



LAKE COUNTY
FLORIDA

North Hancock Road Corridor Traffic Safety Study

May 22nd, 2012

**Presentation Prepared By
Lake County Public Works / Engineering Division
437 Ardice Avenue, Eustis FL**

Purpose



- The Board of County Commissioners requested on Sept. 20th 2011, that the Department of Public Works evaluate the N. Hancock Road corridor for Operational and Safety Improvements.

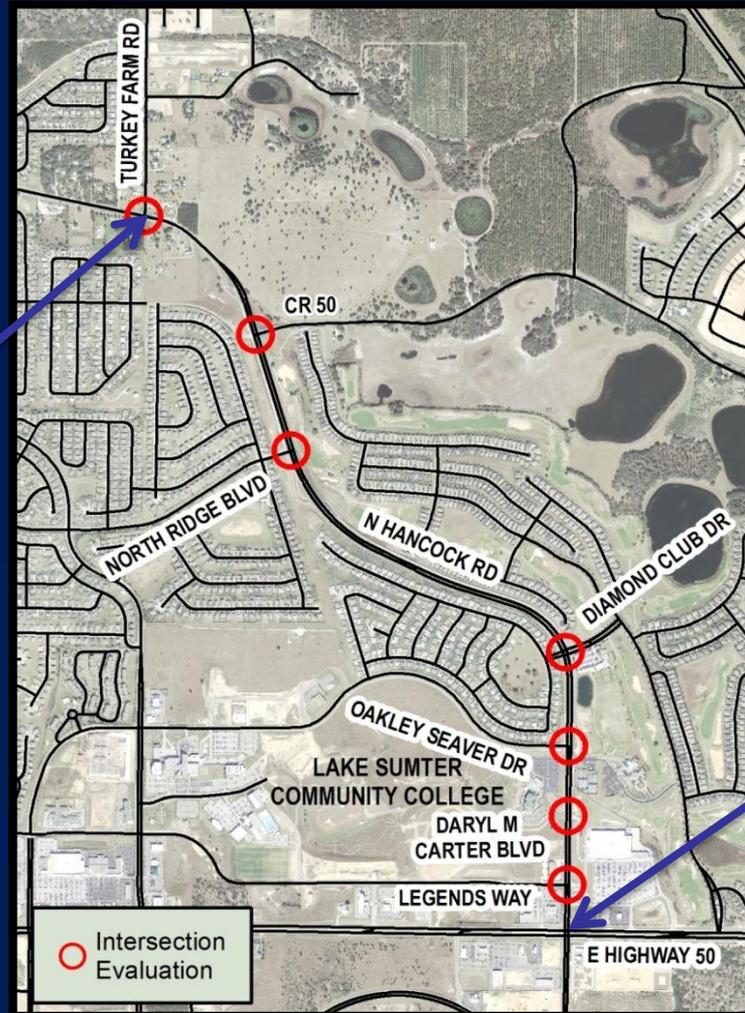
Presentation Outline



- Project Overview
- Governing Documents
- Corridor Analysis
- Intersection Analysis
- Alternatives for Corridor Improvements
- Summary
- Recommendation

Project Overview

Project Location Map



End
Project

Begin
Project

Project Schedule



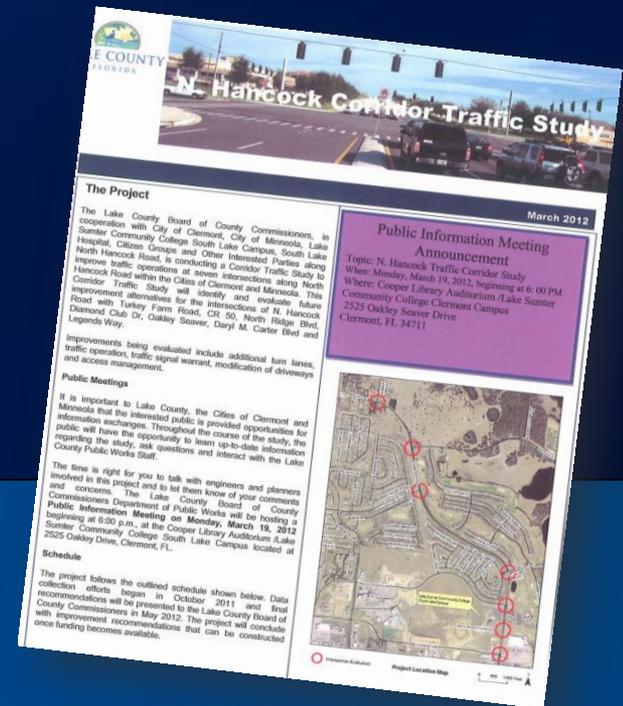
North Hancock Road Corridor Traffic Study

	NOV 2011	DEC 2011	JAN 2012	FEB 2012	MAR 2012	APR 2012	MAY 2012
Data Collection	█						
Operation Evaluation		█					
Study Report					█		
Public Involvement					█		
Public Meeting					MAR 19		
BCC Meeting							MAY 22

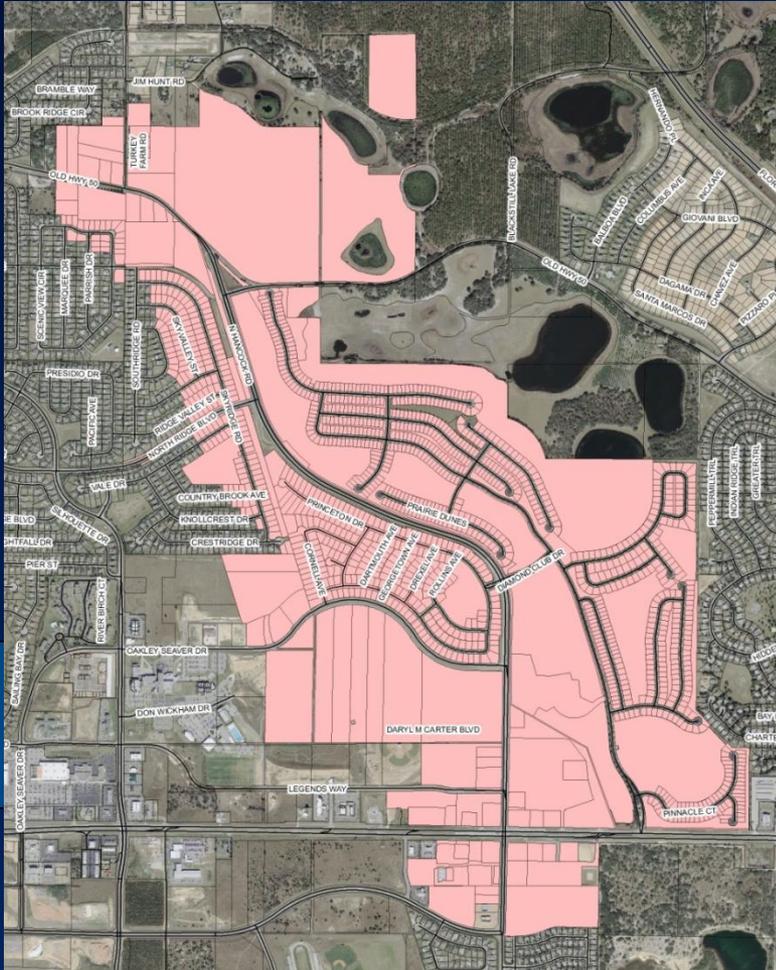
Public Involvement



- Newsletter
 - ✓ Public Officials/Property Owners/Interested Persons
 - ✓ City of Clermont and City of Minneola
 - ✓ Shopping Center/Business
 - ✓ Lake Sumter Community College
- March 19th Public Meeting
 - ✓ Held at Cooper Memorial Library
 - ✓ 64 signed in (1,200 mail outs)



North Hancock Road Corridor Traffic Study Newsletter Mailing Area



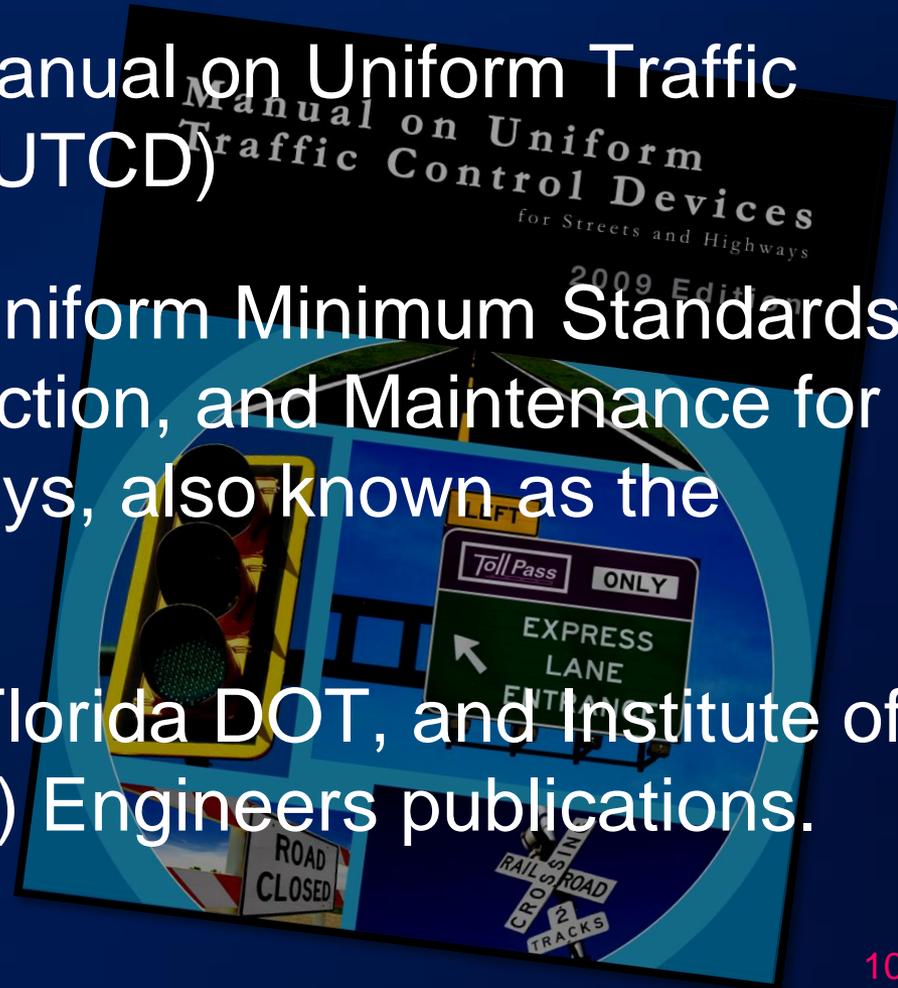
*Mailing area includes all parcels
Within 300 yards of project*

 Mailing Area

Governing Documents

Governing Documents

- Federal Highway Manual on Uniform Traffic Control Devices (MUTCD)
- Florida Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways, also known as the “Green Book”
- Additional FHWA, Florida DOT, and Institute of Transportation (ITE) Engineers publications.



MUTCD Standard Criteria For Evaluation



The need for a traffic control signal shall include an analysis of the following traffic signal warrants and other factors related to existing operation and safety at the study location:

Warrant 1, Eight-Hour Vehicular Volume

Warrant 2, Four-Hour Vehicular Volume

Warrant 3, Peak Hour

Warrant 4, Pedestrian Volume

Warrant 5, School Crossing

Warrant 6, Coordinated Signal System

Warrant 7, Crash Experience

Warrant 8, Roadway Network

*“The satisfaction
of a traffic signal warrant
or warrants
shall not in itself
require the installation
of a traffic control signal.”*

What Methods Are Used For Good Access Management?

- Corridor planning
- Medians: spacing for types of openings
- Turn lanes & Driveway location spacing
- Signal spacing
- Cross-access and joint access
- Frontage roads and connectors

“Managed Roads result in Fewer Accidents”

N. Hancock Road Corridor Analysis

Traffic Safety Audit



- Pavement striping
- Sidewalk and missing connections
- Intersection striping
- Street lighting
- Sight distance
- Speed study

Hancock Corridor Safety Audit Results/Recommendations



- Replace missing delineators
- Pavement re-striping from Diamond Club to SR 50
- Street Lighting from Oakley Seaver to Old 50 is not warranted
- Replace and repair sidewalk
- Trim vegetation along corridor
- Maintain current posted speed of 45 mph.
- Request the City of Clermont to provide increased Speed Enforcement of the corridor.

