

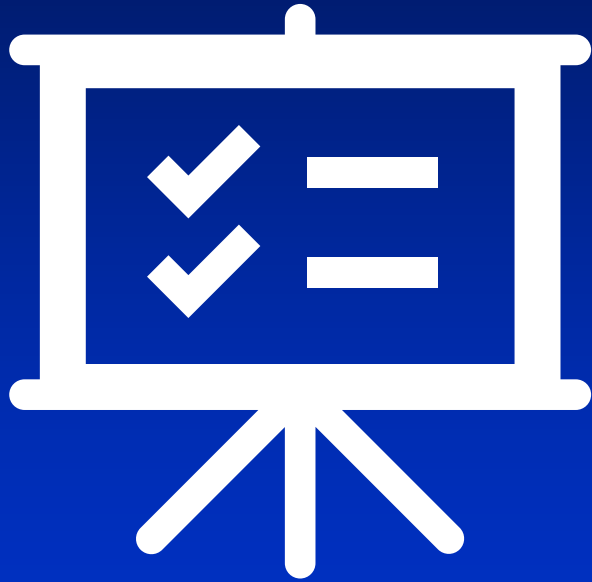
Local Planning Agency

North East Orange County Areawide Transportation Study (NEOCATS)

September 15, 2022



Presentation Outline



Study Overview

Existing Conditions Review

Historical Crash Analysis

Future No Build Traffic Conditions

Roadway/Intersection Improvements

Multimodal Improvements

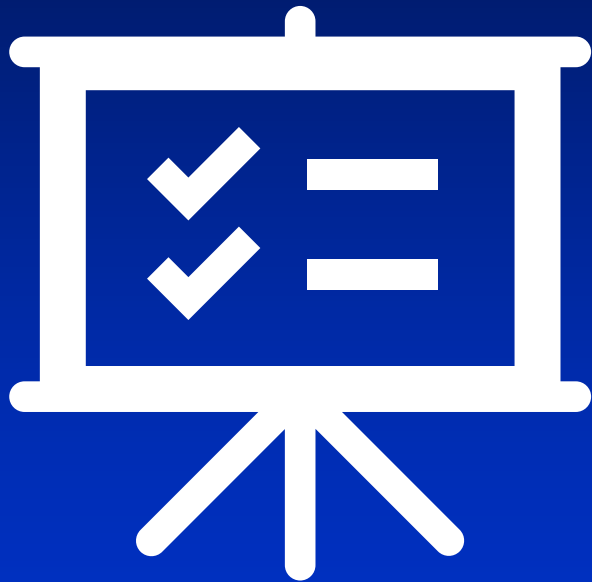
ITS Improvements/Emerging Technologies

Future Build Traffic Conditions with Programmed/Planned Improvements

Future Build Traffic Conditions with Needs Improvements

Study Timeline and Next Steps

Feedback and Discussion



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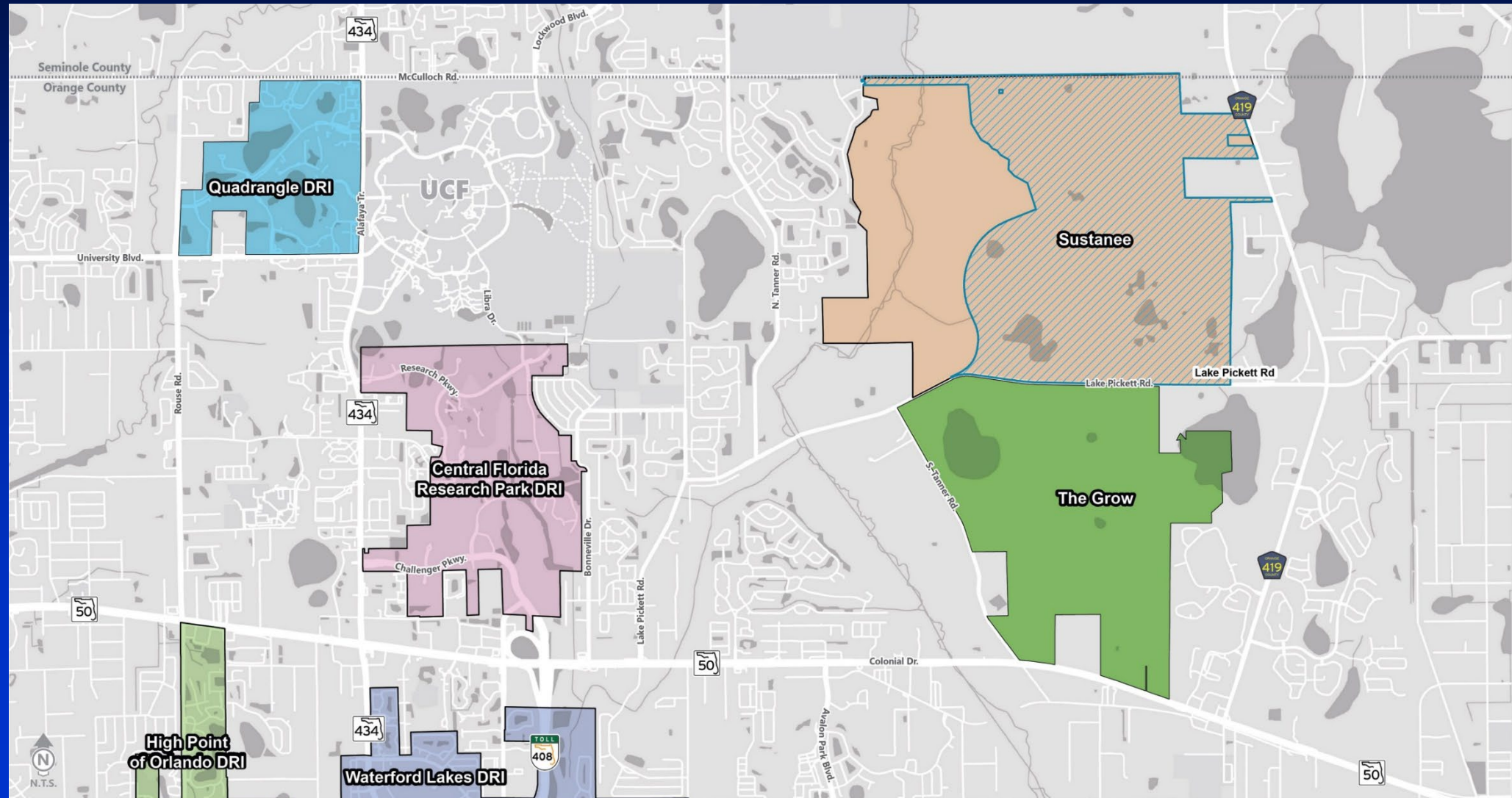
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Study Area





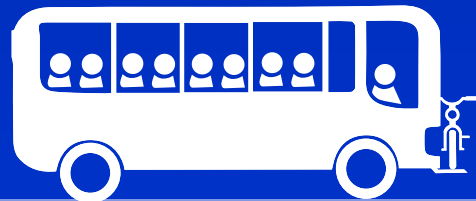
Study Overview

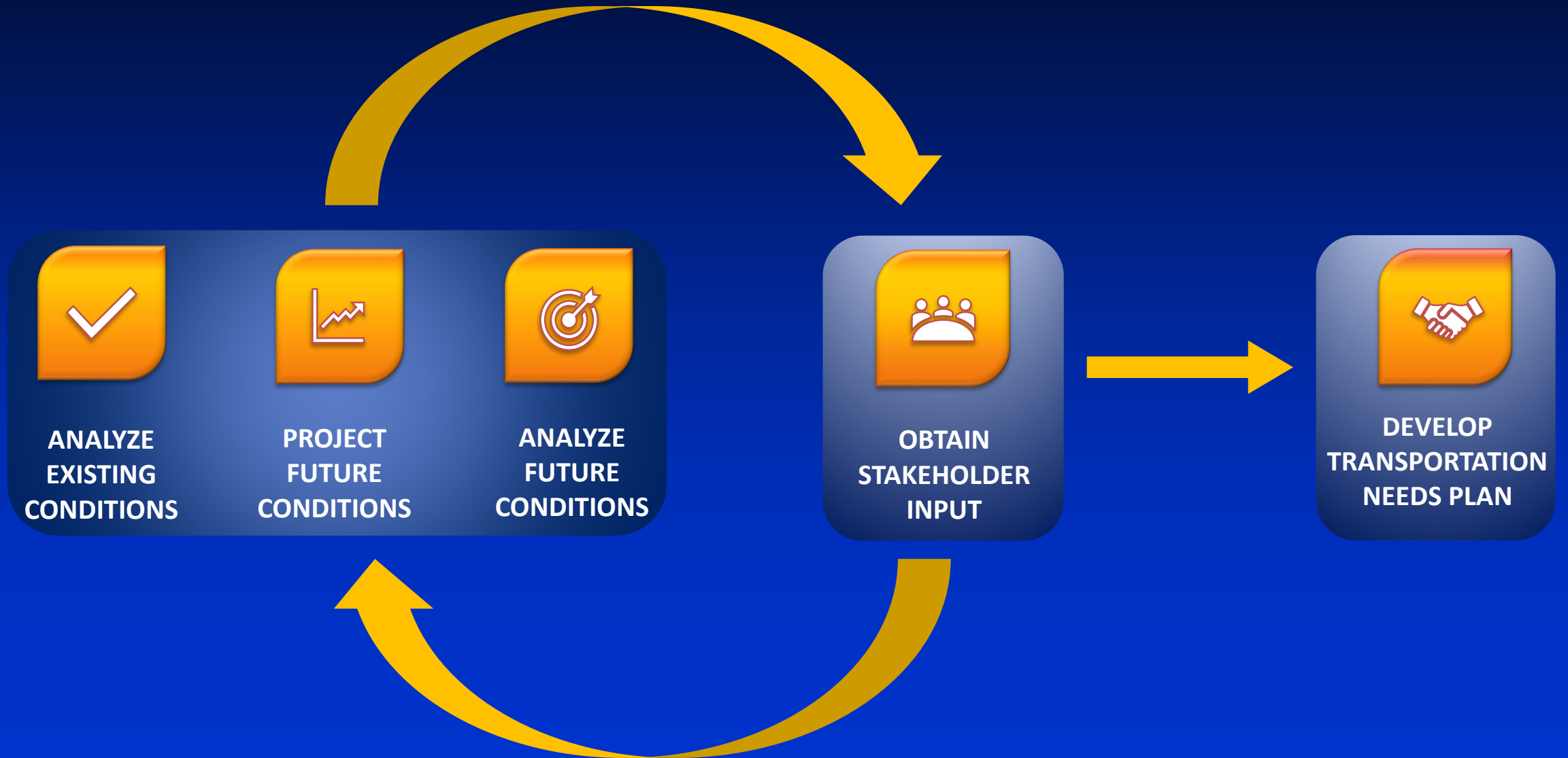
Study Purpose

*“Support future growth
while preserving
community character”*

Study Objectives

- Improve Safety, Mobility & Connectivity for people who drive, walk, bike and use transit
- Identify and prioritize potential transportation projects
 - Improve network connectivity
 - Provide relief to constrained corridors
 - Short-term (2025), mid-term (2035), and long-term (2045) improvements for all road users



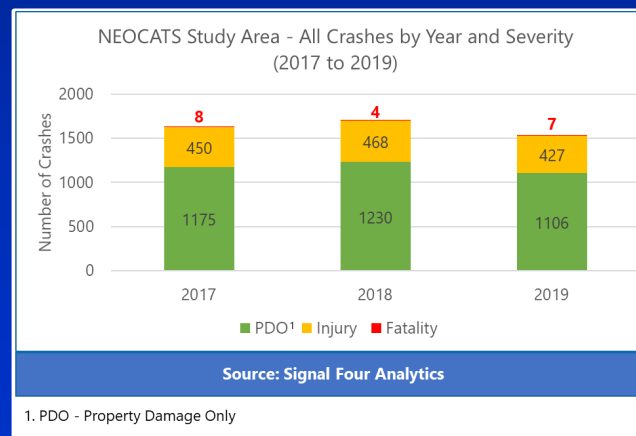
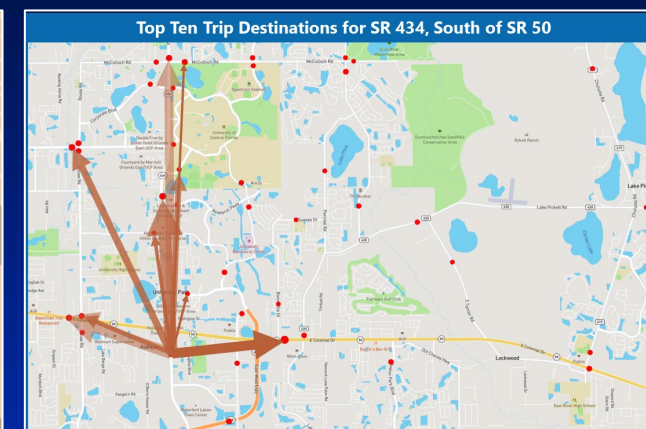
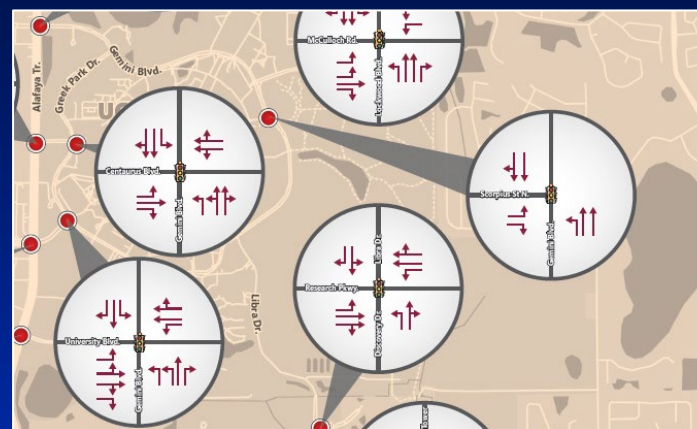


Study Overview

Key Elements

- Roadway data
 - Major developments
 - Pedestrian/bicycle gaps
 - Transit routes
 - Lighting
 - ITS
- Historical crash data
- Traffic data
 - Traffic volumes
 - Origin-Destination (OD) study
 - Multimodal operational analysis
 - Connected Autonomous Vehicles (CAV) impacts*
- Stakeholder input
- Programmed and planned projects
- Orange County, FDOT, and FHWA guidelines
- Similar projects

Note: *CAV Impacts based on the latest Highway Capacity Manual (HCM) 7th Edition



Capacity Analysis for Planning of Junctions						
Dynamic Results Summary						
TYPE OF INTERSECTION	Overall V/C Ratio	V/C Ranking	Multimodal Score	Pedestrian Accommodations	Bicycle Accommodations	Transit Accommodations
Displaced Left Turn	0.49	1	4.8	Fair	Fair	Good
Signalized Restricted Crossing U-Turn N-S	0.50	2	6.3	Good	Good	Fair
Quadrant Roadway S-W	0.51	3	4.4	Fair	Fair	Fair
Quadrant Roadway N-W	0.51	3	4.4	Fair	Fair	Fair
Quadrant Roadway N-E	0.52	5	4.4	Fair	Fair	Fair
Quadrant Roadway S-E	0.52	5	4.4	Fair	Fair	Fair
Partial Displaced Left Turn N-S	0.52	5	4.8	Fair	Fair	Good
Partial Median U-Turn N-S	0.53	8	6.3	Good	Good	Fair
Traffic Signal	0.56	9	4.8	Fair	Fair	Good
2NS X 1EW	0.70	10	5.6	Fair	Good	Good



Study Overview

Community Meetings #1 & #2

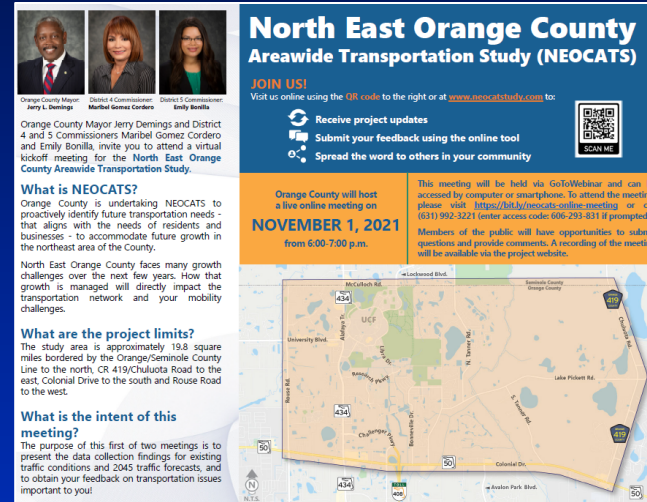
November 1, 2021 (#1) & March 30, 2022 (#2)

- Mail-outs: 8,656
- Forums: Website, Newspaper Advertisement and GoToMeeting

Agency Meetings #1 & #2

January 21, 2022 (#1) & April 28, 2022 (#2)

- Florida Department of Transportation (FDOT)
- Orange County
- Seminole County
- University of Central Florida (UCF)
- LYNX
- MetroPlan Orlando
- Central Florida Expressway Authority (CFX)
- Orange County Fire Rescue
- Orange County Sheriff's Office
- Orange County Public Schools (OCPS)
- Central Florida Research Park (CFRP)



North East Orange County Areawide Transportation Study (NEOCATS)

JOIN US!
Visit us online using the QR code to the right or at www.neocatstudy.com to:

- Receive project updates
- Submit your feedback using the online tool
- Spread the word to others in your community

Orange County will host a live online meeting on **NOVEMBER 1, 2021** from 6:00-7:00 p.m.

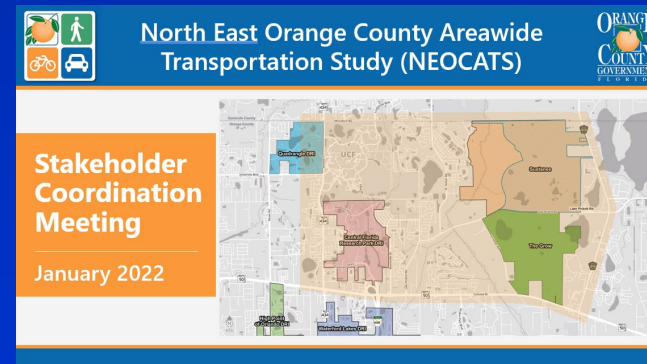
This meeting will be held via GoToWebinar and can be accessed by computer or smartphone. To attend the meeting please visit <https://bit.ly/neocats-online-meeting> or call (831) 992-3221 (enter access code: 606-293-831 if prompted). Members of the public will have opportunities to submit questions and provide comments. A recording of the meeting will be available via the project website.

What is NEOCATS?
Orange County is undertaking NEOCATS to proactively identify future transportation needs – that aligns with the needs of residents and businesses – to accommodate future growth in the northeast area of the County.

North East Orange County faces many growth challenges over the next few years. How that growth is managed will directly impact the transportation network and your mobility challenges.

What are the project limits?
The study area is approximately 19.8 square miles, bordered by the Orange/Seminole County Line to the north, CR 419/Chulucka Road to the east, Colonial Drive to the south and Rouse Road to the west.

What is the intent of this meeting?
The purpose of this first of two meetings is to present the data collection findings for existing traffic conditions and 2045 traffic forecasts, and to obtain your feedback on transportation issues important to you!



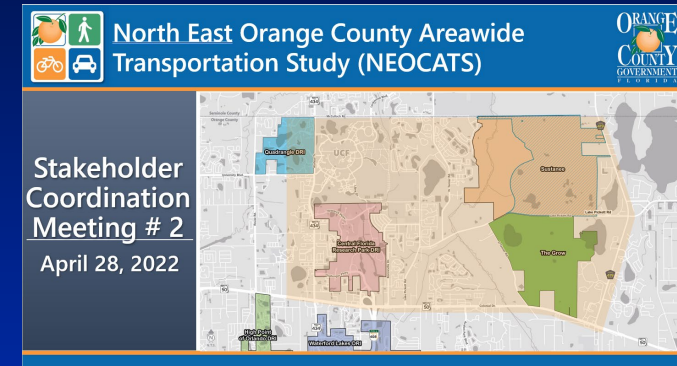
North East Orange County Areawide Transportation Study (NEOCATS)

Stakeholder Coordination Meeting
January 2022

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What is the intent of this meeting?
The purpose of this meeting, which is the second of two community meetings, is to present the findings and recommendations of the proposed future year 2045 transportation needs plan, and to obtain your feedback on the initial recommendations. The types of recommendations being considered include roadway widening, new roadways, safety improvements, intersection improvements, pedestrian/bicycle related improvements, and transit improvements.



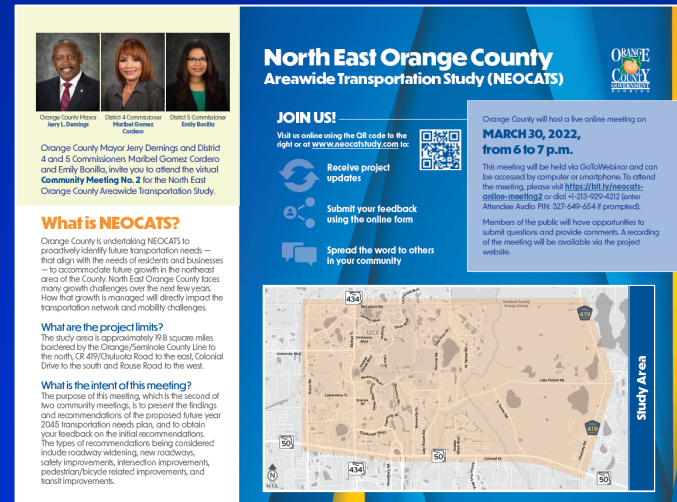
North East Orange County Areawide Transportation Study (NEOCATS)

Stakeholder Coordination Meeting # 2
April 28, 2022

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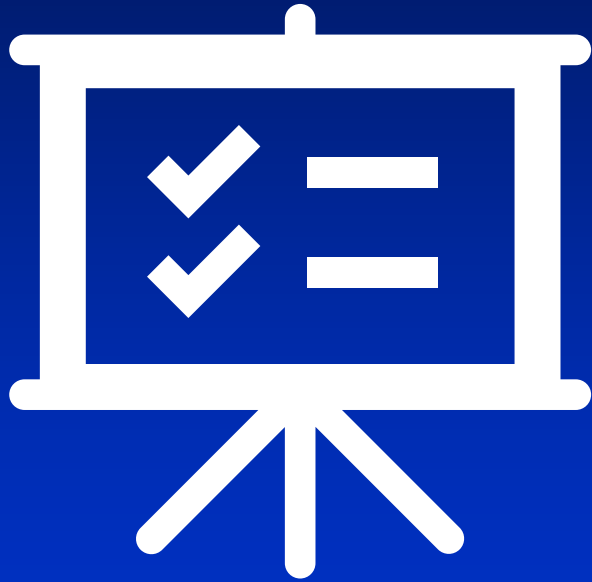
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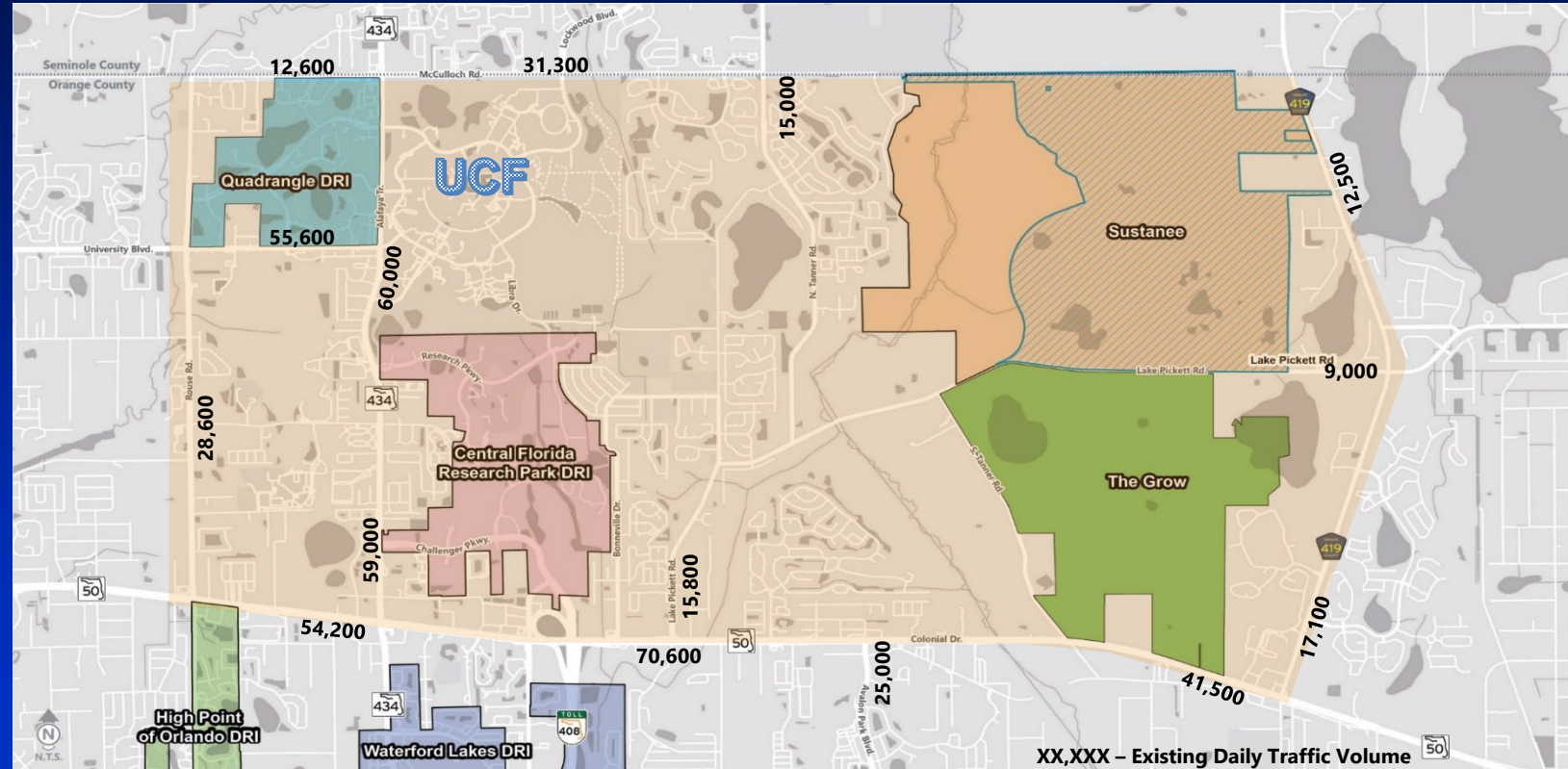
Feedback and Discussion



