



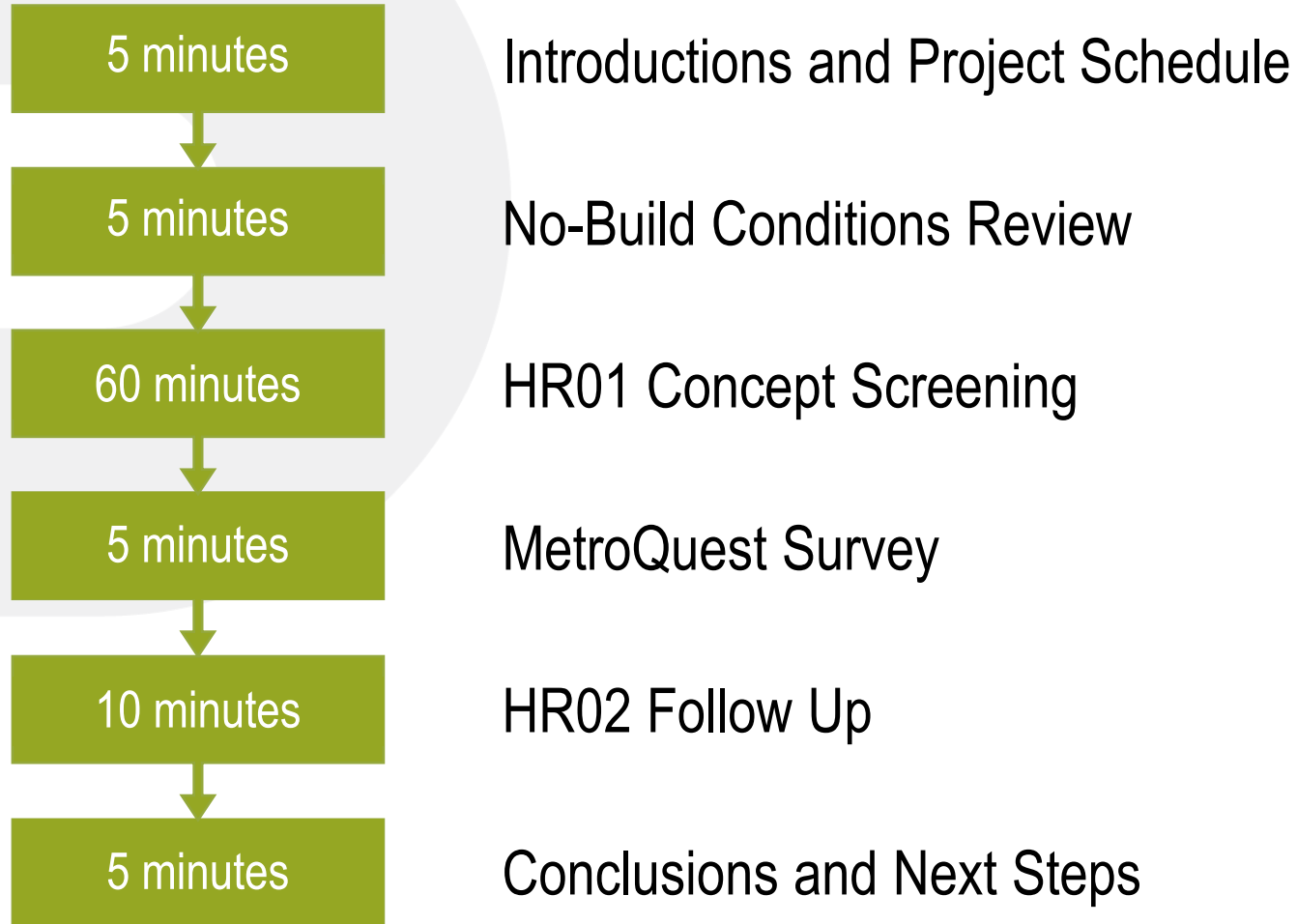
PROJECT PIPELINE

HAMPTON ROADS DISTRICT CITY OF CHESAPEAKE PROJECTS

Phase 2 Concept Screening Meeting | HR01



Agenda



Project Pipeline - Overview

Program Goals:

- Focus planning/project development on CTB VTrans priorities
- Streamline project planning and improve project readiness
- Improve and develop tools to make use of powerful data and improve collaboration
- Solve more problems with limited transportation dollars

