PROJECT PIPELINE

RT 147 (HUGUENOT ROAD) CORRIDOR STUDY

Workgroup Meeting

DRPT Virginia Department of Rail and Public Transportation

Office of INTERMODAL Planning and Investment

VDOT Virginia Department of Transportation

Agenda

- Introductions
- Project Pipeline Initiative
- Project Status Review
- Next Steps

Introductions

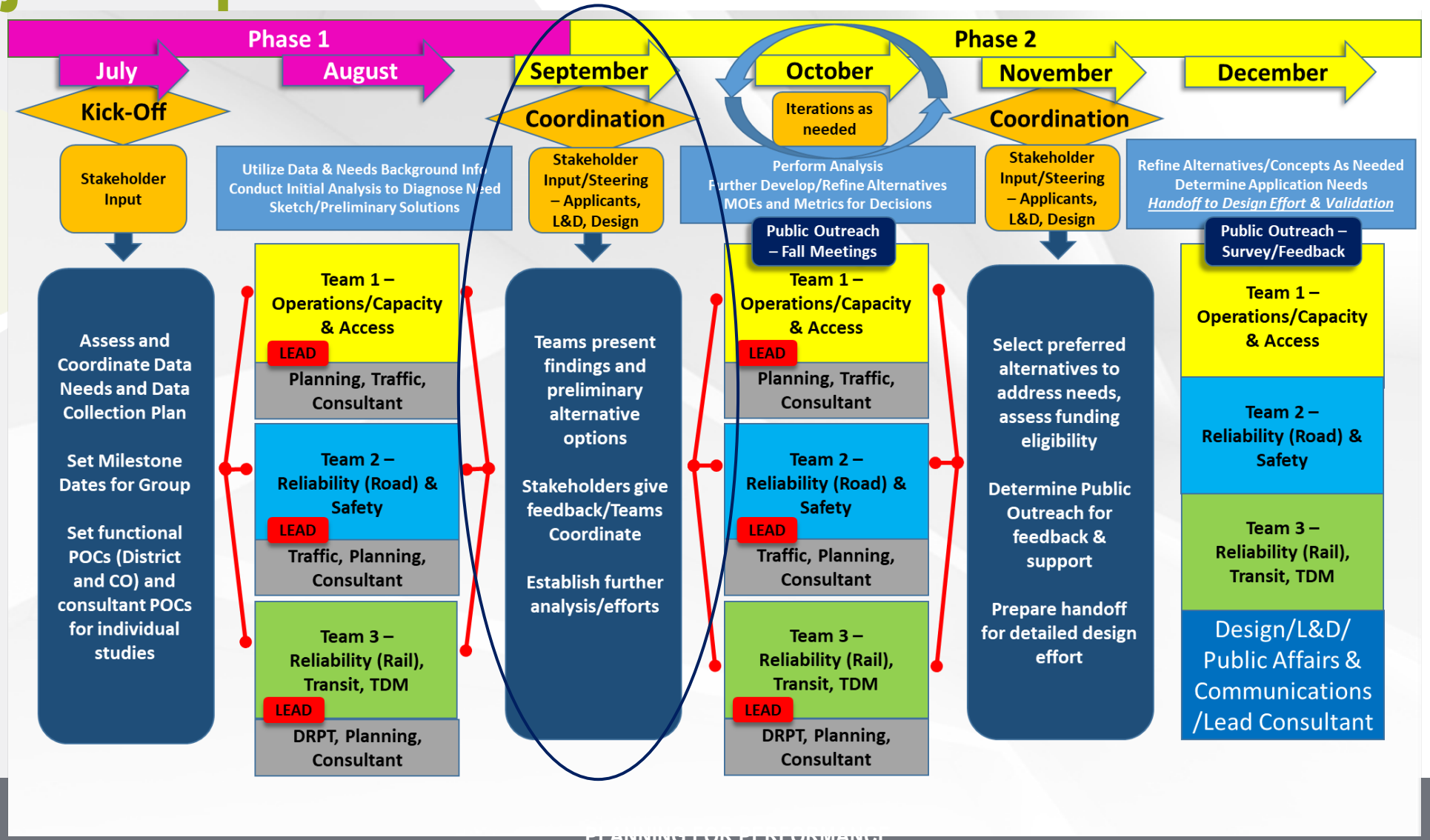
- RK&K Staff
- VDOT Staff
- County Staff

