

ARTERIAL

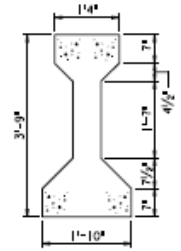
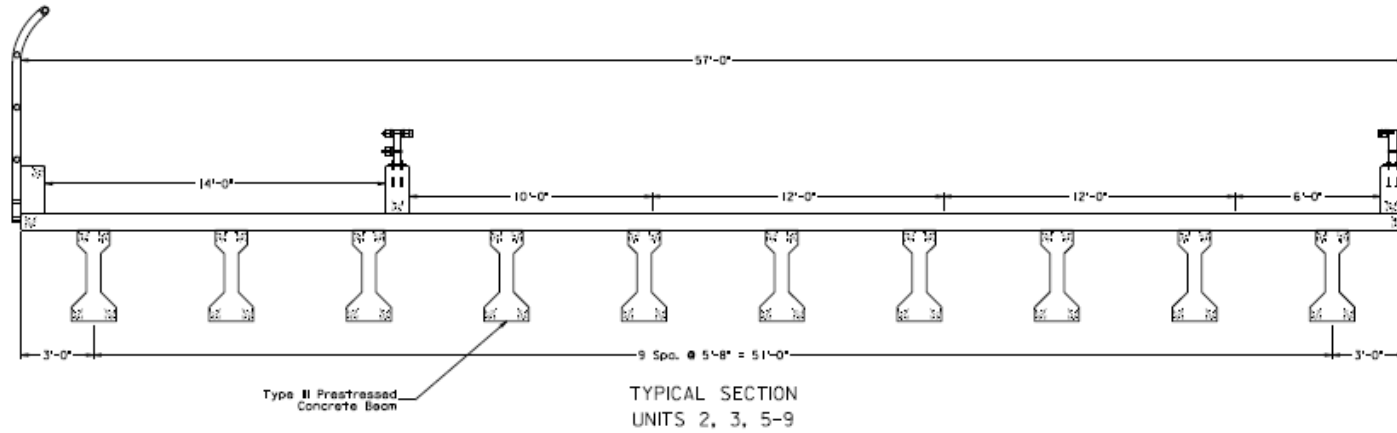
PRESERVATION PROGRAM

US 17 Arterial Preservation Plan

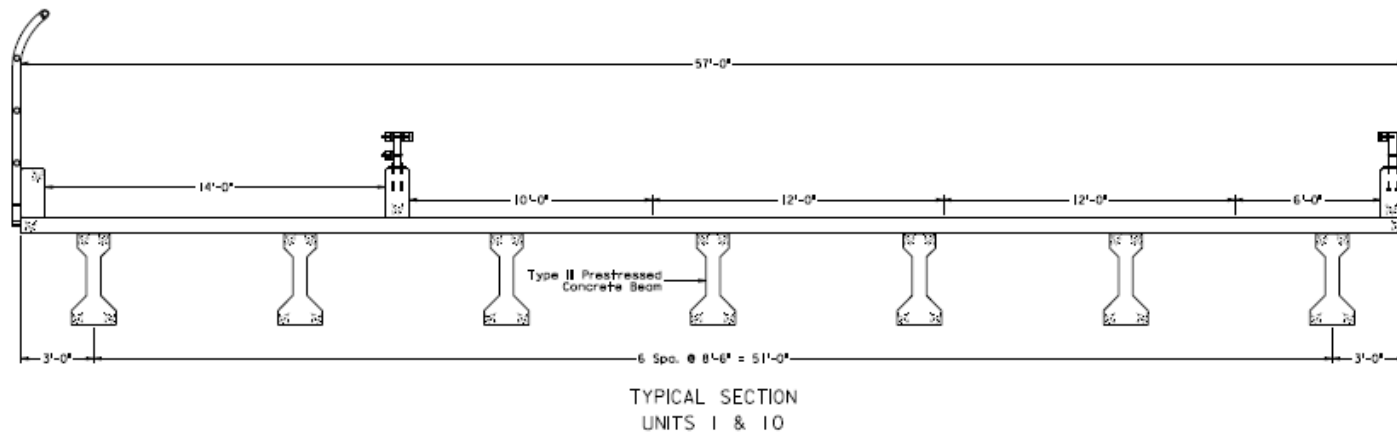
City of Suffolk Alternatives



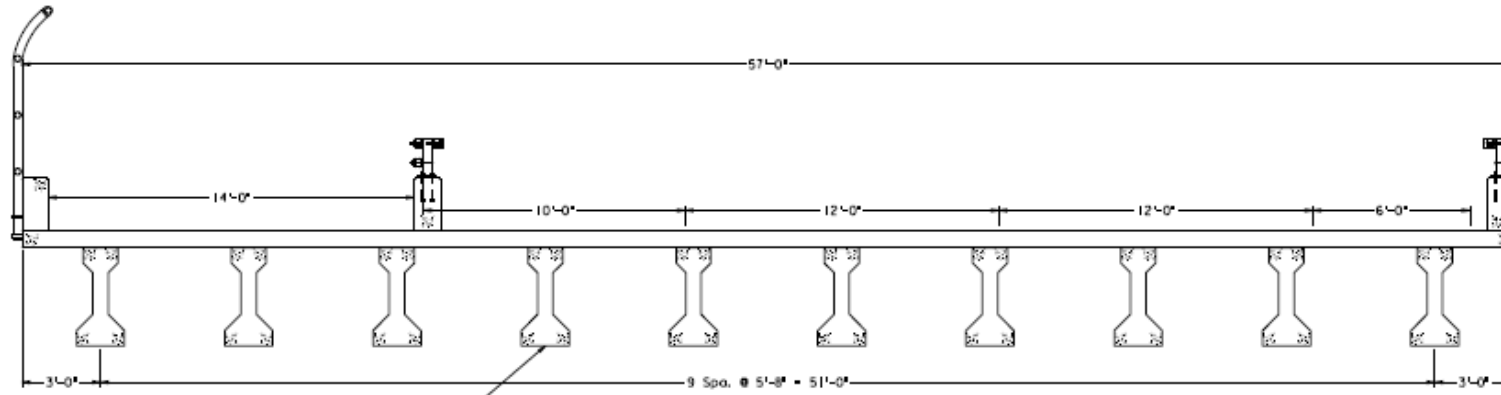
Hazelwood Bridge w/ Shared Use Path



Type III Prestressed Concrete I Beam
Scale: 3/16"=1'-0"

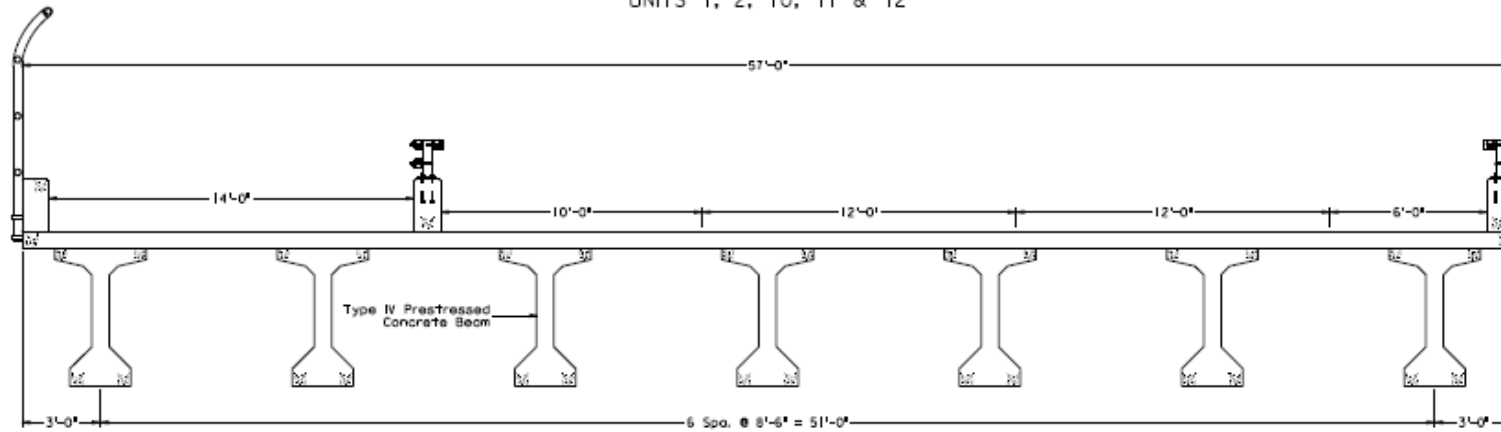


Godwin Bridge w/ Shared Use Path



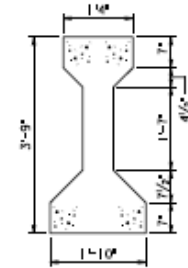
Type II Prestressed Concrete Beam

TYPICAL SECTION
UNITS 1, 2, 10, 11 & 12

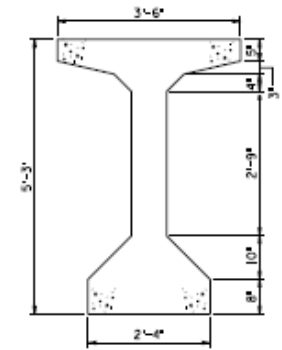


Type IV Prestressed Concrete Beam

TYPICAL SECTION
UNITS 3, 4, 5, 7, 8 & 9



Type III Prestressed Concrete I Beam
Scale: 3/16"=1'-0"



Prestressed Concrete Bulb-T PCBT-45C
Scale: 3/16"=1'-0"

