



**U.S. 41 and Bonita Beach Road Project Development and Environment (PD&E) Study**

**Financial Project Identification (FPID) Number: 444321-1**

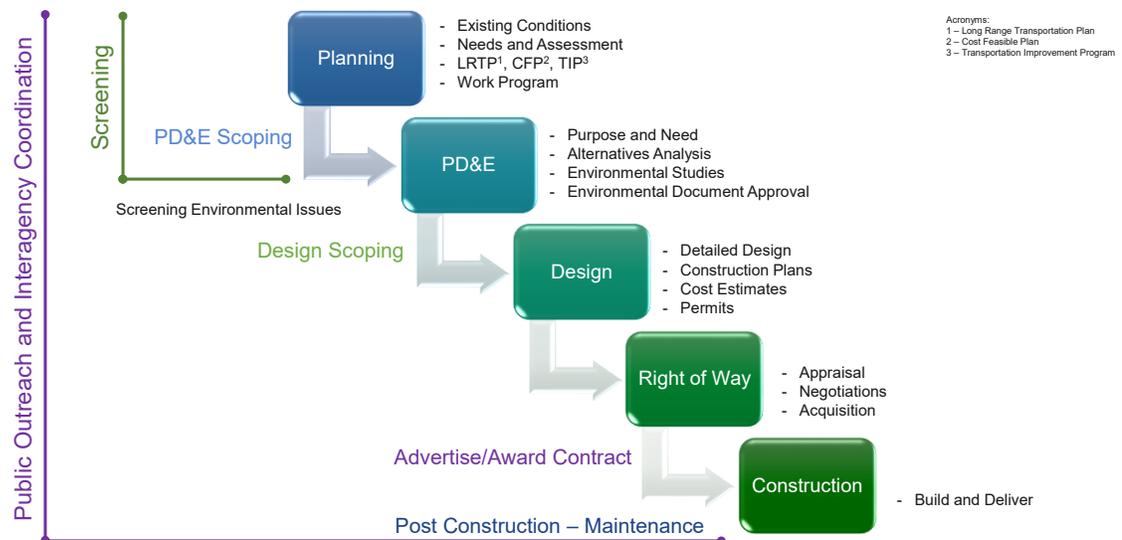
**Alternatives Public Workshop**

**Virtual Meeting: Monday, April 3, 2023**  
**In-Person Workshop: Tuesday, April 4, 2023**



The Florida Department of Transportation, or FDOT, the City of Bonita Springs, and Lee County welcomes you to the Project Development and Environment, or PD and E study Alternatives Public Workshop for US 41 at the intersection of Bonita Beach Road, or County Road 865. We appreciate your attendance and participation.

# Transportation Project Development Process



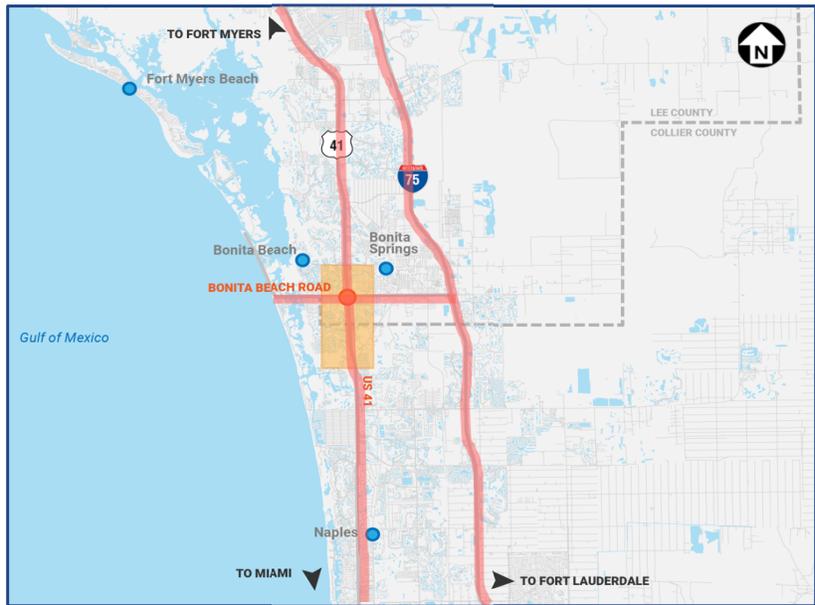
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This PD&E Study is a part of the overall Transportation Project Development Process. This flow chart shows the different project phases. The PD&E Study includes Purpose and Need, Alternatives Analysis, Environmental Studies, and Environmental Document Approval. Upon Environmental Document approval, the remaining phases for project implementation are Design, Right of Way and Construction.

# Regional Significance



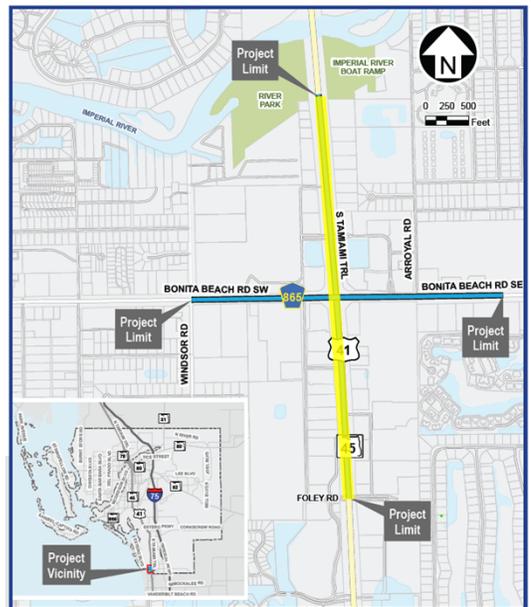
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The project is in the City of Bonita Springs, in Lee County. US 41 serves as a critical corridor in facilitating the north-south movement of regional and local traffic (including truck traffic) as it runs parallel to Interstate 75 along Florida's west coast. Similarly, Bonita Beach Road serves as a major east-west roadway within Lee County, linking US 41 and Interstate 75, and providing access (as one of two connections) between the mainland of Lee County and coastal communities and tourist destinations on the barrier island and beaches to the west. Both US 41 and Bonita Beach Road are designated as emergency evacuation routes.

# Project Study Area



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The study begins (click for animation) at the US 41 intersection with Foley Road and extends approximately one mile northward to the southern end of the US 41 bridge over the Imperial River.