Project Pipeline Initiative

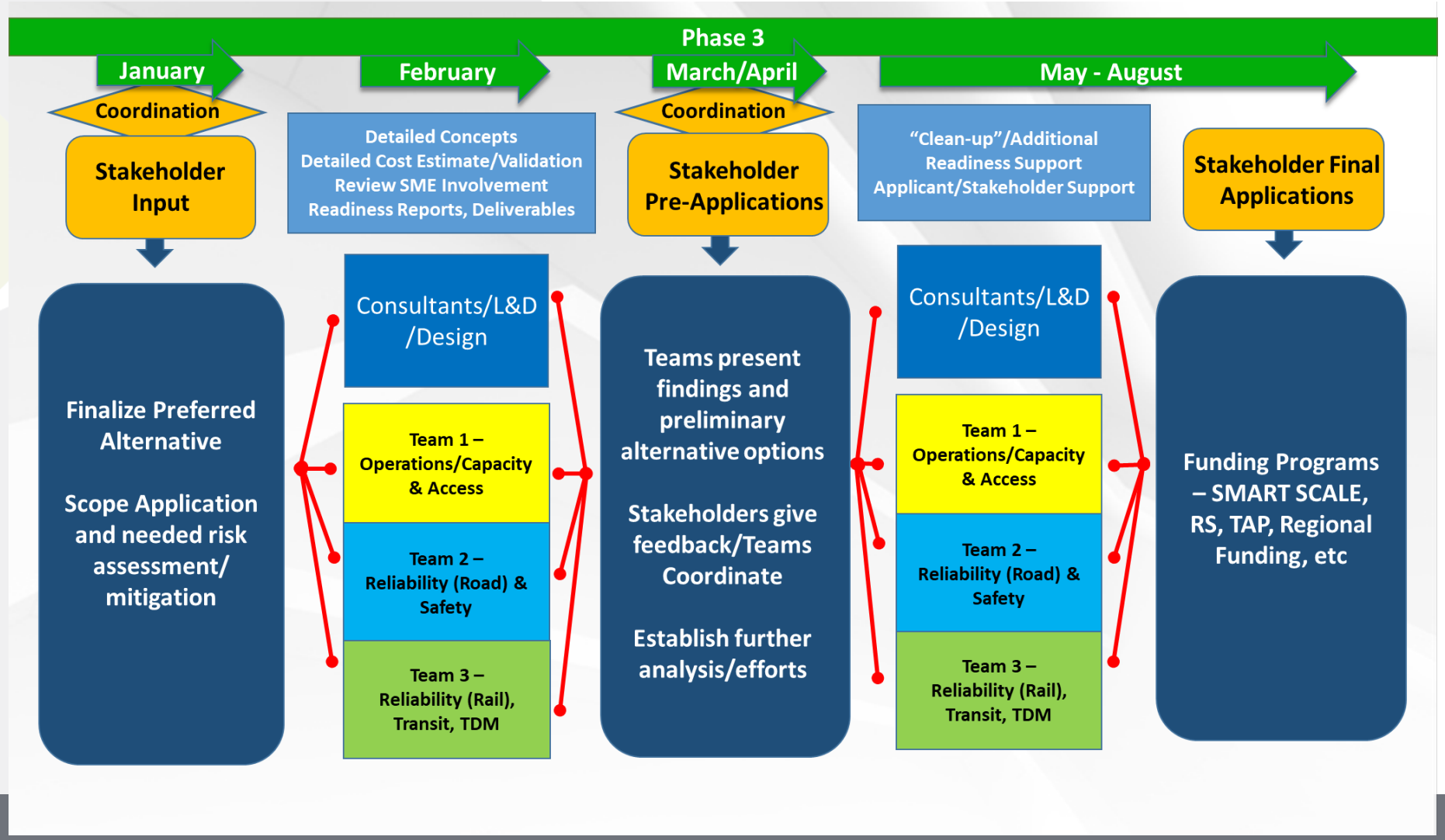
VDOT Project Pipeline

- Address Statewide VTrans Needs
- Evaluate Projects with a Multi-Disciplined Team
- Determine Fundable, Focused Alternatives to Address Needs
- Submit Solutions for Funding

