

Orange County Public Works Department

**Chuluota Road (CR 419)
RCA Study &
Intersection Control Evaluation
Public Meeting**

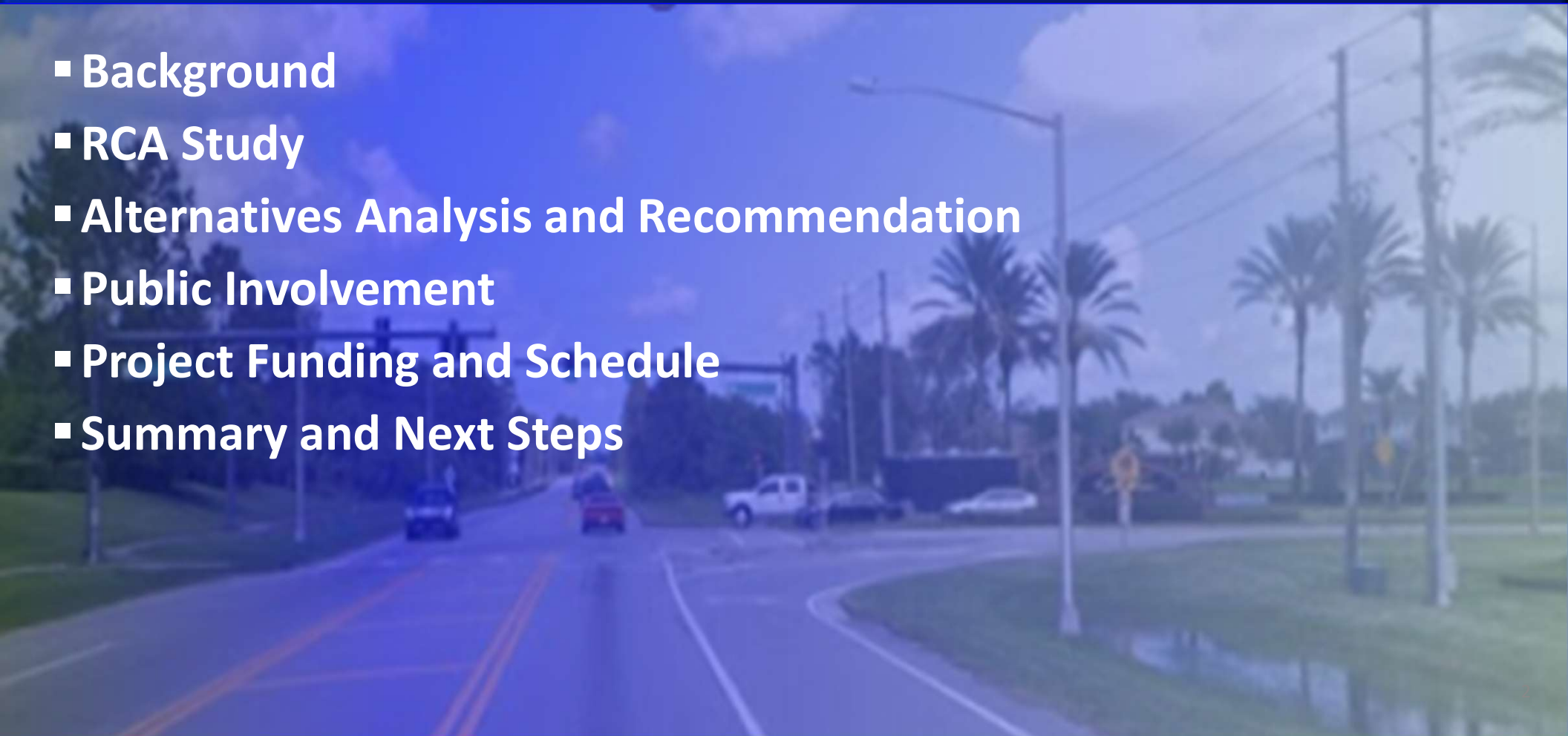
August 21, 2025



Presentation Outline

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- Background
- RCA Study
- Alternatives Analysis and Recommendation
- Public Involvement
- Project Funding and Schedule
- Summary and Next Steps

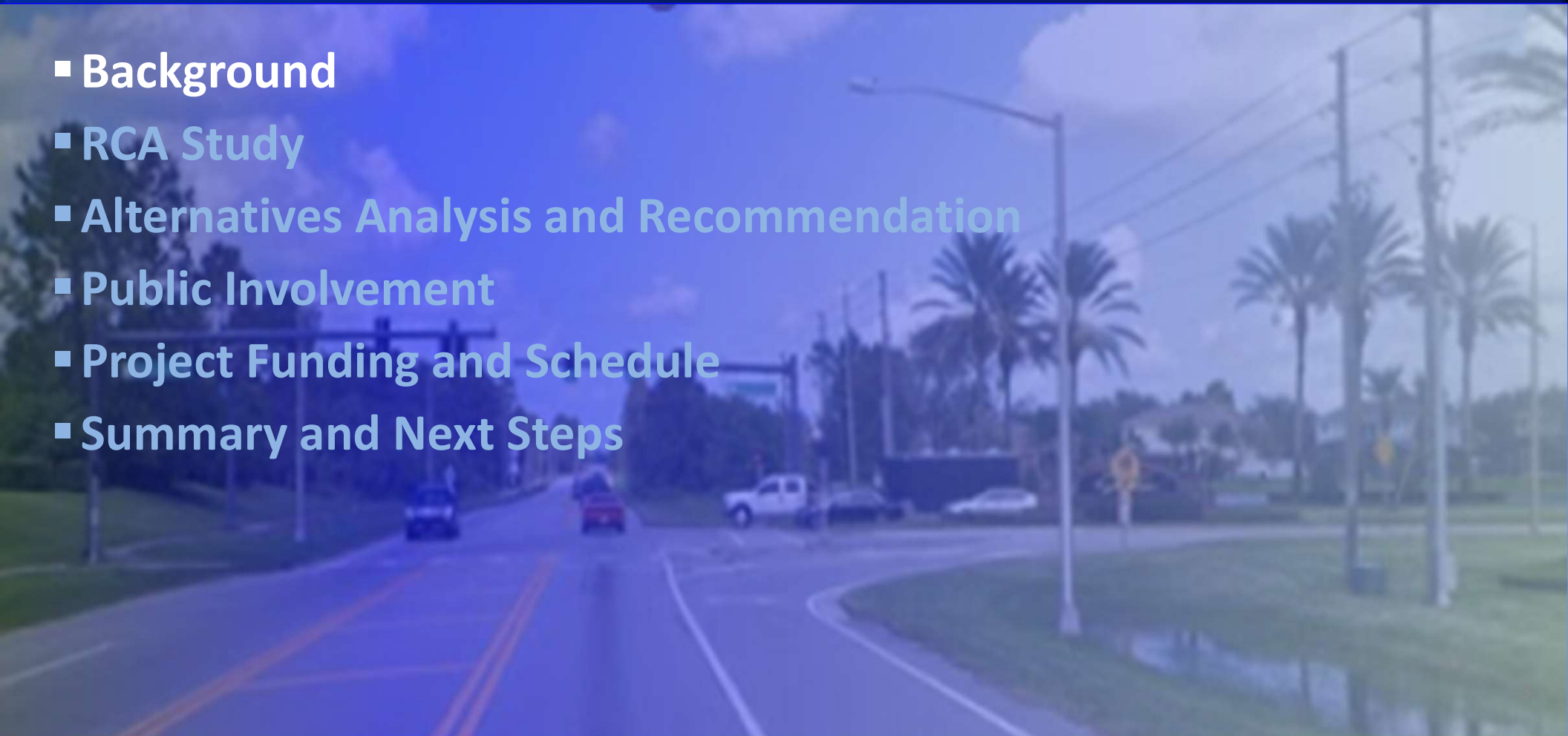




Presentation Outline

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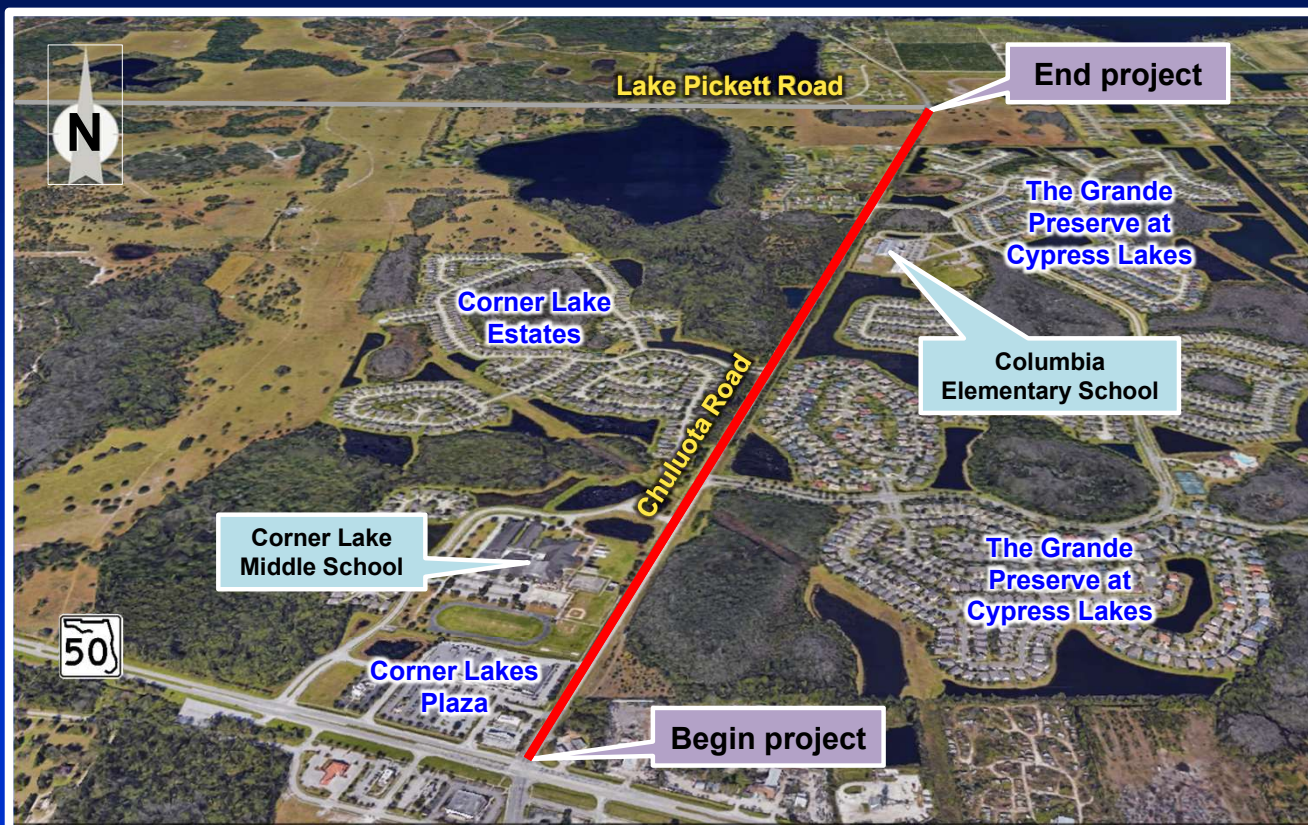
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Background

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■ Project Location



Background

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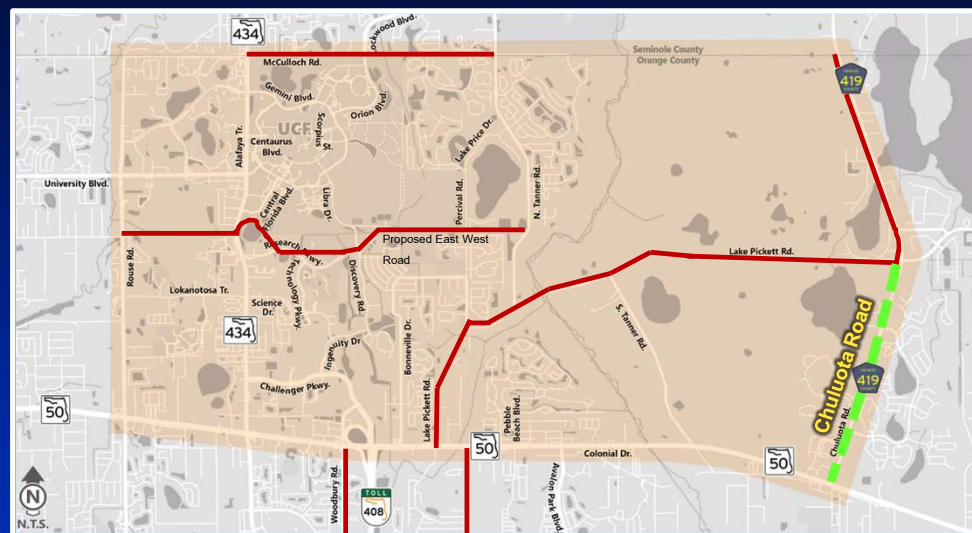
- Chuluota Road has been in County's LRTP for more than 25 years
- Traffic has consistently increased over that time
- The County's Currency Management System shows no available capacity for the segment
- Community identified safety as a persistent problem
- Project part of \$200M Invest in Our Home for Life initiative
 - Funds new roadways
 - Improve existing roadways
 - Relieves traffic congestion throughout Orange County
 - Funded the RCA study, and can fund design, ROW, and portion of construction