N. Hancock Rd. Intersection Analysis

Corridor Study Area Crash Data



TOTAL CORRIDOR STUDY AREA CRASHES

*Over a timeframe
of four years*

**49 Crashes
Total**

(including not occurring at
intersections)

INTERSECTION CRASHES

Total intersection crashes = 40

Non-Signalized Intersection Crashes (28)

Legends Way	2 Crashes
LSCC / Target Plaza	4 Crashes
Oakley Seaver Dr.	2 Crashes
Diamond Club Dr./ West Point Blvd.	7 Crashes
North Ridge Blvd.	6 Crashes
Turkey Farm Road	7 Crashes

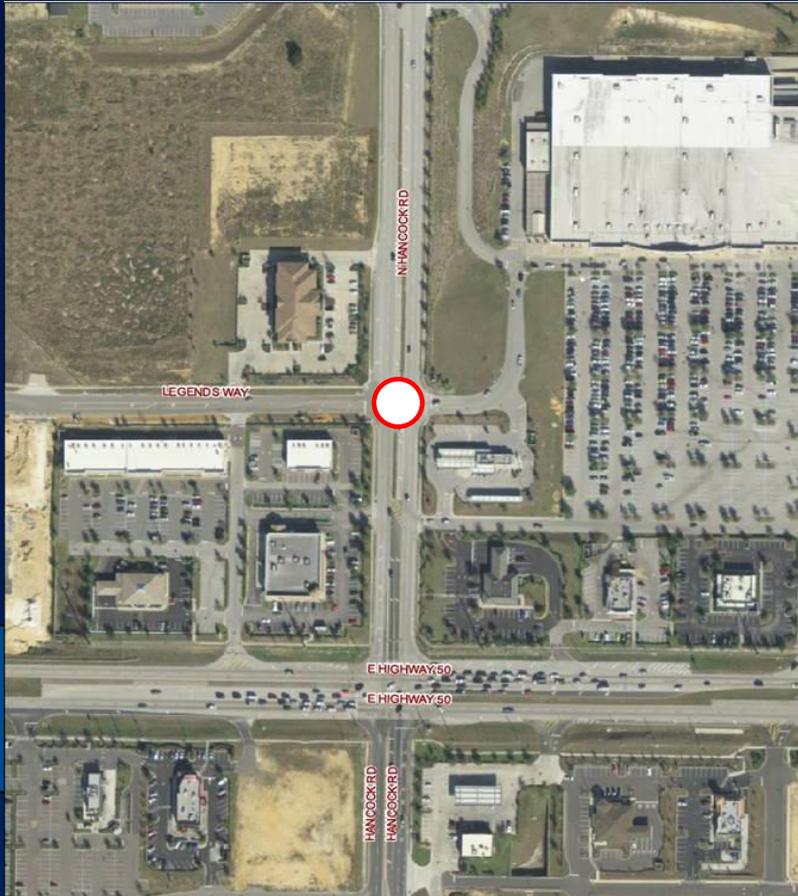
Signalized Intersection Crashes (12)

Old CR 50	12 Crashes
-----------	------------

Intersection Evaluation

Legends Way

Legends Way Signal Warrant Study Site



○ Signal Warrant
Study Site

Legends Way Crash History



- ✓ 24 Hour Approach Count
- ✓ 4 Years Crash History
- ✓ 2 Crashes Reported

-  Crash at Intersection
-  Crash at Intersection which can be corrected with signalization

Legends Way Recommendations



Design Recommendation

- Traffic Signal is not warranted at present
- Sight Distance: Move the stop bar about 4 feet to crosswalk and provide adequate distance between the stop bar and crosswalk according to MUTCD standard.

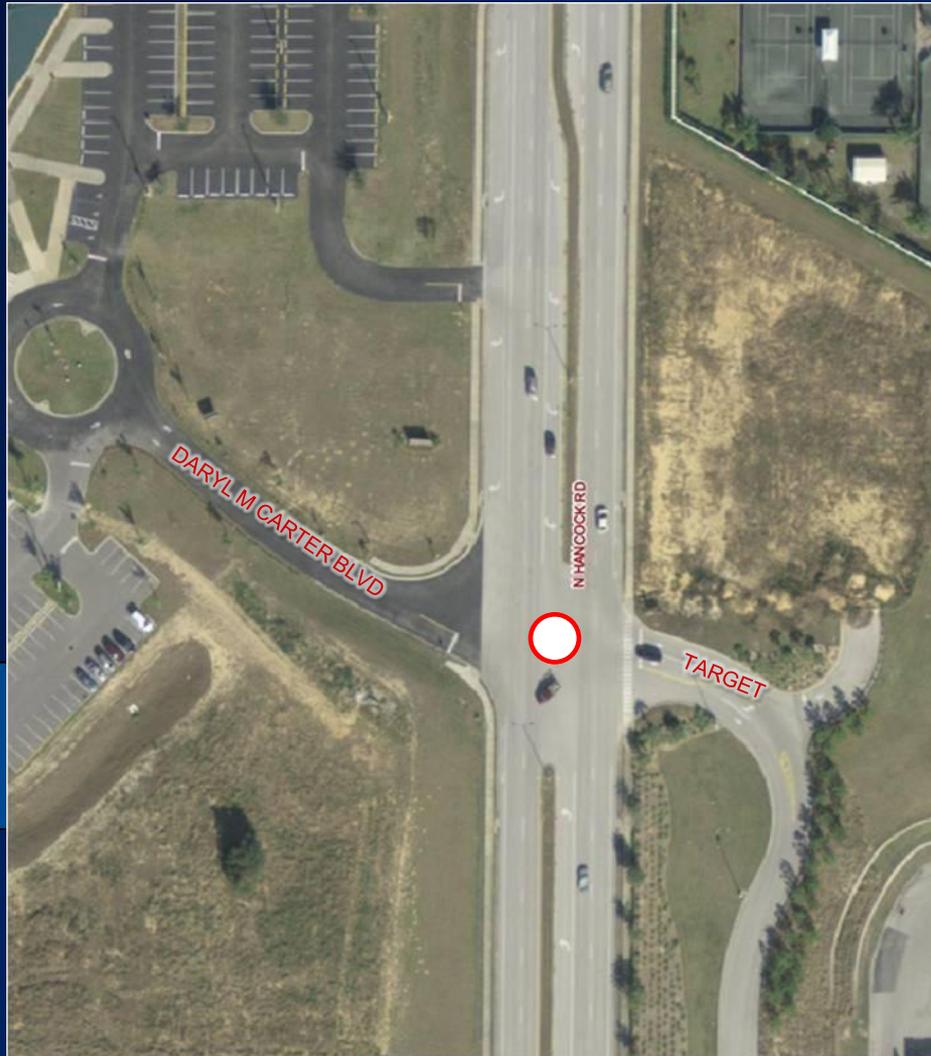
Maintenance Recommendations

- Re-Stripe pavement markings at intersection.
- Repair broken sidewalk at the intersection.
- Add Crosswalk to the intersection.

Intersection Evaluation

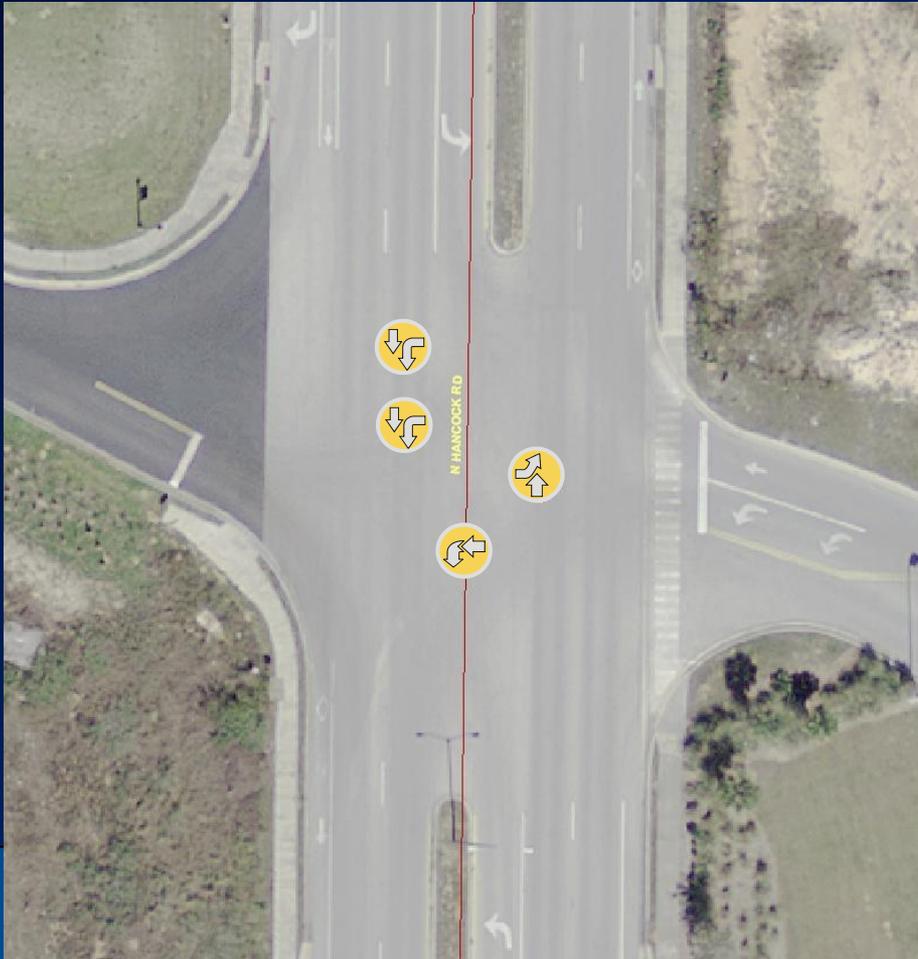
LSCC/Target

LSCC/Target Signal Warrant Study Site



 Signal Warrant
Study Site

LSCC/Target Crash History



- ✓ 24 Hour Approach Count
- ✓ 4 Years Crash History
- ✓ 4 Crashes Reported

- Crash at Intersection
- Crash at Intersection which can be corrected with signalization

LSCC/Target Recommendations



Design Recommendation

- Traffic Signal is not warranted at present
- Sight Distance: Move the stop bar about 4 feet to crosswalk and provide adequate distance between the stop bar and crosswalk according to MUTCD standard.

Maintenance Recommendations

- Re-stripe intersection pavement markings
- Add Crosswalk over Daryl Carter Blvd. to the intersection