Area 1: US 17 between Bennetts Pasture Rd and Lee Farm Ln



Bennetts Pasture Rd

Lee Farm Ln

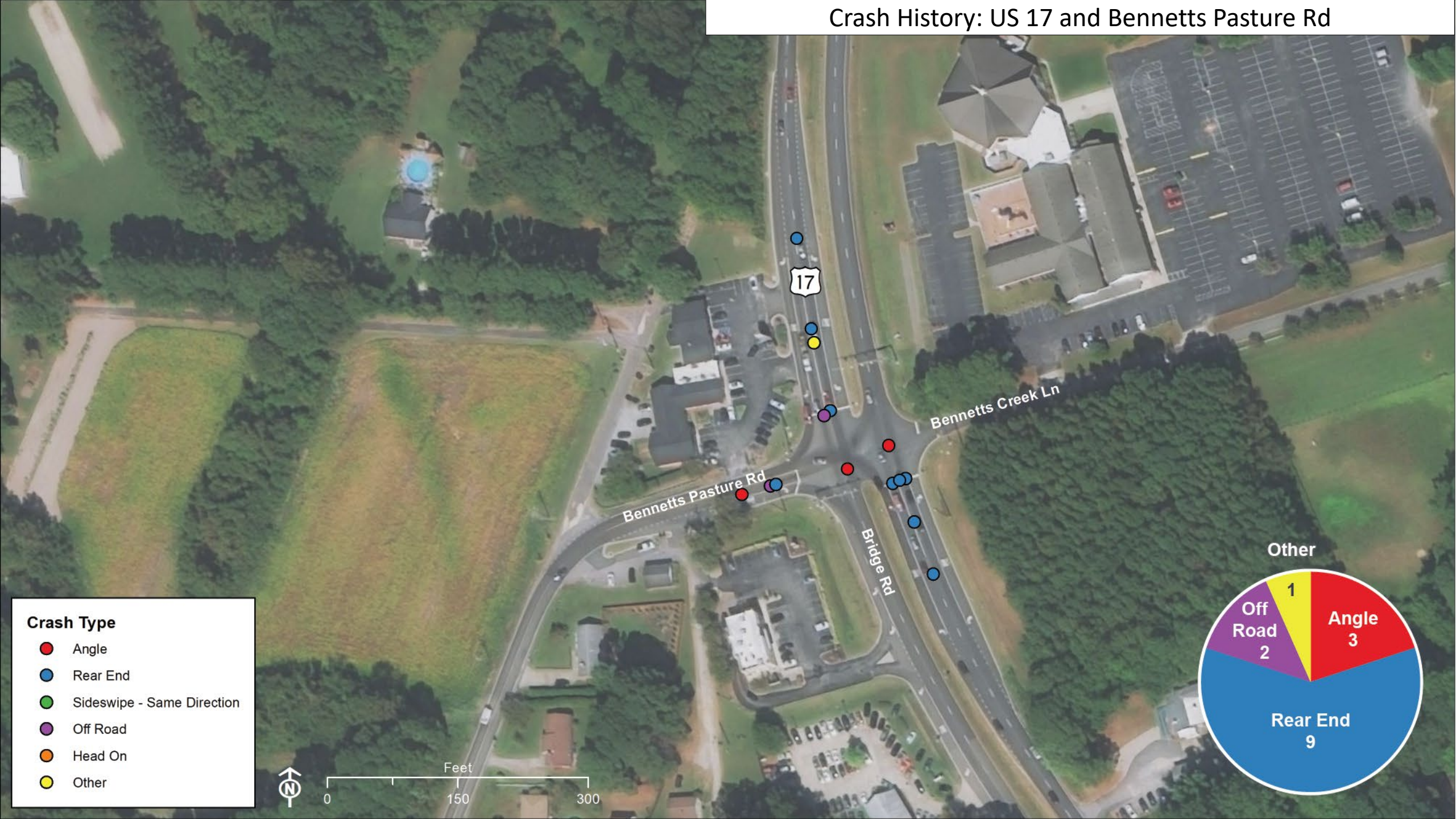


Volumes – Bennetts Pasture to Lee Farm

2019 Volumes	Bennetts Creek Lane						Lee Farm Lane					
	(3)	(1)	(6)	↖	20	(20)	(0)	(0)	(0)	↖	0	(0)
	2	2	10	←	461	(1159)	0	0	0	←	580	(1300)
	↷	↓	↘	↷	100	(180)	↷	↓	↘	↷	144	(319)
	(2)	0	↗	↖	↑	↗	(2)	0	↗	↖	↑	↗
	(950)	1036	→	94	6	59	(982)	1101	→	2	0	359
	(170)	95	↘	(161)	(2)	(58)	(30)	4	↘	(59)	(0)	(245)
	Bennetts Pasture Road						Lee Farm Lane					

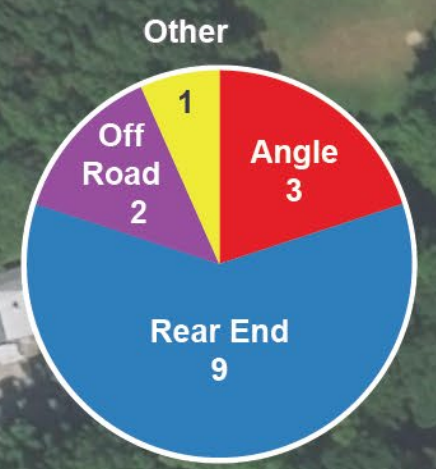
2045 Volumes	Bennetts Creek Lane						Lee Farm Lane					
	(3)	(1)	(6)	↖	20	(20)	(0)	(0)	(0)	↖	0	(0)
	2	2	10	←	1153	(2270)	0	0	0	←	1311	(2468)
	↷	↓	↘	↷	141	(253)	↷	↓	↘	↷	183	(406)
	(2)	0	↗	↖	↑	↗	(2)	0	↗	↖	↑	↗
	(2025)	1797	→	133	6	83	(2072)	1884	→	3	0	456
	(239)	134	↘	(227)	(2)	(82)	(39)	6	↘	(75)	(0)	(312)
	Bennetts Pasture Road						Lee Farm Lane					

