

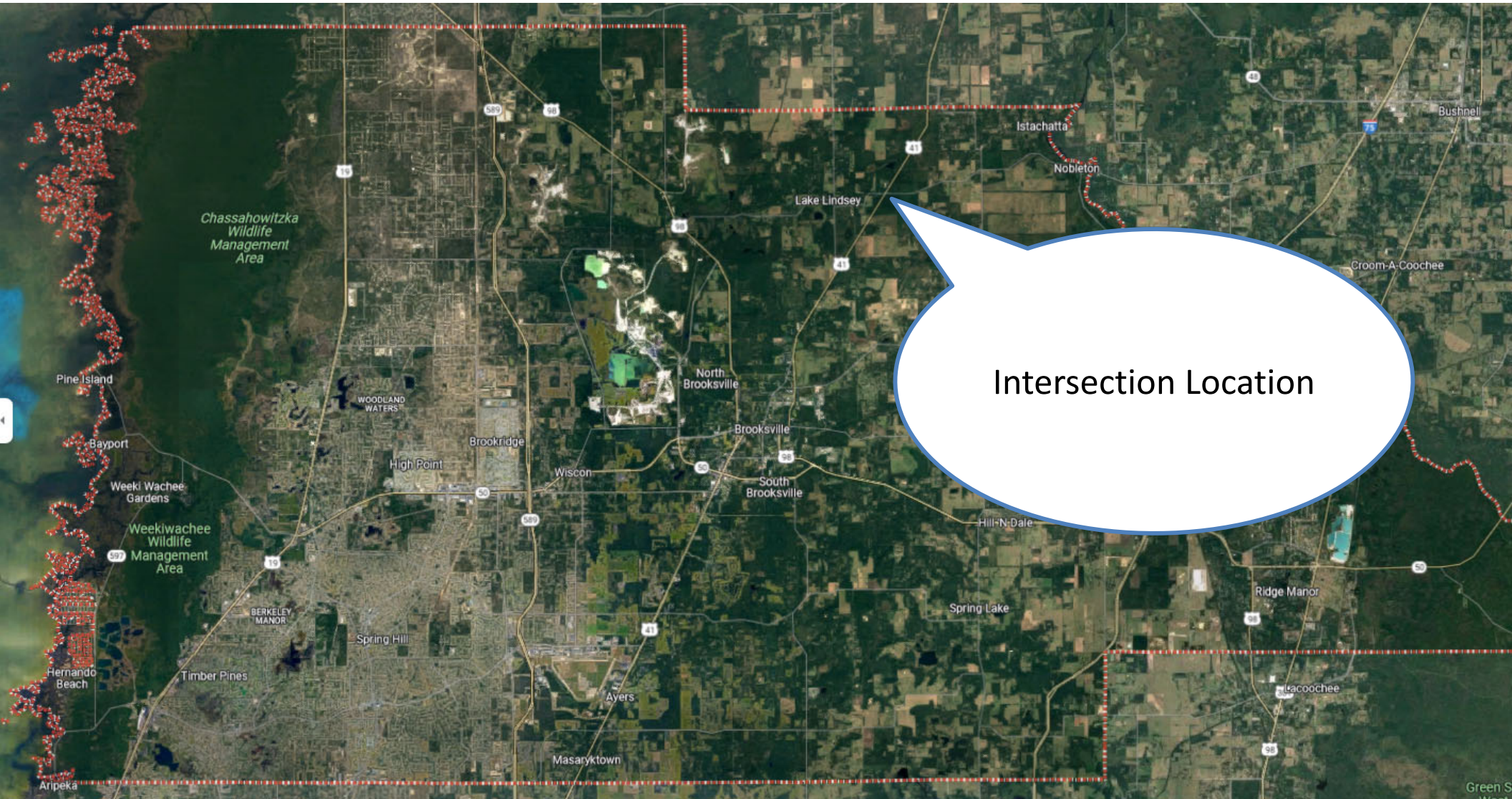


Florida Department of  
**TRANSPORTATION**

# **US 41 (Broad Street) at Lake Lindsey Road**

Hernando County, FL

# FDOT Project Location



# FDOT Intersection Features

2021 Data	US 41		Lake Lindsey Rd	
	South Leg	North Leg	West Leg	East Leg
AADT (veh/day)	6,000	3,900	1,600	3,900
Daily truck percentage	10.1%	11.7%	4.7%	4.7%
Posted Speed Limit (mph)	55	55	50	55

