SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

SR 434 Corridor Planning Study

Seminole County Commission

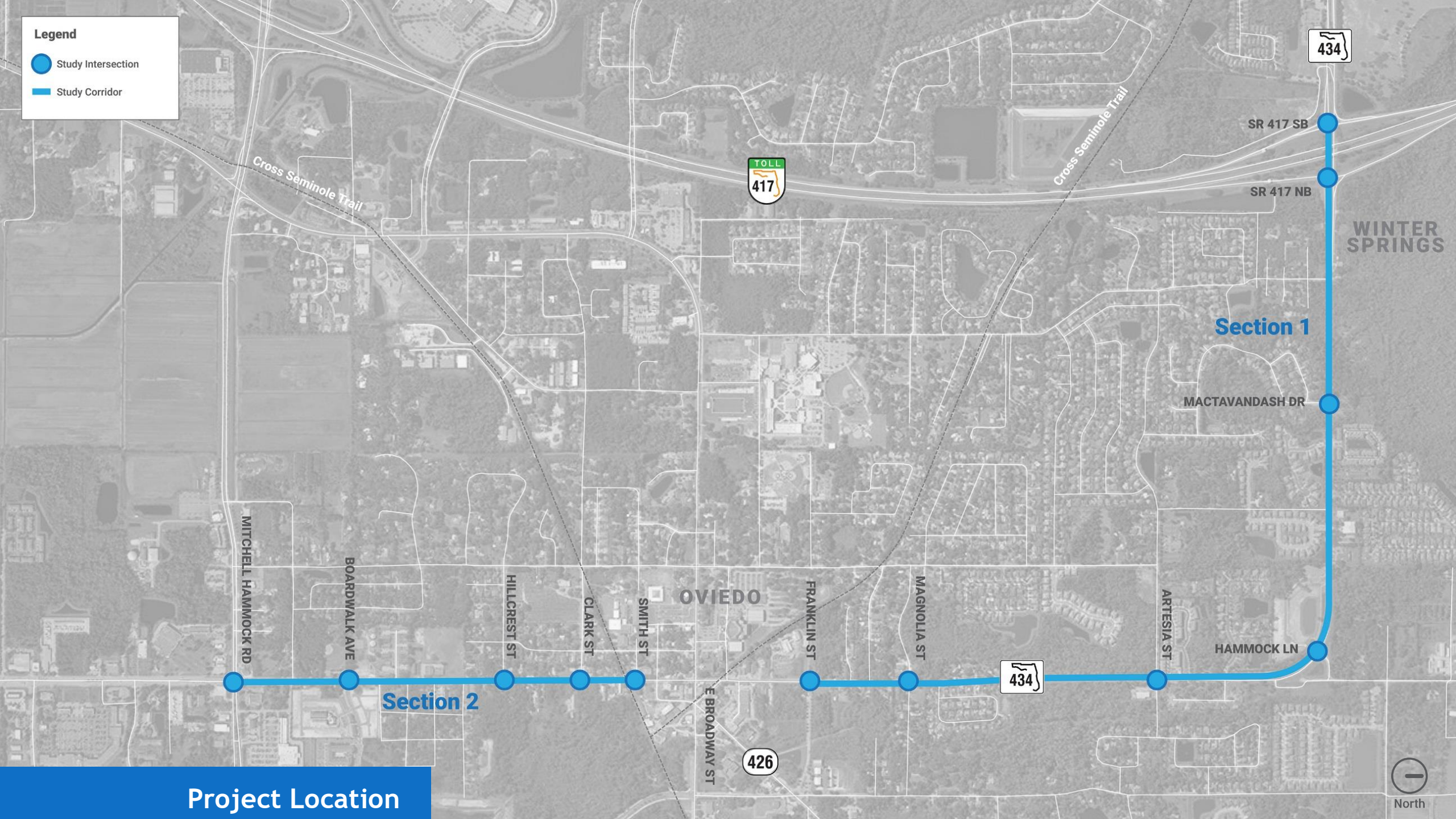
August 27, 2019

Agenda

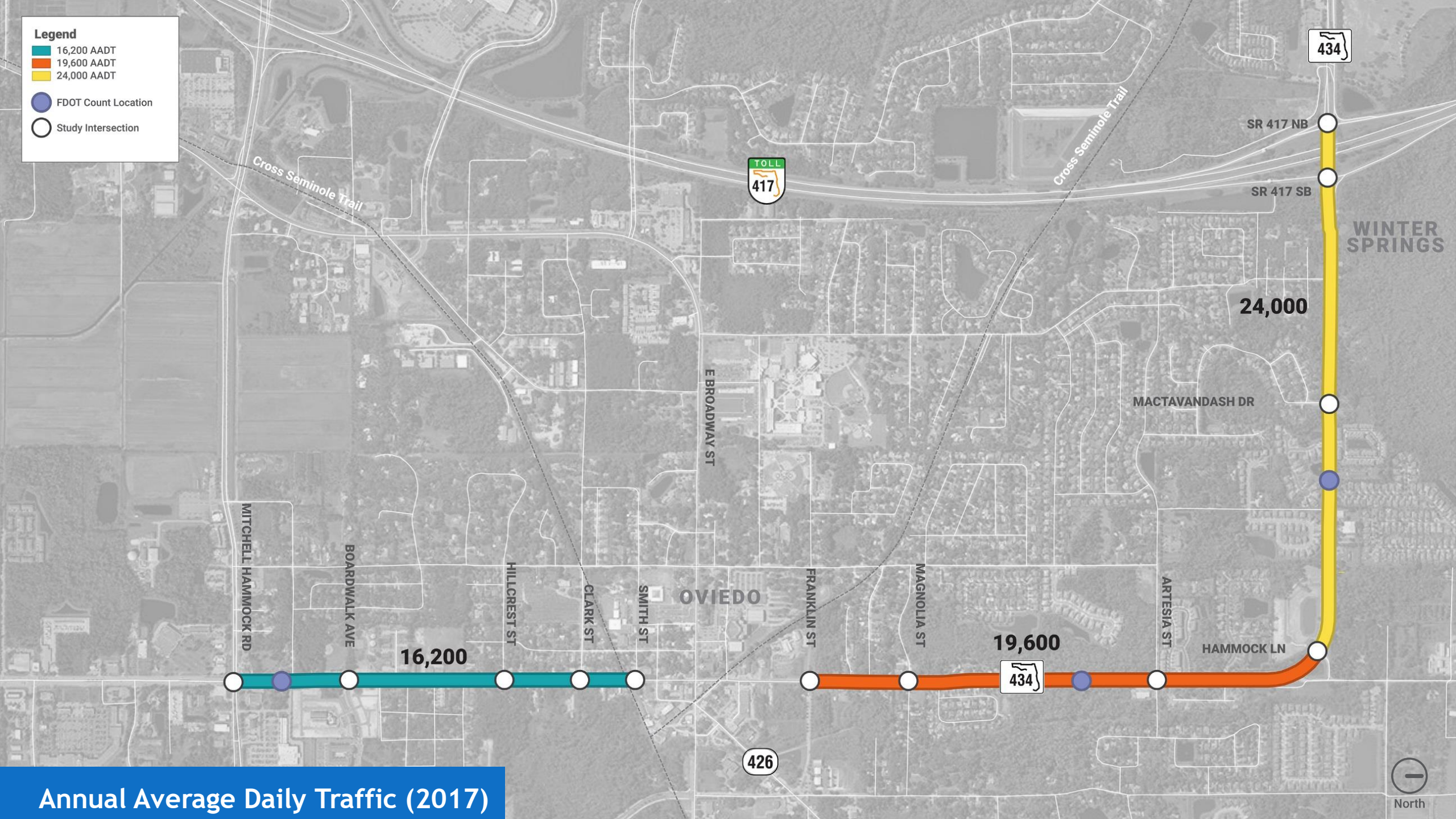
- Corridor Planning Study Overview
- Section 2 Short-Term Projects
- Section 1 Short-Term Project Development
- Next Steps