Existing Conditions Review

Study Area Highlights

- Major economic generators
- UCF - Second largest university in the nation
- Two major business parks
 - Central Florida Research Park
 - Quadrangle
- Major developments
 - High Point of Orlando
 - Waterford Lakes
 - Rybolt Park*/Sustanee*
 - The Grow
- 37 intersections
- 22 roadways



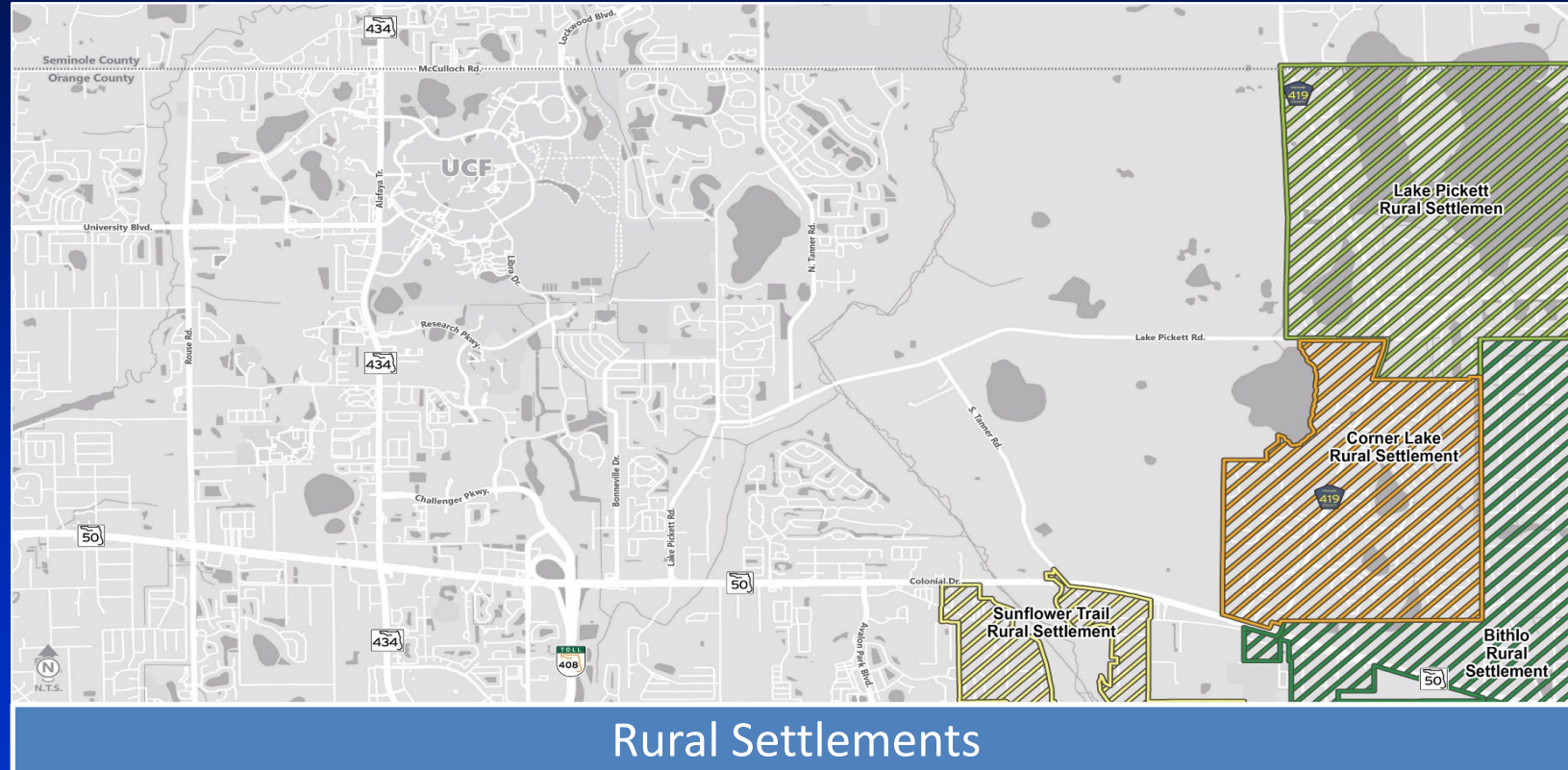
* Both the Rybolt Park DRI application and Sustanee development are withdrawn.



Existing Conditions Review

Rural Settlements

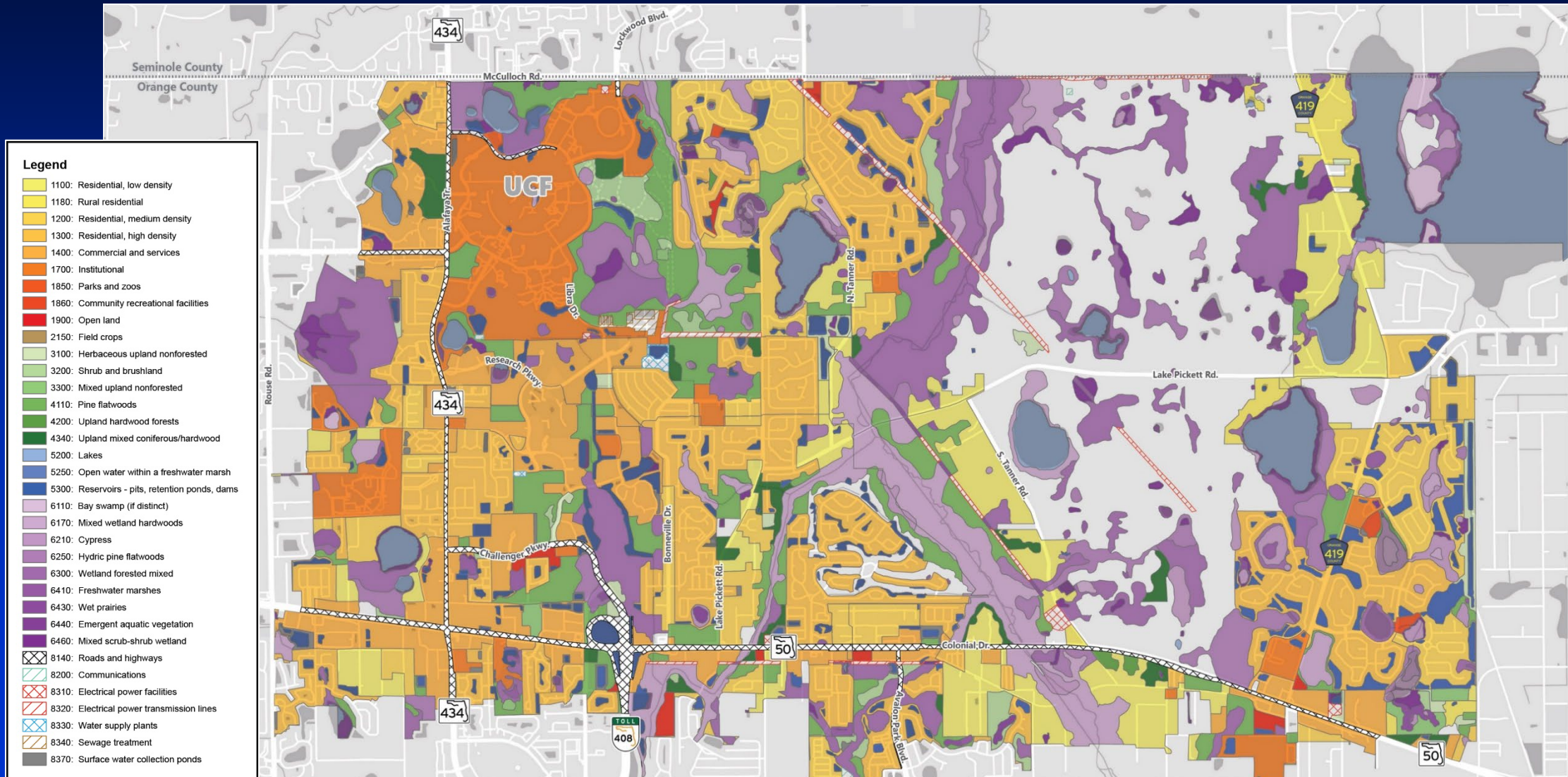
- Sunflower Trail
- Bithlo
- Lake Pickett, and
- Corner Lake





Existing Conditions Review

Existing Land Use

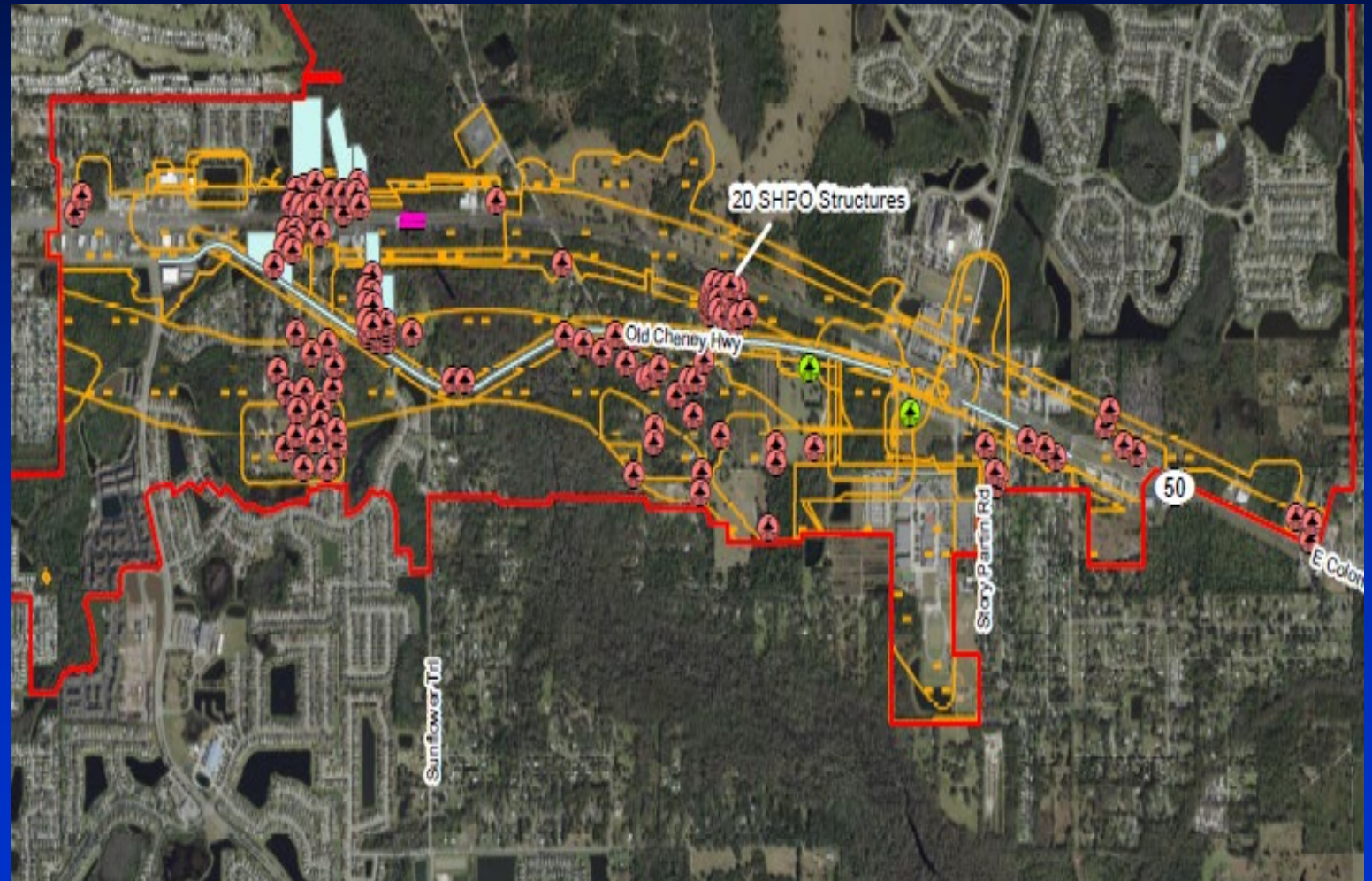




Existing Conditions Review

Historic/Archaeological Sites

- Structures – 153
- Bridges – 2
- Resource Groups* - 8
- No known resources eligible for National Listing



*Resource Groups are districts, landscapes, building complexes and extant linear resources – a collection of similar style historic resources in a neighborhood.



Existing Conditions Review

Public Facilities

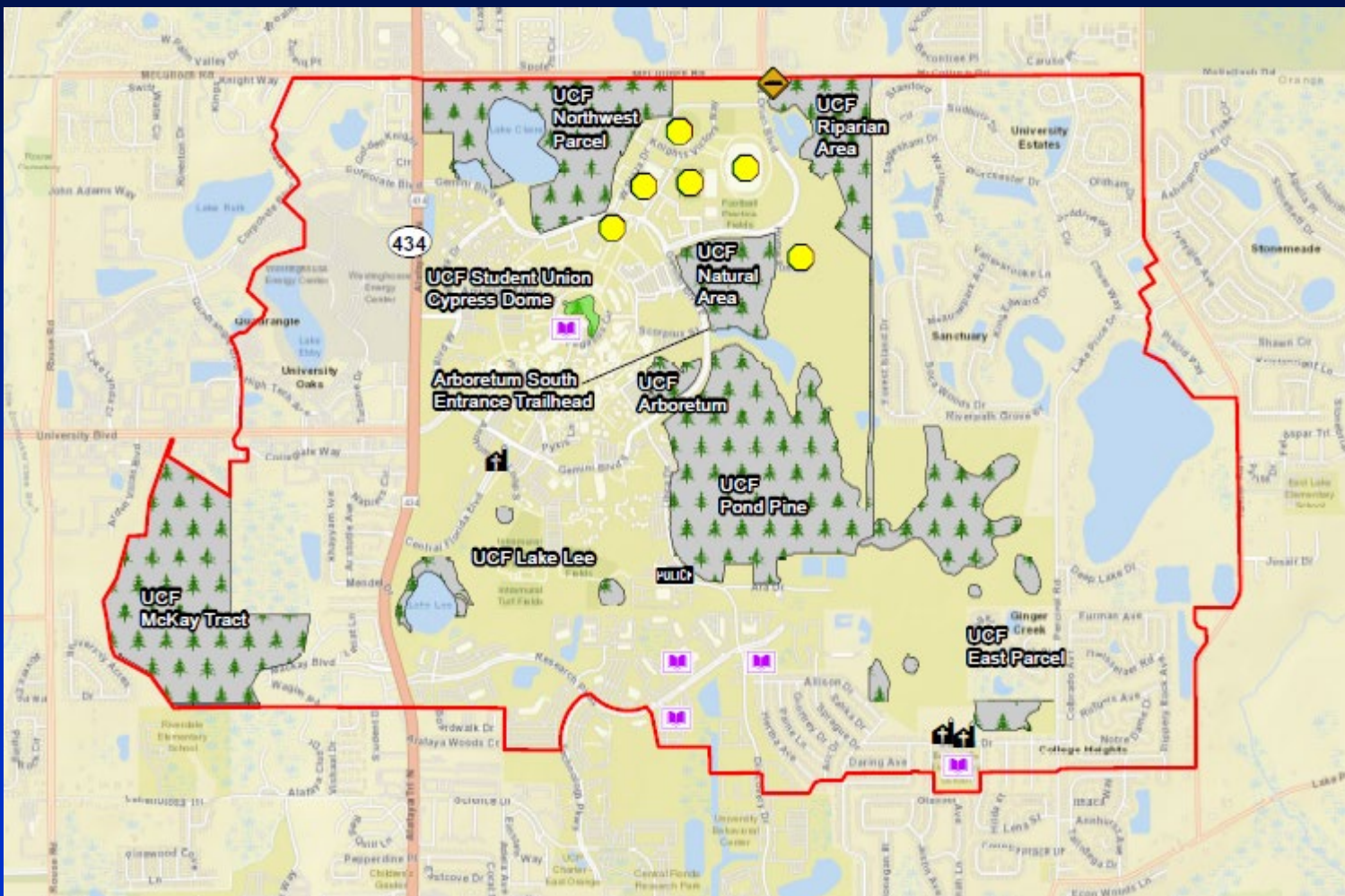
- Civic Centers -6
- Police/Fire – 3
- Health Care/Hospital – 8
- Religious Center – 5
- Schools – 17
- Veterans Facilities – 3
- Parks/Natural Lands – 25

Utility Agency/Owned Lands

- 70

Conservation/Public Lands

- 127





Existing Conditions Review

Potential for protected wildlife species

- 51

Within USFWS Consultation Area for:

- Audubon's Crested Caracara
- Everglade Snail Kite
- Florida Scrub-Jay
- Red-Cockaded Woodpecker
- Wood Stork core foraging area for two colonies



Potential wildlife crossings/habitat connectivity enhancements

- 7

Wetlands - 8,115+/- acres

- Econlockhatchee and Tributaries
- Lakes - Lee, Claire, Price, Ebby, Rouse, Pickett, Drawdy, Paxton, Tanner and Corner
- Unnamed systems

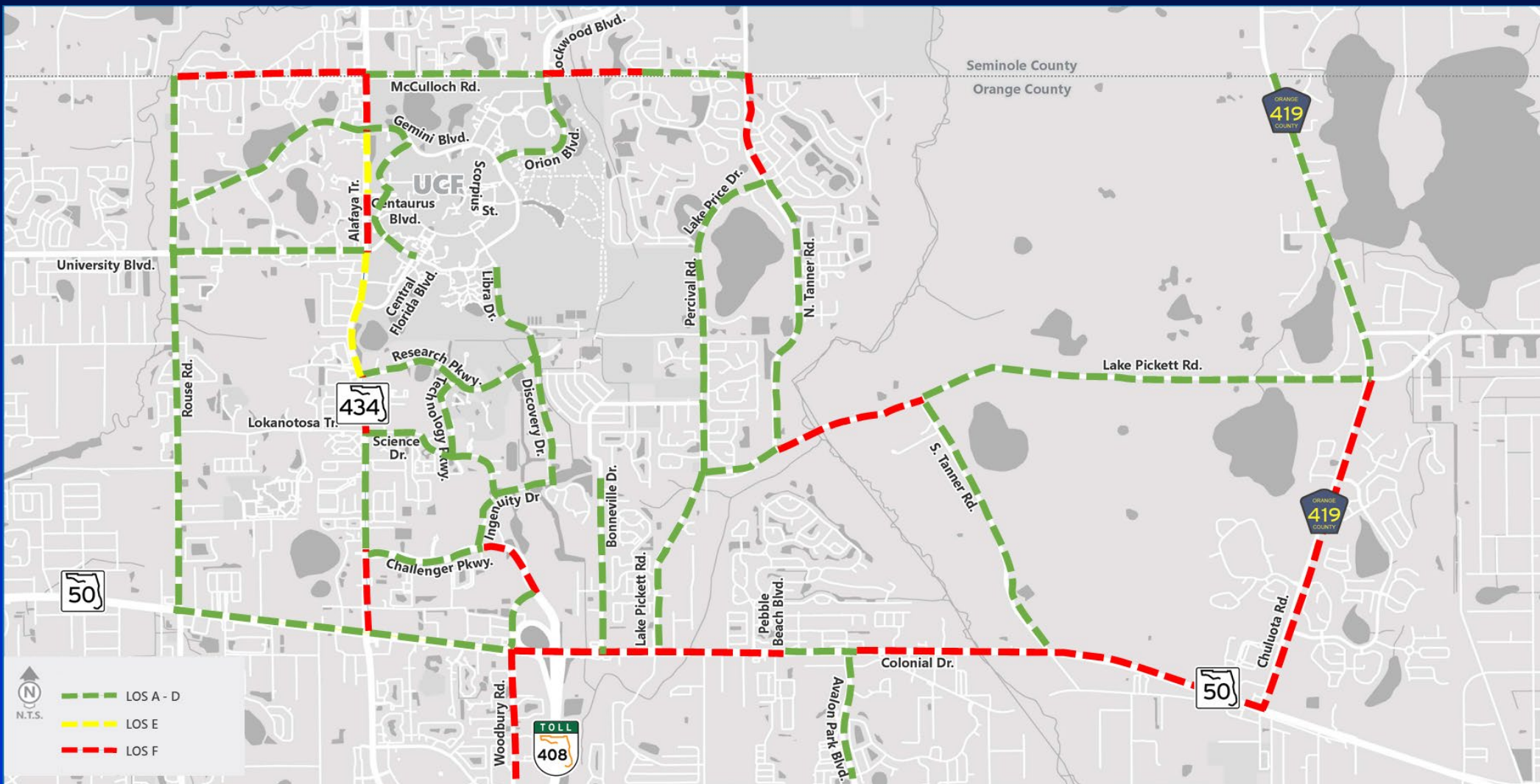
Contamination

- 518 (potential for/known)





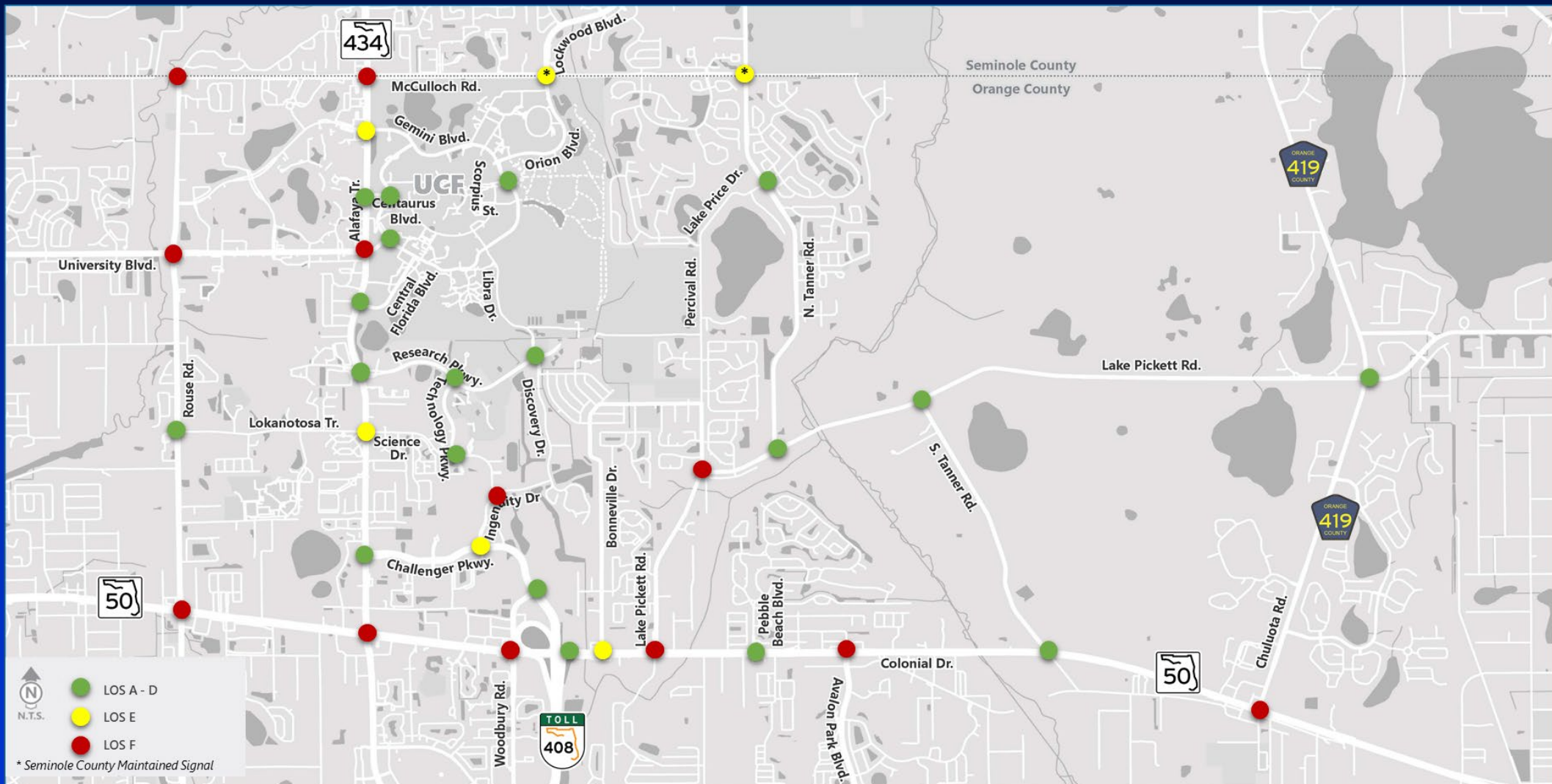
Existing Traffic Conditions – Roadway Segments