- Stop-controlled with two-way flashers in place
- Withlacoochee State Forest exists on the north side
  - Possible sight distance challenges



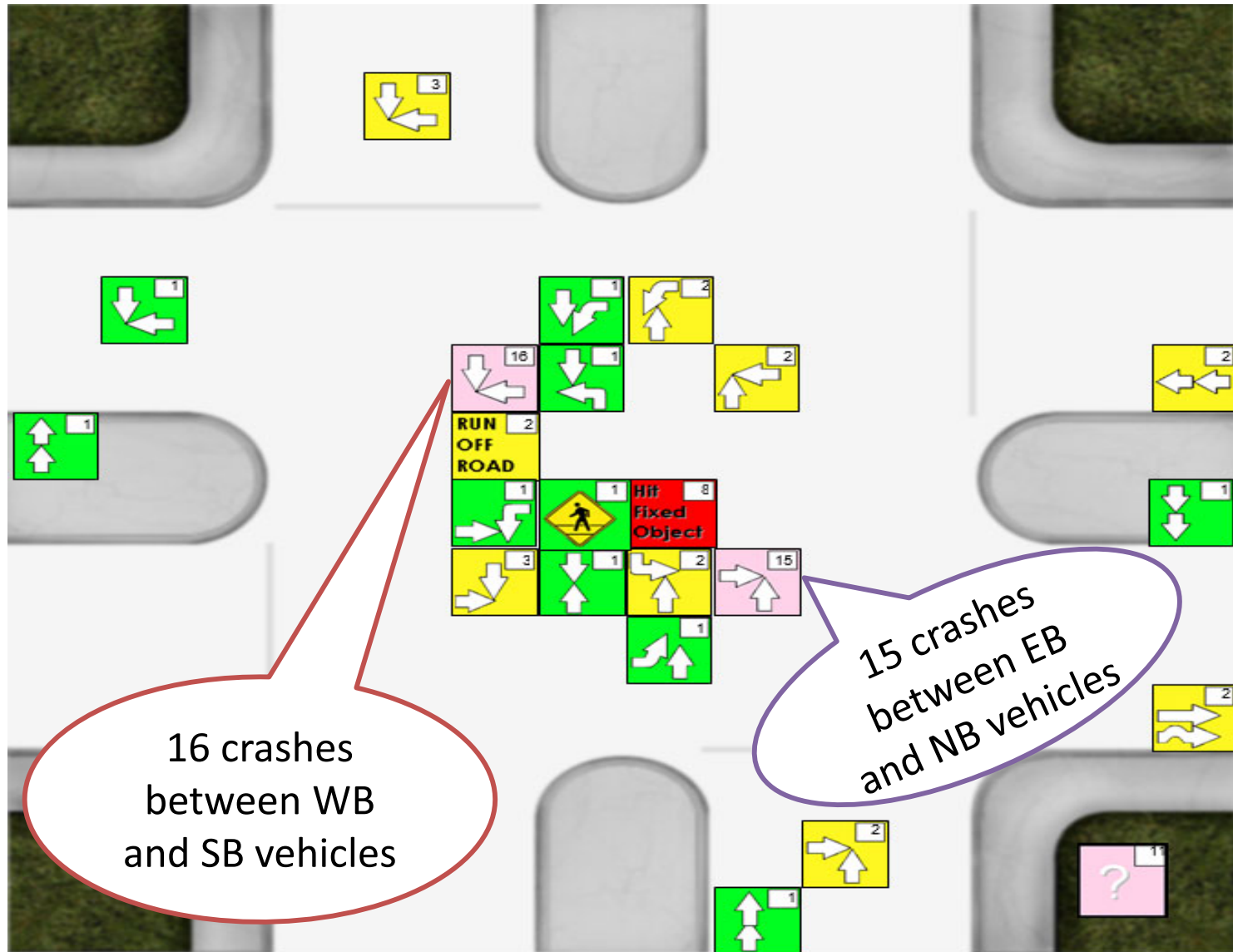
# FDOT Crash Summary

Year	Fatal Crash	Incapacitating Injury Crash	Non-incapacitating Injury Crash	Possible Injury Crash	No Injury Crash	Total	Angle	Left Turn	Rear End	Sideswipe	Other
*2012	1	0	2	2	0	5	2	0	0	0	3
*2013	0	3	1	0	0	4	3	0	0	0	1
*2014	0	2	2	3	3	10	6	0	1	0	3
*2015	0	0	3	0	2	5	1	0	1	0	3
*2016	0	0	5	4	2	11	9	0	0	0	2
2017	0	1	2	2	6	11	3	1	2	0	5
2018	0	2	3	3	4	12	6	0	0	2	4
2019	0	0	3	2	6	11	6	1	1	1	2
2020	0	0	2	0	7	9	5	0	1	0	3
2021	0	1	2	0	9	12	9	0	2	0	1
Total	1	9	25	16	39	90	50	2	8	3	27

