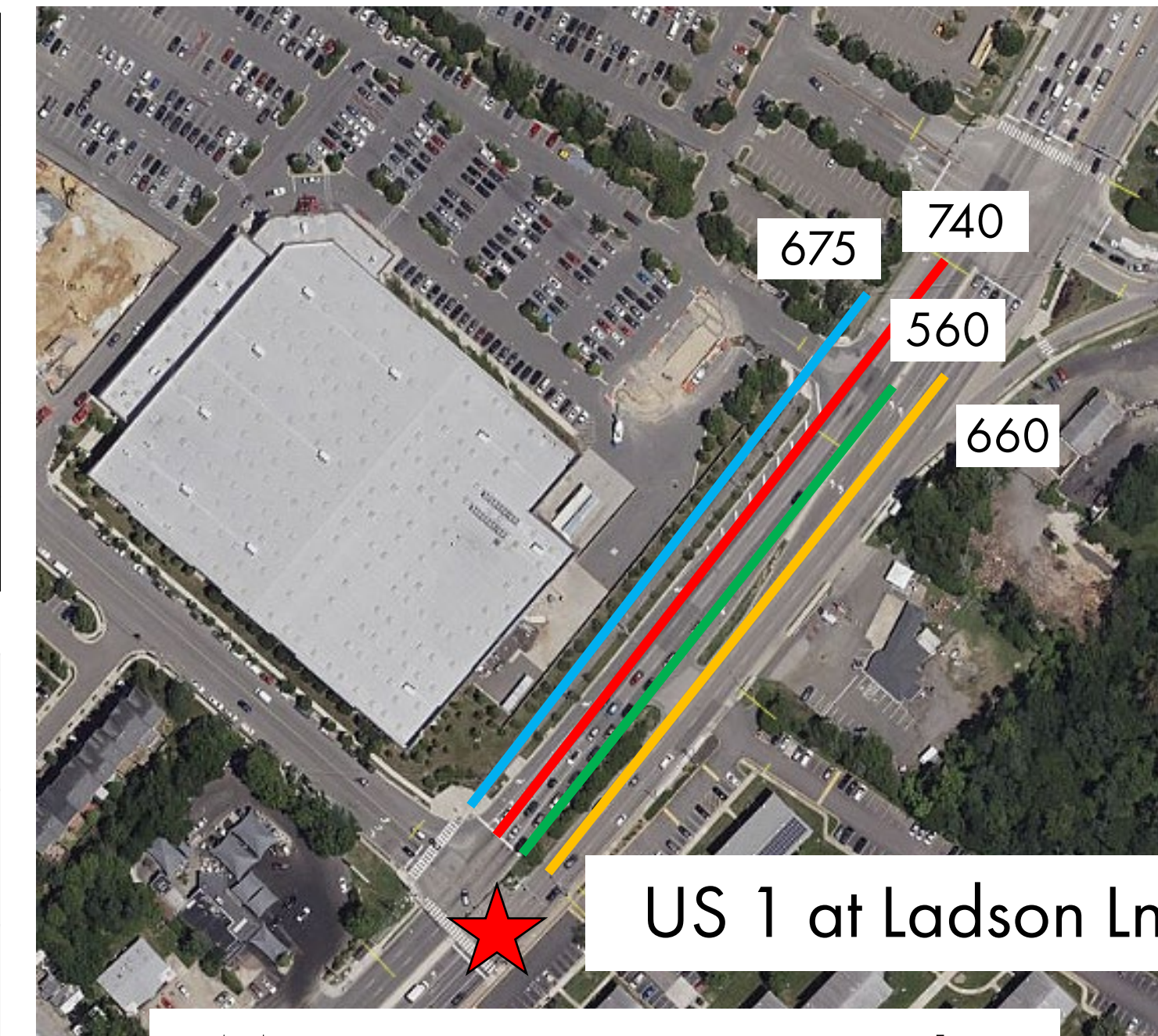


# LADSON LANE - SOUTHBOUND

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

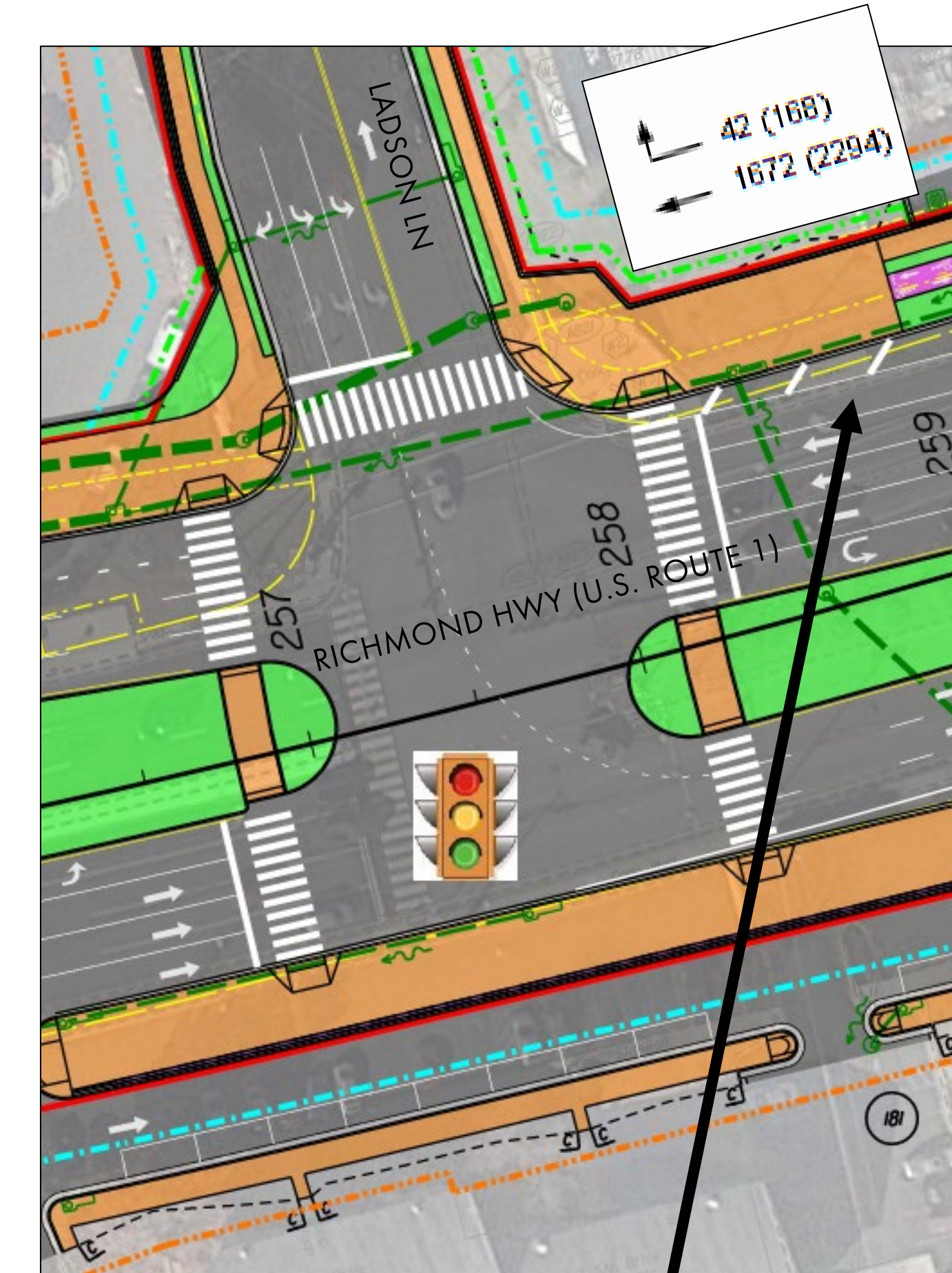
	Intersection Delay (sec.)					
	AM Peak Hour			PM Peak Hour		
	SB R	SB Approach	Overall Intersection	SB R	SB Approach	Overall Intersection
<b>Base Design</b>	5.9	6.0	12.2	15.0	12.4	14.5
<b>Lane Reduction</b>	6.3	11.0	14.7	11.7	11.4	23.5

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>	<b>Do not remove</b>



US 1 at Ladson Ln

- Maximum Queue Lengths**
- Base Design AM — Blue line
  - Base Design PM — Green line
  - Lane Reduction AM — Red line
  - Lane Reduction PM — Yellow line
- Queue Length XXX (feet)