## Purpose for Improvements

- Improve operational conditions
- Improve traffic mobility and transportation network access.
- Enhance emergency evacuation and response times
- Enhance mobility options and multi-modal access



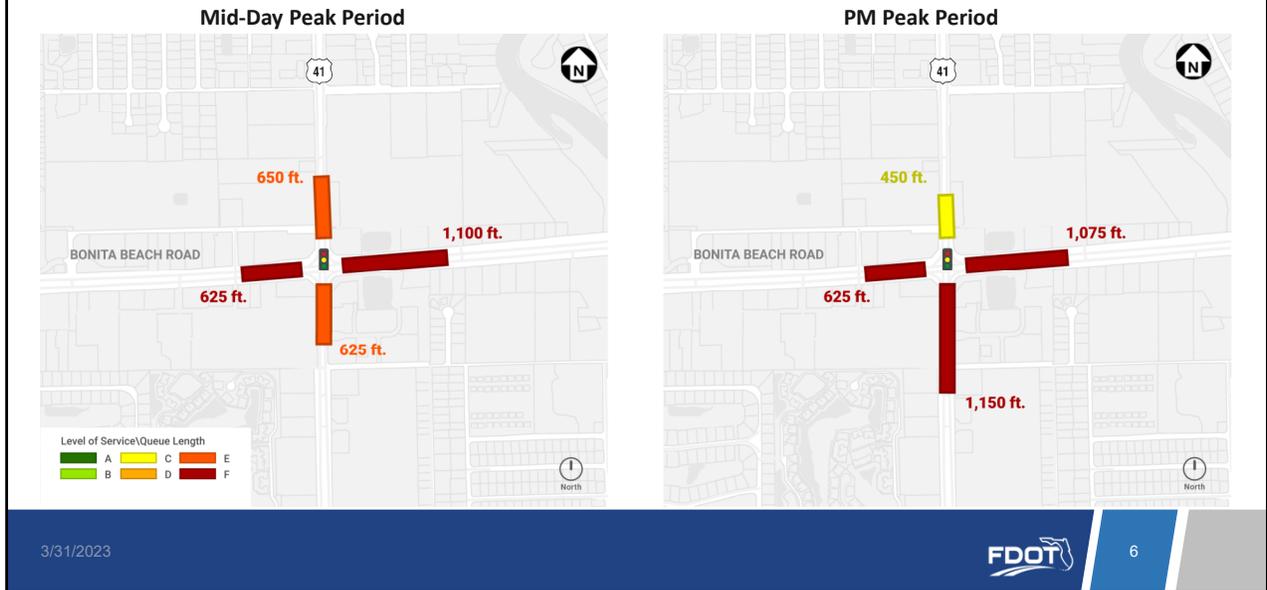
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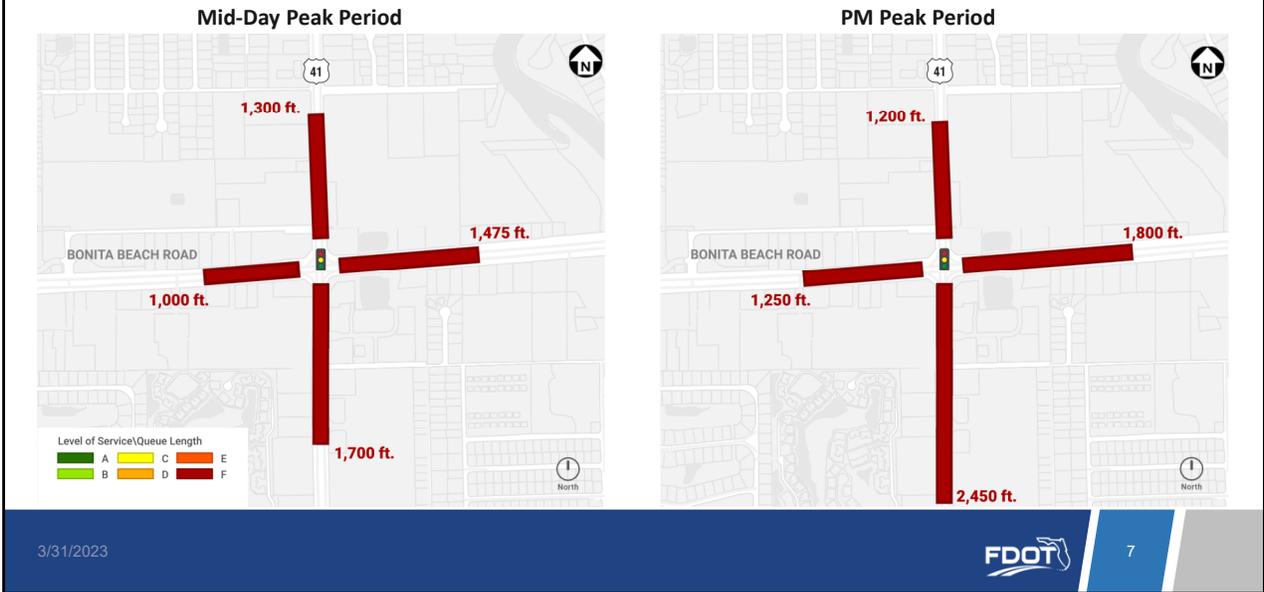
The purpose for the US 41 at Bonita Beach Road intersection proposed improvements are four-fold. First, to relieve existing congestion and accommodate future traffic demands in the area. Secondly, to improve traffic mobility and transportation network access. Next, the improvements are to enhance emergency evacuation and response times. And lastly, the improvements are to enhance the intersection's mobility options and multimodal access.

# Existing Levels of Service/Queue Lengths



The existing mid-day and PM peak hour level of service in the peak season ranges between “C” and “F” or failure for both time periods. Level of Service is like grades in school. “A” is great and “F” is failure. The resulting queues on some approaches are over 1000 feet.

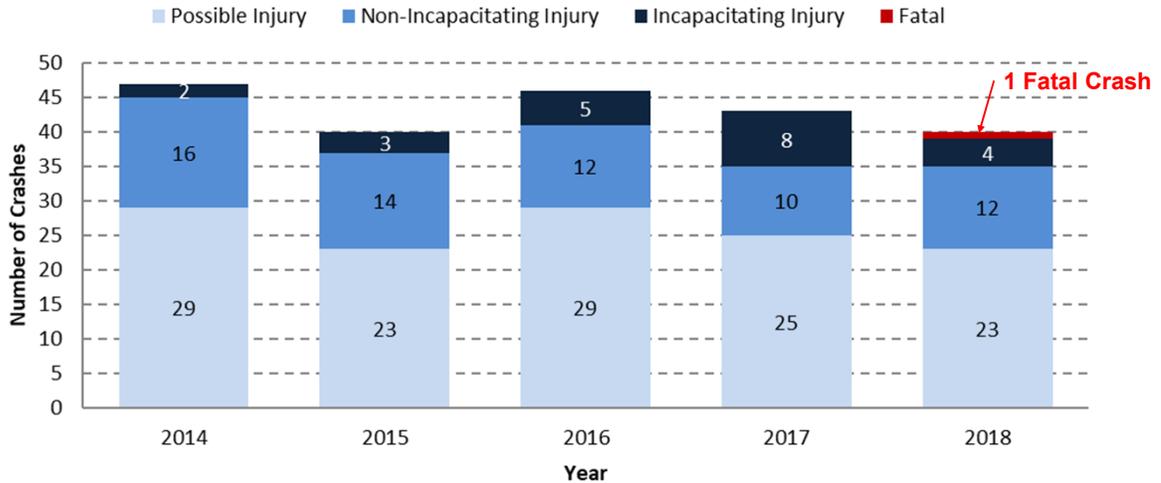
# 2050 Levels of Service/Queue Lengths



By 2050, without improvements, all approaches will be Level of Service F. Further, the anticipated queue lengths are expected to double on US 41 and back into existing nearby signals on Bonita Beach Road if no improvements are made.