Background

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- Chuluota Road, Lake Pickett Road, McCulloch Road, and others were identified as needing improvements as part of the 2024 NEOCATS study
- Reaffirmed need for LRTP projects
- Existing subdivisions paid impact fees for road improvements
- Some developments paid Proportionate Fair Share mitigation for road impacts



Background

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- RCA Study commenced in 2021 to evaluate improvements to Chuluota Road
- Study Goals:
 - Improve safety
 - Address forecasted traffic growth and congestion
 - Improve multi-modal elements with sidewalks and multi-use pedestrian/bicyclist path
 - Identify drainage issues and other deficiencies
 - Minimize property impacts



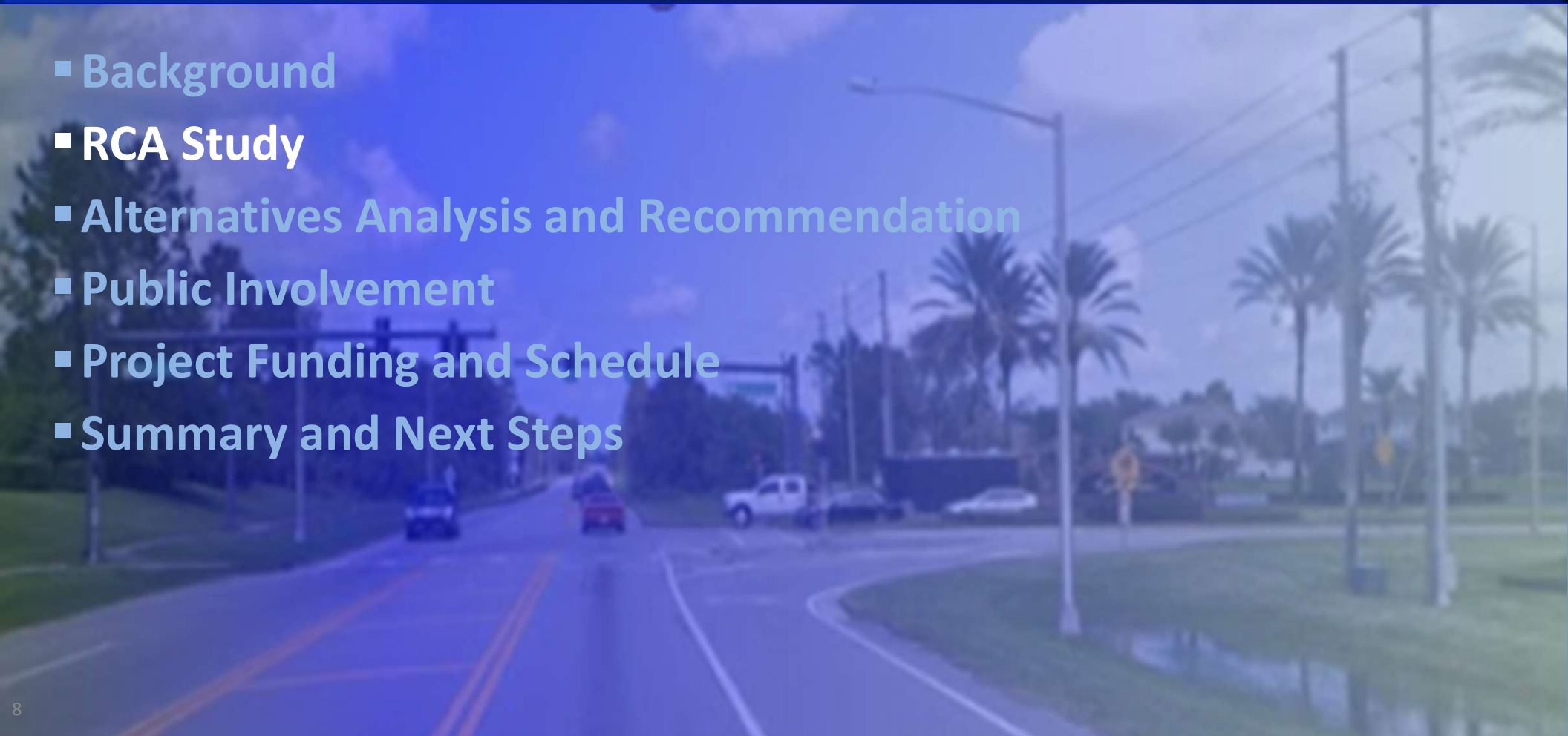
VISION ZERO
CENTRAL FLORIDA
Counting down to zero traffic deaths



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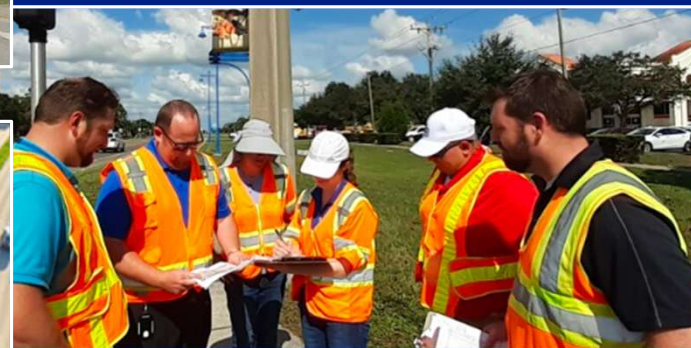
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RCA Study

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■ RCA Study Framework

- Corridor context
- Safety analysis
- Traffic projections
- Operations
- Recommendations



Context Classification C3C Suburban Commercial and C3R Suburban Residential



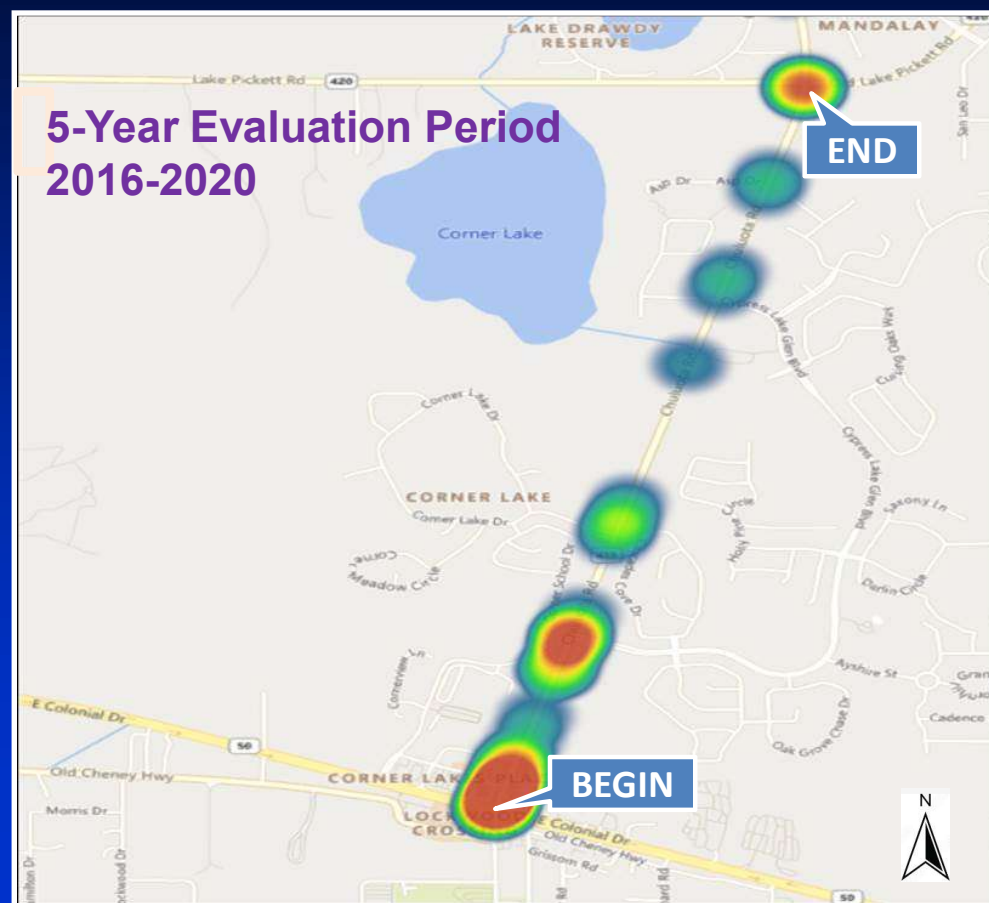
Allows for 35-45 mph Design Speed According to Context
Allows the Creation of Project Specific Transition Zones

RCA Study

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■ Safety Analysis

- 113 Total Crashes
- 36 Injury Crashes
- No Fatalities
- One Pedestrian Crash
- Three Bicycle Crashes
- Most crashes at congested commercial areas and intersections





RCA Study Purpose

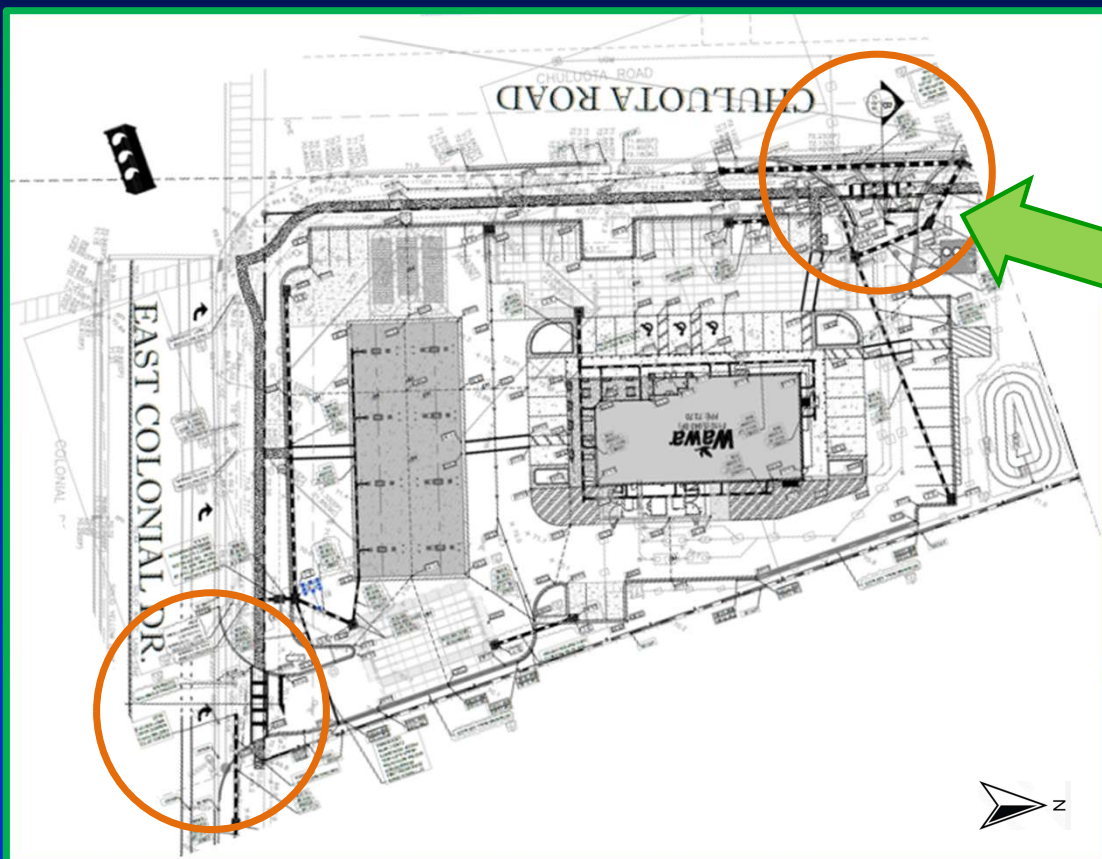
- Safety Considerations Chuluota Road and SR 50



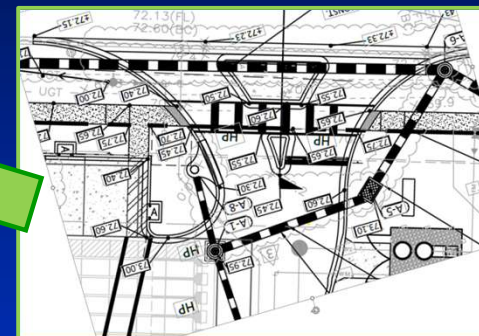


RCA Study Purpose

- Safety Considerations Chuluota Road and SR 50



Right In Only



Right In – Right Out

■ Safety Considerations at SR 50

—North of SR 50

- Right-in, right-out movements maintained for Corner Lakes Plaza south driveway
- North driveway retains full median access
- FDOT's SR 50 interim pedestrian improvements

