

July 31, 2017

Route 28 Corridor Feasibility Study



Executive Committee Meeting #2

Agenda

- I. Introduction
- II. 2040 No-Build Alternative
- III. Review of Study Progress
- IV. 2nd Screening Evaluation of Alternatives
 - a. Costs
 - b. Project Benefits
 - c. Environmental
 - d. Socioeconomic / ROW Impacts
 - e. Highest Ranked Alternative
- V. Public Meeting
- VI. Next Steps
- VII. Open Discussion

II. 2040 No-Build Alternative



II. 2040 No-Build Alternative

- Maintain existing conditions and lane configurations.
- Fairfax Design Build Project included

2040 No-Build Volumes

- Consistent with Fairfax County's Route 28 Design Build project.
- Includes future buildout of the following developments
 - 7-Eleven in the NE quadrant of Route 28 and Falls Grove Drive/Yorkshire Lane
 - Additional 110 townhomes along Falls Grove Drive
 - 400 apartment homes along Orchard Bridge Drive

II. 2040 No-Build Alternative

Volumes

Route 28 ADT

• Historic Downtown:	2016	21,300	2040 No-Build	29,200
• Between Liberia Ave and Manassas Dr:	2016	46,000	2040 No-Build	60,800
• Bull Run:	2016	57,300	2040 No-Build	76,200

Annual growth rate approximately 1.4%

II. 2040 No-Build Alternative

Operational Results

Travel Times

- Route 28 from Godwin Drive to Route 29

AM northbound	2016 ~ 48 mins.	2040 No-Build ~ 47 mins. *
PM southbound	2016 ~ 22 mins.	2040 No-Build ~ 55 mins. *
TOTAL	2016 ~ 70 mins.	2040 No-Build ~ 102 mins.

* Travel time in the northbound direction remains essentially the same compared to the existing conditions due to the Route 28 widening in Fairfax County mitigating the northbound delays. Southbound delays increase due to no-build condition south of Compton Road.

II. 2040 No-Build Alternative

Operational Results

LOS

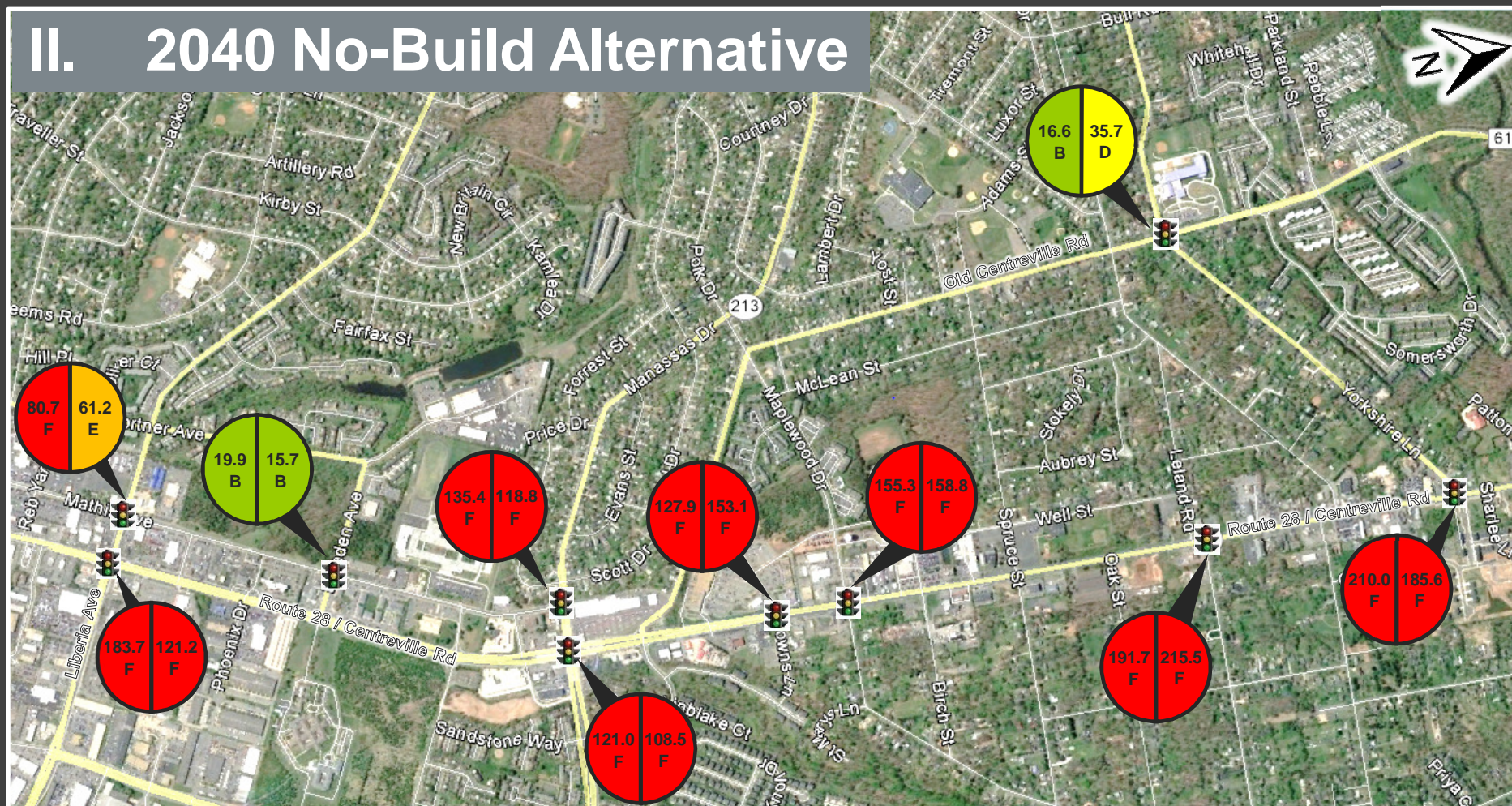
- Intersections operating over capacity (LOS F)* in either AM or PM peak hour:

2016 - 4 out of 29 – 14%

2040 No-Build - 16 out of 29 – 55%

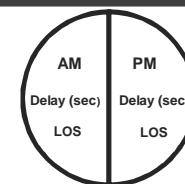
* Queuing along the corridor causes additional intersections to operate at capacity (LOS E)