# Safety

## Crashes by Year and Severity



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Crash data for 2014 through 2018 was reviewed showing an average annual number of fatal and injury crashes in the study area to be 43 crashes per year. Twenty-three percent of all crashes resulted in at least one injury, and one fatal crash occurred in 2018. Rear-end is the predominate crash type, accounting for 48 percent of the total crashes.

## Multimodal Activity



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The intersection has several nearby transit stops. Pedestrian and bicycle traffic is frequently present. The proposed Coastal Loop Trail is in the early planning stages along Bonita Beach Road and, if built, will travel through the US 41 intersection.

# 2045 Long Range Transportation Plan

Project is a **regional priority** in the 2045 Long Range Transportation Plan (LRTP)



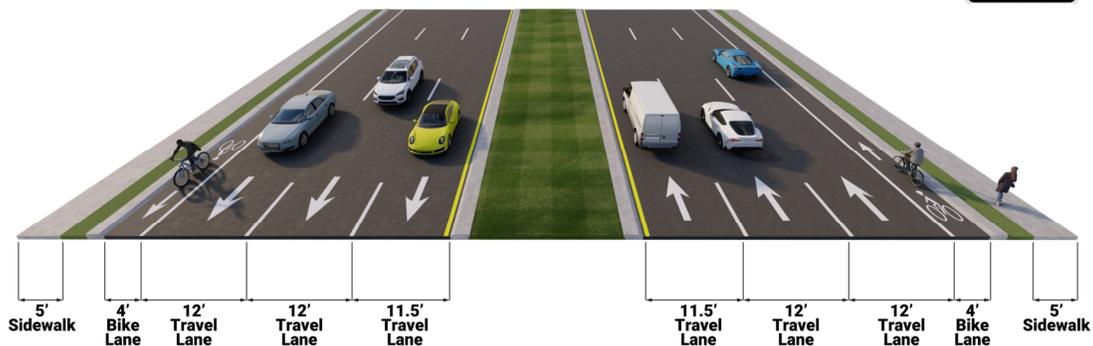
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The Lee County Metropolitan Planning Organization has adopted the 2045 Long Range Transportation Plan, or L R T P. The proposed US 41 and Bonita Beach Road intersection improvement is shown in the 2045 LRTP Cost Feasible Plan for project engineering and design, right-of-way acquisition, and construction.

# US 41 Existing Typical Section



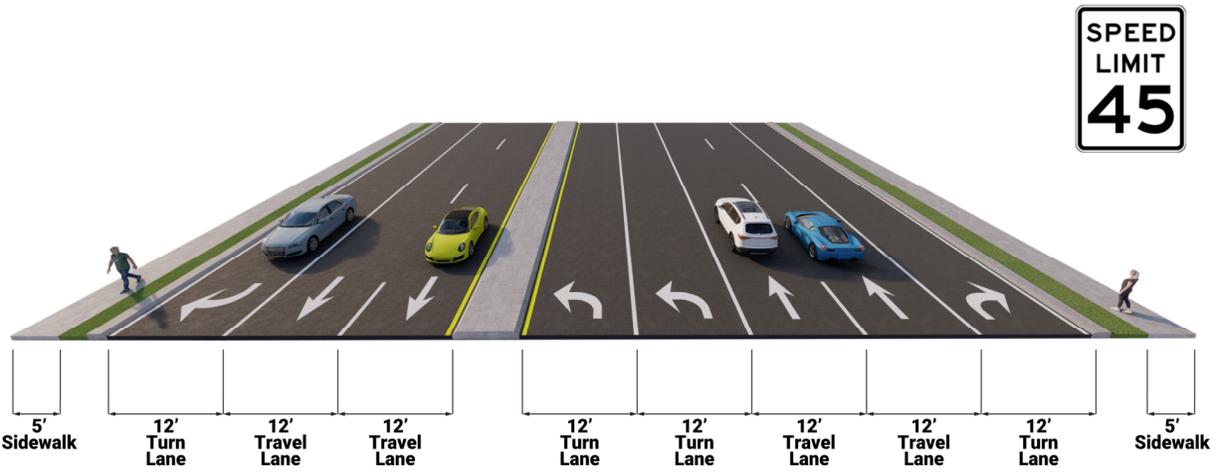
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Within the project limits, US 41 is an existing six lane roadway with a raised median and lane widths varying between 11 and one-half feet and 12 feet. The roadway includes a 4-foot bicycle lane, curb and gutter and 5-foot sidewalks on both sides. The existing right of way width varies between 200 and 210 feet. The US 41 posted speed limit is 50 miles per hour.

# Bonita Beach Road Existing Typical Section



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Bonita Beach Road is an existing four lane roadway with a raised median and 12-foot lanes. Bonita Beach Road does not include any on street bicycle facilities but does have curb and gutter and a 5-foot sidewalk along both sides. The existing right of way varies between 140 and 147 feet. The posted speed limit on Bonita Beach Road at the intersection is 45 miles per hour. This signalized intersection has two left turn lanes and a separate right turn lane on all approaches.

# Network Enhancement Alignment Study – Quadrant Plan



## NETWORK ENHANCEMENT ALIGNMENT STUDY "QUADRANT PLAN" MAY 2017



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The existing US 41 and Bonita Beach Road intersection has two high volume left turn movements being the eastbound to northbound movement and the southbound to eastbound movement. To partially address these heavy movements, the City of Bonita Springs conducted the "Network Enhancement Alignment Study – Quadrant Plan" with the report published in May 2017.