Crash History: US 17 and Bennetts Pasture Rd

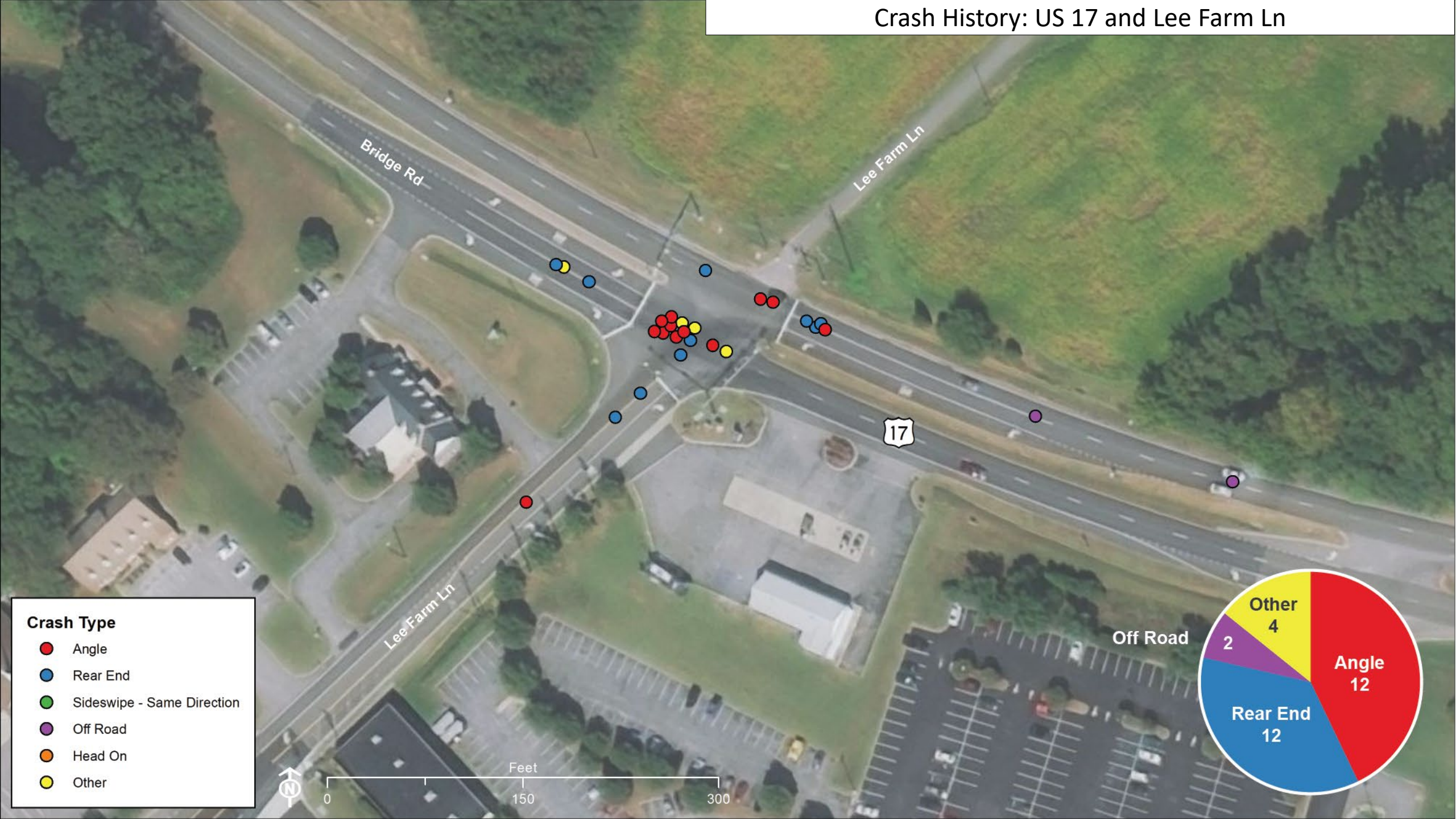


Crash Type

- Angle
- Rear End
- Sideswipe - Same Direction
- Off Road
- Head On
- Other



Crash History: US 17 and Lee Farm Ln



Crash Type

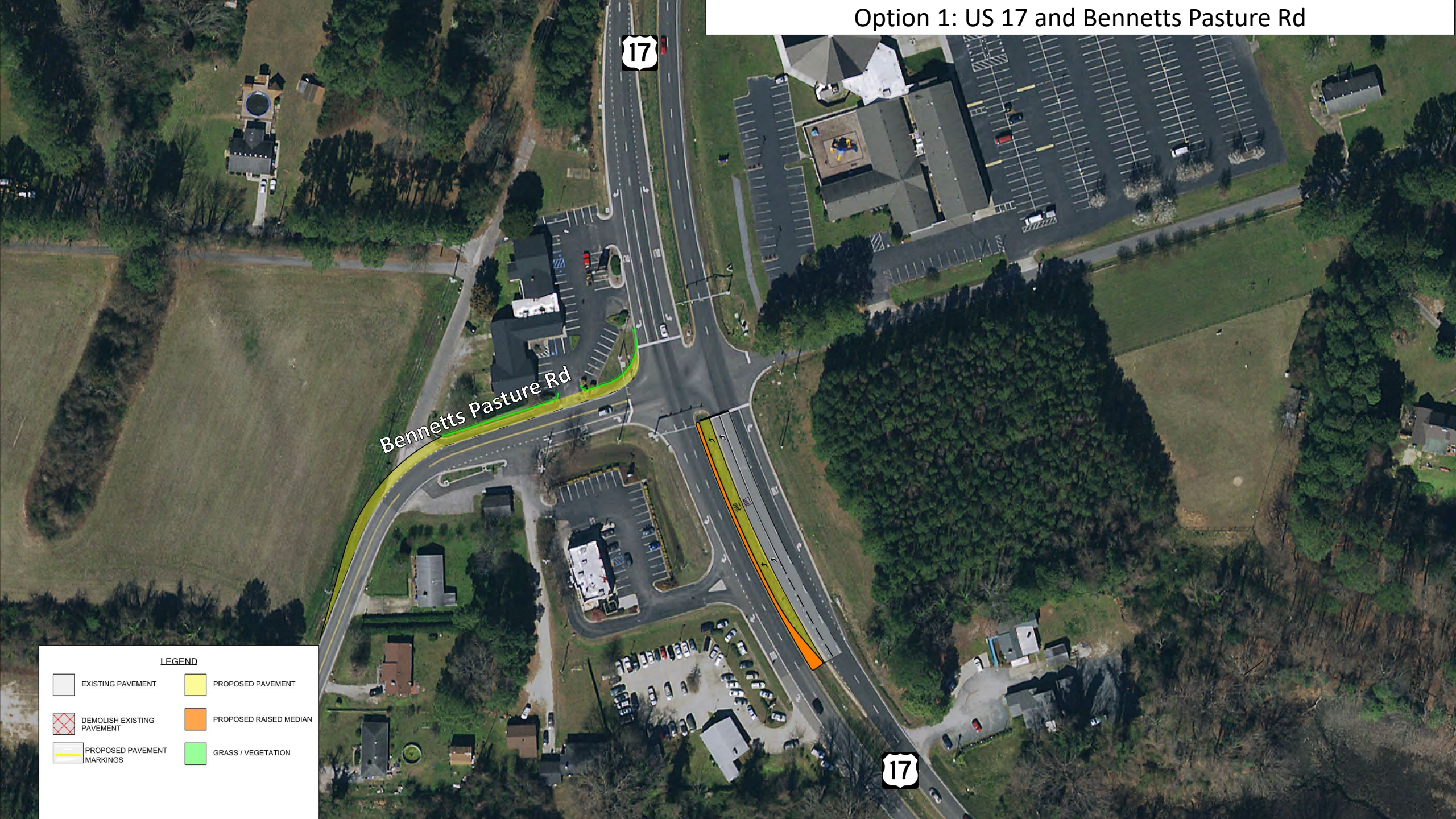
- Angle
- Rear End
- Sideswipe - Same Direction
- Off Road
- Head On
- Other



Preliminary Estimates

Preliminary Estimate Ranges						
Scenario	Construction Estimate	PE Estimate	Estimated R/W Impacts	Overall No Build Intersection Operation (PM)	Overall Build Intersection Operation (PM)	Expected Total Crash Reduction
Bennetts Pasture Road	\$1,908,000	\$600,000	8,000 - 9,000 SF	44.6 - D	37.5 - D	3%
Lee Farm Lane	\$2,629,000	\$600,000	12,000 - 14,000 SF	30.1 - C	21.3 - C	3%

Option 1: US 17 and Bennetts Pasture Rd



Bennetts Pasture Rd

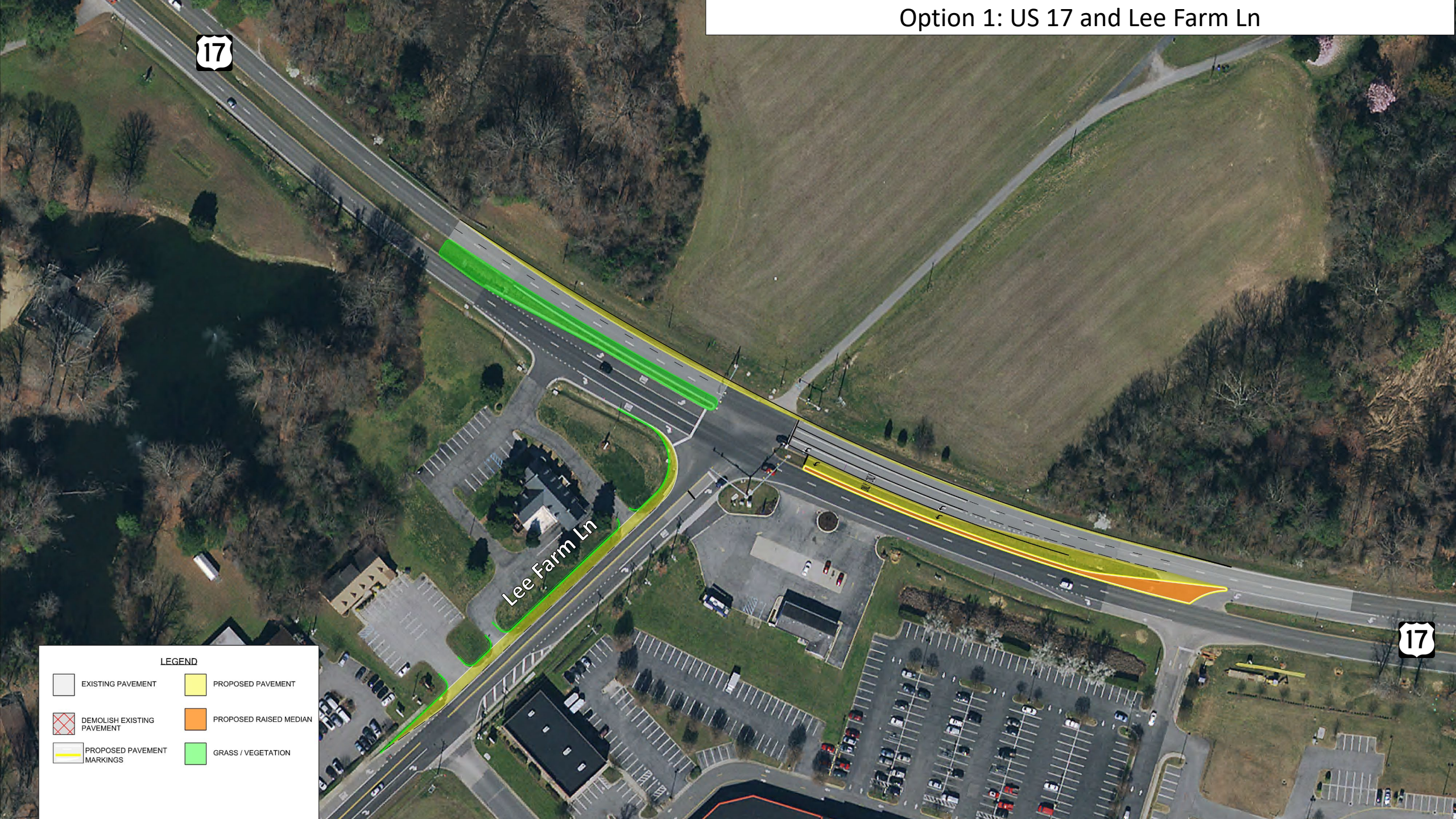
17

17

LEGEND

- | | | | |
|--|----------------------------|---|------------------------|
|  | EXISTING PAVEMENT |  | PROPOSED PAVEMENT |
|  | DEMOLISH EXISTING PAVEMENT |  | PROPOSED RAISED MEDIAN |
|  | PROPOSED PAVEMENT MARKINGS |  | GRASS / VEGETATION |

Option 1: US 17 and Lee Farm Ln



17

17

Lee Farm Ln

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- DEMOLISH EXISTING PAVEMENT
- PROPOSED RAISED MEDIAN
- PROPOSED PAVEMENT MARKINGS
- GRASS / VEGETATION

Area 2: Plummer Blvd to Harbour View Blvd



17

17

Harbour View Blvd

Plummer Blvd

Townpoint Rd



Volumes – Plummer to Harbour View

2019 Volumes	Plummer Boulevard						Harbour View Boulevard					
	(11)	(1)	(47)	↶	50	(40)	(585)	(610)	↶	679	(524)	
	4	0	28	←	1000	(2231)	← 1073 (2371)			199	345	← 874 (1786)
	↷	↓	↷	↷	23	(100)	↷	↷	↷	0	(0)	
(13)	21	↷	↶	↑	↷	(304)	475	↷				
(1609)	1987	→	2	1	62	(1162)	1187	→	(858)	712	→	
(7)	4	↷	(4)	(1)	(39)	(533)	890	↷				
Plummer Boulevard						Exit to I-664N & Route 164E						