**Remove thru/right turn lane**



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

### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design







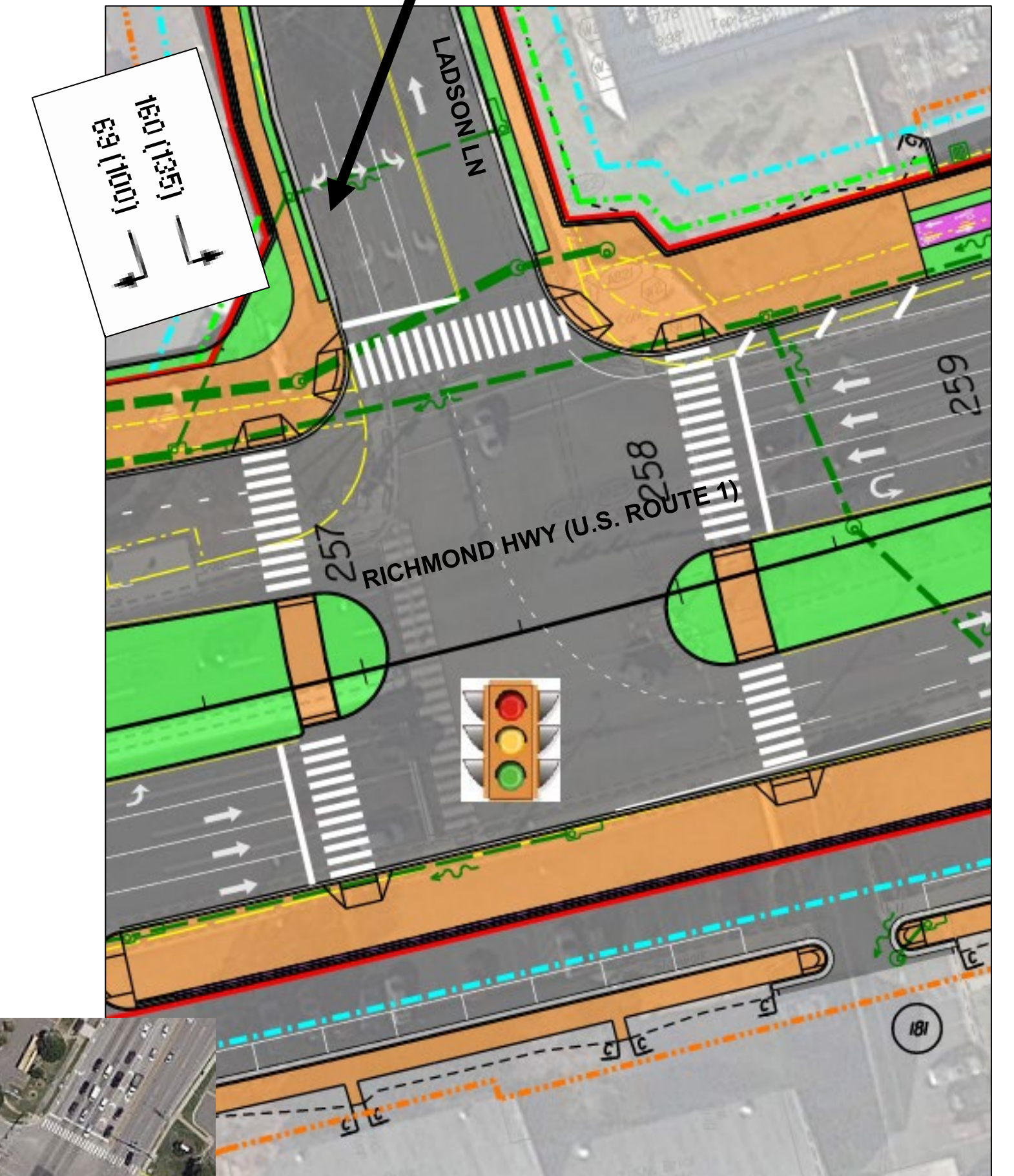
# LADSON LANE - EASTBOUND

## 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

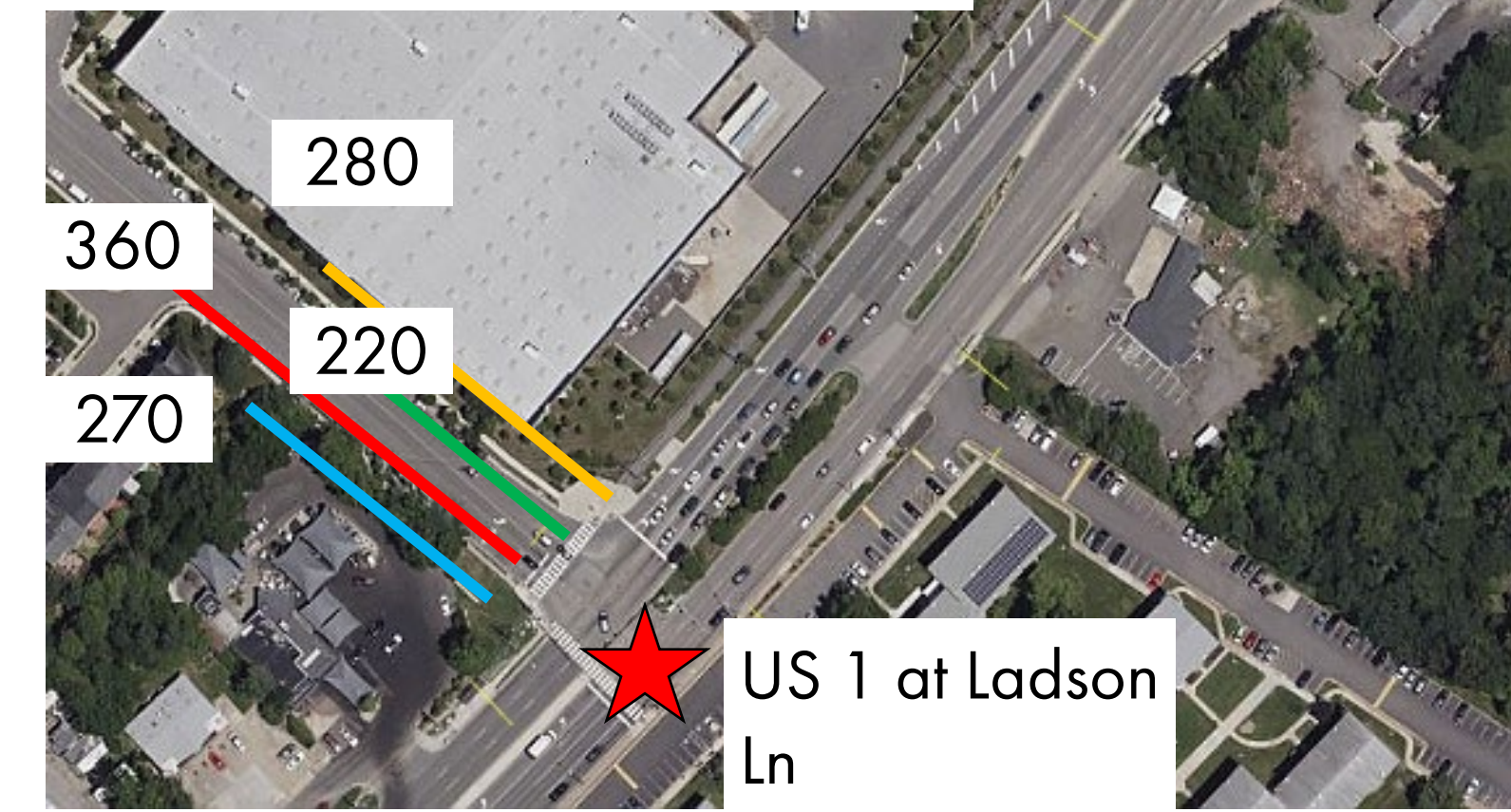
Findings for Removal of EB Right Turn Lane	
<b>BRT impact</b>	No impact
<b>Ped. crossing distance</b>	11-foot reduction
<b>Walk time for signal</b>	With mainline green
<b>Potential conflicts</b>	Potential increase for rear-ends
<b>Delay</b>	Increased EBR delay (40 sec.)
<b>Existing lane (Y/N)</b>	Yes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

Potential for removal right turn lane



**Maximum Queue Lengths**

- Base Design AM (Blue line)
- Base Design PM (Green line)
- Lane Reduction AM (Red line)
- Lane Reduction PM (Yellow line)
- Queue Length XXX (feet)