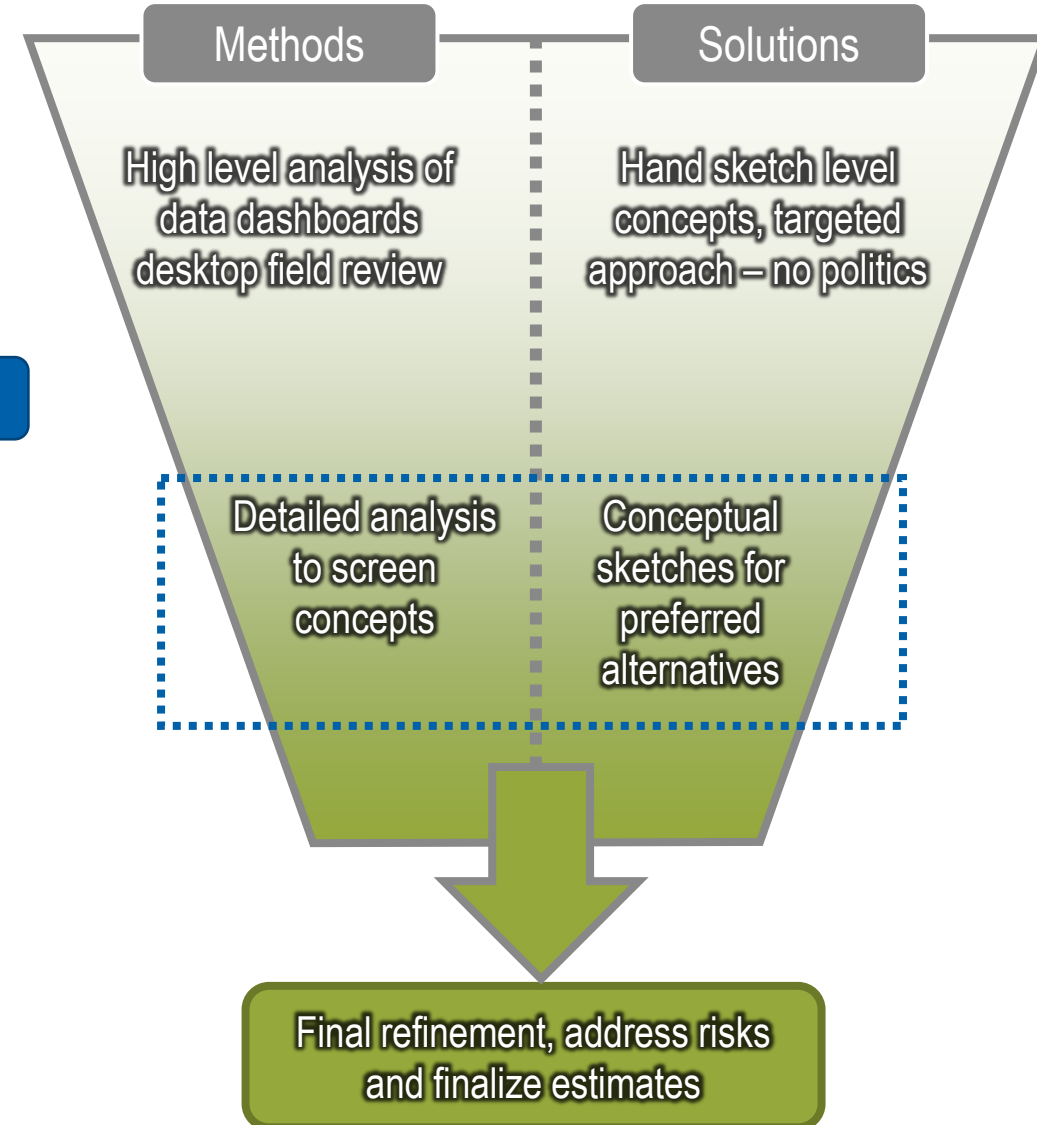
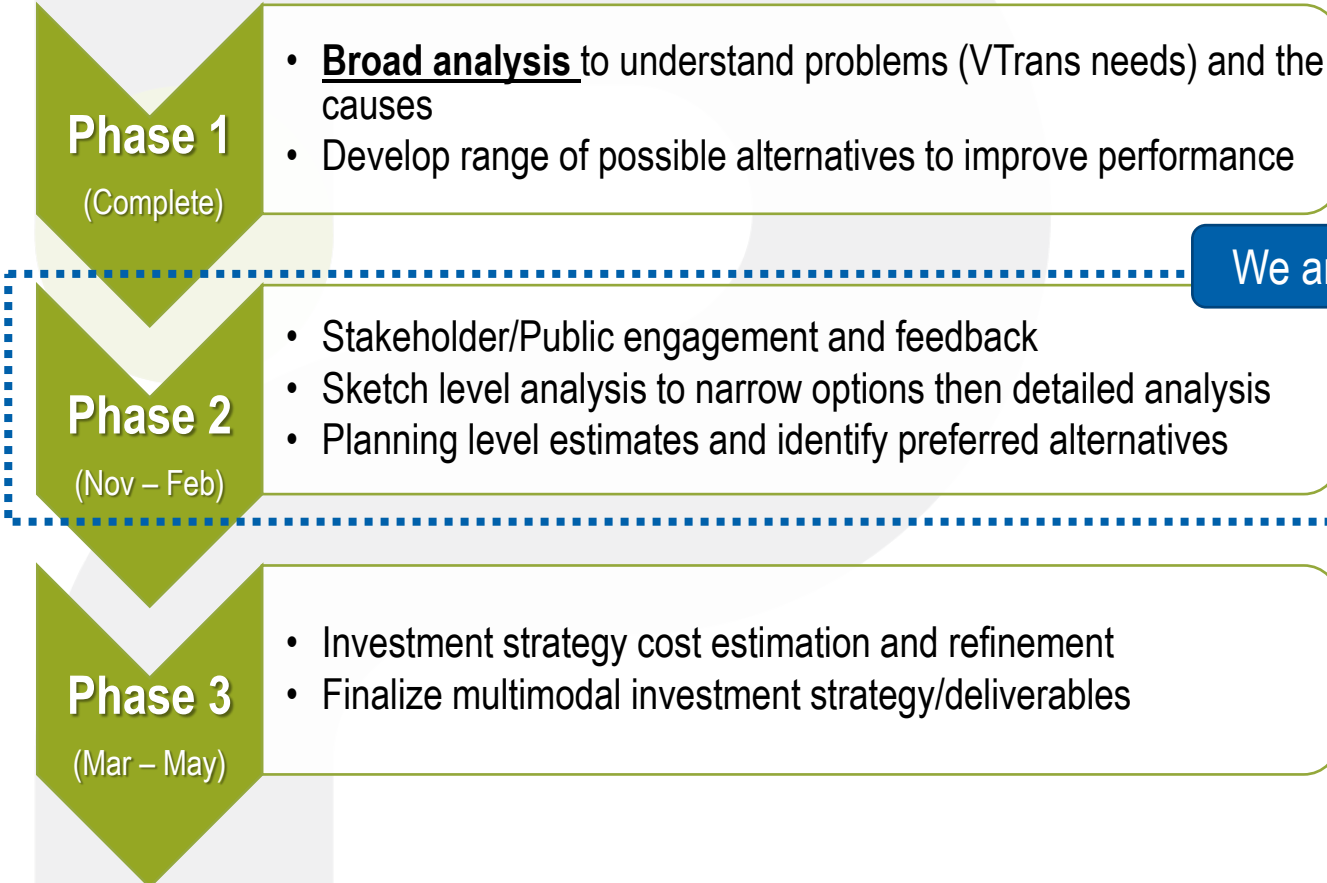
Project Pipeline builds on the success of VDOT's STARS program

- ***STARS recommendations*** submitted in SMART SCALE have had an **80% funding success rate**

Phased Approach to Study Process



PROJECT PIPELINE



Overall Schedule and Major Milestones

- **Completed to-date:** Existing and No-Build Conditions Analysis, Preliminary Concept Development and Screening
- **January – February:** Concept Screening and Refinement
 - Full SWG Meeting (today)
 - MetroQuest Survey – opening mid to late February
- **February – March:** SWG Meeting
 - MetroQuest Results and selection of preferred alternative
 - Draft study summary of Phase 2
 - Identified Phase 3 risks
 - One-page preliminary draft summary sheets of preferred alternatives
 - Phase 3 Scope outline / highlights

MetroQuest Survey

- MetroQuest survey can incorporate any new concepts discussed during this SWG meeting
- MetroQuest survey will be open from 2/24 to 3/10
- MetroQuest survey to stakeholders by **Thursday 2/10**

No-Build Conditions Methodology



- No-Build 2045 volumes developed using agreed upon linear growth rates

Corridor Concept Screening





- Pedestrian and bicycle facility improvements 
- Pedestrian signal head 
- Signing and marking improvements

Intersection Concept Screening



Concepts developed for the following intersections with Battlefield Boulevard:

- 1 Wal Mart Way
- 2 Volvo Parkway
- 3 Byron Street / Thrasher Road
- 9 Gainsborough Square

	Signalized Intersections (3)
	Unsignalized Median Opening (1)







Concept Screening Analysis Assumptions

- Analysis Periods**

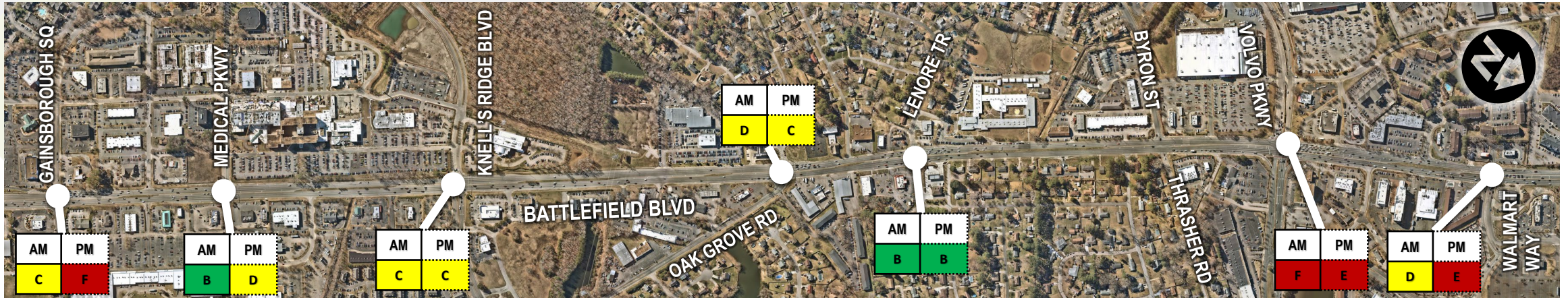
- 2045 AM peak hour (7:30-8:30 am)
- 2045 PM peak hour (4:30-5:30 pm)

