

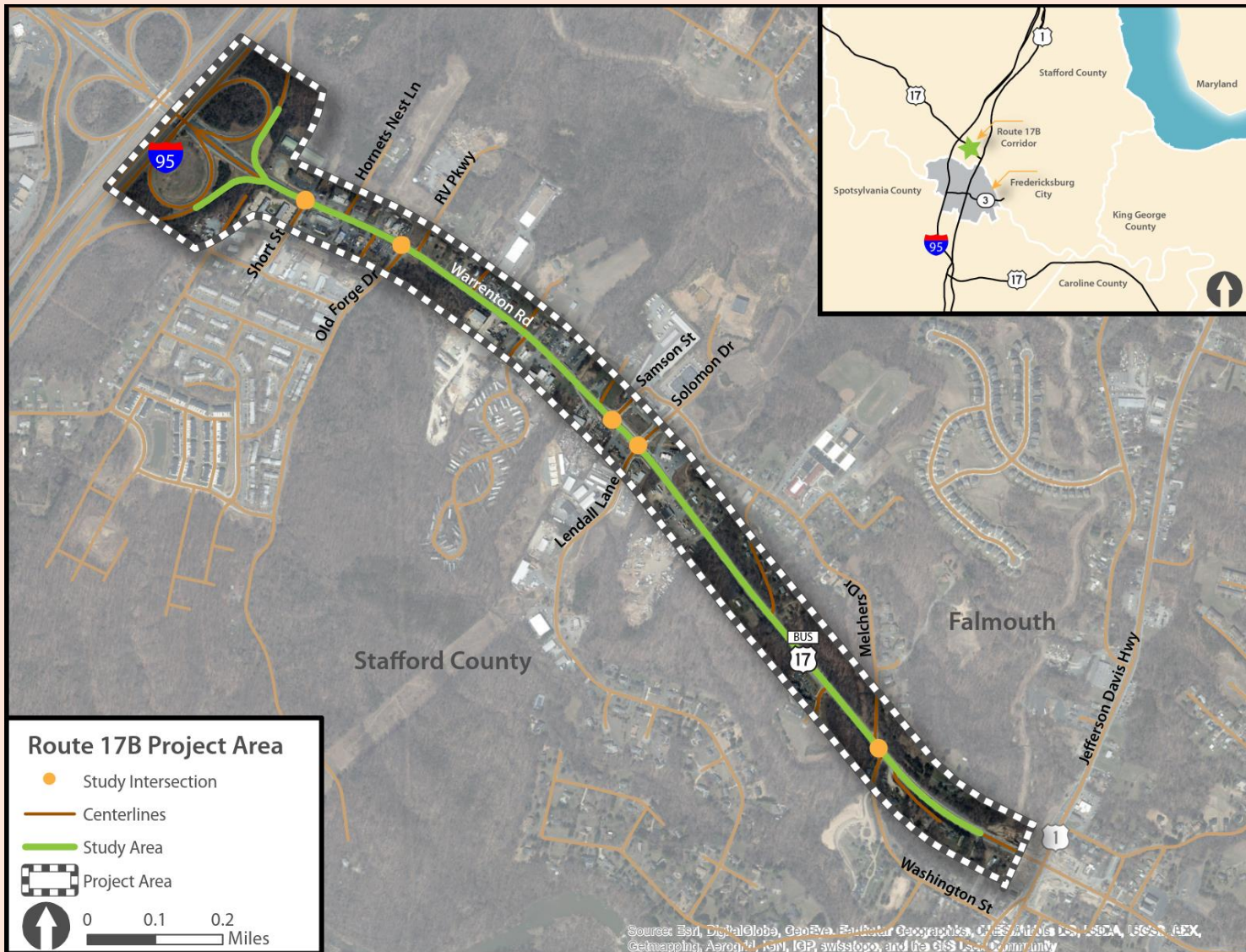
US 17 BUSINESS CORRIDOR STUDY

FROM INTERSTATE-95 TO ROUTE 1001 (WASHINGTON STREET)

Project Description

Route 17 Business between I-95 and Route 1 at Falmouth is a critical east west route in southern Stafford County providing access between the City of Fredericksburg to retail centers and residences east and west of I-95. It experiences heavy congestion during peak hours and has a higher crashes when compared to the statewide average. VDOT has recently completed improvement projects surrounding this corridor, highlighting the need to identify and evaluate additional improvements along this corridor to address congestion and safety issues.