Existing Conditions Review

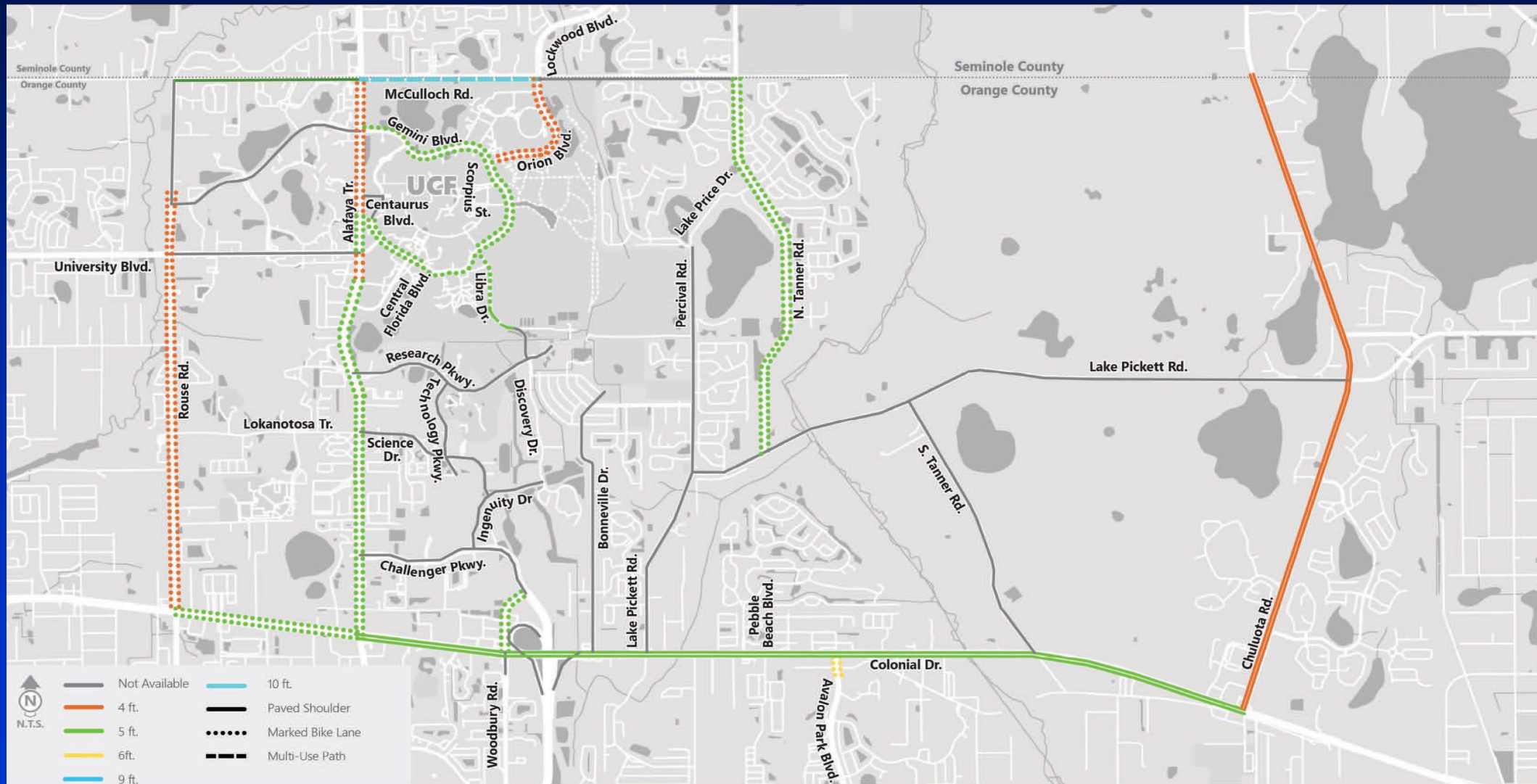
Existing Traffic Conditions – Intersections