Intersection Evaluation

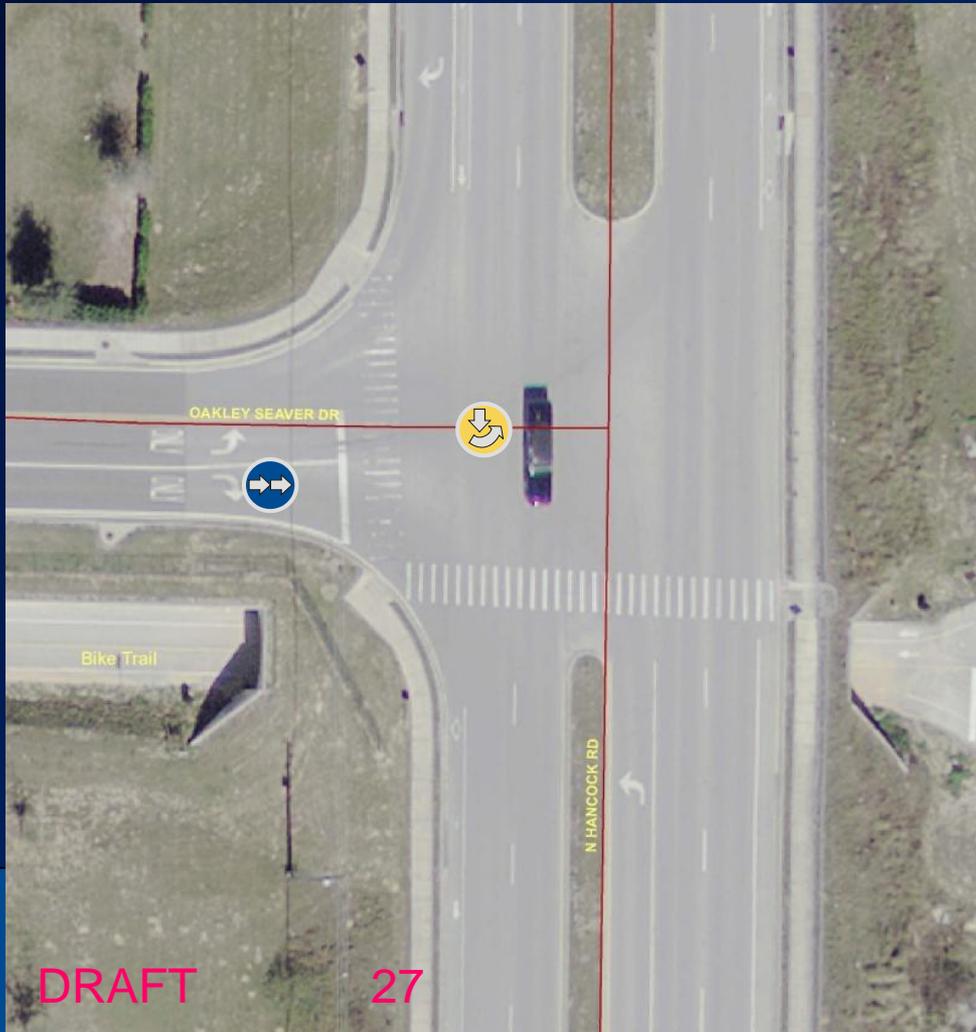
Oakley Seaver Drive

Oakley Seaver Drive Signal Warrant Study Site



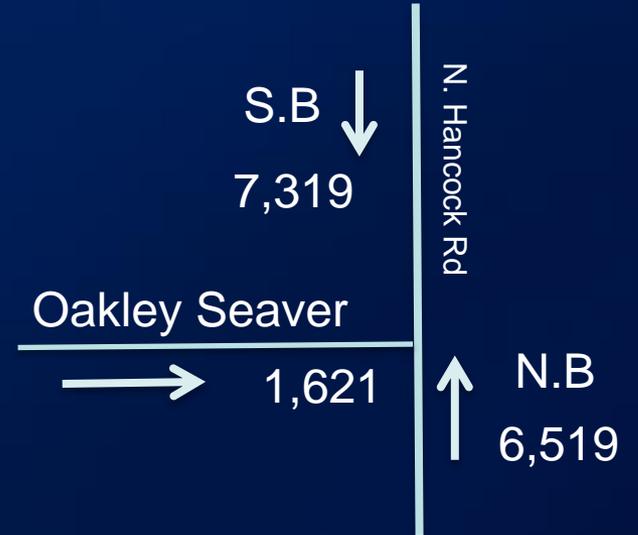
○ Signal Warrant
Study Site

Oakley Seaver Drive Crash History



DRAFT

27



- ✓ 24 Hour Approach Count
- ✓ 4 Years Crash History
- ✓ 2 Crashes Reported

- Crash at Intersection
- Crash at Intersection which can be corrected with signalization

28

Oakley Seaver Drive Recommendations



Design Recommendation

- Traffic Signal is not warranted at present

Maintenance Recommendations

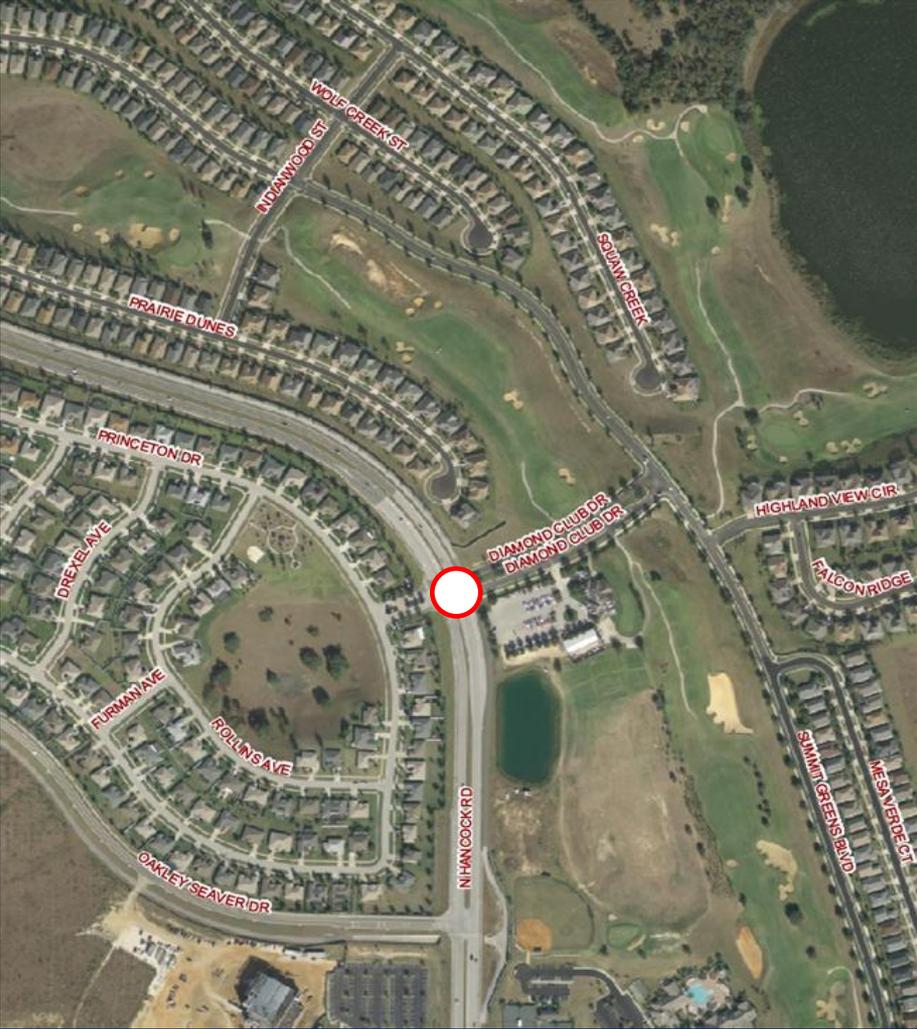
- Re-stripe intersection pavement markings and crosswalk



LAKE COUNTY
FLORIDA

Intersection Evaluation Diamond Club Drive / West Point Boulevard

Diamond Club Dr. / West Point Blvd. Signal Warrant Study Site



Signal Warrant
Study Site

Diamond Club Dr. / West Point Blvd. Study History



Previous Studies

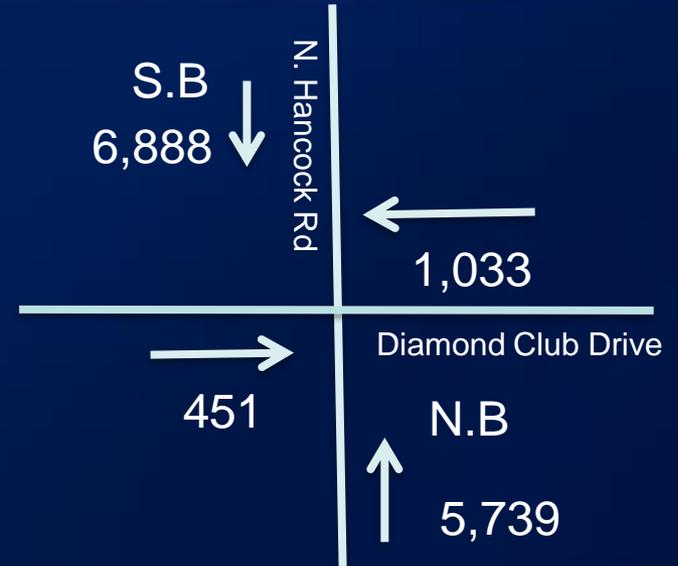
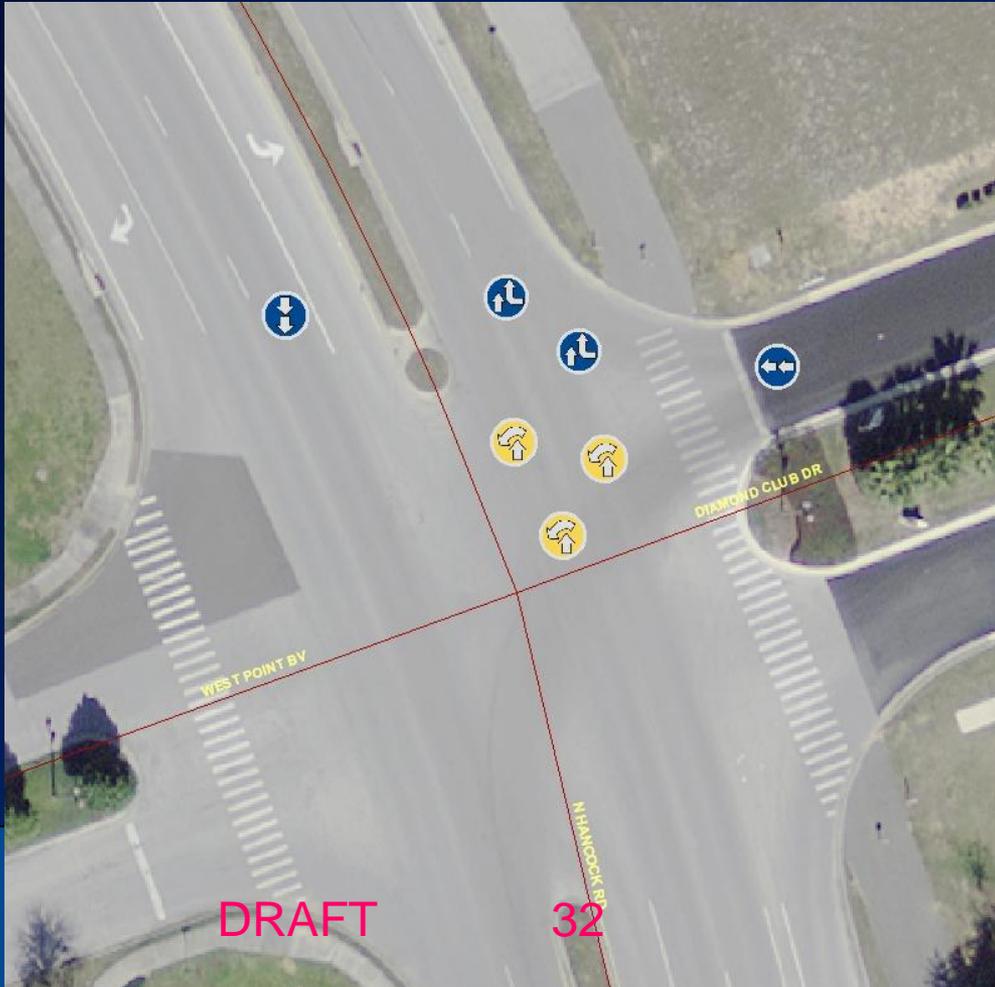
The Summary of Previous Studies background information:
Diamond Club Drive / West Point Blvd.

	YR 2008	YR 2010	YR 2011
North Bound Approach	7,174	7,108	5,739
South Bound Approach	6,249	6,195	6,888
East Bound Approach	1,085	1,340	1,033
West Bound Approach	577	580	451
Total Traffic Volumes	15,085	15,223	14,111

Sept. 2008: Signal Not Recommended By County Staff

March 2010: Signal Not Recommended By GMB

Diamond Club Dr. / West Point Blvd. Crash History



- ✓ 24 Hour Approach Count
- ✓ 4 Years Crash History
- ✓ 7 Crashes Reported

-  Crash at Intersection
-  Crash at Intersection which can be corrected with signalization

Diamond Club Dr. / West Point Blvd. Intersection Approach



Intersection approach warning signs (W2-1) with flashing beacon



South Bound Approach



North Bound Approach

Diamond Club Drive Sight Distance



← Vehicles exiting Diamond Club Dr.
Note the line of sight (red)



Driver view at Diamond Club Dr.
(From van/truck window)



Passenger view at Diamond Club Dr.