Project Pipeline Process

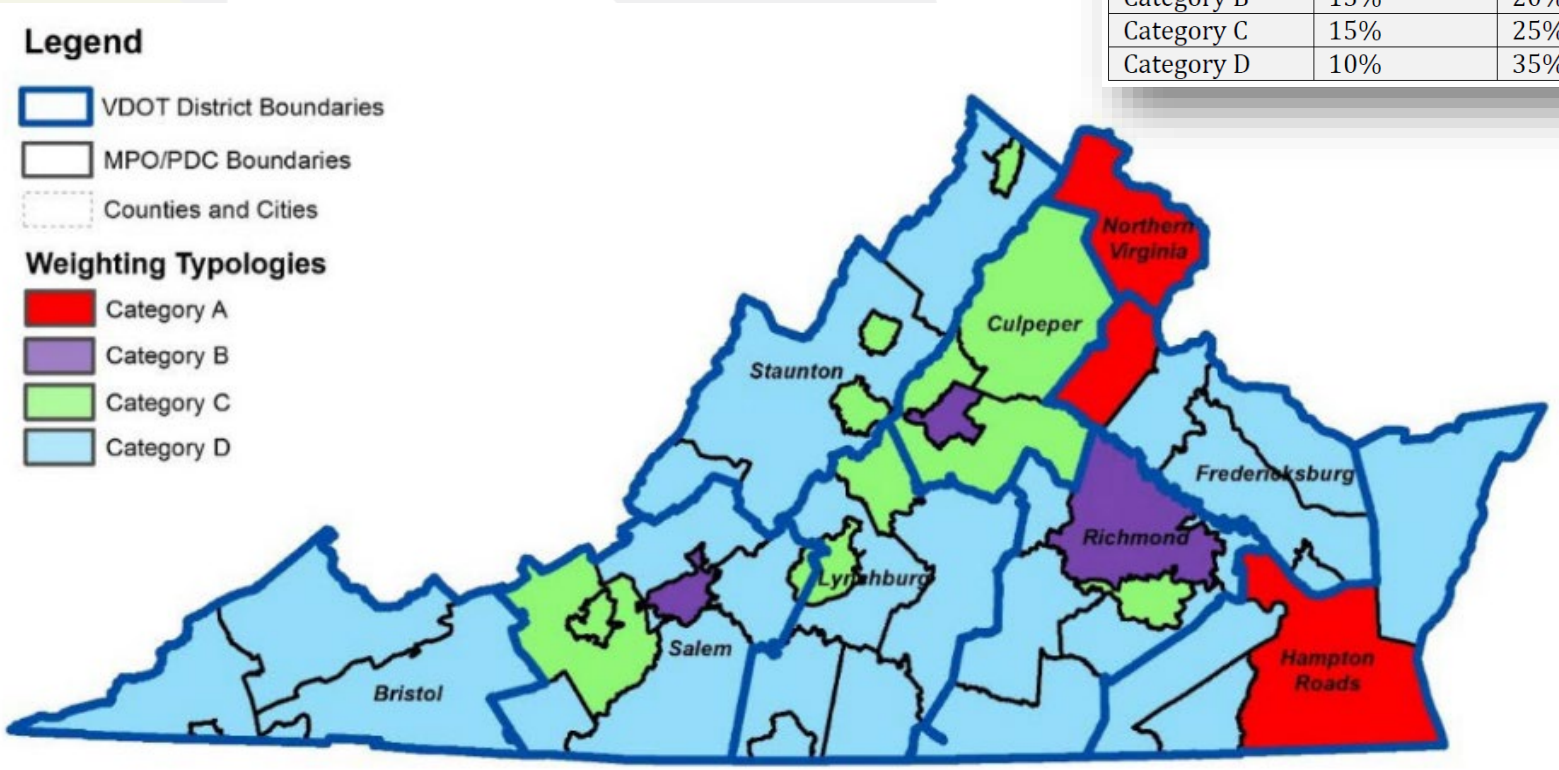


Project Pipeline Process

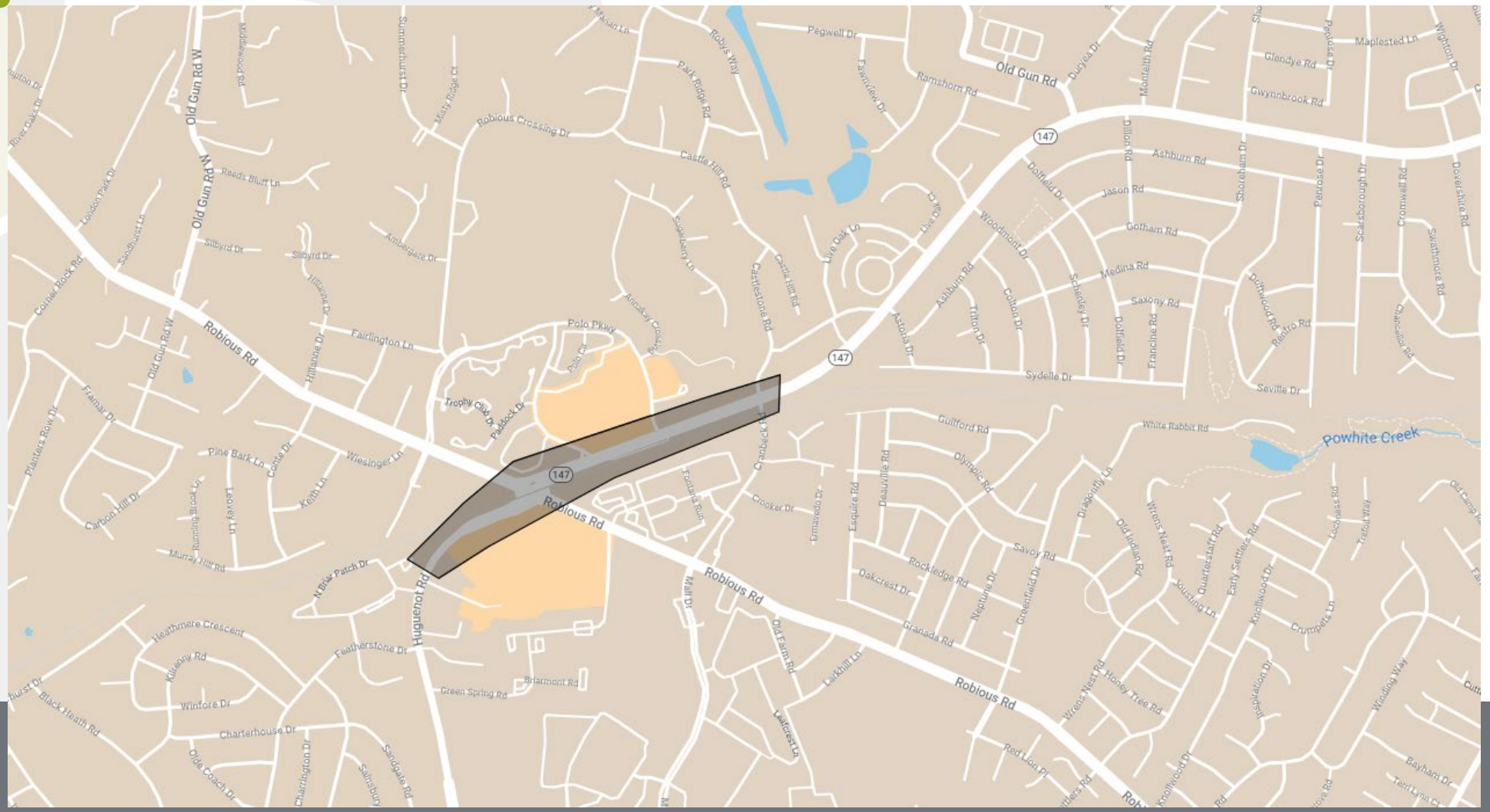


SmartScale Funding

Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	45%	5%	15%	5%	10%	20%
Category B	15%	20%	25%	20%	10%	10%
Category C	15%	25%	25%	25%	10%	-
Category D	10%	35%	15%	30%	10%	-



Project Location



VTrans Needs

	Congestion and Accessibility					Traffic Safety and Reliability			Transit / Travel Demand Management			
	Bicycle Access	Capacity Preservation	Congestion Mitigation	IEDA (UDA) Access	Pedestrian Access	Safety Improvement	Pedestrian Safety Improvement	Reliability	Rail On-time Performance	Transit Access	Transit Access for Equity Emphasis Areas	Transportation Demand Management
RI05. Rt 147 (Huguenot Road)	Very High	Low	Very High	None	Low	None	None	None	None	Very High	None	Very High

Project Status Review

Operational Analysis

- Systemwide Peak Hours
  - 7:45am - 8:45am
  - 4:45pm - 5:45pm

- Applied COVID Factor
  - 1.35 (1.16)
  - Jan 2020 counts along Route 147 EB (W of Route 711) are 20% (4%) higher than Aug 2021 counts

Operational Analysis

Huguenot Road & Robious Road

VJUST Analysis

AM

Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points
Conventional	-	0.70		48
Bowtie	-	0.92	+	24
Partial Displaced Left Turn	-	0.76	-	44
Partial Median U-Turn	-	0.84	+	28
Restricted Crossing U-Turn	-	1.38		20
Single Point	-	0.72	-	32
Conventional 3-Thru lanes	-	0.63		48

PM

Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points
Conventional	-	0.85		48
Bowtie	-	1.15	+	24
Partial Displaced Left Turn	-	0.89	-	44
Partial Median U-Turn	-	1.20	+	28
Restricted Crossing U-Turn	-	1.73		20
Single Point	-	0.77	-	32
Conventional 3-Thru lanes	-	0.78		48

Synchro Analysis

Study Intersection	Movement	Storage Length (Feet)	AM Peak Hour			PM Peak Hour		
			2021 Adj. Volume (vph)	HCM 2010 Delay (s/vehs)	Max Q (Feet)	2021 Adj. Volume (vph)	HCM 2010 Delay (s/vehs)	Max Q (Feet)