II. 2040 No-Build Alternative



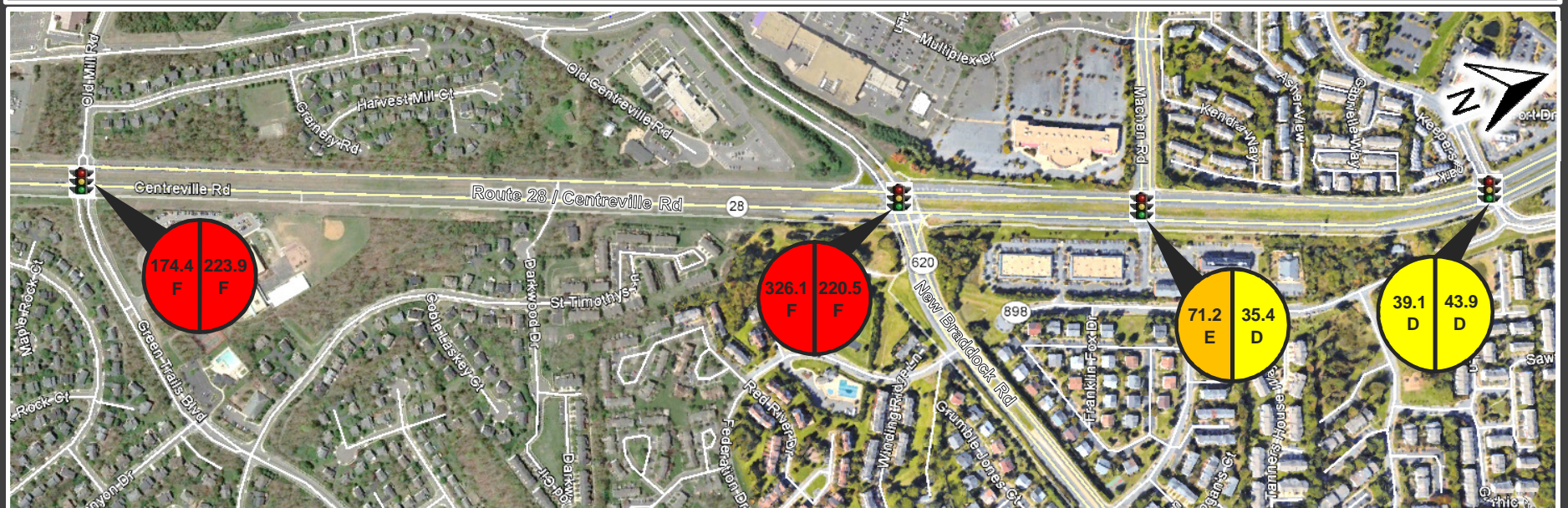
Legend

Level of Service



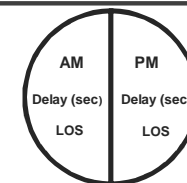
Note: Map not to scale

II. 2040 No-Build Alternative



Legend

Level of Service



Note: Map not to scale

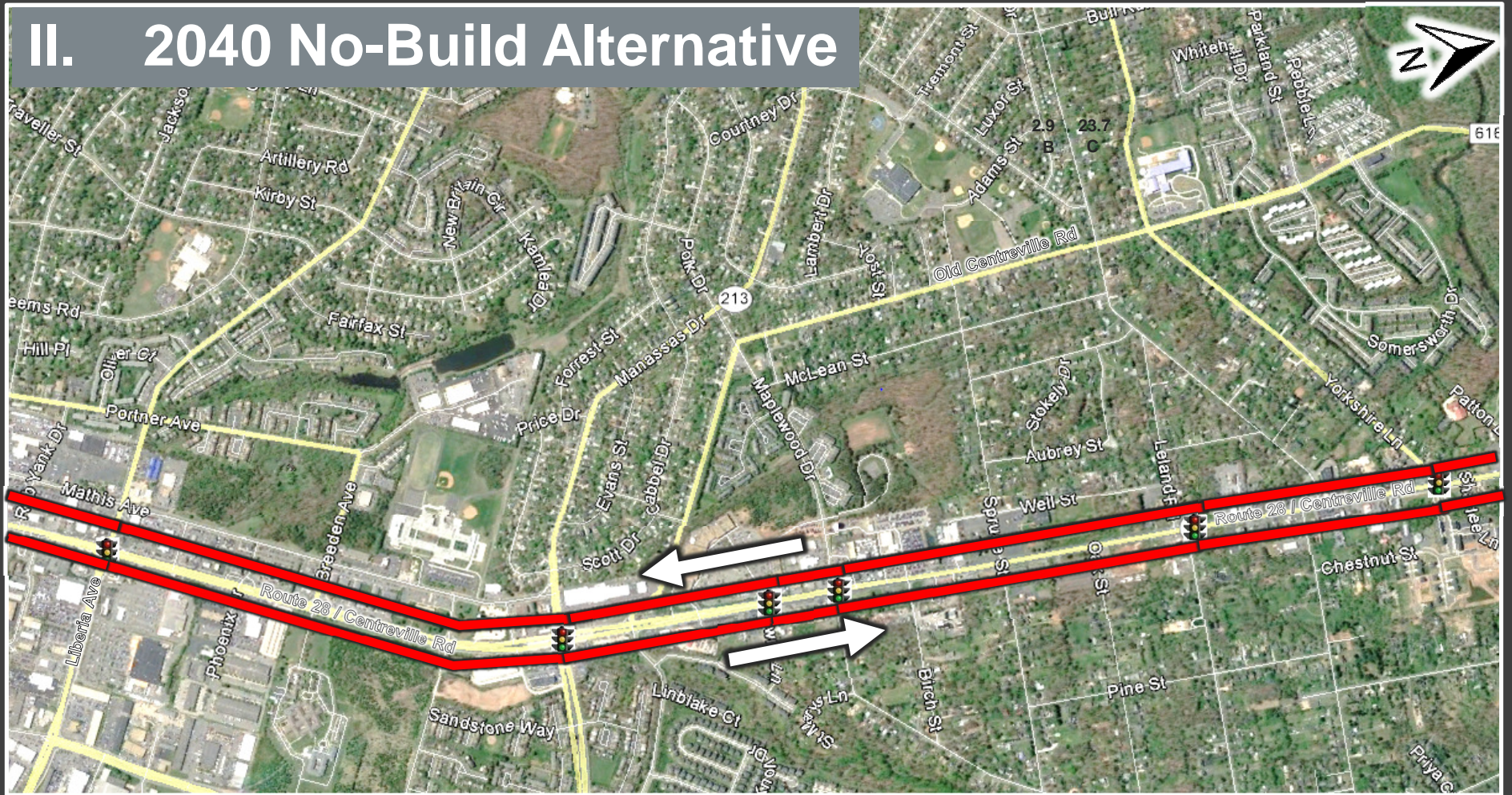
II. 2040 No-Build Alternative

Operational Results

Queuing

- Similar to Existing Conditions – excessive queuing, turn blocking, and system instability creating safety concerns between Liberia Ave and New Braddock Road along Route 28

II. 2040 No-Build Alternative



Legend