Existing Conditions Review

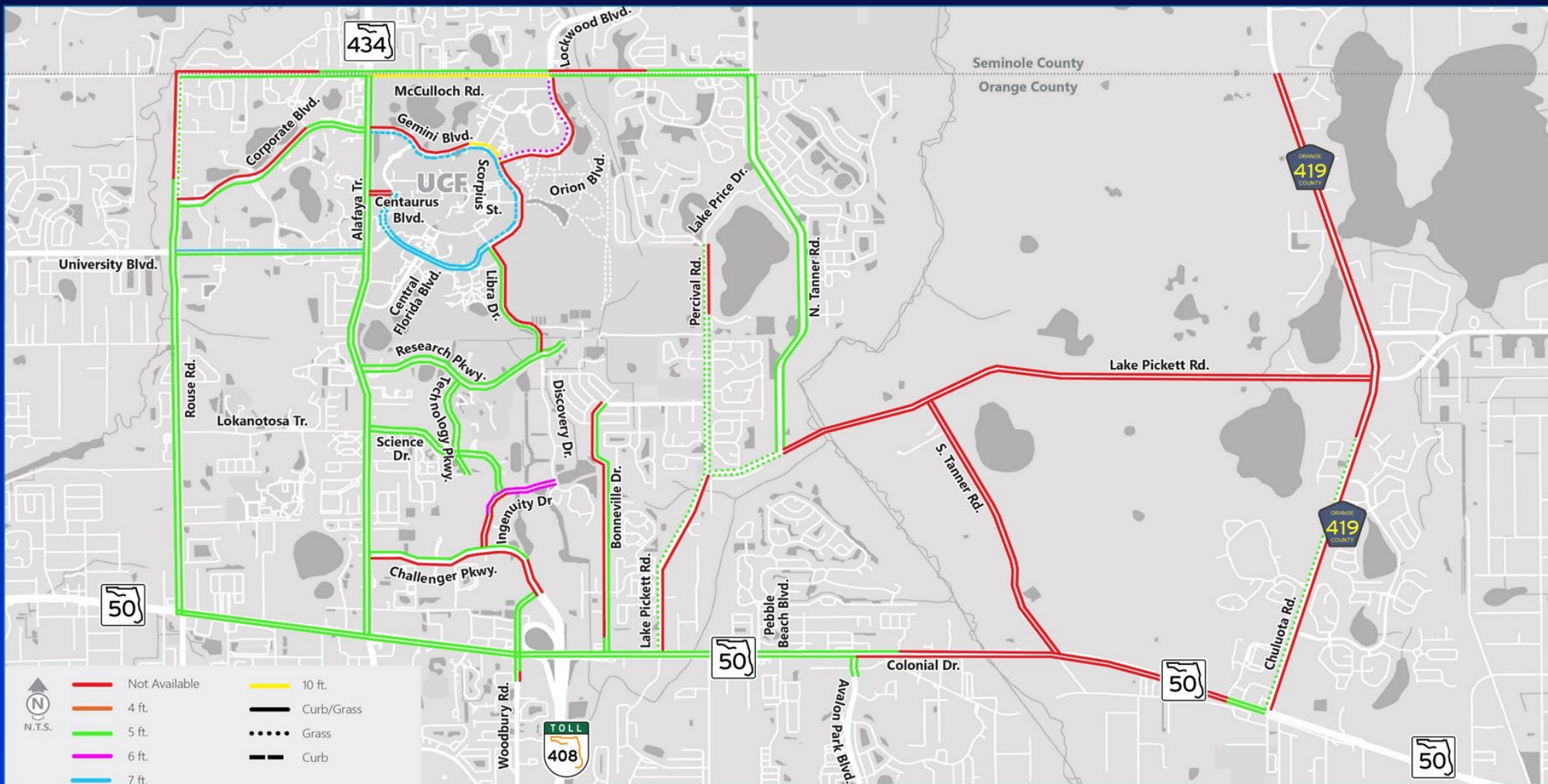
Existing Bicycle Facilities





Existing Conditions Review

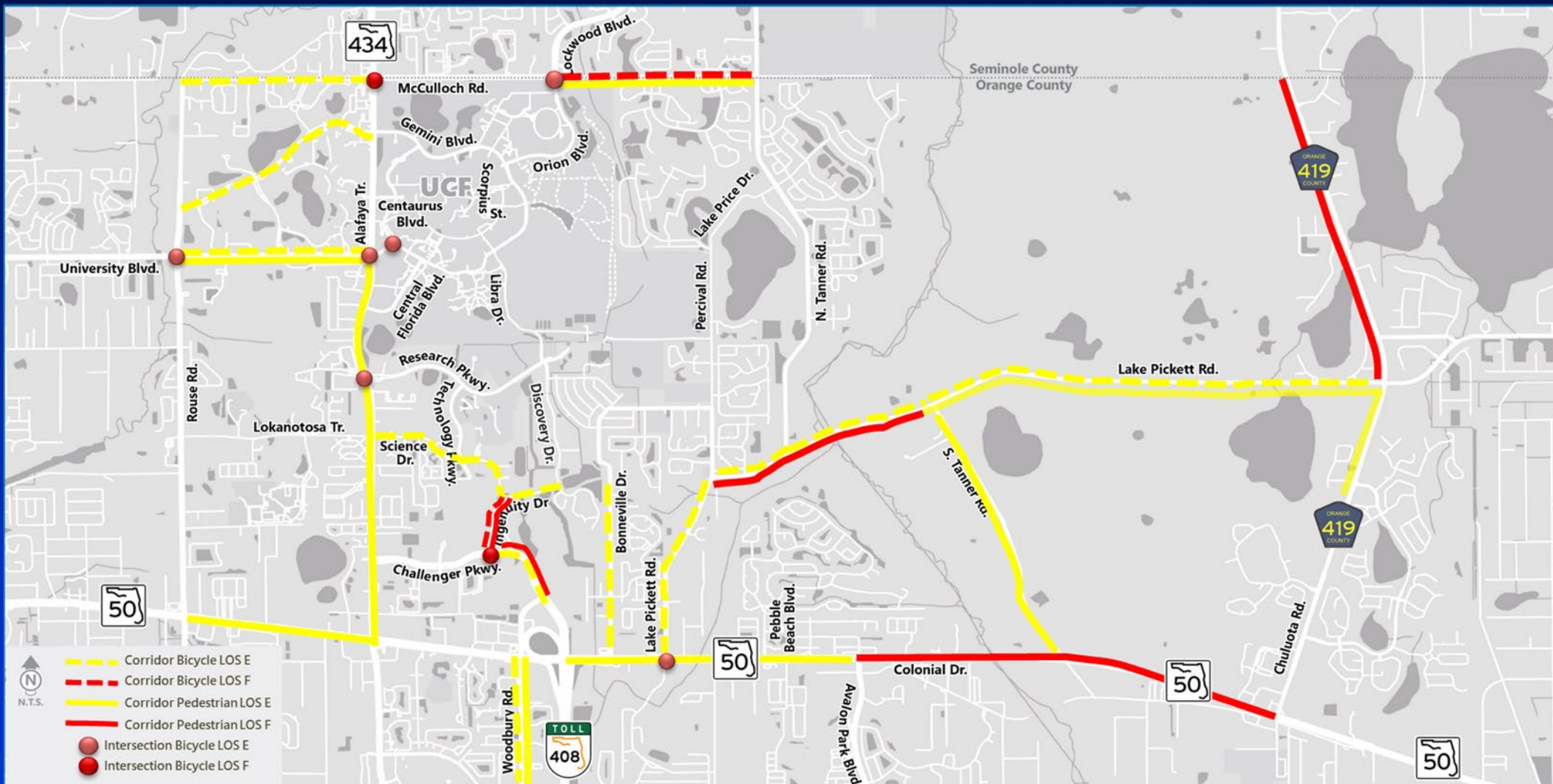
Existing Pedestrian Facilities





Existing Conditions Review

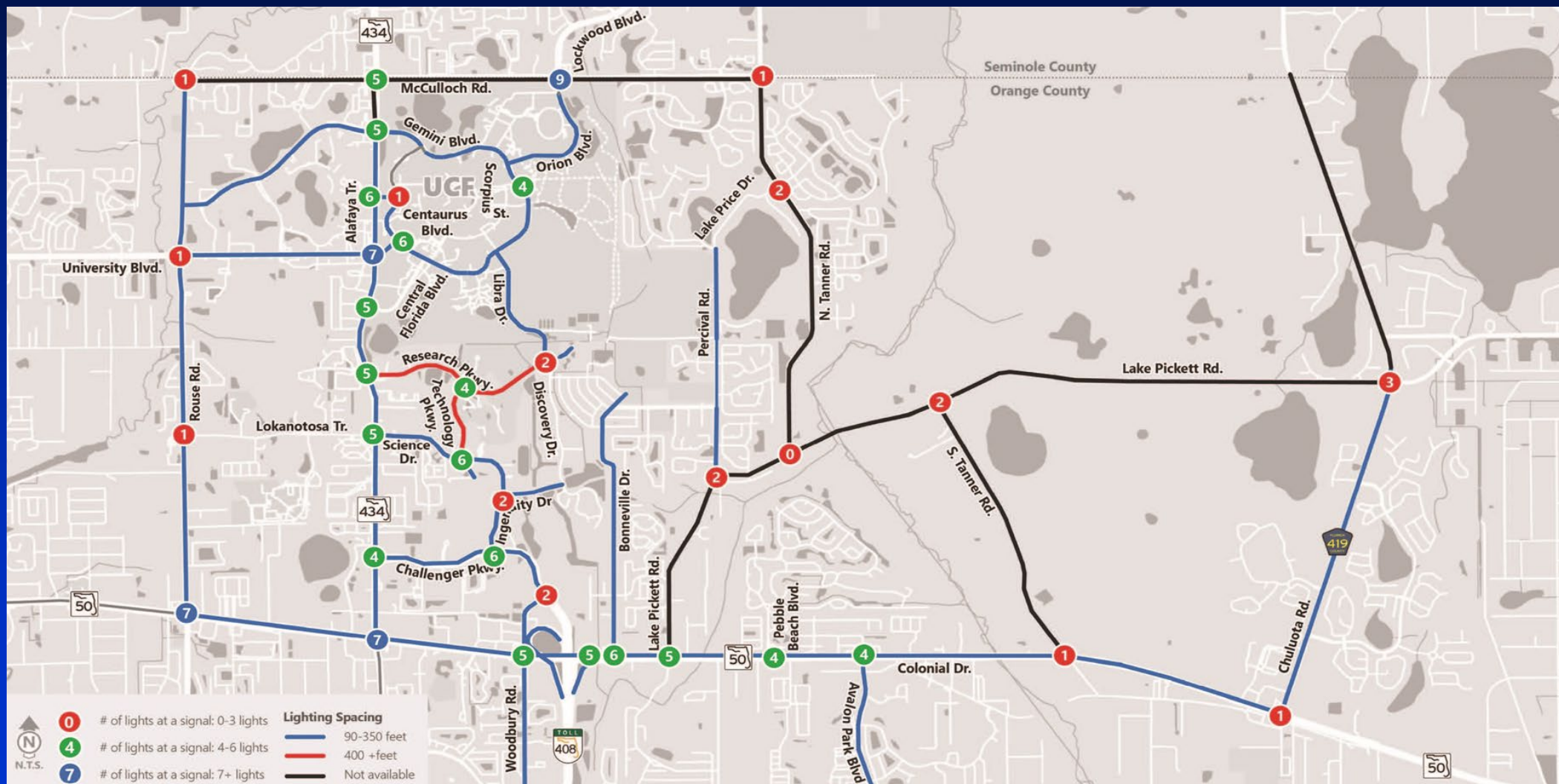
Existing Multimodal Analysis





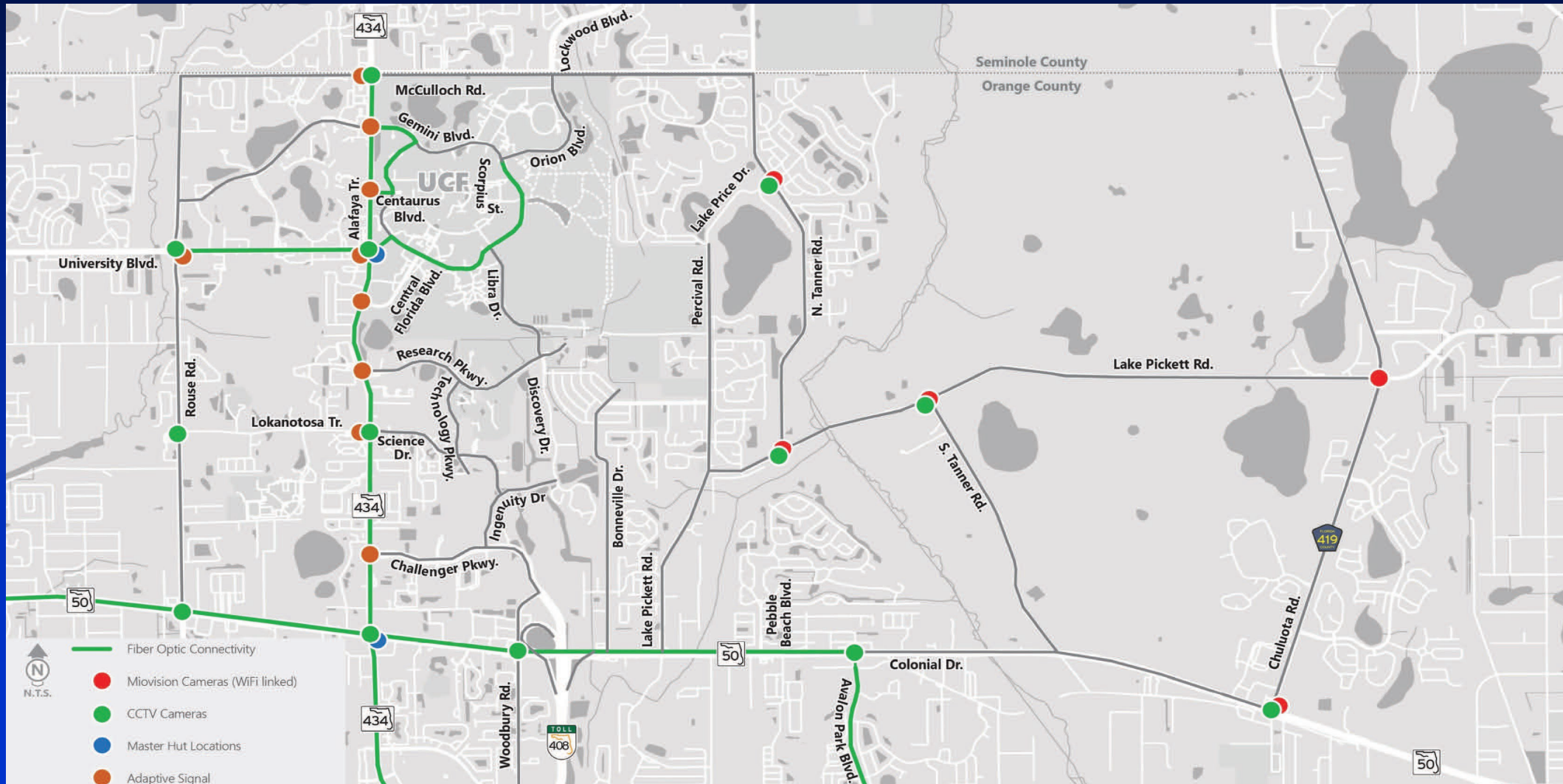
Existing Conditions Review

Existing Lighting Conditions





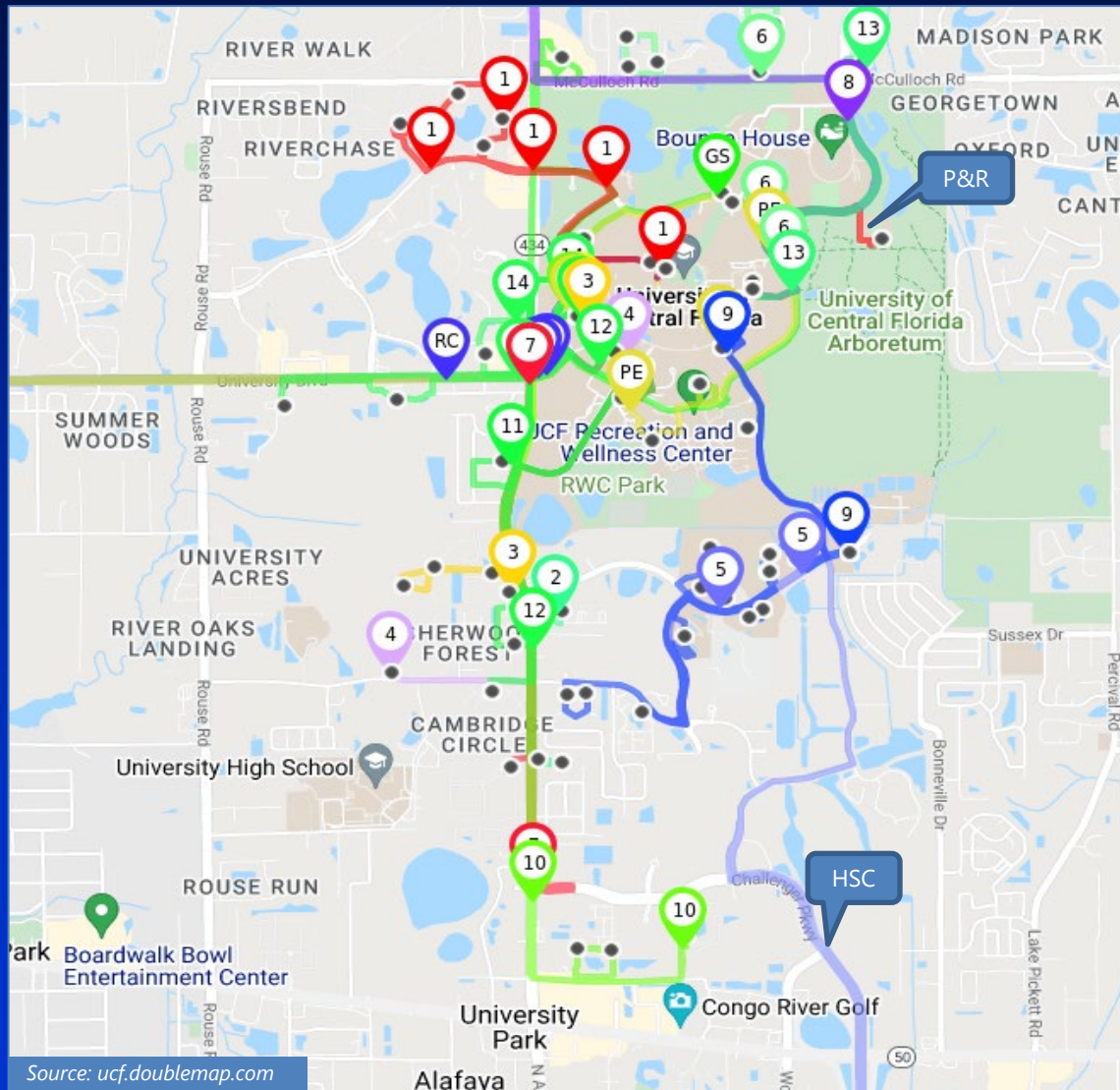
Existing ITS Features





Existing Conditions Review

Existing Transit – LYNX



Source: ucf.doublemap.com

Legend

DT Grocery Shuttle

GS – Grocery Shuttle

HSC – Health Sciences Campus

PE – On-Campus Pegasus Express

P&R – Park and Ride Shuttle

RC – Rosen College Shuttle

UCF – UCF Downtown

1 - Knights Circle

2 – College Station/Boardwalk

3 - The Verge/The Palace at Alafaya

4 - Mercury 3100/Campus Crossings

5 - Village of Science Drive

6 - Northgate Lakes/Tivoli

7 - The Pointe at Central

8 - Riverwind at Alafaya/

The Station

9 - Knights Landing/Research Park

10 - The Lofts/Orion on Orpington

11 - The Aves @ Twelve100

12 - Lark Central Florida

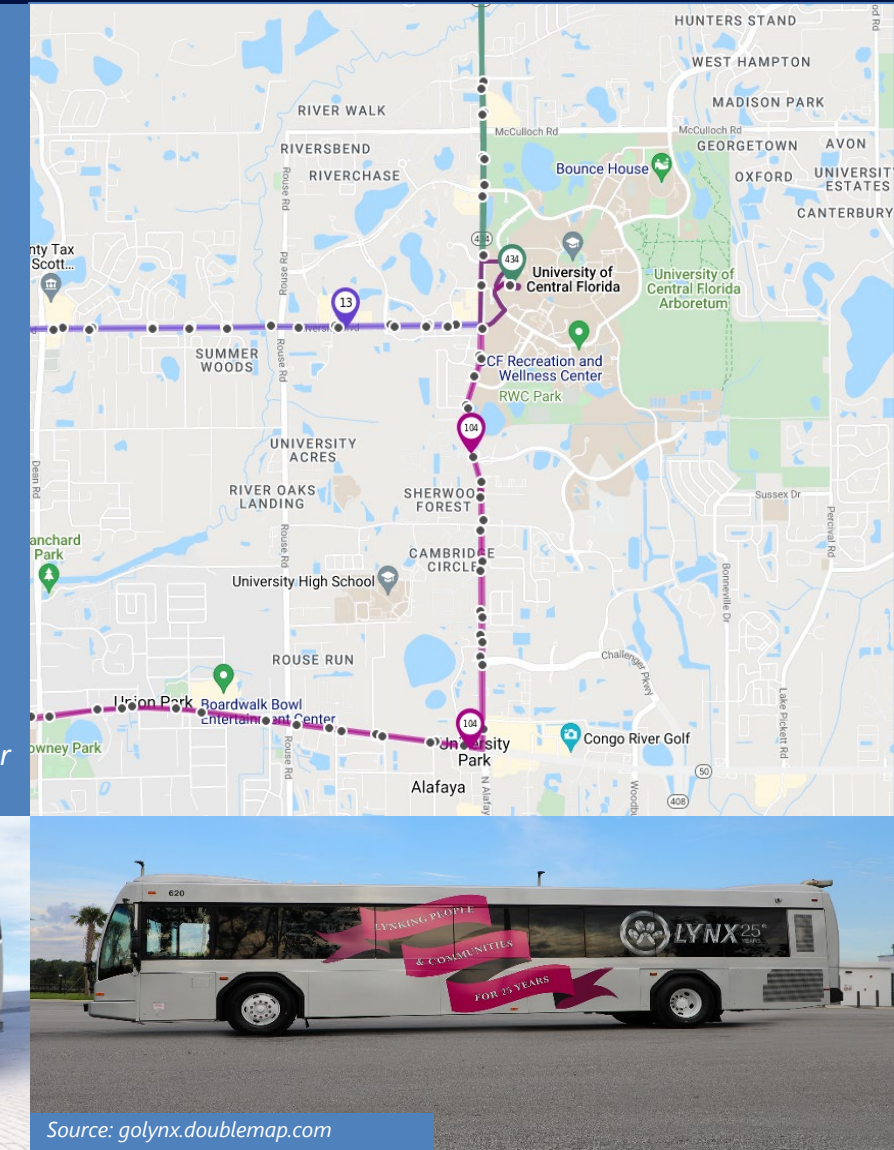
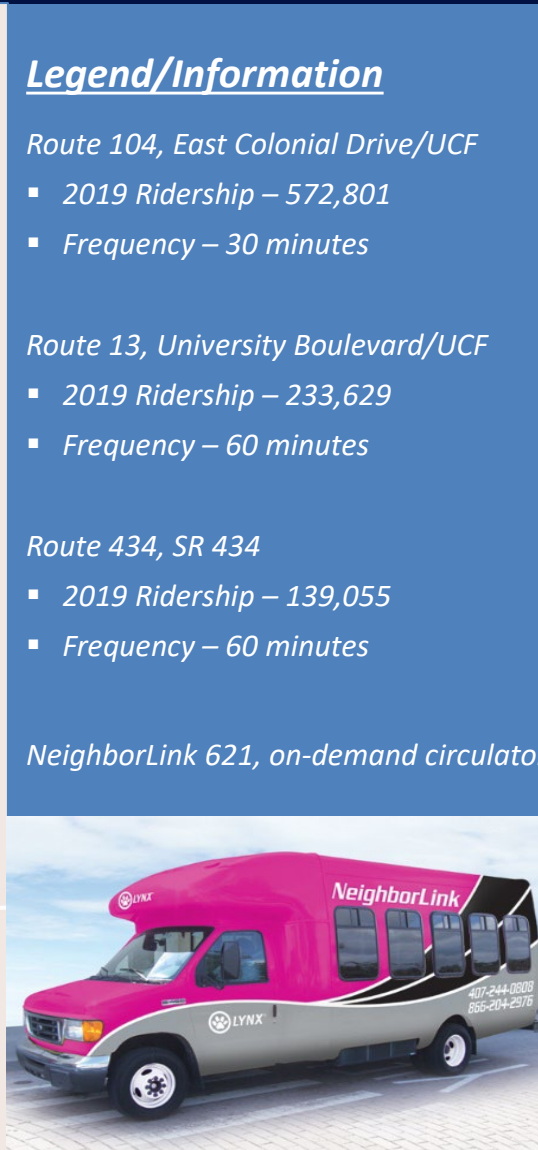
13 - NorthView

14 - Plaza on University

15 - Collegiate Village Inn/Arden Villas



Source: <https://parking.ucf.edu/shuttles/>





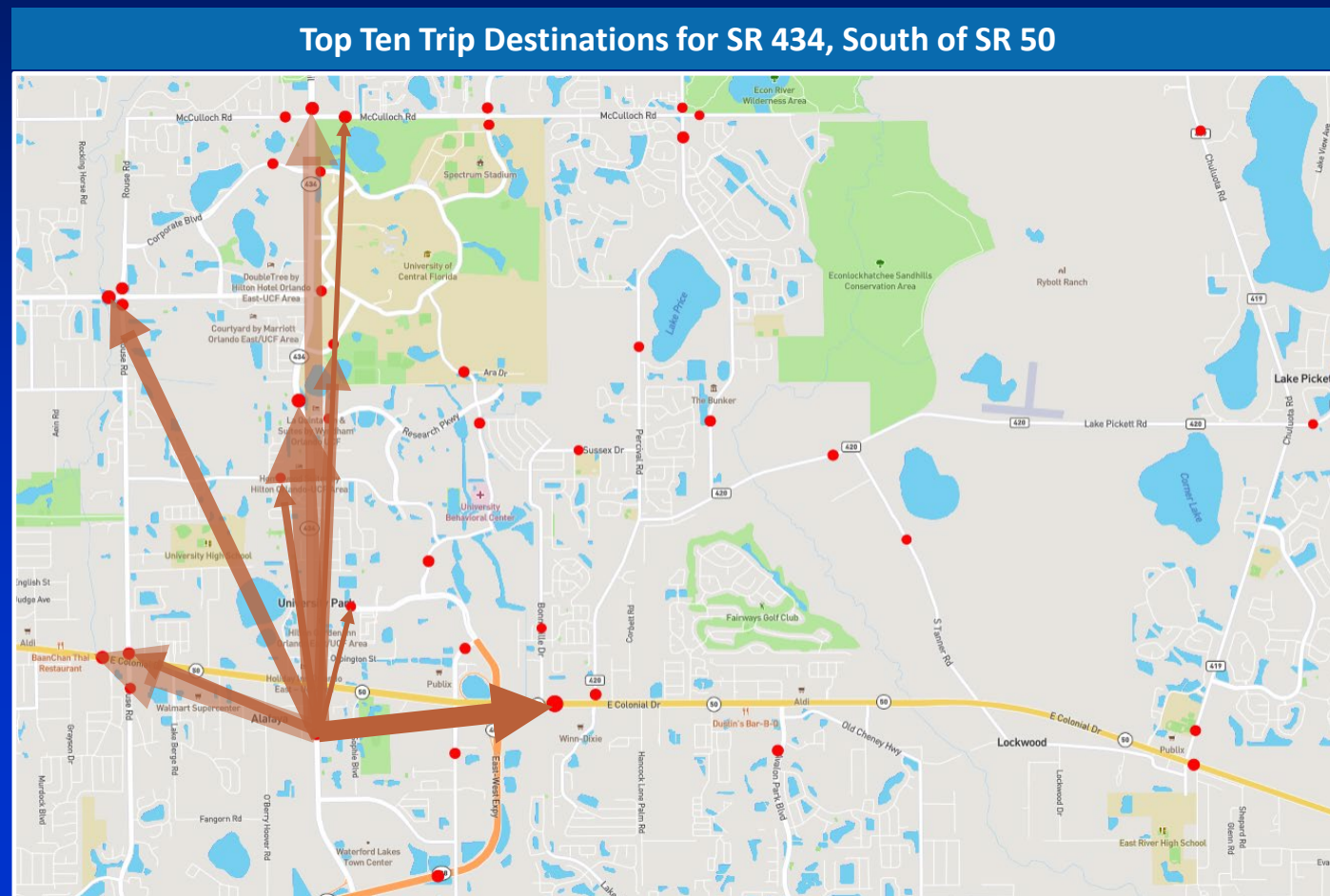
Existing Conditions Review

StreetLight OD Data – September 2019

- Understand travel patterns between origins and destinations
- Time periods
 - Weekday daily
 - Weekday AM (7-9 AM)
 - Weekday PM (4-6 PM)
- Average speeds & trip durations
 - Travel demand model validation

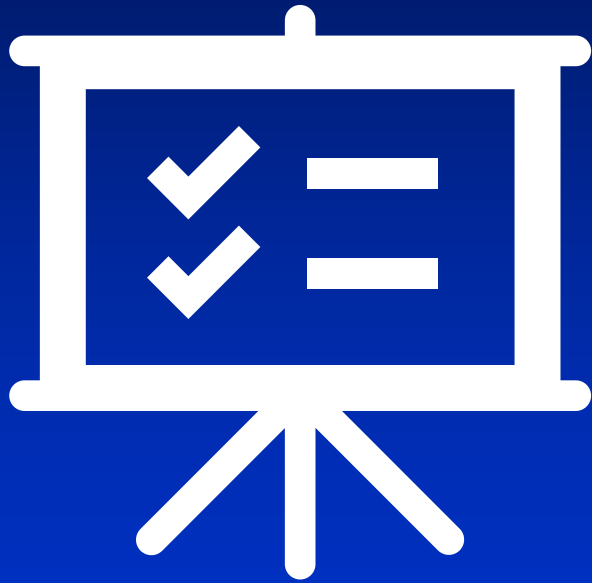
Table 1: Top Ten Trip Destinations for: SR434 South of SR50

Rank	Destination Zone	Trip Duration (minutes)	Average Trip Speed (mph)
1	SR 434 North of Research Pkwy	6.1	23
2	SR 50 West of Rouse Rd	6.5	18
3	SR 50 East Bonneville Dr	8.1	19
4	SR 434 North of McCulloch Rd	10.4	24
5	University Blvd West of Rouse	14.4	21
6	Central Florida Blvd East of SR 434	7.7	22
7	Rouse Rd North of SR 50	6.7	17
8	Lokanotosa Tr West of SR 434	6.7	18
9	McCulloch Rd East of SR 434	14.0	22
10	Challenger Pkwy East of SR 434	3.8	20





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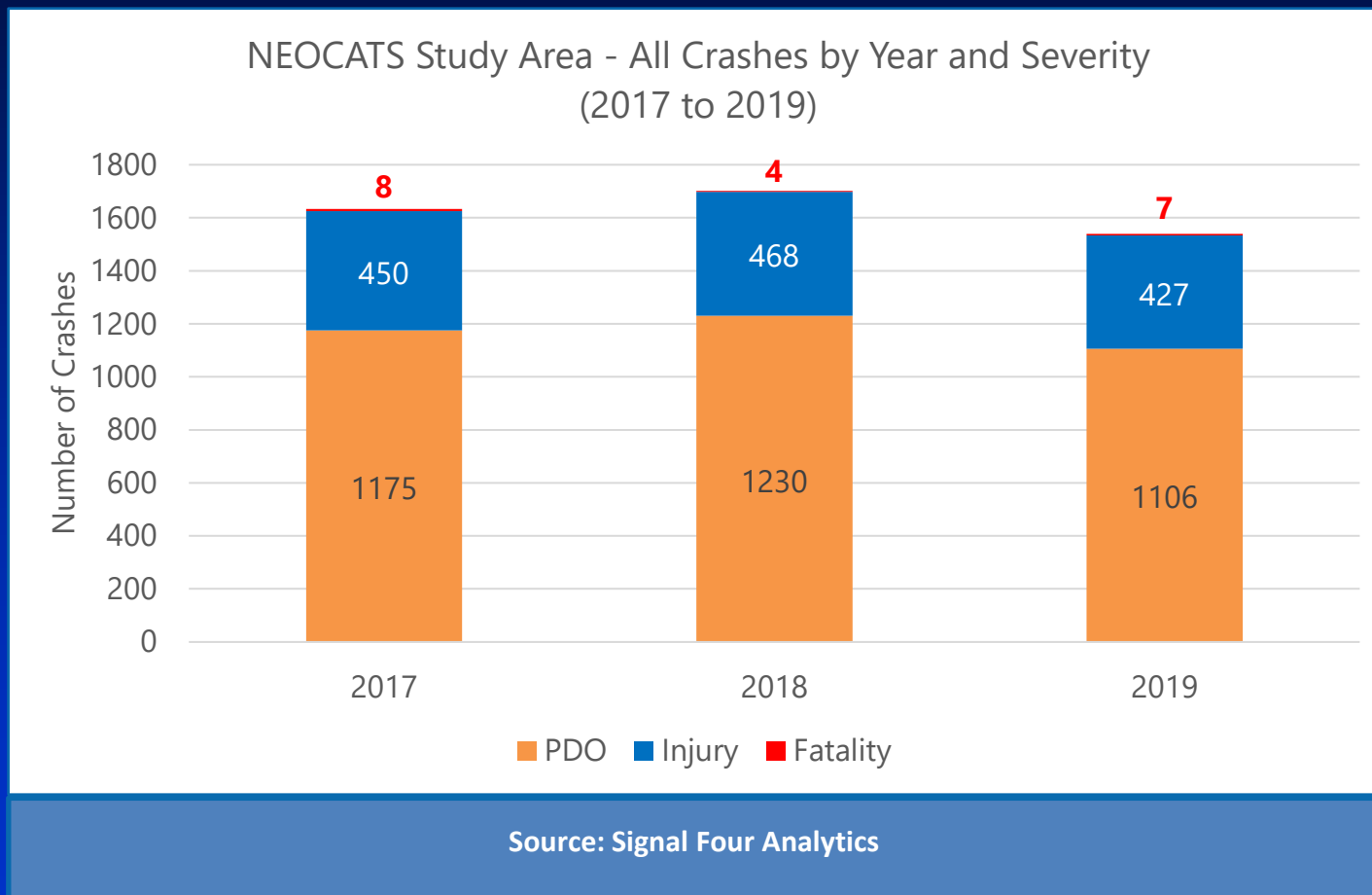
Feedback and Discussion



Historical Crash Analysis

Signal Four Analytics (2017-2019)

- Totals (roadway + intersections)
 - 4,875
 - 19 fatalities
 - 1,345 injury crashes
 - 3,511 property damage
 - Major types – Rear-end, Angle & Sideswipe
- Intersections
 - 2,728 (56% of total)
- Mid-segments
 - 2,147 (44% of total)

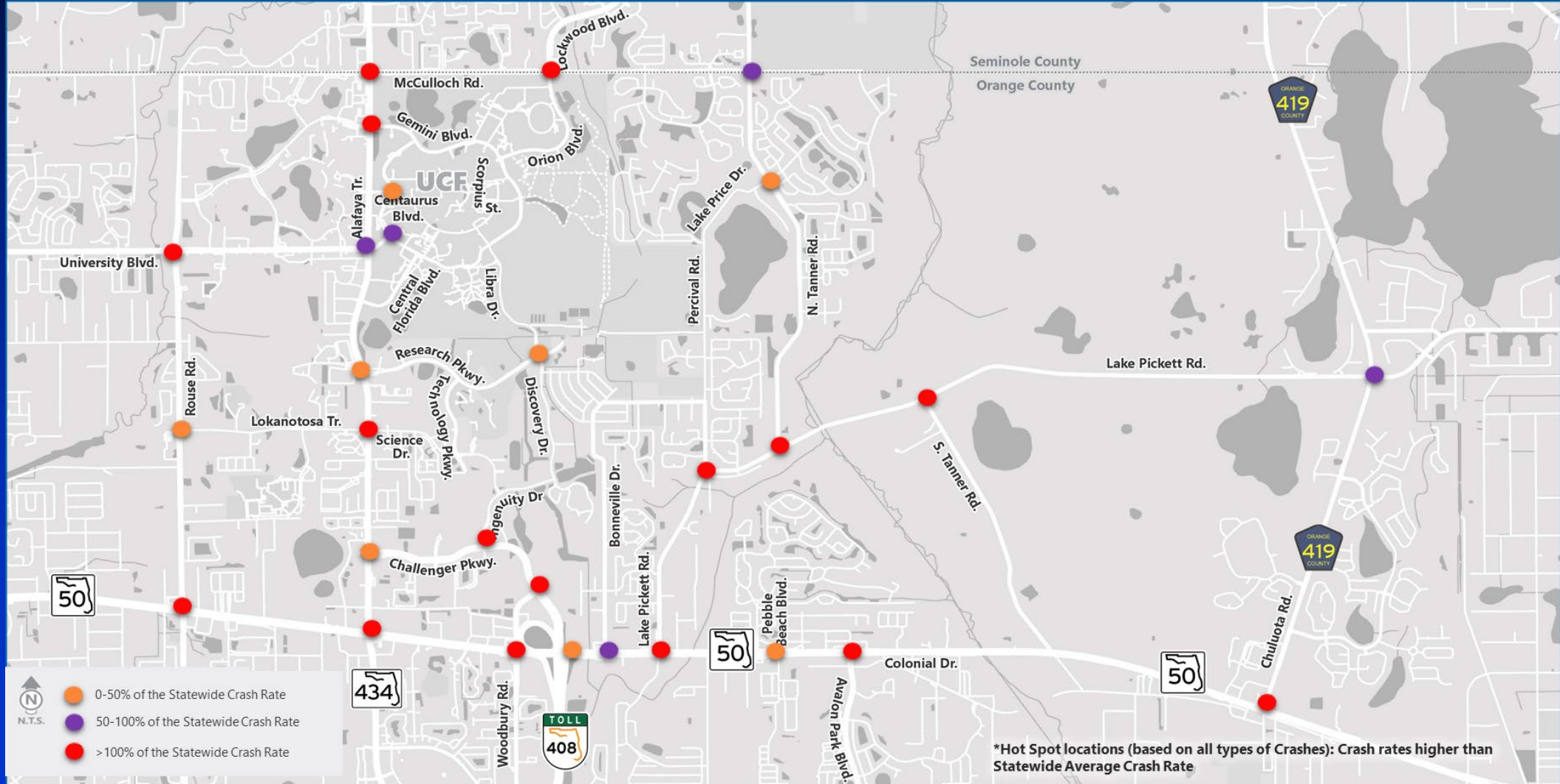


1. PDO - Property Damage Only



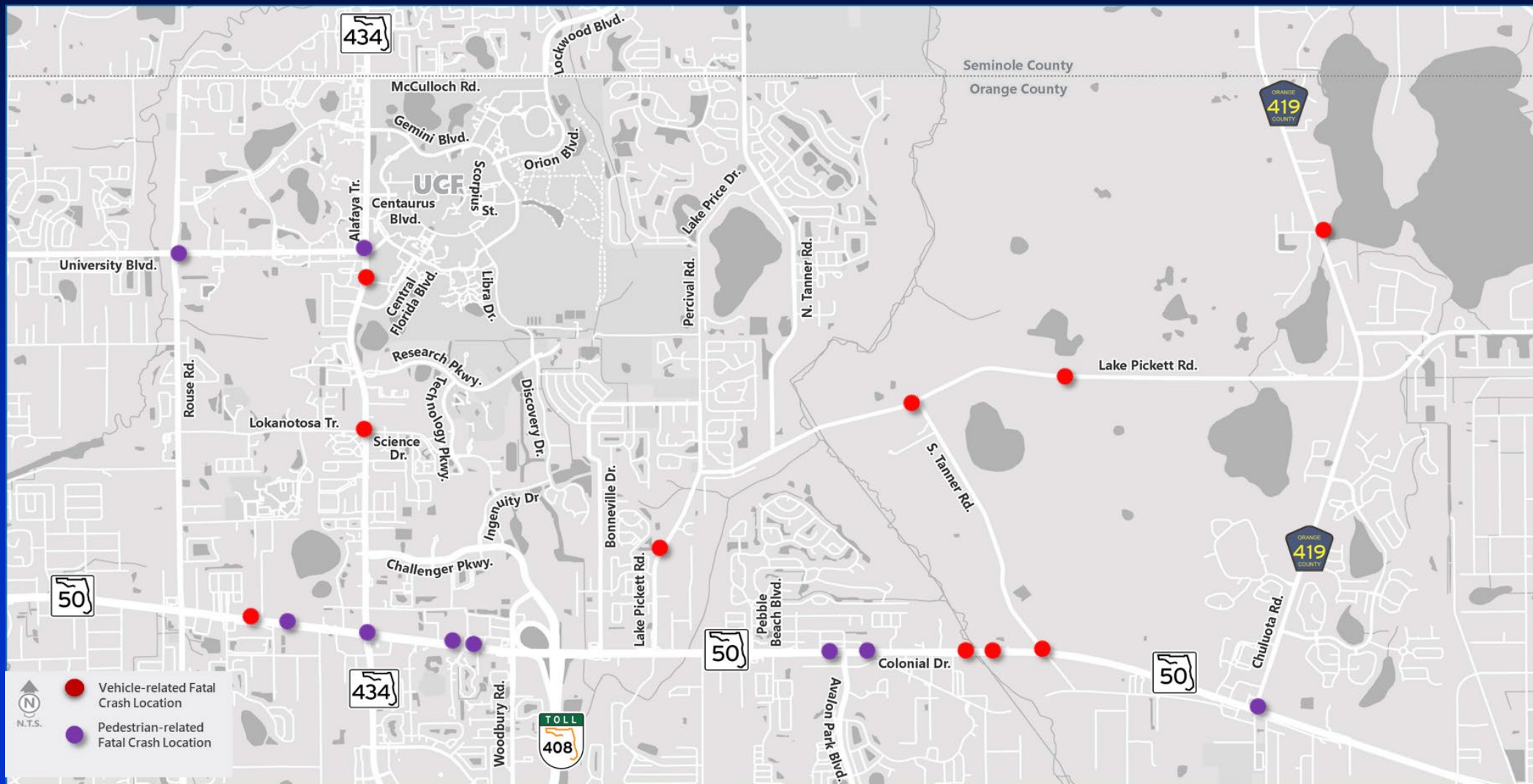
Historical Crash Analysis

Hot Spot Locations (2017-2019)



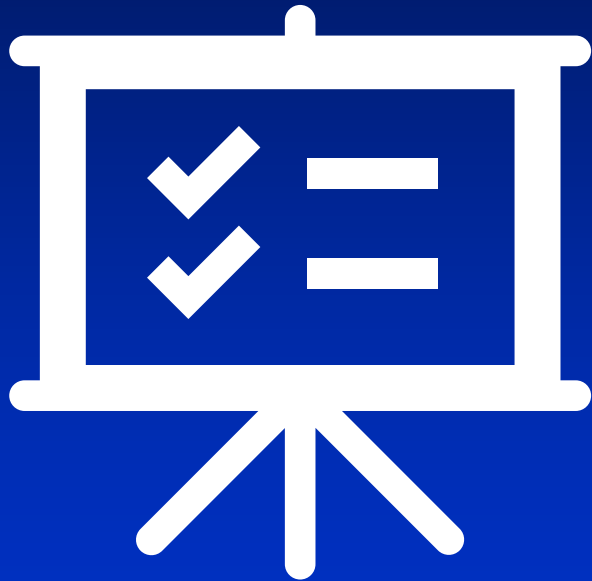


Fatal Crash Locations (2017-2019)