Corridor Planning Study Overview

Planning for Project Implementation



Project Location



Annual Average Daily Traffic (2017)

Needs

Section 1: SR 417 to Franklin Street

- Roadway Capacity
- Safe access to/from driveways or unsignalized intersections
- Safe school bus loading/unloading

- Safe, continuous facility (along SR 434)
- Access between uses (along and across SR 434)

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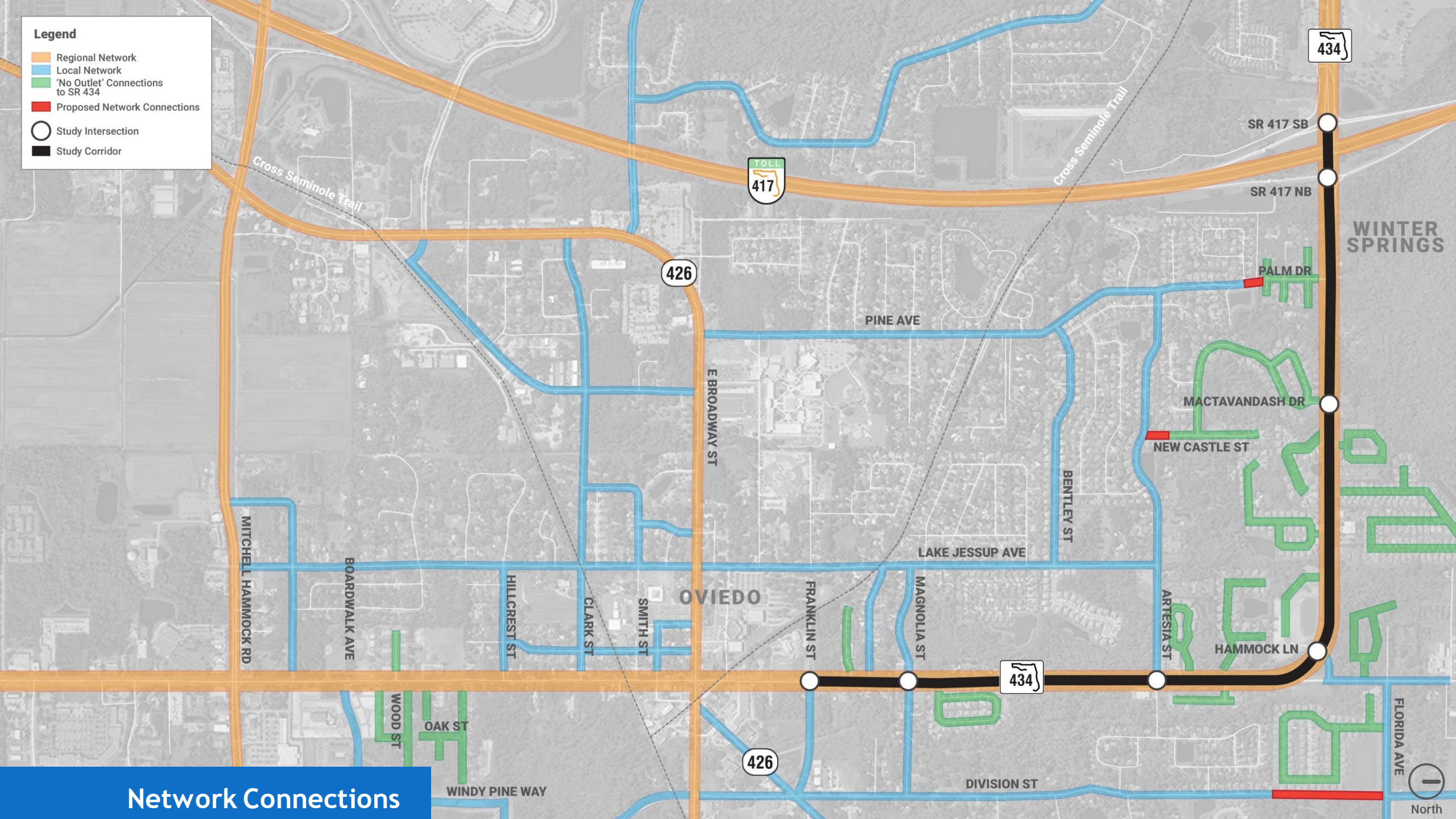
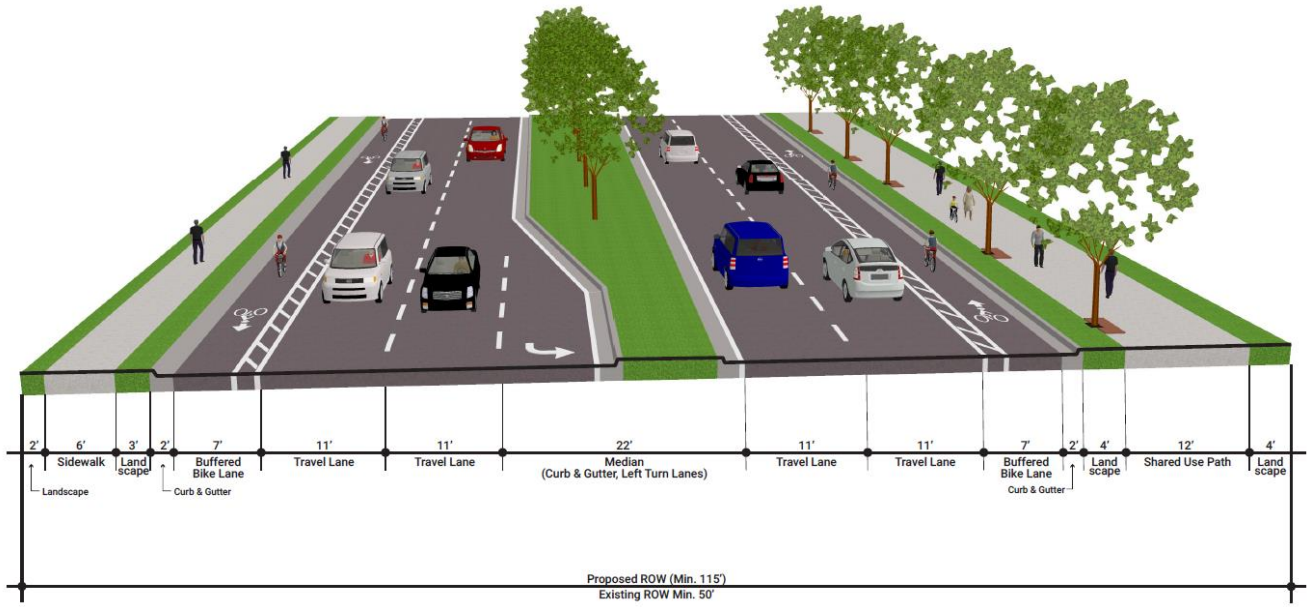