SR 147 (Huguenot Road; E-W) at SR 711 (Robious Road; N-S)	EBL	300	506	155.7	300	595	178.5	300
	EBT	-	822	28.9	1380	895	29.0	1485
	EBR	-	110	0.0	185	209	0.0	335
	EB	-	*1438*	*77.2*	*1380*	*1699*	*88.7*	*1485*
	WBL	400	106	62.1	70	147	59.9	340
	WBT	-	687	48.5	315	951	36.2	495
	WBR	-	271	0.0	-	469	0.0	-
	WB	-	*1064*	*50.3*	*315*	*1567*	*39.4*	*495*
	NBL	350	137	46.3	130	206	49.0	350
	NBT	-	382	62.5	230	733	90.3	1050
	NBR	475	46	0.0	5	135	0.0	435
	NB	-	*565*	*58.2*	*230*	*1074*	*81.3*	*1050*
	SBL	425	565	65.1	415	358	108.7	400
	SBT	-	548	55.8	630	542	59.6	650
	SBR	300	433	0.0	280	533	0.0	290
	SB	-	*1546*	*60.5*	*630*	*1433*	*79.1*	*650*
	Overall	-	***4613***	*63.9*	-	***5773***	*72.9*	-

Note: HCM Delay values highlighted in green indicate an LOS of C or better.

Operational Analysis

Huguenot Road & Polo Parkway

VJUST Analysis

AM

Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points
Conventional	-	0.48		48
Continuous Green-T	-	0.45	-	12*
Partial Displaced Left Turn	-	0.48	-	44
Roundabout	-	0.67		8

PM

Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points
Conventional	-	0.57		48
Continuous Green-T	-	0.72	-	12*
Partial Displaced Left Turn	-	0.62	-	44
Roundabout	-	0.81		8

Synchro Analysis

Study Intersection	Movement	Storage Length (Feet)	AM Peak Hour			PM Peak Hour		
			2021 Adj. Volume (vph)	HCM 2010 Delay (s/vehs)	Max Q (Feet)	2021 Adj. Volume (vph)	HCM 2010 Delay (s/vehs)	Max Q (Feet)
SR 147 (Huguenot Road; E-W) at Polo Parkway	EBL	225	129	2.9	135	257	10.6	225
	EBT	-	1364	0.7	205	1135	0.5	255
	EB	-	*1493*	*0.8*	*205*	*1392*	*2.4*	*255*
	WBT	-	993	0.2	195	1434	0.3	345
	WBR	225	259	0.4	85	388	0.7	200
	WB	-	*1252*	*0.2*	*195*	*1822*	*0.3*	*345*
	SBL	-	146	58.4	145	290	54.2	235
	SBR	-	65	62.2	65	164	78.7	110
	SB	-	*211*	*59.6*	*145*	*454*	*63.1*	*235*
	Overall	-	***2956***	*5.2*	-	***3668***	*9.4*	-

Note: HCM Delay values highlighted in green indicate an LOS of C or better.