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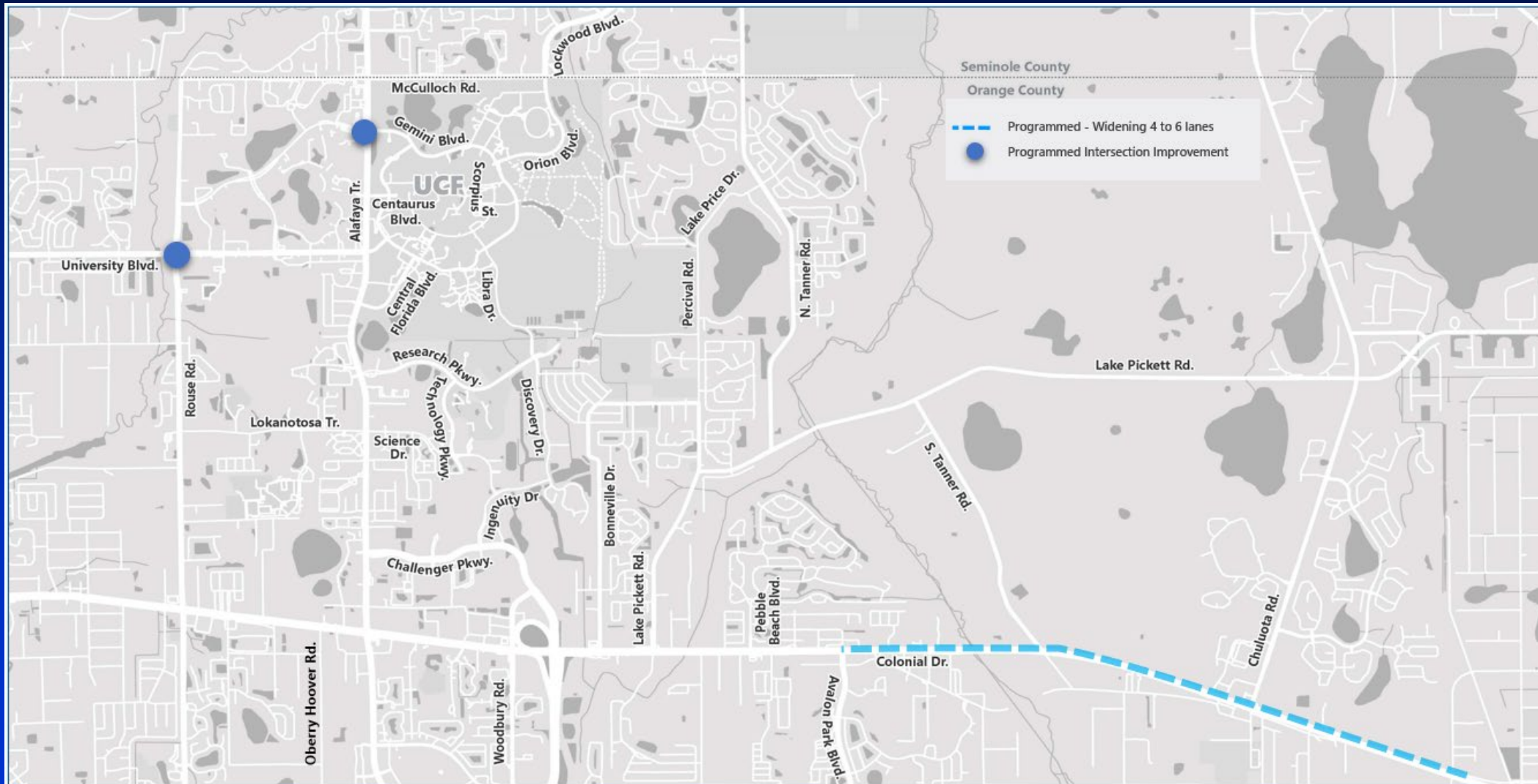
Study Timeline and Next Steps

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Future No Build Traffic Conditions

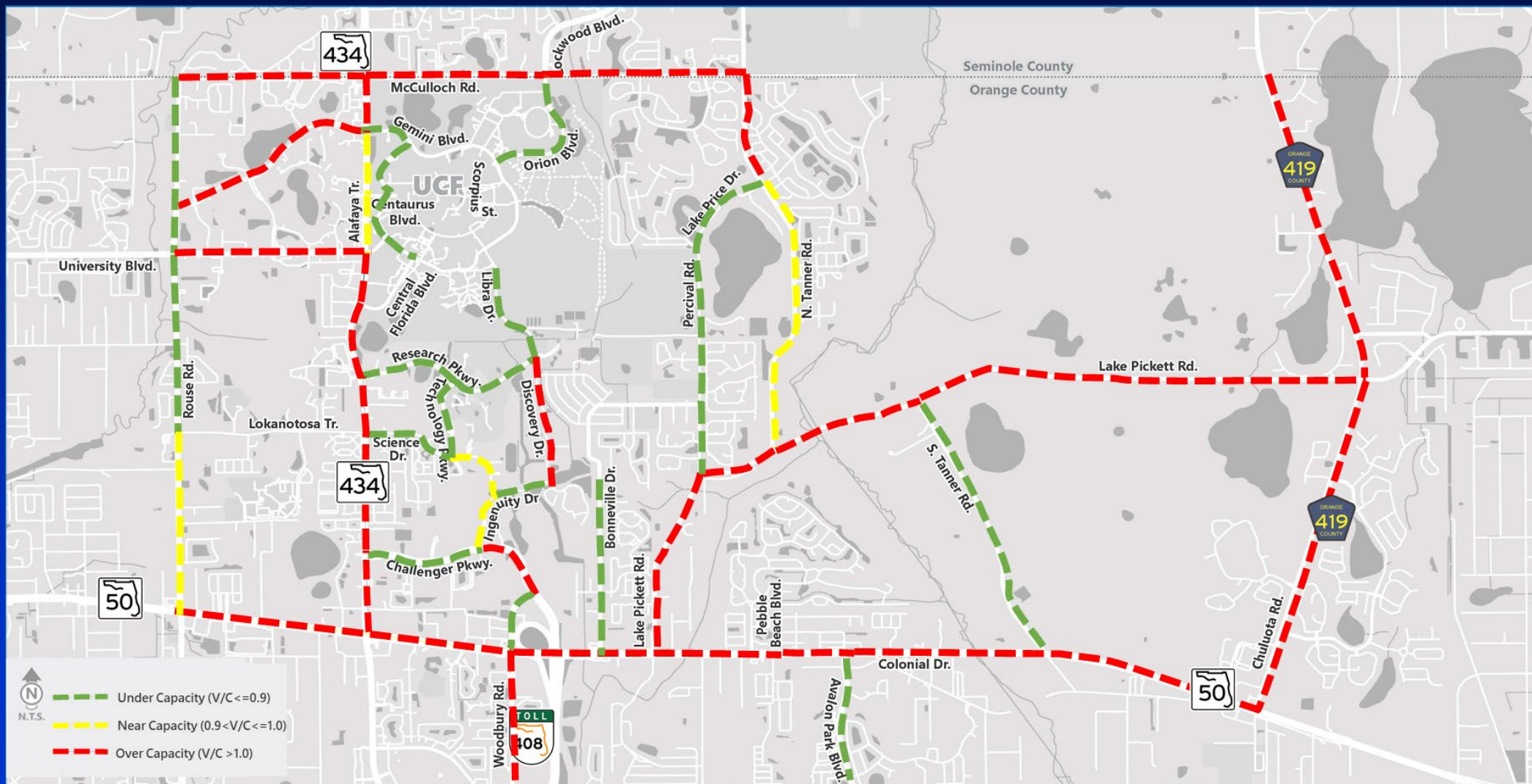
Programmed Improvements





Future No Build Traffic Conditions

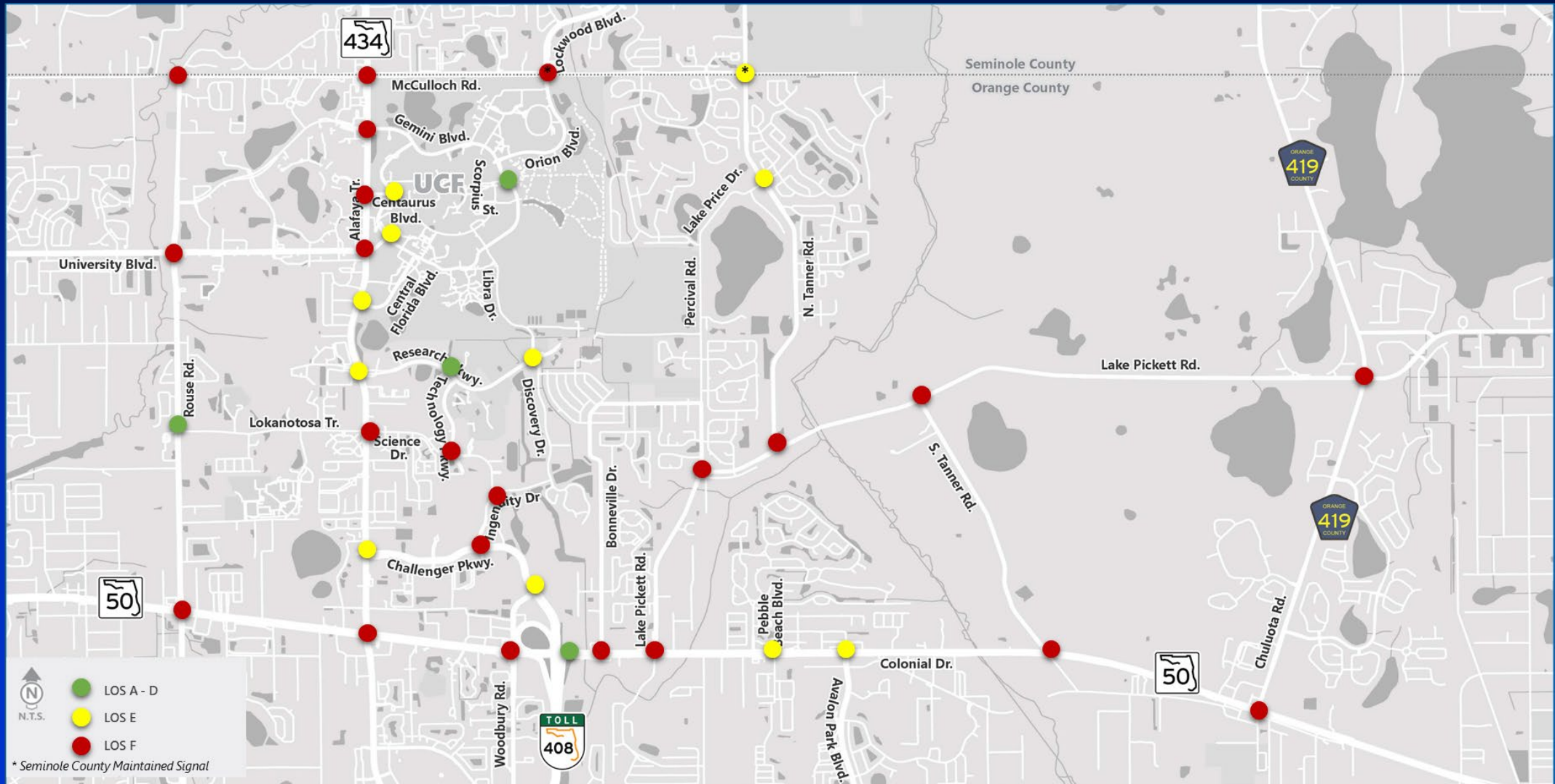
2045 No Build Roadway Segments





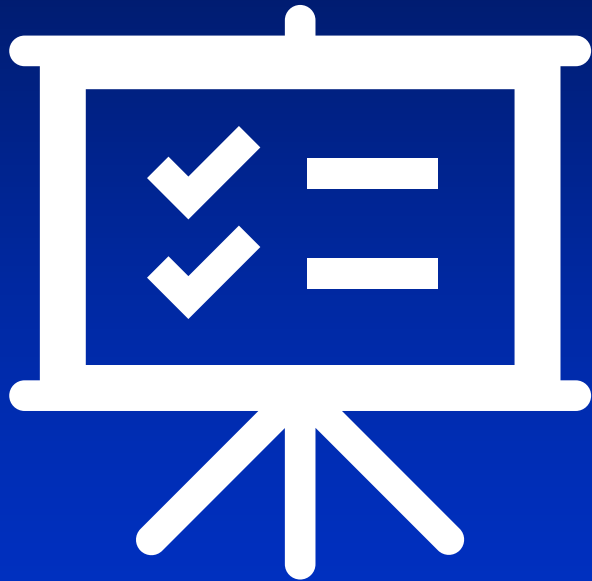
Future No Build Traffic Conditions

2045 No Build Intersections





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Roadway/Intersection Improvements

CAV Impacts for 2045

Highway Capacity Manual (7th Edition)

- CAV adjustments for 2045 traffic conditions
- For through movements
- 33% of CAVs in traffic stream
 - Approximately 10% increase in capacity (Base Saturation Flow Rate)

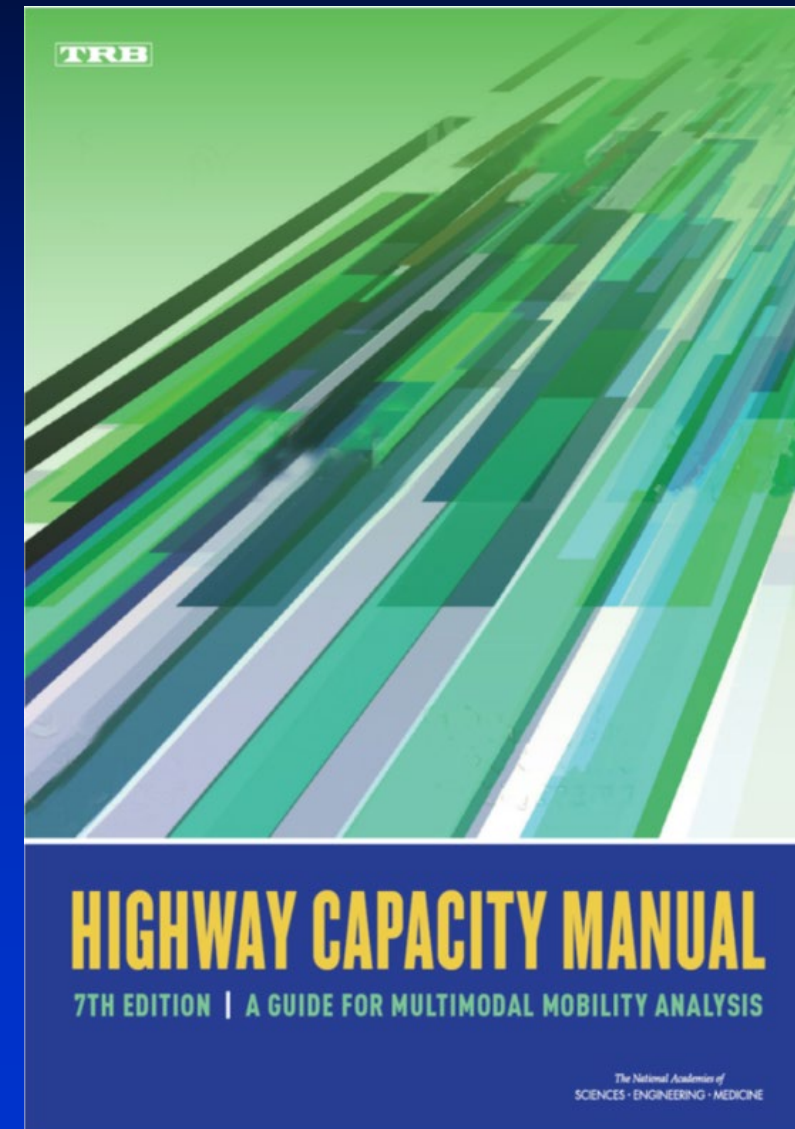
Exhibit 31-64: Base Saturation Flow Rates for CAVs for Through Movements at Signalized Intersections

Proportion of CAVs in Traffic Stream	Base Saturation Flow Rate (pc/h/ln)
0	1,900
20	2,000
40	2,150
60	2,250
80	2,550
100	2,900

Notes: CAV = connected and automated vehicle, defined here as a vehicle with an operating cooperative adaptive cruise control system.

Assumes no interaction with non-motorized road users, no adverse weather impacts, and a facility without driveways

or access points impacting saturation flow rates. Interpolate for other CAV proportions.



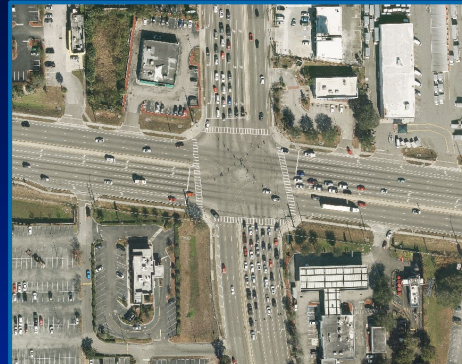


Roadway/Intersection Improvements

Anticipated Safety Benefits

- Permissive to protected left turns
 - 6% reduction in all crashes
- Exclusive right turn lane
 - 11% reduction in all crash types
- Additional left turn lane
 - 4% reduction in all crash types
- Roundabout
 - 90% fewer fatalities/75% fewer injuries
 - 10-40% fewer pedestrian/bicycle crashes
- Traffic signal
 - 23% fewer crashes versus a stop-controlled intersection
- RCUT
 - 20% fewer crashes versus to a traditional intersection
- DLT
 - 12% fewer crashes compared to a stop-controlled intersection

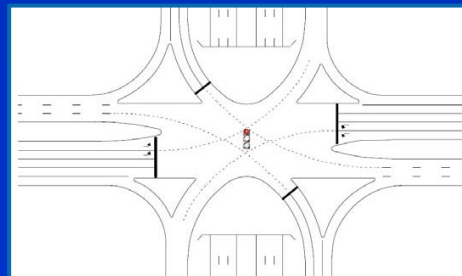
Traditional/Innovative Intersection Improvements



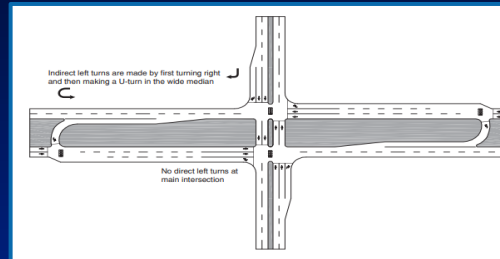
Example Turn Lanes at an Intersection



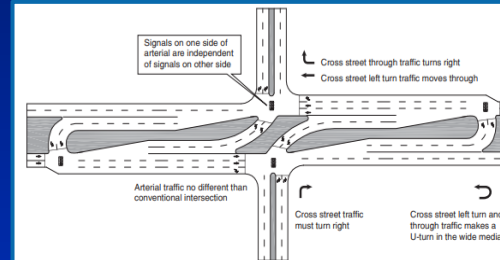
Flashing Yellow Left-turn Signal



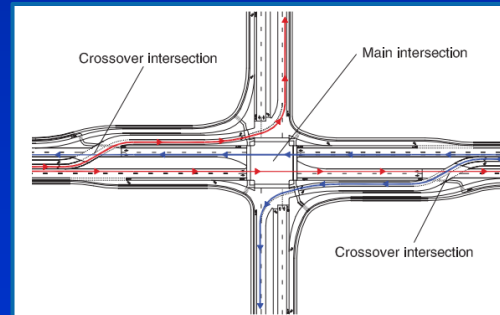
Single Point Urban Interchange (SPUI)



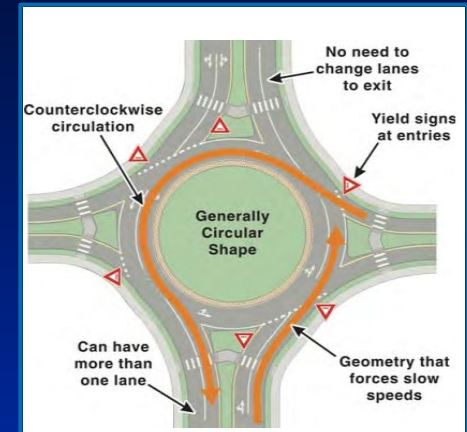
Median U-turn Intersection (MUT)



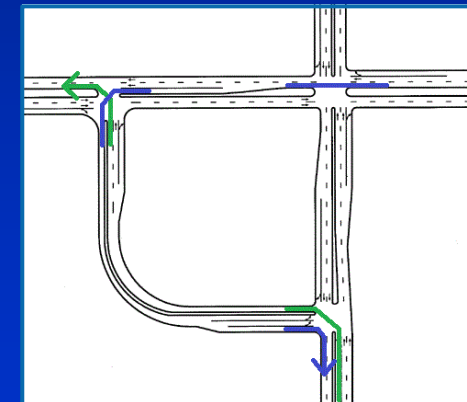
Restricted Crossing U-turn Intersection (RCUT)



Displaced Left-turn Intersection (DLT)



Roundabout



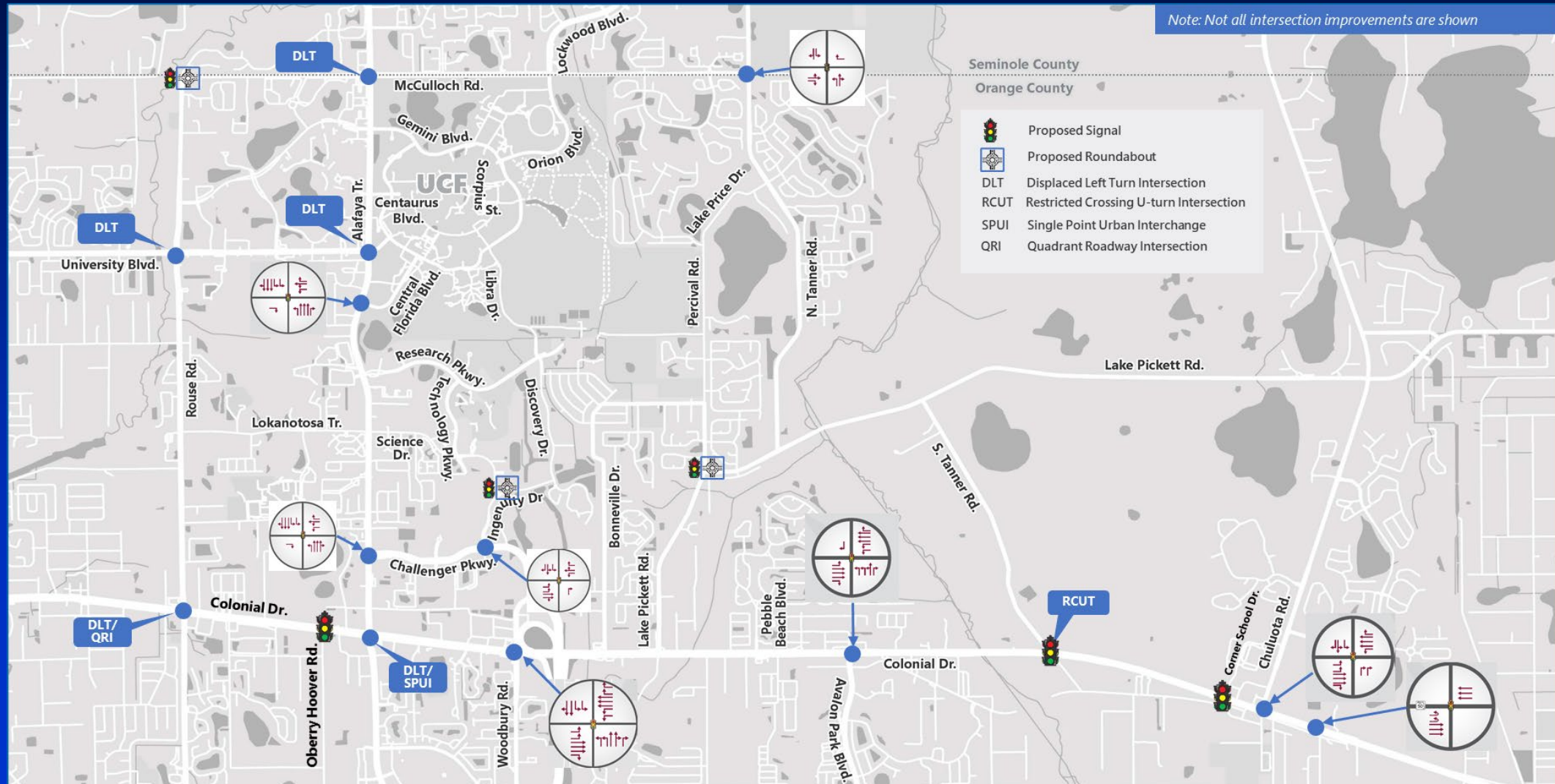
Quadrant Roadway Intersection (QRI)

Source: FHWA



Roadway/Intersection Improvements

Innovative Intersection Improvements





Roadway/Intersection Improvements

Anticipated Safety Benefits

- Retroreflective back plates to signal heads
 - 15% reduction in all crashes
- Hardened centerlines/pedestrian refuge
 - 32% reduction in all pedestrian/vehicle crashes
- High-friction surface treatment
 - 58% reduction in wet weather crashes
- High emphasis crosswalks
 - 40% reduction in pedestrian-related crashes
- Lighting improvements
 - 38-42% reduction pedestrian/vehicle crashes
- Advance traffic signs
 - 20% reduction in rear-end & sideswipe crashes
- HAWK/Pedestrian Hybrid Beacon
 - 57% reduction in pedestrian/vehicle crashes
- Detectable warning surfaces on curb ramps
- Tighten corner radii
 - Improves pedestrian/bicycle safety

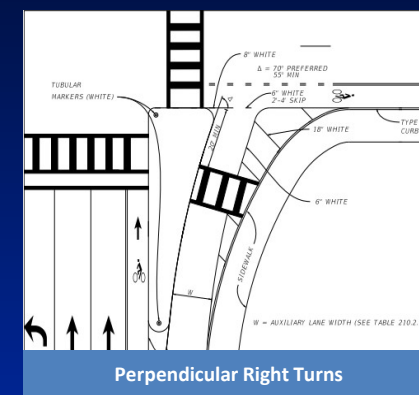
Safety/Multimodal/ADA Improvements



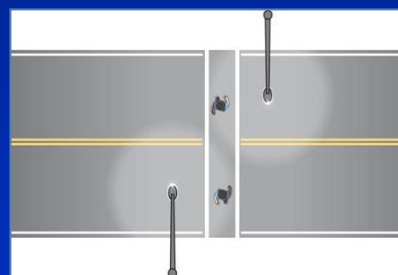
Example Wayfinding Signage



Retroreflective Back Plates



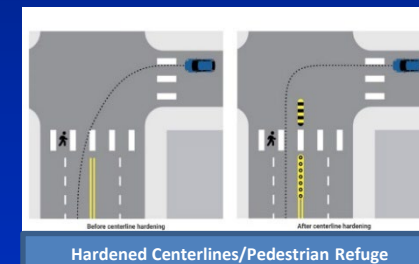
Perpendicular Right Turns



Lights at Mid-block Intersection



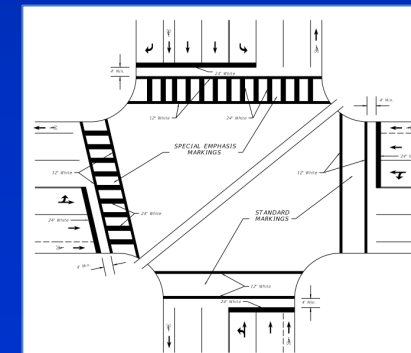
Detectable Warning Curb Ramps



Hardened Centerlines/Pedestrian Refuge



Mid-block Crossing with HAWK



Special Emphasis Markings



WHAT IS HIGH FRICTION SURFACE TREATMENT? (HFST)



High Friction Surface Treatments (HFST) are pavement surfacing systems with exceptional skid-resistant properties that are not typically acquired by conventional materials.