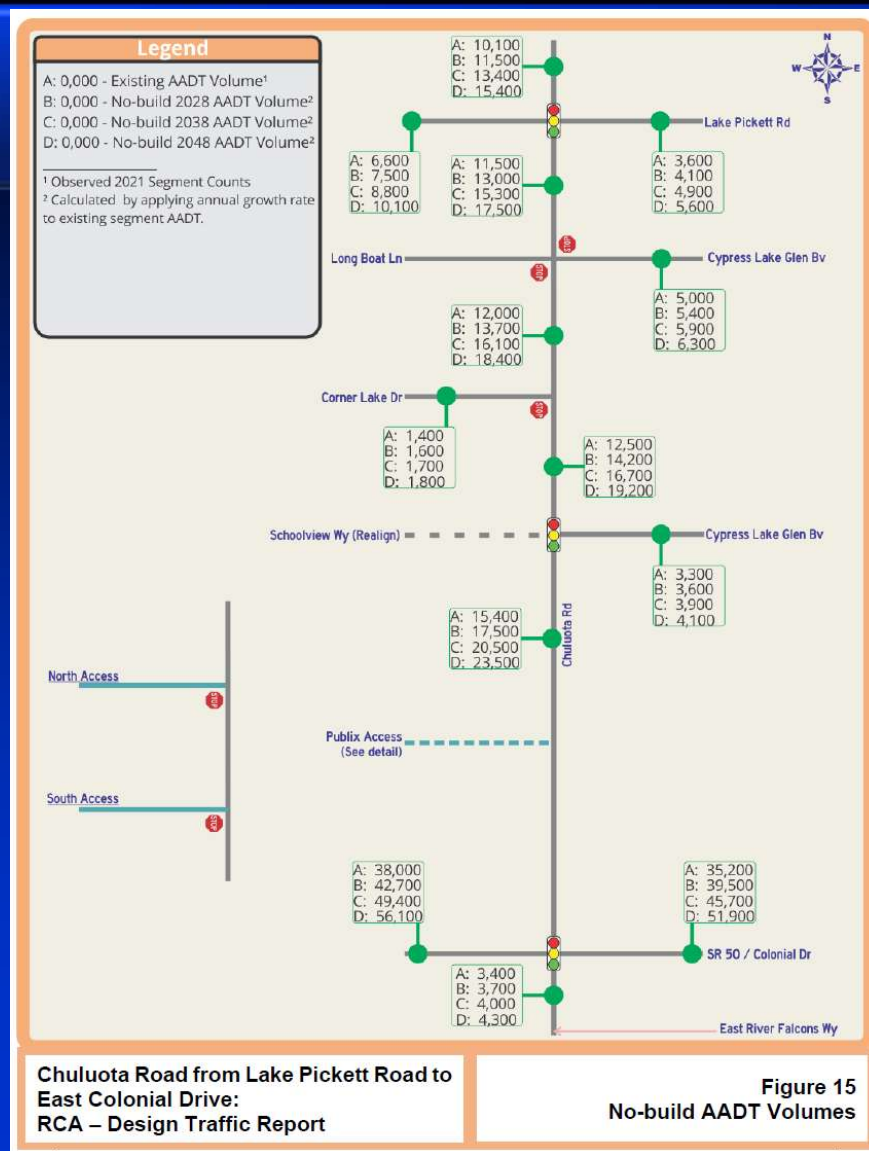
—South of SR 50

- Regional bus dispatch center affected by proposed improvements to SR 50
- Results in rerouting busses to Chuluota Road and introduces safety/operational issues



RCA Study

- **2048 Design Year Traffic**
 - Documents consistent traffic growth
 - Study reflects a 20-year design life
 - Study segment is approaching capacity
 - Roadway failure (LOS F) is projected between 2035 and 2038
 - County policy recommends four lanes when projections indicate failure
 - Data indicates four lanes are needed



RCA Study

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- RCA Study presented to Board at a Public Hearing on March 7, 2023
- Board delayed hearing to allow staff to perform additional outreach and Intersection Control Evaluation:
 - Evaluate alternatives to widening
 - Conduct analysis on four intersections and corridor
 - Conduct two additional public meetings
- BCC April 22, 2025, Public Hearing postponed
 - Conduct an additional public meeting

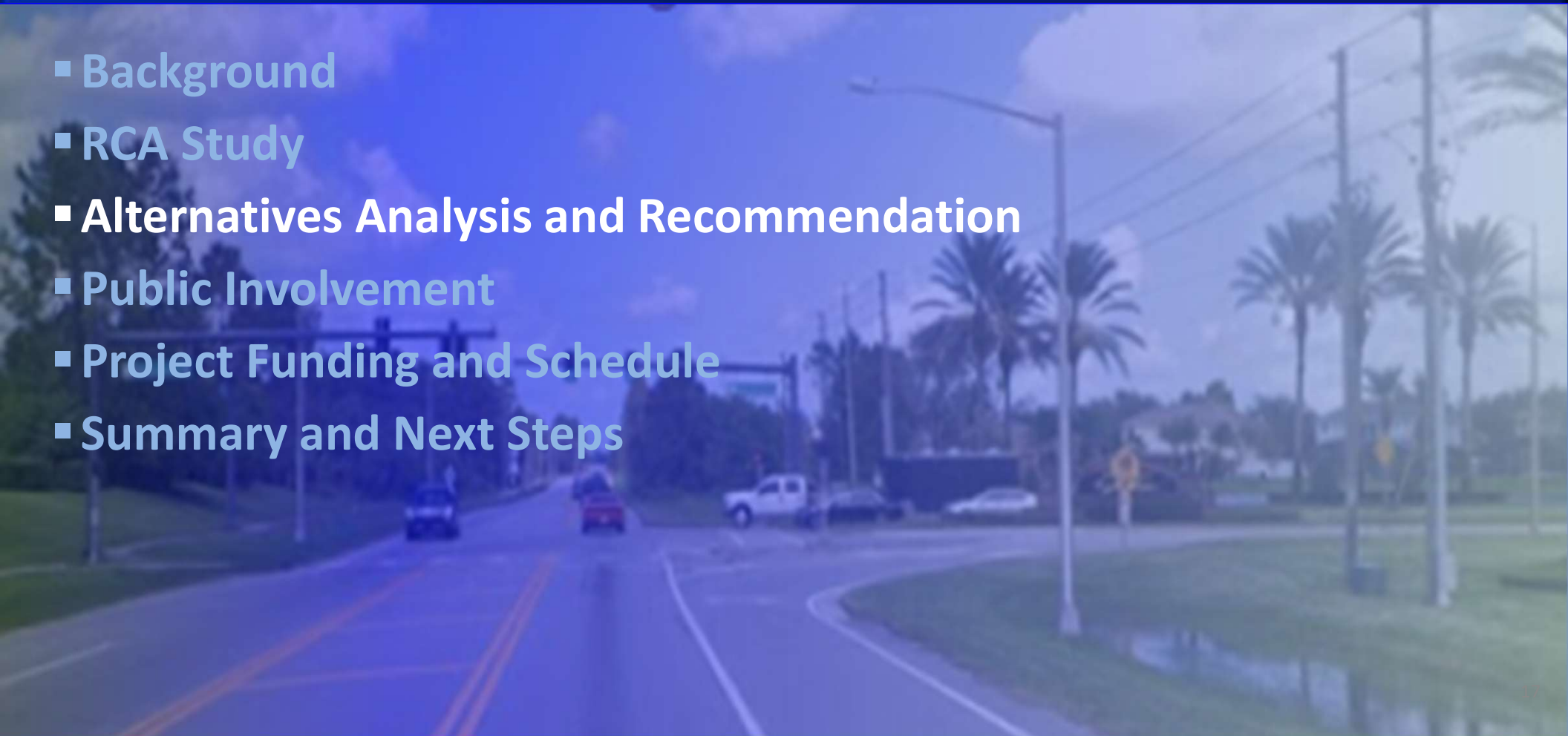




Presentation Outline

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- RCA Study
- **Alternatives Analysis and Recommendation**
- Public Involvement
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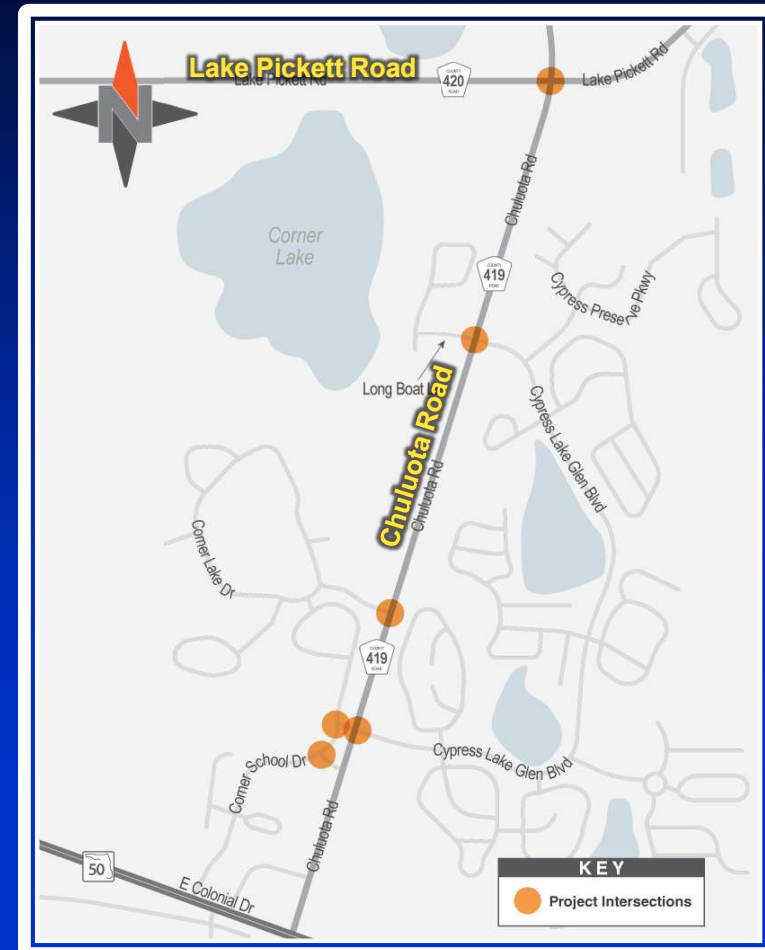
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ICE Alternative Analysis and Recommendations

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- Intersection Control Evaluation Study evaluated options at:
 - Lake Pickett Road
 - Long Boat Lane/(North) Cypress Lake Glen Boulevard
 - Corner Lake Drive
 - Cypress Lake Glen Boulevard (South)
 - Schoolview Way at Corner School Drive
 - Relocated Schoolview Way
- Analyzed 15 possible intersection options generating 1,080 scenarios
 - Included two and four-lane intersections at AM and PM peaks



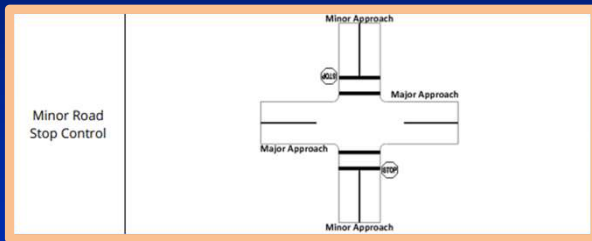


ICE Alternative Analysis and Recommendations

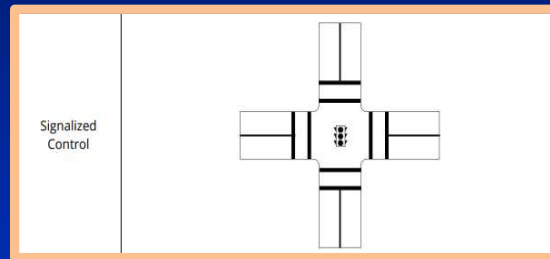
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■ ICE STAGE 1

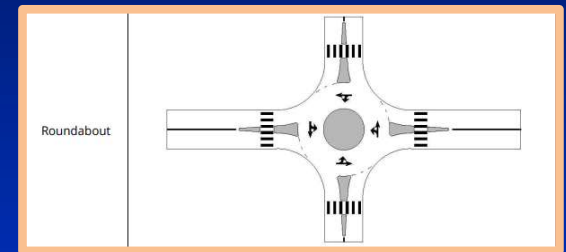
- 15 intersections analyzed - seven Interchange Control Strategies excluded
- 5 successful options:



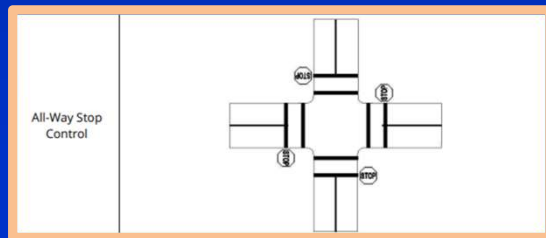
Minor Road Stop Control (2 Stop Signs)