Operational Analysis

Huguenot Road & Cranbeck Road / Big Oak Lane

Synchro Analysis

Study Intersection	Movement	Storage Length (Feet)	AM Peak Hour			PM Peak Hour		
			2021 Adj. Volume (vph)	HCM 2000 Delay (s/vehs)	Max Q (Feet)	2021 Adj. Volume (vph)	HCM 2000 Delay (s/vehs)	Max Q (Feet)
SR 147 (Huguenot Road; E-W) at Cranbeck Road / Big Oak Lane*	EBL	200	19	8.9	110	29	9.0	200
	EBT	-	1472	25.6	385	1341	19.7	345
	EBR	100	20	9.7	75	57	14.4	100
	EB	-	*1511*	*25.2*	*385*	*1427*	*19.2*	*345*
	WBL	300	252	109.6	250	302	40.8	270
	WBT	-	1224	10.8	225	1733	16.3	365
	WBR	125	3	6.0	25	8	7.0	90
	WB	-	*1479*	*27.6*	*250*	*2043*	*19.9*	*365*
	NBL	-	23	79.6	300	55	377.9	395
	NBT		11			20		
	NBR	175	299	92.5	175	434	104.1	175
	NB	-	*333*	*91.2*	*300*	*509*	*144.3*	*395*
	SBL	-	33	102.0	125	27	86.5	120
	SBT		23			17		
	SBR	100	22	54.0	90	35	53.9	85
	SB	-	*78*	*88.4*	*125*	*79*	*72.0*	*120*
	Overall	**-**	***3401***	*33.8*	-	***4058***	*37.6*	-

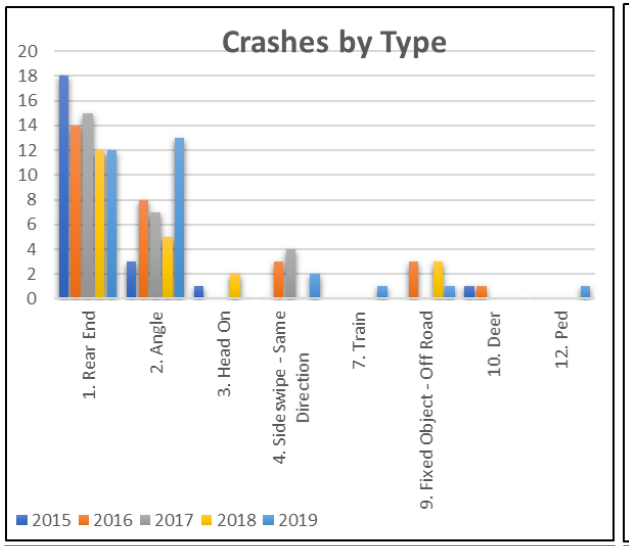
Note: HCM Delay values highlighted in green indicate an LOS of C or better.

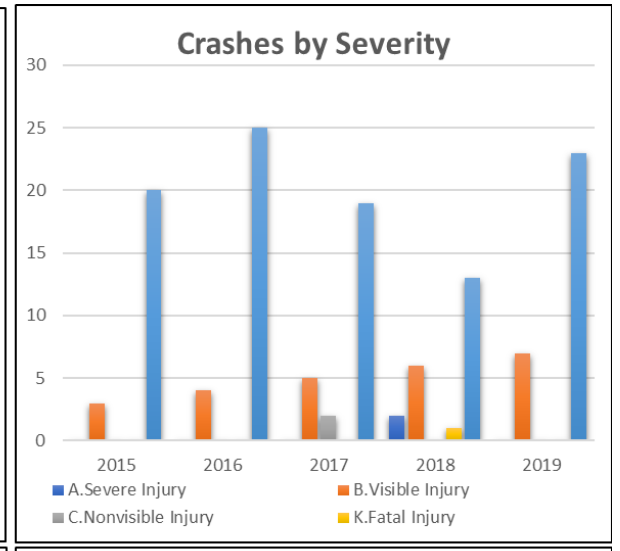
* Synchro results for this non-NEMA phased intersection are based on HCM 2000 module.