Advance Traffic Control Signs



Roadway/Intersection Improvements

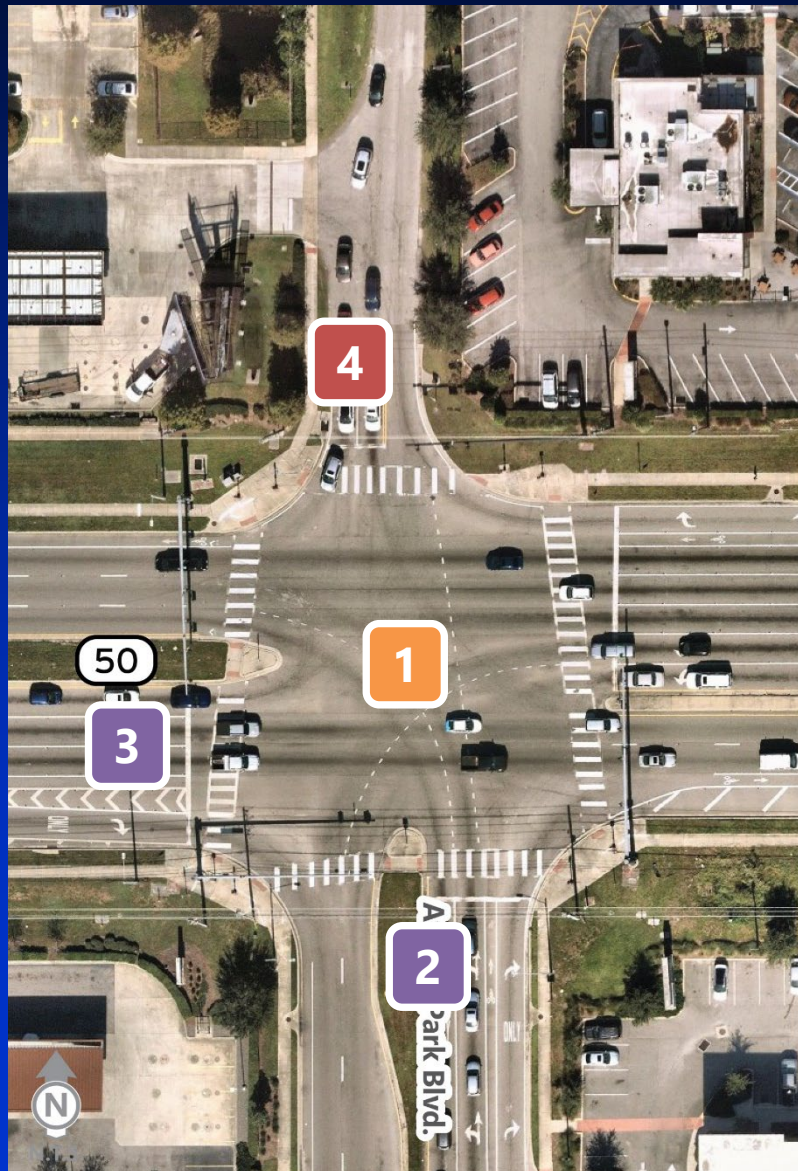


Alafaya Trail & University Boulevard Intersection Improvements

Period	Intersection Improvements	Safety/ADA/ Multimodal Improvements
Short-term Improvements	1 – EB, NB, and SB Right Turn Overlaps 2 – UCF and Alafaya Trail Pedestrian Safety Study Improvements	<ul style="list-style-type: none">▪ Evaluate intersection lighting to meet FDOT guidelines▪ Add retroreflective back plates to signal heads▪ Provide special emphasis crosswalk markings▪ Reduce curb radii on all intersection corners▪ Install wayfinding signs providing directions to major destinations▪ Consider providing a supplemental signal head for westbound traffic to mitigate horizontal curvature and obscured sight lines of signal heads▪ Consider adding a Leading Pedestrian Interval and blank-out yield to pedestrian signs for all right turns at intersection
Mid-term Improvements	3 – Third NB Left Turn Lane	
Long-term Improvements	4 – Third EB Left Turn Lane (or) 5 – Consider Partial Displaced Left Turn Intersection	



Roadway/Intersection Improvements

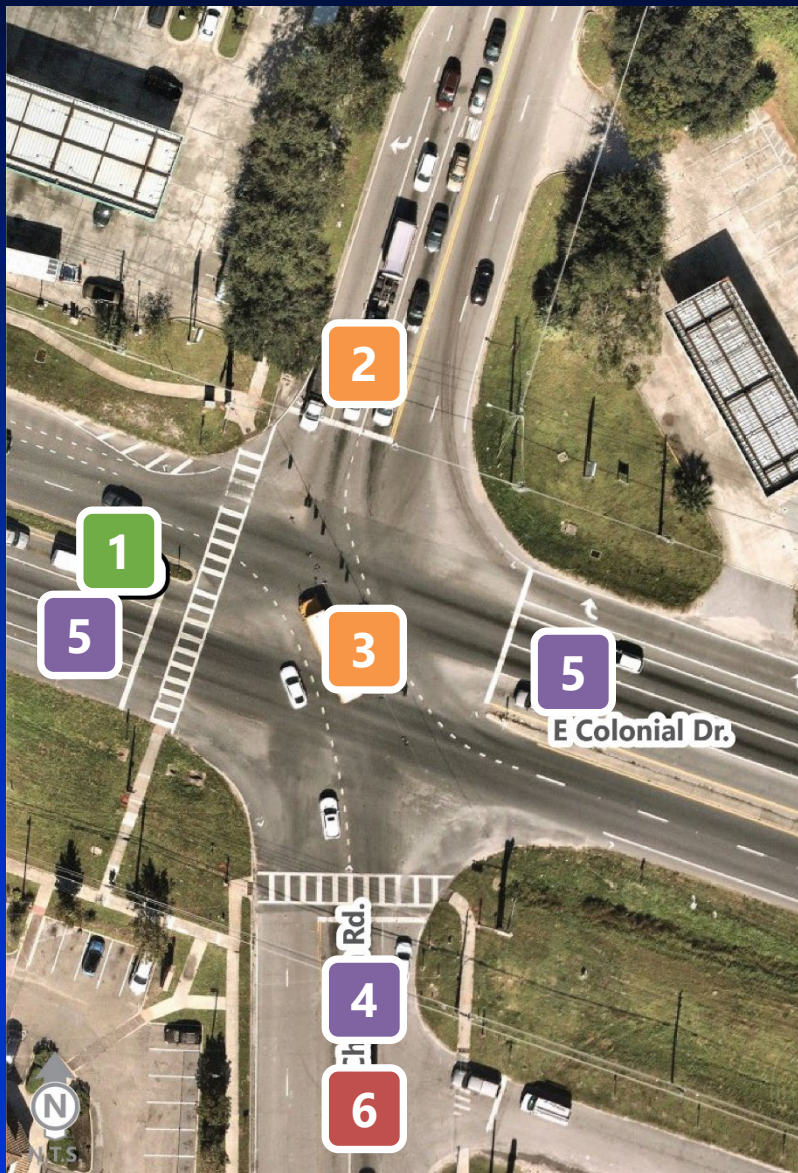


SR 50 & Avalon Park Boulevard Intersection Improvements

Period	Intersection Improvements	Safety/ADA/ Multimodal Improvements
Short-term Improvements	1 – Adaptive Signal Control	<ul style="list-style-type: none">▪ Reduce corner radii or consider installing channelizing corner islands with near perpendicular right turn lane design and truck aprons on the southwest and southeast intersection corners▪ Provide curb extension on EB departure leg▪ Upgrade intersection lighting to meet FDOT guidelines
Mid-term Improvements	2 – Additional NB Left Turn Lane 3 – Three EB Through Lanes as part of SR 50 Widening to Six Lanes	
Long-term Improvements	4 – Convert SB Approach to Right-out Only & Provide U-turn West of this Intersection	



Roadway/Intersection Improvements

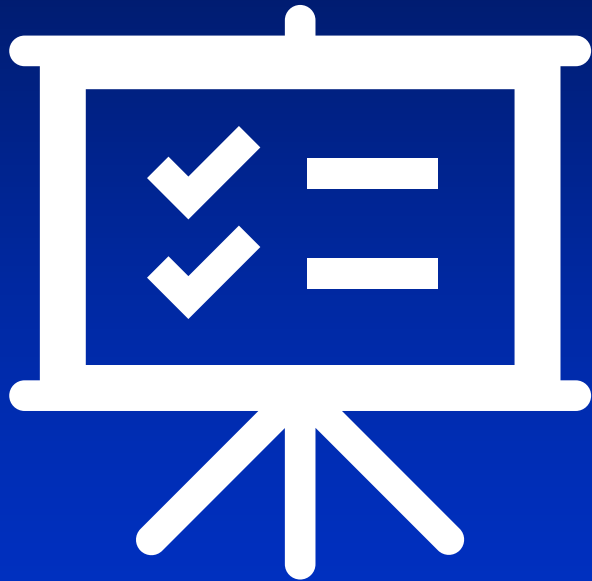


SR 50 & Chuluota Road Intersection Improvements

Period	Intersection Improvements	Safety/ADA/ Multimodal Improvements
Short-term Improvements	1 – Second EB Left Turn Lane 2 – Change SB Approach to 2 SB Lefts, 1 SB Through and 1 SB Right 3 – Adaptive Signal Control	<ul style="list-style-type: none">▪ Consider LPI for southbound right turning movement▪ Evaluate intersection lighting to meet FDOT guidelines▪ Provide lane-line extensions to guide travel along the curved alignments through the intersection on both the SR 50 and Chuluota Rd approaches▪ Revise strain pole configuration to improve signal head placement and visibility▪ Reduce corner radii on the northwest and southeast intersection corners or provide corner islands with near-perpendicular right turn lane design▪ Add retroreflective back plates to signal heads▪ Consider crosswalks on the north and east legs and fill the sidewalk gap to the Gas Station driveway
Mid-term Improvements	4 – Change NB Approach to NB Lefts and add 1 NB Through-Right Turn Lane 5 – Three EB/WB Through Lanes as part of SR 50 Widening to Six Lanes	
Long-term Improvements	6 – Convert NB Approach to Right-out Only & Provide U-turn East of this Intersection	



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Future Build Traffic Conditions with Needs Improvements

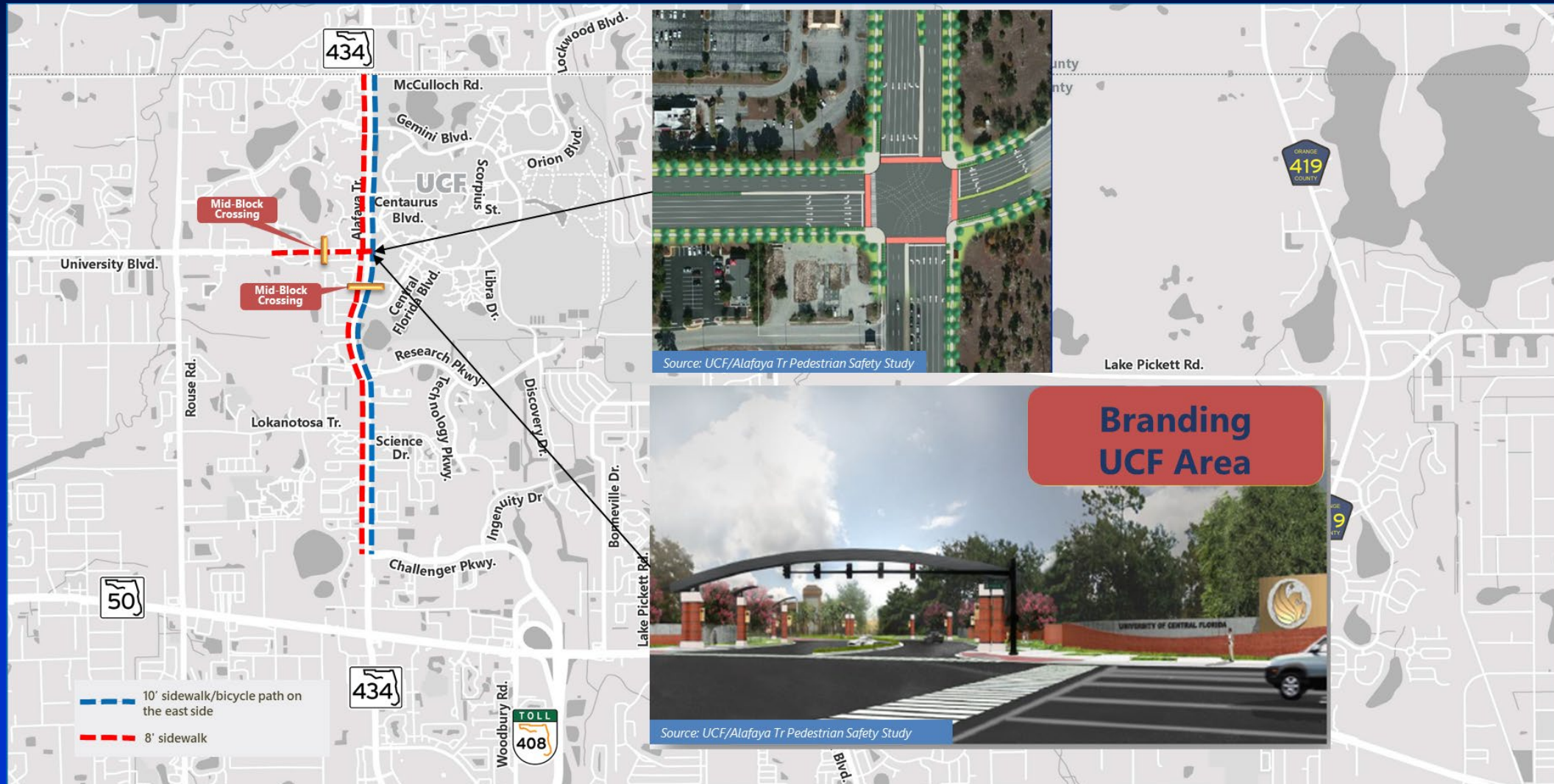
Study Timeline and Next Steps

Feedback and Discussion



Multimodal Improvements

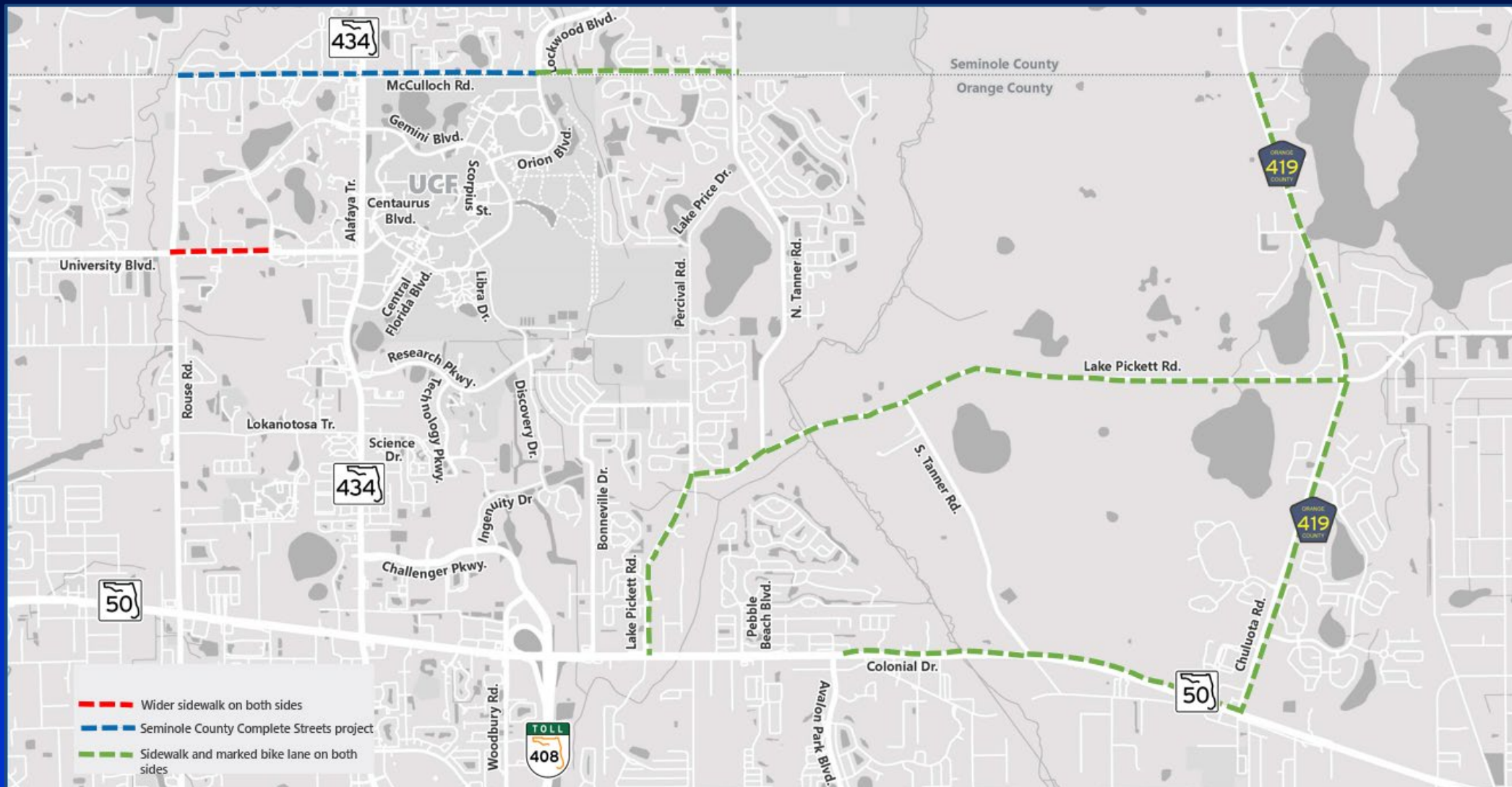
Pedestrian/Bicycle Facilities – Programmed Improvements





Multimodal Improvements

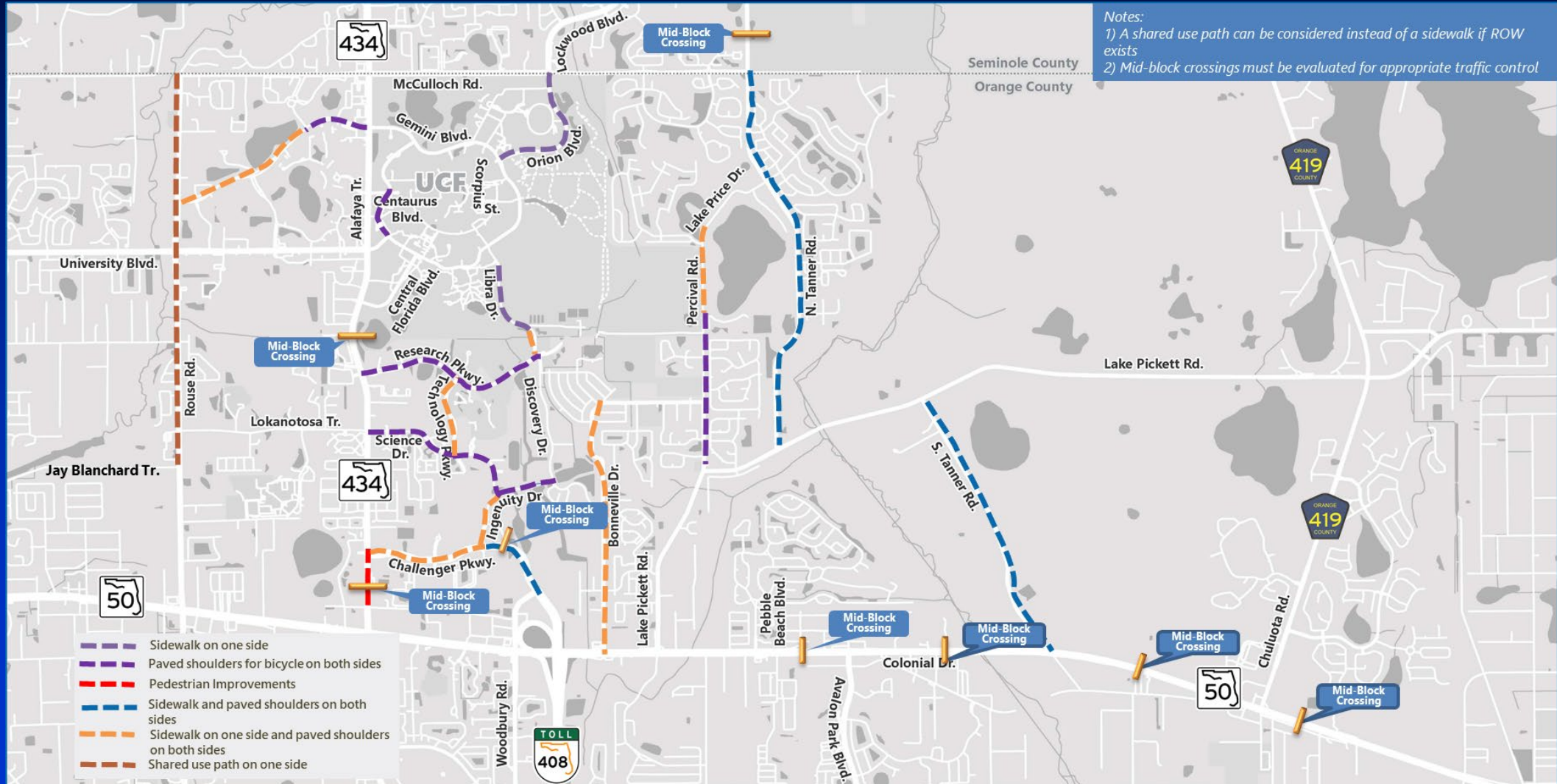
Pedestrian/Bicycle Facilities – Planned Improvements