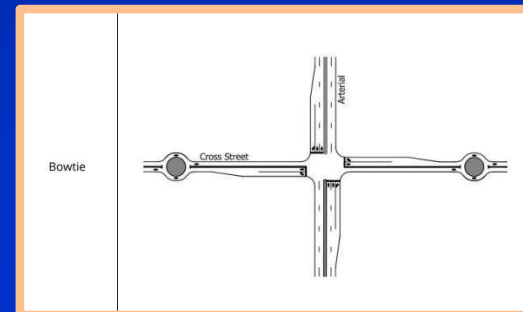
Signalized Control



Roundabout



All Way Stop Control (Stop Signs)



Bowtie (Chuluota / Lake Pickett only)



ICE Alternative Analysis and Recommendations

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■ ICE STAGE 2

- Create intersection concepts for 5 successful strategies
- Expand SPICE crash prediction and incorporate crash data
- Conduct 2 and 4 lane analysis using SYNCRO traffic simulation

2 AND 4-LANE ICE ANALYSIS OPTIONS CONSIDERED				
INTERSECTION	STOP CONTROL	SIGNAL	ROUNDABOUT	BOWTIE
Corner Lake – Cypress Lake Glenn		X	X	
Corner Lake Drive	X		X	
Long Boat Lane – Cypress Lake Glenn	X		X	
Lake Pickett Road		X	X	X

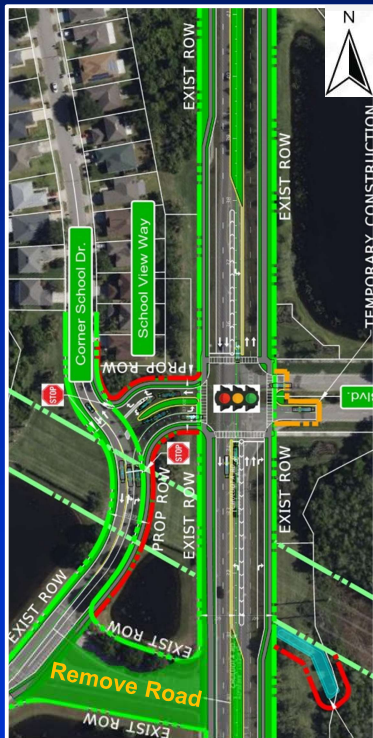


ICE Alternative Analysis and Recommendations

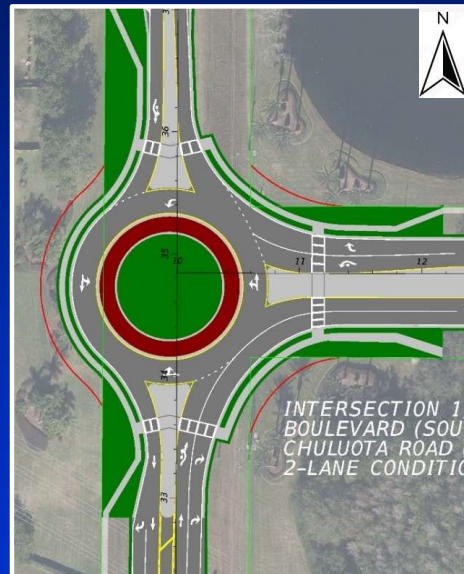
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Intersection 1: Cypress Lake Glen Boulevard

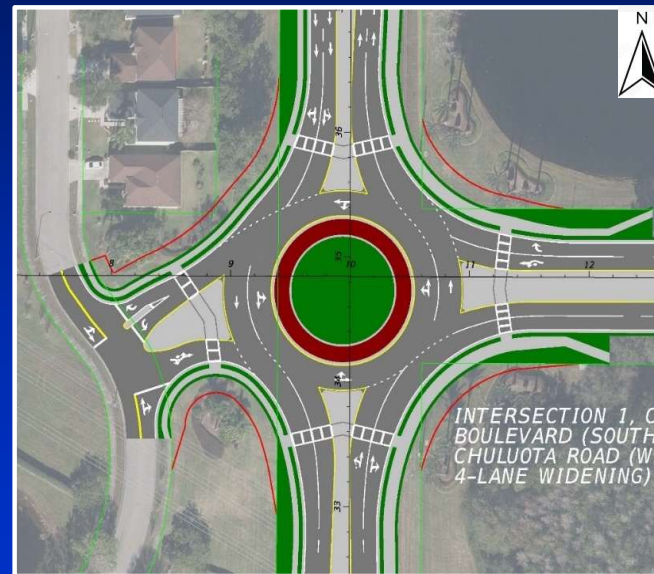
Traffic Signal



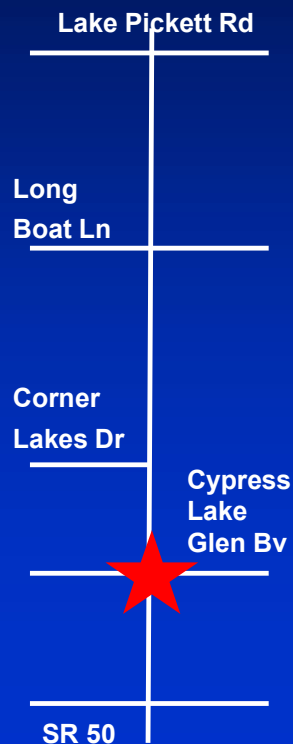
2 Lane Roundabout



4 Lane Roundabout



Key Map



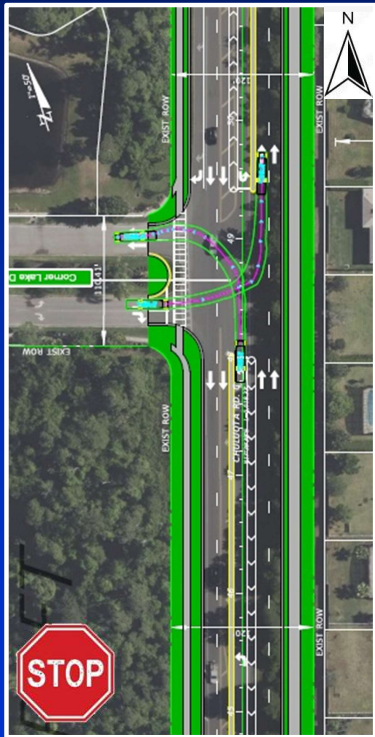


ICE Alternative Analysis and Recommendations

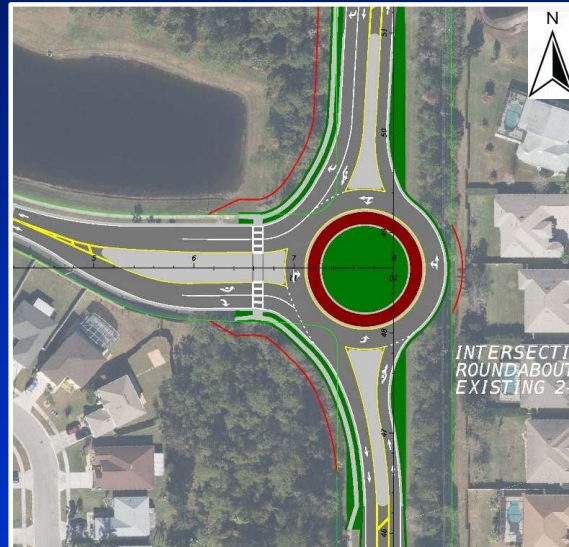
22

Intersection 2: Corner Lake Drive

Stop Sign



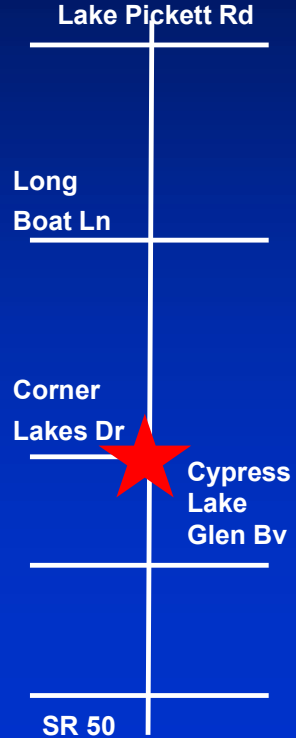
2 Lane Roundabout



4 Lane Roundabout



Key Map





ICE Alternative Analysis and Recommendations

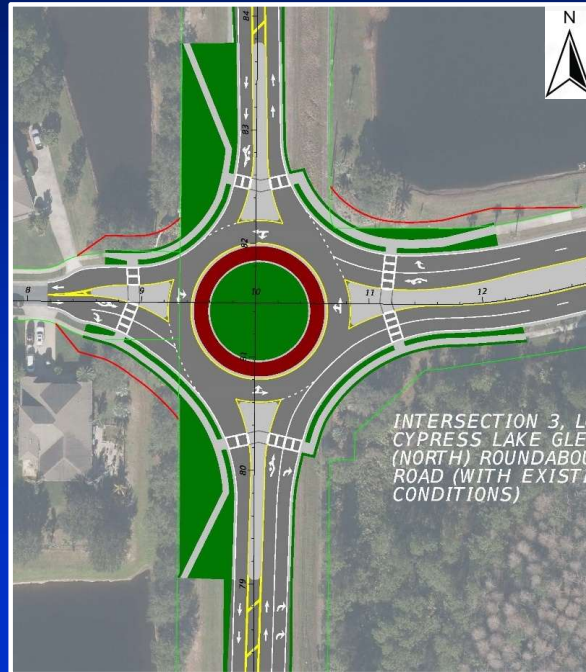
23

Intersection 3: Long Boat Ln /Cypress Lake Glen Blvd (North)

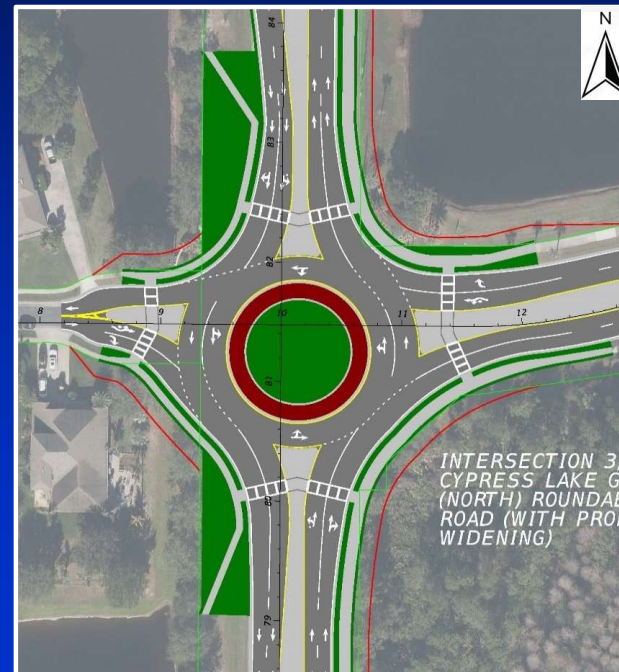
Stop Sign



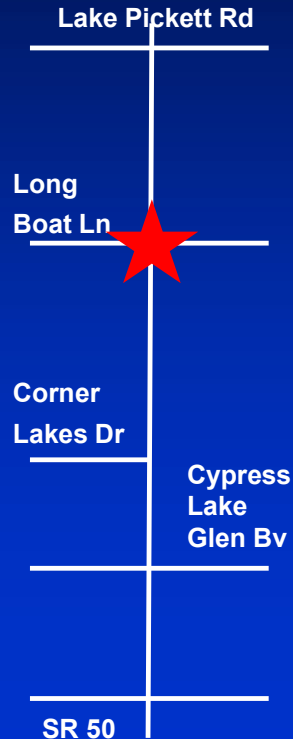
2 Lane Roundabout



4 Lane Roundabout



Key Map





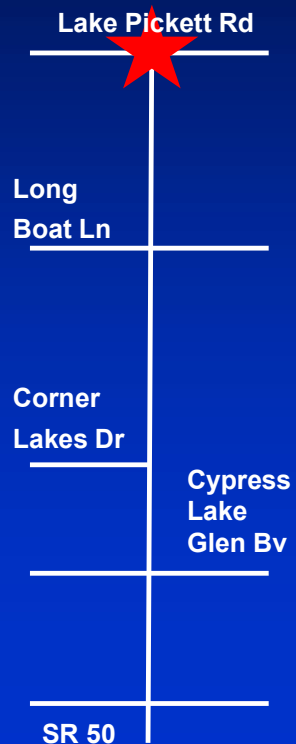
ICE Alternative Analysis and Recommendations

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Intersection 4: Lake Pickett Road - 2 lane 2 Lane Signal