West Point Boulevard Sight Distance



Driver view at West Point



Passenger View at West Point

Diamond Club Dr. / West Point Blvd. Recommendations



Design Recommendation

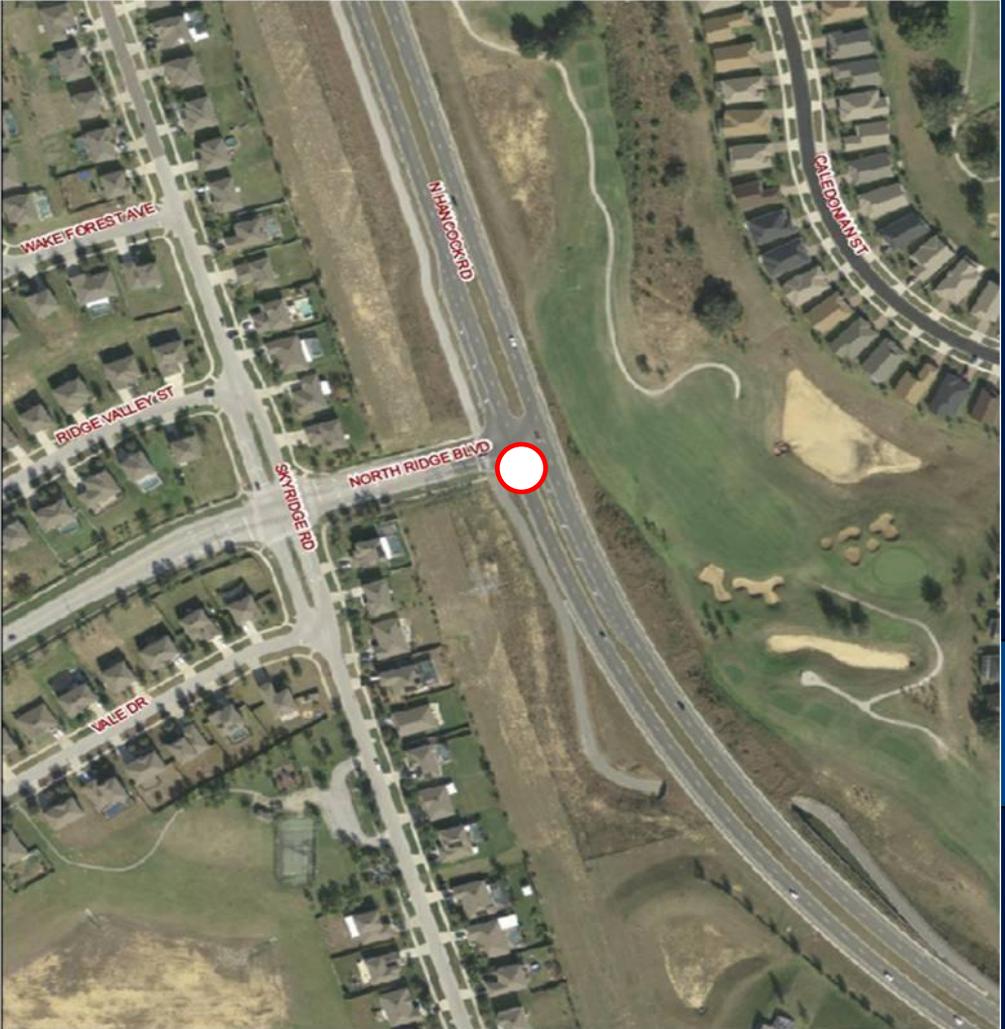
- Traffic Signal is not warranted at present

Maintenance Recommendations

- Consider trimming vegetation at the front of the driveway to improve site distance
- Relocate Stop Bar on West Pt. Blvd
- Relocate Stop Bar on Diamond Club Drive.
- Re Stripe intersection and provide additional median guide stripes

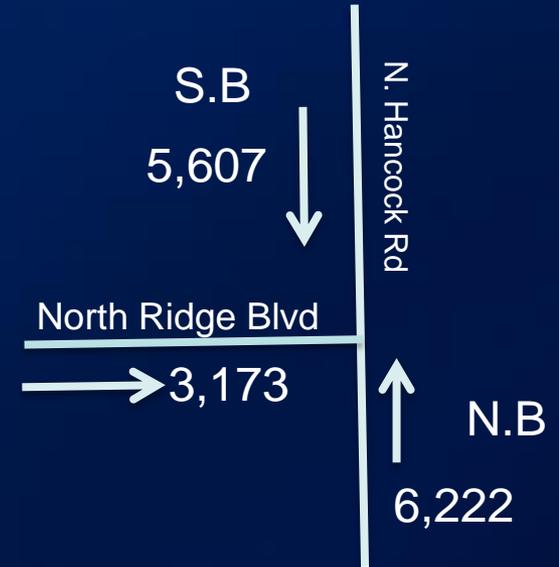
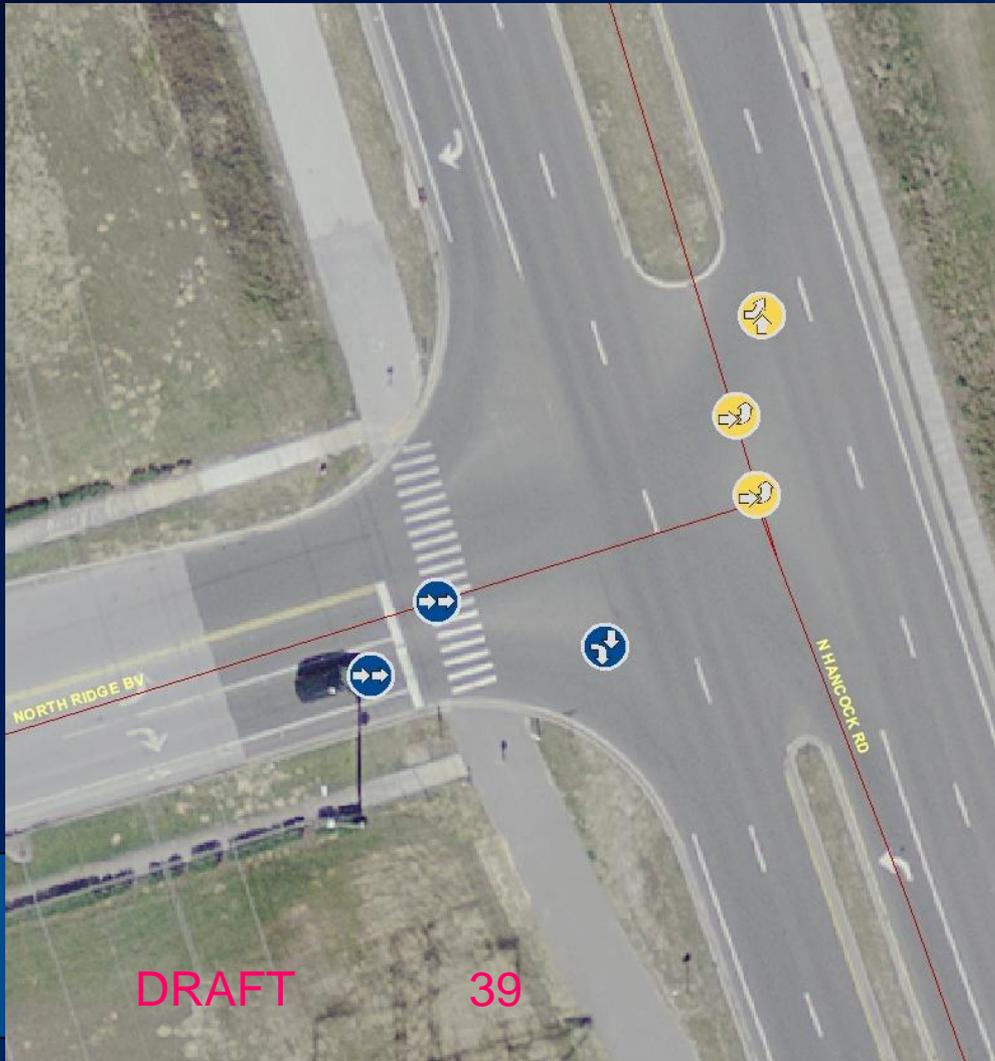
Intersection Evaluation North Ridge Boulevard

North Ridge Boulevard Signal Warrant Study Site



Signal Warrant
Study Site

North Ridge Boulevard Crash History



- ✓ 24 Hour Approach Count
- ✓ 4 Years Crash History
- ✓ 6 Crashes Reported

- Crash at Intersection
- Crash at Intersection which can be corrected with signalization

North Ridge Boulevard Recommendations



Design Recommendation

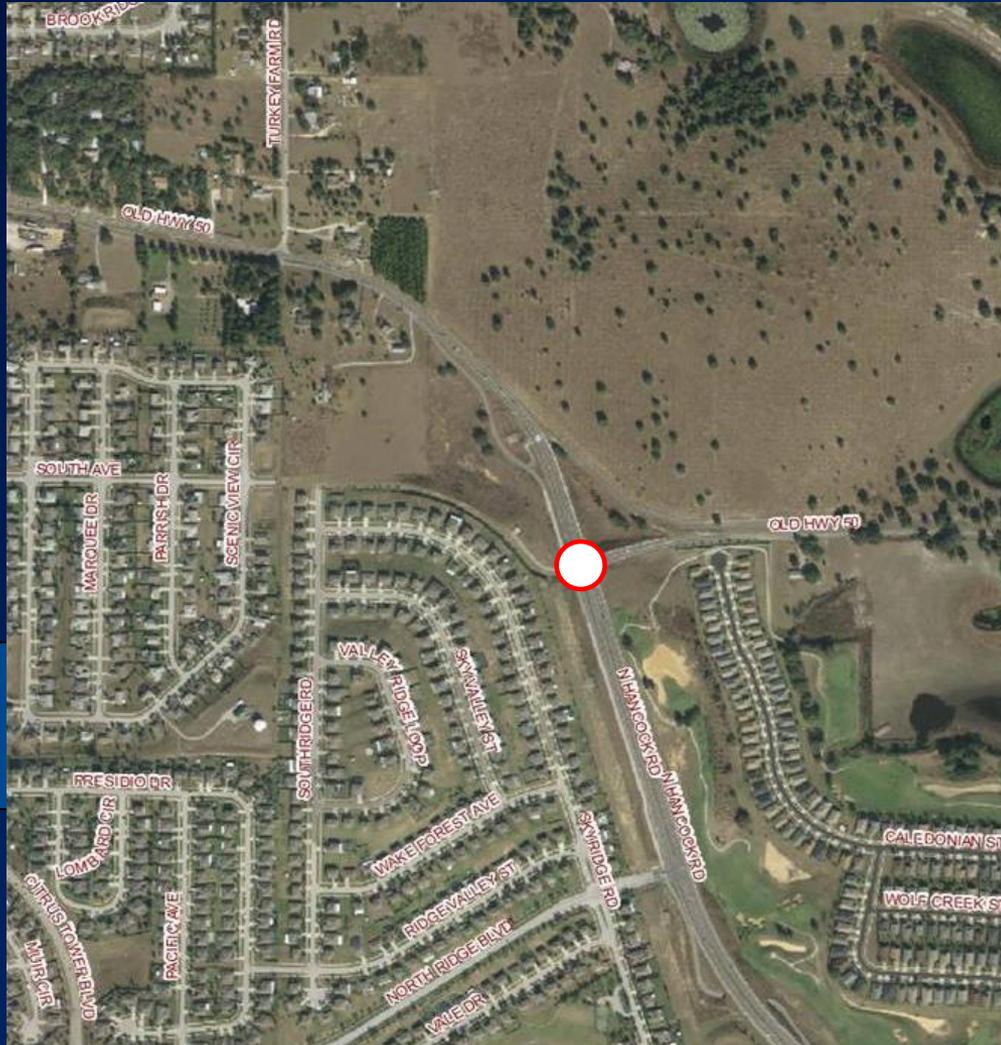
- A signal warrant has been met for this intersection. Consider alternatives to a traffic signal.

Maintenance Recommendations

- Re-stripe intersection pavement markings and crosswalk
- Replace truncated domes at trail ramp