US 17 Business Project Area and Location Map



Planning Level Cost Estimate

Phase	Six Year Improvement Program
Preliminary Engineering	\$650,000
ROW and Utility Relocation	\$219,000
Construction	\$4,243,000
Total Cost =	\$5,112,000

Note: Cost estimates reported in 2017 dollars

Traffic Operations Improvements

- Addition of lane capacity
- Turn lane storage length extensions
- Traffic signal timing/phasing improvements
- Lane re-configurations
- Traffic signage modifications and improvements

Targeted Safety Improvements

- Access management measures
- Geometric improvements
- Pavement marking improvements
- Pedestrian/bike facilities improvements
- Sight Distance improvements

Crash Reduction

2030 – No Build	2030 – Build
53 Expected Crashes	46 to 50 Expected Crashes
6-12% REDUCTION	

Project Benefits

Traffic Operations Measures	
2030 No Build Delay*	423,054 seconds
2030 Build Delay*	384,092 seconds
Δ Delay (% Change)	-38,962 seconds (-9%)
20-Year Operations Savings	\$2,189,798.00

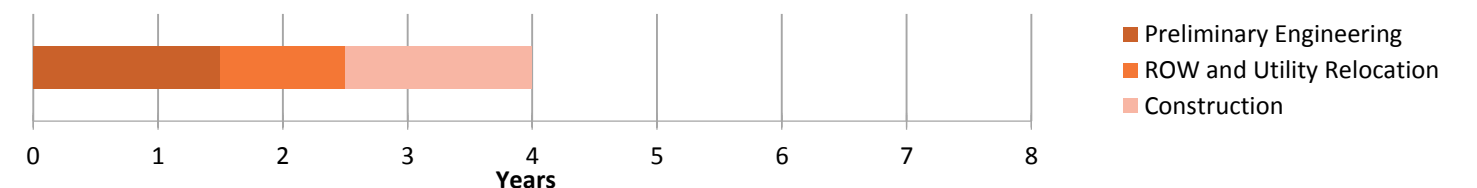
*Compounded AM and PM weekday travel delay in the influence area of all the proposed improvements within the corridor

- Reduced travel time and delay through the corridor
- Improved travel speeds through the corridor
- Improved signal timing and phasing
- Improved pavement markings and signing
- Improved sight distances
- Improved safety for road users

Benefit/Cost Ratio: 0.4

Benefit/Cost calculated using the midpoint of the cost estimate range

Project Schedule



US 17 BUSINESS CORRIDOR STUDY

PREFERRED IMPROVEMENT, SHORT STREET & OLDE FORGE DRIVE (ALTERNATIVE A)

Existing Conditions

Short Street

- Major Collector
- 4-legged signalized intersection

Olde Forge Drive

- Collector facility
- Unsignalized T-intersection
- Minor street movements experience heavier delay and a LOS D or worse
- Eastbound and westbound directions experience lengthy queues

Planning Level Cost Estimate

Phase	Six Year Improvement Program
Preliminary Engineering	\$470,000
ROW and Utility Relocation	\$188,000
Construction	\$3,066,000
Total Cost =	\$3,724,000

Note: Cost estimates reported in 2017 dollars



Eastbound Approach at Short Street

Project Benefits

Traffic Operations Measures	
2030 No Build Delay*	225,673 seconds
2030 Build Delay*	196,166 seconds
Δ Delay (% Change)	-29,507 seconds (-13%)
20-Year Operations Savings	\$1,658,366.00