- Analysis Tools and Measures of Effectiveness**

- Preliminary screening using VJuST
- Traffic Analysis
 - Synchro 10 (control delay and Level of Service)
- Crash Analysis
 - Latest five years (2015-2019)
 - F+I CMFs from SMART SCALE Planning, Virginia State Preferred, and Clearinghouse CMF lists

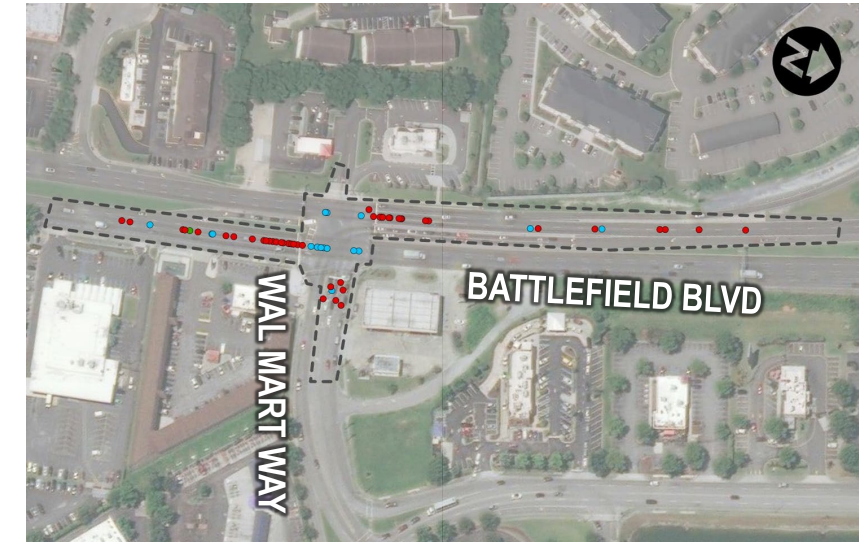
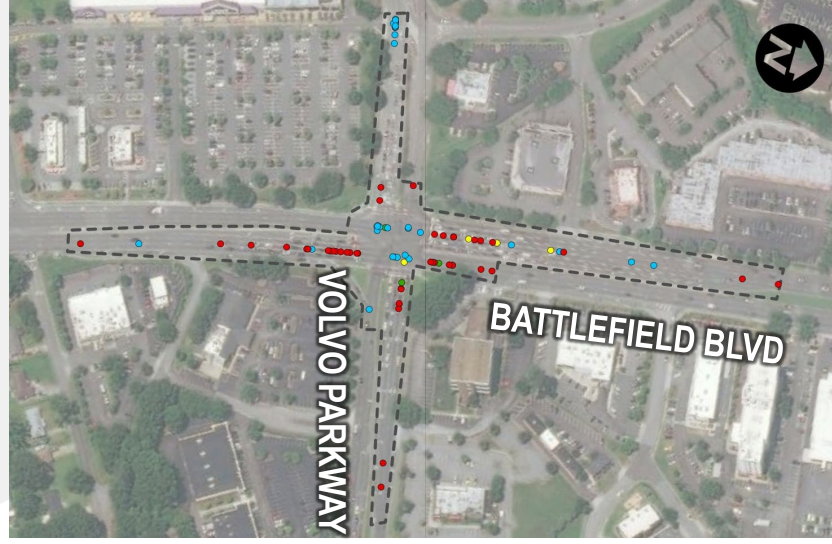
LOS		Unsignalized Intersection Criteria
	A or B	Delay ≤ 15 sec/veh
	C or D	15 sec/veh < Delay ≤ 35 sec/veh
	E or F	Delay > 35 sec/veh
LOS		Signalized Intersection Criteria
	A or B	Delay ≤ 20 sec/veh
	C or D	20 sec/veh < Delay ≤ 55 sec/veh
	E or F	Delay > 55 sec/veh

2045 No-Build Conditions Needs Identification



- Byron St/Thrasher Rd results in LOS F for the worst movements
- Operational issues clustered towards the northern end of the corridor
- Optimization of splits and offsets

Priority Intersections: 2015-2019 Crash Summary



- Angle crash trend at Byron St and Thrasher Rd
- Rear end collision trend along Battlefield Blvd from Volvo Pkwy to Wal Mart Way

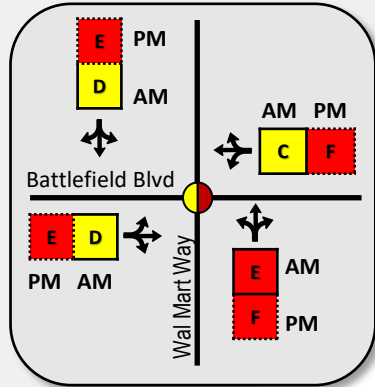
Legend	
	Intersection Influence Area
	Rear End
	Angle
	Sideswipe – Same Direction
	Fixed Object – Off Road
	Pedestrian
	Other

Wal Mart Way: Concept 1 – I-64 Ramp Rerouting

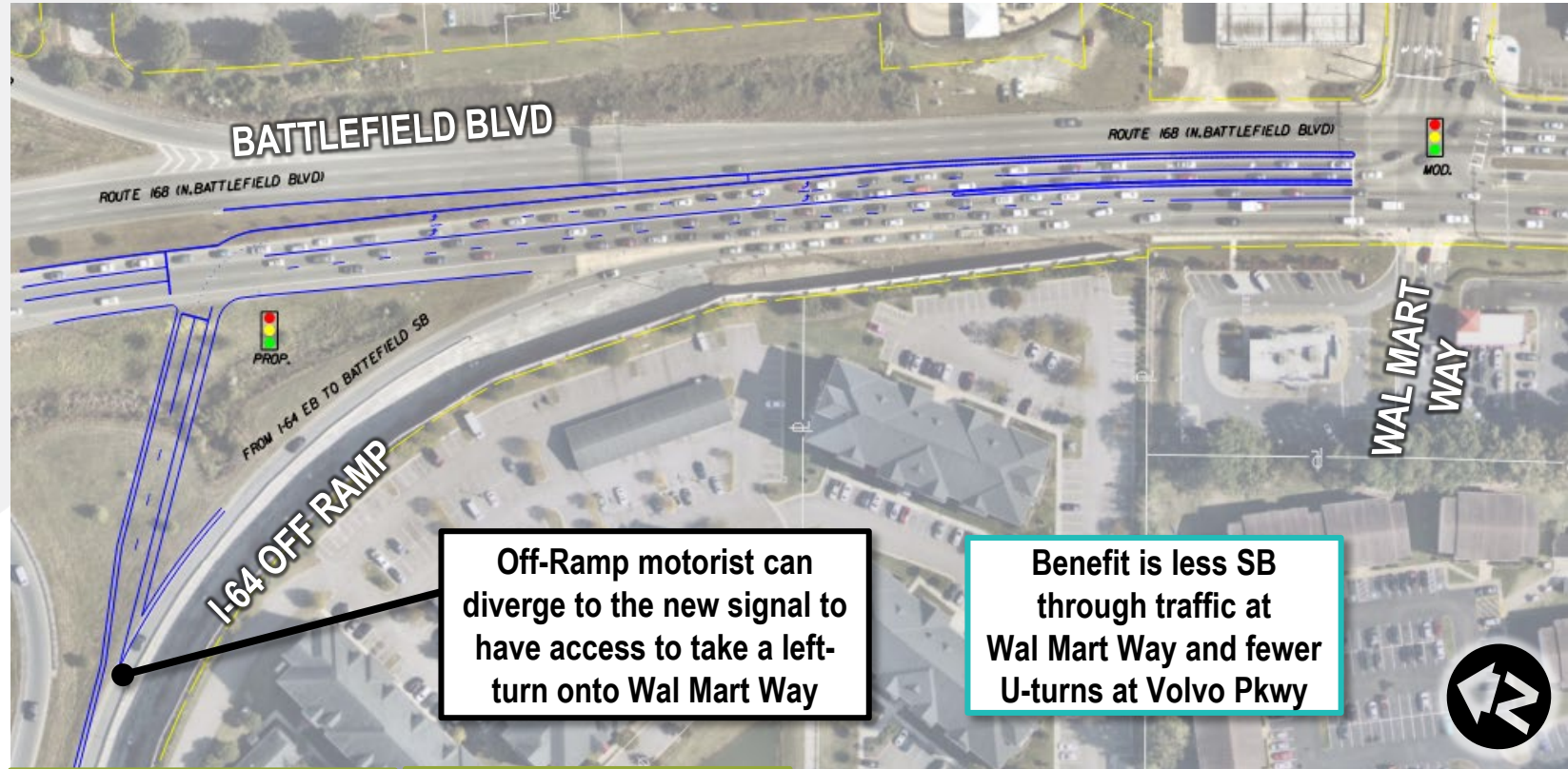
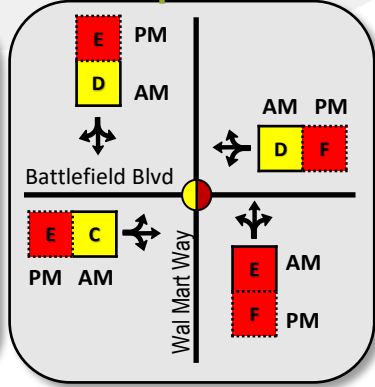
Design Considerations