Network Connections

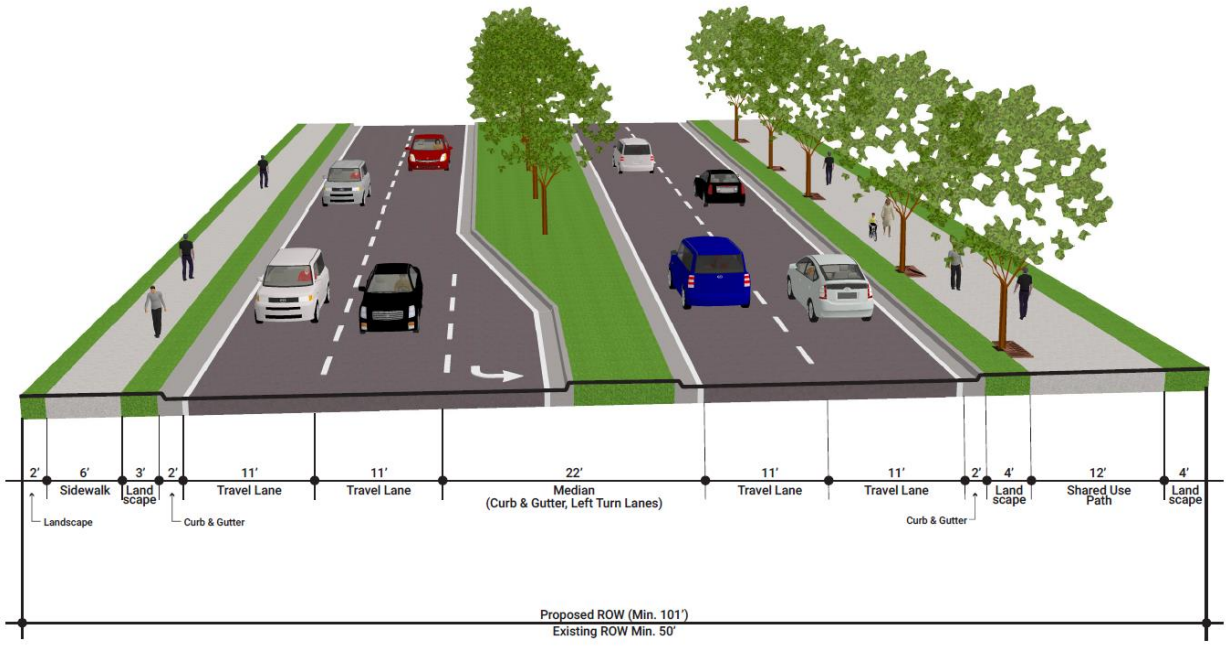
Long-Term Solution
Section 1: SR 417 to Franklin Street

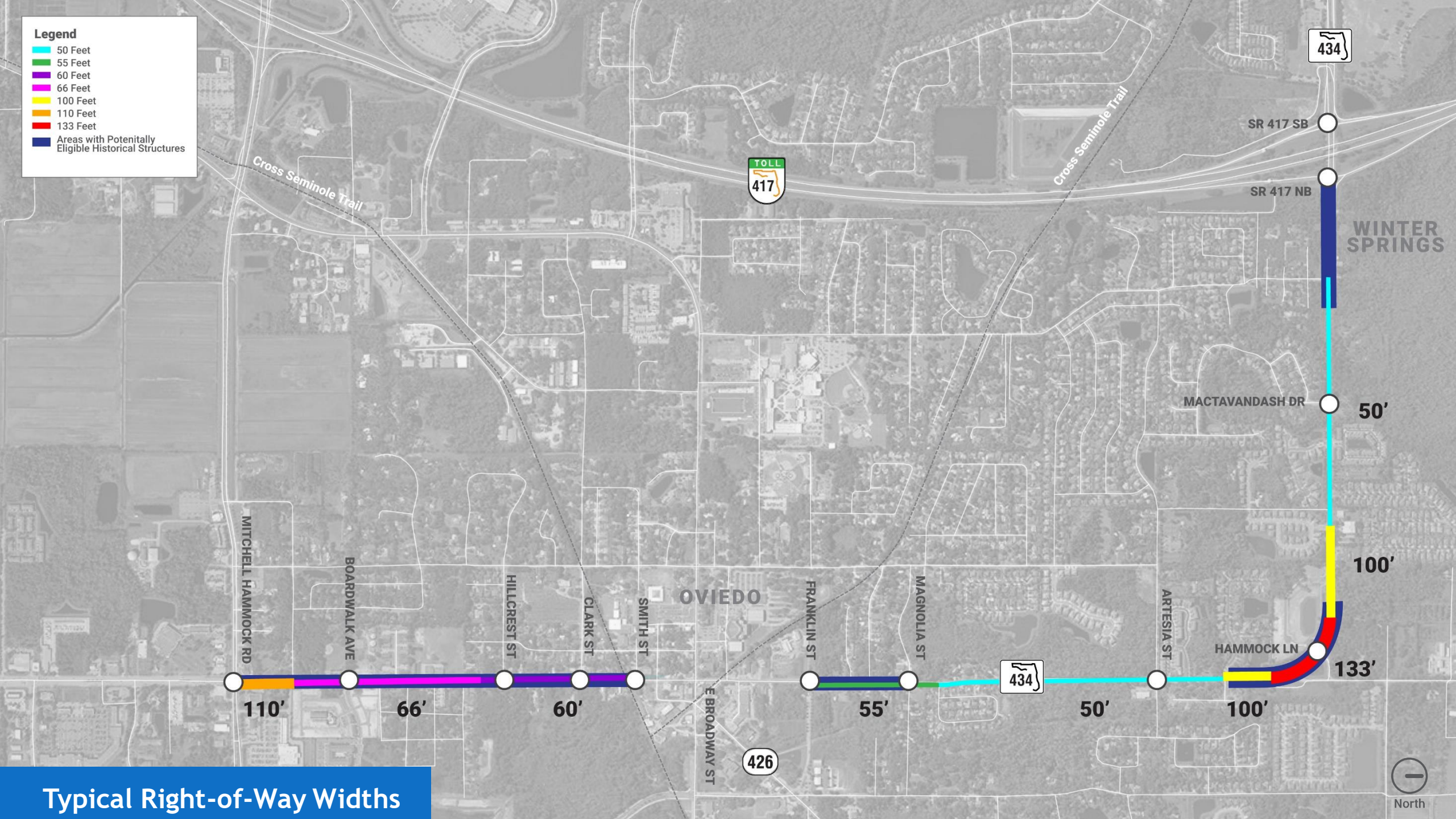
- Alternatives 1 and 3 best meet the needs of the corridor users
  - Alternative 1 – buffered bicycle lanes, more property impacts
  - Alternative 3 – less property impacts, no buffered bicycle lanes (requires design exception)

Section 1 - Alternative 1
4-Lanes Divided with Buffered Bike Lanes & Shared Used Path



Section 1 - Alternative 3
4-Lanes Divided with Shared Used Path





Typical Right-of-Way Widths

Needs

Section 2: Smith Street to Mitchell Hammock Road

- Roadway capacity
- Mitchell Hammock Road intersection capacity
- Road safety

- Safe, continuous facility (along SR 434)
- Access to the trail
- Access between uses (along and across SR 434)