Level of Service

LOS "A" through "C" LOS "D" LOS "E" LOS "F"



AM Northbound



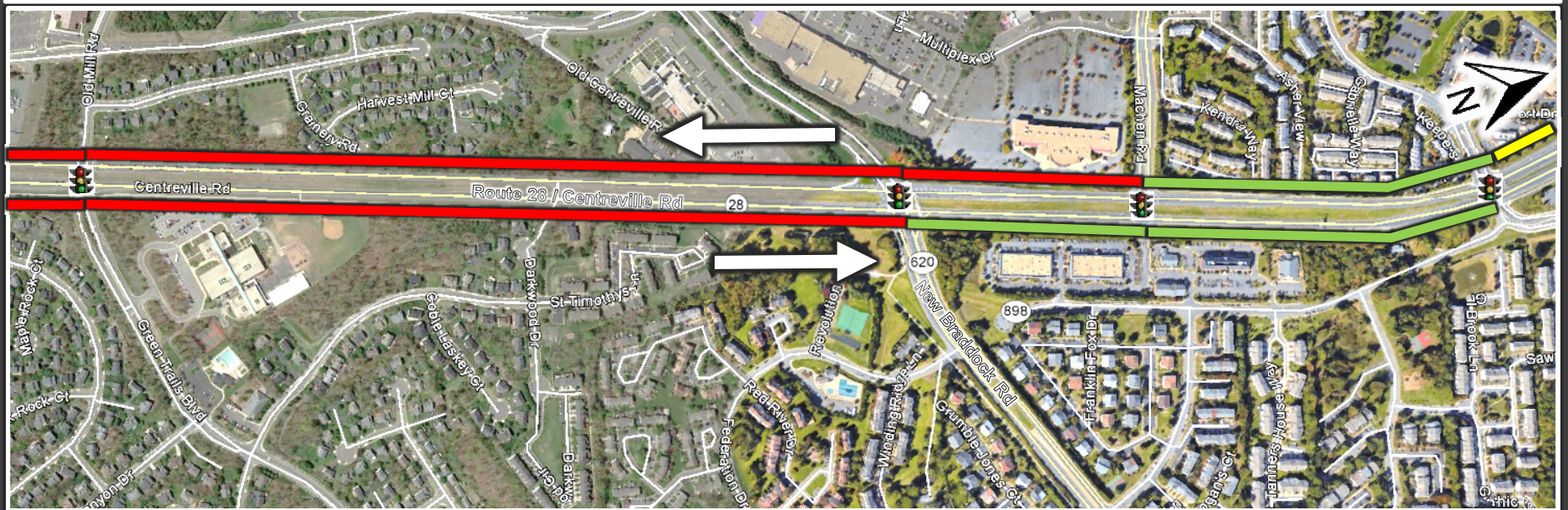
PM Southbound



Signalized Intersection

Note: Map not to scale

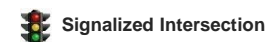
II. 2040 No-Build Alternative



Legend

Level of Service

█ LOS "A" through "C"
 █ LOS "D"
 █ LOS "E"
 █ LOS "F"



AM Northbound



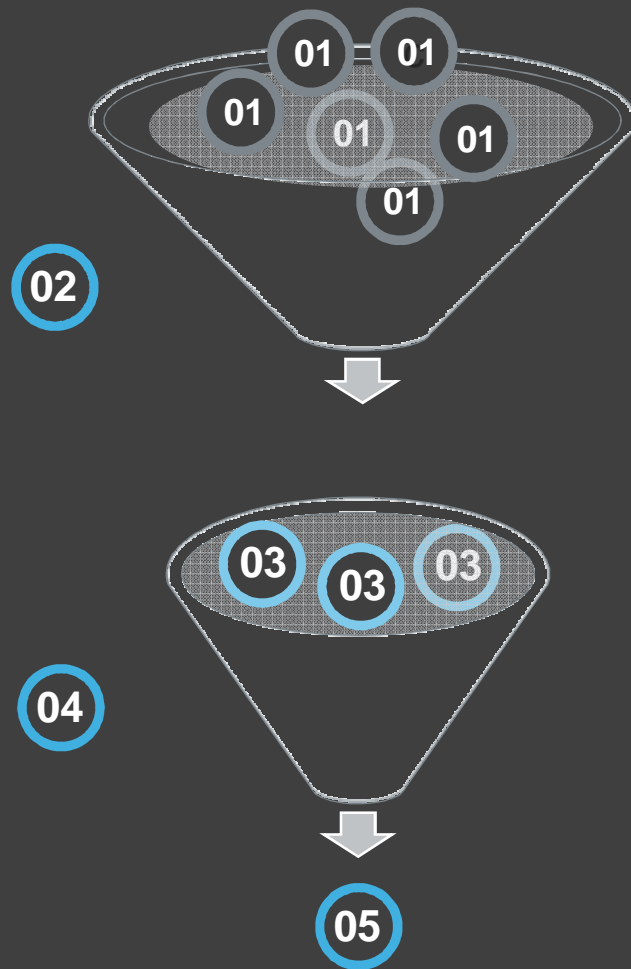
PM Southbound

Note: Map not to scale

III. Review of Study Progress



III. Alternatives Screening / Evaluation



01 Preliminary Alternatives

02 Initial Screening

Criteria:

- Meeting study goals objectives
- Environmental Impacts
- Property Impacts
- Traffic Benefits
- Policy Considerations & Long Term Solution

03 Feasible Alternatives

Four Advanced for Further Evaluation and Study

04 Alternatives Evaluation

Criteria:

- Project Cost
- Project Benefits
- Environmental Impacts
- Socioeconomic / Right of Way Impacts

05 Highest Ranked Alternative

III. Preliminary Alternatives Screening / Evaluation

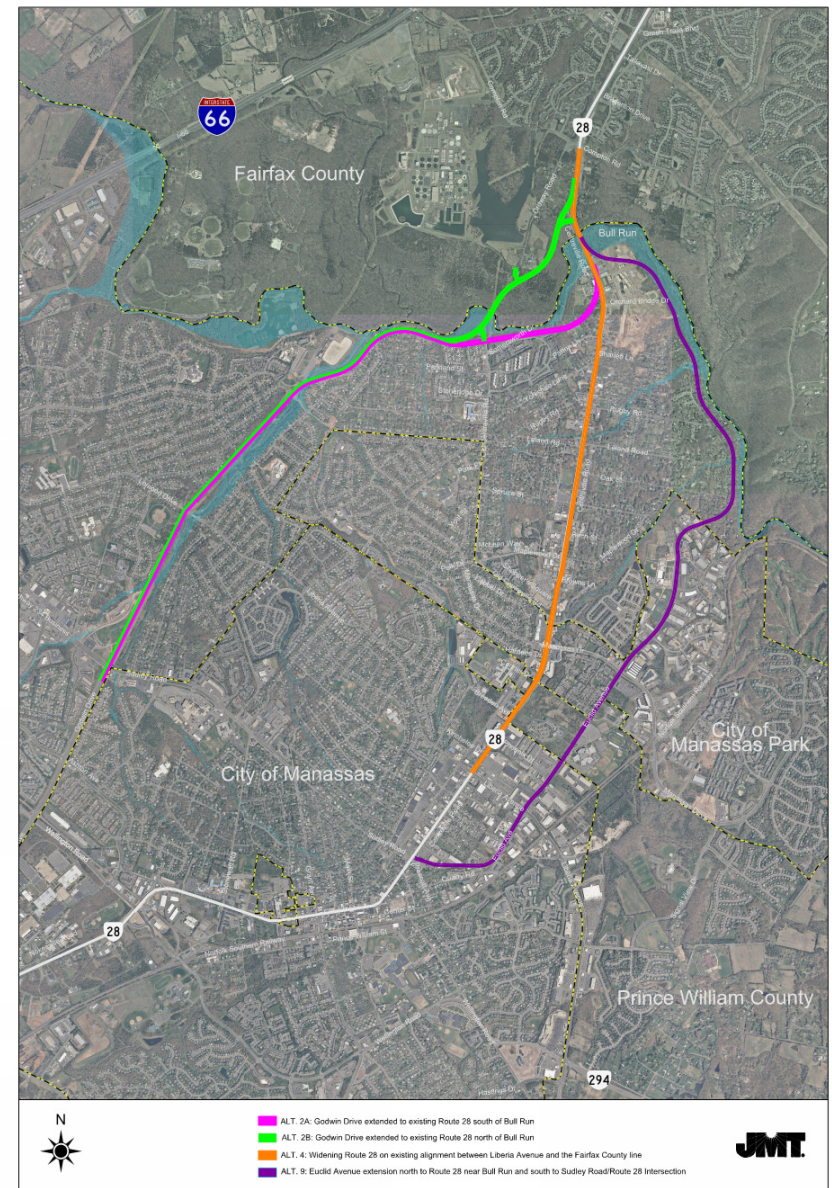
Alternatives moved forward for further study

- ALT. 2A: Godwin Drive extended to existing Route 28 south of Bull Run
- ALT. 2B: Godwin Drive extended to existing Route 28 north of Bull Run
- ALT. 4: Widening Route 28 on existing alignment between Liberia Avenue and the Fairfax County line
- ALT. 9: Euclid Avenue extension north to Route 28 near Bull Run and south to Sudley Road/Route 28 Intersection

Route 28 Corridor Feasibility Study



Route 28 Corridor Feasibility Study Alternatives 2A, 2B, 4, 9



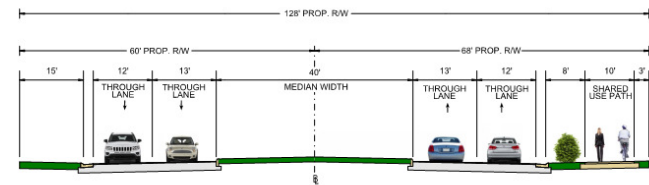
These alignments are conceptual in nature and are intended to serve as representations of the alternatives being studied. The alignments will be refined to address impacts. Imagery Courtesy of Google Earth.

III. Preliminary Alternatives Screening / Evaluation

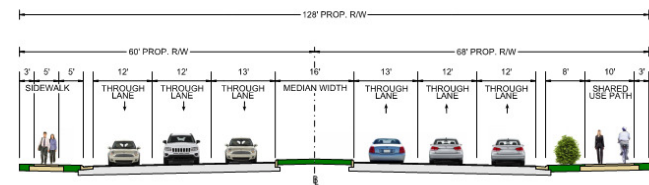
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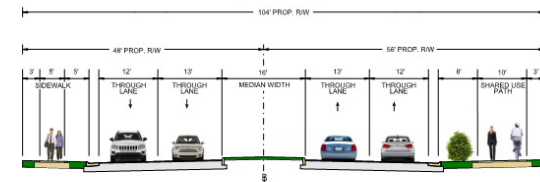
Alternatives 2A, 2B
Typical Section
(Not to Scale)