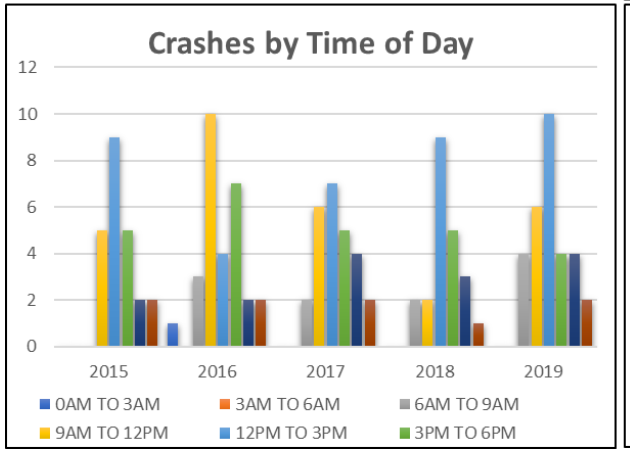
Crash Analysis

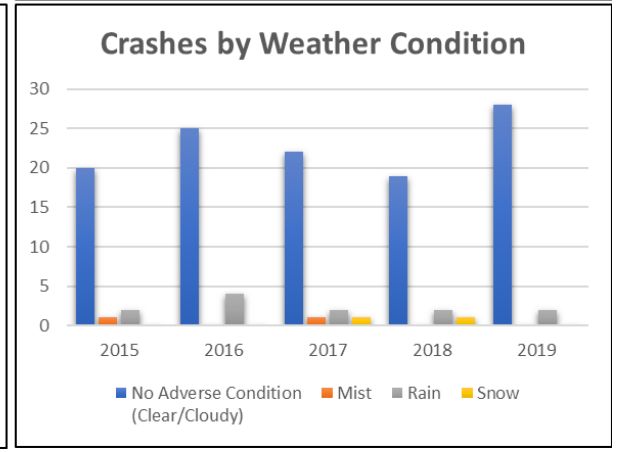
- One hundred and thirty (130) crashes during 2015-2019
  - One (1) Fatal, 29 Injury, 100 PDO
- Seven-one (71) Rear-End, 36 Angle, 9 Sideswipe
- Fifty-nine (59) Rear-End collisions listed

  "Following Too Close" as the cause.
- Sixteen (16) Angle collisions listed "Disregarding a Traffic Signal" as the cause.
- Sixty-eight crashes between 9AM-3PM
  - Twenty-six (26) Crashes between 3PM-6PM
- Twenty-six (26) crashes in 2020









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VA 147 (Huguenot Road) from VA 711 (Robious Road) to Cranbeck Road

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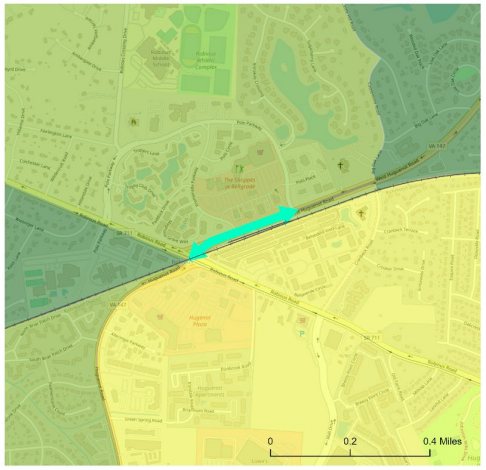
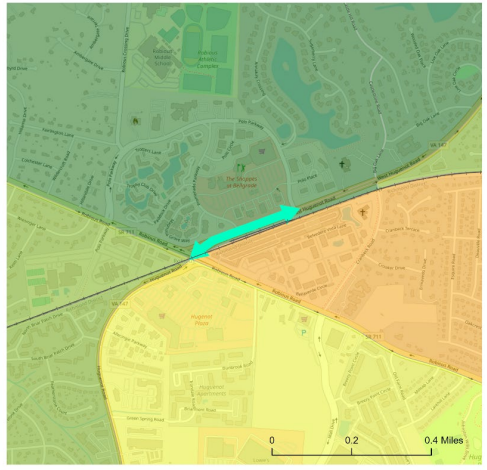
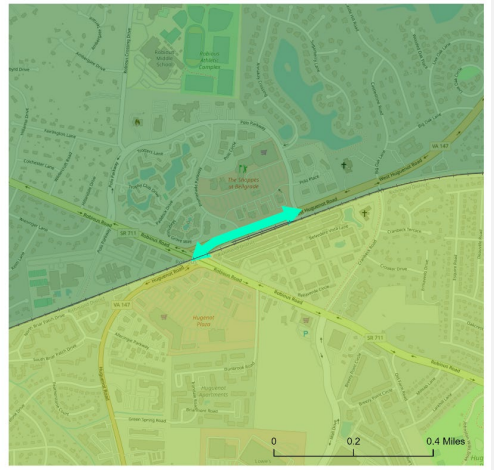
Existing Conditions

	At-grade crossing through the Robious/Huguenot intersection
	RideFinders is the region's commuter assistance program
P	No park and ride lots in immediate area
	No bikesharing and scooter sharing services in this area
	No transit in corridor
	No transit facilities in corridor







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VA 147 (Huguenot Road) from VA 711 (Robious Road) to Cranbeck Road