- Vehicle rerouting – 50% of SB U-turns at Volvo Parkway
- Access impacts – improve access to businesses
- Safety

No-Build Results



Concept Results



Wal Mart Way - Overall
AM: +0.9s delay
PM: +0.5s delay

Volvo Pkwy - Overall
AM: -16.1s delay
PM: -8.6s delay

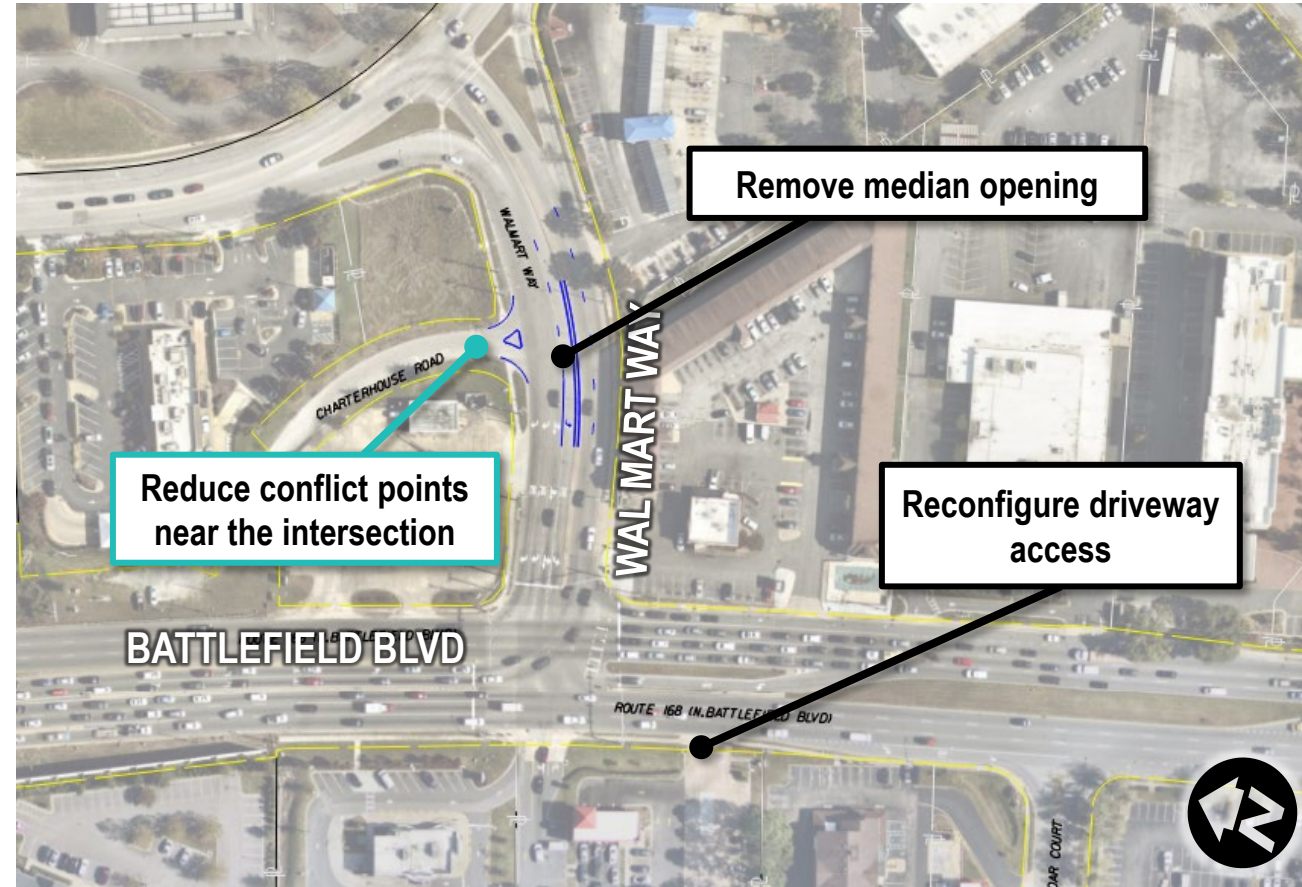
Stage 1 Cost Estimate Range:
\$3,500,000 – 4,500,000