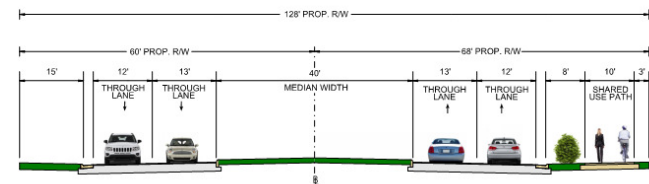
Alternative 4
Typical Section
(Not to Scale)



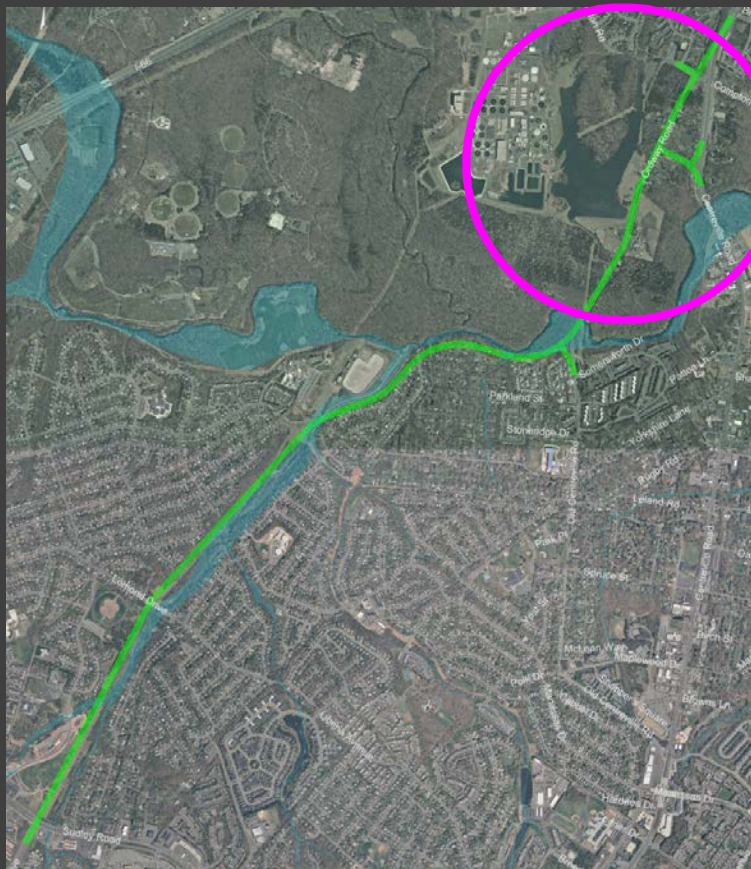
Alternative 9
(Southern Portion)
Typical Section
(Not to Scale)



Alternative 9
(Northern Portion)
Typical Section
(Not to Scale)



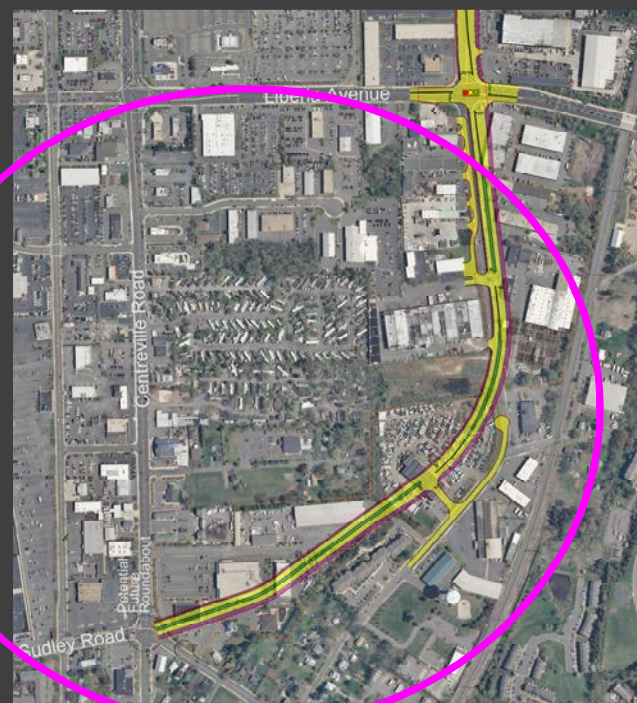
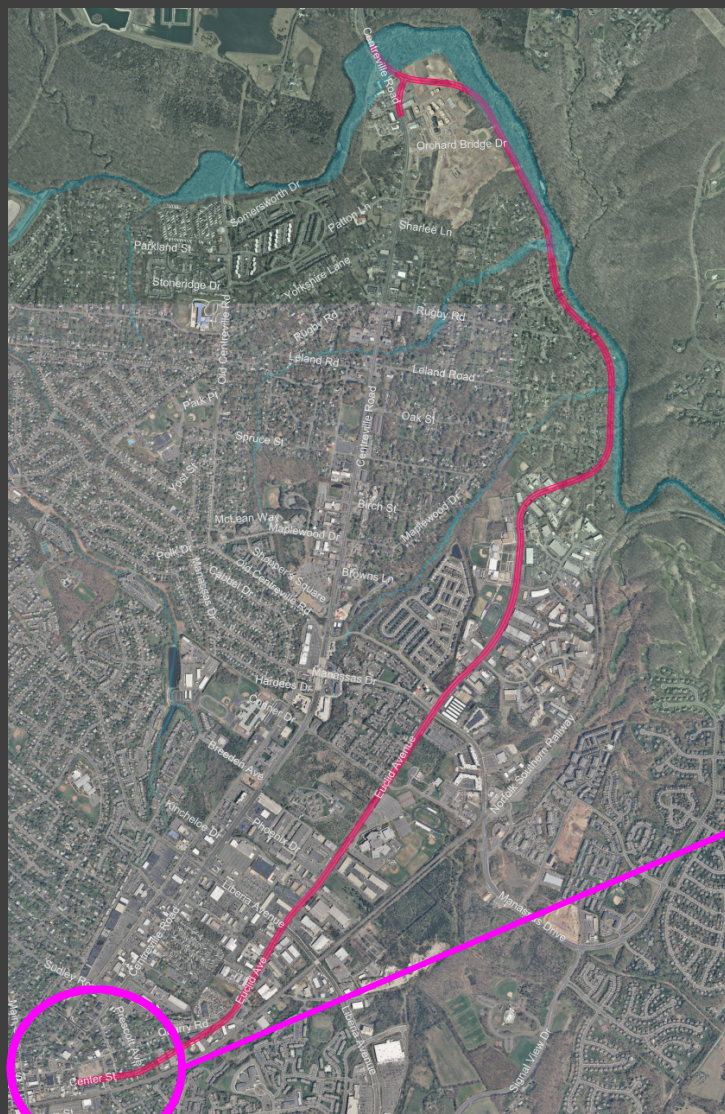
III. Adjustments to Preliminary Alternatives