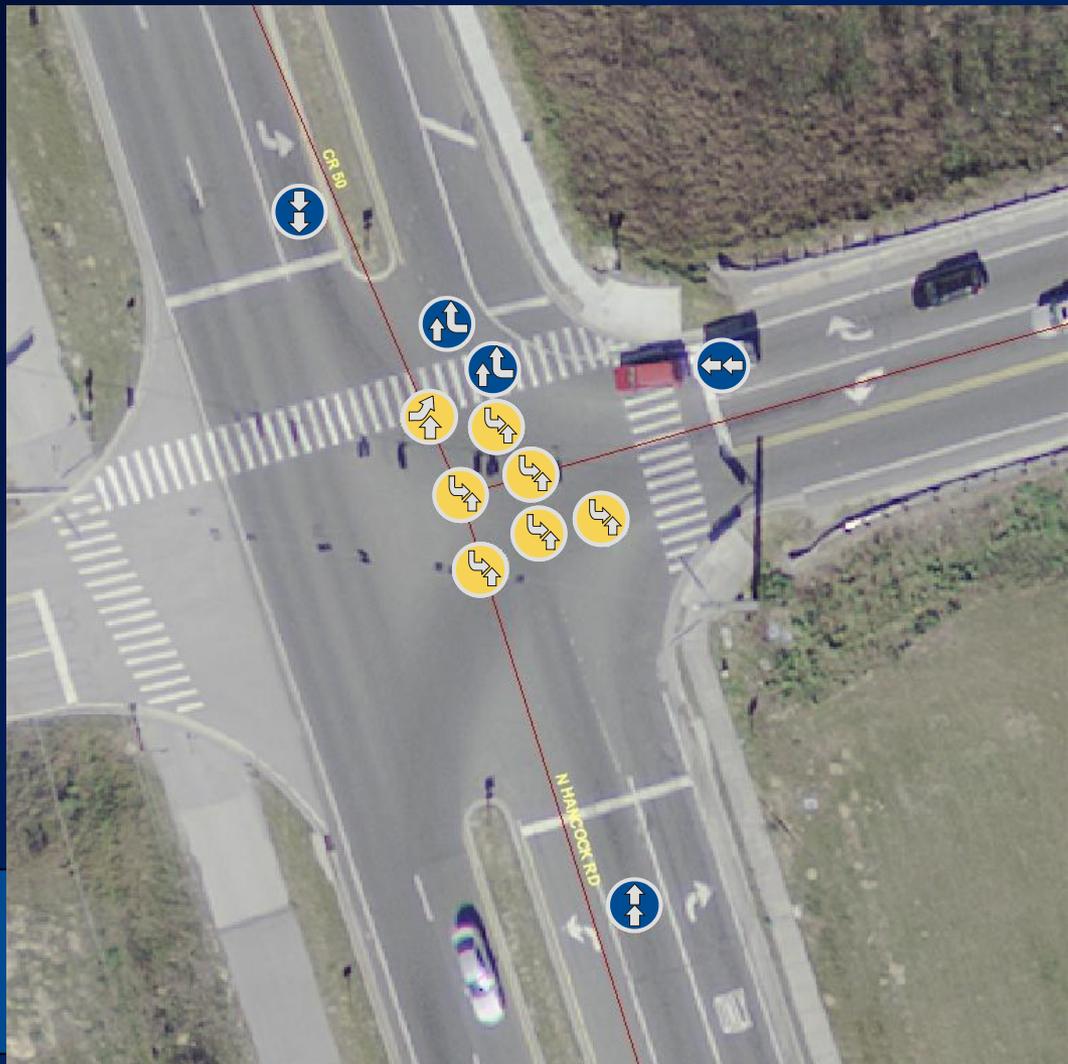
Intersection Evaluation County Road 50

County Road 50 Signal Warrant Study Site



 Signal Warrant
Study Site

County Road 50 Crash History



S.B
6,523

N. Hancock Rd
←

4,922

Old 50

↑
N.B
6,103

- ✓ 24 Hour Approach Count
- ✓ 4 Years Crash History
- ✓ 12 Crashes Reported

- Crash at Intersection
- Crash at Intersection which can be corrected with signalization

County Road 50 Recommendations

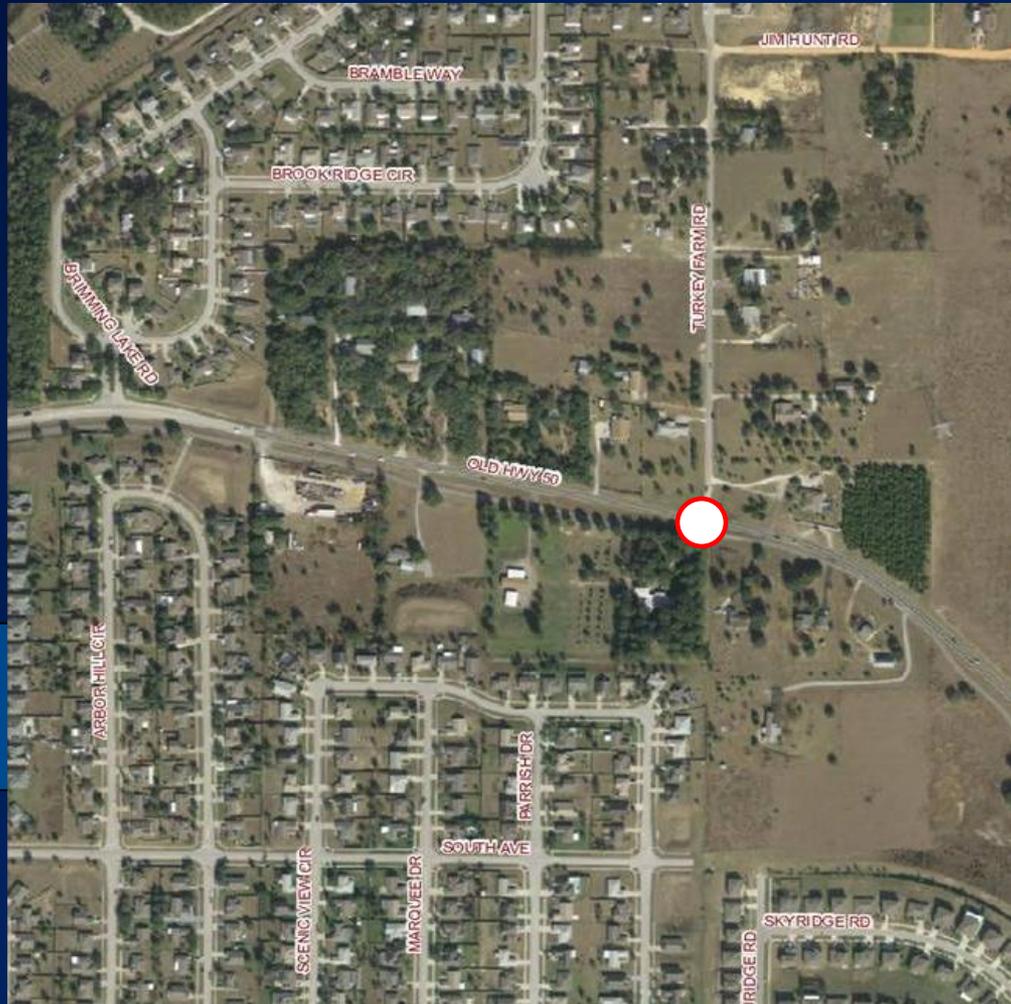


Maintenance Recommendations

- Re-stripe Intersection
- Install Trail Crossing sign
- Install Truncated Domes at all Ramps on CR 50
- Trail Repairs (dip)
- Repair Sidewalk Ramps

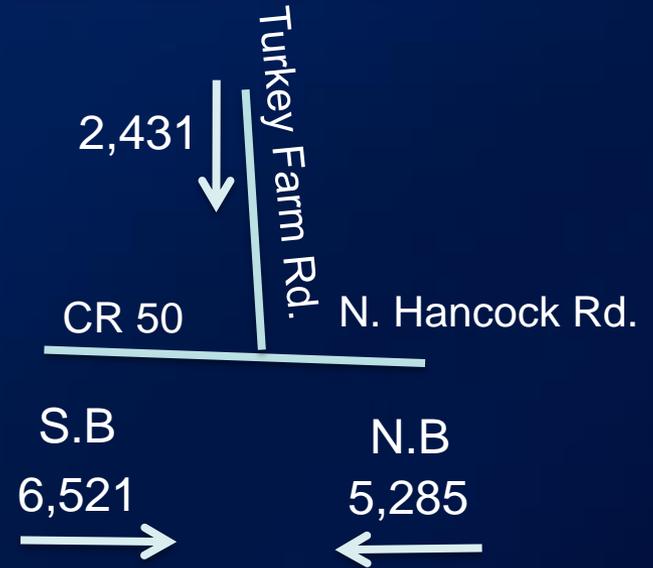
Intersection Evaluation County Road 50 and Turkey Farm Road

CR 50 and Turkey Farm Rd Signal Warrant Study Site



Signal Warrant
Study Site

CR 50 and Turkey Farm Rd Crash History



- ✓ 24 Hour Approach Count
- ✓ 4 Years Crash History
- ✓ 7 Crashes Reported

CR 50 and Turkey Farm Rd Recommendations



Design Recommendations

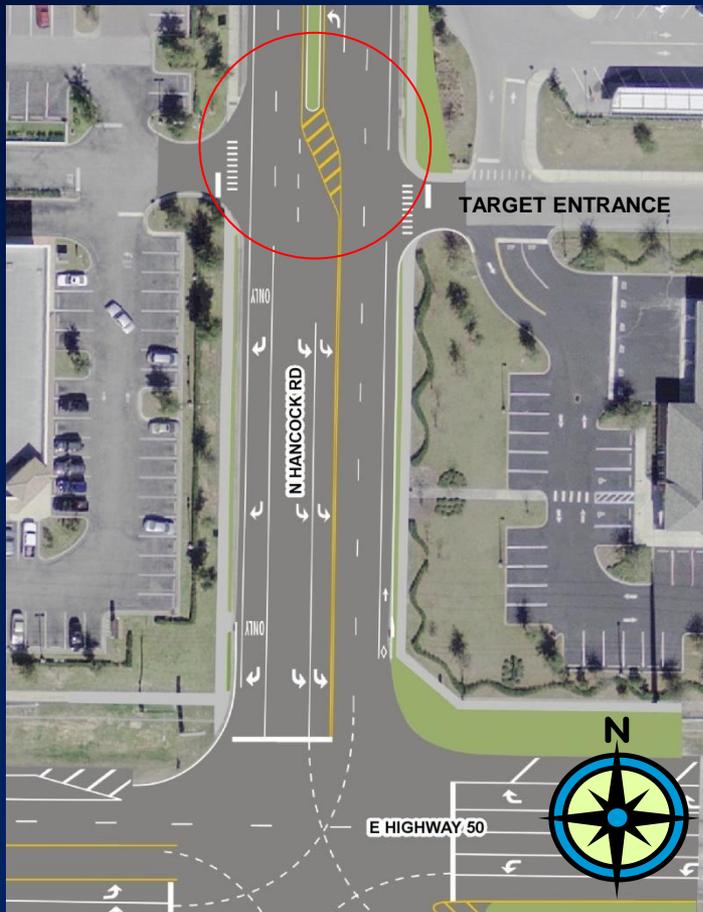
- East bound left turn lane
- West bound right turn lane
- N. Hancock 4 lane extension is in the Transportation Program to resolve this issue