## Network Enhancement Alignment Study – Quadrant Plan



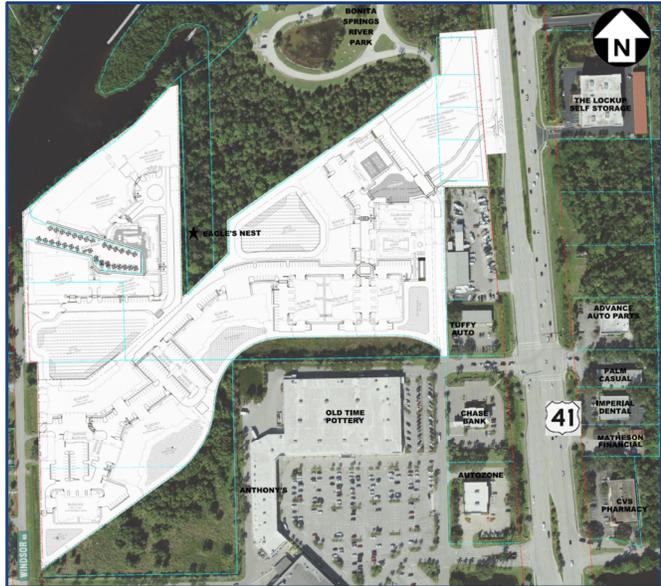
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This “Quadrant Plan” included maps for each of the intersection’s four quadrants. The study’s result was “to further analyze and design the northern half of the Quadrant Plan.”

# Angler's Paradise



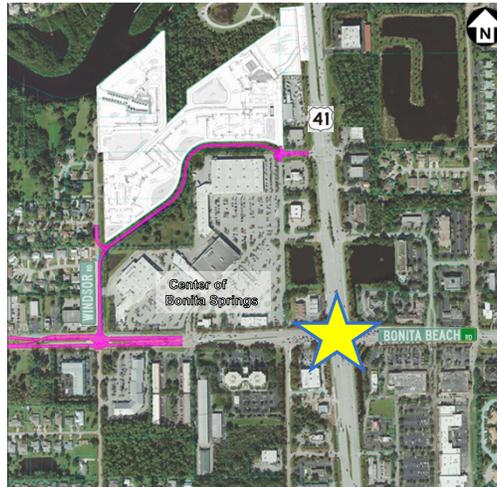
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The City of Bonita Springs has approved a development application for Angler's Paradise in the northwest quadrant of the US 41 and Bonita Beach Road intersection.

## No Build Alternative – Northwest Quadrant Roadway



★ = Study Intersection

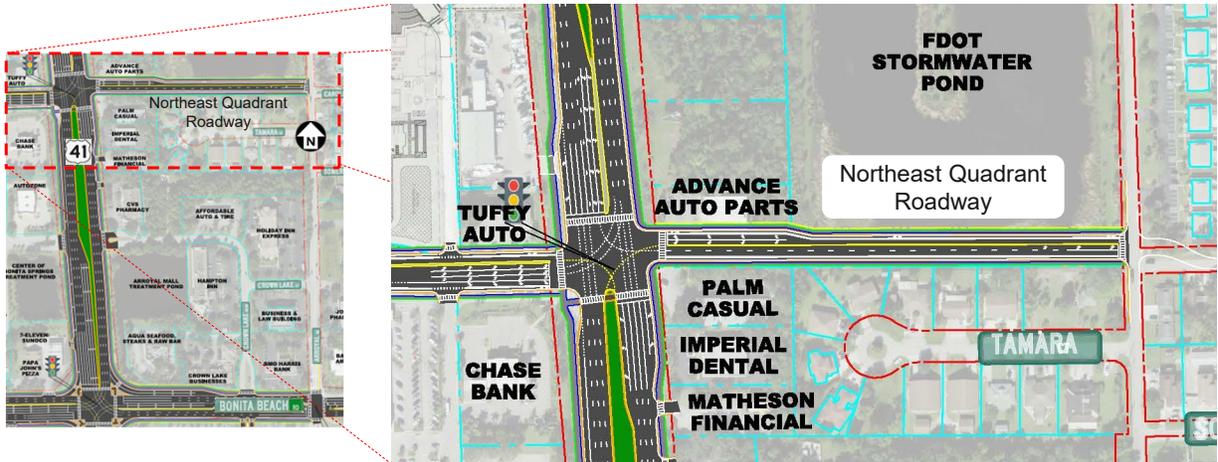
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Associated with this development is the design and construction of the northwest quadrant roadway by the City of Bonita Springs. This will be the initial northwest quadrant roadway. This roadway begins at the Windsor Road and Bonita Springs Road intersection and proceeds in a northeasterly direction behind the Center of Bonita Springs to intersect with US 41 at the existing signal for the Center of Bonita Springs. The City is currently designing the roadway and plans to construct it in a few years. In addition to providing access to Angler's Paradise, this new quadrant roadway will provide an alternative to the US 41 and Bonita Beach Road intersection's eastbound left turn and southbound right turn. This roadway will be considered as part of the P D and E study's existing, or no build roadway network. Throughout this study, a no-build alternative is considered. The no-build alternative assumes that no improvements are made to the US 41 and Bonita Beach Road intersection through the year **2050 ("twenty fifty")**, except routine maintenance. The previously noted level of service "F" and nearly four minutes of average vehicle delay in **2050** includes the addition of the northwest quadrant roadway. The addition of the northwest quadrant roadway improvement will not solve the projected traffic congestion.

## Build Alternative – Northeast Quadrant Roadway



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The proposed intersection improvement includes two build alternatives focused on improving intersection traffic operations and safety. Both build alternatives include the northeast quadrant roadway to provide a network enhancement and a secondary alternative avoiding the study intersection. As shown, the Northeast Quadrant Roadway connects US 41 to Arroyal Road. This roadway's proposed construction is included as part of the US 41 and Bonita Beach Road improvement project.

# Build Alternatives



Enhanced Traffic Signal



Partial Displaced Left Turn

The two build alternatives currently being considered are the enhanced traffic signal and a partial displaced left turn. The first alternative, the enhanced traffic signal, would widen US 41 to eight lanes from Foley Road to the southern end of the Imperial River bridge and provide improvements to the existing signalized intersection.

## Build Alternatives



Enhanced Traffic Signal



Partial Displaced Left Turn

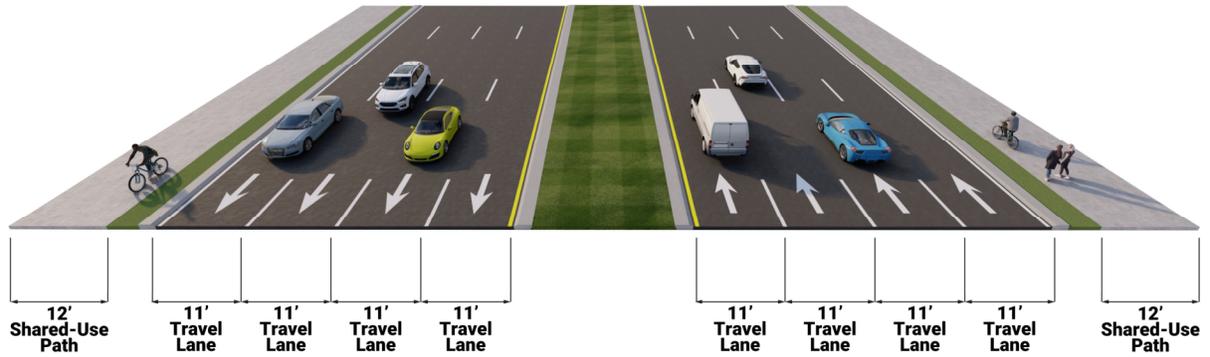
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The second alternative would reconfigure the US 41 and Bonita Beach Road intersection into a partial displaced left turn. This is similar to the new Lee County intersection at Daniels Parkway and SR 82. We will discuss more regarding this proposed improvement later. Also, these alternatives are on display tonight and are available for review from the project website.