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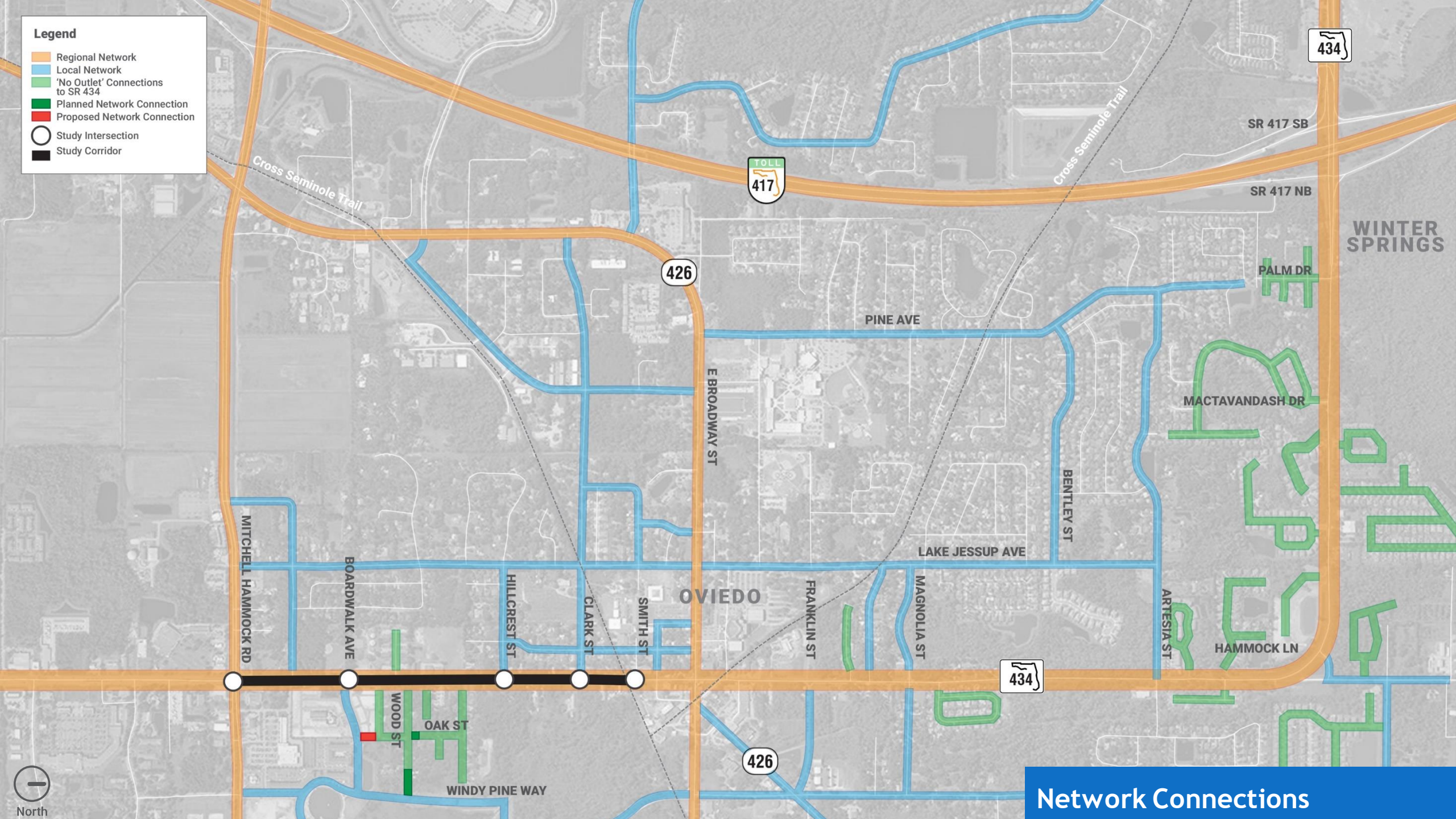


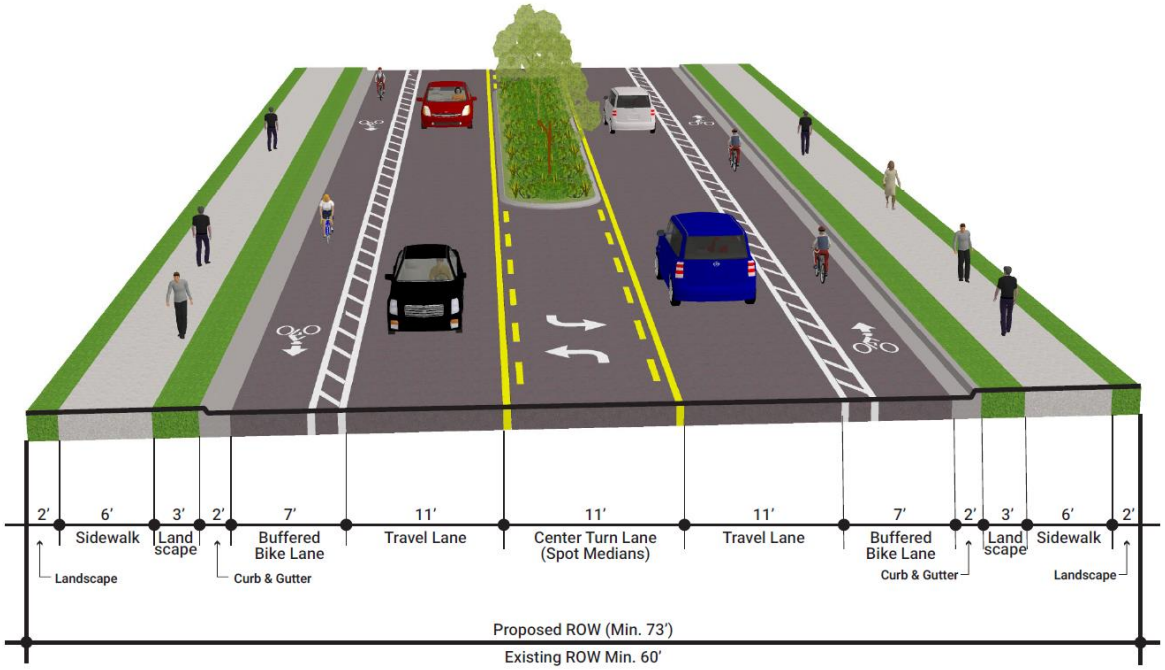
Network Connections

Long-Term Solution

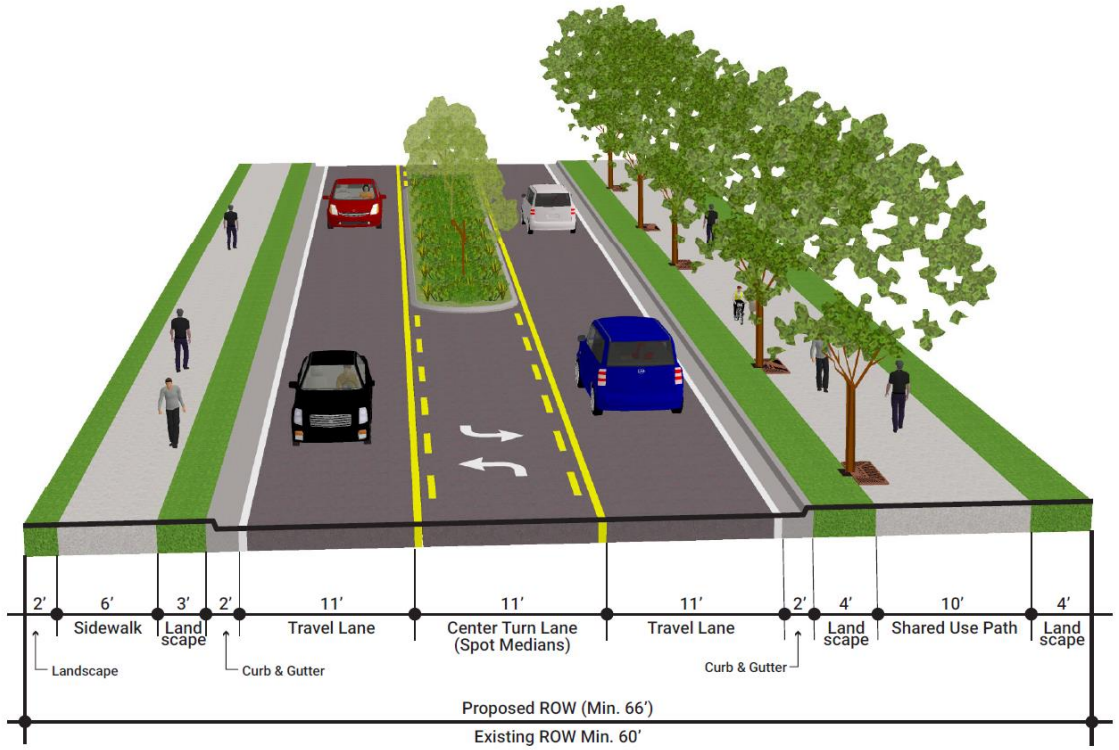
Section 2: Smith Street to Mitchell Hammock Road