N. Hancock Rd Corridor Access Management

Alternatives for Corridor Improvements

South Target Entrance Possible Safety Measures

Current South Target Entrance

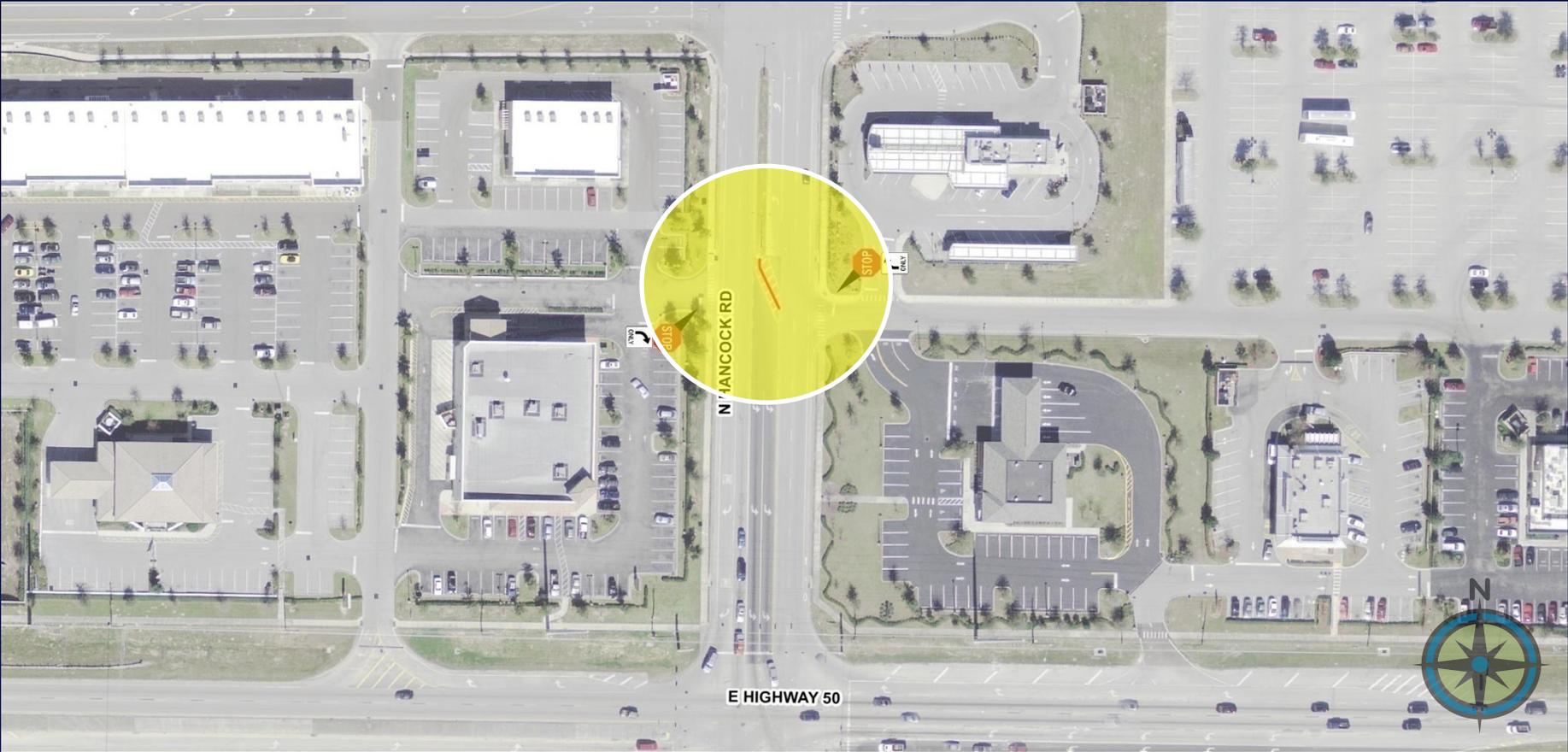


Tubular Markers

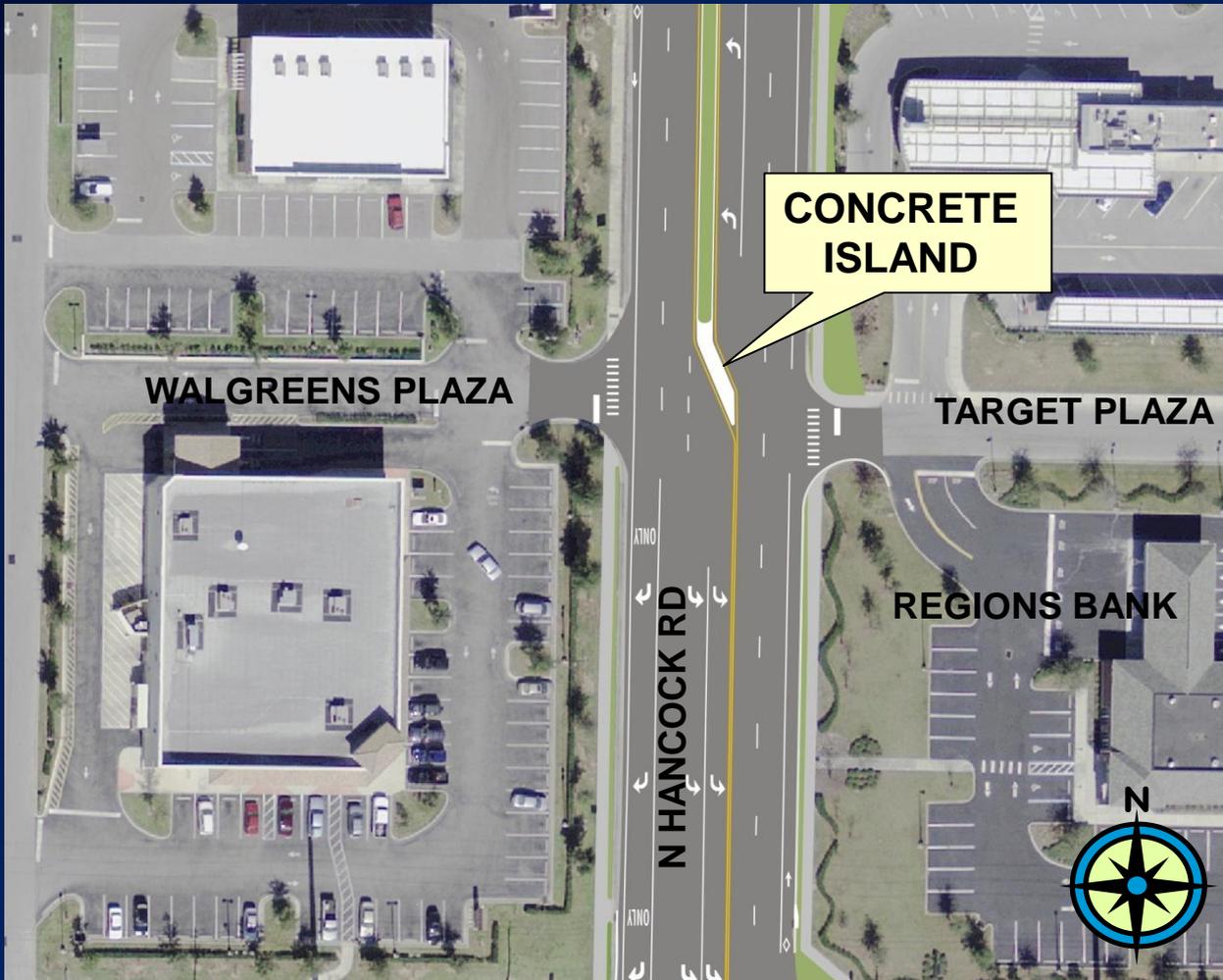


Looking south on N. Hancock Rd.,
toward SR 50

South Target Entrance Possible Safety Measures



South Target Entrance Possible Safety Measures

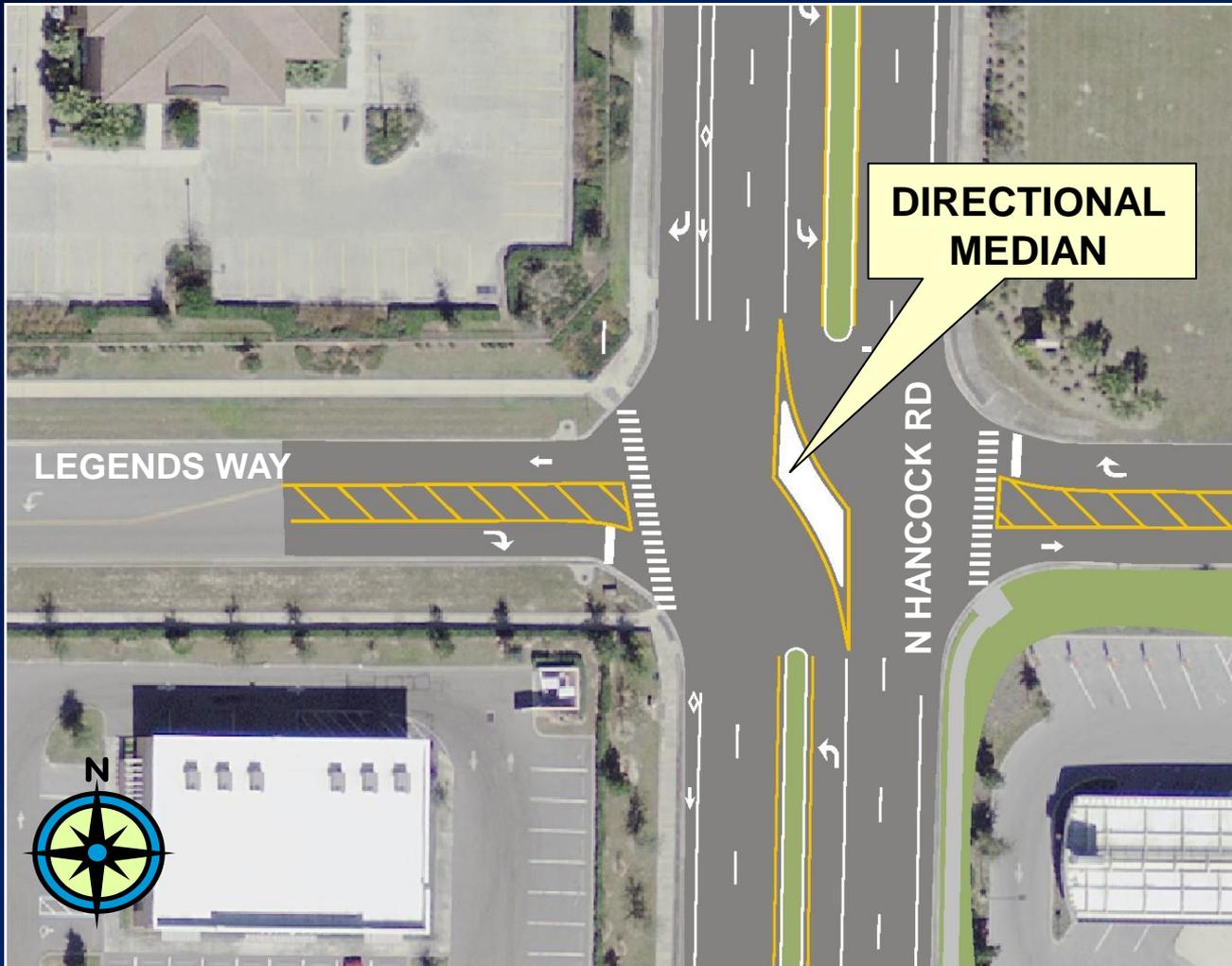


- Concrete island prevents left turns out of shopping plazas
- Cost Estimate \$16,000.