## Enhanced Traffic Signal - Proposed US 41



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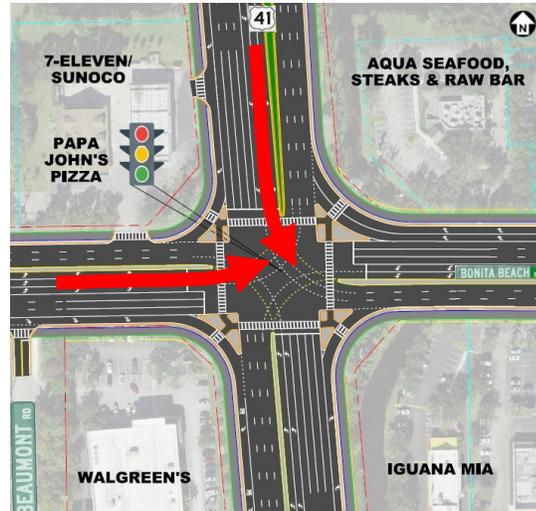


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In the enhanced traffic signal alternative, the Foley Road intersection is proposed to be signalized and US 41's four 11-foot travel lanes, in each direction, would begin and end at this intersection's north leg. Also, for pedestrians and bicyclists, a 12 foot wide shared use path would be provided on both sides of the roadway starting north of Foley Road. The four 11-foot lanes and 12-foot shared use paths are proposed along US 41 throughout the project area, terminating at the Imperial River bridge.

## Enhanced Traffic Signal – Intersection Details

- Eastbound to Northbound left turns
- Southbound to Eastbound left turns
- Proposed three lanes



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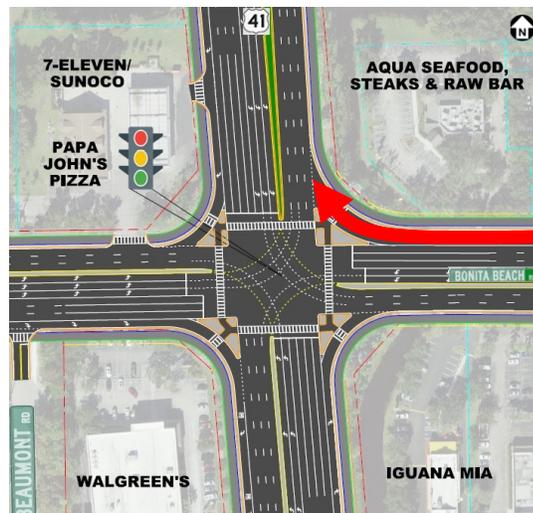
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At the US 41 and Bonita Beach Road intersection, the eastbound to northbound and the southbound to eastbound left turn movements are proposed to be three lanes each.

## Enhanced Traffic Signal – Intersection Details

- The westbound to northbound right turn movement would be two lanes
- Remain signalized



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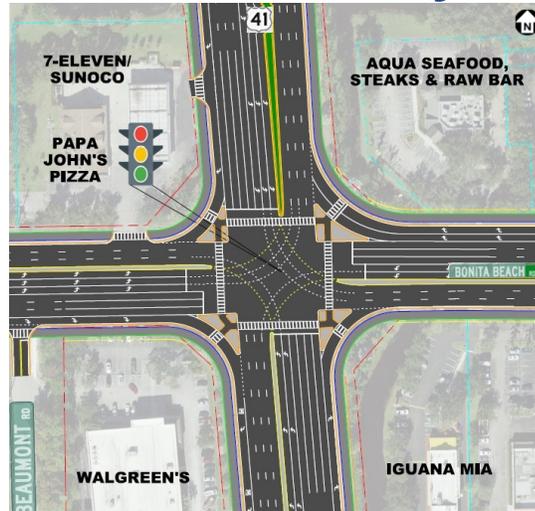
The westbound to northbound right turn movement would be two lanes and would remain under signal control. For both alternatives, Bonita Beach Road would be widened to six lanes between the Center of Bonita Springs and Arroyal Road.

## Enhanced Traffic Signal – Reduces Delay

✓ Avg. vehicle delay reduced to 1.5 min.

✗ Predicted crashes higher than no-build

✗ Pedestrians & cyclists have more lanes to cross



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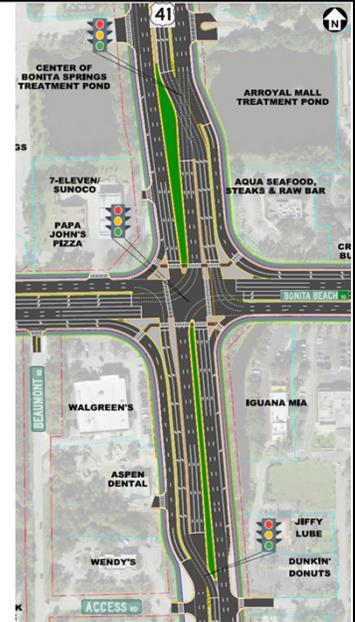
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The estimated **2050** operation is to remain at level of service E to F but the average vehicle delay reduces from the no build's four minute delay to approximately one- and one-half minutes or 90 seconds. The Enhanced Traffic Signal is predicted to have more crashes than the no-build alternative. Further, the Enhanced Traffic Signal will have more lanes for pedestrians and bicyclists to cross.

## Partial Displaced Left Turn

- Similar to the new Lee County intersection at Daniels Parkway and SR 82
- Bonita Beach Road would be widened to six lanes
- Used when there are high volumes of left turn movements
- **Left turn** movements are relocated or “**displaced**” to the other side of the opposing flow called a “**crossover**” movement.



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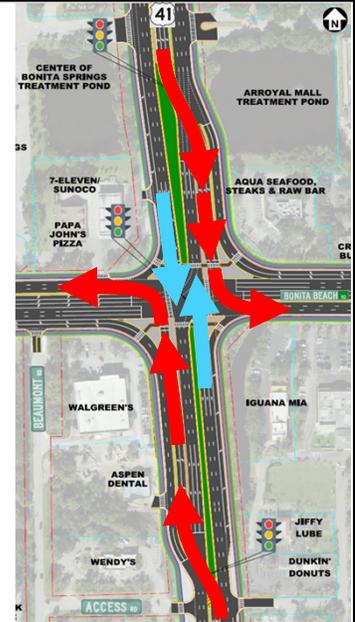
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The second alternative would reconfigure the US 41 and Bonita Beach Road intersection into a partial displaced left turn, similar to the new Lee County intersection at Daniels Parkway and SR 82. For both alternatives, Bonita Beach Road would be widened to six lanes between the Center of Bonita Springs and Arroyal Road. The partial displaced left turn intersection is used when there are high volumes of left turn movements, making the US 41 and Bonita Beach Road intersection a good candidate. The primary feature of a partial displaced left turn intersection is moving left turn movements on an approach to the other side of the opposing traffic flow, known as a “crossover” movement.