Alt 2B – Godwin
Drive Extended to
north of Bull Run

III. Adjustments to Preliminary Alternatives

Alt 9 – Euclid Avenue Extension North & South



Roundabout is being planned for Route 28/ Sudley Road by City of Manassas

III. Adjustments to Preliminary Alternatives



Alt 2A – Godwin Drive Extended to south of Bull Run

Alt 2B – Godwin Drive Extended to north of Bull Run



III. Conceptual Design of Alternatives



Route 28 Corridor Feasibility Study - Alternative 2A (1 of 2)



Project Location



North Arrow & Scale



Legend

- Proposed Road
- Proposed Median
- Proposed Sidewalk/Shared Path
- Proposed Bridge
- 100-yr Flood Plain
- Proposed Right-of-Way
- Proposed Property Acquisition
- Signalized Intersection
- City/County Limits

Route 28 Corridor Feasibility Study - June 20th, 2017
Prince William County, Virginia








These drawings are conceptual and preliminary in nature and are intended to serve as representations of the information being studied. Plans shown are subject to change as more information is obtained as the project moves forward through the environmental, public involvement and design processes. These drawings are not intended to be used for construction or other purposes and should not be used for any other purpose. The drawings are not intended to be used for any other purpose. The drawings are not intended to be used for any other purpose.

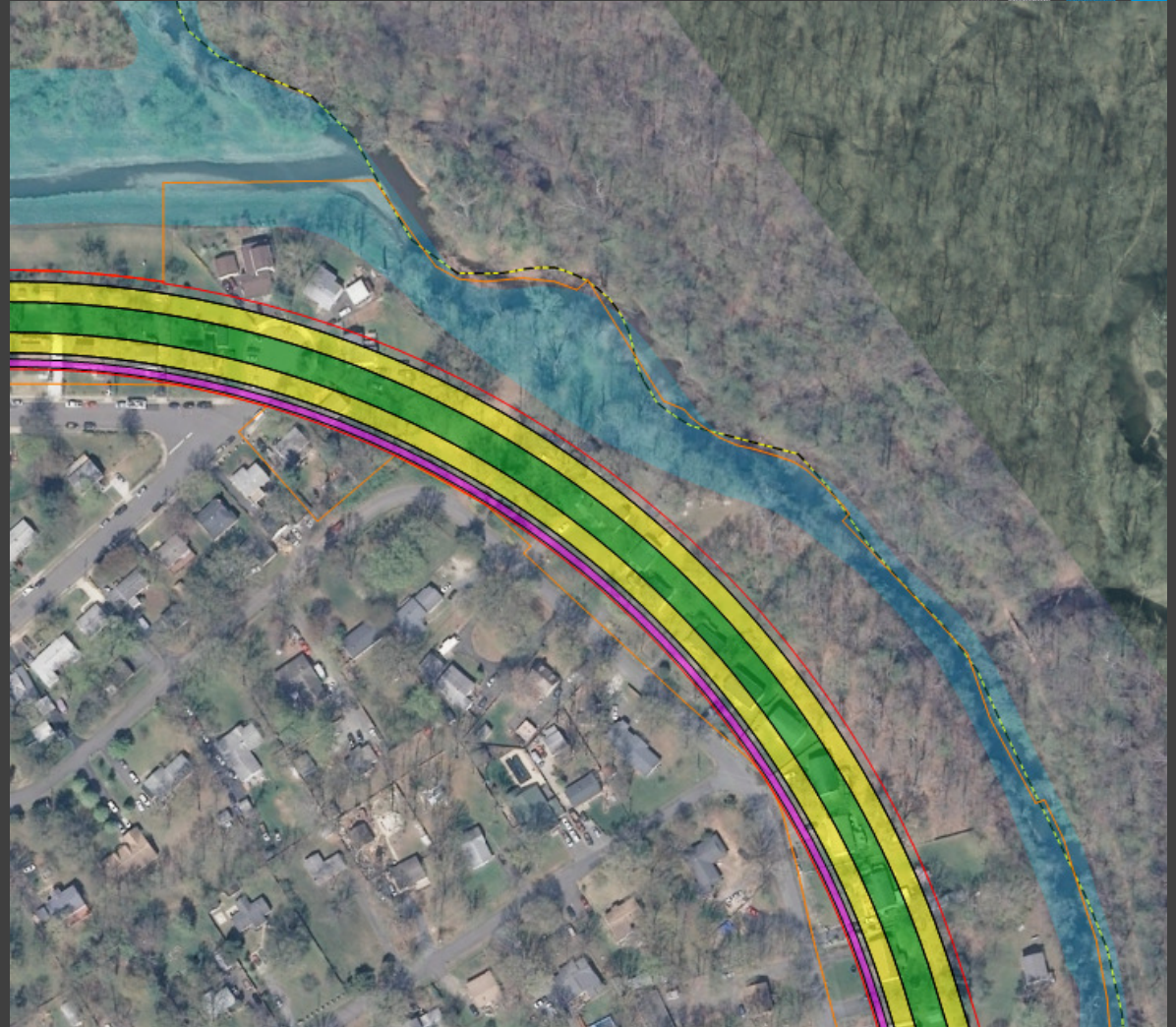
Images Courtesy of Google Earth



Matchline See Display 2 of 2

III. Conceptual Design of Alternatives

Legend	
	Proposed Road
	Proposed Median
	Proposed Sidewalk/Shared Path
	Proposed Bridge
	100-yr Flood Plain
	Proposed Right-of-Way
	Proposed Property Acquisition
	Signalized Intersection
	City/County Limits