Key Map

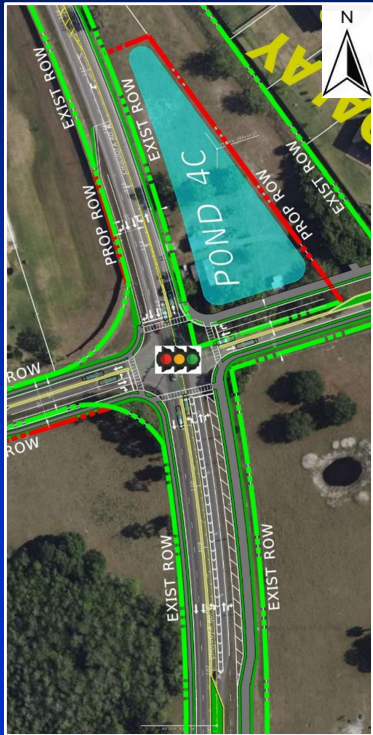




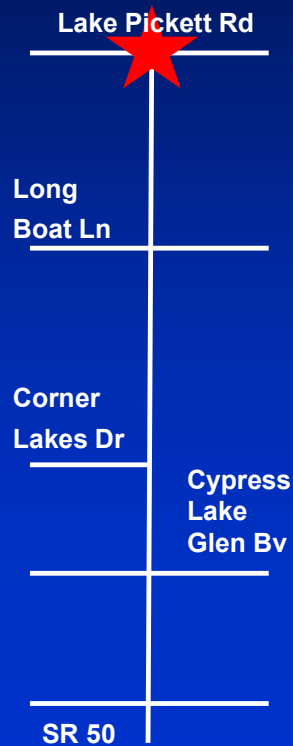
ICE Alternative Analysis and Recommendations

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Intersection 4: Lake Pickett Road - 4 lane 4 Lane Signal



Key Map





ICE Alternative Analysis and Recommendations

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ICE STAGE 2 and STAGE 3

CHULUOTA ROAD INTERSECTION CONTROL EVALUATION (ICE) STUDY RESULTS FROM ICE STAGE 3 ANALYSIS

EXISTING 2-LANE SECTION WITH ALTERNATIVE INTERSECTION CONCEPTS									
	CORRIDOR TRAFFIC CONTROL TYPE	EXISTING TRAFFIC CONTROLS (ETC)		ROUNDABOUTS AT ALL INTERSECTIONS		ETC & ROUNDABOUTS MIXTURE (1)		ETC & ROUNDABOUT AT LONG BOAT LANE (2)	
	MEASURE OF EFFECTIVENESS (MOE)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)
CORRIDOR TRAVEL DIRECTION	NORTHBOUND	66.3	34 (C)	167.9	21 (E)	98.4	27 (D)	76.5	31 (C)
	SOUTHBOUND	239.1	19 (E)	343.8	15 (F)	268.1	16 (F)	248.3	18 (E)

Two Lane Fails

Two lane options ceases to function resulting in significant failure approaching 2032

4-LANE ICE ANALYSIS RESULTS				
INTERSECTION	STOP CONTROL	SIGNAL	ROUNDABOUT	BOWTIE
Corner Lake – Cypress Lake Glenn		X		
Corner Lake Drive	X			
Long Boat Lane – Cypress Lake Glenn			X	
Lake Pickett Road		X		

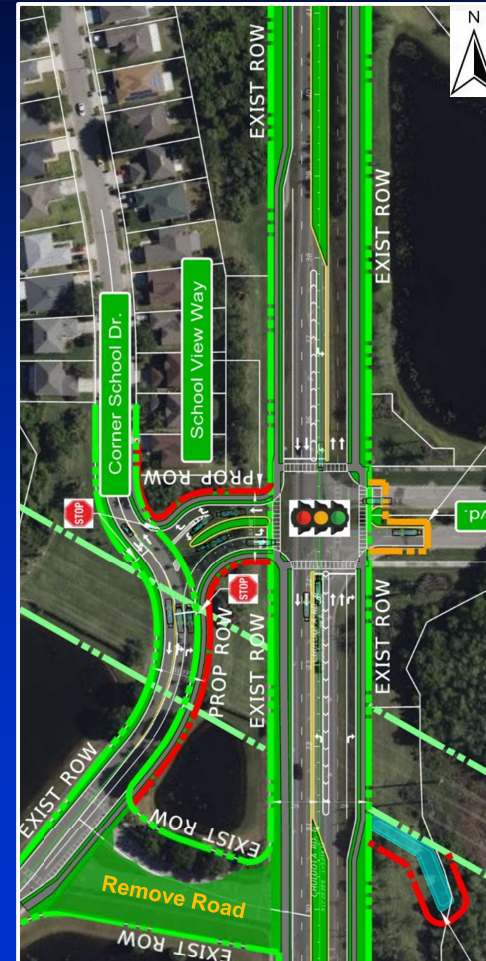
Recommended intersection controls by the ICE analysis + one speed reduction option



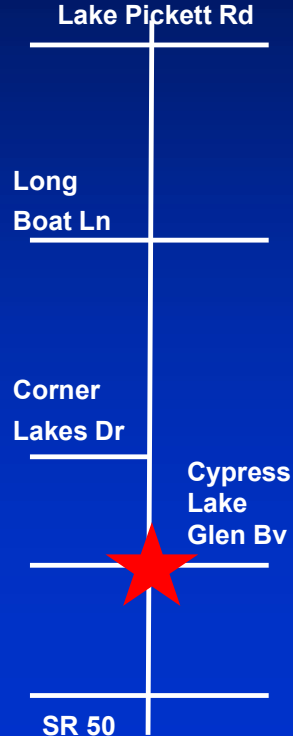
ICE Alternative Analysis and Recommendations

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- **Intersection 1: Cypress Lake Glen Boulevard Recommendation**
 - Traffic signal option
 - Provides new connection to Corner School Drive at signalized Cypress Lake Glen Boulevard
 - Improves access and operations for school traffic



Key Map

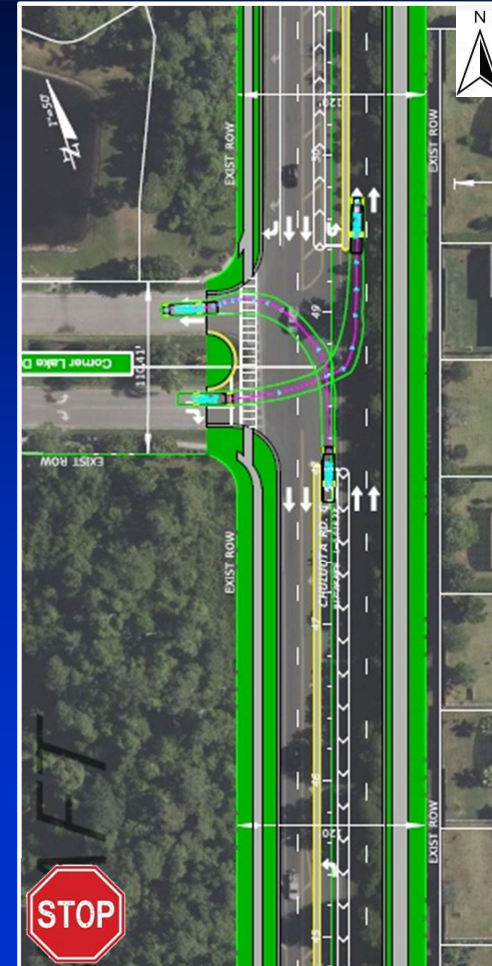




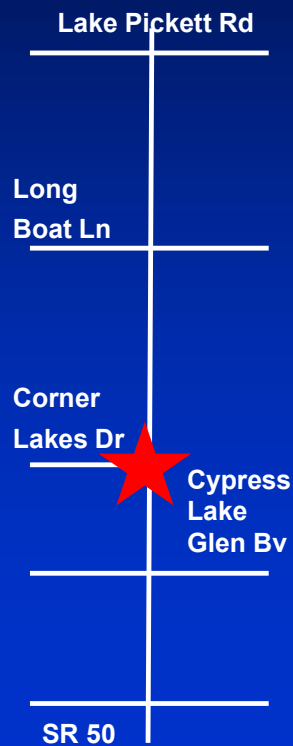
ICE Alternative Analysis and Recommendations

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- Intersection 2: Corner Lake Drive
Recommendation
 - Stop Sign Option



Key Map



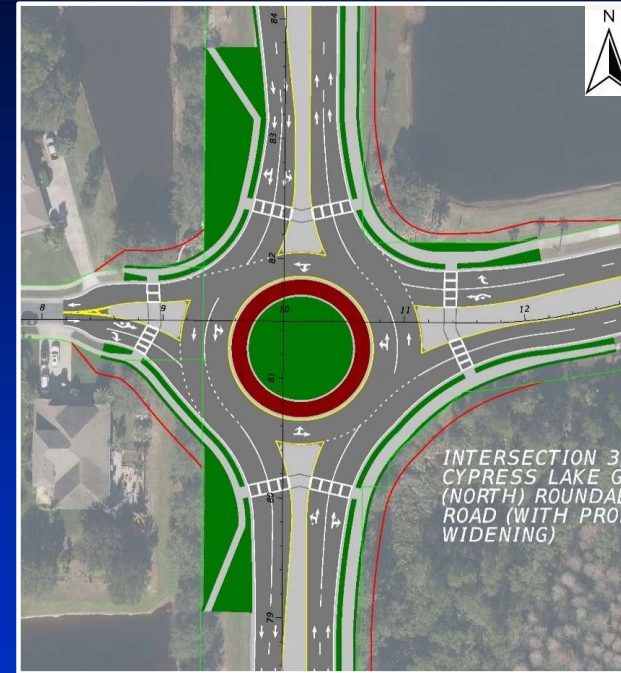


ICE Alternative Analysis and Recommendations

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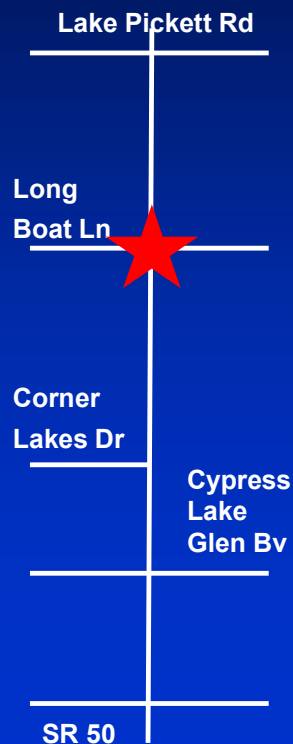
■ Intersection 3: Long Boat Lane/Cypress Lake Glen Blvd (North) Recommendation

- Roundabout Option
- Presented to Country Lakes Estates and The Grande Preserve at Cypress Lakes HOA's
- Reduce speeding on long segment between the Cypress Lakes Glenn Boulevard and Lake Pickett Road traffic signals



- Reduces conflict points and speeding
- 90% fewer fatalities
- 75% fewer injuries
- 10-40% fewer pedestrian/ bicycle crashes

Key Map



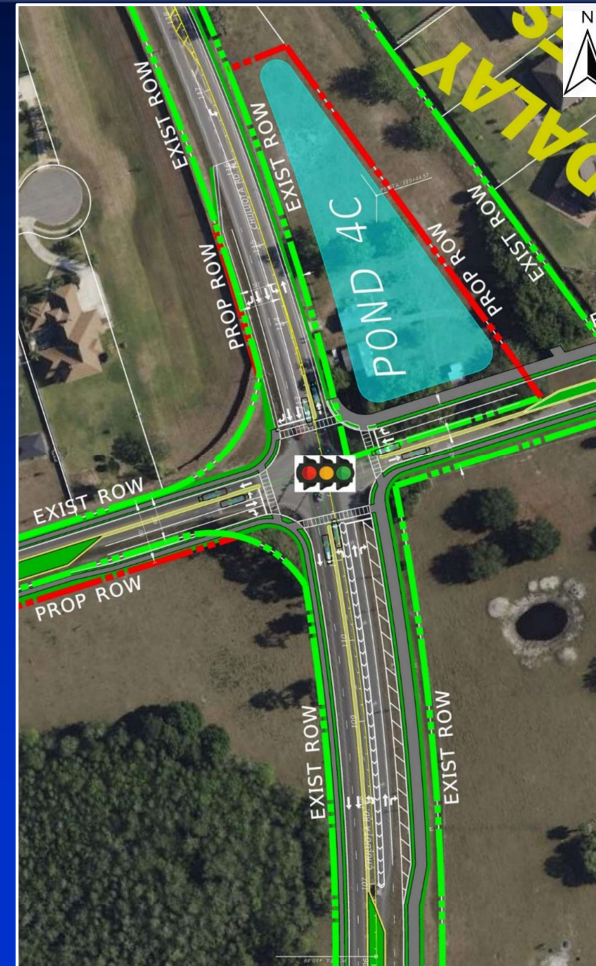


ICE Alternative Analysis and Recommendations

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■ Intersection 4: Lake Pickett Road Recommendation

- Traffic signal option
- Includes portion of East Orange Regional Trail Section 1D and 1E
- North project limit