## Partial Displaced Left Turn

- **Left turn** movements are relocated or “**displaced**” to the other side of the opposing flow called a “**crossover**” movement.
- **Crossover** movements stop at Bonita Beach Road awaiting the green.
- **US 41 left turn and thru movements** in both directions receive green simultaneously.
- No separate US 41 left turn signal phase.



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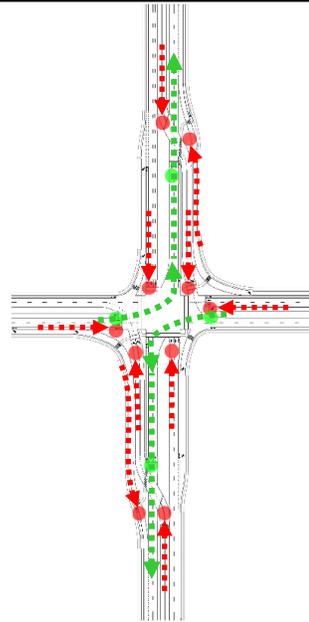
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These movements are on US 41 and identified by the red arrows. The “crossover” intersection for the south approach is a two phased signalized intersection approximately 650-feet south of Bonita Beach Road. The northern “crossover” signalized intersection is approximately 400-feet north of Bonita Beach Road. Both “crossover” left turn movements would have the green light when the Bonita Beach Road east and west through movements have the green light to maximize signal efficiency. After crossing over, the traffic would stop at Bonita Beach road awaiting a green light. This allows the left turn movements to proceed simultaneously with the main intersection’s through movements as shown by the blue arrows. This eliminates a separate left turn phase for the US 41 approaches.

## Partial Displaced Left Turn Movements

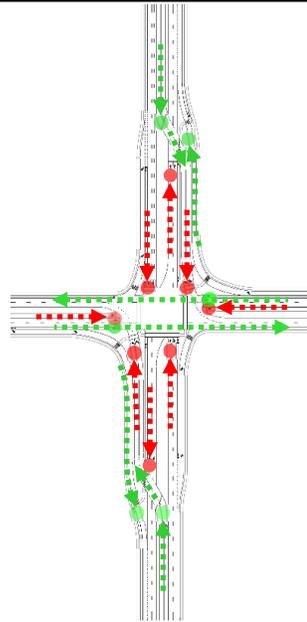
- Bonita Beach Road left turns



The Partial Displaced Left Turn Signal is shown here. The initial phase is the Bonita Beach Road Left Turn and the signals allow this movement to partially clear the crossover intersections.

## Partial Displaced Left Turn Movements

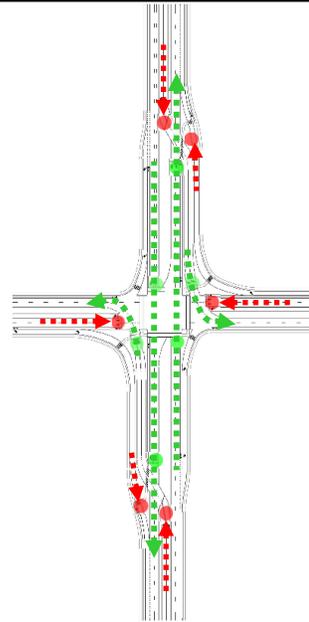
- Bonita Beach Road left turns
- Bonita Beach Road through and crossover



The second phase is the Bonita Beach Road through movement. As this is happening, the crossover intersections left and right turns are green.

## Partial Displaced Left Turn Movements

- Bonita Beach Road left turns
- Bonita Beach Road through and crossover
- US 41 left turns and through simultaneously



The third and final phase is for US 41's through [TRANSITION ANIMATION TO NEXT IMAGE ON CLICK] and left turn movements in both directions to operate simultaneously. The US 41 crossover intersection through movements are also green during this phase.

## Partial Displaced Left Turn - US 41



US 41 from Foley Road to Crossover Intersection features:

- 6-lane divided roadway
- 11-ft travel lanes
- 12-ft shared use paths on both sides

US 41 north of Foley Road to the “crossover” intersection will be a six-lane divided roadway having the 12-foot shared use paths on both sides. The US 41 intersection with Foley Road is proposed to be signalized.

## Partial Displaced Left Turn - US 41



US 41 between Crossover Intersections features:

- 6-lane divided roadway
- 11-ft travel lanes
- Separated left turn movements between opposing through and right turn movements
- 12-ft shared use paths on both sides

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US 41 north of the “crossover” intersection will maintain the same basic roadway features and will add opposing flow left turn movements. These will be physically separated and located between the opposing through and right turn movements.

## Partial Displaced Left Turn - US 41



US 41 from North Crossover Intersection to Imperial River Bridge features:

- 8-lane divided roadway
- Add/drop lanes at crossover and bridge
- 11-ft travel lanes
- 12-ft shared use paths on both sides

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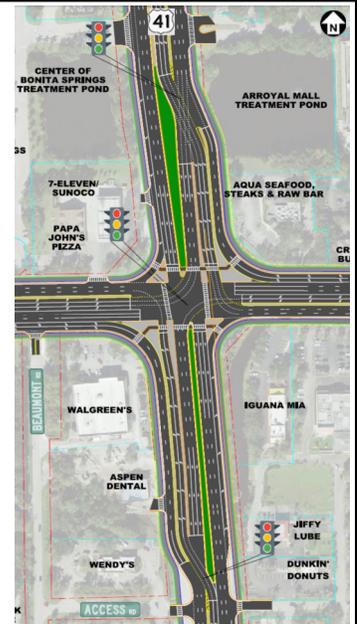
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US 41 north of the “crossover” intersection widens to four lanes northbound and has a short four lane section through the signalized intersection with the northwest and northeast quadrant roadways. The four lanes terminate at the Imperial River bridge. The 11-ft travel lanes and 12-ft shared use paths are throughout.