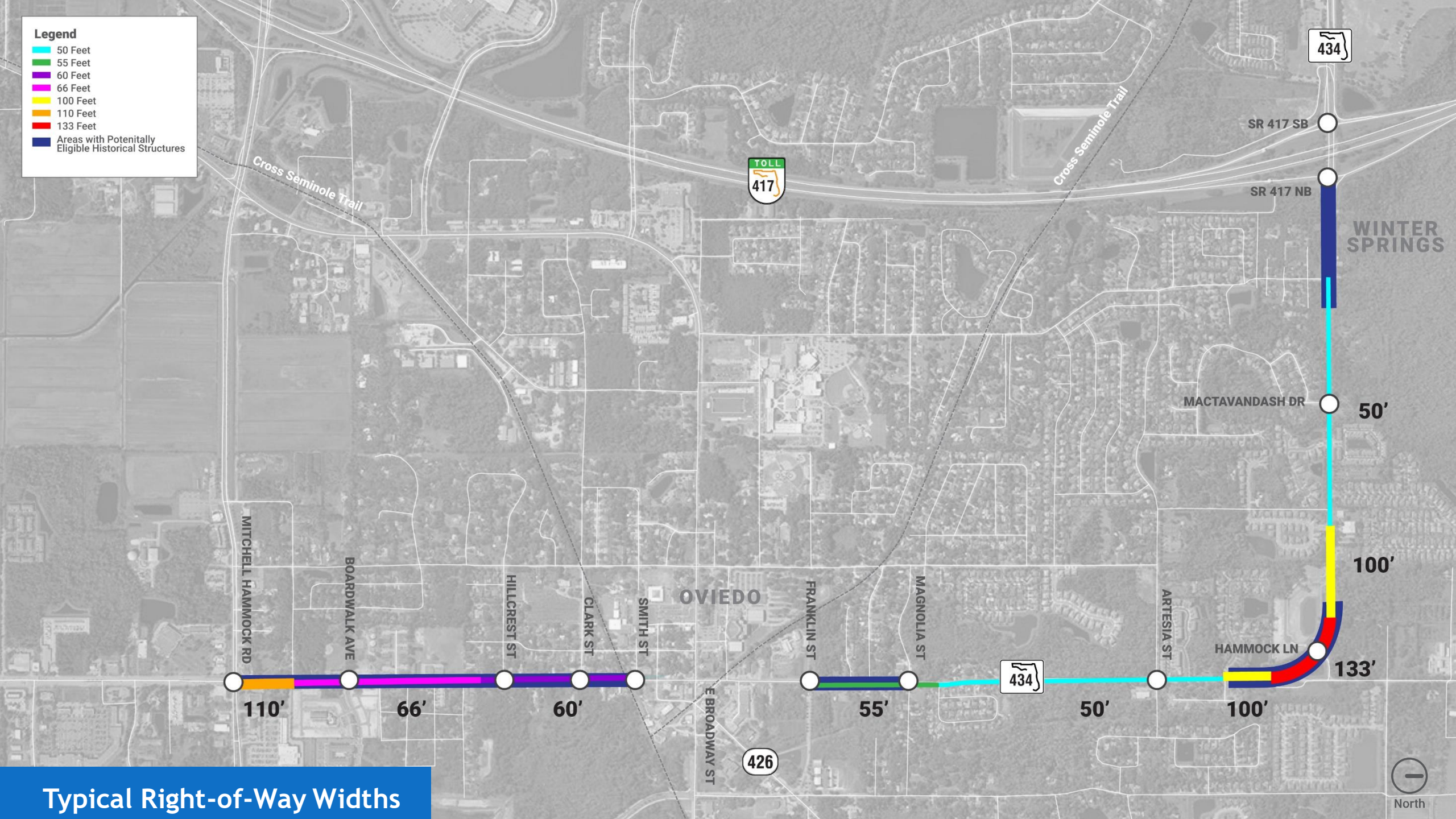
- Alternatives 1 and 2 best meet the needs while controlling property impacts
  - Alternative 1 – buffered bicycle lanes, no shared use path, more property impacts
  - Alternative 2 – less property impacts, no buffered bicycle lanes (requires design exception)

Section 2 - Alternative 1
3-Lanes with Buffered Bike Lanes



Section 2 - Alternative 2
3-Lanes with Shared Use Path





Typical Right-of-Way Widths

Planning for Project Implementation

- MetroPlan Orlando's Prioritized Project List
  - Long-term projects do not have reliable construction funding in the near-term
- We shifted focus to implementing short-term, high-impact projects

Section 2
Short-Term Projects

Section 2 Short-Term Projects

- Safety
  - Pedestrian crosswalk near Boardwalk Ave
  - Reduce posted speed from 45 to 35 mph
- Intersection Operations
  - Mitchell Hammock Road – second westbound left-turn lane
- Network Connections
  - Wood Street extension to Windy Pine Way
  - Oak Street connection across Wood Street

Section 1
Short-Term Project Development

Needs

Section 1: SR 417 to Franklin Street

- Roadway Capacity
- Safe access to/from driveways or unsignalized intersections
- Safe school bus loading/unloading

- Safe, continuous facility (along SR 434)
- Access between uses (along and across SR 434)