Key Map

Lake Pickett Rd

Long
Boat Ln

Corner
Lakes Dr

Cypress
Lake
Glen Bv

SR 50



ICE Alternative Analysis and Recommendations

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■ Evaluation conclusions:

- Stage 2: Traffic Signals, Stop Signs, Roundabout, and Bowtie were advanced for further assessments, including cost evaluations
- **4-lane options advance**

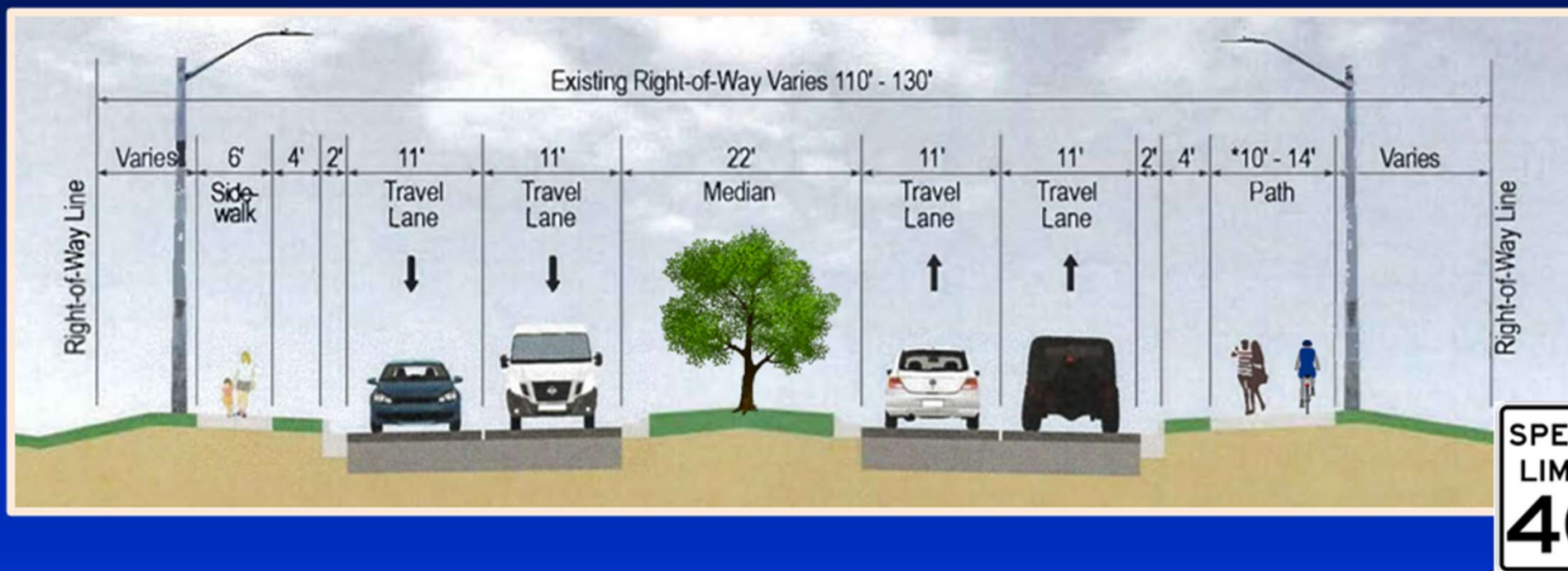
CHULUOTA ROAD INTERSECTION CONTROL EVALUATION (ICE) STUDY
RESULTS FROM ICE STAGE 3 ANALYSIS

4-LANE WIDENING SECTION WITH ALTERNATIVE INTERSECTION CONCEPTS									
CORRIDOR TRAVEL DIRECTION	CORRIDOR TRAFFIC CONTROL TYPE	EXISTING TRAFFIC CONTROLS (ETC)		ROUNDBABOUTS AT ALL INTERSECTIONS		ETC & ROUNDBABOUTS MIXTURE (1)		ETC & ROUNDBABOUT AT LONG BOAT LANE (2)	
	MEASURE OF EFFECTIVENESS (MOE)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)	DELAY (S/VEH)	ARTERIAL SPEED (LOS)
NORTHBOUND	NORTHBOUND	52.5	35 (B)	86.4	28 (C)	71.9	31 (C)	61.1	33 (B)
	SOUTHBOUND	57.0	35 (B)	50.3	35 (B)	77.3	31 (C)	65.5	33 (B)

ICE Alternative Analysis and Recommendations

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■ Typical Section: Cypress Lake Glen Boulevard to Lake Pickett Road





ICE Alternative Analysis and Recommendations

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■ Recommended improvement

- Original study intersections with roundabout at Longboat Lane
- Improved safety
- Low parcel impacts
- Low enviro/social impacts
- Cost efficient alternative

EVALUATION CRITERIA	Four-Lane Widening with Existing Intersection Controls (ETC)	Four-Lane Widening with Roundabout at Longboat Lane, ETC at Other Intersections	Four-Lane Widening with Roundabouts at All Intersections	Recommended Four-Lane Widening with Bow Tie at Lake Pickett Road and Roundabouts at Other Intersections
RELOCATIONS				
Number of Residential Acquisitions	1	1	1	1
Number of Business Acquisitions	None	None	None	None
Number of Parcels Impacted	10	14	39	40
Social, Natural and Physical Impacts				
Social and Neighborhood	Low	Low	Medium	Medium
Archeological/Historic Sites	None	None	None	None
Threatened and Endangered Species	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts
Wetland Impacts (Acres)	Low	Low	Low	Low
RHPZ Uplands Impacts (Acres)	Low	Low	Low	Low
Floodplain Impacts (Acre-Feet)	1.9	2.16	2.16	2.16
Potential High or Medium Ranked Contamination Sites	None	None	None	None
Estimated Costs (Present Day)				
Estimated Construction Costs	\$ 40,968,339	\$ 44,102,180	\$ 48,811,549	\$ 48,977,856
Estimated Design/Adm Costs (12%)	\$ 4,916,201	\$ 5,292,262	\$ 5,857,386	\$ 5,877,343
Preliminary Estimated CEI Costs (15%)	\$ 6,145,251	\$ 6,615,327	\$ 7,321,732	\$ 7,346,678
Preliminary Estimated Right-of-Way Impacts	11.864	12.453	17.466	19.115
Preliminary Estimated Right-of-Way Costs	\$ 2,196,355	\$ 2,305,449	\$ 3,233,481	\$ 3,538,760
Mitigation/RHPZ	\$ 103,000	\$ 103,000	\$ 103,000	\$ 103,000
Subtotal	\$ 54,329,146	\$ 58,418,218	\$ 65,327,148	\$ 65,843,637
Contingency (20%)	\$ 10,865,829	\$ 11,683,644	\$ 13,065,430	\$ 13,168,727
TOTAL PRELIMINARY ESTIMATED PROJECT COSTS	\$ 65,194,975	\$ 70,101,862	\$ 78,392,578	\$ 79,012,364

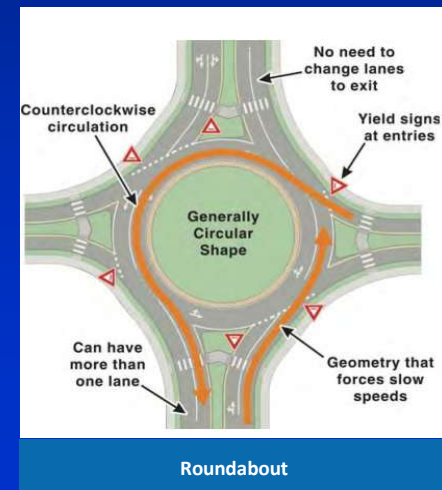


ICE Alternative Analysis and Recommendations

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■ Interim safety measures to be considered:

- Interim 2 Lane Roundabout
- Chicane requires vehicle operators to make horizontal movements reducing speed
- Leading Pedestrian Interval pedestrians enter intersections before vehicles green
- Extend Pedestrian Crossing lengthen time for pedestrian crossing
- Advance Stop Bars stop lines before crossings
- Flashing Beacon / Advance Warning notify motorists of upcoming intersection or crosswalk
- Painted Centerline and Raised Pavement Markers enhance awareness
- Lighting improvements –roadway/pedestrian
- High emphasis crosswalks
- Advance traffic signs

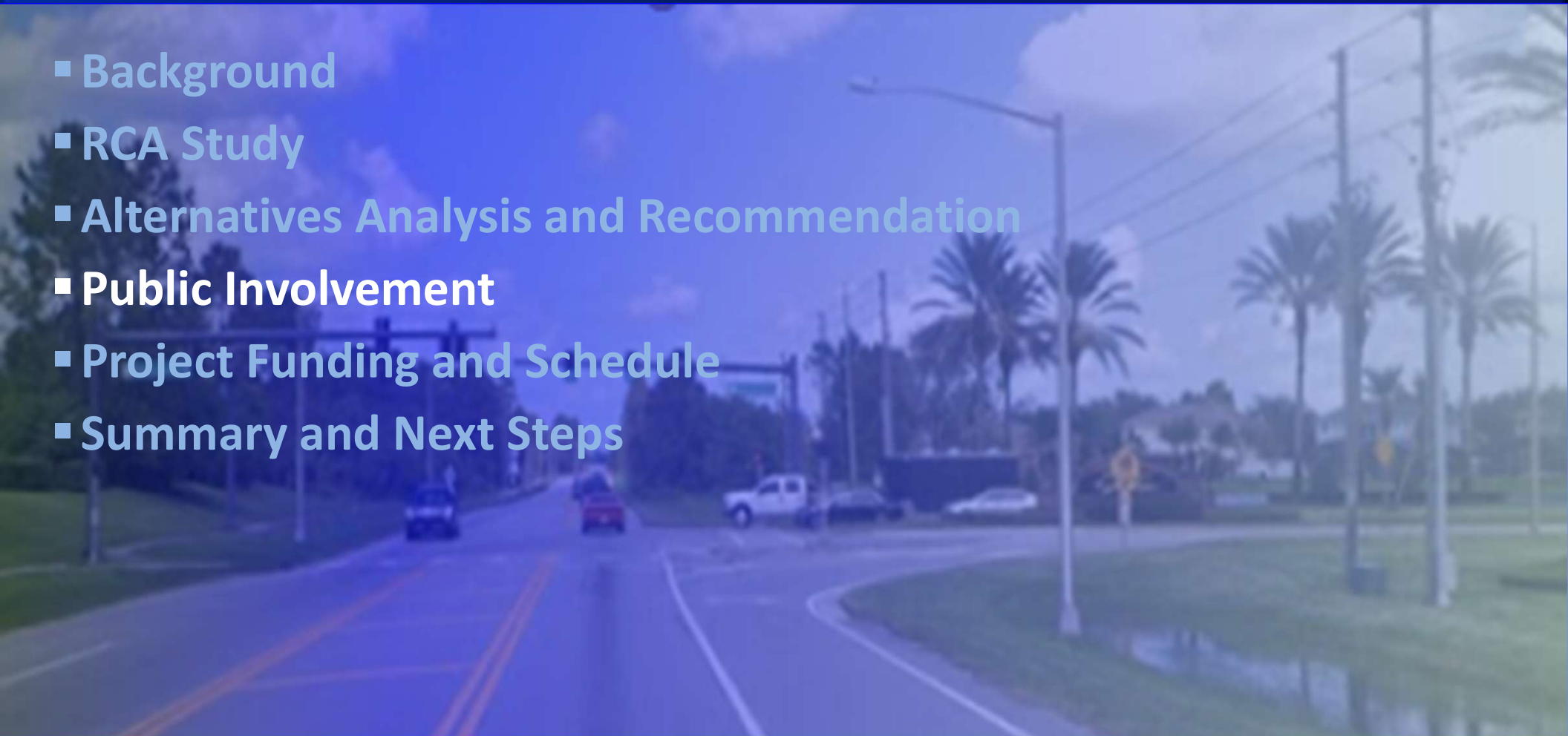




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Public Involvement

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- Study Website: <https://chuluotarca.com/>
- Twenty-eight (28) Stakeholder Meetings
- Five (5) Community Meetings
- On-line survey
- Six (6) Newsletters
- Call/Email
- LPA & BCC Hearings

***"The southbound turn lane at Corner Lakes Estate is really needed"** September 24 – Public Comment (HOA)*

***"Children's safety is top priority"** September 24 – Public Comment*

***"Transportation Planning has done a wonderful job. Thank heaven for the team. They are truly heroes. What a wonderful project."** September 22 - Resident written comment*