2045 Volumes	Plummer Boulevard						Harbour View Boulevard					
	(14)	(2)	(60)	↶	64	(51)	(901)	(775)	↶	863	(666)	
	6	0	36	←	1873	(3851)	← 1967 (4029)			307	439	← 1660 (3128)
	↷	↓	↷	↷	30	(127)	↷	↷	↷	0		
(17)	27	↷	↶	↑	↷	(387)	604	↷				
(2795)	3262	→	3	2	79	(2031)	2006	→	(1644)	1402	→	
(9)	6	↷	(6)	(2)	(50)	(874)	1371	↷				
Plummer Boulevard						Exit to I-664N & Route 164E						

Area 2: Plummer Blvd to Harbour View Blvd

Crash Type

- Angle
- Rear End
- Sideswipe - Same Direction
- Off Road
- Head On
- Other



Construction Estimates

Preliminary Estimate Range					
Base Cost for Widening SMART SCALE APP 7064	Short-Term	Alternative 1 Grade Separation	Alternative 2 SB US 17 Left-turn Flyover	Alternative 3 Center Turn Overpass	Alternative 4 Center Turn Overpass w/ SR 164 Connection
Cost (Not Including Right-of-Way)	\$10.0M - \$11.0M	\$38.0M - \$41.0M	\$27.0M - \$29.0M	\$35.0M - \$39.0M	\$40.0M - \$45.0M
Right-of-Way Impact	115,000 - 121,000 SF	510,000 - 560,000 SF	330,000 - 515,000 SF	110,000 - 130,000 SF	110,000 - 130,000 SF
Overall Intersection Operation (PM) at Harbour View Blvd	87.9 - F	5.4 - A	51.6 - D	6.2 - A	6.2 - A
Overall Intersection Operation (PM) at Plummer Blvd	14.0 - B	34.5 - C	15.8 - B	15.9 - B	15.9 - B
Expected Total Crash Reduction	3%	50%	35%	35%	35%

All alternatives could be built following the planned widening

Option 1: Minimally Managed



New Right-turn lane





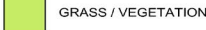

Harbour View Blvd

17

17

Plummer Blvd

LEGEND

 EXISTING PAVEMENT	 PROPOSED PAVEMENT
 PEDESTRIAN FACILITY	 PROPOSED RAISED MEDIAN
 GRASS / VEGETATION	 PROPOSED PAVEMENT MARKINGS

SCALE

0 100' 200' 300' 400'

Option 4: Grade Separation

Bridge shown is concepted assuming 5% max grade

Continuous Green-T

US 17 is about two to three feet lower than sides of roadway

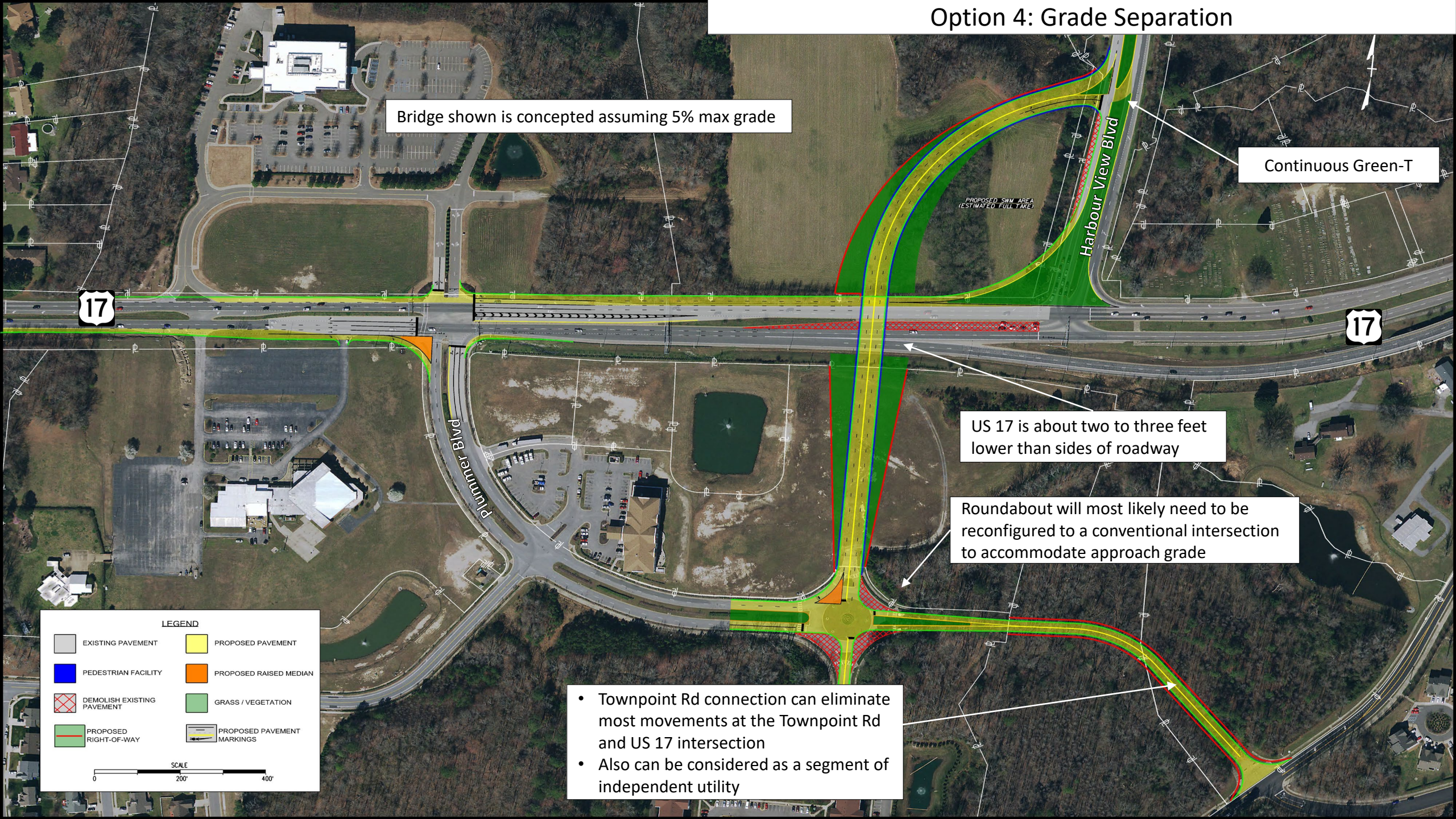
Roundabout will most likely need to be reconfigured to a conventional intersection to accommodate approach grade

- Townpoint Rd connection can eliminate most movements at the Townpoint Rd and US 17 intersection
- Also can be considered as a segment of independent utility

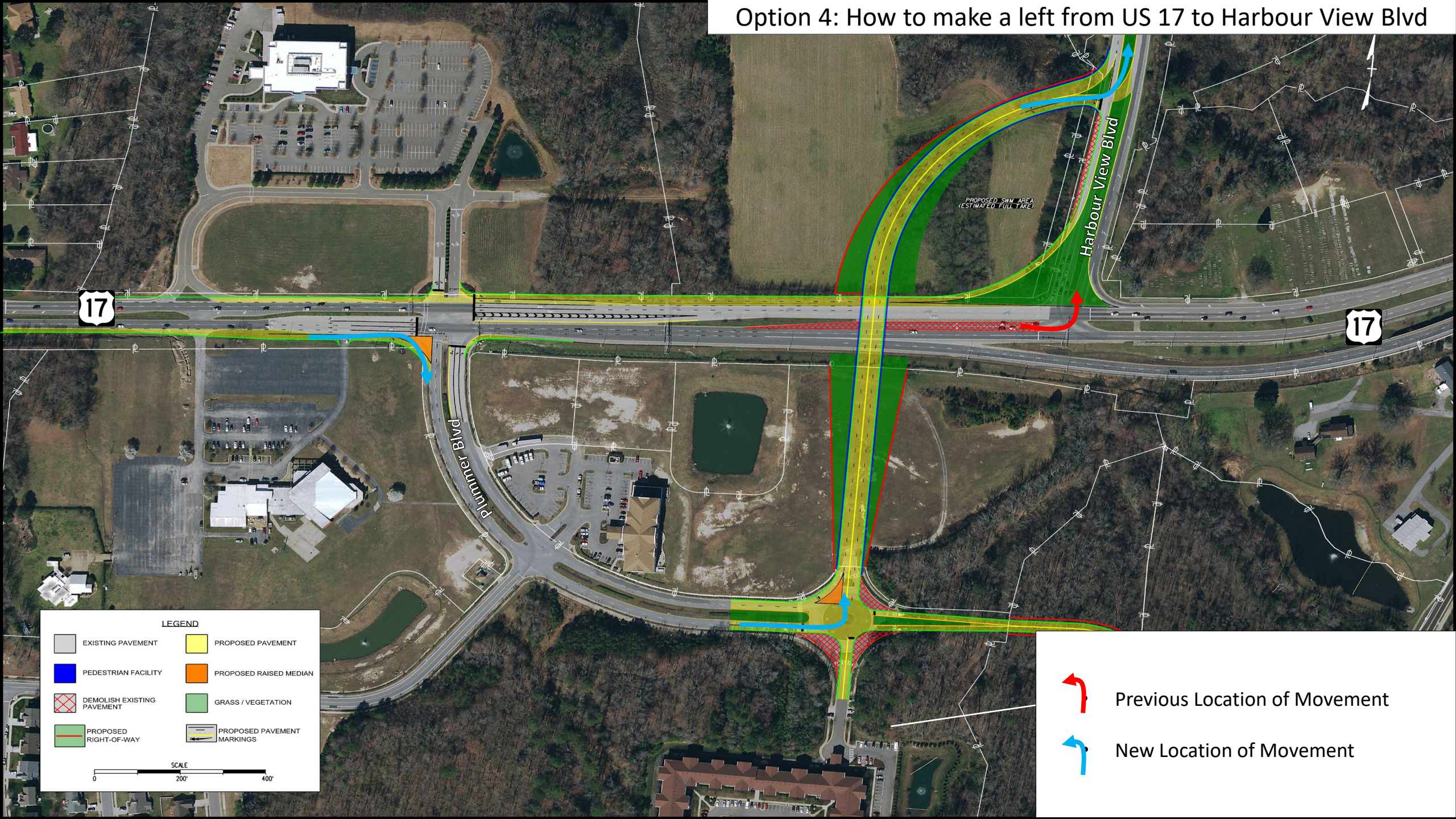
LEGEND

EXISTING PAVEMENT	PROPOSED PAVEMENT
PEDESTRIAN FACILITY	PROPOSED RAISED MEDIAN
DEMOLISH EXISTING PAVEMENT	GRASS / VEGETATION
PROPOSED RIGHT-OF-WAY	PROPOSED PAVEMENT MARKINGS