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Project Elements

- Roundabouts
- Access Management
- Speed Management

- Shared Use Path

- Sidewalk Connections

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- Roundabouts
- Access Management
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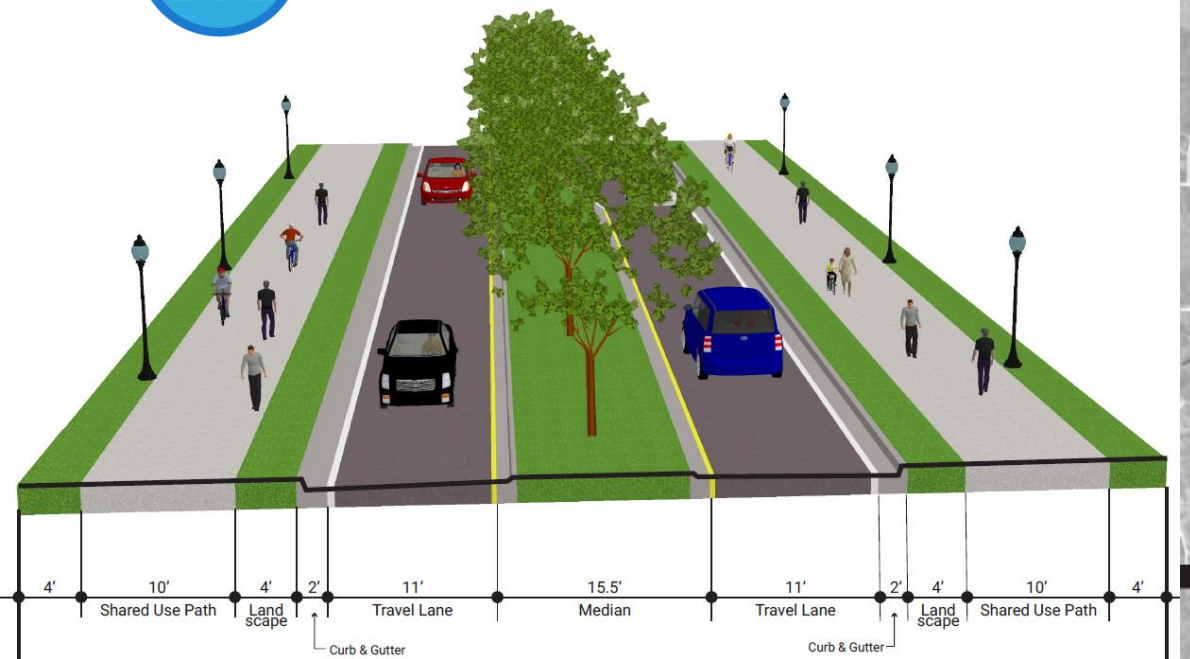
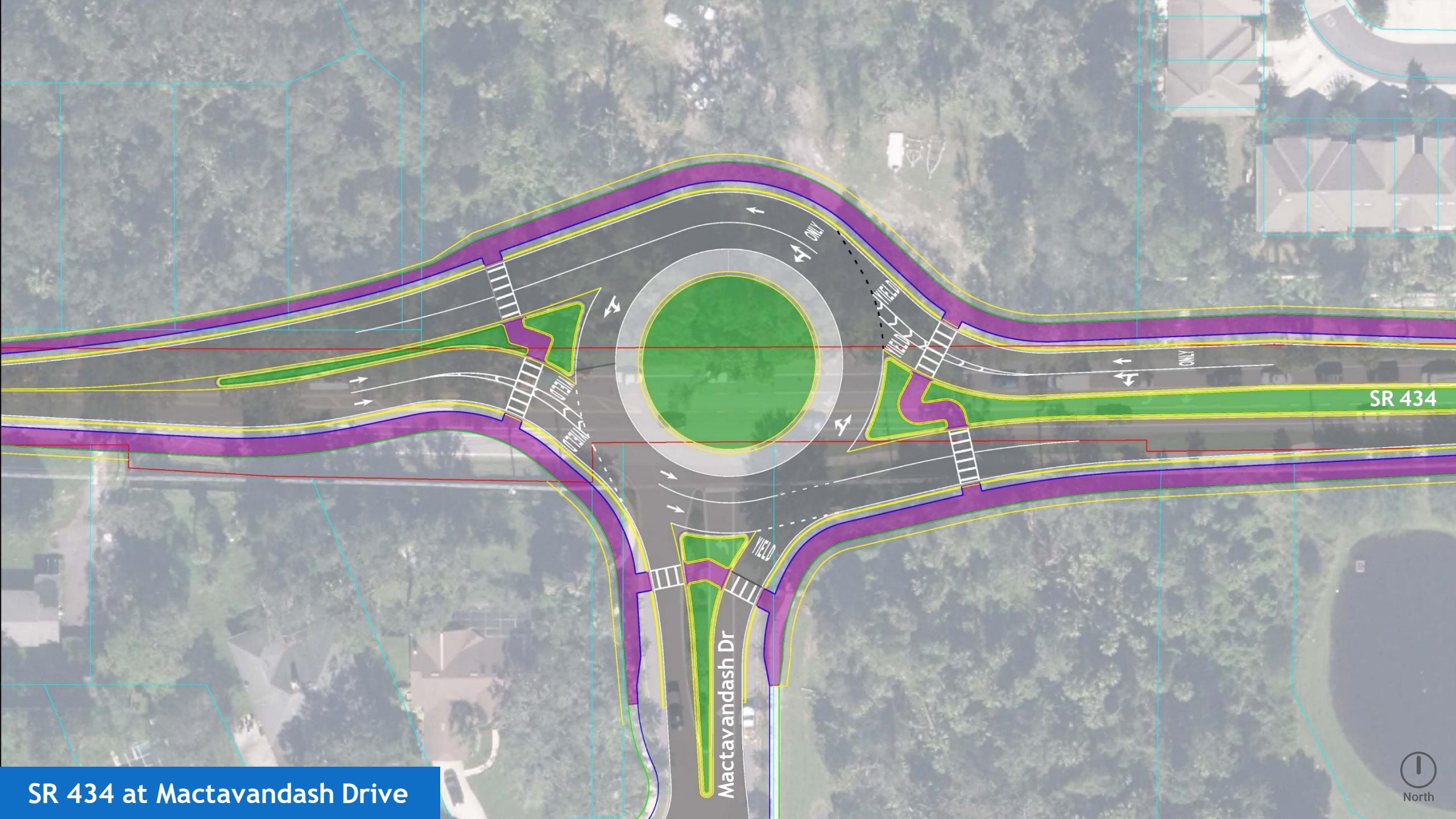
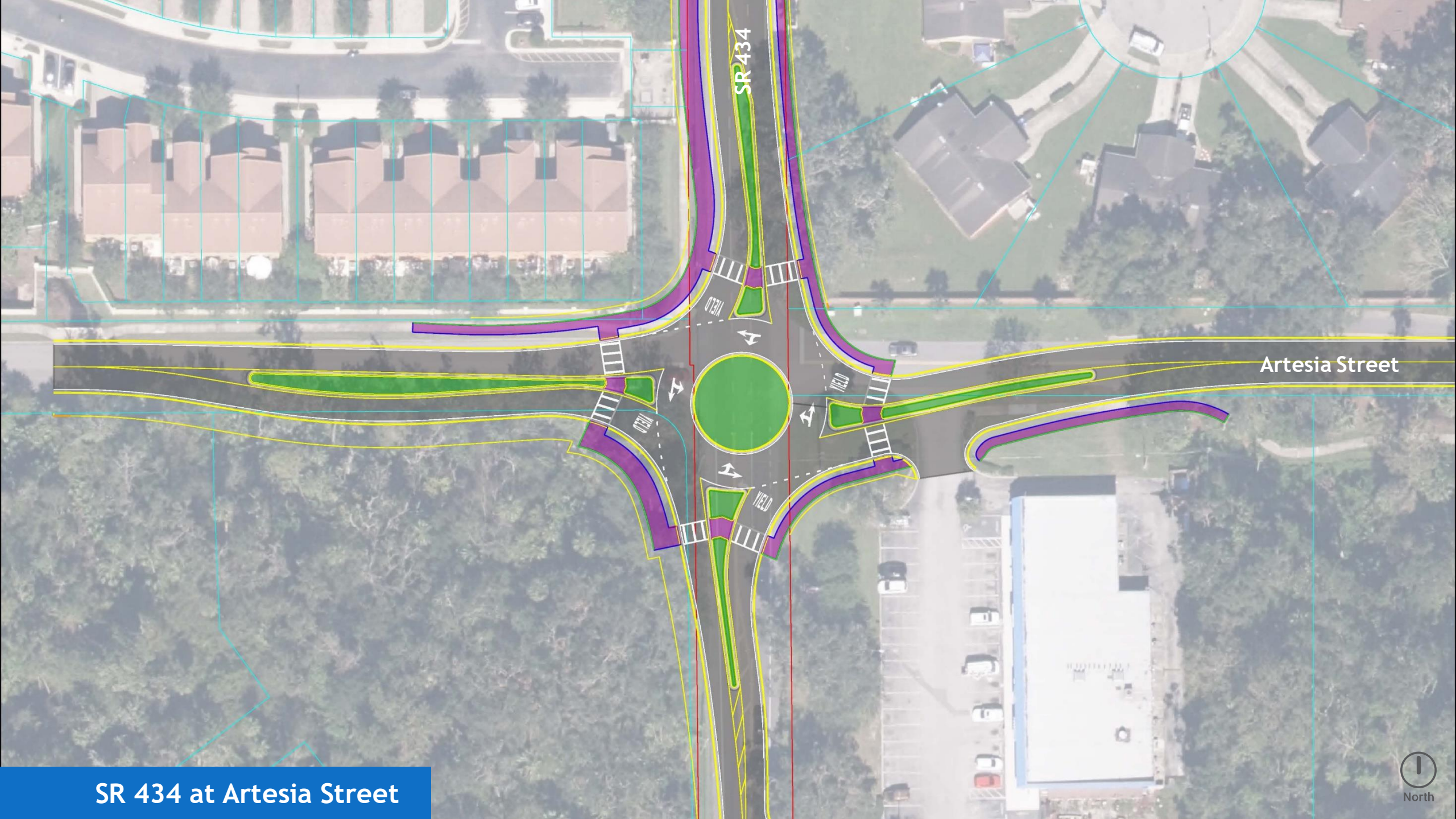
- Shared Use Path
- Sidewalk Connections