Wal Mart Way: Concept 2 – Access Management

Design Considerations

- Access impacts
- R/W and utility impacts
- Risks
- Pedestrian impacts

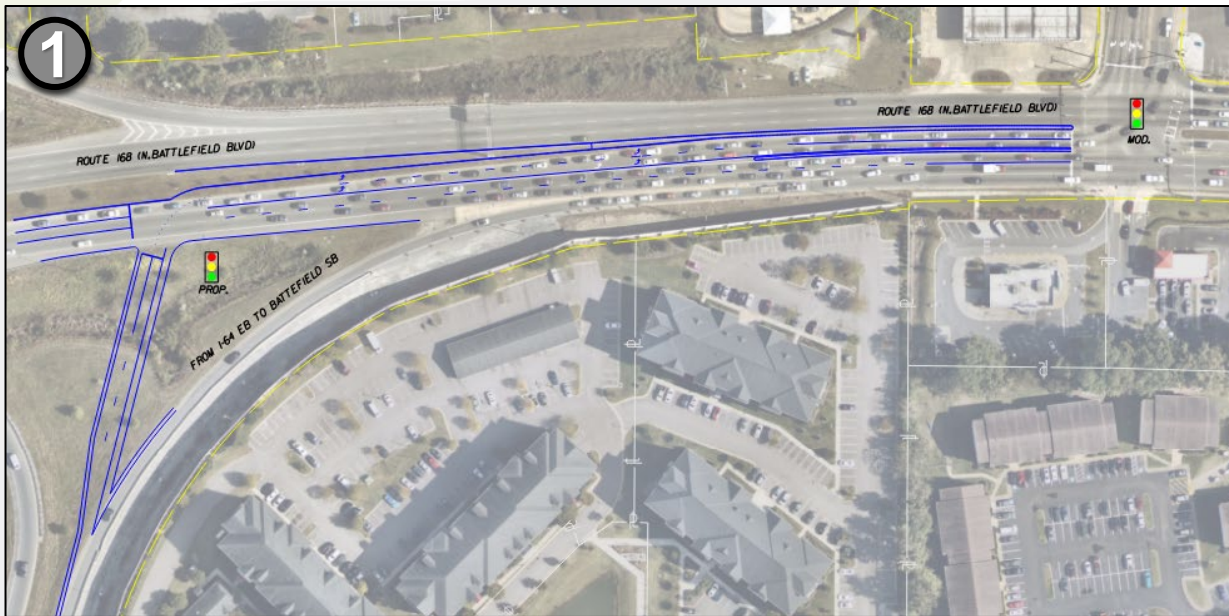
CMF = 0.56
5-Year F+I Crash Reduction = 15.8 crashes



Stage 1 Cost Estimate Range:
\$300,000 – 600,000

Wal Mart Way: Concept Screening Summary

- MetroQuest survey to present:
 - ① I-64 Off-Ramp Rerouting
 - ② Access Management near Wal Mart Way



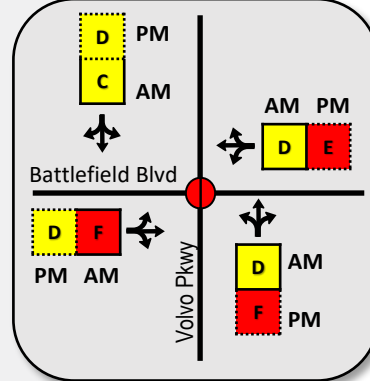
Volvo Parkway: Concept 3 – Full Displaced Left-Turn

Design Considerations

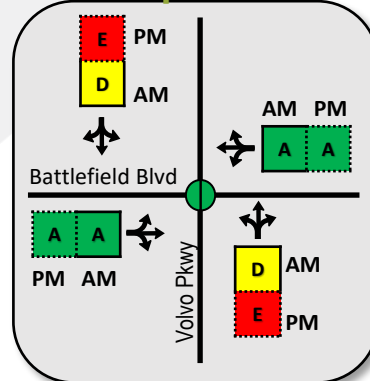
- Vehicle rerouting
- Access impacts
- R/W and utility impacts
- Pedestrian impacts

CMF = 0.8
5-Year F+I Crash Reduction = 9.4 crashes

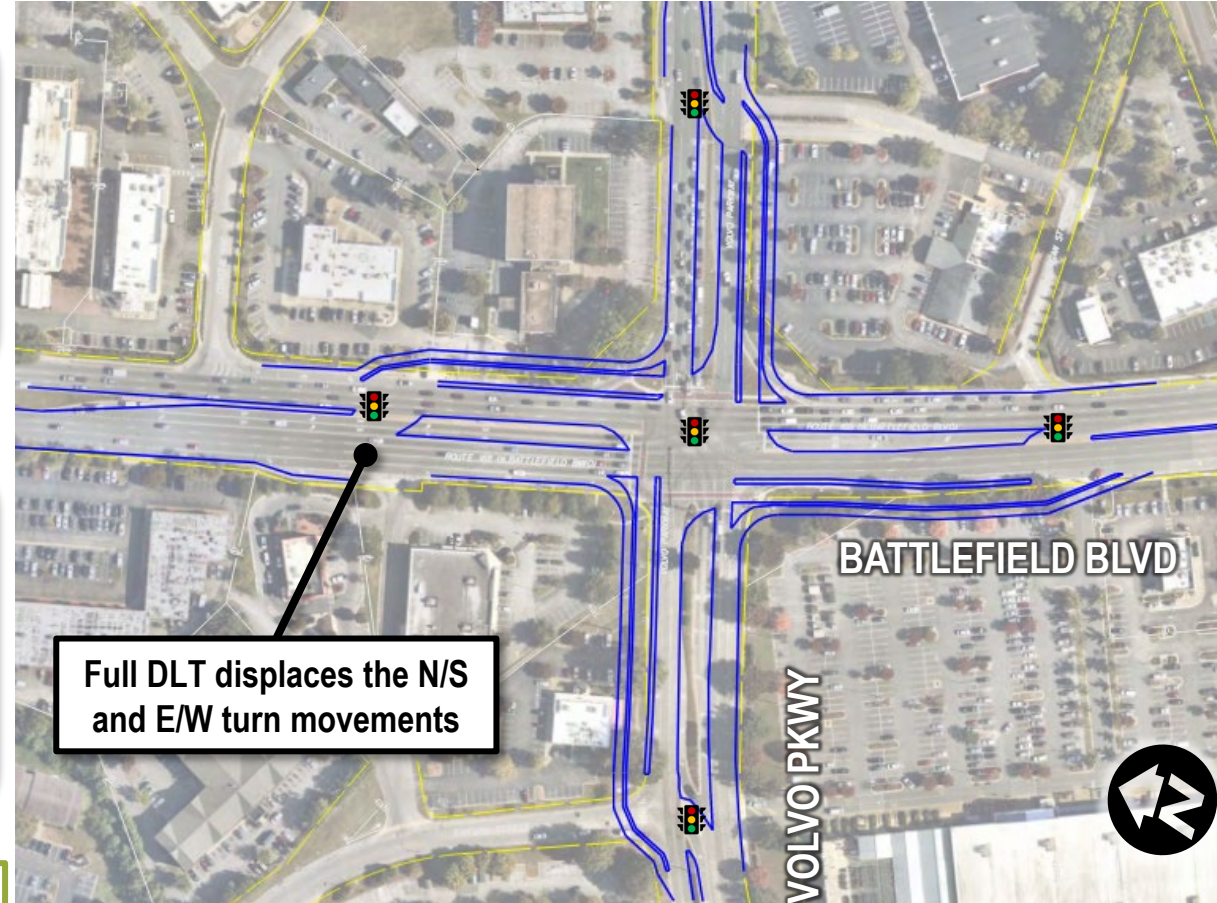
No-Build Results



Concept Results



Overall Intersection
AM: -83s delay
PM: -55.7s delay



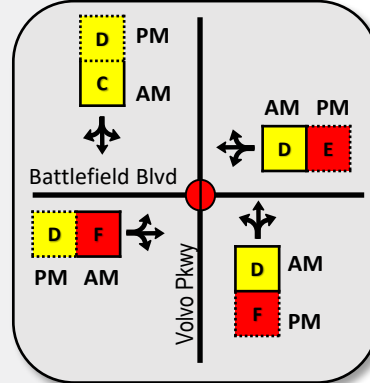
Stage 1 Cost Estimate Range:
\$22,000,000 – 30,000,000