IV. 2nd Screening Evaluation of Alternatives



IV. Screening Criteria for Alternative Evaluation

Screening Criteria established to attain study objectives

Key Objectives Summary

Obj. 1: Reduce Congestion (Historical Downtown Manassas)

Obj. 2: Reduce Congestion (Liberia Ave to Compton Rd)

Obj. 3: Facilitate Peak Period Commute Flows

Obj. 4: Increased Opportunities for Alternative Modes of Travel

Obj. 5: Improved Access to Transit Facilities

Obj. 6: Improvement Projects with Public Consensus

Obj. 7: Improvement Projects with Minimal Environmental Impacts

Obj. 8: Improvement Projects with Minimal Existing Conditions Impacts

Obj. 9: Improvement Projects that Complement Route 28 Operations

IV. Screening Criteria for Alternative Evaluation

Alternative Rating

Positive Benefits		
•	0 pts.	Neutral / Minimal / No Benefits
□	1 pts.	Low Benefits
▣	2 pts.	Medium Benefits
■	3 pts.	High Benefits
Negative Impacts		
•	0 pts.	Neutral / Minimal / No Negative Impact
□	-1 pts.	Low Negative Impact
▣	-2 pts.	Medium Negative Impact
■	-3 pts.	High Negative Impact

IV.a. Planning Level Costs



IV.a. Planning Level Costs

2017 Planning Level Costs

	Construction Cost – using VDOT Project Cost Estimating System (PCES)
	ROW Costs
	Utility Costs
	Environmental Mitigation Costs
	Contingency – 10% (applied to total)

Conceptual Alternative #	Alignment Color	Length in Miles	2017 Planning Level Costs
			Rounded up to Nearest \$5 Million
2040 No-Build			N/A
Alt 2A		4.25	\$240 M
Alt 2B		4.0	\$190 M
Alt 4		3.5	\$245 M
Alt 9		4.75	\$265 M

IV.b. Project Benefits



IVb. Project Benefits

Screening Criteria for Alternative Evaluation

Project Benefits

1

Change in 2040 ADT in Historic
Downtown Manassas

2

2040 ADT Served by Alternative +
Route 28

1,
2,3

Ratio of 2040 ADT to Planning Level
Cost

3

Peak Hour Travel Time in 2040 using
Alternative

2,3

Peak Hour Travel Time Savings in
2040 on Route 28

1,
2,3

No. of Intersections Operating over
Capacity

4,5

Multimodal Compatibility

X

Key Objective Attainable

Key Objectives Summary

Obj. 1	Reduce Congestion (Historical Downtown Manassas)
Obj. 2	Reduce Congestion (Liberia Ave to Compton Rd)
Obj. 3	Facilitate Peak Period Commute Flows
Obj. 4	Increased Opportunities for Alternative Modes of Travel
Obj. 5	Improved Access to Transit Facilities

IV.b. Project Benefits

Conceptual Alternative #	Alignment Color	Traffic Benefits (when compared to 2040 No-Build)						
		Change in 2040 ADT on route 28 in Historic Downtown Manassas ³		Change in 2040 ADT on Route 28 (Liberia Ave to Compton Rd)	2040 ADT Served by Alternative + Route 28 (Liberia Ave to Compton Rd) ⁴			
					Bypass Alt	Route 28	Total	
Key Objectives Attainable ¹		1		2	2			
Current Volume					0	57,200	57,200	
2040 No-Build		0	●	0	0	76,200	76,200	●
Alt 2A		-7,700	■	-16,900	37,200	59,300	96,500	■
Alt 2B		-7,700	■	-16,800	37,200	59,400	96,600	■
Alt 4		2,700	▣	6,200	0	82,400	82,400	▣
Alt 9		3,400	▣	-24,300	35,000	51,900	86,900	▣

IV.b. Project Benefits

Travel Times on Alternative Routes (min)

Alternative #	NB AM Peak Hr	SB PM Peak Hr	Total
2040 No-Build	47	55	102
Alt 2A	20	31	51
Alt 2B	18	31	49
Alt 4	35	43	78
Alt 9	30	36	66

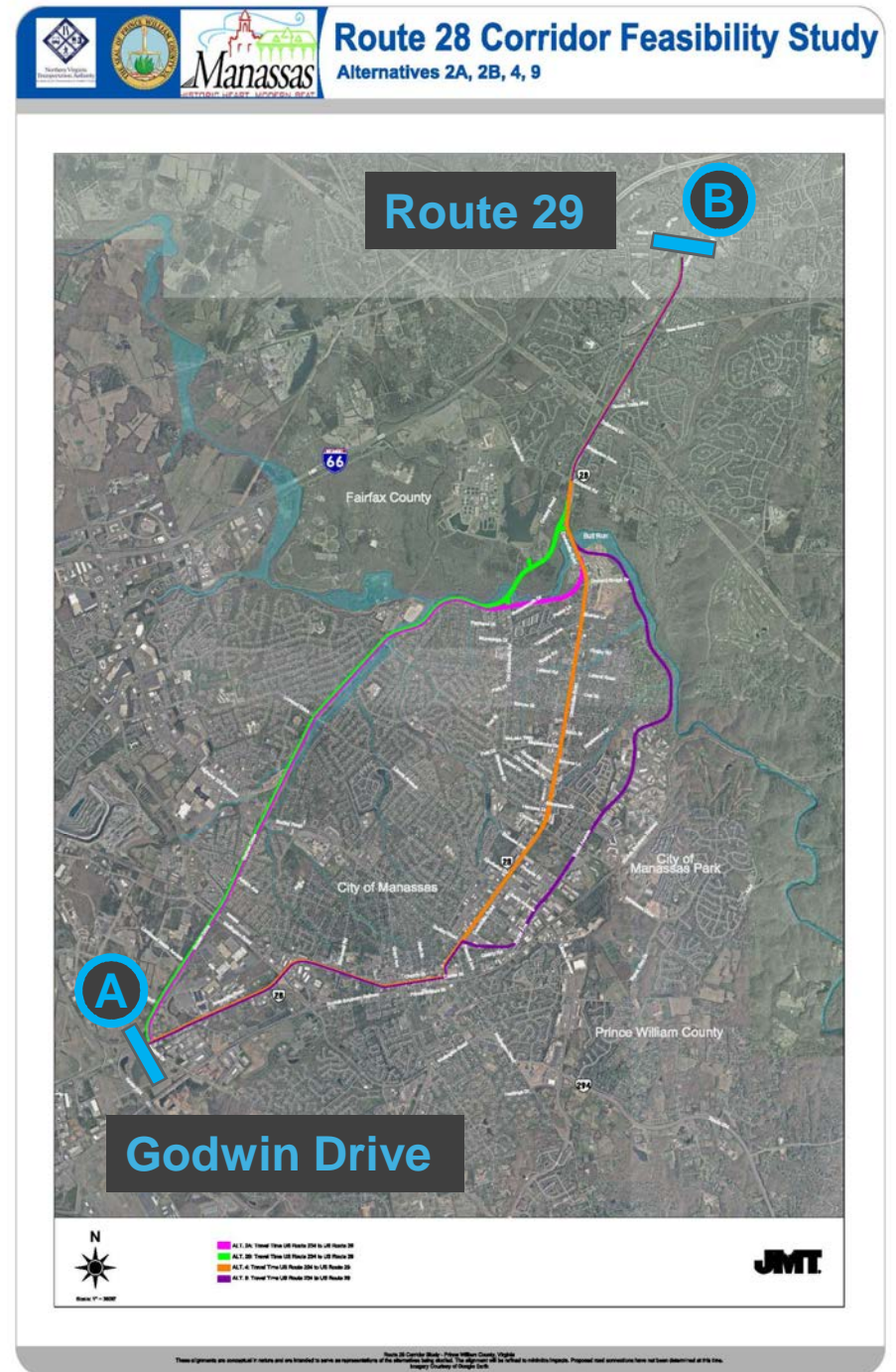
Travel Time Savings on Business Route 28 (min)