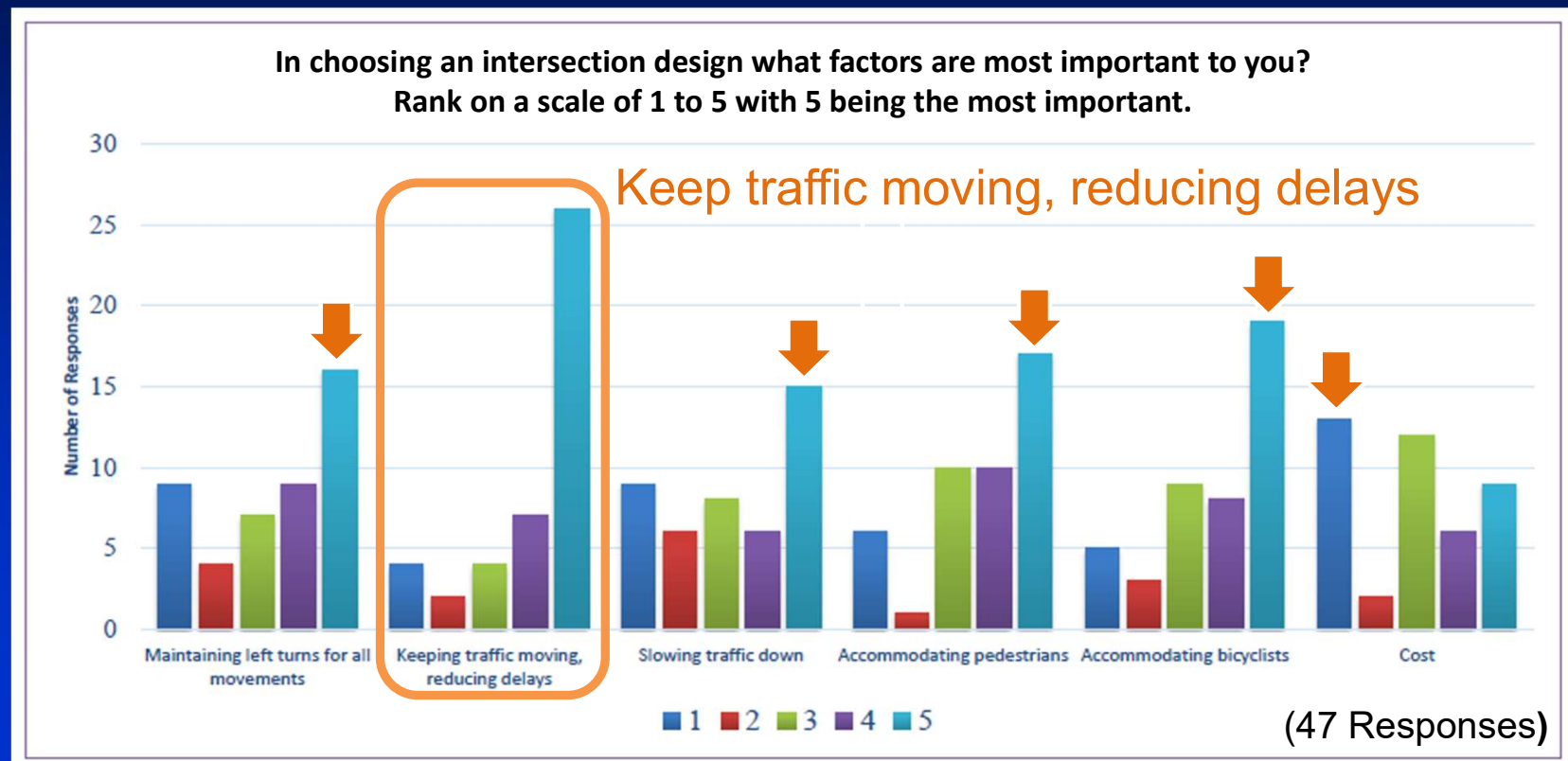
The screenshot shows the 'Chuluota Road RCA Study' website with a blue header and navigation links. The 'Study Process' section is visible, describing the data collection and analysis. To the right is a flyer for the 'CHULUOTA ROAD/CR 419 INTERSECTION CONTROL EVALUATION (ICE)' meeting, dated November 20, 2024. The flyer includes a map of the intersection and details about the meeting time and location.



Public Involvement

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Results of the September 2024 RCA/ICE On-Line Survey

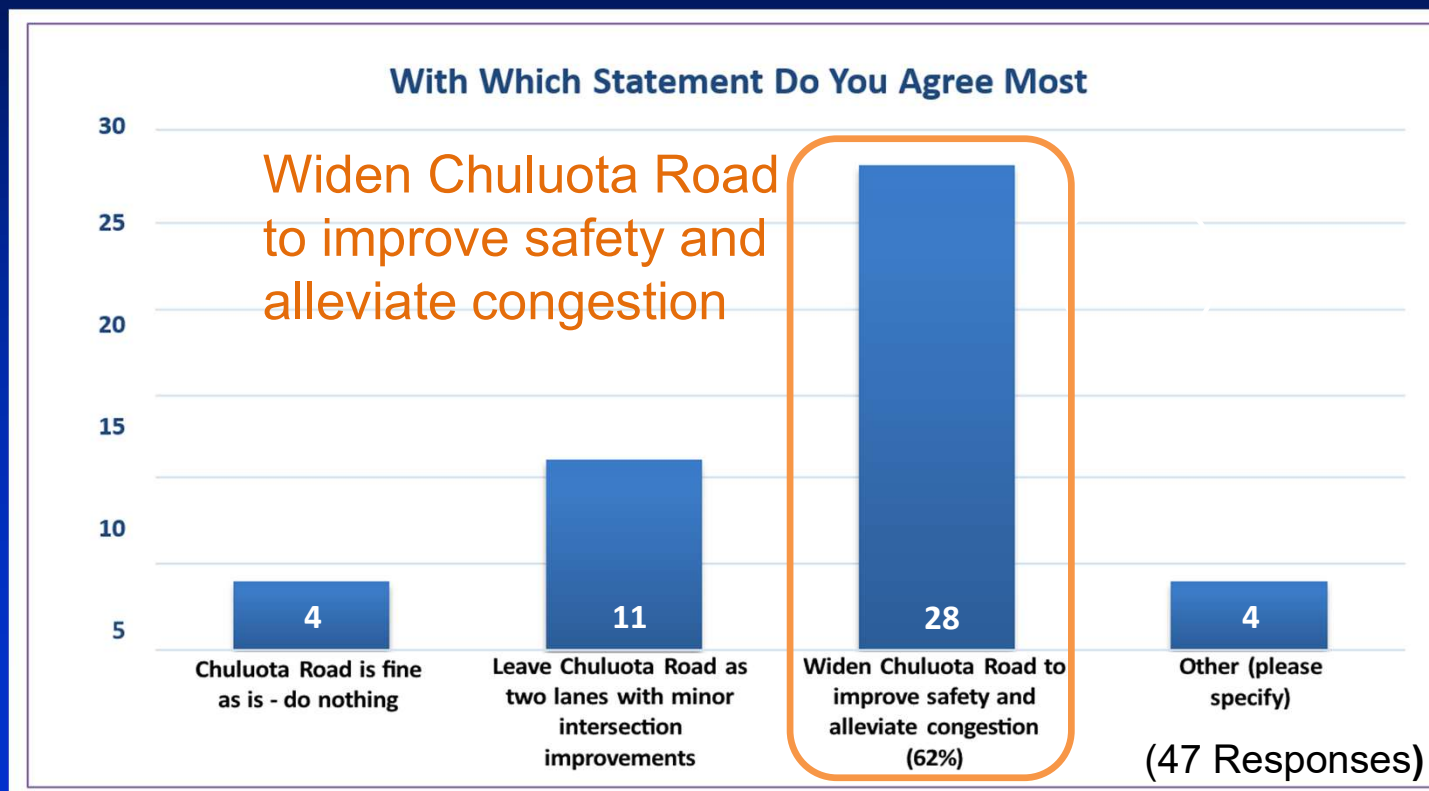




Public Involvement

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Results of the RCA/ICE September 2024 On-Line Survey

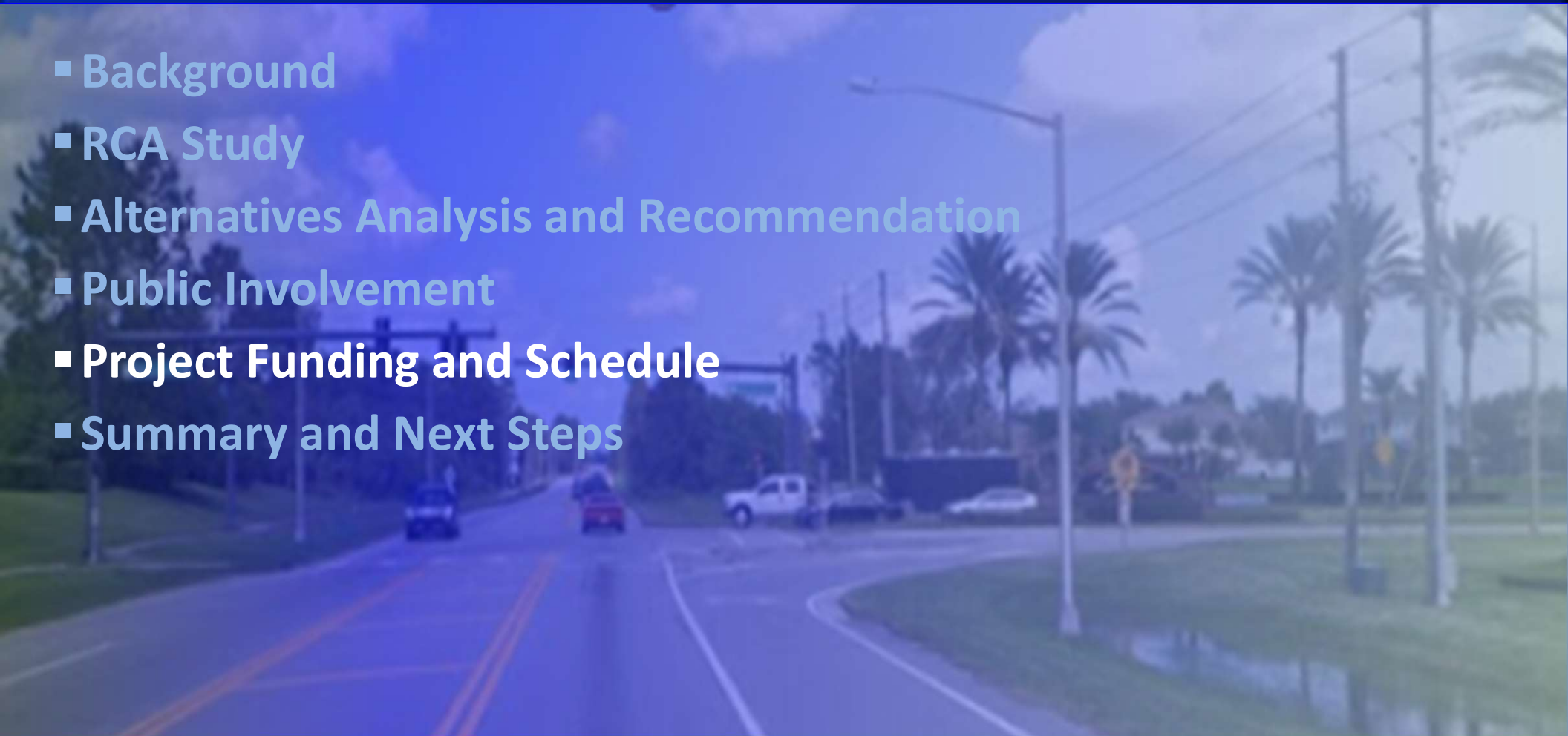




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Project Funding and Schedule