Multimodal Improvements

Pedestrian/Bicycle Needs

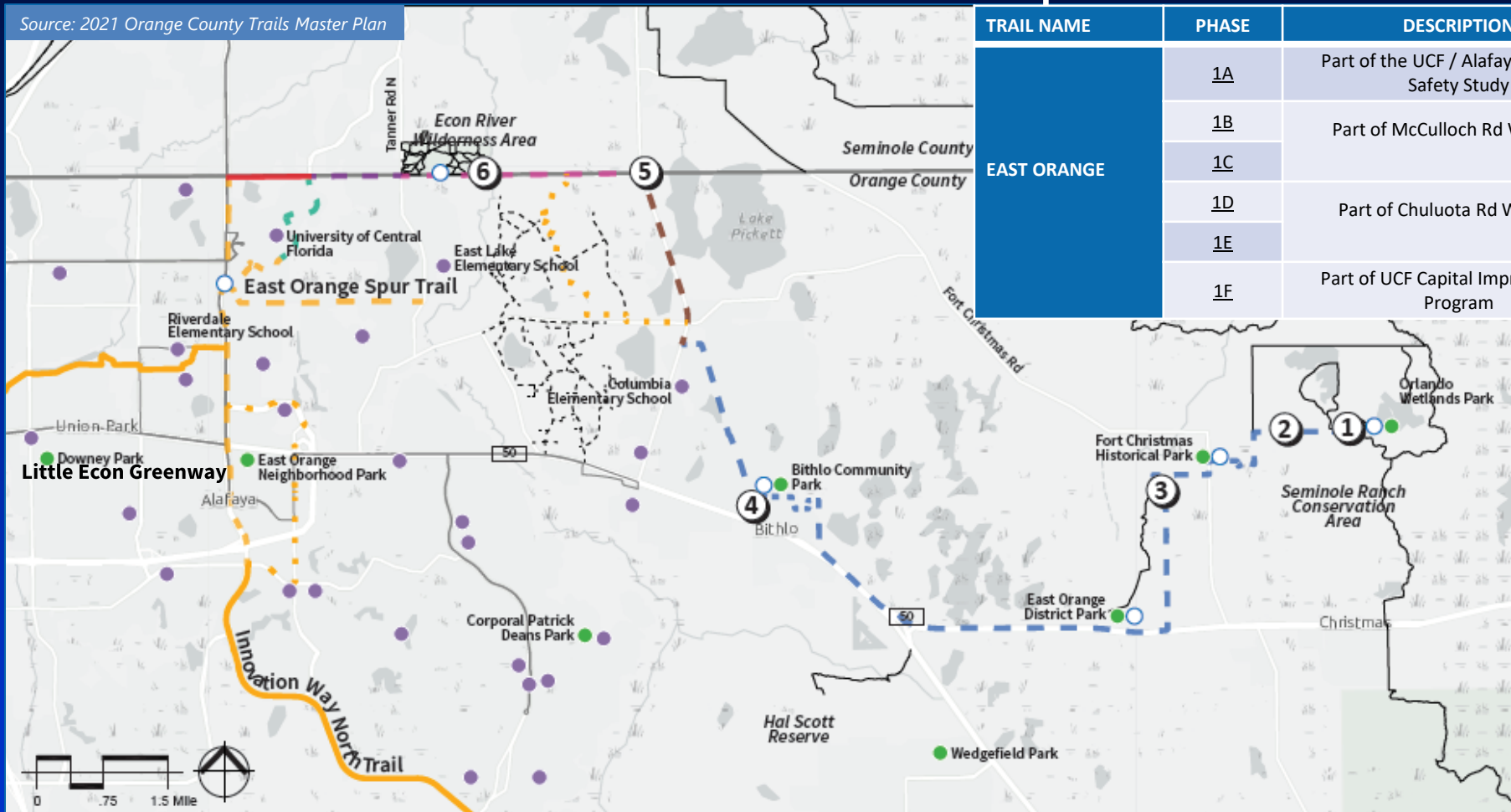




Multimodal Improvements

Planned Trail Improvements

Source: 2021 Orange County Trails Master Plan



TRAIL NAME	PHASE	DESCRIPTION	FROM	TO
EAST ORANGE	<u>1A</u>	Part of the UCF / Alafaya Bike Ped Safety Study	N Alafaya Tr	Orion Blvd
	<u>1B</u>	Part of McCulloch Rd Widening	Orion Blvd	N Tanner Rd
	<u>1C</u>		N Tanner Rd	Chuluota Rd
	<u>1D</u>	Part of Chuluota Rd Widening	Chuluota Rd	Lake Pickett Rd
	<u>1E</u>		Lake Pickett Rd	Fort Christmas Park
	<u>1F</u>	Part of UCF Capital Improvements Program	N Alafaya Tr	McCulloch Rd

Legend

- East Orange Trail - Phase 1A (Complete)
- East Orange Trail - Phase 1B
- East Orange Trail - Phase 1C
- East Orange Trail - Phase 1D
- East Orange Trail - Phase 1E
- East Orange Trail - Phase 1F
- East Orange Trail Potential Alternative Route
- Existing Orange County Trail
- Proposed Orange County Trail
- Potential Alternative Route
- Existing Trail (not maintained by Orange County)
- Proposed Trail (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Potential Trailhead

TRAIL NAME	PHASE	DESCRIPTION	FROM	TO
INNOVATION WAY NORTH	<u>1A</u>	Part of UCF/Alafaya Tr Ped Safety Study	McCulloch Rd	Challenger Pkwy
	<u>1B</u>		Challenger Pkwy	Lake Underhill Rd



Multimodal Improvements

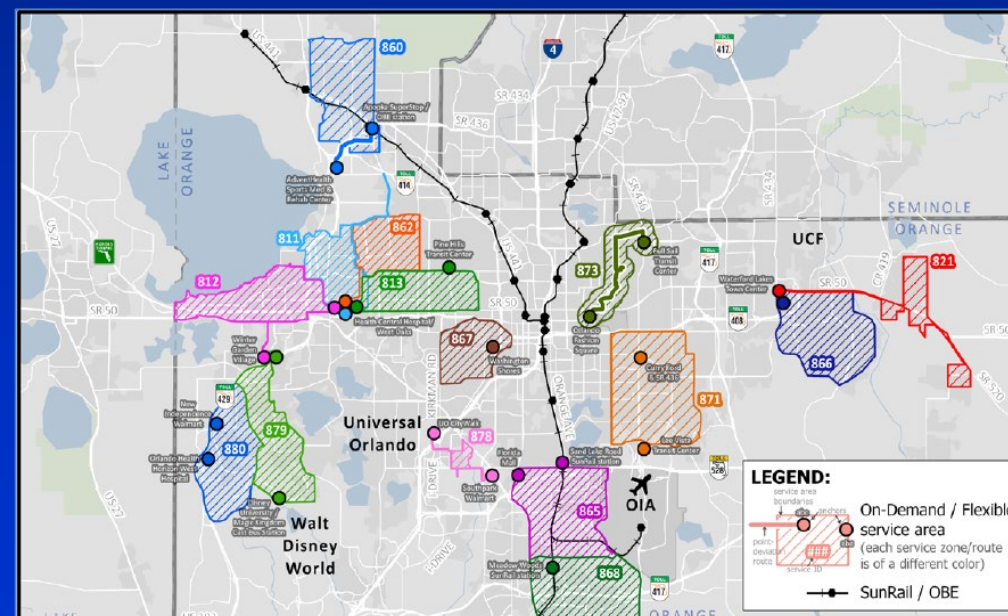
Planned Transit Improvements – LYNX

Orange County Transit Plan – Enhanced Service

- Enhanced service in existing zones (Curb to Curb)
- 11 New Enhanced On-Demand/Flexible Routes/Zones
 - Bithlo Neighborhood
 - Waterford Lakes/Avalon Park NeighborLink
- Four Express Routes
 - Increased frequencies/Connections to Rail Station & transfer centers
- Bus Rapid Transit (BRT) Corridor between Ocoee and UCF
 - 20–30-minute frequency
- UCF to Oviedo via Lockwood Blvd

Route Number	Route Name	Frequency (Weekday)
Planned Routes (Future Condition)		
104	SR 50 UCF-Downtown	20-30 min
204	SR 50 Limited Stop	20 min
308	UCF-Downtown Regional Express	30 min
311B	UCF-Medical City/Lake Nona - Meadowoods Regional Express	30 min
401A	Waterford Lakes Commuter Express	30 min
401B	Waterford Lakes Commuter Express (Pattern of 401A)	30 min
506	Lake Underhill-UCF	30 min
522	UCF-SR 436/Aloma	30 min
600B	Red Bug Lake/Alafaya	60 min
601	Oviedo/Lockwood	60 min
821	Bithlo NeighborLink (On-Demand/Flex-Route Hybrid)	Flexible (30 min)
866	Waterford Lakes/Avalon Park (On-Demand/Flex Zone)	Flexible (30 min)

Source: Orange County Transit Plan, LYNX, March 2022

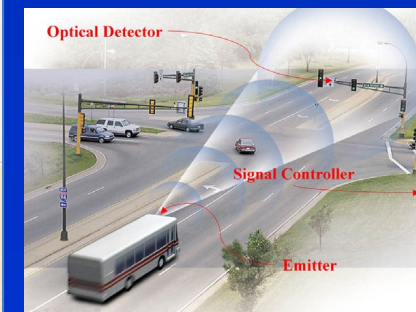


Network On-Demand/Flexible Services
(source: Orange County Transit Plan, LYNX, March 2022)



- Recommended as part of 2013 SR 50/UCF Connector Alternatives Analysis

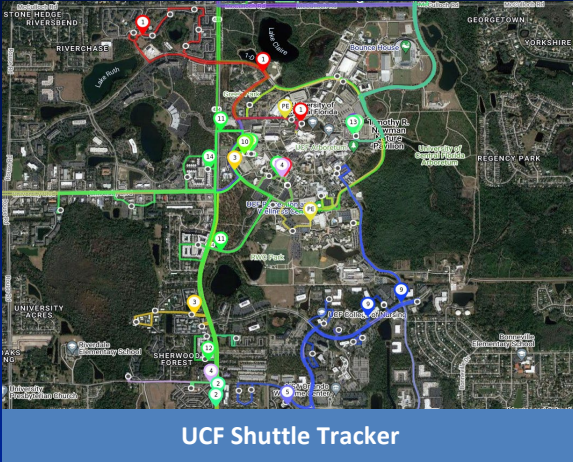
-
- The map illustrates the proposed Orange County Commuter Rail system. The main map shows the rail lines (Premium Service, SunRail, Neighborhood Circulator, Regional Express, Local, On Demand Zone) and stations (SuperStop, Preferred Stop) connecting the University of Central Florida to the Orlando Executive Airport. An inset map shows the Downtown Orlando Inset area.
- Legend:**
- Premium Service (Pink line)
 - SunRail (Light blue line)
 - Neighborhood Circulator (Green line)
 - Regional Express (Dark blue line)
 - Local (Light blue line)
 - On Demand Zone (Orange area)
 - SuperStop (Pink square)
 - Preferred Stop (Black circle)
 - 3/4 Mile Study Corridor (White area)
 - Preferred Alignment (Grey line)
- Key Locations and Features:**
- University of Central Florida:** Located at the top right of the map.
 - Orlando:** The central city area, including Fashion Square Mall, Colonial Plaza, and the Orlando Executive Airport.
 - Valencia East Campus:** Located at the bottom right of the map.
 - Downtown Orlando Inset:** A detailed view of the downtown area, showing the intersection of major roads and the proposed rail lines.
- Map Details:**
- The map includes a scale bar (0 to 2 miles) and a north arrow.
 - Major roads are labeled with their route numbers (e.g., 50, 17, 408, 406, 404, 403, 402, 401, 400, 399, 398, 397, 396, 395, 394, 393, 392, 391, 390, 389, 388, 387, 386, 385, 384, 383, 382, 381, 380, 379, 378, 377, 376, 375, 374, 373, 372, 371, 370, 369, 368, 367, 366, 365, 364, 363, 362, 361, 360, 359, 358, 357, 356, 355, 354, 353, 352, 351, 350, 349, 348, 347, 346, 345, 344, 343, 342, 341, 340, 339, 338, 337, 336, 335, 334, 333, 332, 331, 330, 329, 328, 327, 326, 325, 324, 323, 322, 321, 320, 319, 318, 317, 316, 315, 314, 313, 312, 311, 310, 309, 308, 307, 306, 305, 304, 303, 302, 301, 300, 299, 298, 297, 296, 295, 294, 293, 292, 291, 290, 289, 288, 287, 286, 285, 284, 283, 282, 281, 280, 279, 278, 277, 276, 275, 274, 273, 272, 271, 270, 269, 268, 267, 266, 265, 264, 263, 262, 261, 260, 259, 258, 257, 256, 255, 254, 253, 252, 251, 250, 249, 248, 247, 246, 245, 244, 243, 242, 241, 240, 239, 238, 237, 236, 235, 234, 233, 232, 231, 230, 229, 228, 227, 226, 225, 224, 223, 222, 221, 220, 219, 218, 217, 216, 215, 214, 213, 212, 211, 210, 209, 208, 207, 206, 205, 204, 203, 202, 201, 200, 199, 198, 197, 196, 195, 194, 193, 192, 191, 190, 189, 188, 187, 186, 185, 184, 183, 182, 181, 180, 179, 178, 177, 176, 175, 174, 173, 172, 171, 170, 169, 168, 167, 166, 165, 164, 163, 162, 161, 160, 159, 158, 157, 156, 155, 154, 153, 152, 151, 150, 149, 148, 147, 146, 145, 144, 143, 142, 141, 140, 139, 138, 137, 136, 135, 134, 133, 132, 131, 130, 129, 128, 127, 126, 125, 124, 123, 122, 121, 120, 119, 118, 117, 116, 115, 114, 113, 112, 111, 110, 109, 108, 107, 106, 105, 104, 103, 102, 101, 100, 99, 98, 97, 96, 95, 94, 93, 92, 91, 90, 89, 88, 87, 86, 85, 84, 83, 82, 81, 80, 79, 78, 77, 76, 75, 74, 73, 72, 71, 70, 69, 68, 67, 66, 65, 64, 63, 62, 61, 60, 59, 58, 57, 56, 55, 54, 53, 52, 51, 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0).





- **New NeighborLinks (Expansion Area/On-Demand)**
- **Transportation Management Organization (TMO)**
- **Transit Marketing, Real-Time Information, and Wayfinding**
- **Special Transit Benefits Zone**
- **Active Transportation Commuter Stations**
- **Dedicated Traffic Safety Instructor**
- **Mobility Hub (UCF SuperStop) and Facility Enhancement**
- **Express Bus Service and New Park & Ride Lots (TSP/Queue Jumps)**

**Anticipated Vehicle Trip Reduction
5-15% for NEOCATS**

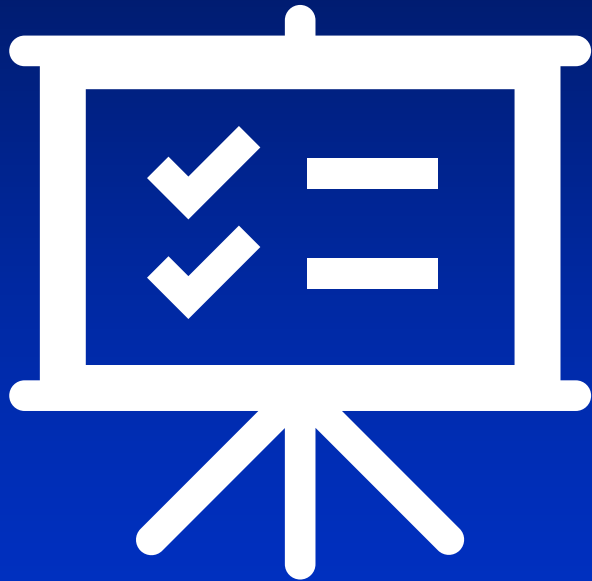


TDM Program or Strategy	High Transit	Moderate Transit	Low Transit
Support, Promotion, Information	3-5%	1-3%	<1%
Alternative Commute Services	5-10%	5-10%	1-3%
Financial Incentives	10-20%	5-15%	1-5%
Combined Strategies			
With Free Parking	15-20%	10-15%	3-7%
With Paid Parking	25-30%	15-20%	N/A





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Multimodal Improvements

ITS Improvements/Emerging Technologies

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Future Build Traffic Conditions with Needs Improvements

Study Timeline and Next Steps

Feedback and Discussion



ITS Improvements/Emerging Technologies

Period	ITS Project	Description
Short-term	<ul style="list-style-type: none"> SR 50 Adaptive Signal System (Forsyth Rd to Avalon Park Blvd) 	<ul style="list-style-type: none"> Install an adaptive signal system
	<ul style="list-style-type: none"> Intelligent Transportation Systems/Customer Information Systems/Travel Planning 	<ul style="list-style-type: none"> Test upcoming transit technologies and real time transit dissemination applications
	<ul style="list-style-type: none"> Data Sharing Application 	<ul style="list-style-type: none"> Access real-time information from other agencies (dashboard with performance measures, and tools to measure performance and communicate information)
	<ul style="list-style-type: none"> Active Arterial Management (AAM) 	<ul style="list-style-type: none"> AAM is a collection of strategies for managed corridors and an integrated regional system. Strategies include traveler information, signal timing, and more.
Mid-term	<ul style="list-style-type: none"> Connected Vehicle Pilot Project 	<ul style="list-style-type: none"> Test connected vehicle strategies
	<ul style="list-style-type: none"> UCF - Bicycle and Pedestrian Innovative ITS Solution 	<ul style="list-style-type: none"> Install bicycle and pedestrian ITS technologies
	<ul style="list-style-type: none"> CAV Technology Ready Corridors 	<ul style="list-style-type: none"> Vehicle-to-vehicle (V2V) & Vehicle-to-Infrastructure (V2I), Road-side Units & Communications Infrastructure Congestion alerts, collision avoidance, weather alerts, blind spot alerts, pedestrians nearby etc. Can be combined with adaptive traffic control system
	<ul style="list-style-type: none"> Install speed/volume sensors, Bluetooth devices, and Arterial DMS (ADMS) 	<ul style="list-style-type: none"> Disseminate real-time traffic information, detour routing for incidents, construction & event information Measure near real-time/historic travel time & origin-destination information for performance reporting and optimization



Connected Vehicle Technology (Source: its.dot.gov)



Adaptive Signal System



Enhanced Pedestrian Infrastructure



Active Arterial Management





ITS Improvements/Emerging Technologies

- Deploy smart technologies in Central Florida - Four distinct programs
- Funded by FHWA grant and local matching funds
- PedSafe – hardware installations complete
 - Innovative ped/bike collision avoidance system that will operate with CV technologies
 - *Pilot deployment at/between signals on Alafaya Tr adjacent to UCF*
- Greenway - CV Technologies installed at 33 signals (Orange County)
 - Cellular vehicle-to-everything (C-V2X) roadside units (RSU),
 - Emergency vehicle preemption (EVP),
 - Transit signal priority (TSP)
 - Passive pedestrian detection (PPD) technology
 - *Initially will be used by UCF transit /first responder vehicles*
- Smart Community
 - *District's 1st autonomous vehicle (AV) shuttles (2) within UCF*
 - Surface Parking Management
- SunStore – FDOT's Data Storage & Research Sharing Initiative

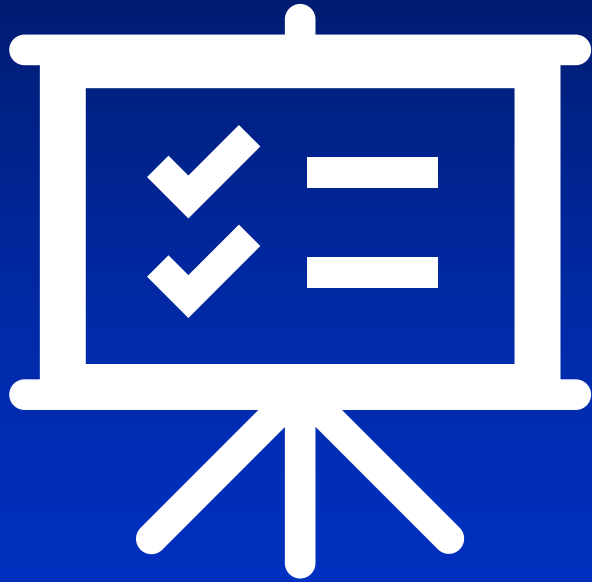
ATTAIN Central Florida



Source: <https://cflsmartroads.com/projects/ATTAIN-CFL.html>



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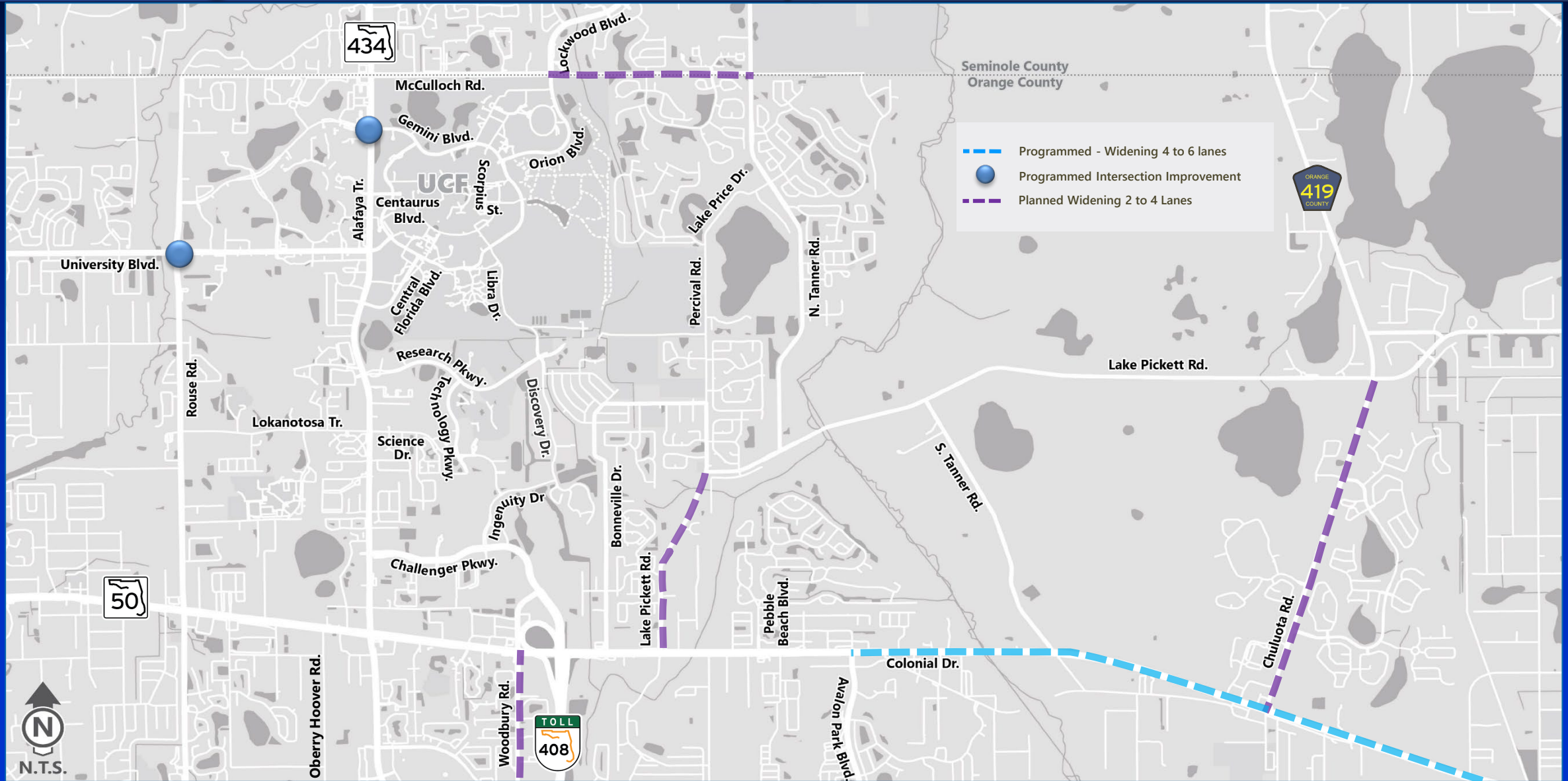
Future Build Traffic Conditions with Needs Improvements