Legends Way Possible Safety Measures

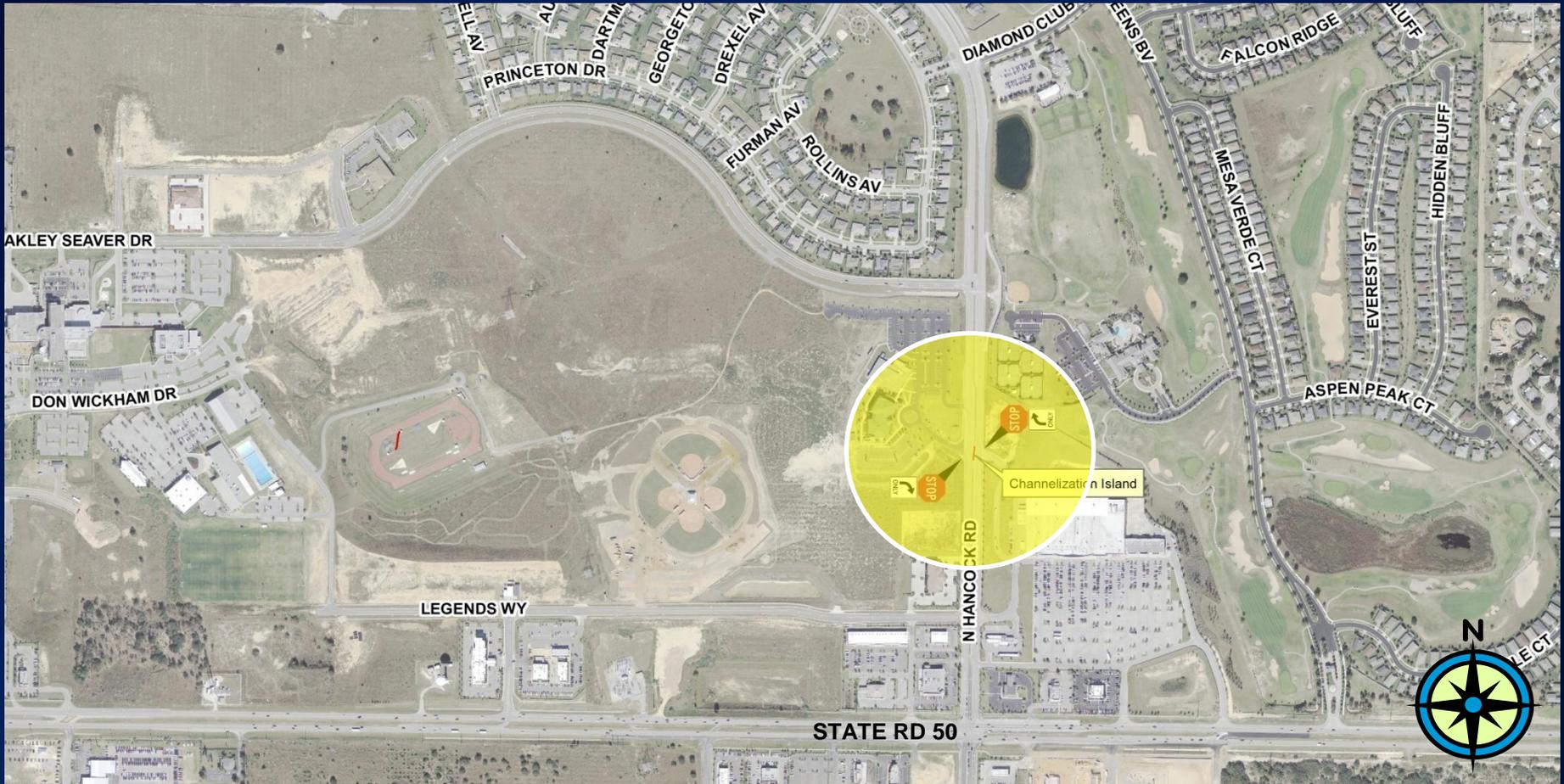


Legends Way Possible Safety Measures



- Channelized median prevents left turns onto N Hancock Rd

LSCC Possible Safety Measures

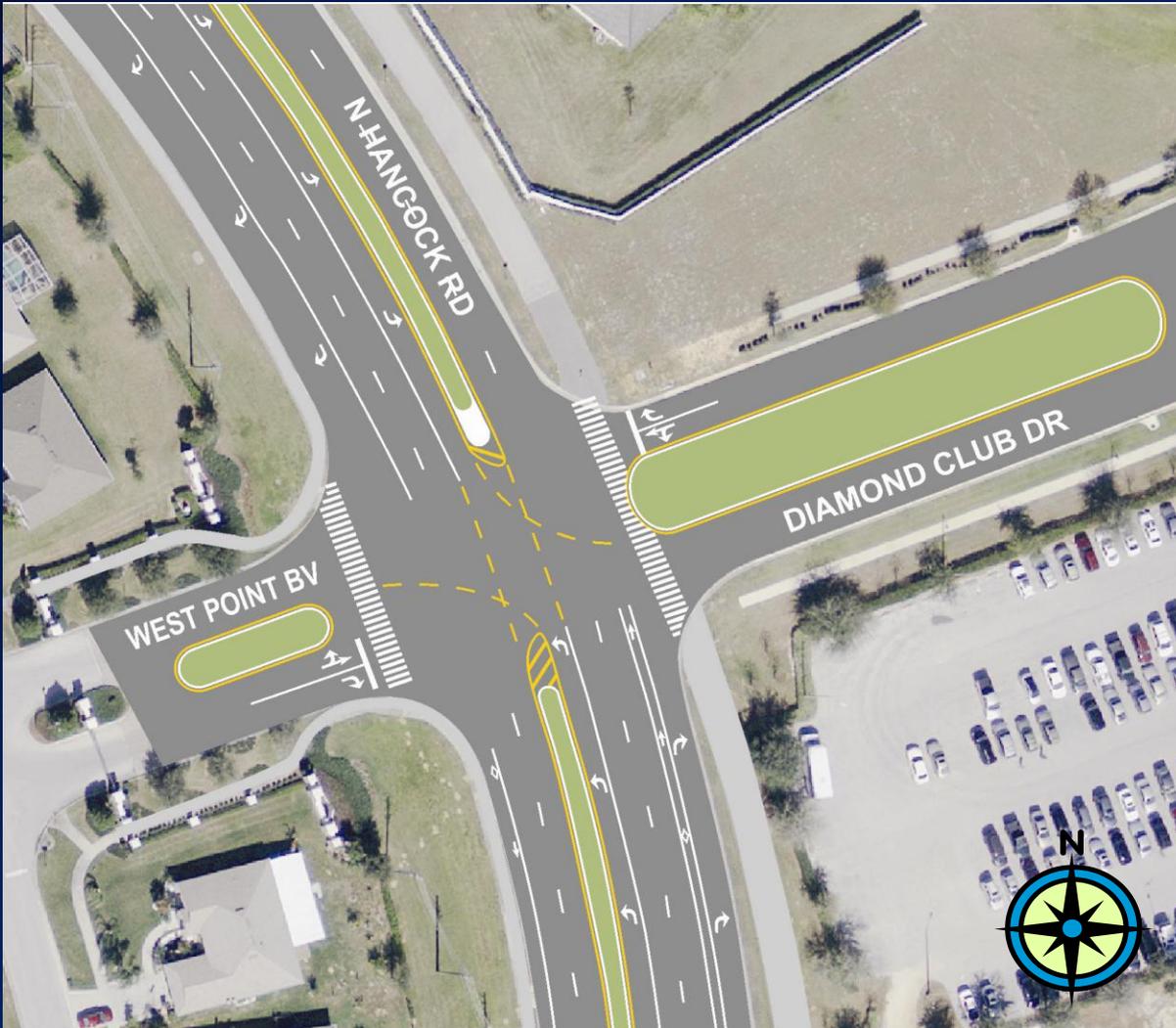


LSCC Possible Safety Measures



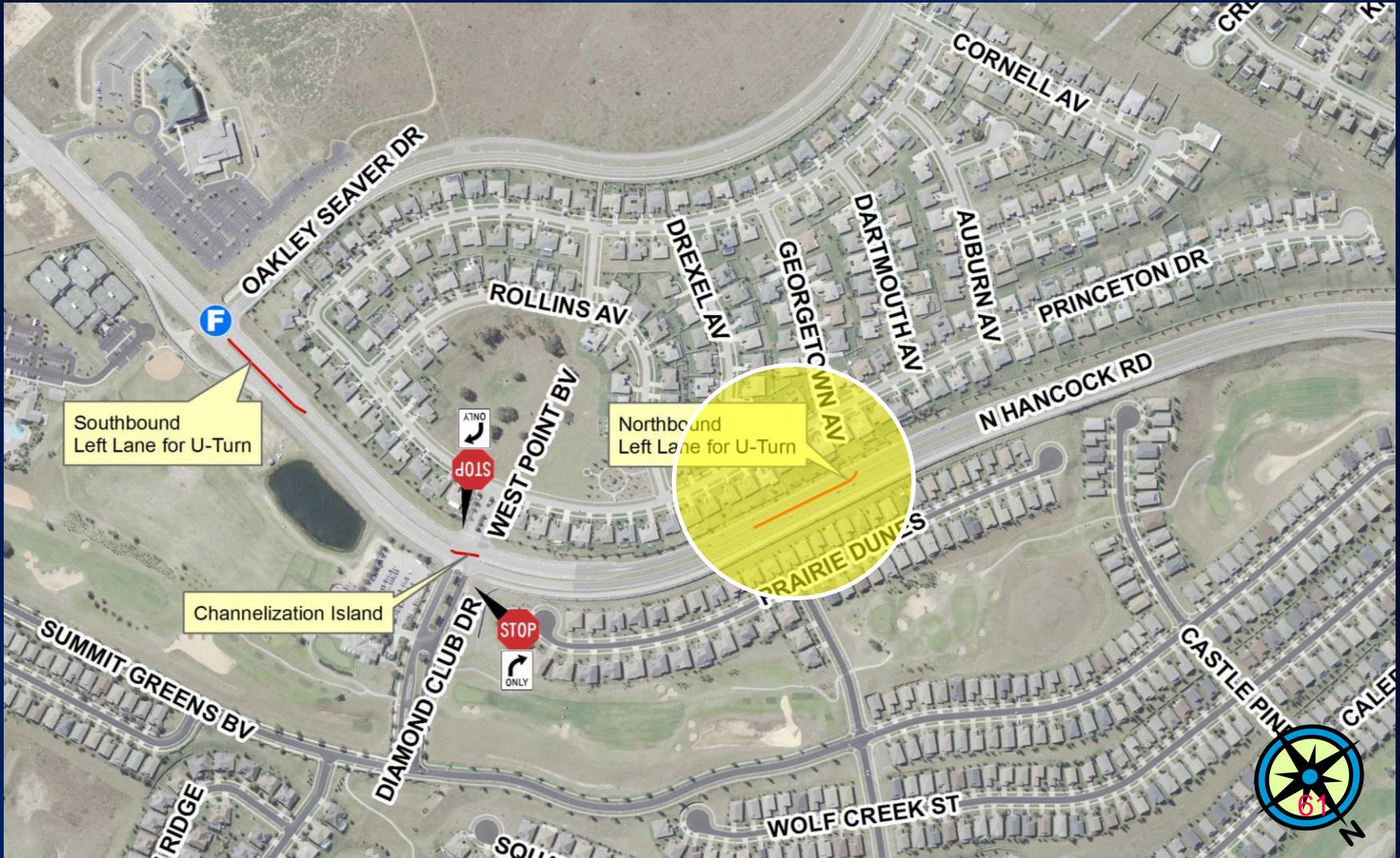
- Channelized median prevents left turns onto N Hancock Rd
- Cost Estimate \$16,000.

Diamond Club Dr. / West Point Blvd. Short Term Improvement



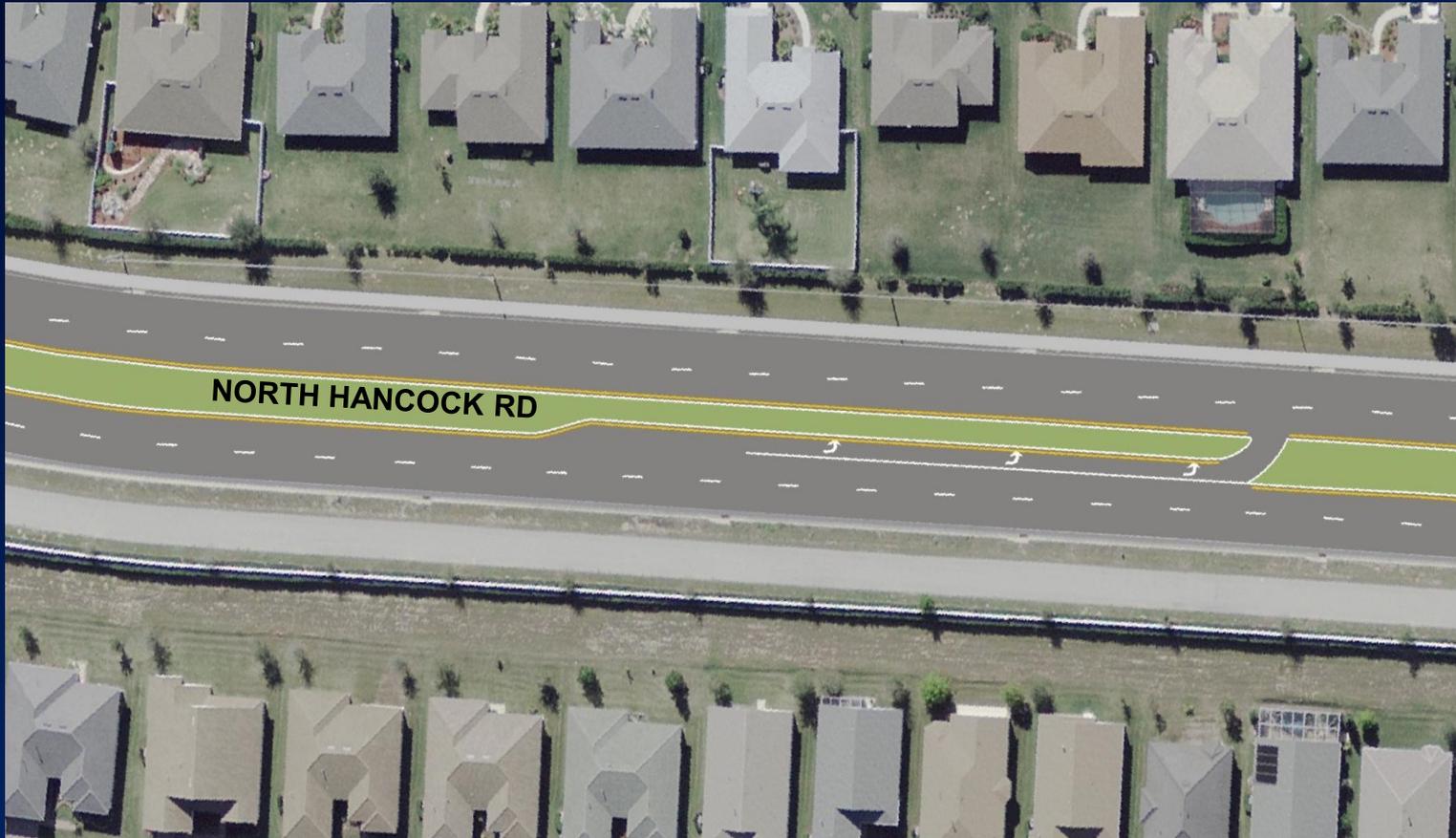
- Additional guide striping and bull nose striping
- Relocate stop bar