## Partial Displaced Left Turn

- ✓ Avg. Vehicle Delay reduced to <1.5 min.
- ✓ Crashes are lower than enhanced traffic signal
- ✓ Peds & cyclists - fewer lanes to cross than enhanced traffic signal



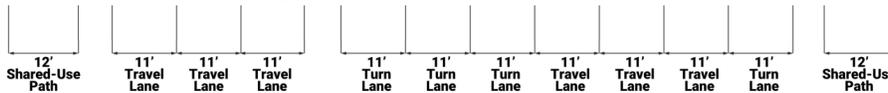
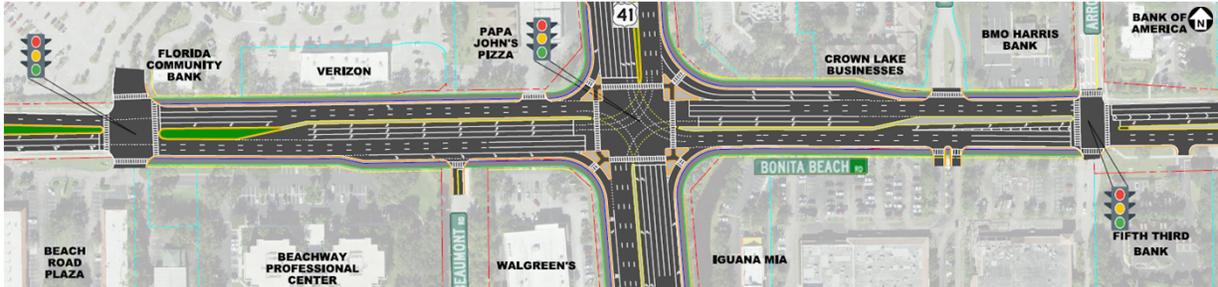
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While the **2050** design year peak season level of service will remain E to F, the overall delay will reduce from the no build's four minutes to be less than one and one half minute per vehicle. The Partial displaced left turn is predicted to have fewer crashes than the Enhanced Traffic Signal. Further, the Partial displaced left turn will have fewer lanes for pedestrians and bicyclists to cross with fewer vehicle-pedestrian conflict points.

# Bonita Beach Road Widening



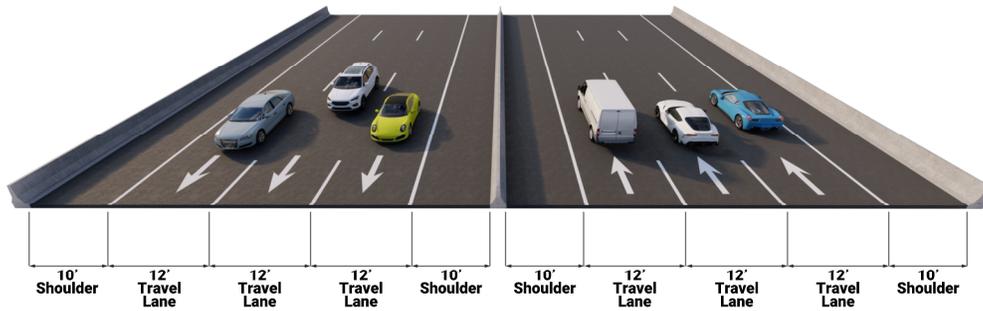
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As noted previously, Bonita Beach Road will be widened to six lanes in both alternatives. The widening would begin at the signal serving the Center of Bonita Springs and extend to Spanish Wells Boulevard.

## Past Alternative: Grade Separation



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You may have heard in the past about a grade separated or interchange alternative to improve this intersection. Grade separation was initially considered but not found to be a viable alternative with the City's upcoming northwest quadrant roadway construction. The spacing between the overpass and ramps and the northwest quadrant roadway signalized intersection is not sufficient to properly merge and terminate the ramps. Therefore, grade separated alternatives are no longer being considered.

## Potential Environmental Effects



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This P D and E study is ongoing. Project team members will continue to develop, refine, and evaluate alignment alternatives for the US 41 and Bonita Beach Road intersection throughout the remainder of the study. Potential environmental effects associated with the proposed build alternatives are under careful evaluation and include detailed studies of:

- Wetlands
- Floodplains
- Threatened and endangered species
- Water quality
- Contamination sites
- Recreational sites
- Noise
- Air quality
- Historic structures and
- Archaeological sites.

Based on data already collected, we do not anticipate significant effects associated with the two proposed build alternatives.

# Evaluation Matrix

EVALUATION FACTORS	Alternative	8-Lane US 41 with Traffic Signal	6-Lane US 41 with Partial Displaced Left Turn	No Build
<b>ABILITY TO MEET PURPOSE AND NEED</b>				
Improves Traffic Operations		✓	✓	✗
Improve Traffic Mobility and Transportation Network Access		✓	✓	✗
Enhances Emergency Evacuation and Response Times		✓	✓	✗
Enhance Mobility Options and Multi-Modal Access		✗	✓	✗
<b>POTENTIAL RIGHT OF WAY IMPACTS</b>				
Relocations (#Business/#Residential/#Other)		2/0/0	2/0/0	0
Parcels (#Business/#Residential/#Other)		12/2/3	14/2/3	0
Right of Way to be Acquired (acres)		4.05	4.73	0
<b>POTENTIAL ENVIRONMENTAL EFFECTS</b>				
Threatened/Endangered Species and Habitat		Low	Low	N/A
Wetlands (acres)		0.55	0.79	0
Floodplains (acres)		4.63	4.65	0
Archaeological/Historic Resources		Low-Med/0	Low-Med/0	N/A
Drinking Water Intake (gallons per day)		1	1	0
Noise Sensitive Receptors (#)		16	16	0
Contamination Sites (Flow/#Medium/#High Risk)		6/3/0	6/3/0	0/0/0
Utilities Impacted (#)		8	8	0
<b>TRAFFIC OPERATIONS</b>				
US 41/Bonita Beach Road Intersection 2050 Average Vehicle Delay in Seconds (Midday/PM)		71/93	69/96	231/258
Net Present Value <sup>1</sup> (Compared to No-Build)		\$763,360,000	\$314,380,000	N/A
<b>ESTIMATED PROJECT COSTS (2023 \$)</b>				
Right of Way for Roadway		\$15,000,000	\$16,050,000	\$0
Wetland Mitigation		\$50,000	\$70,000	\$0
Final Design and Construction		\$20,610,000	\$26,630,000	\$0
Construction Engineering and Inspection		\$2,470,000	\$3,200,000	\$0
<b>Preliminary Estimate of Total Project Cost<sup>2</sup></b>		<b>\$38,130,000</b>	<b>\$45,950,000</b>	<b>\$0<sup>3</sup></b>

<sup>1</sup> Net Present Value: 20 year life cycle costs for operational (reduced delay) and safety (fewer crashes) benefits as compared to the no build alternative minus construction and right of way costs. The higher the number represents better return on investment.  
<sup>2</sup> Source: FDOT Long Range Estimating System. Preliminary Estimate of Total Project Cost does not include maintenance costs.  
<sup>3</sup> No-Build would result in higher maintenance costs.

The evaluation matrix included in your handout shows a summary of results of preliminary analysis for the “build” and “no-build” alternatives. This matrix is also included in the project displays.