Study Timeline and Next Steps

Feedback and Discussion

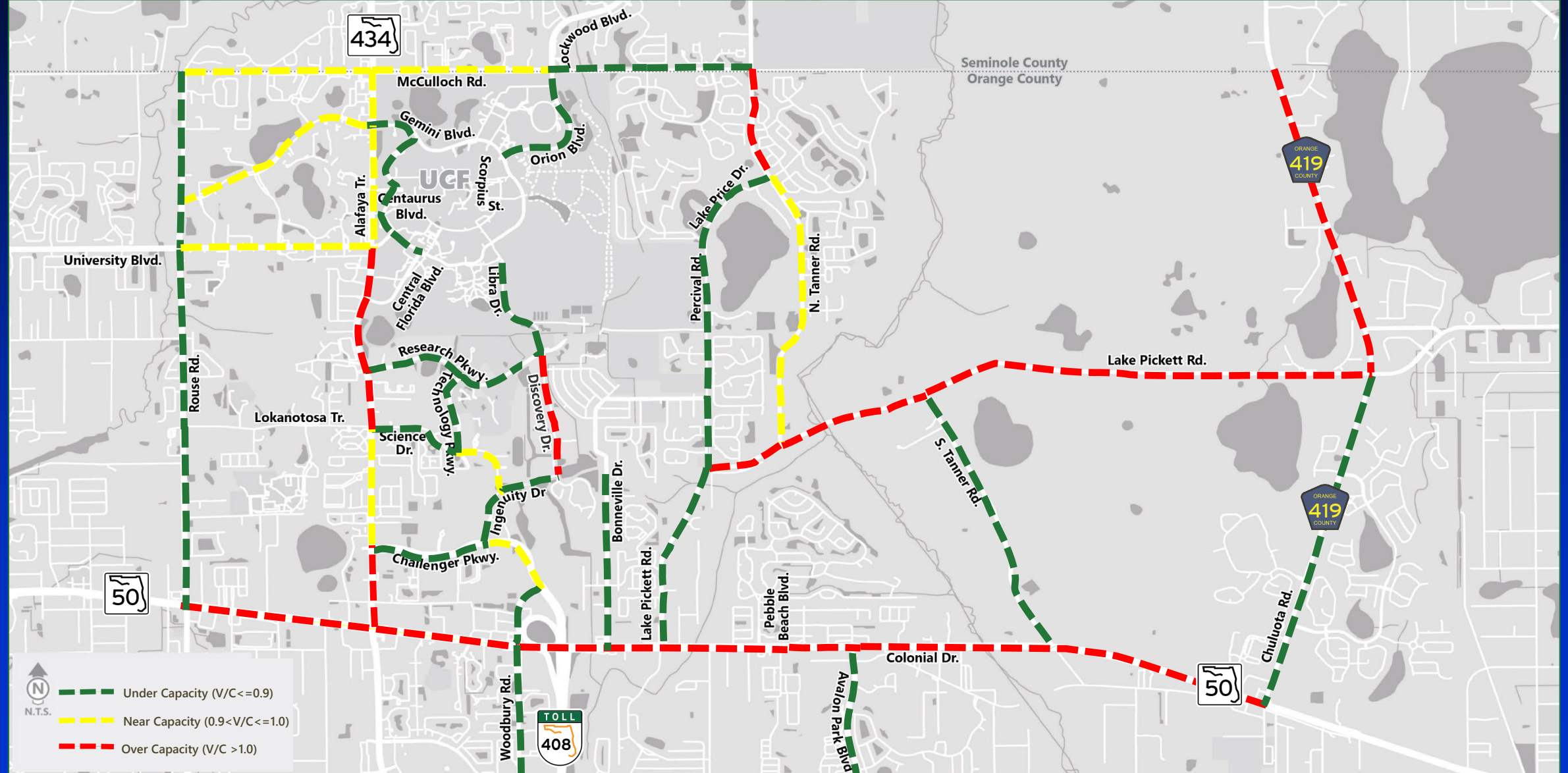


Future Build Traffic Conditions with Programmed/Planned Improvements



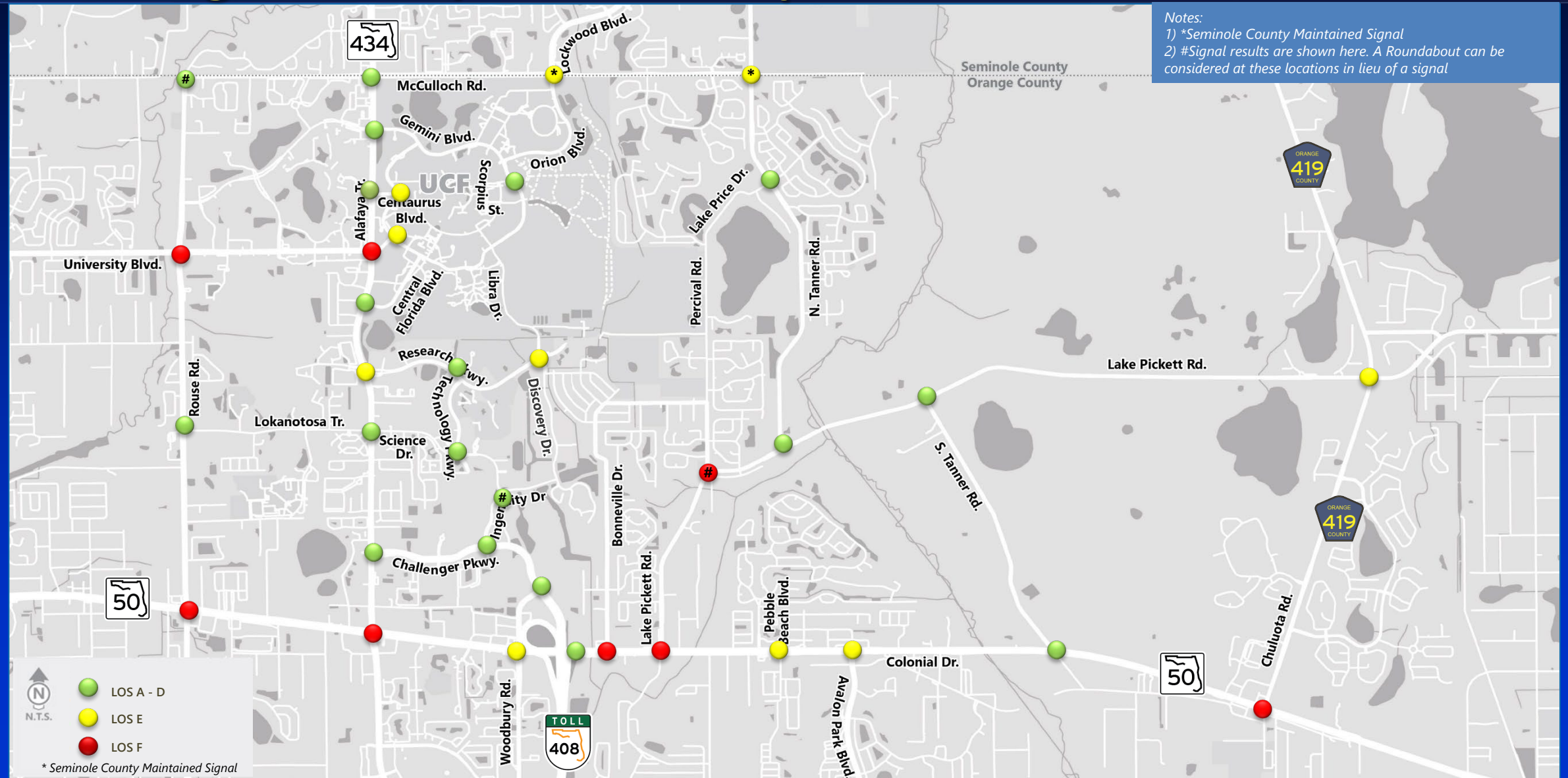


Future Build Traffic Conditions with Programmed/Planned Improvements





Future Build Traffic Conditions with Programmed/Planned Improvements





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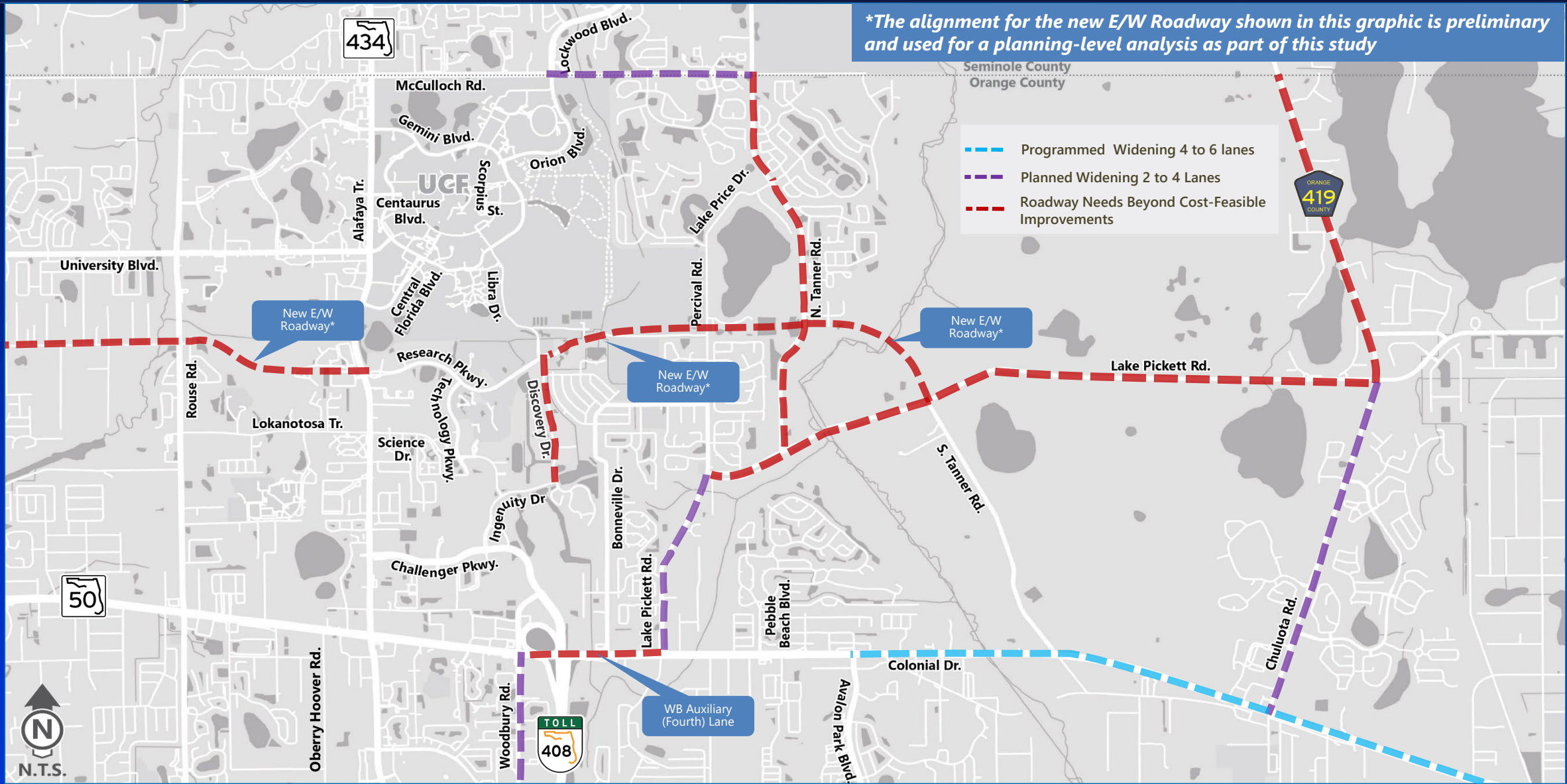
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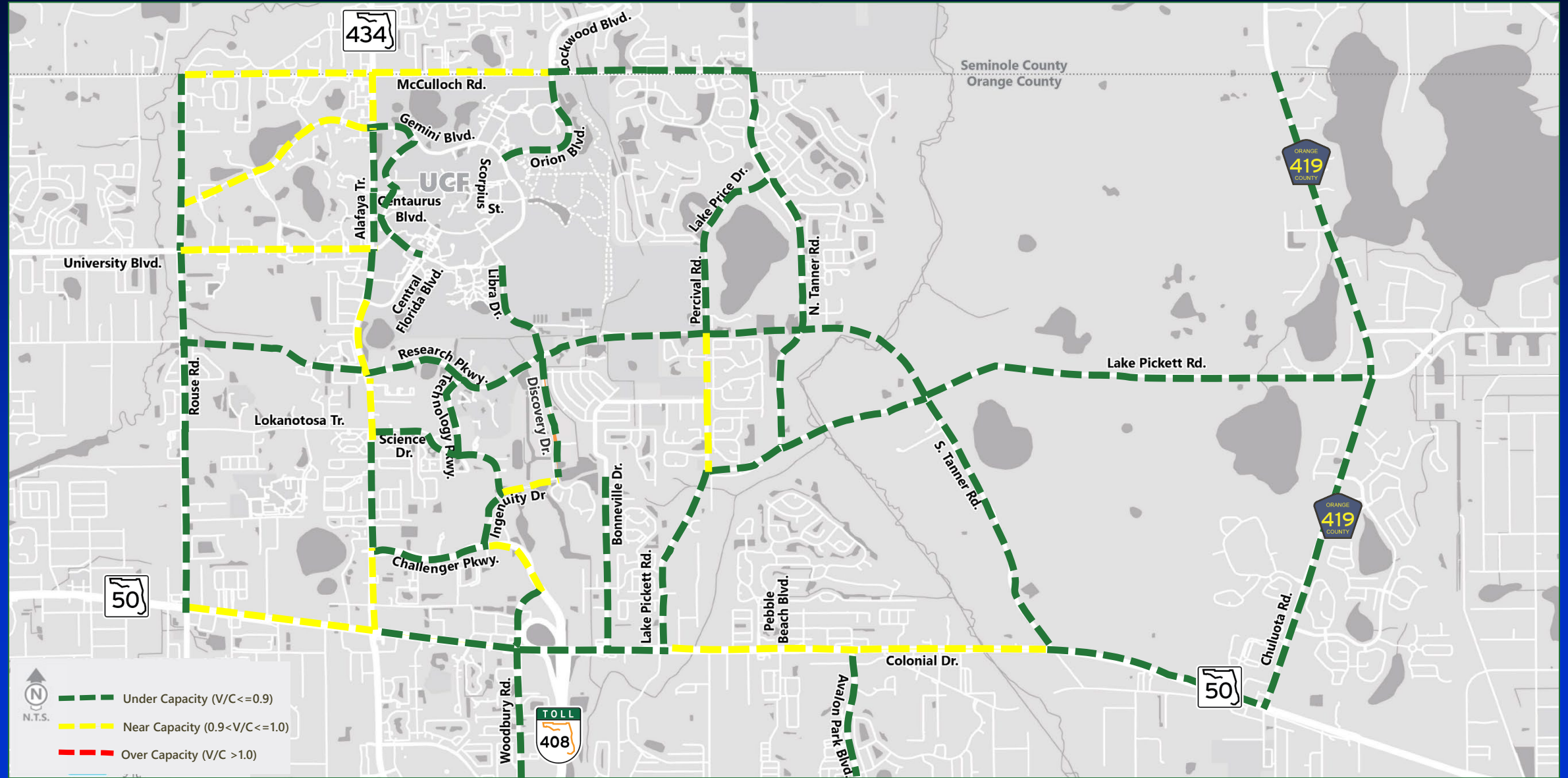


Future Build Traffic Conditions with Needs Improvements



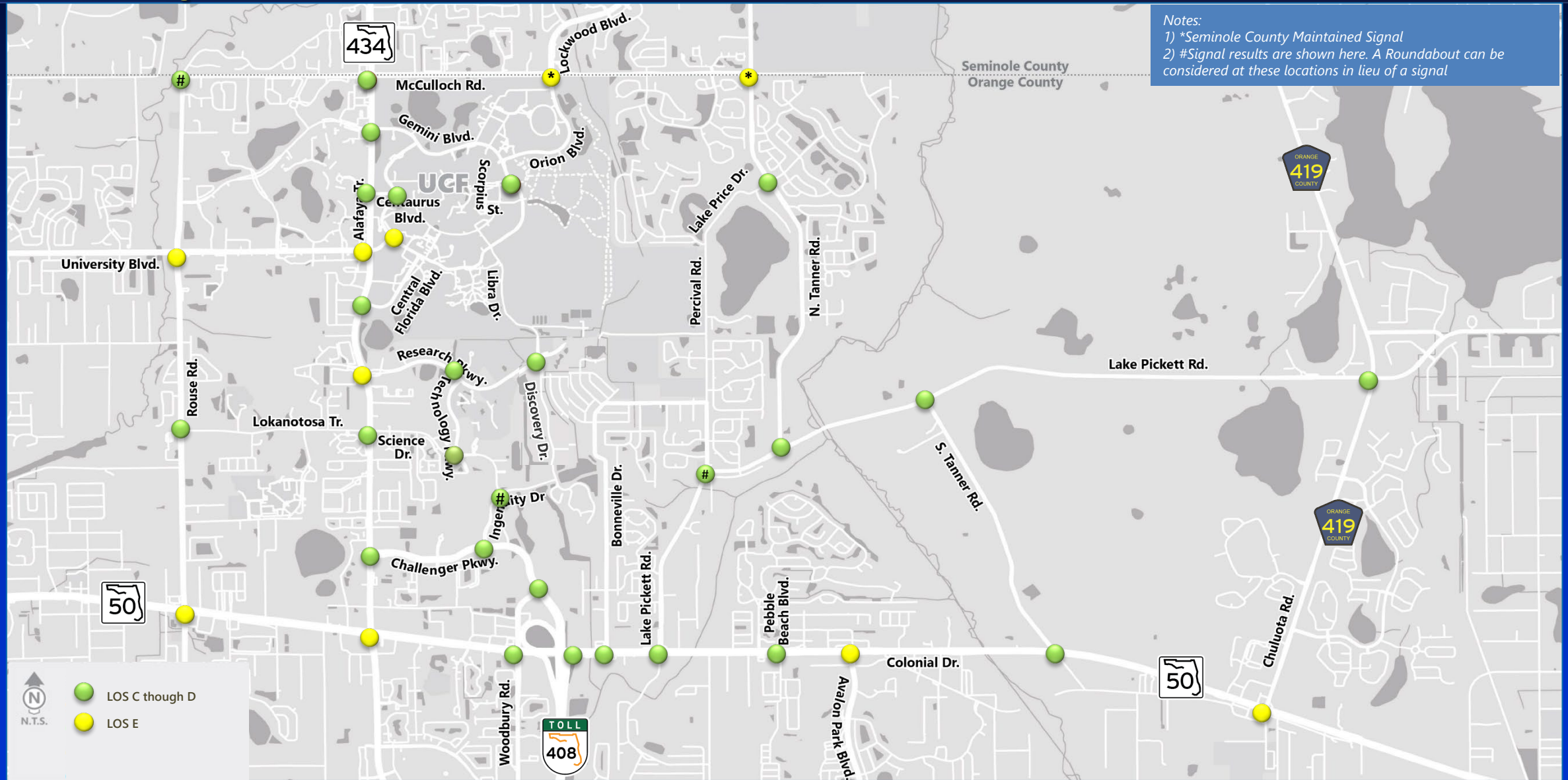


Future Build Traffic Conditions with Needs Improvements





Future Build Traffic Conditions with Needs Improvements





Future Build Traffic Conditions with Needs Improvements

Alternatives Comparison

No Build

- Existing + Committed Improvements

Build 1 (Cost-Feasible Plan)

- Existing + Committed + Planned Improvements

Build 2 (Needs Plan)

- Existing + Committed + Planned Improvements + Roadway/Intersection Needs

Evaluation Matrix

Evaluation Criteria	Project Alternatives		
	No Build	Build 1	Build 2
Traffic Operations & Safety			
Accommodates future traffic demand ¹	Low	Moderate	High
Provides multimodal improvements (ranking)	Good	Better	Best
Improves safety (ranking)	Good	Better	Best
Potential Community Impacts			
Right-of-Way Potentially Needed (Low/Moderate/High) ²	Low	Moderate	High
Potential Historic/Archaeological Impacts (Low/Moderate/High) ³	Low	Low	Low
Potential Utility Impacts (Low/Moderate/High) ³	Moderate	Moderate	Moderate
Potential Environmental Impacts			
Wetlands (Low/Moderate/High) ³	Low	Moderate	Moderate
Floodplains (Low/Moderate/High) ³	Moderate	Moderate	High
Threatened & Endangered Species (Low/Moderate/High) ³	Low	Low	Low
Potential Contamination Sites (Low/Moderate/High) ³	Moderate	Moderate	Moderate
Estimated Project Cost (\$ Million)⁴			
Estimated Total Cost	70.0	269.0	452.0
B/C Ratio Relative to No Build Alternative⁵			
Value	-	11.7	7.6

Notes:

1 - Based on the number of failing study roadway segments and intersections

2 - Based on available parcel data from Orange County Property Appraiser

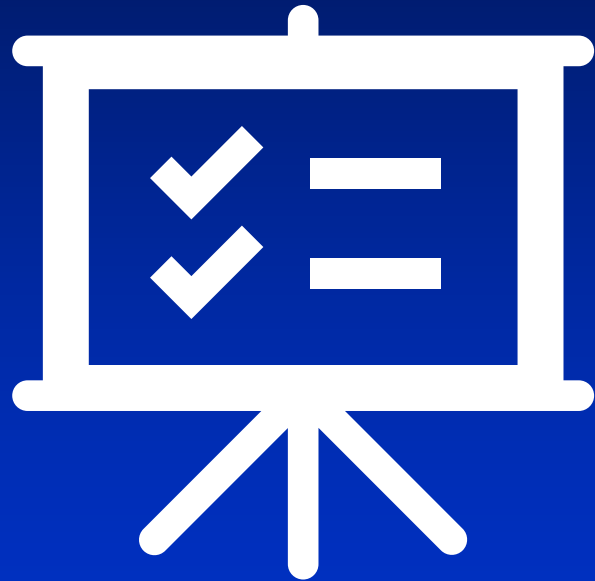
3 - Based on NEOCATS Existing Environmental Conditions Report and future roadway improvements

4 - Based on cost estimates provided for the roadway, intersection and multimodal (pedestrian/bicycle) improvements

5 - B/C ratio is calculated for operational benefits (time and fuel saved) of the two Build Alternatives relative to the No Build Alternative. Only roadway and intersection improvement costs are considered in the B/C ratio calculations



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Study Timeline and Next Steps

Feedback and Discussion



Study Timeline and Next Steps

Study Schedule	2021								2022									
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Project Kick-off	★																	
Community Meetings							👤				👤							
Local Planning Agency (LPA) / Board of County Commissioners (BCC) Workshops																	👥 LPA	👥 BCC
Traffic Data Collection & Analysis				🏔️														
Transportation Modeling					🏔️													
Evaluation of Scenarios & Needs Plan										🏔️								
Environmental Conditions									🏔️									
Final Report & Project Wrap-up																		🏔️

★ Project Kick-off

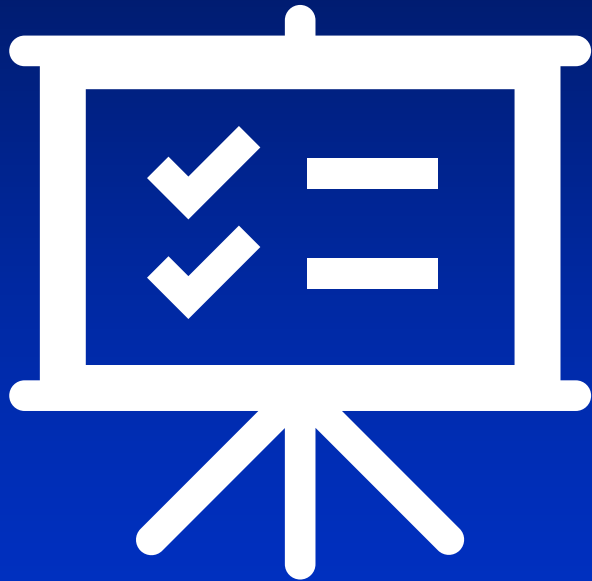
👤 Community Meeting

👥 LPA/BCC Workshop

🏔️ Project Milestone



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Feedback and Discussion



Hatem A. Abou-Senna, PhD., P.E.

Project Manager

Orange County Transportation Planning Division

4200 S. John Young Pkwy.

Orlando, FL. 32839

(407) 836-8023

Babuji Ambikapathy, AICP, P.E.

Consultant Project Manager

225 E. Robinson Street, Suite 300

Landmark Center Two

Orlando, FL 32801-4326

(407) 230-2762



www.neocatstudy.com



@OrangeCoFL



Orange County, Florida Government



Feedback and Discussion

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SUBSCRIBE

Contacts

Hatem A. Abou-Senna, PhD., P.E.

Project Manager
Orange County Transportation Planning Division

4200 S. John Young Pkwy.
Orlando, FL. 32839

(407) 836-8023

[@hatem.abou-senna@ocfl.net](mailto:hatem.abou-senna@ocfl.net)

Consultant Team

Babuji Ambikapathy, AICP, P.E.

Consultant Project Manager

225 E. Robinson Street, Suite 300
Landmark Center Two
Orlando, FL 32801-4326

(407) 230-2762

[@bambikapathy@vhb.com](mailto:bambikapathy@vhb.com)

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[f](#) Orange County, Florida Government

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