Volvo Parkway: Concept 4 – Partial Displaced Left-Turn

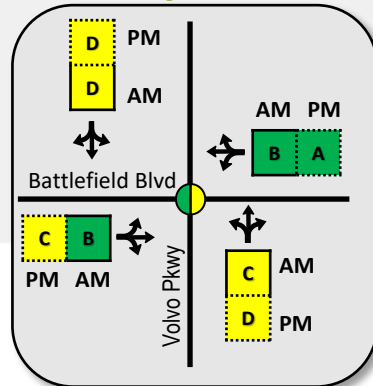
Design Considerations

- Vehicle rerouting
- Access impacts
- R/W and utility impacts
- Pedestrian impacts
- Volvo Pkwy concurrent left turns

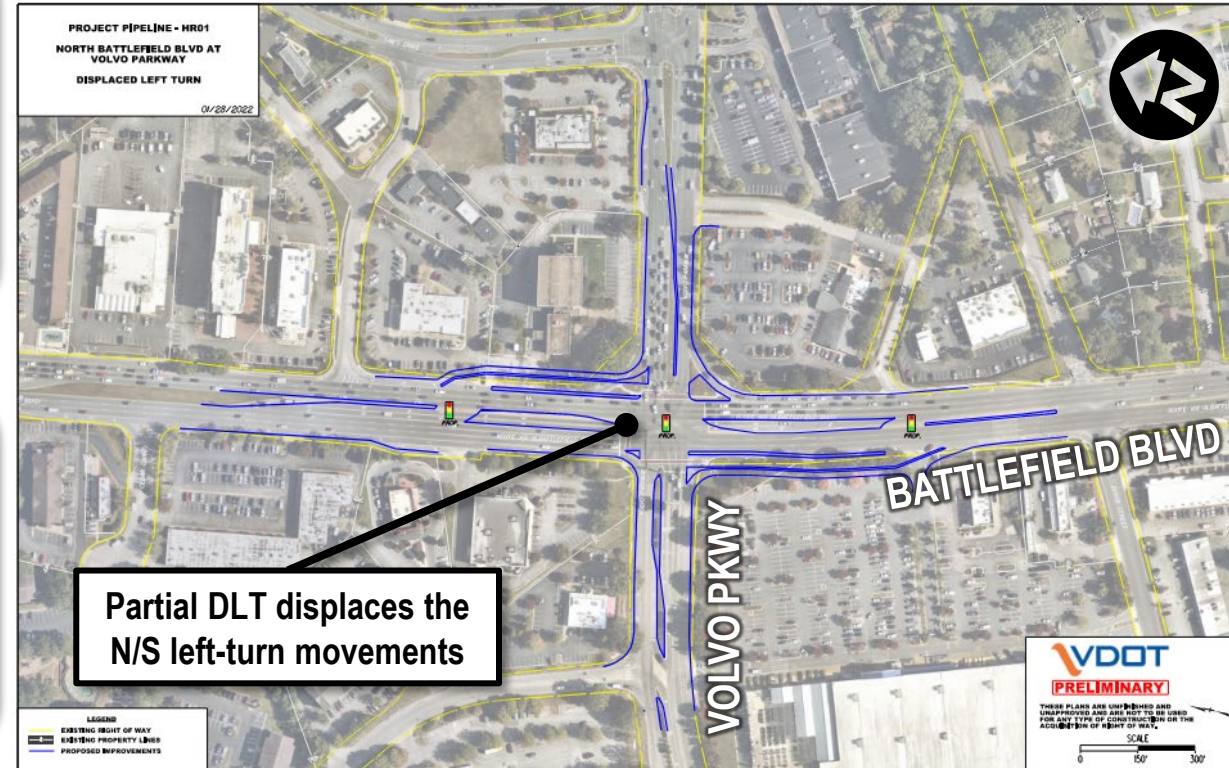
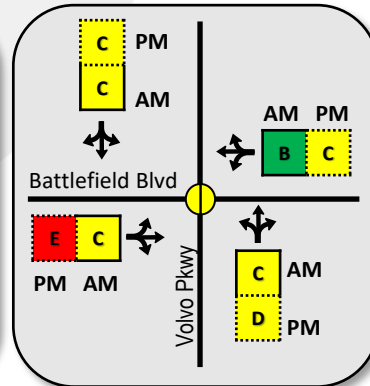
No-Build Results



Concept Results



ETT Results



CMF = 0.9

5-Year F+I Crash Reduction = 4.7 crashes

Overall Intersection

AM: -66.6s delay

PM: -24.6s delay

Stage 1 Cost Estimate Range:

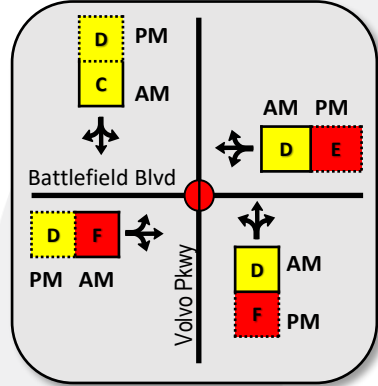
\$14,000,000 – 20,000,000

Volvo Parkway: Concept 5 – Partial Quadrant

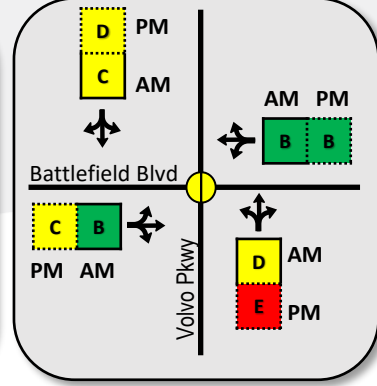
Design Considerations

- Vehicle rerouting – N/S left-turn
- Minor street impacts - Phase 3 intersection control