## Public Comment After Today's Meeting

1. During the live in-person event
2. By Mail
3. By email or through website

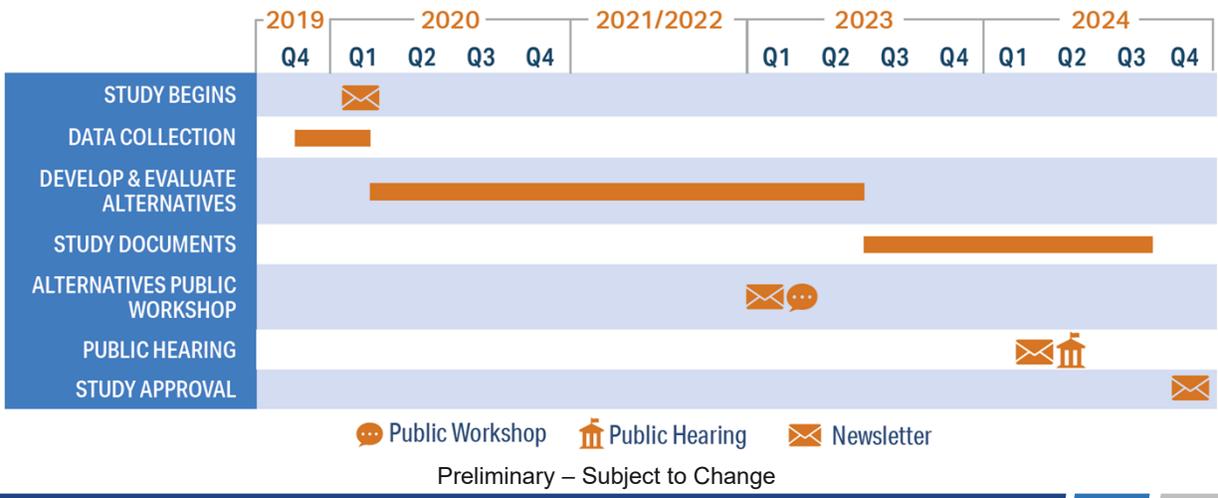
Patrick Bateman, PE, MS 1-40  
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Email - [Patrick.Bateman@dot.state.fl.us](mailto:Patrick.Bateman@dot.state.fl.us)  
Website: <https://www.swflroads.com/project/444321-1>



Your comments will help the Department, the City of Bonita Springs, and Lee County to make its selection of the preferred alternative. We encourage you to fill out the comment form during the meeting tonight or, if you prefer, you may mail your comments, postmarked by April 14, 2023, to the address on the comment form. You may also submit comments through the project webpage, using the site address listed in your handout, or email Patrick Bateman, PE, the FDOT Project Manager. Although project comments are accepted at any time, comments received or postmarked by April 14, 2023 will become part of the workshop record. The project team will consider all comments and where feasible, will incorporate them into the development of the preferred alternative

# Study Schedule



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F D O T will present the preferred alternative at an upcoming formal public hearing for this project, tentatively scheduled for early 2024. At the end of this study, and after the formal public hearing, FDOT will finalize the preferred alternative for the US 41 and Bonita Beach Road intersection.

# How to Stay Informed

<https://www.swflroads.com/project/444321-1>

Send a comment or ask a question about this project



US 41 at the Intersection of Bonita Beach Road (CR 865)  
Project Development and Environment (PD&E) Study  
Bonita Springs, Florida  
FPID: 444321-1  
Newsletter #2 - March 2023

## PD&E STUDY STARTED

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to evaluate improvements to the intersection at US 41 and Bonita Beach Road in the City of Bonita Springs, FL in southern Lee County. The study's purpose is to address congestion and projected travel demand with the ultimate goals being to enhance mobility, improve safety conditions, and provide for multi-modal features.

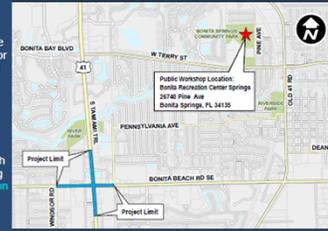
FDOT has developed "build" alternatives and is providing opportunities for your input. Alternatives under consideration include a variety of intersection-related improvements. We are evaluating each alternative to determine community impacts, additional right-of-way needs, safety mobility for all users, and traffic performance. The study will make a recommendation to advance into the design phase. Throughout this process, FDOT will consider the no-build or "do-nothing" option.

## HOW TO GET INVOLVED

The Alternatives Public Workshop is being held to present information about the preliminary alternatives and provides the opportunity for the public to offer feedback. You can participate in the Alternatives Public Workshop live online or in-person. The same materials will be displayed at both the online and in-person events, and will also be posted by March 27, 2023 on the project website.

**LIVE ONLINE OPTION:** Attend virtually on Monday, April 3, 2023 starting at 6 p.m. This event will include a viewing of the project video and a live question-and-answer component with the project team. Register in advance by visiting <https://floridadot.com/BonitaBeachRoadRegistration> or on the project website. Once registered, attendees will receive a confirmation email containing information about joining the workshop online.

**IN-PERSON OPTION:** Attend the Alternatives Public Workshop on Tuesday, April 4, 2023, at Bonita Springs Recreation Center, 26740 Pine Ave, Bonita Springs, FL 34135. Visit the workshop any time between 5 and 7 p.m. to view the project video and displays, speak with project team members, and submit comments or questions.



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We will mail project newsletters to keep you informed about the study's progress. If you would like to receive future newsletters and you are not on our mailing list, please request to be added on your comment form . You may also visit the project webpage at <https://www.swflroads.com/project/444321-1> for the latest study information, schedule, and upcoming events.

## FPID: 444321-1 Future Phases

PHASE	COST	FISCAL YEAR
PD&E	\$1.1M	2020
Design	Unfunded	To be Determined
Right of Way	Unfunded	To be Determined
Construction	Unfunded	To be Determined

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The Department anticipates completion of this P D and E study by late fall 2024, when the F D O T Office of Environmental Management accepts the location and design concept of the preferred alternative.

At this time, the F D O T 's Adopted Five-Year Work Program does not include funding for the next project phase, design.

## Memorandum of Understanding (MOU)

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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The US 41 and Bonita Beach Road intersection study team is here tonight to answer your questions and discuss the project. We invite you to speak with them and to review the aerial maps, plans, and illustrations on display.

This P D and E study is being conducted and completed according to the environmental review, consultation, and other actions required by applicable federal environmental laws **for this project are** being, or **have** been, carried out by FDOT pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

## Thank you



We appreciate your participation and input.

**FDOT thanks you for making safety a continued priority!**



Thank you for your interest in the proposed US 41 and Bonita Beach Road intersection improvements and for taking time to participate in this workshop. We look forward to your comments and your continued involvement in this important P D and E study

“And finally: an FDOT safety moment. FDOT thanks you for making safety a continued priority!”