Alternative #	NB AM Peak Hr	SB PM Peak Hr	Total
Alt 2A	24	15	39
Alt 2B	24	17	41
Alt 4	12	12	24
Alt 9	20	19	39

Travel Paths

- Alt 2A
- Alt 2B
- Alt 4
- Alt 9

Route 28 Corridor Feasibility Study



IV.c. Environmental Impacts



IVc. Environmental Impacts

Screening Criteria for Alternative Evaluation

Environmental Impacts

7

4f Properties / Historical Sites /
Public Recreation Areas / Wildlife or
Waterfowl Refuges

7

Floodway / Floodplains

7

Streams / Wetlands

7

Hazardous Materials

7

Environmental Justice Concern

7

Noise Impacts

X

Key Objective Attainable

Key Objectives Summary

Obj. 7

Improvement Projects with Minimal Environmental Impacts

Obj. 8

Improvement Projects with Minimal Existing Conditions Impacts

IV.c. Screening Criteria for Alternative Evaluation

Environmental Impacts with 250 Foot Corridor

Conceptual Alternative #	Alignment Color	Environmental Impacts							
		4f Properties: Historic Sites (acres) / Public Recreation Areas / Wildlife or Waterfowl Refuges		Floodway (Acres) / Floodplains (Acres)		Streams (Linear Feet) / Wetlands (Acres)		Hazardous Materials (# Sites)	
Key Objectives Attainable ³		7		7		7		7	
2040 No-Build		0 / 0 / 0	●	0 / 0	●	0 / 0	●	0	●
Alt 2A		7.0 / 16.4 / 0	■	23.4 / 66.7	■	7370 / 5.4	■	9	■
Alt 2B		0.7 / 30.3 / 0	■	21.2 / 55.7	■	7050 / 6.2	■	1	■
Alt 4		3.9 / 1.1 / 0	□	5.0 /9.3	□	2050 / 0.9	□	50	■
Alt 9		0.6 / 8.3 / 0	■	16.9 / 47.8	■	2030 / 2.8	■	16	■

IV.d. Socioeconomic / ROW Impacts



IV.d. Socioeconomic / ROW Impacts

Screening Criteria for Alternative Evaluation

Socioeconomic/ROW Impacts

8

Relocations - Businesses

8

Relocations to Residential / Churches / Schools

8

Conservation Easements

X

Key Objective Attainable

Key Objectives Summary

Obj. 7	Improvement Projects with Minimal Environmental Impacts
Obj. 8	Improvement Projects with Minimal Existing Conditions Impacts

IV.d. Socioeconomic / ROW Impacts

Conceptual Alternative #	Alignment Color	Socioeconomic / Right of Way Impacts			
		Relocations to Businesses (#)		Relocations to Residential (#) / Churches (#) / Schools (#)	
Key Objectives Attainable ³		8		8	
2040 No-Build		0	●	0 / 0 / 0	●
Alt 2A		13	□	112 / 0 / 0	■
Alt 2B		0	●	70 / 0 / 0	■
Alt 4		96	■	5 / 0 / 0	●
Alt 9		24	□	51 / 0 / 0	■

IV.e. Highest Ranked Alternative



IV.e. Highest Ranked Alternative

Conceptual Alternative #	Alignment Color	2017 Planning Level Costs		Project Benefits		Environmental / Socioeconomic / ROW Impacts		Average Ranking*	Highest Ranked Alternative by Technical Committee
		Rounded up to Nearest \$5 Million	Ranking*	Points	Ranking*	Points	Ranking*		
Alt 2A		\$240 M	2	19 pts.	2	-20 pts.	4	2.7	
Alt 2B		\$190 M	1	20 pts.	1	-15 pts.	2	1.3	✓
Alt 4		\$245 M	3	8 pts.	4	-11 pts.	1	2.7	
Alt 9		\$265 M	4	12 pts.	3	-16 pts.	3	3.3	
* Ranking Best (1) to Worse (4)									

V. Public Meeting



V. Public Meeting

Public Meeting

September 7th from 6:30 PM to 8:30 PM

Manassas Park Community Center
99 Adams St, Manassas Park, VA 20111

Project Overview Presentation @ 7:00 PM

VI. Next Steps



VII. Open Discussion



Wrap-Up



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