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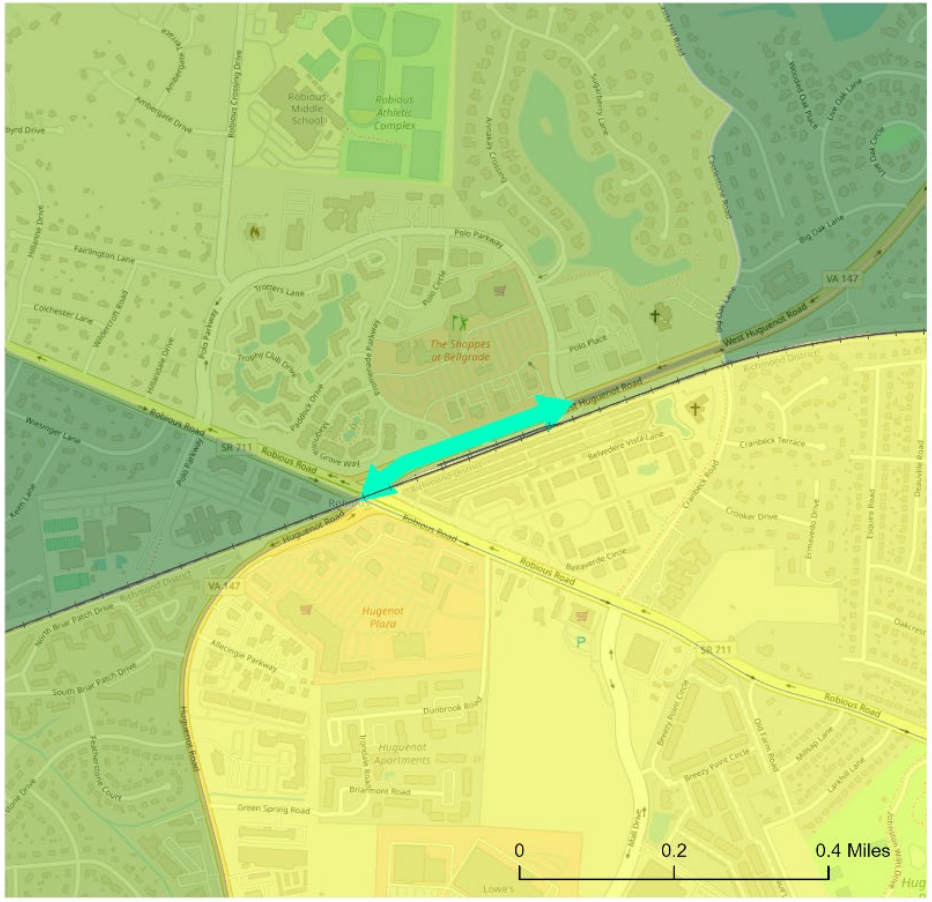


Transportation Infrastructure

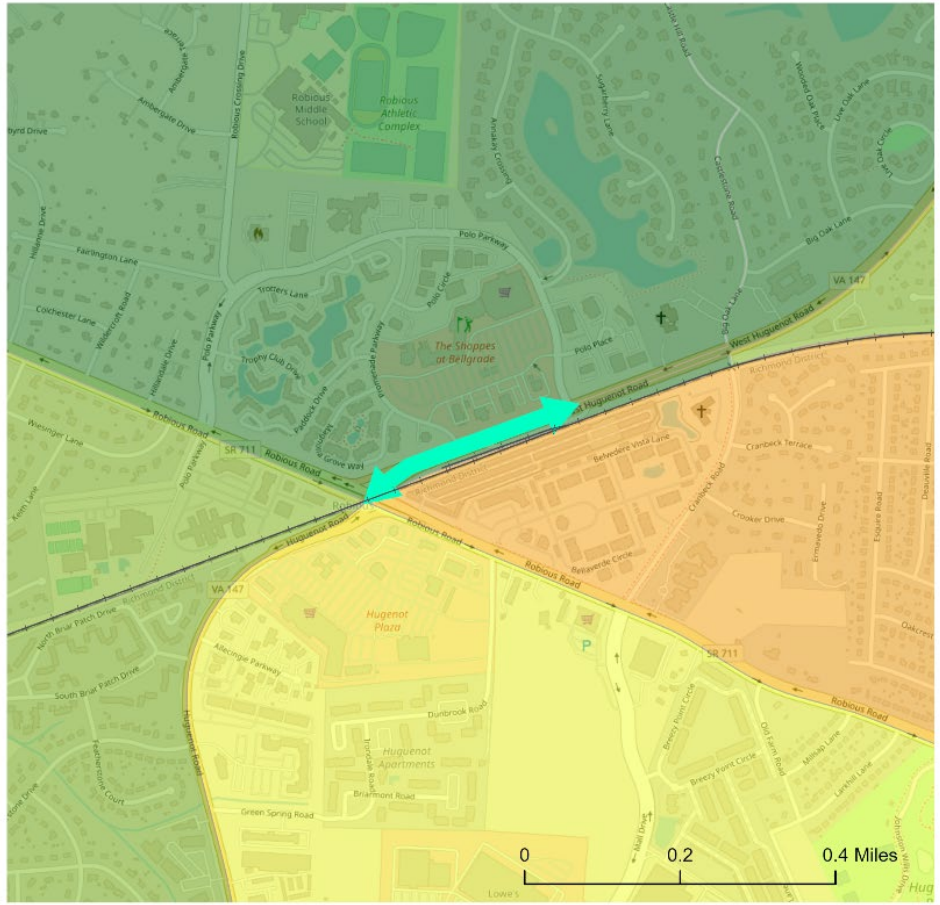
- Park and Ride Locations
- Transit Stops
- Railroads
- Project Corridor

All-Day Service Index

Propensity Score

- *High*
- *Moderately-High*
- *Moderate*
- *Low-Moderate*
- *Low*

The All-Day Service Index identifies locations suitable for all-day transit service by combining the results of the Transit-Oriented Population and Non-Work Indices. At both peak and off-peak hours, locations with significant transit-oriented populations are presumed to require connections to and from jobs or non-work-related trip destinations. This results in a propensity index that identifies major origins or destinations for transit trips that would occur throughout the day.