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



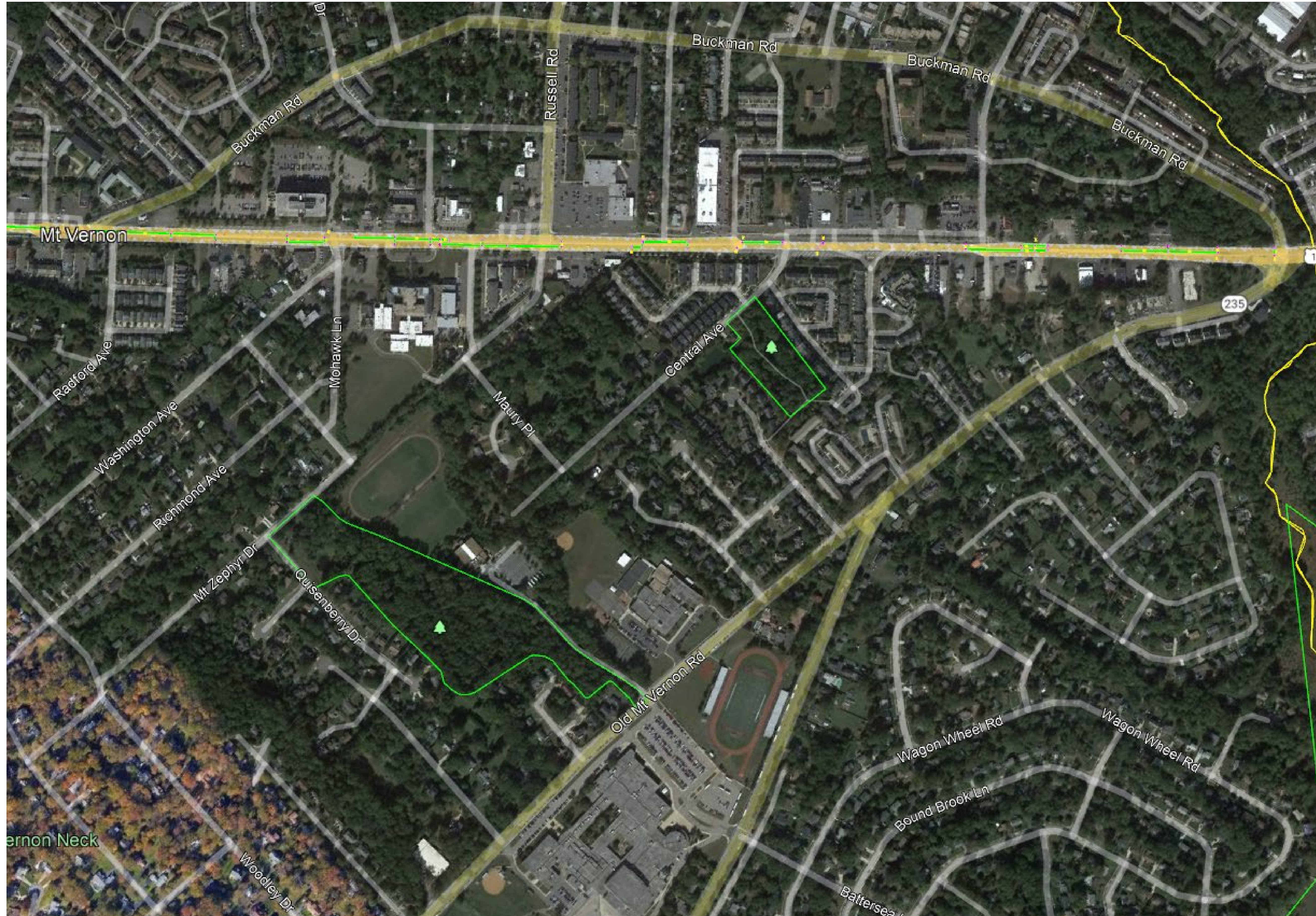
Change proposed for inclusion in design







# BUCKMAN ROAD AREA



Source: Google Imagery 2022



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## RICHMOND HIGHWAY BUS RAPID TRANSIT PUBLIC INFORMATION MEETING

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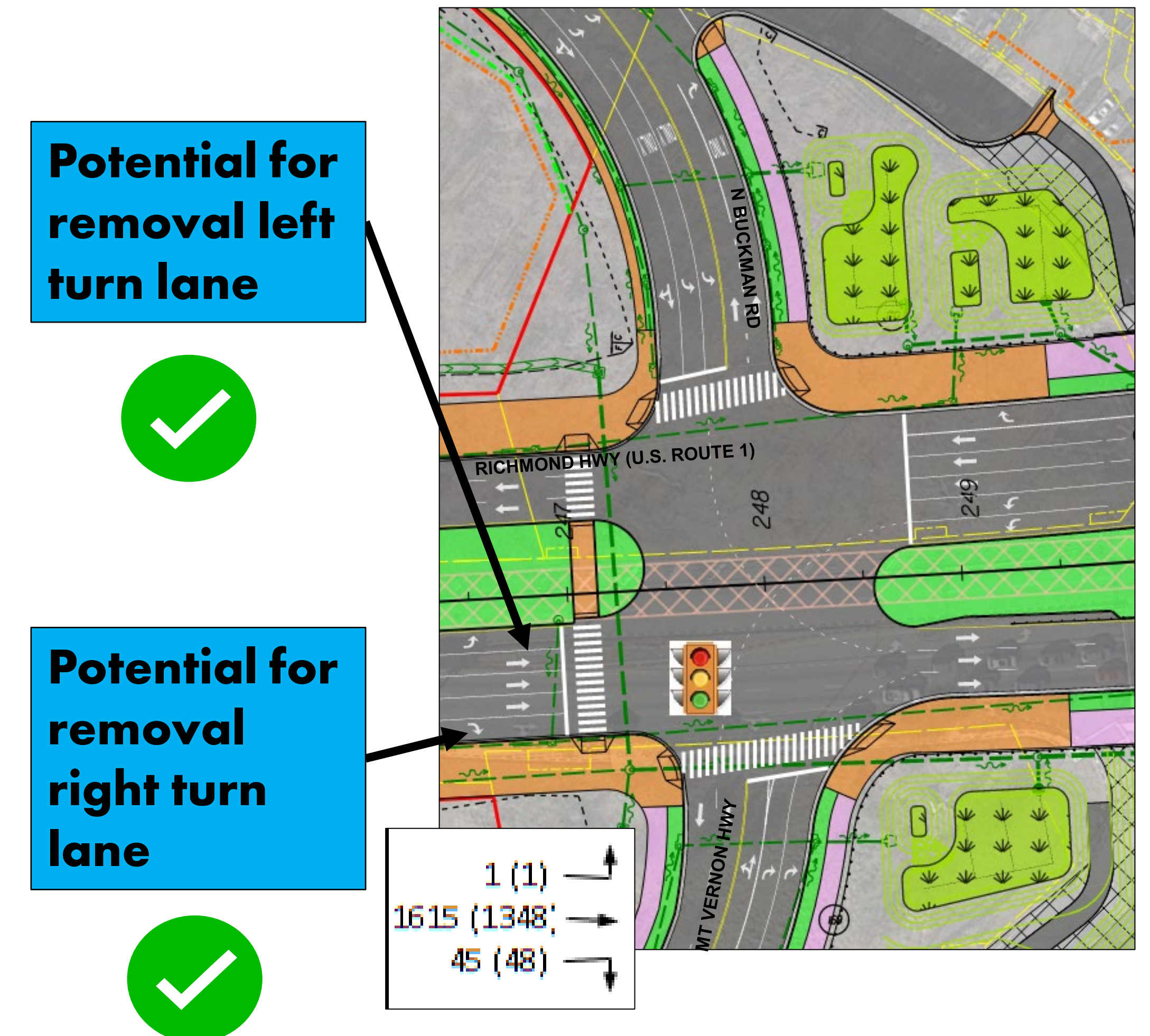