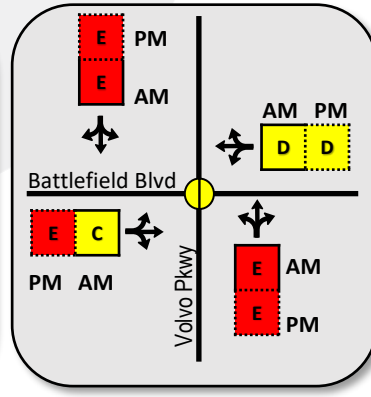
No-Build Results



Concept Results



ETT Results



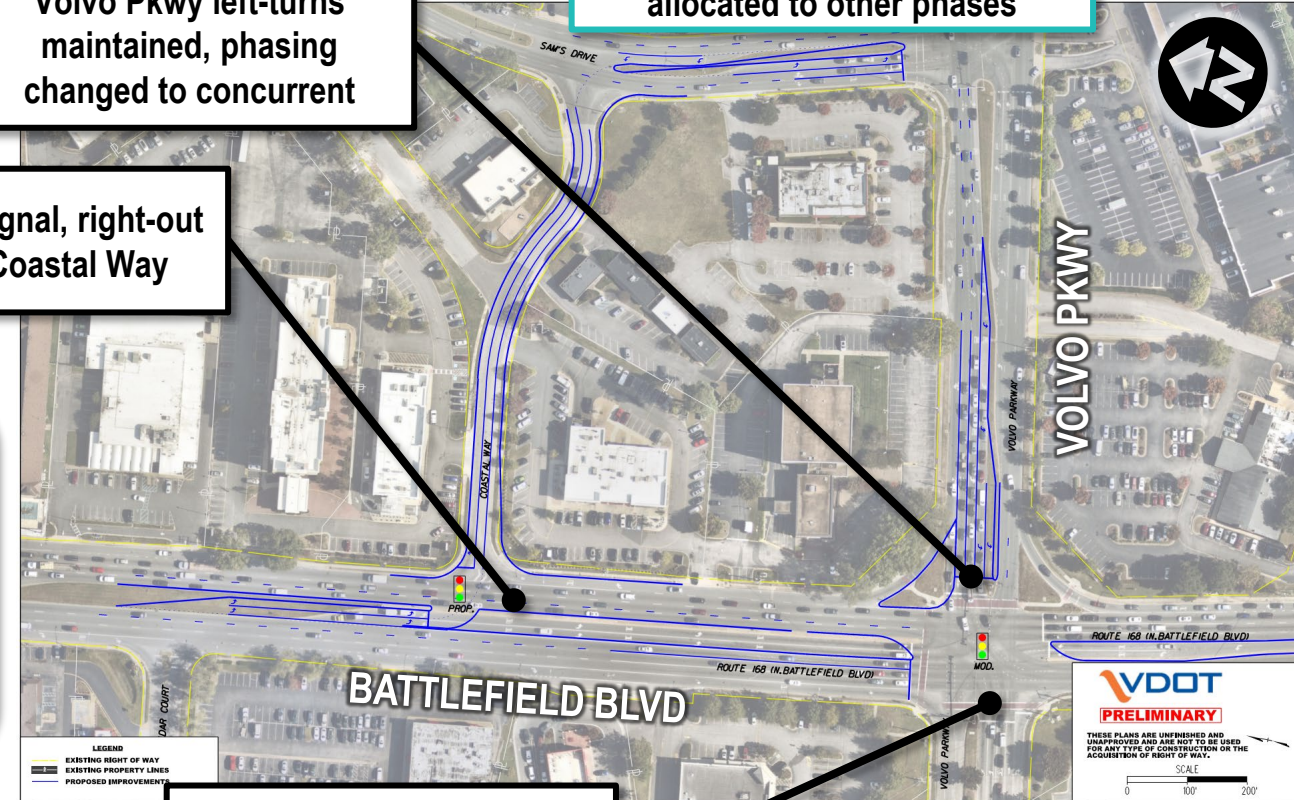
CMF = 0.91
5-Year F+I Crash Reduction = 4.2 crashes

Overall Intersection
AM: -50.4s delay
PM: -10.4s delay

Volvo Pkwy left-turns maintained, phasing changed to concurrent

Two-phase signal, right-out only from Coastal Way

Benefit is no left-turning traffic off Battlefield Blvd, less conflict points, more green time allocated to other phases



Medians reduced to make room for eastbound and westbound concurrent lefts

Stage 1 Cost Estimate Range:
\$10,000,000 – 14,000,000

Volvo Parkway: Concept Screening Summary

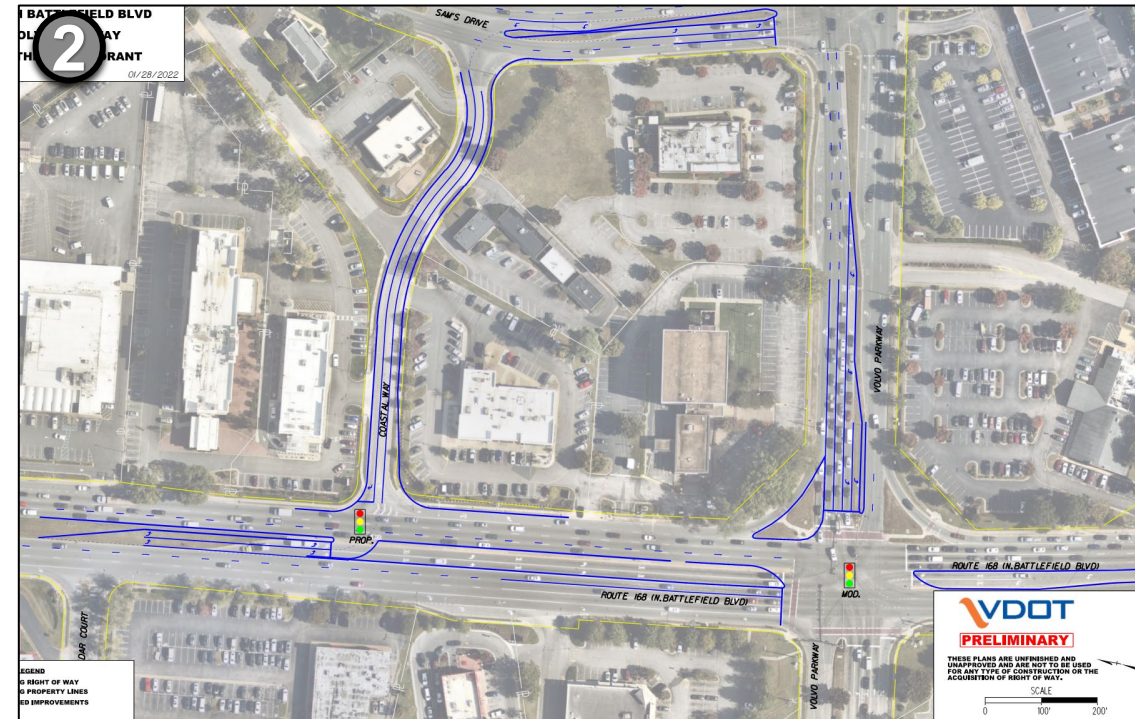
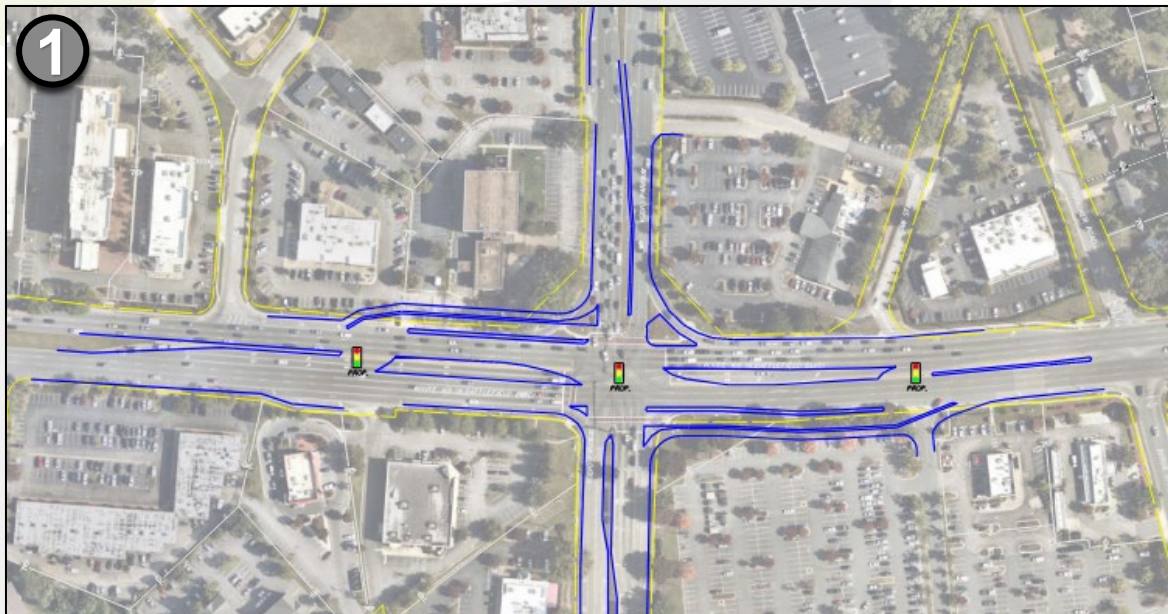
Concept	Estimated 5-Year Crash Reduction	Ped & Bike Accommodation	Cost	Approach	Difference in Delay from No-Build		Notes
					AM	PM	
Full DLT	9.4	-	\$\$\$	Intersection	-83s	-55.7s	ROW Impacts
Partial DLT	4.7	-	\$\$	EB	-28.8s	-93.8s	Concurrent phasing on Volvo Pkwy ROW Impacts
				WB	-5.8s	-22s	
				NB	-26.5s	-32.5s	
				SB	-126.0s	+11s	
				Intersection	-66.6s	-24.6s	
Quadrant	4.2	+	\$	EB	+8.9s	-67.1s	Minor street impacts
				WB	+29.8s	+8.2s	
				NB	+1.6s	-20.9s	
				SB	-130.8s	+11.0s	
				Intersection	-50.7s	-10.4s	