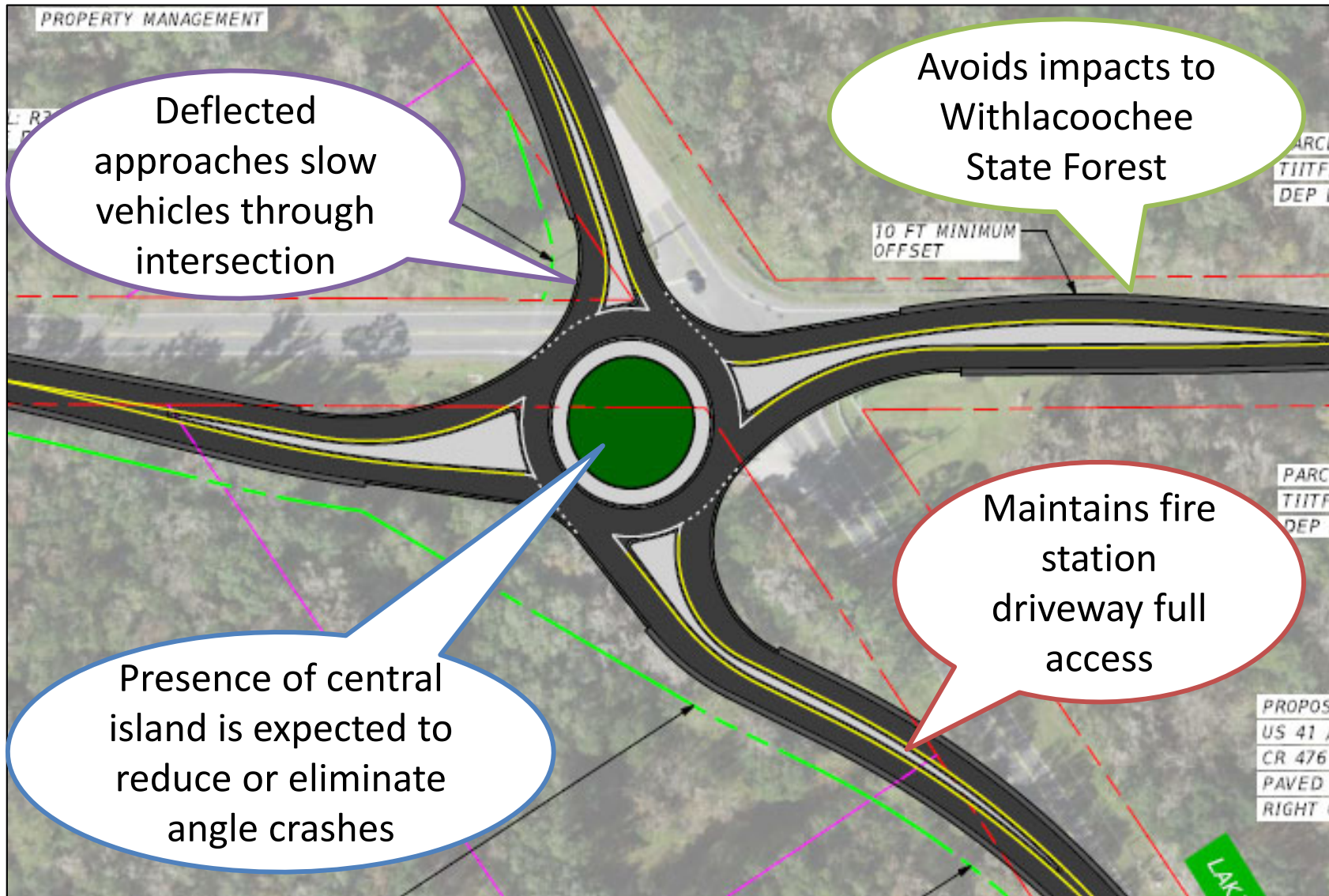
\*Original study data set

56% of all crashes are angle crashes

# FDOT Crash Patterns



# FDOT Roundabout Concept





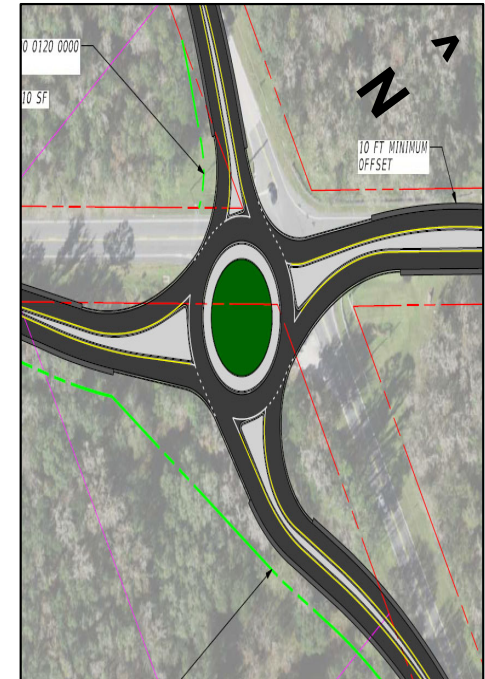
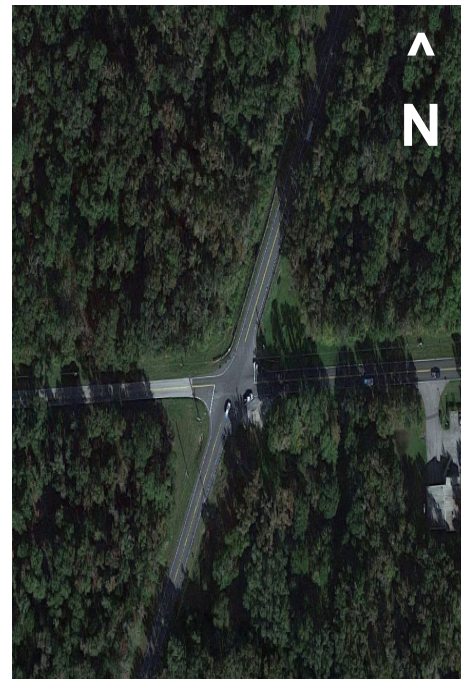
# Comparison to Traditional Signal

Volumes	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2040 AM	30	180	30	180	65	30	5	110	85	15	170	20
2040 PM	120	240	30	155	85	40	5	220	150	15	170	15

Year 2040

Concept	Overall Intersection	
	Delay (sec/veh)	LOS
AM		
Traditional Signal	10.3	B
Roundabout	8.5	A
PM		
Traditional Signal	12.7	B
Roundabout	9.1	A

Both Alternatives operate well





# Comparison to Traditional Signal

Conflict Point Type	Signal	Roundabout
Diverging	8	4
Merging	8	4
Crossing	16	0
Total	32	8

Roundabout reduces total conflict points and removes crossing conflict points

Roundabout implementation in Florida has resulted in a **15 to 47 percent** reduction in all crashes and an **80 percent reduction** in serious injuries and fatalities. – FDOT Agency Resource, Roundabouts

Countermeasure	*FHWA Crash Reduction Factor (all crashes)	*FHWA Crash Reduction Factor (severe crashes)	Crashes Reduced Annually	Life Cycle B/C
Convert Two-Way Stop to Roundabout	58%	82%	5	7.0

\*FHWA Clearinghouse: Observational Before-After Study of the Safety Effect of U.S. Roundabout Conversions Using the Empirical Bayes Method, Persaud et al., 2001.





# Project Costs

Cost Item	Sequence Description	Cost (Million \$)
Construction Sequence 1	Construct roundabout.	\$1.68
MOT	8 percent.	\$0.13
MOB	8 percent.	\$0.15
Project Unknowns	15 percent.	\$0.29
Non-Bid	Initial contingency.	\$0.05
Construction Total		\$2.30
Design Total		\$0.60
Survey Total		\$0.26
R/W Total	4 parcels with expected impacts.	TBD
<b>Project Total</b>		<b>\$3.16 + R/W Cost</b>



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