# BUCKMAN RD/MT VERNON HWY - NORTHBOUND

## 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



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design





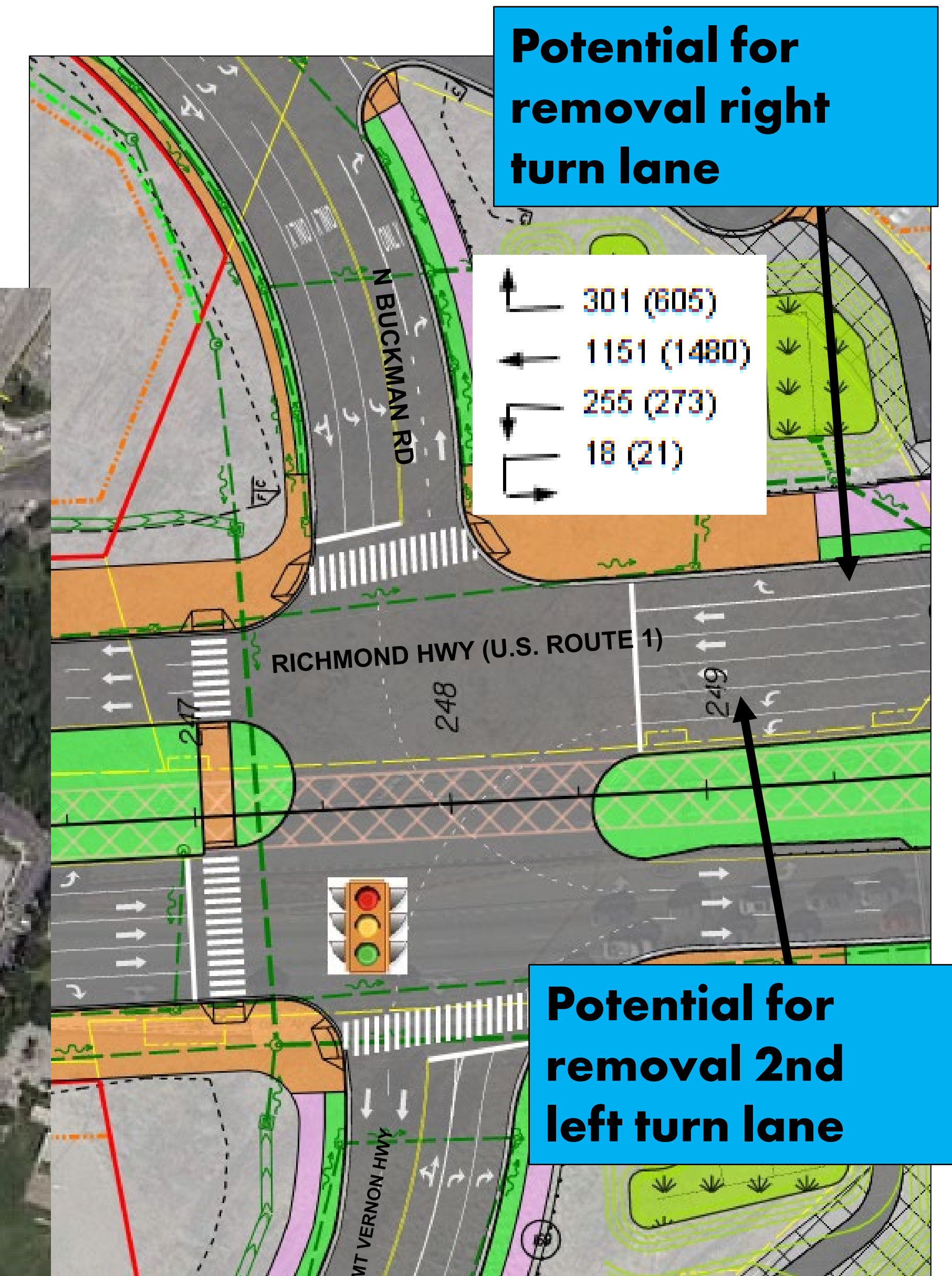
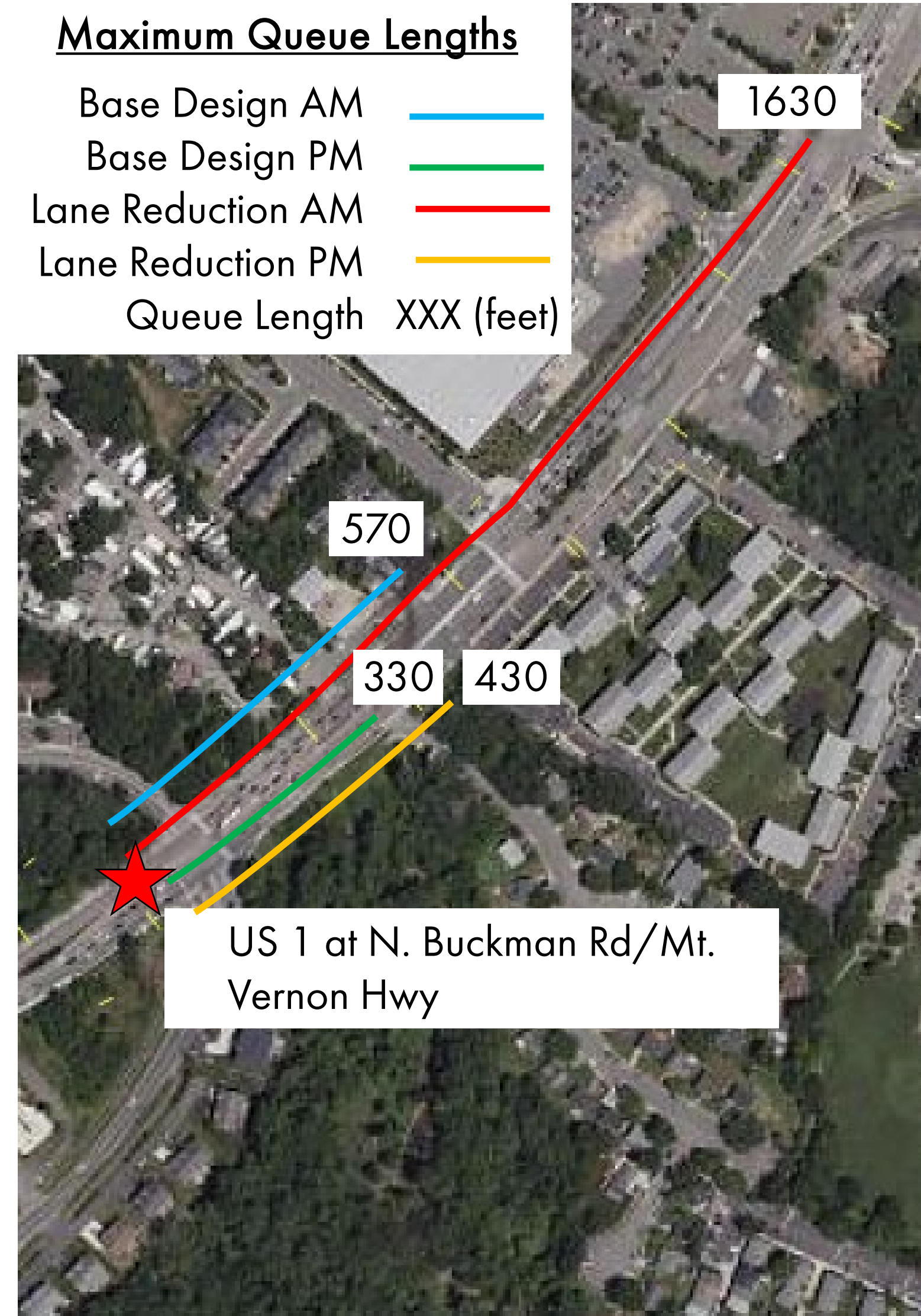


# BUCKMAN RD/MT VERNON HWY - SOUTHBOUND

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

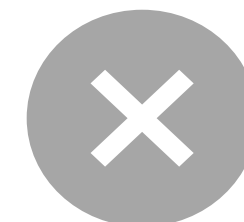
Intersection Delay (sec.)								
	AM Peak Hour				PM Peak Hour			
	SB R	SB L	SB Approach	Overall Intersection	SB R	SB L	SB Approach	Overall Intersection
<b>Base Design</b>	11.9	66.8	29.8	47.2	9.6	96.3	23.0	33.9
<b>Lane Reduction</b>	27.0	197.9	51.0	59.0	17.1	99.1	26.8	39.8