Bike/Ped Accommodations Compared to No-Build		Cost		Build LOS
-	Negative Impact	\$	Low	LOS A-B
0	Neutral Impact	\$\$	Moderate	LOS C-D
+	Positive Impact	\$\$\$	High	LOS E-F

2045 No-Build	EB	D (54.7s)	F (129.5s)
	WB	C (28.0s)	D (48.7s)
	NB	D (39.2s)	E (63.2s)
	SB	F (159.8s)	D (46.2s)
	Intersection	F (90.7s)	E (65.0s)

Volvo Parkway: Concept Screening Summary

- MetroQuest survey to present:
 - 1 Partial Displaced Left-Turn
 - 2 Quadrant Intersection



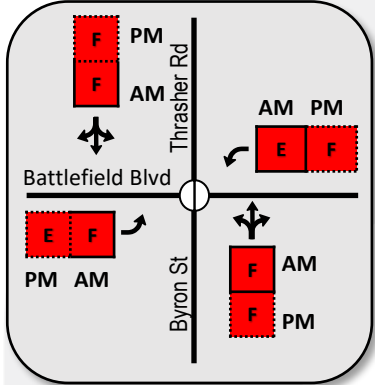
Byron St/ Thrasher Rd: Concept 6 – RCUT

Design Considerations

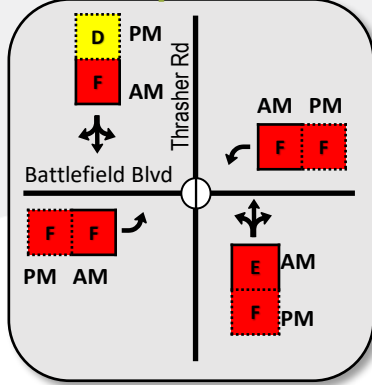
- Vehicle rerouting
- Access impacts
- Discuss closing median

Reduction in conflict points,
improved minor street operations

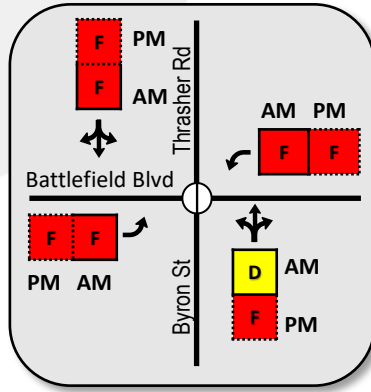
No-Build Results



Concept Results

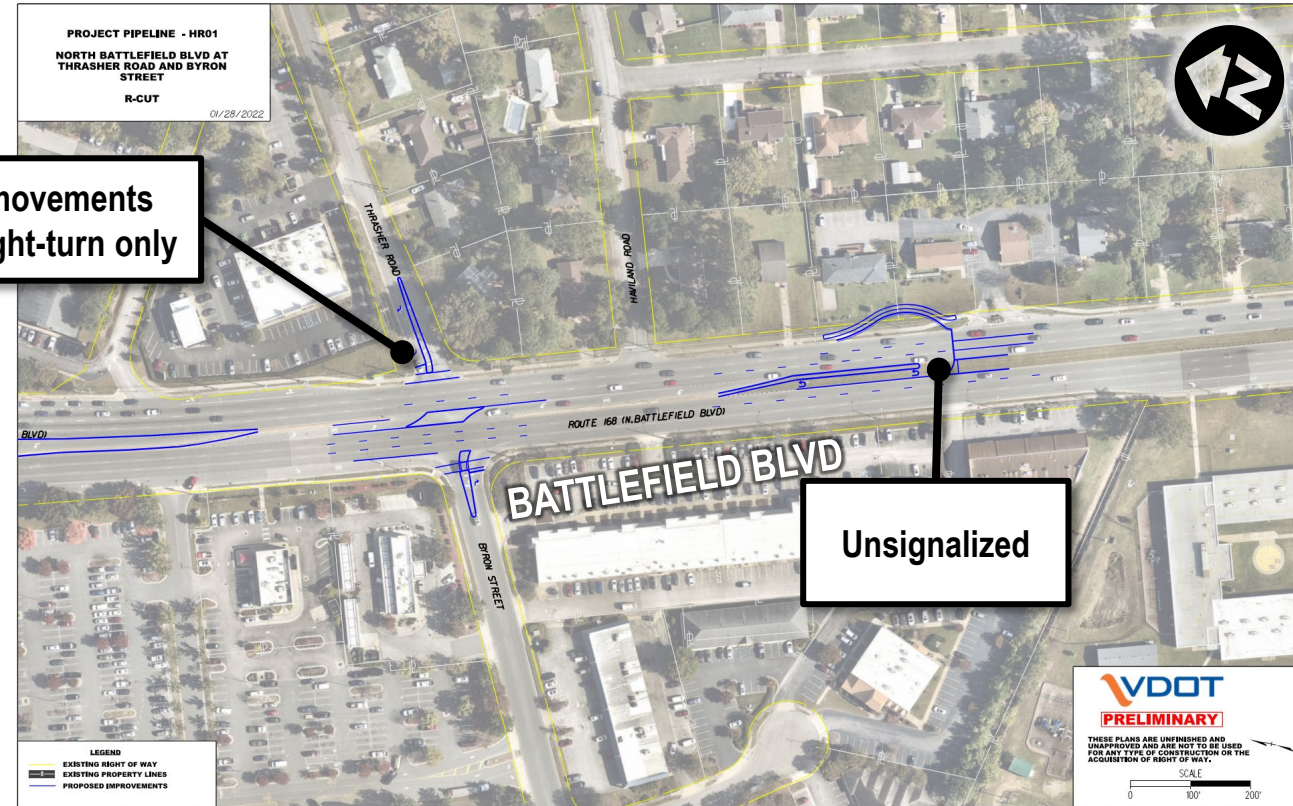


ETT Results



CMF = 0.45
5-Year F+I Crash Reduction = 11.5 crashes

Minor street movements
converted to right-turn only



Stage 1 Cost Estimate Range:
\$2,700,000 – 3,300,000

MetroQuest Survey

- Ped/Bike Improvements
- I-64 Off-Ramp rerouting vehicles at Wal Mart Way
- Access Management near Wal Mart Way
- Partial DLT at Volvo Pkwy
- Partial Quadrant at Volvo Pkwy
- RCUT at Byron St/Thrasher Rd

Battlefield Blvd Corridor (HR01)

More at: <https://va.projectpipeline.org/studies/hampton-roads/hr01-route-168-bus---battlefield-boulevard.asp>

Next Steps

- Finalize and launch MetroQuest survey – comments due Feb. 15, live Feb. 24
- Process MetroQuest results
- Begin drafting Phase 2 project summary sheets
- Identify Phase 3 risks



PROJECT PIPELINE