Transportation Infrastructure

- Park and Ride Locations
- Transit Stops
- Railroads
- Project Corridor

Peak Commuter Index

Propensity Score

- *High*
- *Moderately-High*
- *Moderate*
- *Low-Moderate*
- *Low*

The Peak Index identifies locations suitable for peak-hour service by combining results from the Commuter and Workplace Indices. Locations with significant numbers and densities of commuters are presumed to require connections to and from locations with significant numbers and densities of jobs, especially at peak hours. This results in a propensity index that identifies major origins or destinations for transit trips that would occur during peak hours.

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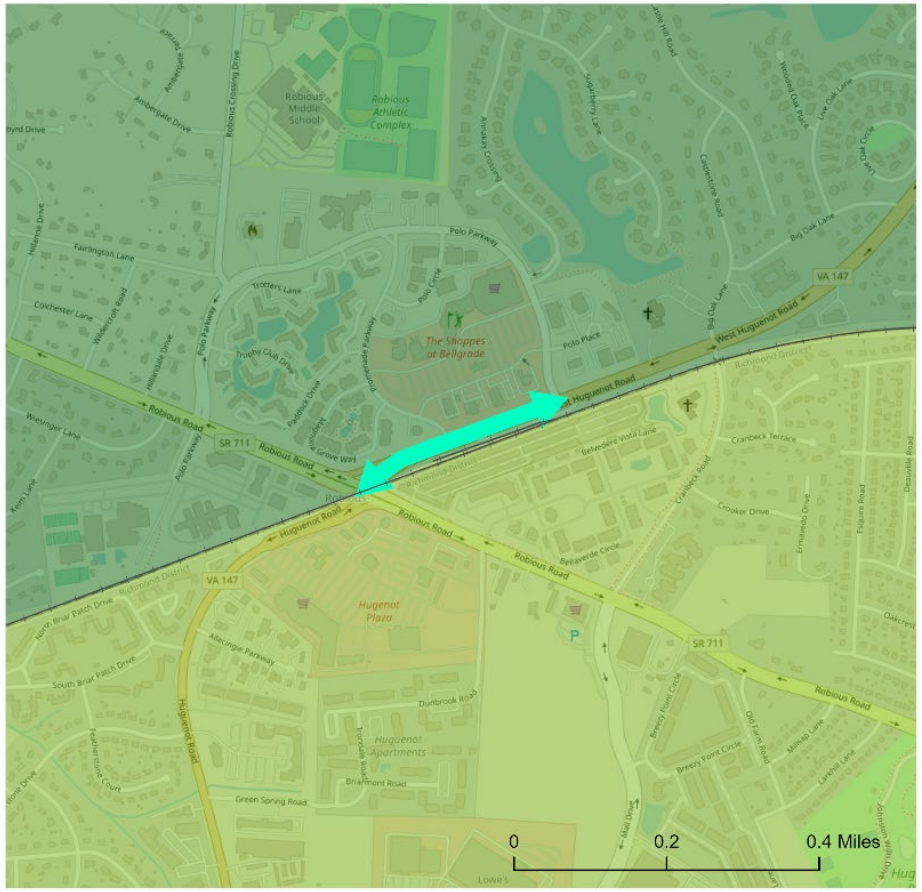
VA 147 (Huguenot Road) from VA 711 (Robious Road) to Cranbeck Road



Transportation Infrastructure

- Park and Ride Locations
- Transit Stops
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- Project Corridor

Transit Potential

Jobs + Population per Acre

- 60+
- 31 - 60
- 16 - 30
- 6 - 15
- 1 - 5
- <1

A separate analysis entirely from Transit Propensity, Transit Potential combines population and employment densities for each Census Block Group to indicate the viability of fixed-route service in an area. In general, regions with a density of at least five jobs plus people per acre relatively may be better suited to support fixed-route transit service; areas with densities lower than five jobs plus people per acre may be better suited to support

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VA 147 (Huguenot Road) from VA 711 (Robious Road) to Cranbeck Road

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Establish pedestrian network in corridor along Huguenot Road and Robious Road

Greater Richmond Transit Vision Plan recommended high-frequency fixed route service on this part of the corridor, connecting Midlothian Turnpike to Henrico County via Huguenot Road and Chippenham/Parham Road

Explore opportunities for a park and ride lot northwest of corridor (at Huguenot Trail and VA 288)

Leverage the existing RideFinders commuter assistance programs to promote the use of transit, carpool and vanpool, and to provide ridematching and commute options information to residents, employers, and employees.

Phase 2 Efforts

- Travel Demand Modeling and Traffic Forecasting
- Field Visit
- Future Year Analysis
- Concept Development
- Alternative Evaluation and Selection

Discussion

Next Steps

Next Steps

- Finalize Existing Conditions Analysis
- Meet with Localities
- Meet with Transit Team
- Begin Phase 2 Analysis