	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







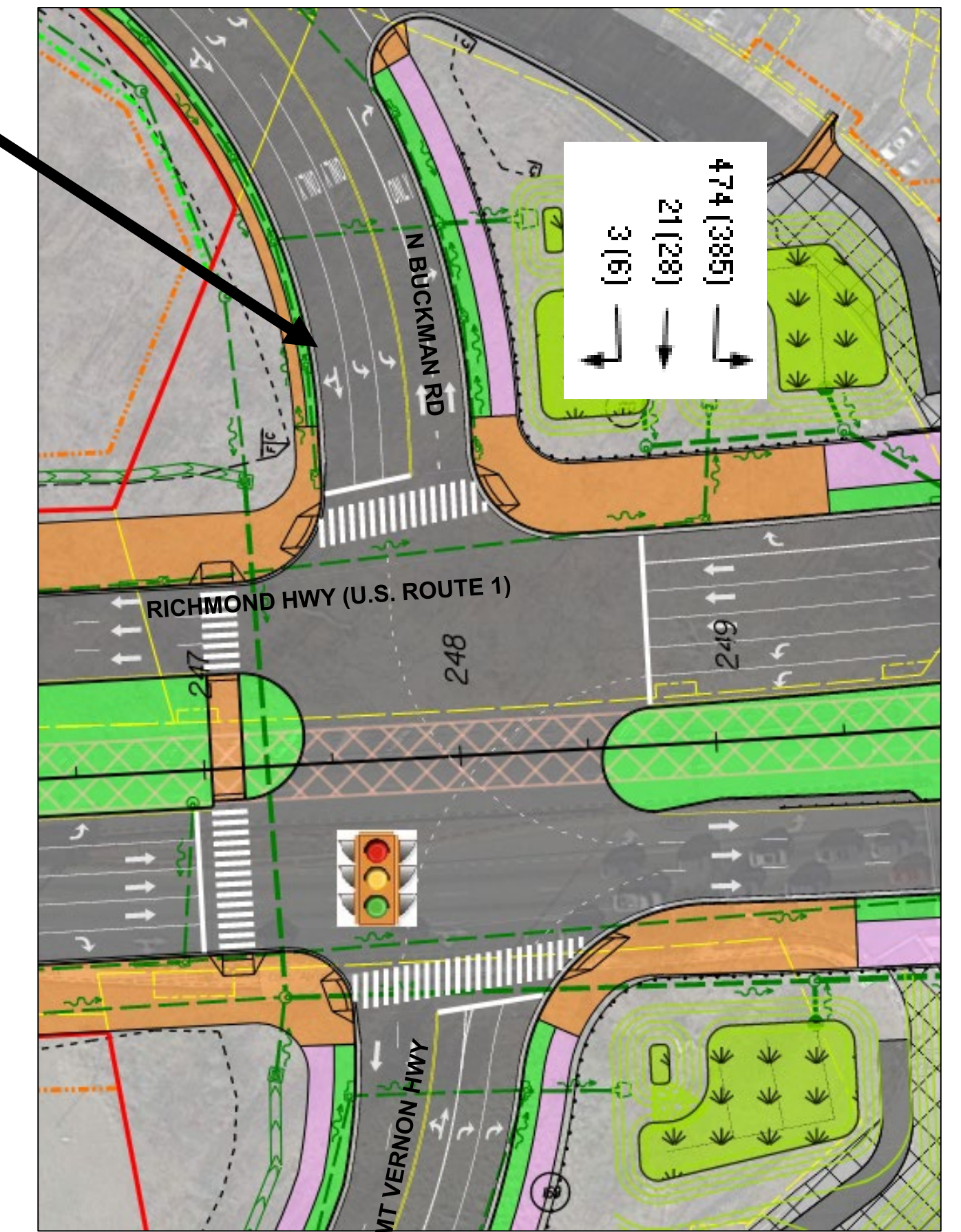
# BUCKMAN RD/MT VERNON HWY - EASTBOUND

**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
<b>Base Design</b>	12.5	76.3	47.2	21.1	74.4	33.9
<b>Lane Reduction</b>	43.2	75.5	59.0	60.3	76.3	39.8

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 (30-40 sec.)
<b>Existing lane (Y/N)</b>	No
<b>Cost impacts/other considerations</b>	Blocking of driveways
<b>Recommendation</b>	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**