Possible Corrective Measures U-turn Accessibility



Possible Corrective Measures

U-turn Accessibility



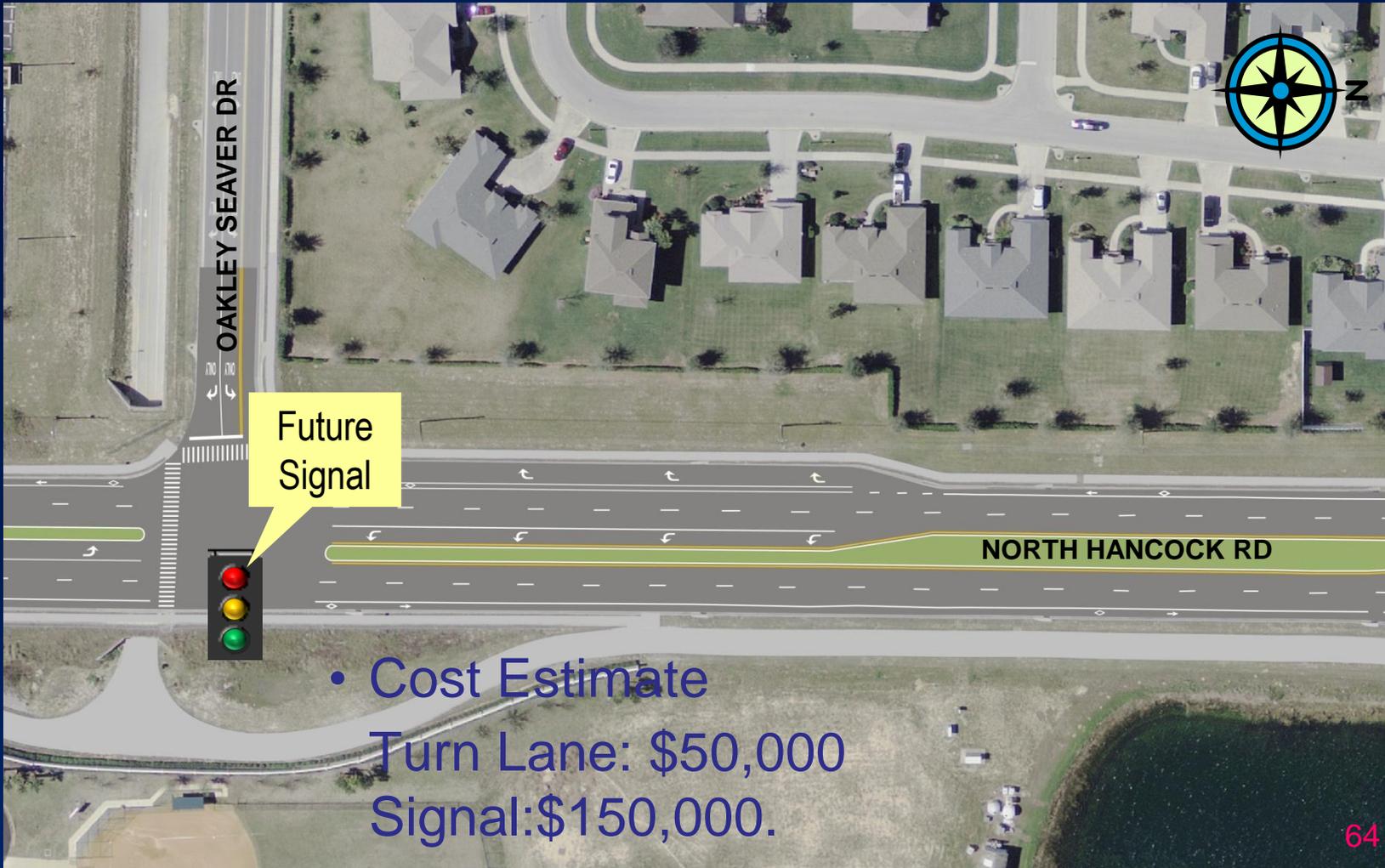
- Cost Estimate \$50,000.



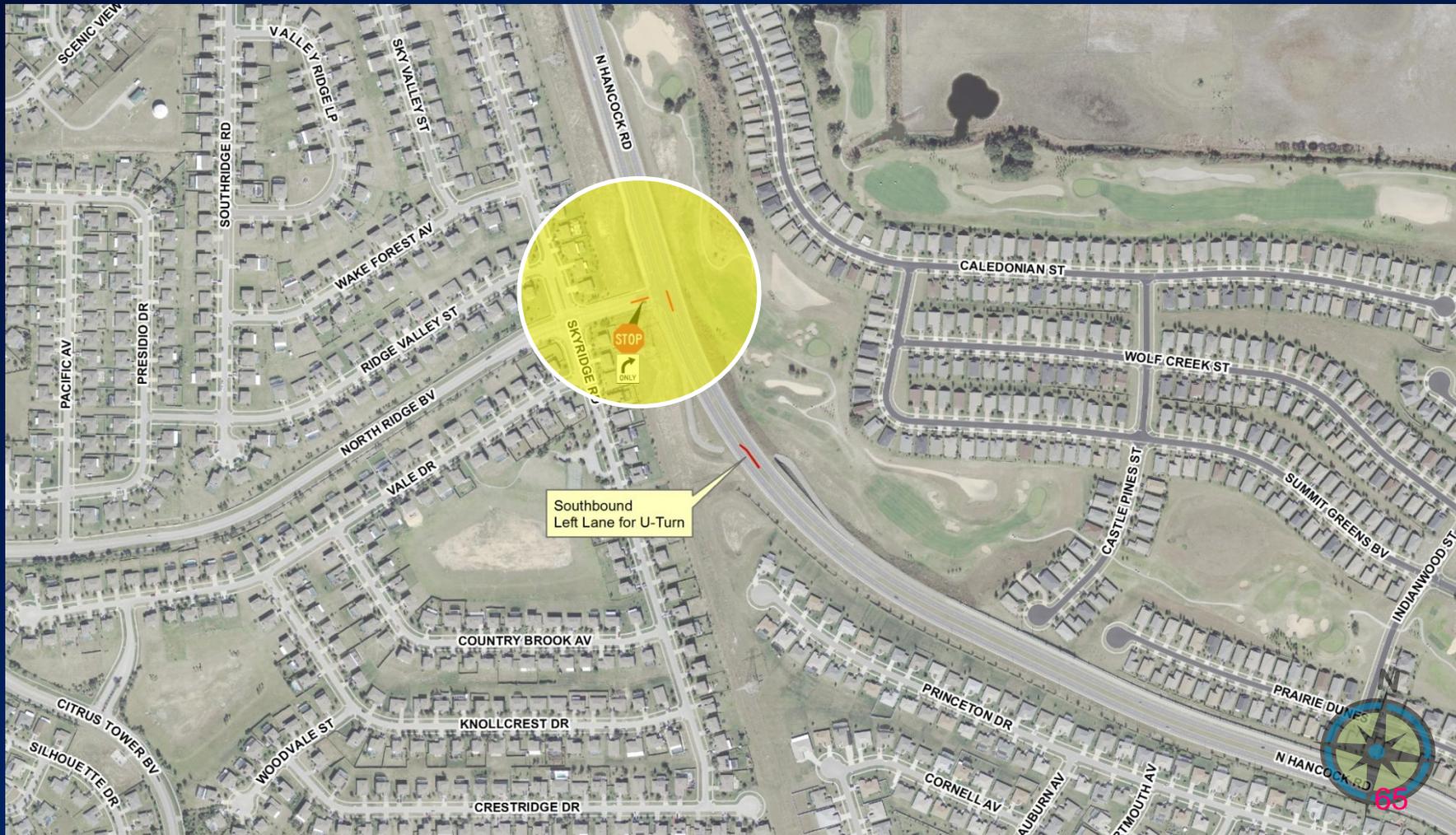
Oakley Seaver Drive Possible Corrective Measures



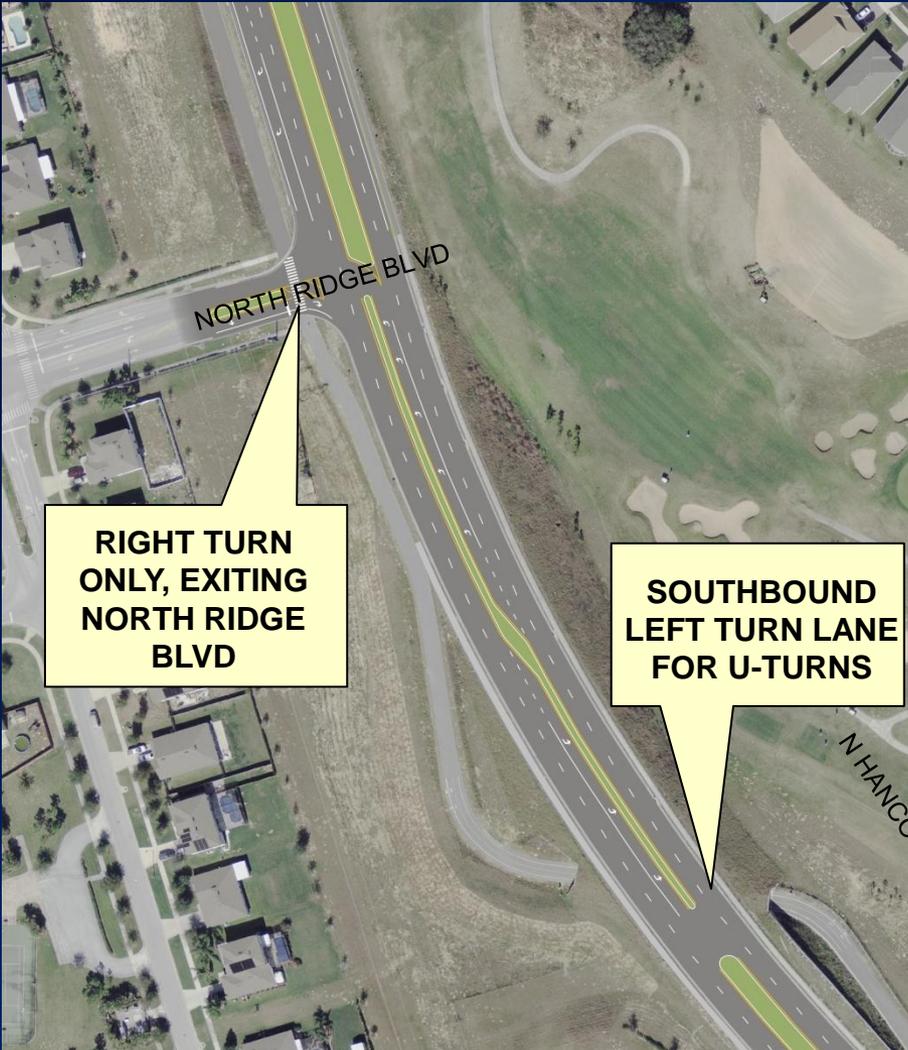
Oakley Seaver Drive Possible Corrective Measures



North Ridge Boulevard Possible Corrective Measures



North Ridge Boulevard Possible Corrective Measures



RIGHT TURN ONLY, EXITING NORTH RIDGE BLVD

SOUTHBOUND LEFT TURN LANE FOR U-TURNS

- Cost Estimate
Turn Lane: \$50,000
Directional Median: \$16,000.



Optional Improvements Cost Totals

Future Planning Opportunities			
Intersection	Higher Traffic Capacity		Higher Access
	Median modifications	Turn Lanes	Signals
South Target drive	\$16,000		
Legends Way	\$16,000		\$150,000
LSCC/Target	\$16,000		
Oakley seaver Blvd		\$50,000	\$150,000
Diamond Club Dr.	\$16,000	\$50,000	\$150,000
NorthRidge Blvd.	\$16,000	\$50,000	\$150,000
CR 50			
Turkey Farm Rd.			
subtotal	\$80,000	\$150,000	
Total		\$230,000	\$600,000



Corridor summary:

- Design and spacing of driveways and turn lanes are adequate
- Posted Speed Limit is appropriate. Request City of Clermont speed enforcement.
- Overall Sight Distance on the corridor is adequate
- Street Lighting is not warranted
- Traffic Signals and Access Management alternatives considered.



Corridor summary (Cont'd):

- N. Hancock Rd. is designed as a roadway which provides higher speed and mobility at the expense of access.
- Median modifications through access management will maintain a higher capacity of the roadway and provide a safer alternative
- There are four possible future traffic signal locations within the study area: Legends Way, Oakley Seaver Blvd., Diamond Players Club Dr., and Northridge Blvd.



Intersection Summaries:

- Minor improvements needed including re-striping of intersections, sidewalk cross walks, and repairs to sidewalks.
- Landscaping trimming should be performed to improve sight distance: Notify property owners and the City of Clermont.
- The intersection of North Ridge Blvd with N. Hancock Road met the warrant for a traffic signal or other alternative.



Short Term Recommendations:

- Modify the striped median to raised concrete at the Target South/Regions Bank Entrance. (\$16K)
- Construct a Directional Median opening at the South LSCC / Target North entrance. (\$16k)
- Repair Sidewalks and ramps (\$16.6k)
- Restripe N. Hancock Blvd. & Intersections (\$43.5k)
- *Total Cost Estimate: \$92,100.*



Long Term Recommendations:

- Policy Decision on the Hancock Rd. Corridor:
 - Higher Capacity, Lower Access
 - Should we continue to plan and program improvements on N. Hancock Road for higher capacity? (45 mph speed, longer street and driveway spacing, median controls)
 - Lower Capacity, Higher Access
 - Should we begin planning and programming improvements to N. Hancock Rd. for higher access? (lower speed, closer driveway spacing, full medians and signals.)



Final Recommendations:

- Monitor intersections for Traffic Signal need or Median modification in the future.
- Program the short term improvements for coming year.
- Program the long term improvements when warranted by engineering study of traffic and safety data on the corridor.
- Prepare Final Report for this current study



LAKE COUNTY

FLORIDA

Visit our project website:

www.lakecountyfl.gov/northhancockroad