SCALE
0 200' 400'



Option 4: How to make a left from US 17 to Harbour View Blvd



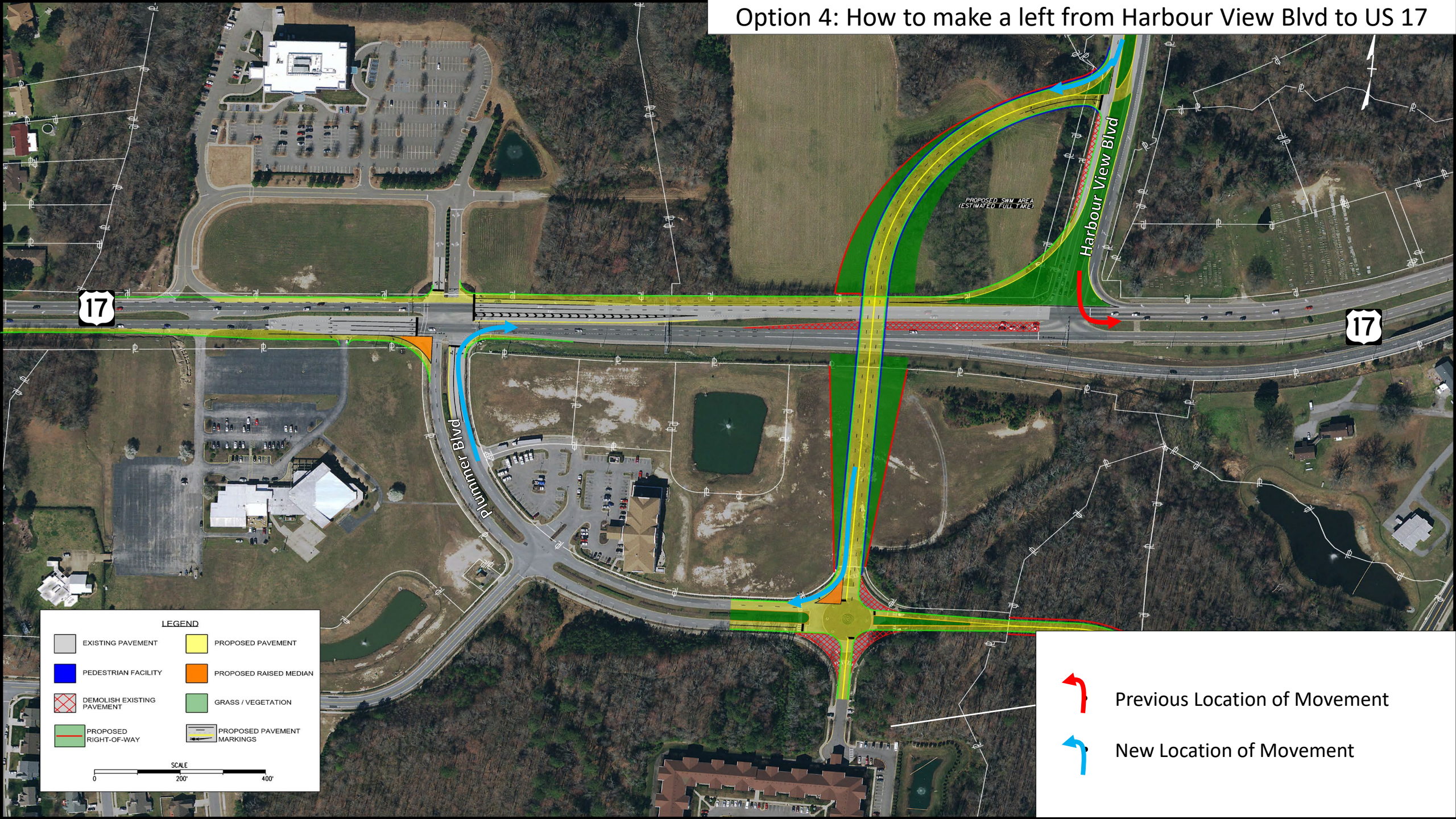
LEGEND

- | | |
|----------------------------|----------------------------|
| EXISTING PAVEMENT | PROPOSED PAVEMENT |
| PEDESTRIAN FACILITY | PROPOSED RAISED MEDIAN |
| DEMOLISH EXISTING PAVEMENT | GRASS / VEGETATION |
| PROPOSED RIGHT-OF-WAY | PROPOSED PAVEMENT MARKINGS |

SCALE
0 200' 400'

- Previous Location of Movement
- New Location of Movement

Option 4: How to make a left from Harbour View Blvd to US 17



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17

Harbour View Blvd

Plummer Blvd

PROPOSED SWM AREA
(ESTIMATED FULL TAKE)

LEGEND

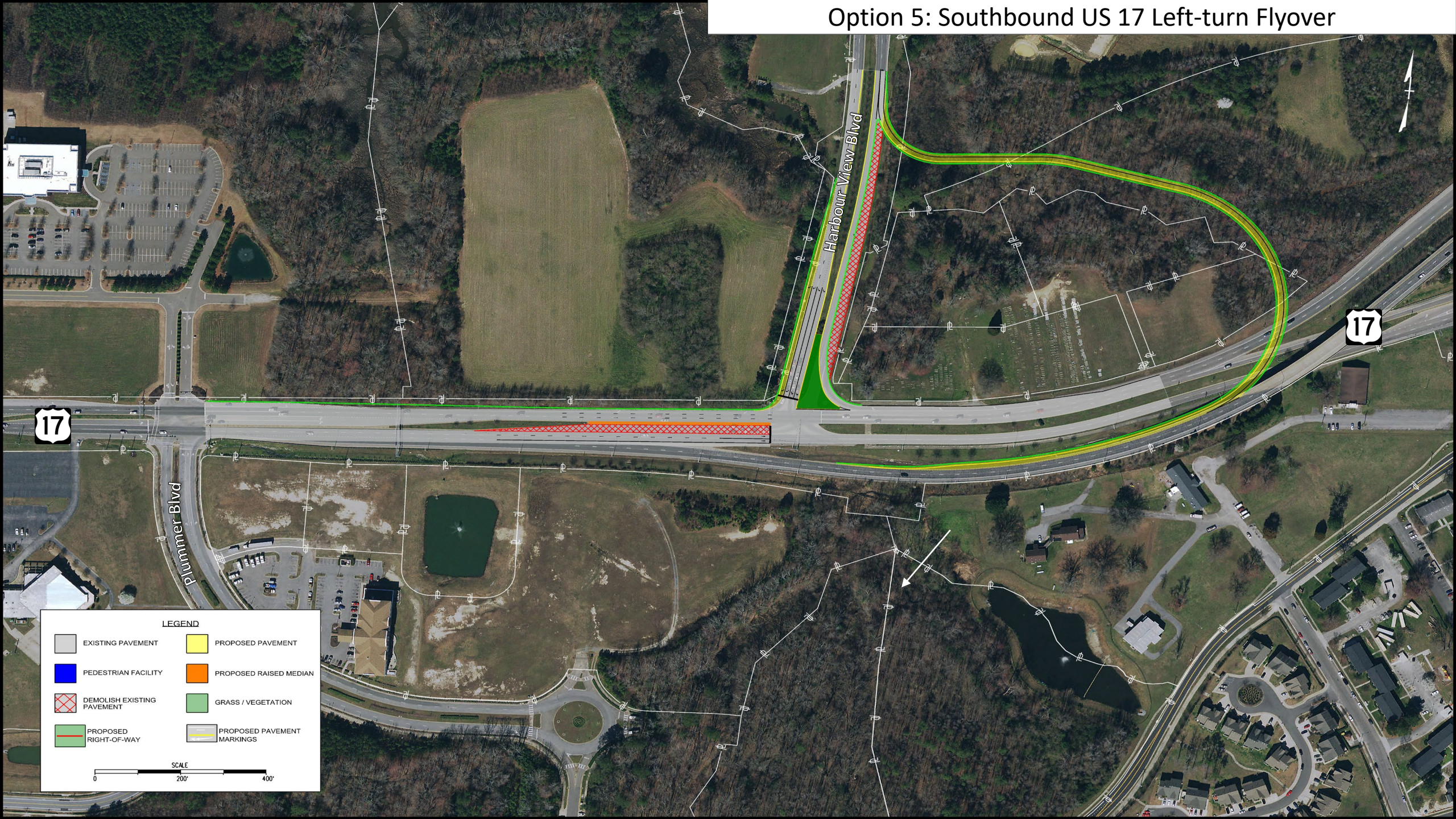
EXISTING PAVEMENT	PROPOSED PAVEMENT
PEDESTRIAN FACILITY	PROPOSED RAISED MEDIAN
DEMOLISH EXISTING PAVEMENT	GRASS / VEGETATION
PROPOSED RIGHT-OF-WAY	PROPOSED PAVEMENT MARKINGS