SR 434 at Mactavandash Drive

SR 434 at Hammock Lane



SR 434 at Artesia Street

Needs

Section 1: SR 417 to Franklin Street

- ☑ Roadway Capacity
- ☑ Safe access to/from driveways or unsignalized intersections
- ☑ Safe school bus loading/unloading

- ☑ Safe, continuous facility (along SR 434)
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Short-Term Project Schedule

- Complete Project Development (2019)
- Move Project into Design (FY 19/20)
- Right-of-Way & Construction (FY 23/24)

Next Steps

Next Steps for Short-Term Project

- Obtain Support for Short-Term Project
  - **Seminole County Commission** workshop (8/27)
  - **FDOT Management Meeting** (9/3)
  - **Oviedo City Council** meeting in September
  - **Winter Springs City Commission** meeting in September
  - **Public Meeting** in October
- Complete Project Development
  - Finalize Preliminary Concepts and Cost Estimates
  - Complete Project Application
- Prepare for Design Phase

Contact Information

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2018 Intersection Operations

Intersection	Measure	AM Peak Hour					PM Peak Hour				
		EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
SR 434 at SR 417 SB Ramps	Delay (LOS)	11.9 (B)	6.8 (A)	-	61.2 (E)	**12.2 (B)**	14.9 (B)	5.4 (A)	-	64.9 (E)	**17.6 (B)**
	v/c ratio	0.32	0.42	-	0.83	-	0.34	0.44	-	0.92	-
SR 434 at SR 417 NB Ramps	Delay (LOS)	27.5 (C)	21.7 (C)	54.4 (D)	-	**29.5 (C)**	3.8 (A)	20.2 (C)	60.0 (E)	-	**22.2 (C)**
	v/c ratio	0.80	0.61	0.84	-	-	0.47	0.43	0.87	-	-
SR 434 at Mactavandash Drive	Delay (LOS)	-	9.9 (A)	144.0 (F)	-	-	-	13.2 (B)	125.9 (F)	-	-
	v/c ratio	-	0.01	0.50	-	-	-	0.04	0.21	-	-
SR 434 at Hammock Lane	Delay (LOS)	12.4 (B)	124.6 (F)	-	30.3 (C)	65.8 (E)	19.1 (B)	25.3 (C)	-	52.6 (D)	**22.8 (C)**
	v/c ratio	0.68	1.21	-	0.80	-	0.91	0.84	-	0.64	-
SR 434 at Artesia Street	Delay (LOS)	234.2 (F)	31.7 (D)	9.6 (A)	10.0 (B)	-	315.8 (F)	67.7 (F)	10.8 (B)	10.2 (B)	-
	v/c ratio	0.98	0.3	0.01	0.01	-	1.12	0.48	0.03	0.06	-
SR 434 at Magnolia Street	Delay (LOS)	31.9 (C)	34.6 (C)	6.5 (A)	6.8 (A)	**9.7 (A)**	56.5 (E)	54.6 (D)	5.4 (A)	7.1 (A)	**11.4 (B)**
	v/c ratio	0.28	0.56	0.57	0.58	-	0.61	0.49	0.55	0.64	-
SR 434 at Franklin Street	Delay (LOS)	-	48.1 (D)	20.4 (C)	14.1 (B)	**21.4 (C)**	-	32.3 (C)	20.2 (C)	23.8 (C)	**23.0 (C)**
	v/c ratio	-	0.78	0.32	0.47	-	-	0.35	0.64	0.92	-

**Average delays (seconds) and LOS reported for approach on signalized approaches or critical movement on unsignalized approaches. Volume-to-capacity (v/c) ratios reported for critical movement on all approaches.*

2045 (No Build) Intersection Operations

Intersection	Measure	AM Peak Hour					PM Peak Hour				
		EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
SR 434 at SR 417 SB Ramps	Delay (LOS)	16.0 (B)	6.6 (A)	-	68.3 (E)	**14.2 (B)**	20.3 (C)	5.4 (A)	-	68.2 (E)	**20.2 (C)**
	v/c ratio	0.44	0.89	-	0.86	-	0.47	0.82	-	0.94	-
SR 434 at SR 417 NB Ramps	Delay (LOS)	41.5 (D)	26.0 (C)	84.2 (F)	-	**42.1 (D)**	4.7 (A)	22.0 (C)	65.1 (E)	-	**24.3 (C)**
	v/c ratio	1.04	0.83	1.02	-	-	0.61	0.54	0.90	-	-
SR 434 at Mactavandash Drive	Delay (LOS)	-	10.9 (B)	>200 (F)	-	-	-	15.8 (C)	181.8 (F)	-	-
	v/c ratio	-	0.02	1.45	-	-	-	0.06	0.71	-	-
SR 434 at Hammock Lane	Delay (LOS)	25.8 (C)	>200 (F)	-	37.8 (D)	**199.3 (F)**	32.8 (C)	76.5 (E)	-	56.9 (E)	**50.3 (D)**
	v/c ratio	0.91	>1.5	-	0.87	-	1.04	1.08	-	0.78	-
SR 434 at Artesia Street	Delay (LOS)	>200 (F)	70.3 (F)	10.5 (B)	11.0 (B)	-	>200 (F)	>200 (F)	12.2 (B)	11.0 (B)	-
	v/c ratio	>1.5	0.58	0.01	0.02	-	>1.5	1.42	0.04	0.09	-
SR 434 at Magnolia Street	Delay (LOS)	31.0 (C)	33.9 (C)	10.2 (B)	11.5 (B)	**13.4 (B)**	55.0 (E)	52.5 (D)	8.6 (A)	14.1 (B)	**16.0 (B)**
	v/c ratio	0.34	0.62	0.74	0.76	-	0.66	0.53	0.72	0.82	-
SR 434 at Franklin Street	Delay (LOS)	-	43.8 (D)	21.6 (C)	16.8 (B)	**23.8 (C)**	-	27.6 (C)	31.4 (C)	23.1 (C)	**26.7 (C)**
	v/c ratio	-	0.79	0.42	0.66	-	-	0.42	0.96	0.95	-

**Average delays (seconds) and LOS reported for approach on signalized approaches or critical movement on unsignalized approaches. Volume-to-capacity (v/c) ratios reported for critical movement on all approaches.*