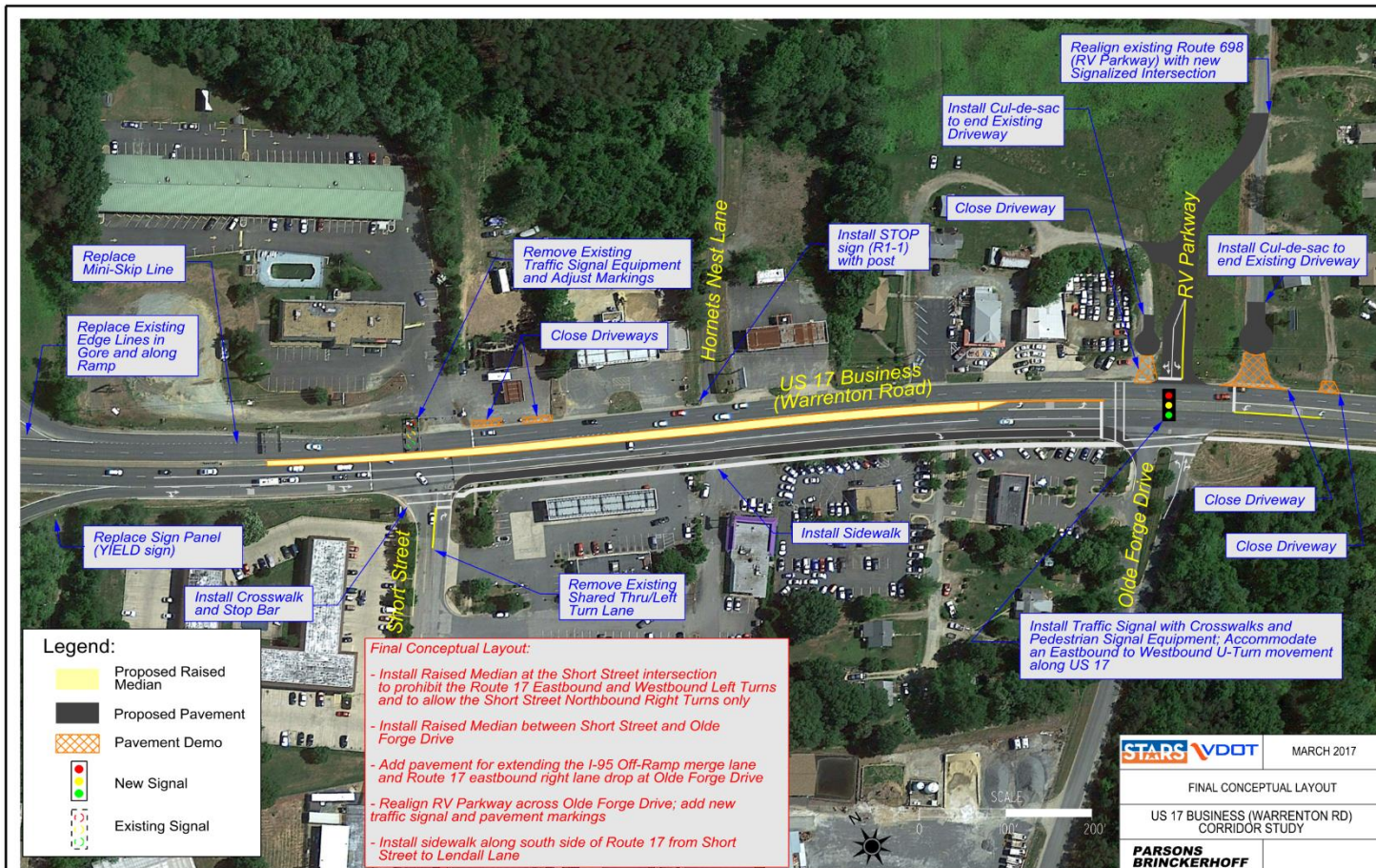
*Total of AM and PM weekday travel times in the influence area of the proposed improvement

- Provides longer merging distance for I-95 off-ramp traffic
- Adds capacity at the Older Forge Drive intersection
- Provides improved access for RV Parkway
- Improved safety for road users

Benefit/Cost Ratio: 0.4

Benefit/Cost calculated using the midpoint of the cost estimate range

Final Alternative Layout, Alternative A



Operations Benefits

Movement	Short Street Intersection Queues (feet)			
	2030 No-Build (Signalized)		2030 Build (Unsignalized)	
	AM	PM	AM	PM
Eastbound LT	267	281	--	--
Eastbound TH	247	287	0	0
Eastbound R	13	47	0	0
Westbound L	44	50	4	9
Westbound TH	136	132	0	0
Westbound TR	177	156	0	0
Northbound LT	180	210	--	--
Northbound R	49	73	11	14
Southbound LT	23	52	--	--
Southbound R	50	38	2	3

Project Schedule