SCALE
0 200' 400'

Previous Location of Movement

New Location of Movement

Option 5: Southbound US 17 Left-turn Flyover



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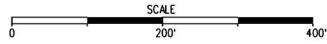
Plummer Blvd

Harbour View Blvd

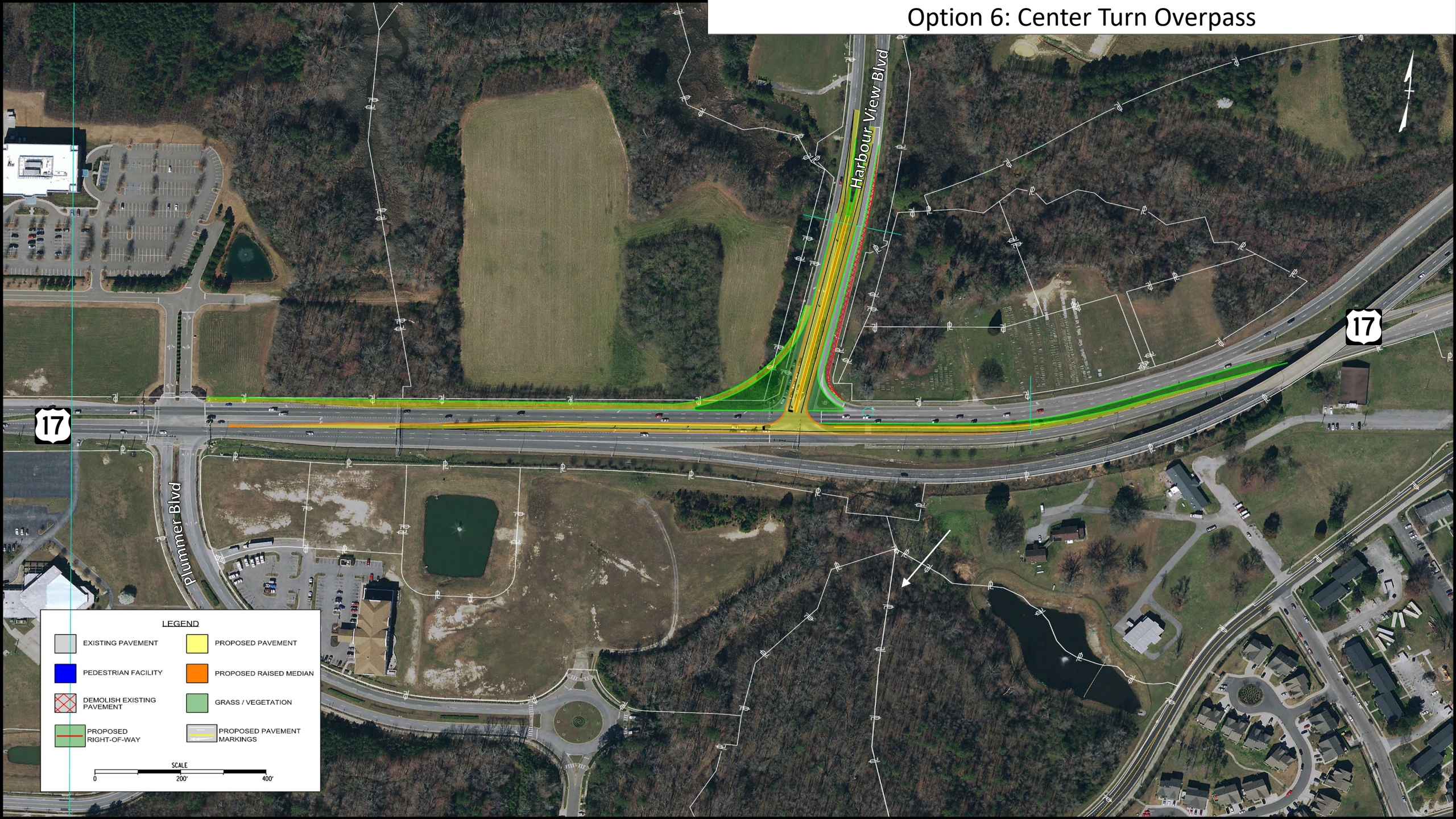
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LEGEND

- EXISTING PAVEMENT
- PEDESTRIAN FACILITY
- DEMOLISH EXISTING PAVEMENT
- PROPOSED RIGHT-OF-WAY
- PROPOSED PAVEMENT
- PROPOSED RAISED MEDIAN
- GRASS / VEGETATION
- PROPOSED PAVEMENT MARKINGS



Option 6: Center Turn Overpass



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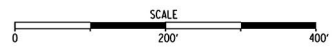
Plummer Blvd

Harbour View Blvd

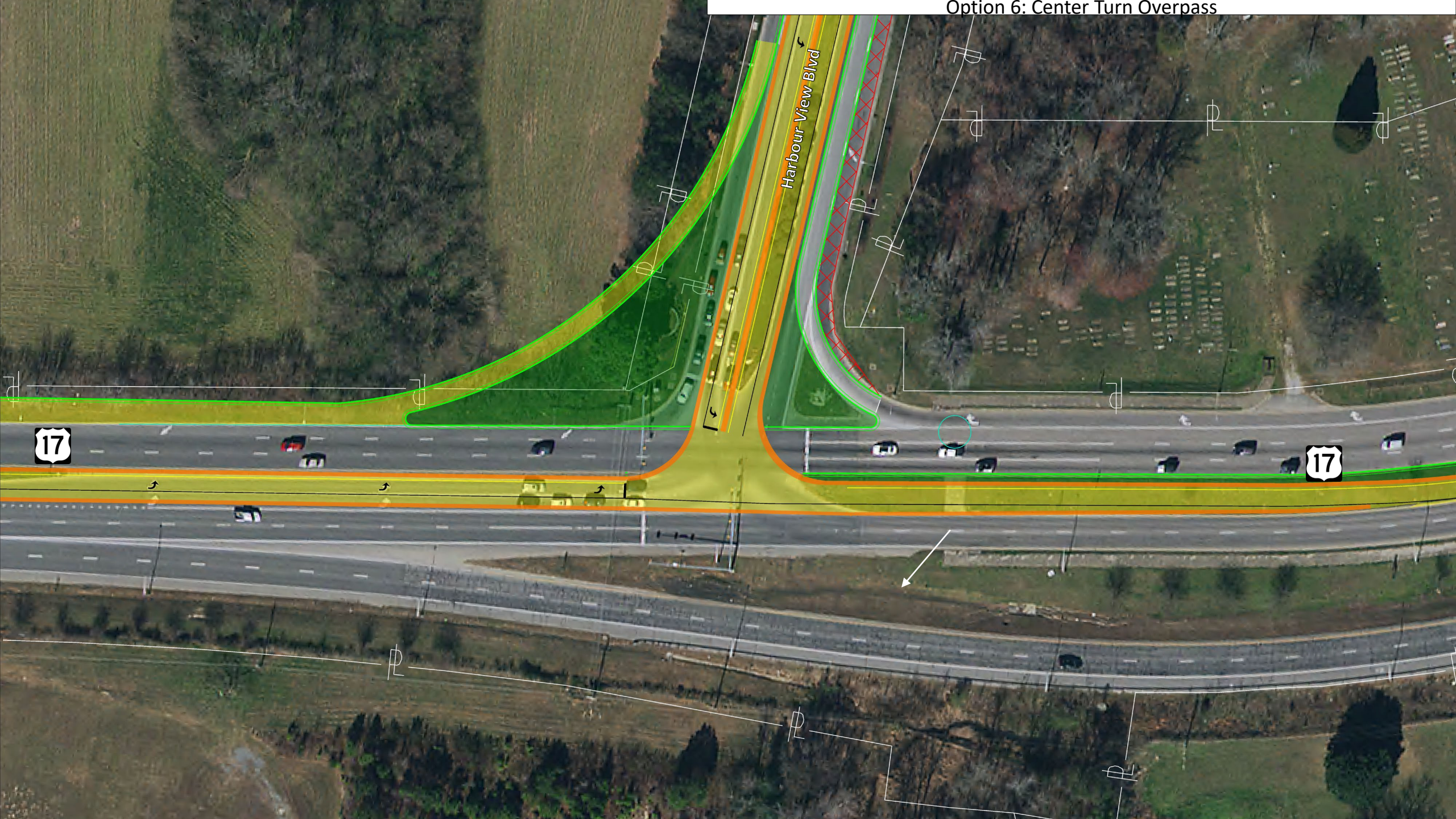
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LEGEND

- EXISTING PAVEMENT
- PEDESTRIAN FACILITY
- DEMOLISH EXISTING PAVEMENT
- PROPOSED RIGHT-OF-WAY
- PROPOSED PAVEMENT
- PROPOSED RAISED MEDIAN
- GRASS / VEGETATION
- PROPOSED PAVEMENT MARKINGS