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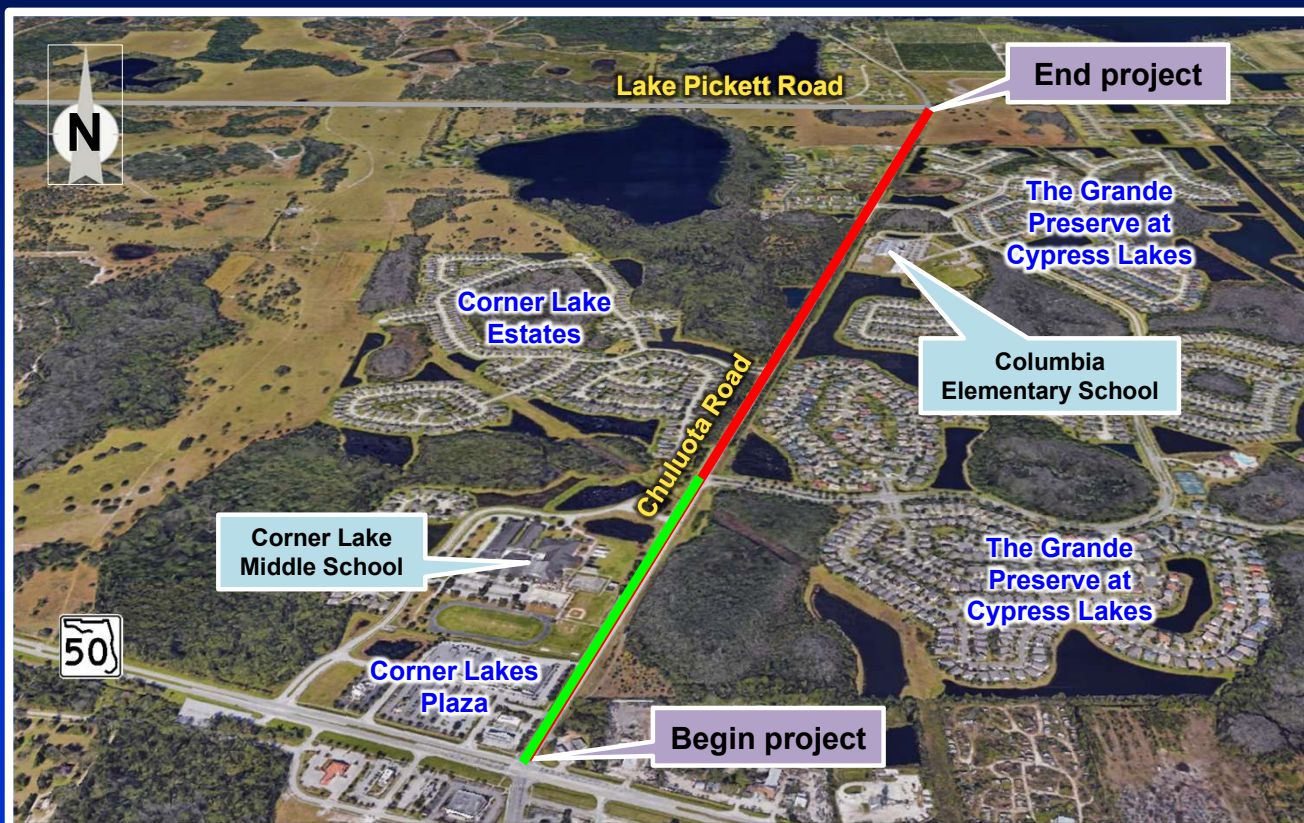
- Total: \$1,14,888 = Study \$765.245 + \$349,643 intersection analysis
- Initial recommendations proven sound by intersection analysis
- TransMAC recommended approval of proposed improvements
- Funding sources available – requires BCC approval to proceed

Project Funding Schedule				
Phase	Costs	Available Funding	Fiscal Year	Fund Source
Design	\$6,474,314	\$10,300,000	2025-2026	PW CIP
Right-of-way	\$2,766,539			
Construction/CEI	\$60,861,009	\$29,200,000	2025-2026	PW Prop Share
		\$20,000,000	2026 - 2030	PW CIP/INVEST
Total:	\$70,101,862	\$59,500,000		
Funding Needs:	\$10,601,862	Includes 20% Contingency		

Background

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■ Potential Phasing

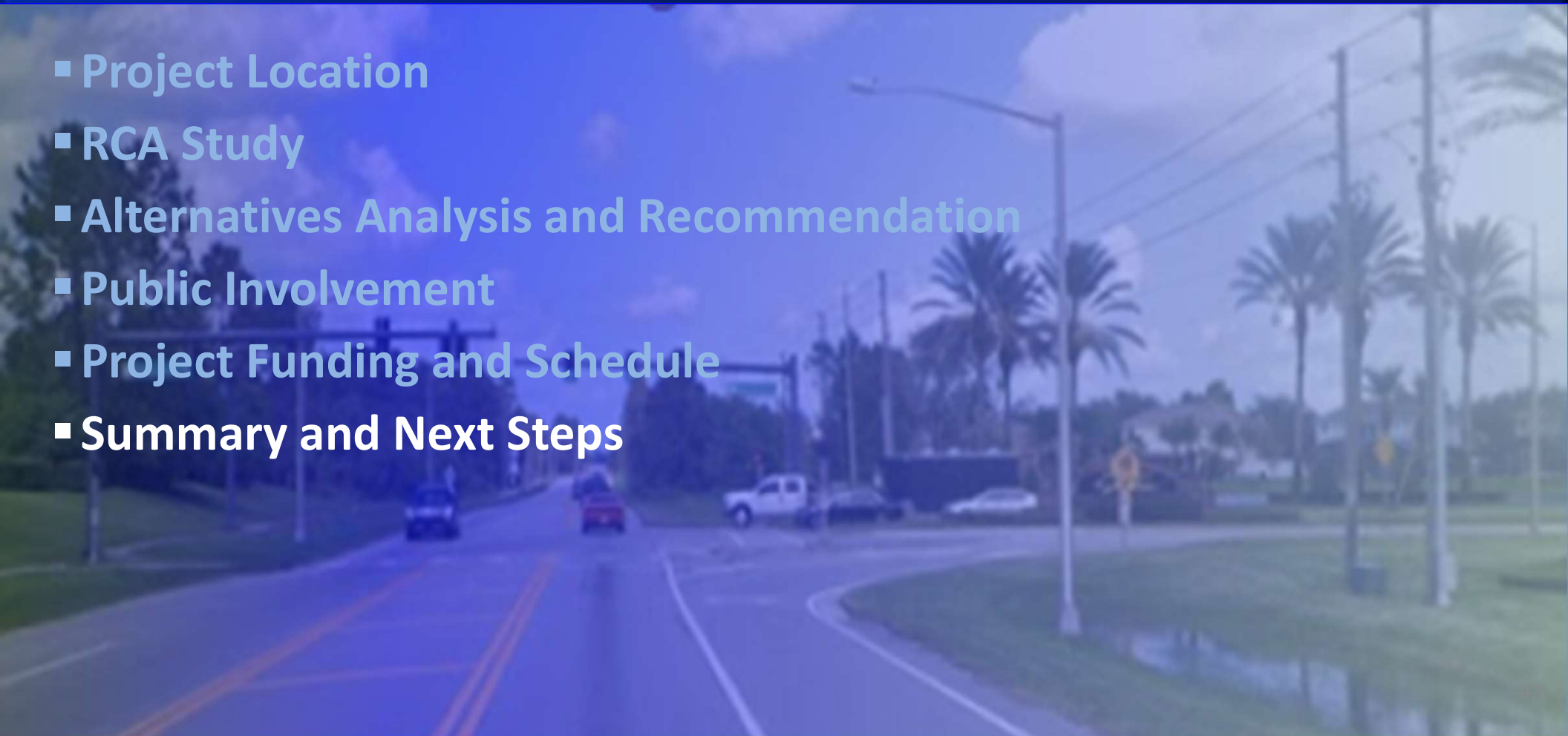




Presentation Outline

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- Project Location
- RCA Study
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- Project Funding and Schedule
- **Summary and Next Steps**



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Summary and Next Steps

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- Chuluota Road is a developing collector roadway
- Road improvements in County's LRTP for more than 25 years
- All three Stages of Intersection Analysis have been completed
- Intersection Analysis evaluated 1,080 options
- Study confirmed need for four lanes
- County engaged the public
- Proposed roundabout at Long Boat Lane addresses speeding problem
- Project cost of \$70M has \$60M in funding
- Return to BCC for the Public Hearing



Board Direction

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- **Requesting Board to direct staff to schedule Public Hearing**
 - Find consistency with the Comprehensive Plan
 - Approval of the study confirming the need for four lanes
 - Direction to move forward with design, right-of-way acquisition and construction

- **Staff will continue to evaluate opportunities for interim safety improvements such as the proposed speed reduction**

■ RCA Recommendation Rational

Study Intersections	Future Traffic Control	Peak Hour Period	2048 Build Four-Lane Chuluota Road Cross Section									
			EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Chuluota Rd Lake Pickett Rd	Signal	AM	31.5	C	33.6	C	17.5	B	27.6	C	24.5	C
		PM	30	C	37	C	20.6	C	27	C	25.8	C
	R/A	AM	19.5	C	26.6	D	8.8	A	21.5	C	16.9	C
		PM	305.1	F	15.4	C	16.7	C	11.6	B	95.9	F
Chuluota Rd Cypress Lake Glen Bv (S)	Signal	AM	20.6	C	29.4	C	22.9	C	20.5	C	22.5	C
		PM	29.9	C	28.3	C	20.5	C	19.2	B	21	C
	R/A	AM	10	A	13.3	B	6.4	A	9.4	A	8.7	A
		PM	19.6	C	14.4	B	9.7	A	11.6	B	11.3	B

- Delay between traditional intersections and roundabouts was calculated
- Traditional intersections were recommended due to longer roundabout delay times and school traffic accommodation
- Additional considerations included ROW Impacts, subdivision landscaping and monuments



ICE Alternative Analysis and Recommendations

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■ Intersection Control Evaluation (ICE)

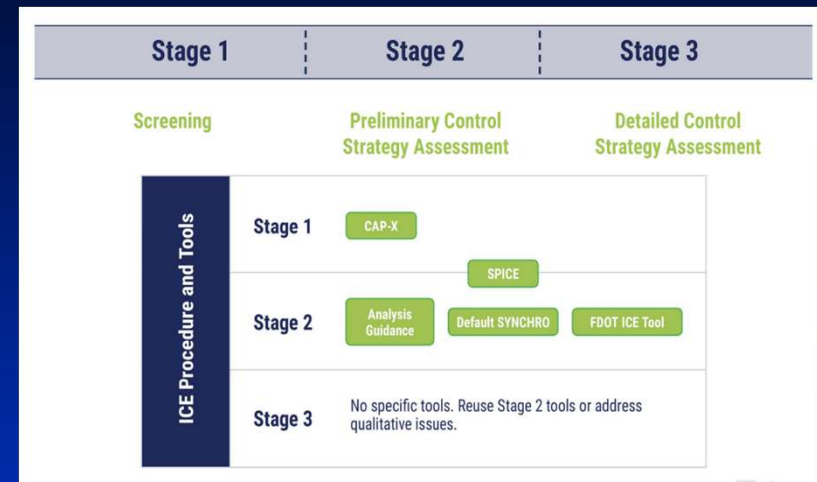
- Federal platform adopted by FDOT
- Three stage data-driven framework to predict intersection controls, impacts, and costs

■ Three Stage Analysis

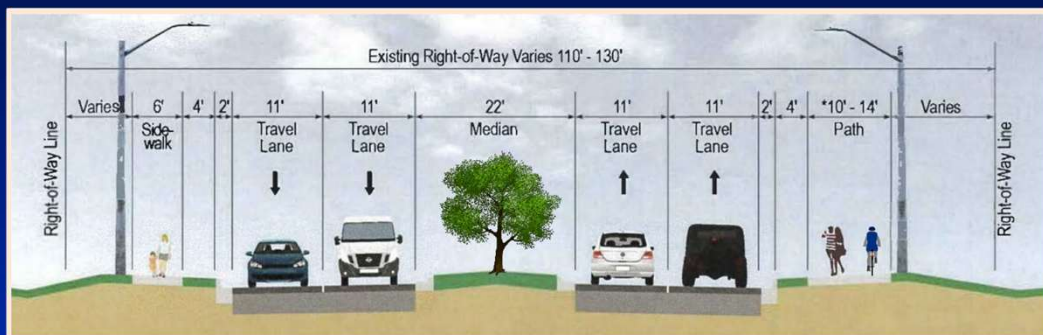
- Stage 1: Review data, preliminary analyses, screen for viable control strategies, CAP-X and SPICE
- Stage 2: Detailed analysis to identify preferred intersection options
- Stage 3: Assessment for ROW impacts and costs

■ Corridor Integration Method (outside ICE)

- Apply ICE analysis to the corridor to determine functionality



RCA Study Typical Section



RCA Evaluation Matrix

- Other than for ponds and minor intersection improvements, the bulk of needed ROW exists

Chuluota Road RCA From SR 50 to Lake Pickett Road Alternatives Evaluation Matrix		
	No-Build Alternative	Preferred Alternative
	No Improvements	Four-Lane Urban Section with 6' SW and 10-14' Path
Evaluation Criteria		
Relocations		
Number of Residential Acquisitions	None	1
Number of Business Acquisitions	None	None
Number of Parcels Impacted	None	10
Social, Natural and Physical Impacts		
Social and Neighborhood	None	Low
Archeological/Historic Sites	None	None
Threatened and Endangered Species	None	No Adverse Impacts
Wetland Impacts (Acres)	None	None
RHPZ Uplands Impacts (Acres)	None	1.03
Floodplain Impacts (Acre-Feet)	None	0.798
Potential High or Medium Ranked Contamination Sites	None	None
Estimated Costs (Present Day Costs)		
Estimated Construction Cost	No Cost	\$27,538,176
Design, Adm Costs (15% of Construction)	No Cost	\$4,130,726
CEI (15% of Construction)	No Cost	\$4,130,726
Right-of-Way Costs	No Cost	\$2,148,566
Wetland Mitigation	No Cost	
RHPZ Uplands Mitigation	No Cost	\$103,000
Reimbursable Utility Relocation	No Cost	
Subtotal		\$38,051,194
Contingency (20%)		\$7,610,239
TOTAL ESTIMATED COSTS		\$45,661,433