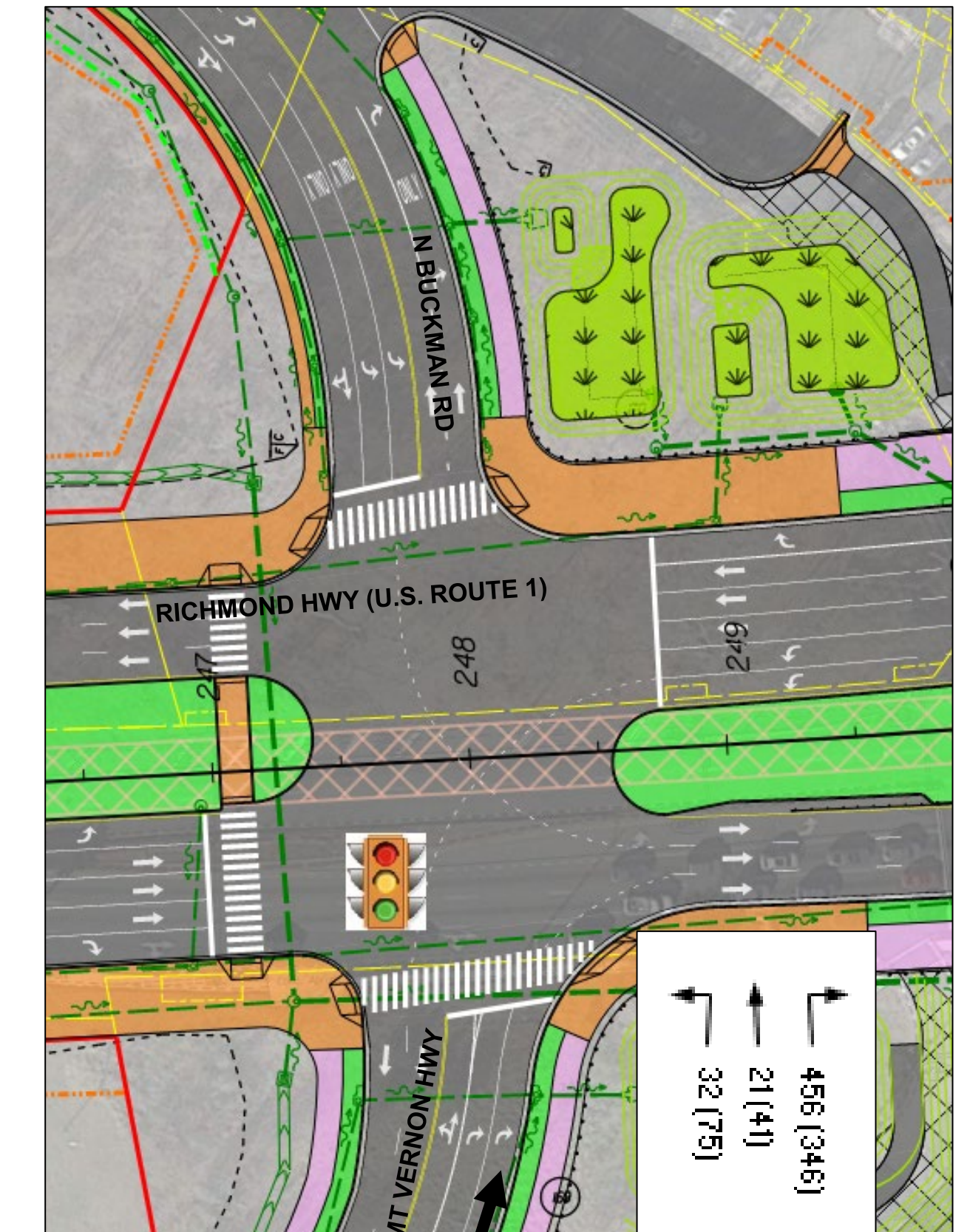


# BUCKMAN RD/MT VERNON HWY - WESTBOUND

## 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>	<b>Do not remove</b>



**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**







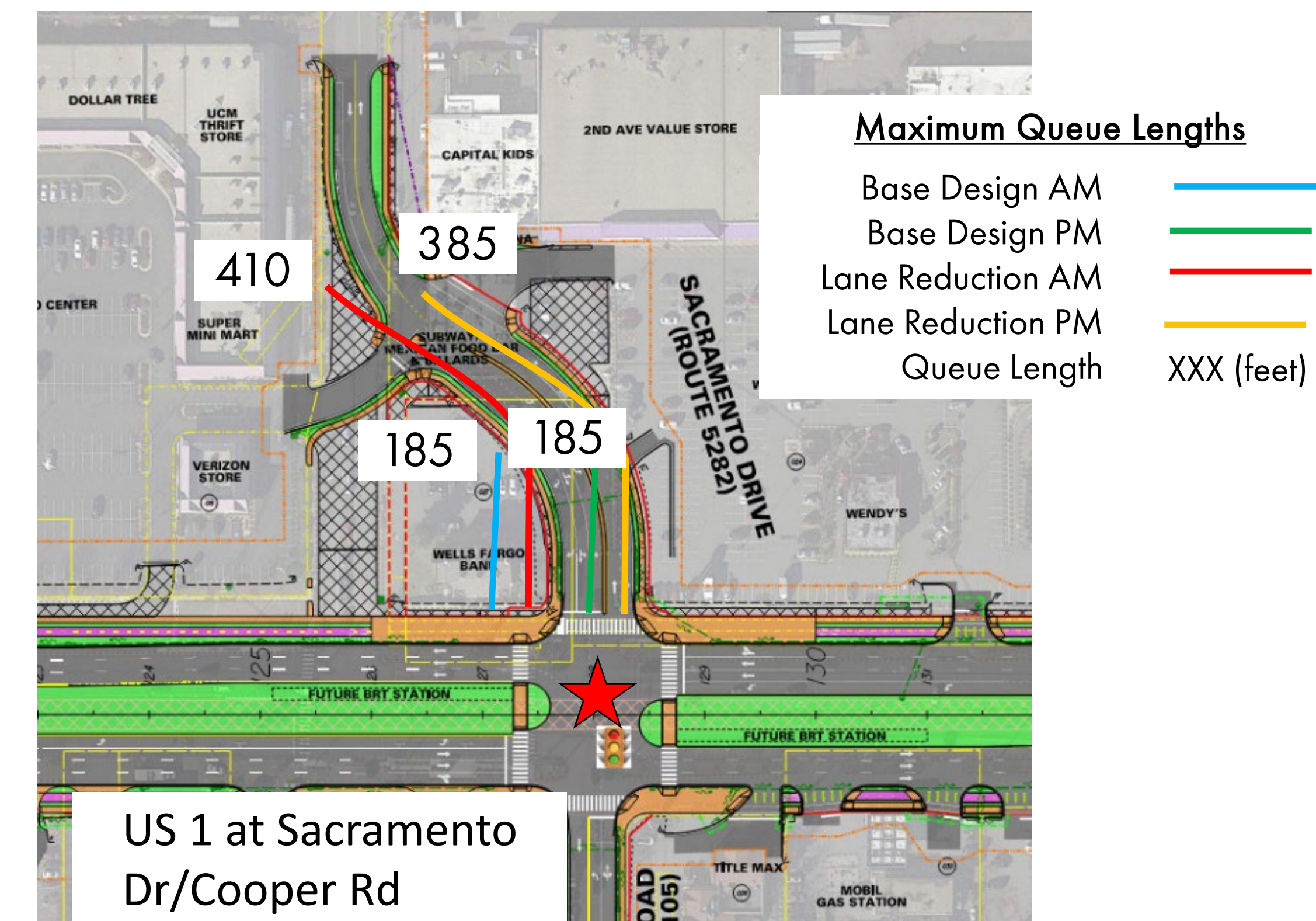
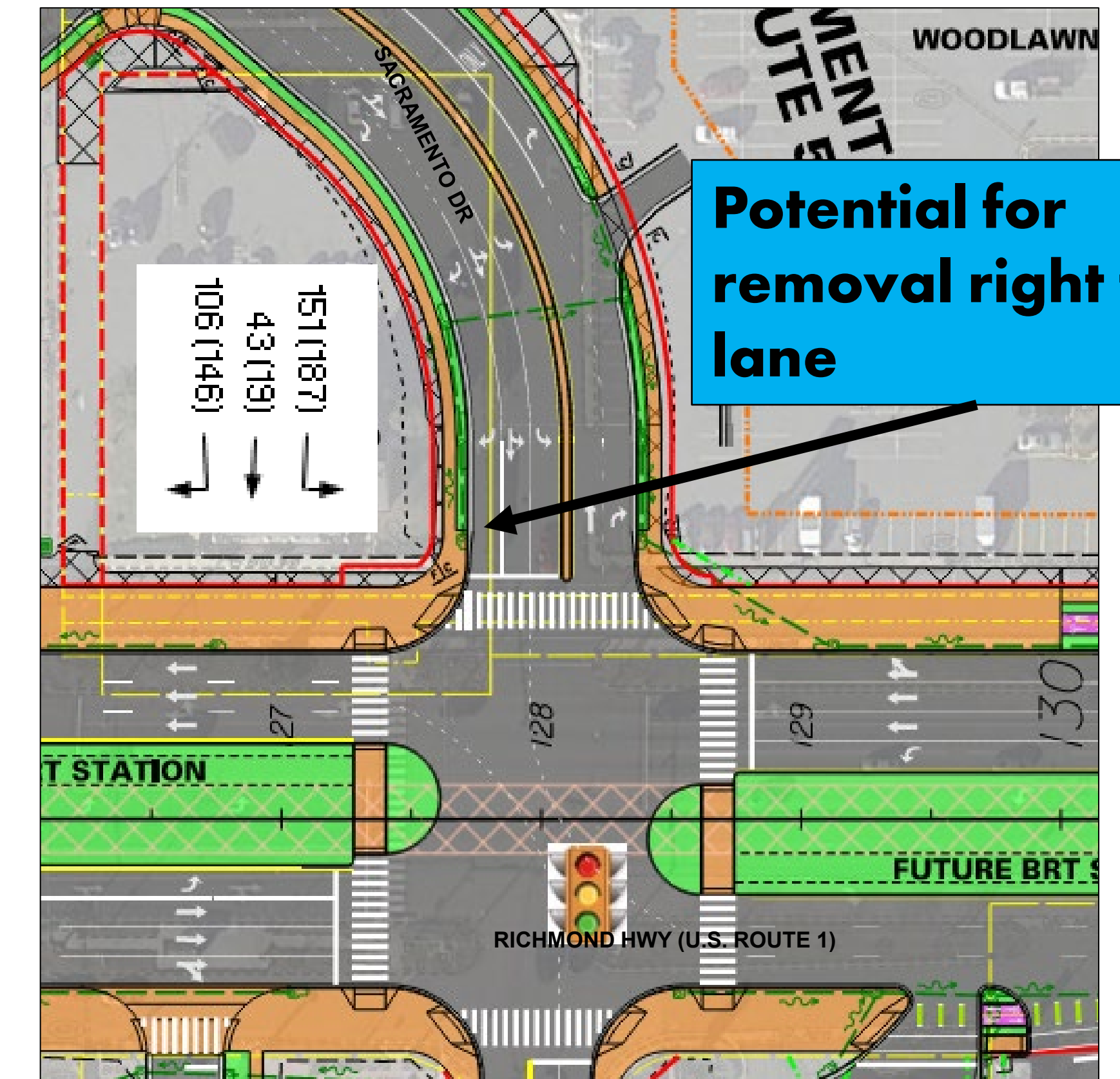
# SACRAMENTO DR/COOPER RD - EASTBOUND

## Potential modification: Removal of eastbound right turn lane (EBR) along Sacramento Dr

- As redevelopment occurs, lane can be reevaluated for potential 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>	<b>Do not remove</b>