Option 6: Center Turn Overpass



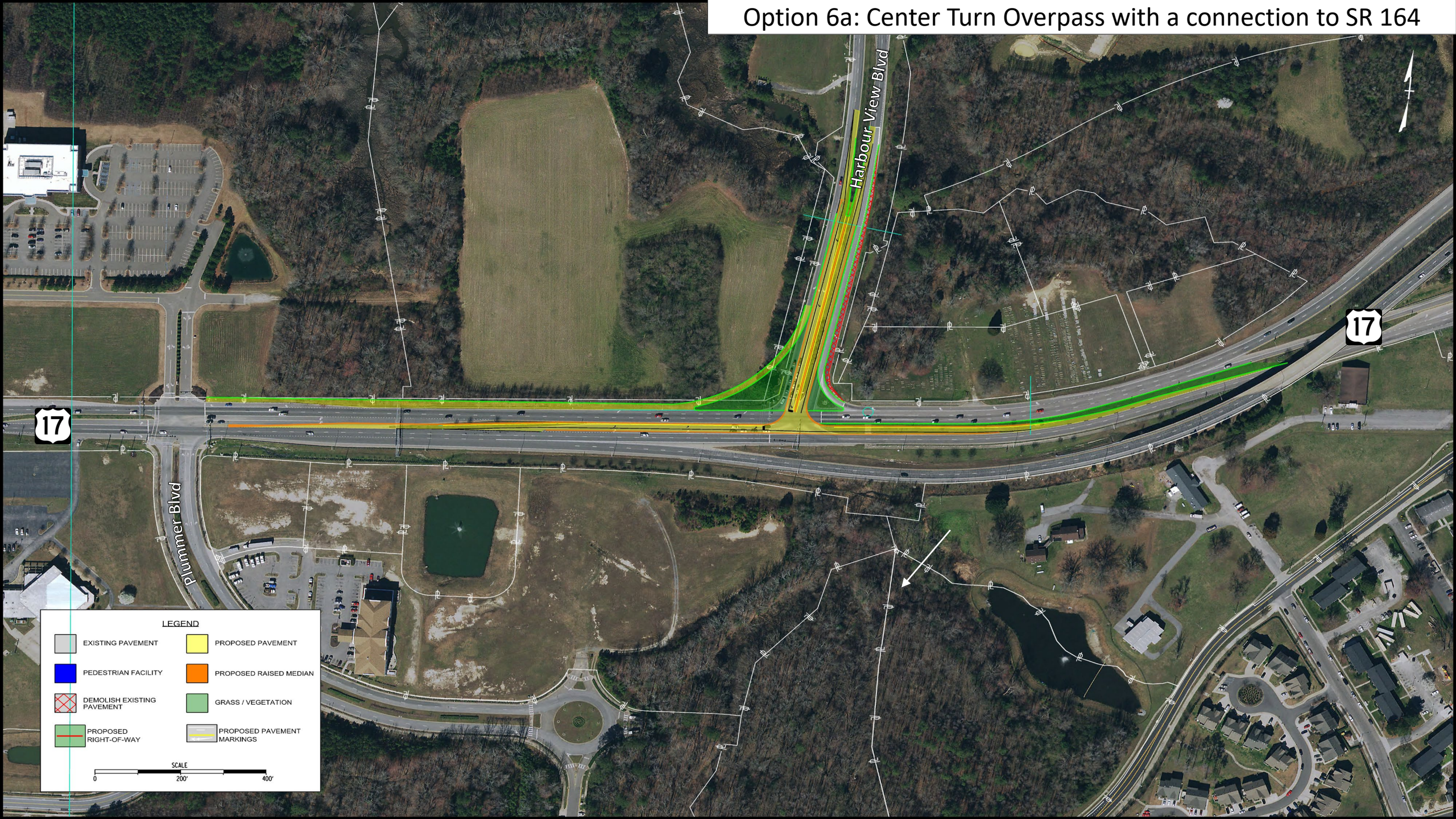
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Harbour View Blvd



Option 6a: Center Turn Overpass with a connection to SR 164



LEGEND

 EXISTING PAVEMENT	 PROPOSED PAVEMENT
 PEDESTRIAN FACILITY	 PROPOSED RAISED MEDIAN
 DEMOLISH EXISTING PAVEMENT	 GRASS / VEGETATION
 PROPOSED RIGHT-OF-WAY	 PROPOSED PAVEMENT MARKINGS

SCALE
0 200' 400'

Area 4: US 17 & College Drive



164

17

17

College Dr



Volumes – College Dr

2019 Volumes	College Drive					
	(549)	(7)	(513)	↖	347	(557)
	360	9	262	←	380	(632)
	↷	↓	↘	↙	9	(12)
	(530)	454	↗	↖	↑	↗
	(558)	560	→	6	3	8
	(16)	16	↘	(7)	(13)	(9)
Lynn Drive						

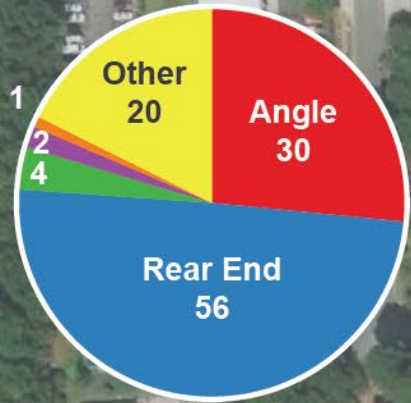
2045 Volumes	College Drive					
	(846)	(7)	(791)	↖	535	(858)
	555	9	404	←	525	(894)
	↷	↓	↘	↙	9	(12)
	(817)	700	↗	↖	↑	↗
	(1128)	932	→	6	3	8
	(16)	16	↘	(7)	(13)	(9)
Lynn Drive						

Area 4: US 17 & College Drive



Crash Type

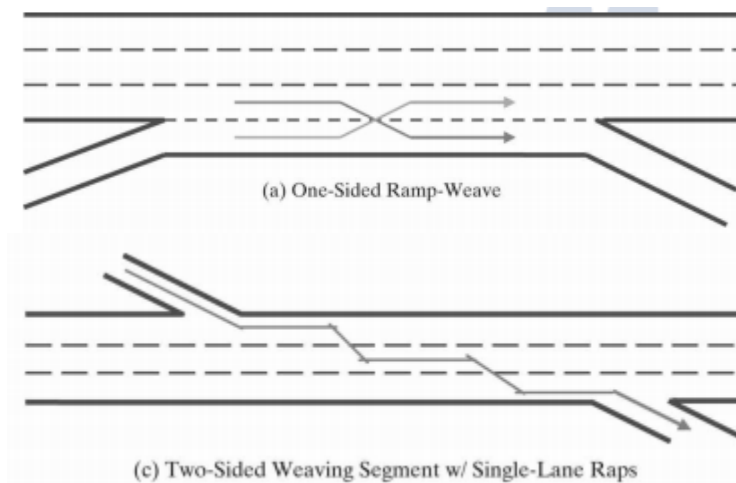
- Angle
- Rear End
- Sideswipe - Same Direction
- Off Road
- Head On
- Other