Long-Term Project - 2045 Intersection Operations

Intersection	Configuration		Measure	AM Peak Hour					PM Peak Hour				
				EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
SR 434 at SR 417 SB Ramps		Base	Delay (LOS)	16.2 (B)	7.5 (A)	-	68.3 (E)	**14.7 (B)**	20.4 (C)	5.4 (A)	-	68.2 (E)	**20.2 (C)**
			v/c ratio	0.44	0.88	-	0.86	-	0.47	0.81	-	0.94	-
		2nd SB LT Lane	Delay (LOS)	12.9 (B)	6.9 (A)	-	48.8 (D)	**11.8 (B)**	12.5 (B)	5.2 (A)	-	53.0 (D)	**14.8 (B)**
			v/c ratio	0.40	0.89	-	0.73	-	0.39	0.82	-	0.83	-
SR 434 at SR 417 NB Ramps		Base	Delay (LOS)	29.4 (C)	26.0 (C)	84.2 (F)	-	**37.0 (D)**	4.4 (A)	28.6 (C)	50.8 (D)	-	**22.5 (C)**
			v/c ratio	1.04	0.77	1.02	-	-	0.62	0.62	0.84	-	-
		2nd EB LT Lane	Delay (LOS)	27.3 (C)	26.0 (C)	50.9 (D)	-	**30.6 (C)**	4.0 (A)	32.5 (C)	49.1 (D)	-	**23.0 (C)**
			v/c ratio	0.61	0.77	0.85	-	-	0.62	0.67	0.83	-	-
SR 434 at Mactavandash Drive		Base	Delay (LOS)	-	11.1 (B)	21.6 (C)	-	-	-	15.8 (C)	27.5 (D)	-	-
			v/c ratio	-	0.02	0.17	-	-	-	0.06	0.11	-	-
		Roundabout	Delay (LOS)	6.4 (A)	10.7 (B)	7.9 (A)	-	**9.0 (A)**	10.5 (B)	6.8 (A)	13.0 (B)	-	**9.1 (A)**
			v/c ratio	0.42	0.68	0.06	-	-	0.68	0.47	0.07	-	-
		Signal	Delay (LOS)	10.1 (B)	19.2 (B)	14.4 (B)	-	**15.8 (B)**	22.9 (C)	10.3 (B)	14.7 (B)	-	**17.7 (B)**
			v/c ratio	0.56	0.92	0.06	-	-	0.90	0.62	0.05	-	-
SR 434 at Hammock Lane		Base	Delay (LOS)	11.7 (B)	44.3 (D)	-	37.8 (D)	**29.9 (C)**	14.5 (B)	19.5 (C)	-	52.3 (D)	**18.1 (B)**
			v/c ratio	0.74	0.95	-	0.87	-	0.90	0.59	-	0.77	-
		Roundabout	Delay (LOS)	7.1 (A)	8.7 (A)	-	43.8 (E)	**14.3 (B)**	10.3 (B)	10.5 (B)	-	10.2 (B)	**10.4 (B)**
			v/c ratio	0.46	0.54	-	0.90	-	0.67	0.58	-	0.32	-
		Roundabout with Bypass	Delay (LOS)	7.1 (A)	8.7 (A)	-	1.1 (A)	**6.7 (A)**	10.3 (B)	10.5 (B)	-	1.3 (A)	**9.7 (A)**
			v/c ratio	0.46	0.54	-	0.13	-	0.67	0.58	-	0.07	-
SR 434 at Artesia Street		Base	Delay (LOS)	37.5 (E)	18.3 (C)	10.5 (B)	11.2 (B)	-	53.2 (F)	21.4 (C)	12.2 (B)	11.0 (B)	-
			v/c ratio	0.38	0.21	0.01	0.02	-	0.46	0.22	0.04	0.09	-
		EB RT Lane	Delay (LOS)	36.1 (E)	18.3 (C)	10.5 (B)	11.2 (B)	-	48.0 (E)	21.4 (C)	12.2 (B)	11.0 (B)	-
			v/c ratio	0.36	0.21	0.01	0.02	-	0.41	0.22	0.04	0.09	-
		Roundabout	Delay (LOS)	7.6 (A)	8.9 (A)	7.0 (A)	6.3 (A)	**6.8 (A)**	9.7 (A)	7.9 (A)	7.0 (A)	8.0 (B)	**7.6 (A)**
			v/c ratio	0.11	0.14	0.45	0.42	-	0.13	0.11	0.45	0.54	-
		Signal	Delay (LOS)	8.0 (A)	8.0 (A)	18.5 (B)	17.6 (B)	**17.5 (B)**	11.2 (B)	11.2 (B)	12.9 (B)	17.4 (B)	**15.2 (B)**
			v/c ratio	0.09	0.09	0.81	0.79	-	0.09	0.09	0.64	0.81	-
SR 434 at Magnolia Street		Base	Delay (LOS)	35.7 (D)	39.0 (D)	8.3 (A)	8.5 (A)	**11.8 (B)**	55.0 (D)	52.9 (D)	10.0 (B)	11.8 (B)	**15.4 (B)**
			v/c ratio	0.38	0.65	0.44	0.48	-	0.65	0.55	0.53	0.78	-
SR 434 at Franklin Street		Base	Delay (LOS)	-	43.8 (D)	19.1 (B)	16.2 (B)	**22.9 (C)**	-	27.6 (C)	22.6 (C)	26.7 (C)	**25.2 (C)**
			v/c ratio	-	0.79	0.22	0.66	-	-	0.42	0.51	0.95	-

Short-Term Project – Intersection Control Evaluation

SR 434 at Mactavandash Drive

Configuration		Operational Performance					DELAY B/C RATIO	Safety Performance				SAFETY B/C RATIO	OVERALL B/C RATIO
		Measure	Existing Year (2018)		Design Year (2045)			Measure	Existing Year (2018)	Design Year (2045)	Total Project Life Cycle		
			AM Peak	PM Peak	AM Peak	PM Peak							
	Signal	Delay (LOS)	9.6 (A)	29.0 (C)	33.4 (C)	44.6 (D)	-	Total Crashes	4.24	6.31	147.35	-	-
								Fatal & Injury Crashes	1.70	2.43	57.67		
	Roundabout	Delay (LOS)	6.7 (A)	6.7 (A)	9.3 (A)	9.4 (A)	**12.36**	Total Crashes	4.95	6.82	164.47	**3.76**	**16.13**
								Fatal & Injury Crashes	0.93	1.36	31.85		

SR 434 at Hammock Lane

Configuration		Operational Performance					DELAY B/C RATIO	Safety Performance				SAFETY B/C RATIO	OVERALL B/C RATIO
		Measure	Existing Year (2018)		Design Year (2045)			Measure	Existing Year (2018)	Design Year (2045)	Total Project Life Cycle		
			AM Peak	PM Peak	AM Peak	PM Peak							
	Signal	Delay (LOS)	28.1 (C)	15.0 (B)	69.3 (E)	42.6 (D)	-	Total Crashes	4.83	7.15	167.24	-	-
								Fatal & Injury Crashes	1.81	2.56	61.10		
	Roundabout	Delay (LOS)	7.4 (A)	7.2 (A)	15.4 (C)	10.7 (B)	**9.62**	Total Crashes	5.39	7.50	180.25	**2.07**	**11.68**
								Fatal & Injury Crashes	1.03	1.52	35.65		

SR 434 at Artesia Street

Configuration		Operational Performance					DELAY B/C RATIO	Safety Performance				SAFETY B/C RATIO	OVERALL B/C RATIO
		Measure	Existing Year (2018)		Design Year (2045)			Measure	Existing Yr (2018)	Design Yr (2045)	Total Project Life Cycle		
			AM Peak	PM Peak	AM Peak	PM Peak							
	Signal	Delay (LOS)	24.9 (C)	15.8 (B)	23.0 (C)	30.2 (C)	-	Total Crashes	6.52	9.27	220.56	-	-
								Fatal & Injury Crashes	2.25	3.27	76.98		
	Roundabout	Delay (LOS)	10.0 (A)	12.8 (B)	19.9 (C)	42.2 (E)	**5.95**	Total Crashes	2.40	2.96	75.25	**9.76**	**15.72**
								Fatal & Injury Crashes	0.47	0.61	15.14		

Project Costs

Long-Term Projects

- MetroPlan Orlando Prioritized Project List
  - SR 434 Section 1 is prioritized at #41 ($70M PE/ROW/CST)
  - SR 434 Section 2 is prioritized at #51 ($25M PE/ROW/CST)
  - Federally mandated performance-based scoring criteria
  - Top 7 projects are funded in the next 5 years

Short-Term Project (Section 1)

- FDOT Long Range Estimate (LRE)
  - $1.6M Design
  - ROW cost estimate under development
  - $10.6M Construction + $1.6M CEI