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design





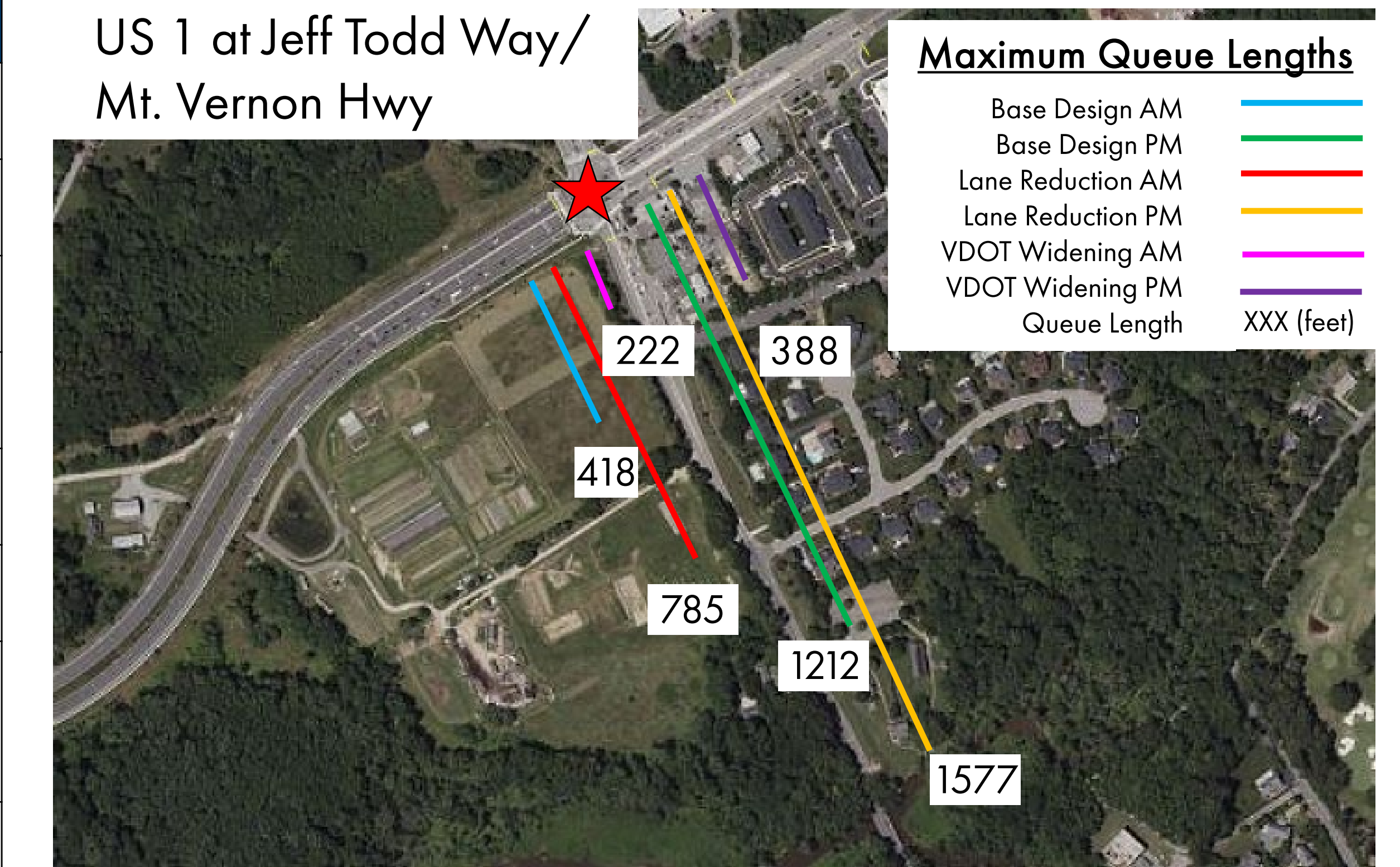
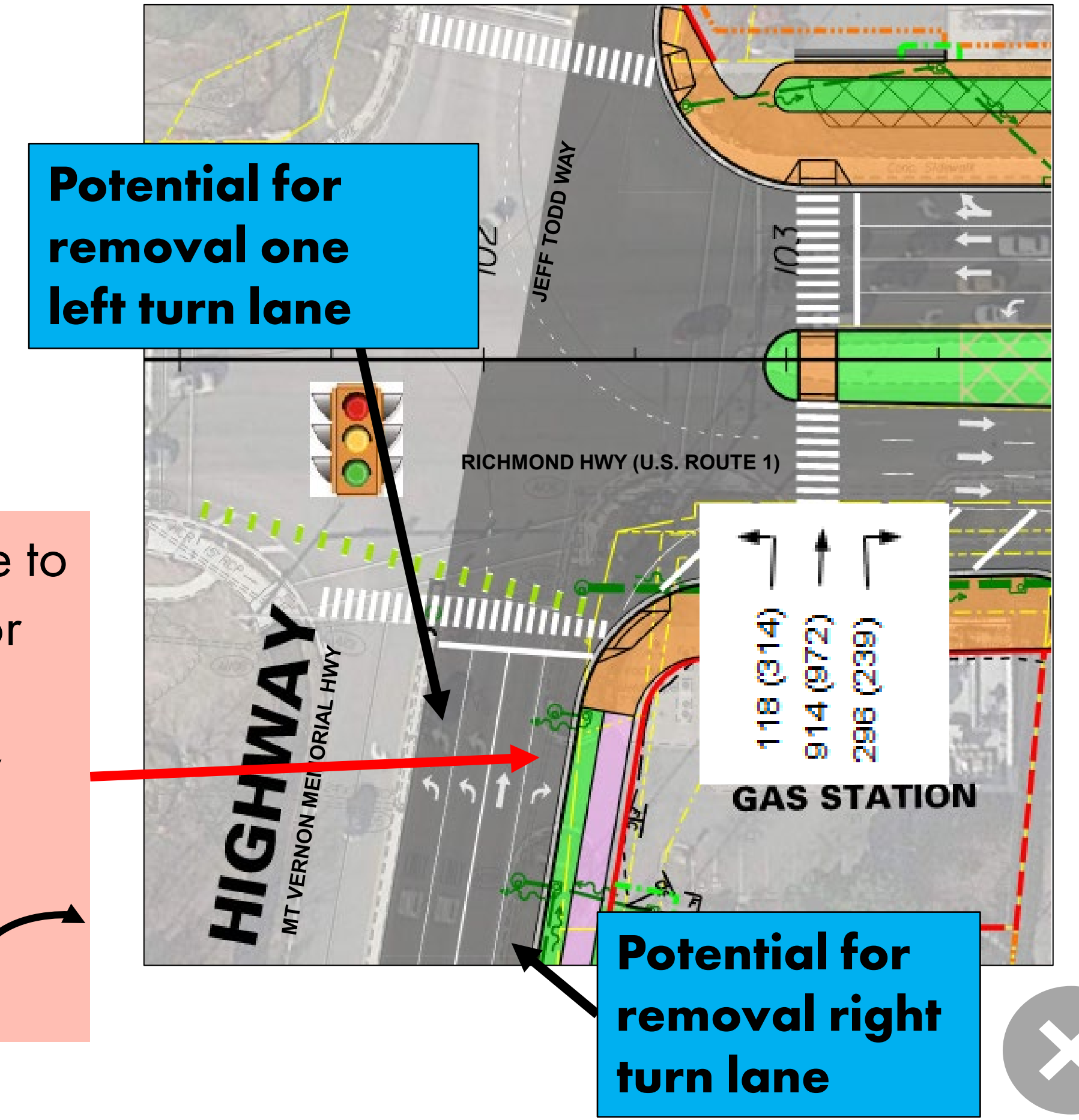
# JEFF TODD WAY / MT VERNON - WESTBOUND