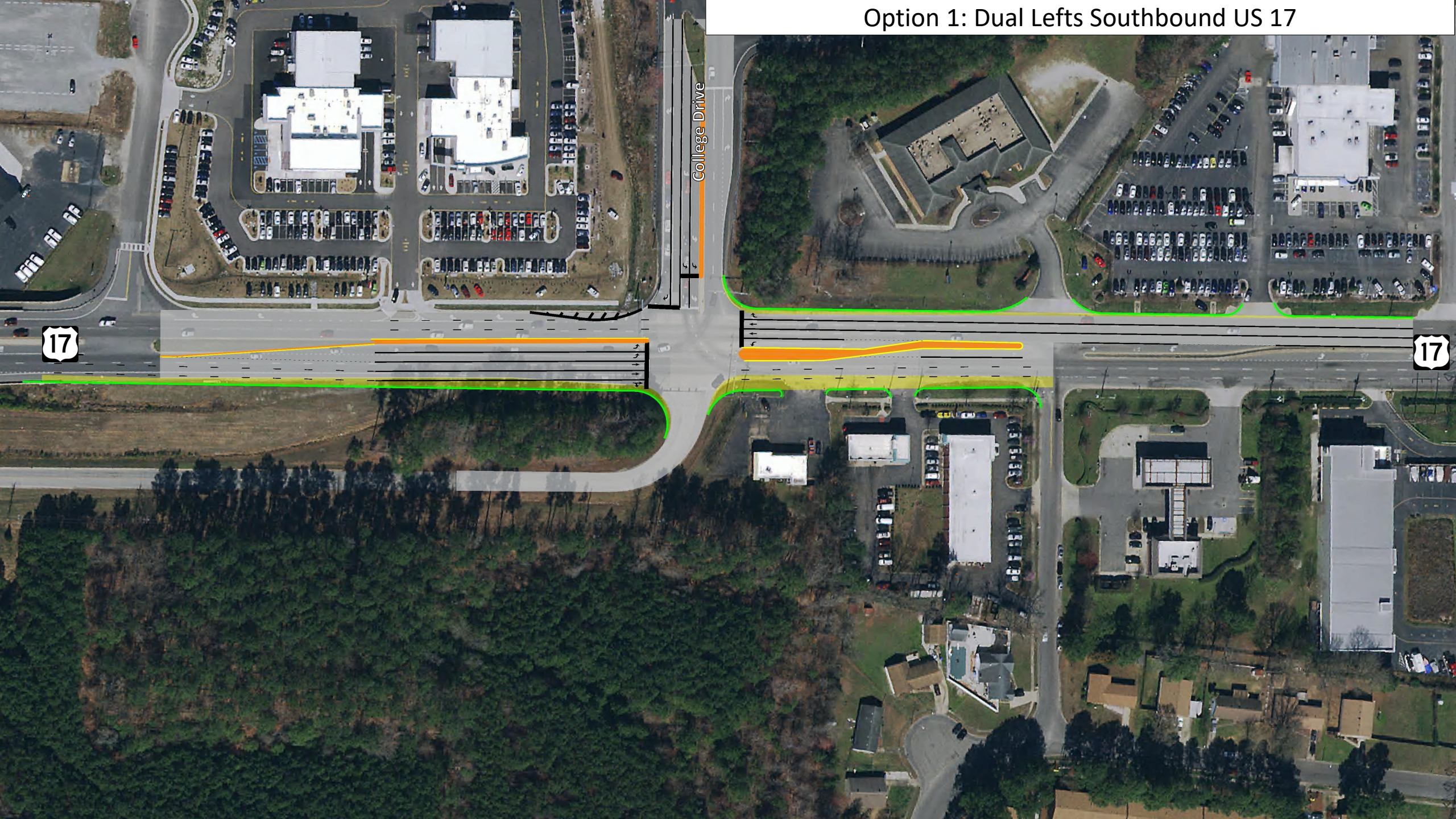
Construction Estimates

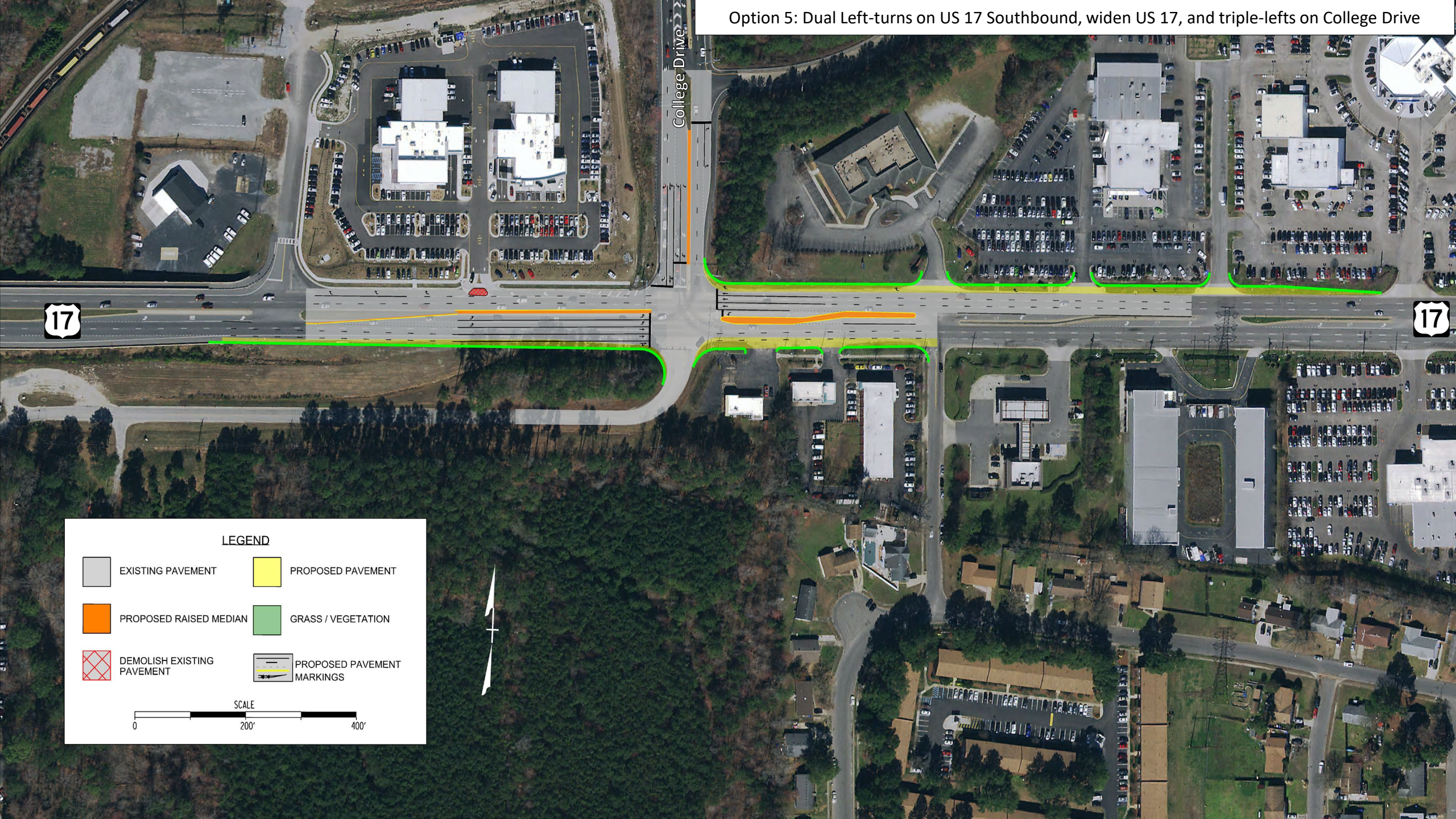
Construction Estimate Range				
Scenario	No Build	Option 1 Dual Lefts	Option 5 Dual Lefts/Widen Us 17/College Dr Triple-Lefts	Partial Quadrant Roadway
Construction Estimate	-	\$3,400,000	\$4,915,000	\$6.0M to \$7.5M
PE Estimate	-	\$600,000	\$820,000	\$900K - \$1.1M
RW Square Footage	-	<3,000 SF	<25,000 SF	<35,000 SF
Overall Intersection Operation	95.5 - F	65.2 - E	53.5 - D	57.2 - E
Expected Total Crash Reduction	-	3% -15%	3% - 15%	35%
Southbound US 17 Queue lengths are lower under the Partial Quadrant Roadway configuration				

PM Weave Analysis				
Scenario	Weave Type	Desnity (pc/mi/ln)	LOS	Speed (MPH)
Existing	Two-sided	12.2	B	48.0
No Build	Two-sided	22.9	C	45.6
Dual Lefts	Two-sided	22.9	C	45.6
Partial Quadrant Roadway	One-sided	25.4	C	41.1
HCS Weaving Module				



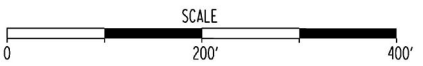
Option 1: Dual Lefts Southbound US 17

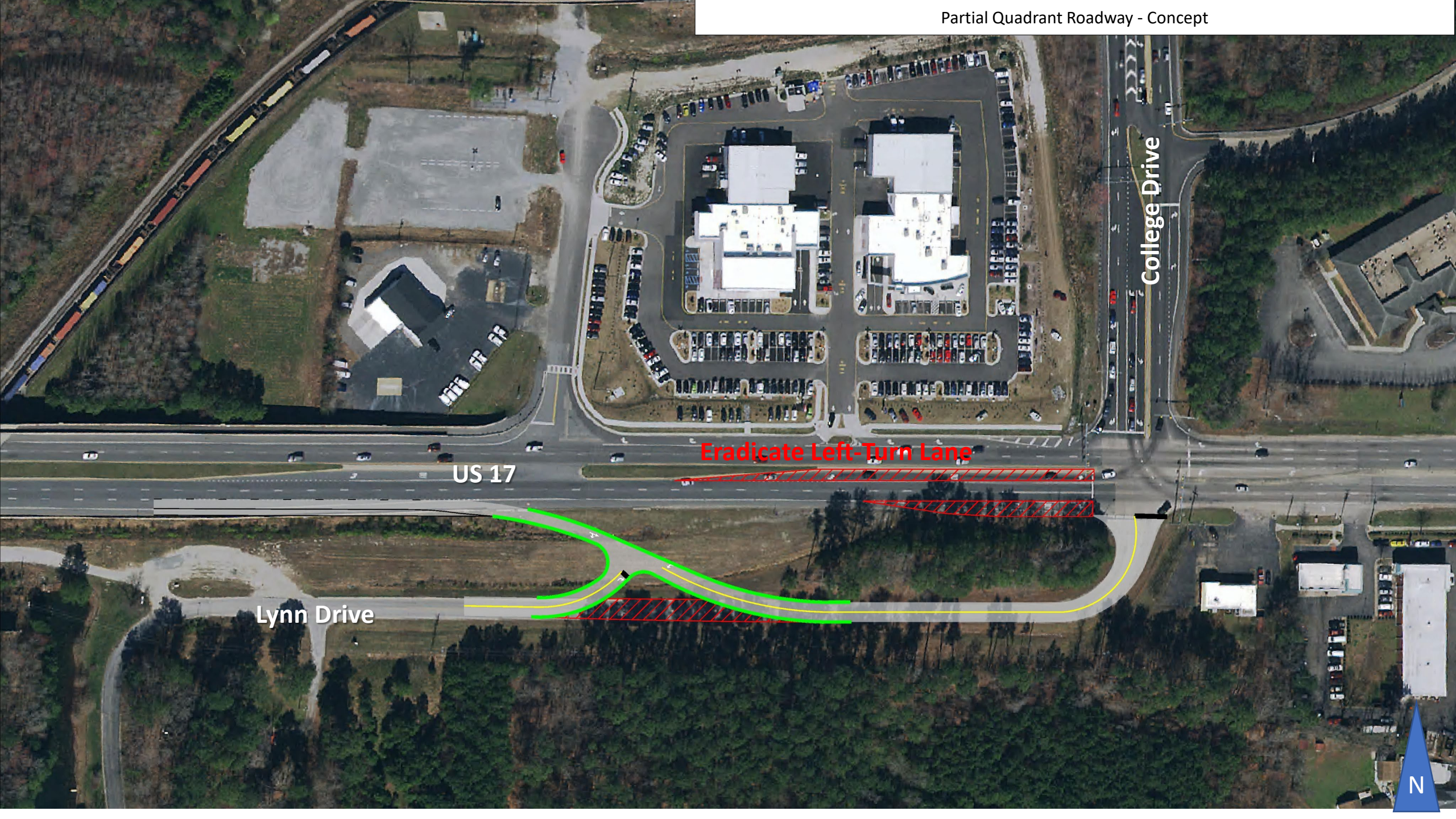




LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROPOSED RAISED MEDIAN
- GRASS / VEGETATION
- DEMOLISH EXISTING PAVEMENT
- PROPOSED PAVEMENT MARKINGS





US 17

Lynn Drive

College Drive

Eradicate Left-Turn Lane