**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>	<b>Do not remove</b>	<b>Do not remove</b> /Lanes reconfigured

Proposed change to thru/right lane for improved pedestrian safety and operations



## LEGEND

Potential modifications for analysis/evaluation

Change not proposed for inclusion in design

Change proposed for inclusion in design





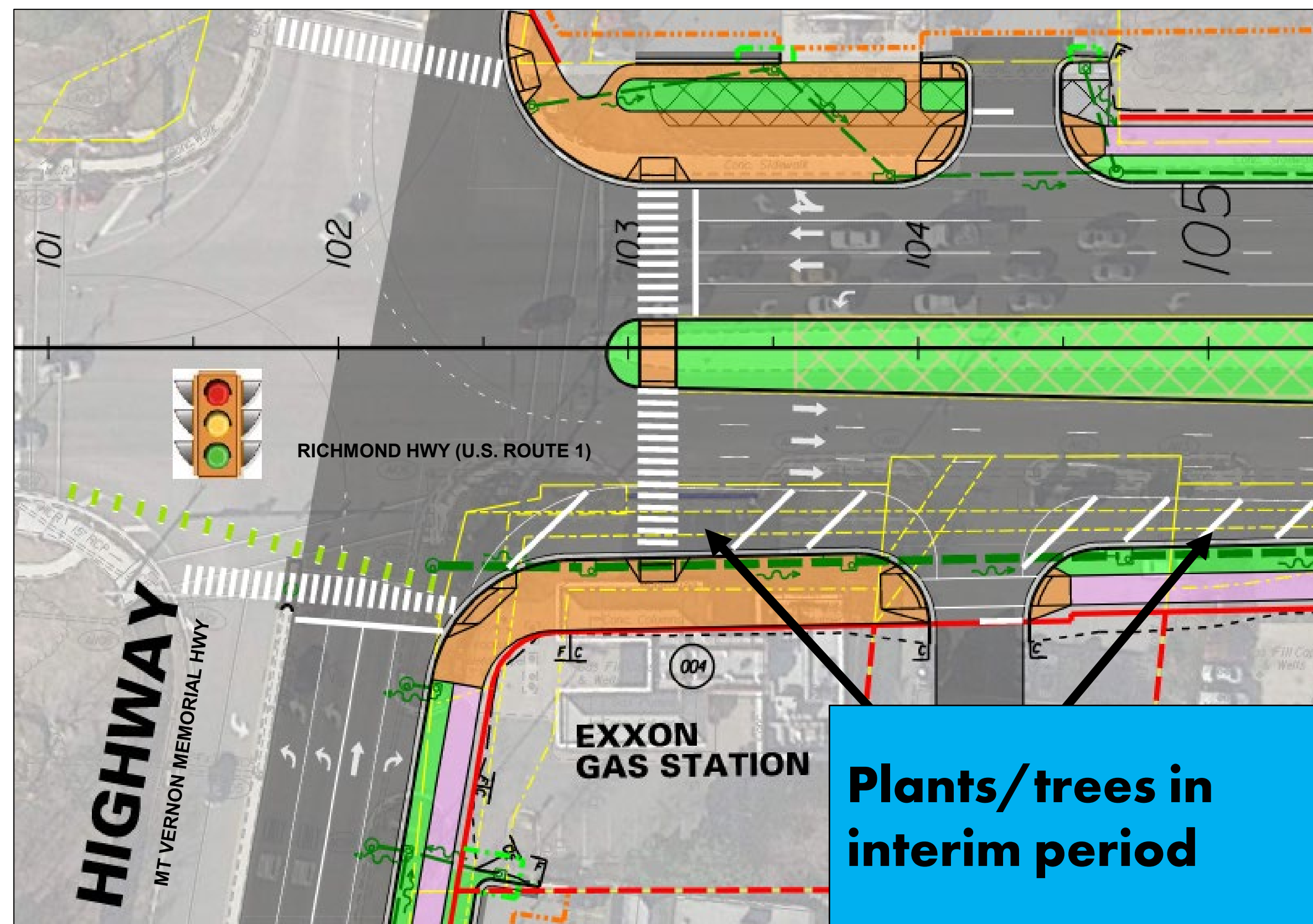


# JEFF TODD WAY - NORTHBOUND

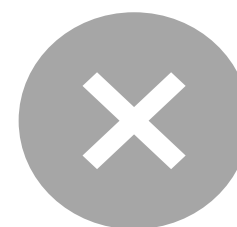
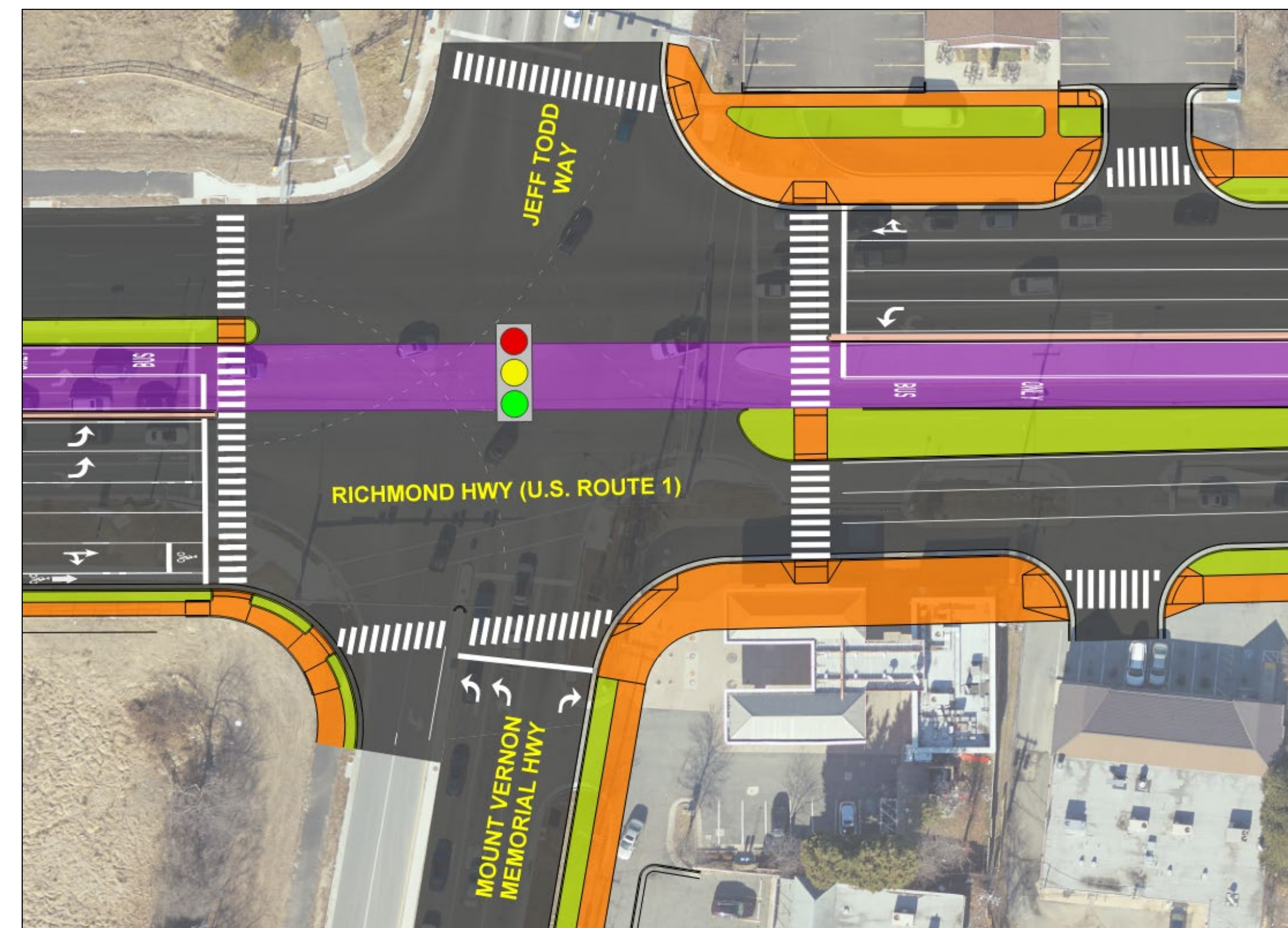
## Potential modification: Install plants and trees in the interim period along northbound Richmond Highway north of the Mt. Vernon Memorial Highway intersection

- The interim period is not expected to be long enough to justify planting trees in this area
- This will be reevaluated if the construction schedule changes in the future

Short Duration Condition



Ultimate Condition



### LEGEND

Potential modifications for analysis/evaluation



Change not proposed for inclusion in design



Change proposed for inclusion in design



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## RICHMOND HIGHWAY BUS RAPID TRANSIT PUBLIC INFORMATION MEETING

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# SUMMARY OF FINDINGS

**FCDOT staff is recommending incorporating about 40% of the lane reductions into the design of the BRT system.**

Intersection with Richmond Highway	Potential Modification	Recommended?
<b>Penn Daw Area (Shields Avenue)</b>	Remove 2 <sup>nd</sup> left turn lane along northbound Richmond Highway	No
	Reduce median width on north side of intersection	Yes
	Remove dedicated right turn lane along southbound Richmond Highway	Yes
	Remove 2 <sup>nd</sup> dedicated right turn lane along eastbound Shields Avenue	No
	Replace asphalt with landscaped grass median along southbound Richmond Highway south of the intersection	Yes
	Remove/reduce the width of the grass medians south of the intersection	No
<b>Penn Daw Area (Entrance to Kings Crossing)</b>	Remove 4 <sup>th</sup> through lane along northbound Richmond Highway	No
<b>Furman Lane</b>	Replace asphalt lane with grass median	Yes
<b>Southgate Drive</b>	Remove through/right turn lane along southbound Richmond Highway	Yes
<b>Beacon Hill Road</b>	Remove dedicated right turn lane along southbound Richmond Highway	No
	Remove dedicated right turn lane along northbound Richmond Highway	Yes
<b>Memorial Street</b>	Remove dedicated right turn lane along eastbound Memorial Street	No (consideration for off-peak parking)
	Remove dedicated right turn lane along southbound Richmond Highway	No
<b>Arlington Drive</b>	Remove dedicated right turn lane along westbound Arlington Drive	No
<b>Fordson Road/Boswell Avenue</b>	Remove dedicated right turn lane along eastbound Fordson Road	No
<b>Sherwood Hall Lane</b>	Remove dedicated right turn lane along northbound Richmond Highway	No
	Remove 2 <sup>nd</sup> left turn lane along northbound Richmond Highway	Yes
	Remove dedicated right turn lane along southbound Richmond Highway	Yes
	Remove dedicated right turn lane along eastbound Sherwood Hall Lane	No
<b>Ladson Lane</b>	Remove through/right turn lane along southbound Richmond Highway	No
	Remove dedicated right turn lane along eastbound Ladson Lane	Yes
<b>North Buckman Road/ Mount Vernon Highway</b>	Remove through/right turn lane along eastbound North Buckman Road	Yes
	Remove dedicated right turn lane along southbound Richmond Highway	No
	Remove 2 <sup>nd</sup> left turn lane along southbound Richmond Highway	No
	Remove dedicated right turn lane along westbound Mount Vernon Highway	No
	Remove dedicated right turn lane along northbound Richmond Highway	Yes
	Remove dedicated northbound left turn lane along Richmond Highway	Yes
<b>Sacramento Drive/Cooper Road</b>	Remove dedicated right turn lane along eastbound Sacramento Drive	No (consideration for off-peak parking)
<b>Jeff Todd Way/ Mount Vernon Memorial Highway</b>	Remove dedicated right turn lane along westbound Mount Vernon Memorial Highway	No
	Remove 2 <sup>nd</sup> left turn lane along westbound Mount Vernon Memorial Highway	No

